

EA- SOUTHERN BOX 5

Environment Agency Hampshire & Isle of Wight Area

Autumn 2000 to Spring 2001 Floods Review Area Report



Southern Region



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FOREWORD

The dramatic events experienced from Autumn 2000 to Spring 2001 have deeply affected all those involved. The extent and duration of the flooding and speculation regarding climate change have reduced the confidence of those living in flood risk areas. We must now work together to face up to the challenge of managing the risk of flooding.

The Hampshire and Isle of Wight Area experienced four distinct periods of unusually intense autumn rainfall followed by high winter and spring accumulations. Each of the specific rainfall events caused widespread disruption due to watercourses inundating flood plains and surface water overwhelming drainage systems. As the winter rains continued groundwater levels reached record levels in the chalk catchments. It is estimated that 130 different communities across the Hampshire and Isle of Wight area were affected. Groundwater flooding continued into May 2001 and levels in some places have yet to fully return to normal.

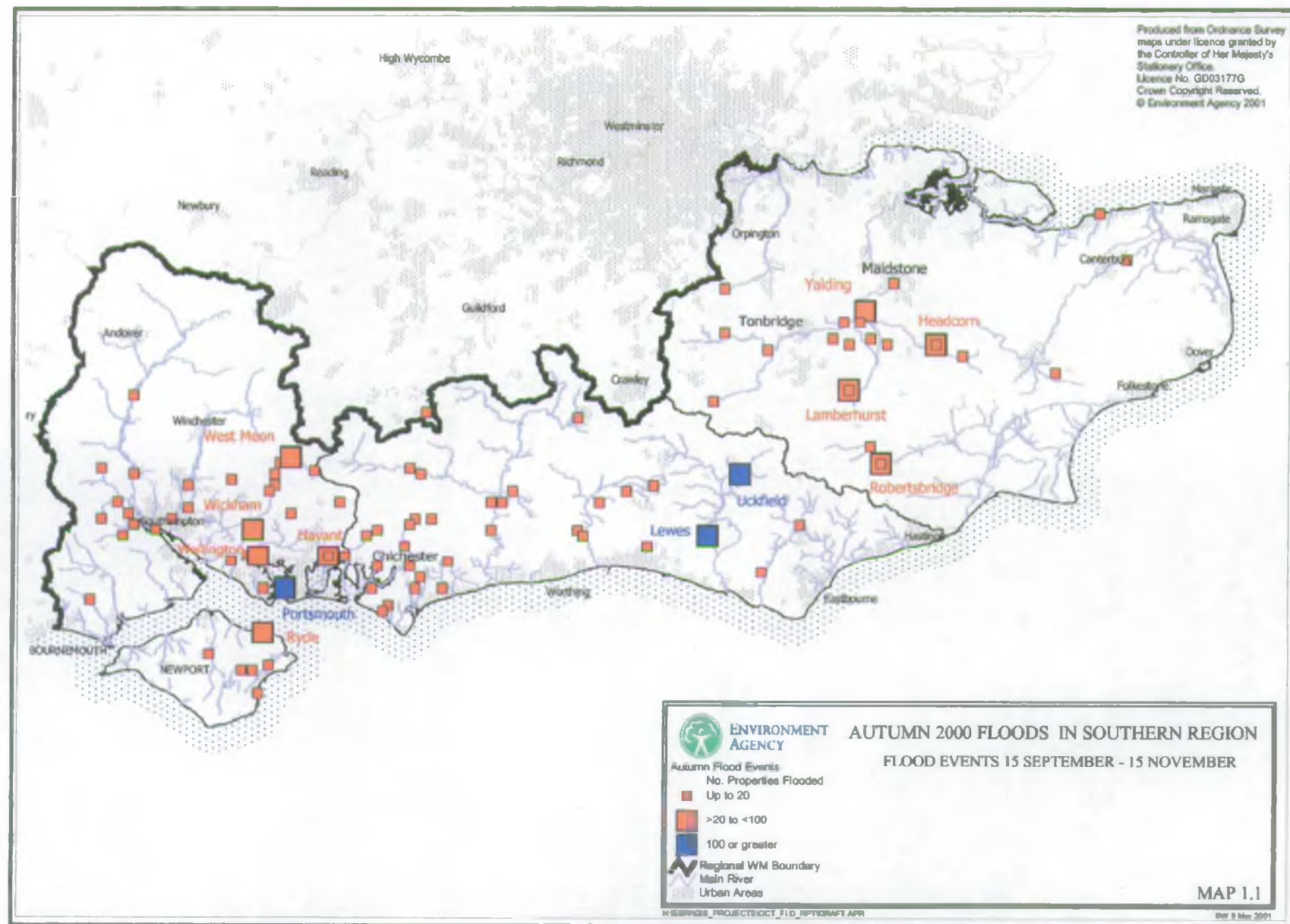
Groundwater flooding occurs on a small scale in many places and is particularly important in Hampshire. The many villages along the dry valleys and streams are attractive and so housing is expensive. These communities suffered from shallow flooding, generally with clean water but sometimes contaminated with sewage for many weeks and in some case months. Flooding of roads as well as houses caused disruption to the lives of many individuals and should not be underestimated.

To ensure that we at the Environment Agency deliver the best possible service to our customers, it is essential that we continually review our performance to identify any areas for improvement. This report, and the site specific reports commissioned by the Environment Agency, have been produced to provide an accurate and clear understanding of the flood events that occurred between Autumn 2000 and Spring 2001 in the Hampshire and Isle of Wight Area. We are encouraging all our professional partners to work together to help to mitigate future problems by producing combined Action Plans for each community affected.

Throughout the report issues are raised and recommendations have been made. From the list of recommendations an Action Plan has been produced in order to address the recommendations proposed. The Action Plan includes a detailed programme for introducing the improvements. Much has already been done to repair the defences damaged and to increase the number of people who receive warnings and groundwater information directly from ourselves.

Tim Kermode

**Area Flood Defence Manager
Environment Agency
Hampshire and Isle of Wight Area**



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1 EXECUTIVE SUMMARY

1.1 INTRODUCTION

This report is a factual record of the events that have occurred as a result of the exceptional autumn and winter 2000 to 2001 rainfall. It also covers the actions the Agency took in terms of its flood forecasting, warning and emergency response and includes recommendations for improvements to current practises.

As a result of the event the Environment Agency is aware of flooding to about 900 properties in 130 different communities across the Hampshire and Isle of Wight area. Following the Autumn 2000 to Spring 2001 event the Agency commissioned consultants to report on the flooding in these communities, identifying and assessing possible mitigation works wherever these may be feasible. A list of all the reports carried out on behalf of the Environment Agency is contained in Appendix J. These reports have been compiled after this Autumn 2000 to Spring 2001 Flood Review and contain more site specific up to date information following consultation with parish councils, residents and local authorities.

September 2000 to March 2001 was the wettest since records began. A series of storms crossed Hampshire and Isle of Wight Area over the autumn period as well as generally high rainfall occurring throughout the winter into early spring. The Area experienced four distinct periods of unusually intense autumn rainfall followed by high winter accumulations. As a historical comparison the autumn and winter 2000/2001 total is 10% higher than the previous highest record in 1935. Compared to the average monthly rainfall some sites have experienced in excess of twice the average amount for three of four months in succession.

Each of the specific rainfall events caused widespread disruption due to surface water overwhelming drainage systems and watercourses inundating flood plains. Many properties were affected and in some cases have been flooded more than once. Additionally, as winter rains continued ground water levels became very high in the chalk catchments. This has resulted in a number of villages and isolated properties being flooded directly from the rising groundwater. Heads of streams in many cases migrated up normally dry valleys to some of the highest ever-recorded locations.

Some properties experienced flooding where watercourses are not found even in wetter winters with water percolating up through ground floors or filling basements. Groundwater flooding lasted continued into May 2001 and many villages affected have yet to fully return to normal.

This report covers the events of:

- Friday 15th September 2000
- Monday 9th October to Monday 16th October 2000
- Sunday 29th October to Tuesday 31st October 2000
- Sunday 5th November to Wednesday 8th November 2000

- November 2000 to May 2001 Groundwater Flooding

All times in the report are local.

1.2 FRIDAY 15TH SEPTEMBER 2000 EVENT

The area recorded 59.4mm of rain in 24 hours at Havant in East Hampshire, with four further automatic rain gauges in East Hampshire and the Isle of Wight recording over 50mm in the same 24 hours. Wroxall rain gauge, immediately south of the Monktonmead catchment, recorded 53mm with a particularly intense storm occurring at the time of the high tide at Ryde.

It is estimated that approximately 200 properties were flooded in Portsea Island after Southern Water's Eastney Pumping Station failed due to heavy rainfall. It is also estimated that up to a further 3000 properties were affected by this flooding. 80 properties were flooded internally in the area during this event. This event occurred with very little notice and, therefore, the Agency was limited in their response. There was close liaison with Portsmouth City Council following the failure of Eastney Pumping Station and the Agency's Environment Protection department agreed discharge points for temporary pumping that was undertaken. Portsmouth City Council (PCC) opened a Tactical Co-ordination Centre to deal with the emergency response and the Agency were actively involved.

The Strand area of Ryde experienced flooding as a result of 34.6mm of rain being deposited by an intense storm over 5 hours that coincided with the high tide period. The Agency's pumping station was unable to prevent the Simeon Street Recreation Ground being inundated from the Monktonmead Brook. High levels in the brook also caused Southern Water's combined sewer overflow (CSO) to be closed. Consequently the combined sewers became overloaded by surface runoff and backed up into lower ground floor flats. 20 properties were recorded as flooding internally and required to be pumped out by the Fire Service.

Across the area 51 other properties have been reported as flooding from surface water and inadequate drainage of which a notable cluster was 25 in Havant.

During this flood event 5 catchment flood watches, 2 flood watches and 3 flood warnings were issued.

1.3 MONDAY 9TH OCTOBER TO MONDAY 16TH OCTOBER 2000 EVENT

Intense rainfall occurred over the Isle of Wight and Southern Hampshire on Monday 9th October. Rainfall exceeded 47mm in 24 hours on the Isle of Wight.

Problems with surface water, combined sewers and fluvial flooding occurred in Ryde. Estimates are of 70 properties affected, with the Isle of Wight railway closed due to track flooding and severe erosion. Flooding exceeded that of the Christmas 1999 event with some properties having been affected 3 times in the preceding 12 months. There was extensive floodplain inundation from the Eastern Yar with properties being affected both at Alverstone and Newchurch. There were reports of widespread surface water flooding throughout the island and a few minor problems in Eastern Hampshire. Total number of properties flooded internally was estimated at 131.

During this flood event 10 catchment flood watches, 12 flood watches and 4 flood warnings were issued.

1.4 SUNDAY 29TH OCTOBER TO TUESDAY 31ST OCTOBER 2000 EVENT

Over Sunday 29th October and Tuesday 31st October the Area responded to severe weather warnings based on very high rainfall accumulations and hurricane force winds. Intense rainfall occurred over Isle of Wight and Southern Hampshire from Sunday 29th October and exceeded 45mm in 24 hours.

The Monktonmead Pumping Station at Ryde had one of the two pumps operational and additional temporary diesel pumps were brought in from the mainland. No significant property flooding was reported at Ryde.

Across Hampshire in this event 58 properties were flooded internally and 32 externally. Virtually all flooding was either due to surface water runoff and inadequate drainage or from ordinary watercourses with only a few cases being affected by high main river flows.

During this flood event 6 flood watches and 8 flood warnings were issued.

1.5 SUNDAY 5TH NOVEMBER TO WEDNESDAY 8TH NOVEMBER 2000 EVENT

A further incident occurred between Sunday 5th November and Wednesday 8th November. Rainfall for the period beginning Sunday 5th November exceeded 42mm in 24 hours and 60 mm in 48 hours.

46 properties were affected by flooding from the River Wallington and 42 from the River Meon. Extensive flood plain inundation of the Eastern Yar exceeded levels from the previous autumn events. Reports were received of widespread surface water flooding throughout the Isle of Wight and Hampshire: 133 properties in total were flooded internally and 161 affected externally. Main emergency response measures included laying of sandbags across the road at Exton and building up the existing flood embankment at Wallington.

During this flood event 5 catchment flood watches, 12 flood watches and 12 flood warnings were issued.

1.6 NOVEMBER 2000 TO MAY 2001 GROUNDWATER EVENT

High rainfall totals during September, October and November 2000 increased the water table level and caused extensive groundwater flooding in the chalk catchment areas. This flooding continued for a number of months as further significant rainfall fell in December through to April. This caused the water table level to remain unusually high during the winter period and continued to remain well above the normal Spring peak.

A number of towns and villages were affected by groundwater flooding, notably, Bramdean, Hambledon, Cheriton, Preston Candover, Chilton Candover, Brown Candover, Old Alresford, Sutton Scotney Twyford and Exton. It is estimated that over 260 properties were flooded internally and 244 affected externally between November 2000 and May 2001. A number of these properties suffered from prolonged flooding which affected septic tanks.

The Agency responded before and during the groundwater flooding event. For example a large number of sandbags were placed along the Bourne Rivulet at St Mary Boume to prevent the river, swollen with a high groundwater component, coming out of bank and causing extensive flooding in the village.

The Environment Agency issued a series of Groundwater Newsletters to professional partners, Parish Councils and communities at risk. Whilst groundwater flooding is not presently covered by a formal flood warning service, the Environment Agency produced a Groundwater Newsletter and provided information on groundwater levels and the risk of flooding by post, email, on the internet and through Floodline, to professional partners, Parish Councils and communities at risk.

During this flood event 25 catchment flood watches, 69 flood watches and 45 flood warnings were issued.

2 FLOOD FORECASTING AND HYDROLOGICAL RESPONSE

2.1 RAINFALL

In the Hampshire and the Isle of Wight Area there were four flooding events directly resulting from intense and heavy rainfall. The dates of these events are:

- 15th September 2000
- 9th to 16th October 2000
- 29th to 31st October 2000
- 5th to 8th November 2000

However, a significant amount of flooding in parts of Hampshire was due to rising groundwater levels, and not directly due to intense rainfall events and occurred between November 2000 and February 2001. Due to the large rainfall amounts during September, October and November catchments became saturated and groundwater levels rose significantly. Flooding was caused either directly due to rising groundwater levels or indirectly as additional rainfall was unable to enter the ground and therefore ran off the hills causing surface water flooding. Due to these high water table levels a number of springs and ephemeral streams re-emerged causing further flooding.

2.1.1 Friday 15th September 2000

September 2000 started as mostly dry with occasional light rain and drizzle. On 15th September a cold front from the west brought heavy thundery rain and prolonged showers giving very high rainfall totals across the area, particularly in East Hampshire and the Isle of Wight. At Havant 69.5mm fell in 24 hours and four additional automatic rain gauges in East Hampshire and Isle of Wight (Eastney, Chale, Brighstone and Wroxall) recorded rainfalls greater than 50mm. Wroxall in particular, which is indicative of the adjacent Monktonmead catchment, recorded 34.6mm of rain during an intense storm over 5 hours that coincided with the high tide period at Ryde. In the Test Valley, Itchen Valley and New Forest rain gauges recorded between 2 and 20mm of rainfall on 15th September 2000.

At the end of September, several fronts moving east across the country brought heavy rain and showers across the area for a couple of days, but mainly this period was dry. The soil moisture deficit fell throughout September. On average by the end of the month it was half that calculated at the beginning. River levels remained high in affected areas and base flows did not return to those observed prior to the flooding.

September 2000 was the wettest since 1981, with an average total rainfall of 124mm in Hampshire compared to a long term average of around 75mm for the region. Daily rainfall records for a number of sites throughout Hampshire and the Isle of Wight are included in Appendix A.

2.1.2 Monday 9th October to Monday 16th October

The beginning of October was mainly dry with the occasional periods of thundery showers giving moderate rainfall totals. River levels had dropped by the end of this period to levels approximating to those recorded at the beginning of September. A complex low lingered over northern parts on the 9th to 10th October and a series of fronts moving easterly across the country brought heavy rain, showers and gales across the region. The 13th to 26th October remained unsettled, but mainly dry with some rain and showers allowing river levels to fall slightly. Catchments remained saturated with rivers responding very rapidly to additional rainfall.

The flooding that occurred between 9th and 16th October was as a direct result of heavy rainfall. Rainfall totals during this event varied throughout the Area, the highest being in Eastern Hampshire and on the Isle of Wight. The highest total for the period was recorded in Carisbrooke, Isle of Wight (93.6mm). Two additional gauges on the Isle of Wight recorded over 90mm during the event. Over 90mm of rainfall was also recorded at Cowplain, East Hampshire while a further two in the East Hampshire area recorded 70mm or above. Both rain gauges in the New Forest recorded rainfall totals above 55mm. In other areas (Test Valley and Itchen Valley) rain gauges recorded totals between 34mm and 51mm.

A majority of the rainfall during this event was recorded on 9th October and 11th October, with totals on other days being significantly less, and often below 1mm. Daily rainfall records for a number of sites throughout Hampshire and the Isle of Wight are included in Appendix A.

2.1.3 Sunday 29th October to Tuesday 31st October

On 27th October another very wet period commenced as a series of fronts moved in from the west culminating in a severe storm with heavy rain and gale force winds during 29th and 30th October as a deep depression crossed northern parts of Hampshire.

The flooding that occurred between 29th October and 31st October was mainly due to heavy rainfall. However, the situation was exacerbated by the saturated catchments caused by the high amounts of rainfall that had fallen during September and October. Rainfall totals during this event were generally much lower than totals recorded during the earlier event (9th to 16th October 2000). Highest rainfall totals were recorded on the Isle of Wight, the highest being at Broadfield (Cowes) (65.8mm) for 29th to 31st October. One further rain gauge on the Isle of Wight recorded greater than 50mm. In the Itchen Valley 3 rain gauges recorded greater than 50mm of rainfall. In other areas rainfall totals were generally between 40 and 45mm for 72 hours. Throughout the area a majority of rain fell on the 29th October 2000. In Hampshire rainfall on other days was insignificant, however, on the Isle of Wight rainfall totals on other days varied between 2 and 11mm.

By the end of October all catchments throughout the region were completely saturated. 2000 was the wettest October since 1903, with an average total rainfall of 175mm in Hampshire, compared to a long term average of around 80mm for the region. Daily rainfall records for a number of sites throughout Hampshire and the Isle of Wight are included in Appendix A.

2.1.4 Sunday 5th November to Wednesday 8th November

The wet weather continued at the beginning of November with bands of rain and showers affecting the whole region. On the 5th and 6th November several fronts crossed the region bringing heavy thundery rain and showers accompanied by strong winds across the region.

Although flooding that occurred between 5th and 8th November was due to heavy rainfall the situation was made worse by the saturated catchment conditions as a result of high rainfalls that had fallen during September and October. During this event highest rainfall totals were recorded in East Hampshire, the maximum being 72.2mm in Cowplain. One further rain gauges recorded more than 70mm during the event. Rain gauges in all other areas recorded between 55 and 65mm.

Daily rainfall records for a number of sites throughout Hampshire and the Isle of Wight are included in Appendix A.

2.1.5 November 2000 to May 2001

Flooding that occurred from November 2000 though to May 2001 was mainly caused due to the saturated nature of the catchments. This caused rising groundwater throughout Hampshire, mainly in the Itchen, Test and Meon Valleys. Rainfall events during November, December, January and February generally produced relatively low rainfall totals compared to September, October and early November. However due to the saturated nature of the catchments these rainfalls caused accelerated rising of the groundwater. The rising of these groundwater levels throughout the autumn and winter caused prolonged flooding in a number of areas.

There was further heavy rain between 10th and 13th November when a slow moving cold front crossed the region. Flooding continued in the areas previously affected although not to the same scale as before. As river levels gradually dropped, groundwater continued to rise on the Rivers Itchen and Test in Hampshire. Following this a period of rain and showers brought moderate rainfall totals across the region allowing river levels to drop, but groundwater levels continued to be high.

This was the wettest November since 1970, with an average total rainfall of 185mm in Hampshire, compared to a long term average of around 84mm for the region.

There was a vigorous depression approaching south western Britain on Thursday 7th December. The associated fronts of this Atlantic weather system caused heavy bands of rain to sweep across the area causing heavy rainfall and strong winds.

On 12th December 2000 a vigorous Atlantic depression tracked north eastwards across the British Isles causing a large amount of rain to fall in the area. Highest rainfall quantities were found in the Itchen Valley, with two rain gauges, West Tisted and Bishops Sutton, recording above 30mm of rain while the remaining 7 gauges recorded over 19mm. The average rainfall in the Itchen Valley was 25.71mm. In East Hampshire totals for the day averaged 25mm, with all rain gauges in the area recording more than 20mm. The highest rainfall quantities were recorded at Soberton where 30.5mm fell. In the New Forest gauges at New Milton and Hythe recorded 35mm or more in 24 hours from 09:00 12th December. At the top of the Test

Valley rainfall quantities were generally between 15 and 19mm, and lower down the valley rainfall was recorded as being over 25mm at most of the sites.

A weak ridge began to cross the area on Friday 15th December. These weak weather fronts crossed very slowly over the area due to rising pressure in Scandinavia, allowing mostly fine and dry weather for a few days.

A further band of heavy rain approached southern Britain on 31st December and along with melting snow caused many flooding problems. Most rain fell to the west of the area, with Brockenhurst and Woodlands recording over 40mm of rain. Within the Itchen Valley three rain gauges recorded over 30mm of rain (Millbrook, West Tisted and Otterbourne), the other gauges in the Itchen area recorded between 25 and 30mm. In the Test Valley gauges recorded between 14 and 43mm.

On the 11th January 2001 a weak occluded front was located close to the south coast of England, lying at the edge of a high pressure area. This produced some settled weather for about 10 days due to the slow moving nature of the high pressure.

A depression tracked across northern France on 26th January 2001 and continued to move up the English Channel, so causing some precipitation in Hampshire. All ten gauges in the Itchen Valley recorded over 18mm of rainfall, with Preston and Brown Candover recording the largest rainfalls, above 23mm. Rainfall recorded in the Test Valley catchment varied between 17 and 33mm. Highest rainfall amounts were recorded in the Romsey area, for example Mottisfont Abbey recorded 29.5mm, and Merton Manor recorded 33mm. Lowest rainfall amounts in the Itchen Valley were found towards the east of the catchment for example Bishops Sutton and Ropley both recorded just under 18mm. Quantities varied significantly throughout the area due to the localised nature of the rainfall. Two rainfall gauges (Woodlands and Brockenhurst) in the New Forest recorded more than 20mm. Least rainfall was recorded in East Hampshire where gauges recorded between 12 and 18mm.

Daily rainfall records for a number of sites throughout Hampshire and the Isle of Wight are included in Appendix A.

2.2 WEATHER FORECASTING

The impact of inaccurate Met office forecasts can be considerable. On the occasions where significant under forecasting occurred it proved extremely difficult to provide timely advice and flood warnings. Where 'over' forecasting occurred significant but fruitless preparations will have been put in place leading to a loss of confidence in those providing warnings.

The Met Office London Weather Centre issued a number of Severe Weather Warnings and Heavy Rainfall Warnings (HRWs) during the autumn and winter flood period, as well as a daily weather forecast. On several occasions these were not as accurate or timely as expected and problems were encountered as a result. Some Heavy Rainfall Warnings were issued after the weather system had cleared Hampshire.

All data received from the Met Office is included in Appendix B.

2.2.1 Accuracy and Timeliness of Heavy Rainfall Warnings

Thursday 14th to Friday 15th September

A heavy rainfall warning received on 14th September advised that heavy rain was expected during the latter part of the day and evening. Accumulations of 20-30mm were anticipated, although totals as high as 40-45mm were expected in a few areas. Examining totals for the 24 hour period starting at 06:00 on 14th September showed that 1 to 4mm fell across the whole Region. Calls to the Met Office through the day confirmed that the front was moving slower than had been anticipated, and was not due to arrive in Hampshire until Friday morning.

The main cause for concern was the lack of information/warning received on the morning of Friday 15th September, where problems starting occurring in Hampshire before midday. By the time Flash Warnings and Heavy Rainfall Warnings had been sent out (12:30 and 12:50), parts of East Hampshire had seen rainfall accumulations of 20-25mm. An Early Warning of Severe Weather was issued at 09:45 advising that a band of showers would move across the region in the afternoon, giving about 3hrs rainfall with totals of around 15mm, but no mention of the rain in the morning. No Heavy Rainfall Warnings had been issued during the morning. At 12:30 a Flash Warning of Severe Weather advised that outbreaks of heavy rain were occurring across parts of the South East making conditions difficult. This was received after the above mentioned rain had occurred.

The Heavy Rainfall Warning issued at 19:40 forecast that accumulations of 20mm+ would be observed over all catchments in Hampshire over a 14 hour period from 08:00 to 22:00. However, this warning was only received in the Area at 20:00 with two hours left in the time period it was forecasting for. By this time, all areas had received in excess of 20mm: the warning presented no additional information. In the 24hr period starting 06:00 on 15th September, 50-60mm fell on the IOW, 35-60mm in East Hampshire, and 6-22mm in West and North Hampshire.

Monday 9th to Thursday 12th October

Deep depressions, bringing heavy rain and high winds, tracked over the Area from 9th to 12th October triggering the issue of a number of Heavy Rainfall Warnings and Severe Weather Warnings. Problems occurred with the accuracy of the Heavy Rainfall Warnings, with forecasts under or overestimating the amount of rain forecast in a certain time period.

For example, the warning received at 09:52 on 9th October predicted that accumulations of 20mm+ would fall throughout the whole region (all catchments) in a six/seven hour period. This in itself is rather unspecific, however the text that accompanied the warning advised that areas would see between 20-30mm, locally up to 35mm. In this example, the forecast greatly underestimated the amount of rainfall that was received throughout the Area. Sites in Hampshire and the IOW collected, in places, up to 60mm. Although the information on the Heavy Rainfall Warning was applicable to parts of the Region, many sites received in excess of the figures presented. (See graph 1 overleaf).

The warning issued on 10th October was accurate, correctly advising that between 15-20mm could be expected across the Area.

The warning issued on the 11th October was also accurate, as accumulations in Hampshire were within the boundaries of the warning (15-20mm), although some sites in East Hampshire and the IOW collected up to 25mm.

Sunday 15th to Wednesday 18th October

Between 15th and 18th October three Heavy Rainfall Warnings were issued: all forecast significantly greater accumulations than those seen. On the evening of 15th October, a Heavy Rainfall Warning advised between 5-12mm of precipitation would fall in Hampshire (up until mid-afternoon on the 16th October). Accumulations were expected to be heavy with some of the eastern parts of the Region collecting 35mm, whilst the extreme west of Hants was expected to escape with even smaller accumulations. The rain that arrived was significantly lower than that forecast: Hampshire received between 0.2-2.4mm.

On 17th October a Heavy Rainfall Warning was issued forecasting that 20mm+ was expected across the Area as a whole. The text accompanying the warning advised that overall amounts would generally reach 8-15mm, with a few places obtaining totals of 20mm. The Regional Telemetry System (RTS) showed that Hampshire received between 5-12mm of rain. The text explanation of the warning was accurate for Hampshire, however the table specifying how much would be received per catchment (in this case 20mm+) was an overestimate.

Sunday 5th November

During the afternoon and evening of 5th November, heavy and persistent rain crossed the Region prompting a Heavy Rainfall Warning. Overall amounts were expected to be between 15-25mm perhaps even as much as 35mm in places. Unfortunately no catchment differentiation had been made: a figure of 20mm+ was quoted for all areas. Actual precipitation exceeded the amounts quoted on the Heavy Rainfall Warning. Hampshire received up to 48mm of rain in places.

Saturday 11th November

A Heavy Rainfall Warning issued during the early hours of the morning on 11th November predicted between 15 and 25mm of rainfall in Hampshire and Isle of Wight, with up to 25-40mm locally. The rain was expected during 11th and 12th November.

Thursday 30th November

A heavy rainfall warning was issued late afternoon on 30th November to warn of an area of rain, heavy at times, that was expected to spread from the south during the second half of the night. Over the next 24 hours accumulations of 15-29mm are expected, with the possibility of 25mm over the higher ground. The rain was expected to have cleared to the east by Friday evening. Accumulations recorded in the Area were generally between these predicted figures.

Thursday 7th December 2000

The Heavy Rainfall Warning issued at 05:15 forecast periods of rain to arrive from the south from the late morning onwards and become heavy at times before turning more showery

during the evening. By dawn on 8th December it was expected that rainfall amounts would have reached 25-50mm, with rainfall rates over 10mm/hour at times. Accumulations recorded in the Area were between 13.4mm and 26.2mm.

Saturday 9th December 2000

A Heavy Rainfall Warning was issued early evening to inform the Region that outbreaks of rain would soon be beginning. Rainfall rates were not expected to exceed 3-4mm/hour with quantities totalling around 10mm overnight. Squally showers were forecast for the 10th, bringing instantaneous rainfall rates of 20mm/hr and another total of around 10mm in some areas. Accumulations recorded in the Area were between 8.6 and 19.2mm.

Tuesday 12th December

Over 20mm of rainfall was predicted for 12th December in the Hampshire and Isle of Wight catchments due to outbreaks of heavy and persistent rain. Accumulations recorded in the area were generally above 20mm.

Tuesday 23rd January

A heavy rainfall warning was issued during the morning of 23rd, as rainfall rates may exceed 10mm/hour at times. Totals were likely to reach between 25 and 50mm. Insignificant rainfall amount fell on 23rd January.

Saturday 3rd to Monday 5th February

A warning was issued on the afternoon of 3rd February warning of rainfall totals in Hampshire and the Isle of Wight exceeding 20mm during the night and the morning of 4th. A further warning was issued on 5th to warn of a further area of rain causing rainfall totals of 15-20mm in the area.

2.2.2 Other Weather Warnings

As well as Heavy Rainfall Warnings, a variety of other weather warnings were issued by the Met Office during the autumn flood period including Early Warnings of Severe Weather, Flash Warnings of Severe Weather, and Weather Watches. Although these are less specific to the Southern Region than Heavy Rainfall Warnings, they provide an early warning of any weather systems that may cause problems in the next 12-48hrs. A number of Early Warnings of Severe Weather and Update Warnings were issued for 9th-12th October flood event. Although they gave a good indication of the severity of the system and approximate timings, they were generalised and not specific enough to the Southern Region. The same problems occurred with Flash Warnings, which often arrived after the worst of the weather had been received, or after Heavy Rainfall Warnings had been issued.

A large number of gale warnings were issued which were important for assessing surges and coastal defences. However the warnings are specific to open water rather than inshore.

2.2.3 Met Office Daily Weather Forecasts

The Daily Weather Forecast gave a good indication as to whether it was going to rain on that day or not, but often rainfall totals were not accurate. The quality of verbal forecasts by Met Office Duty Forecasters were of a dubious nature, especially over the period 10th-12th October. During the evening, Met Office forecasters maintained the opinion that low quantities of rainfall were expected across the region. Accumulations were actually much greater than forecast, which led to problems throughout the Region. When forecasts were requested by Forecasting Duty Officers (FDOs), the quality of the information seemed to be dependent on the Met Office Duty Forecaster available at that time. Individual interpretation of model results often varied from one forecaster to the other, giving inconsistent forecasts.

2.2.4 Accuracy of Weather Radar

There is a need for reliable, timely and accurate predictions of precipitation from the weather radar system. Unfortunately during the autumn floods the data was of poor quality, in most circumstances over predicted rainfall rates. The Nimrod forecasts were of particular concern, being wholly unrepresentative, and quantitatively unusable. However FDOs used the real-time data qualitatively, predicting the direction systems were moving and how quickly they were moving.

Nimrod is poor at convective development. It uses linear extrapolation to forecast how cells will develop. This explains why, in most cases, the Nimrod forecasts were so inaccurate – cells were often shown to decay over the six-hour forecast when in reality the system was itself developing, bringing more precipitation than forecast.

Comparison between the real time radar rainfall accumulations and ground truth data showed that the radar overestimated, compared to rain gauges. Nearly every rain gauge returned a figure lower than the radar, especially the greater the precipitation.

Radar coverage has continued to be a problem, with a large network 'gap' in the south east of England.

2.3 IMPACT OF ANY INACCURATE METEOROLOGICAL FORECAST

The quantity and suddenness of the precipitation received in the morning of Friday 15th September led to a number of flooding events through the Region. Thunderstorms developed very quickly off the coast of Hampshire and streamed across Hampshire and IOW during the morning. No Heavy Rainfall Warnings were received from the Met Office for this event. Flooding occurred in Eastney, Portsmouth, as well as Ryde on the IOW.

One of the main problems during 9th to 19th October event was the underestimation of rainfall on the 11th October. Having received a Heavy Rainfall Warning advising that at most 15-20mm would be seen across the whole Region, and with further consultation with the Met Office Forecaster, the decision was taken to stand down the FDO and Monitoring Duty Officer (MDO) 24 hour shift roster and return to standby arrangements.

As night drew on, bands of rain continued developing and moving over the south coast. The MDO was relocated to the RCC to alarm handle and the FDO to the Regional Flood

Forecasting Room and it was realised that the MDO and FDO would need to return to 24 hour monitoring and forecasting. That evening, an exceptional amount of rain was received in the Region. Some places saw four to five times more rainfall than the Heavy Rainfall Warning had predicted. Provisional rosters had already been drawn up for the MDO/FDO for that evening and the next day, however had these not been in place it would have been extremely difficult to staff the forecasting room at such late notice.

Within the Areas, problems associated with manning up offices also occurred. Officers were sent home to rest (on the basis of the forecast of lower totals of rain) leaving a skeleton staff behind. With the amount of rain that fell, more staff were called into the office to issue warnings and man phones. A rapid and accelerated response was required by the area offices to this unanticipated situation. This is a major problem associated with underestimating the forecast rain

Heavy Rainfall Warnings issued between the 15th and 18th October tended to overestimate the amount of rain due. Significant resources were expended in staffing up incident and forecasting rooms, making sure that phones could be manned, and that enough support operators were present in the RCC. Staff that had been working on rosters could have been rested and stood down, instead had to continue on overnight shifts.

Individual catchment summaries were often inadequate for the needs of the areas i.e. those that quoted a figure of 20mm+ across all catchments in the Region. The idea of splitting the Heavy Rainfall Warning into different catchments was to give the Areas as much detail as possible in order to issue flood warnings for those different catchments. Unfortunately, most of the Heavy Rainfall Warnings that were issued had not been broken down into individual catchments and this requirement appears beyond the present capability of the Met office.

A large proportion of the warnings significantly under or overestimated forecast accumulations, however there were occasions when the Heavy Rainfall Warnings were extremely accurate. The period around the 28th to the 30th October is a good example where timings and precipitation accumulations were relatively good. It was also positive to see a Heavy Rainfall Warning being cancelled (7th November) when it was realised that the system would not bring any additional rain.

All data received from the Met Office and Regional Forecasting Officer is included in Appendix B.

2.4 PREDICTING HYDROLOGICAL RESPONSE

2.4.1 Agency Models

The Agency has a number of models, both hydrological and hydrodynamic, to predict flood levels.

Hydrological Models

The following locations can be modelled using hydrological models:

- Tadburn Lake (Lower Test)

- Millbrook (Tanners Brook)
- Leigh Park (Lavant Stream)

Observed data is extracted from the RTS up to the point at which the calculation is made. The FDO then on uses weather predictions to forecasts the flow and/or level at the site utilising the Flood Forecasting Platform (FFP) transfer functions.

Forecasts are initially made to predict if water levels are expected to exceed the trigger levels. Further to this the forecasts are used to predict at what time the exceedance is likely to occur and finally they then may be used to predict a peak level or flow at the respective sites.

The primary objective of the FFP models is to support rain gauge and upstream river level information to more accurately predict if and when water levels will rise above the trigger levels. As a result the FFP models have been calibrated to mimic the rise of the hydrograph as accurately as possible at the expense of the accuracy of the falling hydrograph and the peak.

The FFP models have been derived and validated over the past 18 months from observed data. The Agency intends to develop and verify the models and determine their accuracy and performance based on the flood events of the winter of 2000/2001. During the flood event the models were run on several occasions but regional forecasting updates did not predict the water levels as the models were not believed to be responding accurately.

For example on 9th October 2000 output data from the Tadburn Lake model was issued to the area office. Information from the FDO at 18:30 forecast that flow would be 2.7 cumecs at 21:00. However from RTS the flow at this time was 1.837 cumecs.

Hydrodynamic Models

In addition there are two hydrodynamic design models:

- *Romsey Model*
- *Winchester Model*

The design models are not designed to run as real time models due to the amount of data input required. However after flood events they should be re-calibrated using new data and therefore their use in the future will be with most accurate data.

2.4.2 Other Forecasting Methods

There are a number of other forecasting methods employed at sites not included in the FFP. These include:

- RTS forecasting models
- FEH techniques

- Interpolating data
- Review of historic events

The Forecasting Duty Officers used these forecasting methods. For example on 15th October 2000 the regional forecasting officer reviewed what had happened previously with similar amount of rainfall to predict the effect of the rainfall.

2.5 HYDROLOGICAL RESPONSE

2.5.1 Agency Telemetry

Since taking on the role of flood warning dissemination in 1996 Southern Region has invested heavily in new technology to support its new role. The Regional Telemetry System (RTS), introduced in 1999 at a cost of £3m, has replaced outdated equipment and allowed further expansion in terms of the number of sites from which information is available and the quality of the information presented. Information on rainfall, river levels and river flows and the operation of flood defences is located on dedicated PCs in the office. Overall the RTS system performed very well throughout the event.

The Agency has a number of telemetric sites for rain gauges, river gauging stations (flow and/or level) and boreholes. These are important in monitoring the hydrological response, river flows and river levels.

RTS operated well throughout the autumn 2000 event with problems occurring during the afternoon of 11th November 2000. Generally telemetric sites were operating well except for the following:

- Loss of telemetry at Tadburn Lake between 6th November 05:00 and 8th November 09:30
- Intermittent loss at Brockenhurst between 6th November 05:00 and 10th November 14:00

2.5.2 River Levels and Flows

River levels and flows are recorded at a number of sites throughout Hampshire and the Isle of Wight at 15 minute intervals. Graphs indicating average, maximum and minimum daily river level and flow data are included in Appendix C.

The River Test catchment is mainly on chalk and therefore a large amount of water was stored in the chalk and only water flowed into the main channel when the chalk became saturated. Monitoring stations at Chilbolton, Longbridge and Testwood record levels and flows in the main channel of the River Test. Longbridge is not presently considered a reliable monitoring station so data from this station has not been referred to.

Generally levels and therefore flows remained constant throughout September and early October 2000. The flows at Chilbolton increased and fell gradually as they are mainly affected by groundwater flow. Flows generally were between 4.5-5m³/s during this period and increased significantly in early November to approximately 9m³/s.

In early December 2000 there was a further significant increase in water flows, with flows reaching $11.5\text{m}^3/\text{s}$ at Chilbolton. Flows remained high during December 2000 and January 2001 although levels began to drop very slowly from mid January due to low rainfall. However rainfall falling in early February caused the levels to increase again, maximum recorded flow at Chilbolton was $13.9\text{m}^3/\text{s}$.

The catchment of the River Itchen is mainly on chalk. A large amount of water was stored in the chalk and therefore water flowed into the main channel only when the chalk became saturated. The data from the monitoring stations at Allbrook and Highbridge are combined to estimate the total flow in the main channel of the River Itchen.

Flows at Highbridge and Allbrook were fairly constant throughout September and early October, with only small fluctuations being noted due to the rainfall events. The flow recorded at Allbrook during this period was approximately $0.7\text{m}^3/\text{s}$, and that recorded at Highbridge was approximately $3.3\text{m}^3/\text{s}$. Flows at both sites slowly increased throughout the remainder of October. In early November flows rose rapidly; flows at Allbrook reached $3.0\text{m}^3/\text{s}$ and flows at Highbridge were approximately $8.6\text{m}^3/\text{s}$. The flow at Allbrook continued to increase very slightly peaking in mid December, reaching $4.5\text{m}^3/\text{s}$. At Highbridge the flow began to fall slightly during November and then rapidly increased in November and December peaking at $15\text{m}^3/\text{s}$ in mid December. Levels then fell rapidly during the remainder of December to about $10\text{m}^3/\text{s}$ and tailed off into the spring. The flow at Allbrook decreased at a slower rate and by March 2001 was $3.7\text{m}^3/\text{s}$.

The River Lymington in the New Forest catchment responds rapidly to rainfall events and both flows and levels fluctuated greatly throughout the event. Throughout September and October flows would increase rapidly due to rainfall events and then would quickly return to those experienced prior to the event. However during November and December there was a large number of fluctuations and the minimum flow slowly increased to $3.5\text{m}^3/\text{s}$. Highest level was observed on 5th November. Base flow began to fall in April.

There are a number of catchments in the East Hampshire area, including the Meon Catchment, Hamble Catchment, Lavant Stream Catchment and Wallington Catchment.

Stations at Mislingford and West Meon record the water levels and flows along the River Meon. The Meon responds quickly to rainfall events but also receives a high proportion of its flow from groundwater. In September 2000 flow was $0.1\text{m}^3/\text{s}$ at West Meon. Flow then increased in steps following rainfall events until reaching $2\text{m}^3/\text{s}$ in early December 2000. Throughout this time flows and levels fluctuated due to the rainfall. Levels and flow peaked on 12th December.

The monitoring station at North Fareham records the water flows and levels on the River Wallington. Generally the river responds quickly to rainfall events and is influenced only slightly by high groundwater levels. The general responses to rainfall events were similar to those experienced by the River Lymington at Brockenhurst. At North Fareham the minimum flow slowly increased to approximately $5\text{m}^3/\text{s}$.

2.5.3 Flood Flows

During the flood event huge amounts of water flowed outside the main river channels. Water Resources staff measured much of these flow rates. These flow measurements are located in the Hampshire Area Water Resources Office.

2.5.4 Tide Levels

The flooding in Hampshire and the Isle of Wight was not tidal.

Ryde on the Isle of Wight flooded on 15th September and on the night of 9-10th October due to a combination of factors, including main river and overloaded sewers when the Brook was tidally locked. However high tide levels did not cause any direct flooding at Ryde, or elsewhere in the Area.

Predicted tide, surge and actual tide levels for Ryde on the above dates are recorded in Appendix D. Predicted tide levels for other locations and dates can be found in the 'Predicted High and Low Tide Table 2000' and actual levels on the RTS. A copy of this document is located in the Flood Defence Office of the Hampshire Area Office. Further surge data is located in the weather forecasting files located in the Hampshire Area Flood Defence Office.

2.5.5 Groundwater Levels

Groundwater levels are recorded at a limited number of sites throughout Hampshire and the Isle of Wight at 15-minute intervals. In addition to the groundwater levels recorded by telemetry the Water Resources staff undertake a number of groundwater levels dips. Generally dips are carried out either weekly or monthly depending on the site. However during the groundwater flooding event sites have been dipped more frequently. Groundwater level data is included in Appendix E. Further groundwater level data for additional sites is located in the Hampshire Area Water Resources Office.

In Hursley levels rose from 33.67m OD on 16th October to 45.74m OD by 22nd December. The groundwater level remained high until mid April before receding.

The groundwater levels at Pitton increased rapidly from 57.2m OD on 18th October to 73.82 OD on 5th January. The previous highest level in the area was 73.83m OD in March 1995. Levels in the area were consistently above 73m OD through to early February. Due to the foot and mouth crisis no records were available after this although levels were receding in June.

In the Anton Valley, which includes the villages of Appleshaw, Hatherden and Kimpton, groundwater levels were dipped at 6 locations. Generally the groundwater was at its minimum level during late October or early November. Levels then increased peaking in late December or early January. At some sites groundwater levels rose rapidly, for example at Hatherden levels rose from 90.73m OD on 7th November to 100.98m OD on 3rd March.

However in other cases levels rose more slowly and by a smaller differential, for example in Appleshaw levels rose from 84.49m OD on 16th October, to 90.55m OD on 20th December.

The long-term average in Appleshaw during October is 82.36m OD and in December is 83.37m OD, therefore levels in both October and December were both above average. The level recorded in December was the highest ever recorded. Levels then began to fall very slightly during January. However readings taken in early February generally showed a slight rise in groundwater levels compared to those in January.

In the Bourne Valley groundwater levels are recorded in 6 locations. Villages in this area include Vernham Dean, Hurstbourne Tarrant and Upton. Levels in this area were at their minimum during mid October. Generally levels increased fairly rapidly during late October and November peaking in December. Levels at Vernham Dean increased very rapidly from 101.07m OD on 18th October to 127.3m OD on 20th December. Both of these levels are the highest levels recorded with the previous maximum in October being 114.67m OD and in December being 114.52m OD both recorded in 1959. However levels at Hurstbourne Tarrant increased much less from 97.84m OD on 18th October to 100.43m OD on 17/11/00. Generally levels at all the sites in the Bourne Valley have remained at their peak or almost at that peak until early February.

At Preston Candover groundwater levels were at a minimum of 94.49m OD on 5th October. Groundwater levels have continuously increased throughout the autumn and winter of 2000 and 2001 so far peaking at 99.67m OD on 3rd April 2001. Levels started to fall in late May, the maximum recorded at Preston Candover prior to 2000/2001 was 97.45m OD.

At Broadhalfpenny Down, north of Hambledon groundwater levels were at a minimum of 43.66m OD on 20th September 2000. Levels rose rapidly from 47.62m OD on 16th October to 76.85m OD on 7th November 2000. Levels then fell throughout November reaching a minimum of 64.66m OD on 24th November 2000. Groundwater levels then increased rapidly and continuously throughout early December peaking at the highest ever recorded level of 86.11m OD on 15th December. The previous maximum level recorded was 70.55m OD in January 1970. Levels then began to fall, but quickly reacted to further rainfall at the end of December, end of January and mid March.

In Finchdean levels rose very rapidly from 26.52m OD on 20th September to 41.85m OD on 9th November and remained above 42m OD through November to April. The long term average at Finchdean is 25.768m OD in November and the level in 2000 was the highest ever recorded.

2.6 ISSUES AND RECOMMENDATIONS

SO/H/FF/1 Weather Forecasts

<p><u>Issue</u></p>	<p>The timeliness and accuracy of daily weather forecasts, Heavy Rainfall Warnings and verbal updates from the London Weather Centre and Bracknell was variable.</p> <p>Forecast information received during the flood event was frequently late and either under and over predicted actual rainfall. At times information was received by the area office up to three hours after issue from the</p>
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	<p>Met Office.</p> <p>Sometimes faxes were difficult to read and had to re-faxed increasing the time between the warning being issued and the time the area office receiving it.</p>
<u>Recommendations</u>	<ul style="list-style-type: none"> • Improve accuracy and timeliness of forecasting • Ensure forecasts are sent to Area Offices as soon as possible • Email forecasts in future

SO/H/FF/2 Weather Radar Coverage

<u>Issue</u>	<p>The south-east of England suffers from very poor weather radar coverage. This causes differences in forecast and actual rainfall intensities. The six hour Nimrod radar forecast cannot be used to input accurate rainfall forecasts into flood forecasting systems. New radar sites need to be identified and investigated in order to improve accuracy.</p>
<u>Recommendations</u>	<ul style="list-style-type: none"> • Improve radar coverage and accuracy • Improve accuracy of Nimrod forecast

SO/H/FF/3 Telemetry Sites

<u>Issue</u>	<p>At present the telemetry network is limited in some areas and no accurate predictions can be made. However this system is in the process of being enhanced through the Regional Telemetry Network Improvements Project.</p> <p>At present most telemetry sites are designed for a 1 in 100 year return periods. In the design an allowance should be made for uncertainty in estimating a 1 in 100 year flood, so as to allow increased flows to be measured. In addition all telemetry sites should ensure that as a minimum the water level is recorded so as there is some record of flood flows. It is also useful be able to cross reference flow data to level data.</p>
<u>Recommendations</u>	<ul style="list-style-type: none"> • Improve Telemetry Network • Design of new sites for greater return period events

SO/H/FF/4 Agency Models

<u>Issue</u>	Currently Agency real time models are limited in number and do not predict flows very accurately. It is recommended that the development of models be pursued, so future models are able to accurately predict river flows. Also area staff require training in order for them to appreciate of the model outputs.
<u>Recommendations</u>	<ul style="list-style-type: none">• Implement use of real time models.• Make FD staff aware of model outputs.

SO/H/FF/5 Return Periods

<u>Issue</u>	The return periods witnessed throughout this event have been larger than in previous years. Consideration should be given to how the return period of events is estimated in the light of climatic change.
<u>Recommendations</u>	<ul style="list-style-type: none">• Return period estimation should be reassessed.

3 FLOOD WARNING

3.1 INTRODUCTION

The Agency has recently introduced a four stage warning service across England and Wales. The warning codes are Flood Watch, Flood Warning, Severe Flood Warning and All Clear and either refer to whole rivers or discrete sections of the coast and river network.

Two levels of service are provided:

- **Flood Watch Only** – These relate to entire catchments (Itchen Valley, Test Valley, East Hampshire, New Forest and the Isle of Wight) and are issued to professional partners and the media. These catchment watches provide an early warning of events and provide warnings for areas known to be at risk of flooding but not yet covered with specific flood watches and flood warnings.
- **Full Flood Warning Service** – These relate to specific river and coastal areas and are issued to professional partners, the media and members of the public. Individuals can receive a warning directly via the Automatic Voice Messaging (AVM) system or indirectly via TV and radio. The AVM is programmed to telephone everyone who has registered to receive flood warnings with a pre-recorded message informing the type of warning issued, local areas affected and what the public should do.

Catchment Flood Watches are based on a combination of forecast information including Severe Weather Warnings, Heavy Rainfall Warnings and weather radar observation together with an assessment of the catchments saturation level.

The majority of fluvial flood warnings are based on actual or forecast trigger point exceedence for river levels. These trigger points are referred to H1, H2, H3 and H4 as levels increase. For the more responsive urban rivers, rain gauge alarms are also used. Generally if an H1 trigger level is reached then the catchment it is located in should be assessed using RTS and Hyrad. When the H2 trigger level is reached then a Flood Watch is generally issued for the Flood Warning Area. If the river level is expected to exceed the H3 trigger level a Flood Warning is issued. A Severe Flood Warning will only be issued if the H4 trigger level is reached and staff called out to site consider levels and forecast conditions warrant issuing a Severe Flood Warning.

3.2 WARNINGS ISSUED

Warning Code	Test Valley	Itchen Valley	New Forest	East Hampshire	Isle of Wight	Hampshire Coastal	Isle of Wight Coastal	TOTAL
<i>15th September 2000</i>								
Catchment Flood Watch	1	1	1	1	1	0	0	5
Flood Watch	0	0	0	0	2	0	0	2
Flood Warning	0	0	0	0	3	0	0	3
Severe Flood Warning	0	0	0	0	0	0	0	0
<i>9th-16th October 2000</i>								
Catchment Flood Watch	2	2	2	2	2	0	0	10
Flood Watch	1	0	2	0	9	0	0	12
Flood Warning	0	0	0	0	4	0	0	4
Severe Flood Warning	0	0	0	0	0	0	0	0
<i>29th-31st October 2000</i>								
Catchment Flood Watch	0	0	0	0	0	0	0	0
Flood Watch	2	0	2	0	2	0	0	6
Flood Warning	1	2	2	1	2	0	0	8
Severe Flood Warning	0	0	0	0	0	0	0	0

Warning Code	Test Valley	Itchen Valley	New Forest	East Hampshire	Isle of Wight	Hampshire Coastal	Isle of Wight Coastal	TOTAL
<i>5th-8th November 2000</i>								
Catchment Flood Watch	1	1	1	1	1	0	0	5
Flood Watch	3	1	4	0	4	0	0	12
Flood Warning	2	2	2	1	5	0	0	12
Severe Flood Warning	0	0	0	0	0	0	0	0
<i>November – May 2001</i>								
Catchment Flood Watch	3	5	5	5	5	0	0	25
Flood Watch	16	8	5	10	44	12	3	69
Flood Warning	13	9	2	7	14	0	0	45
Severe Flood Warning	0	0	0	0	0	0	0	0

On 15th September 2000 73 individual properties received flood watches, and 96 individual properties received flood warnings.

Between 9th and 16th October 2000 127 individual properties received flood warnings, and 165 individual properties received flood watches.

Between 29th and 31st October 2000 131 individual properties received flood watches, and 139 individual properties received flood warnings.

Between 5th and 8th November 2000 173 individual properties received flood watches, and a 404 individual properties received flood warnings.

Between 9th November 2000 and 28th February 2001 1215 individual properties received flood watches, and 1089 individual properties received flood warnings.

A full list of flood warnings issued from 15th September 2000 to 28th February 2001 is included in Appendix G. There is also information regarding the number of properties, which received flood watches and flood warnings.

3.3 PERFORMANCE OF FLOOD WARNING SYSTEM

3.3.1 Liaison with Forecasting Duty Officers

During a flooding incident flood forecasting is provided by the Regional Monitoring Duty Officer and Regional Forecasting Duty Officer.

The Regional Flood Forecasting Service provides the Area offices with up to date information from the Met Office by sending frequent flood information updates.

Forecasting Duty Officers are also able to run Agency models (in the Hampshire area these include models for Leigh Park, Lavant Stream; Millbrook, Tanners Brook and Tadburn Lake, Lower Test) based on current flows and predicted rainfall. During the flood event the models were run on several occasions but regional forecasting updates did not predict the water levels as the models were not believed to be responding accurately.

3.3.2 Liaison with Professional Partners

Professional partners were formally informed of proposed changes to flood warning codes at the Flood Warning Planning Group meeting on 8 October 1999.

Exercise Floodwarn (Southern) was held in Hampshire on 20th July and the IOW on 21st July with those staff in partner organisations receiving and acting on the new flood warning codes.

The aim of the exercise was to reiterate the changes in the Agency's Flood Warning Code System. The presentations and syndicate exercises formed part of the larger education programme.

The Local Flood Warning Plans were updated and reissued in July for the introduction of the new Flood Warning Codes on 12th September 2000 and Guides to the Environment Agency's Flood Warning Codes were also issued to professional partners.

Following the autumn 2000 and winter 2001 event the Environment Agency held a Flood Warning Planning Group meeting on 31st January 2001 for Professional Partners. This gave an opportunity for both the Agency and the Professional Partners to question and comment on the new Flood Warning Service as operated. A number of key issues / actions arose from the meeting as shown below:

- There is a strong need to improve the communication processes between the Agency and its professional partners.
- The Agency would benefit from receiving real time information from Local Authorities and the Emergency Services during an incident.
- More effective liaison and developing closer working links with professional partners could lead to a 'pooling' of staffing and resources.
- During the groundwater flooding the public were confused about who does what. The Agency ground water fact sheets should contain some advice on roles, flood proofing and recovery.
- The Hampshire and Isle of Wight Office will have a new Area Incident Room (AIR) opening in 2001. This will allow for more structured incident management. Dedicated phone lines will improve communication between the Agency and its professional partners.
- Concern was expressed that the media are using Flood Warning Codes incorrectly. The importance of using correct terminology must be stressed to the media both locally and nationally.

It is important that the Environment Agency liaise with Professional Partners at the flood warning stage so as they are aware of the response the Agency is giving to the event, and so have an opportunity to respond accordingly.

3.3.3 Operation of Individual Warning Methods

Automatic Voice Messaging System

Southern Region has four Automatic Voice Messaging (AVM) systems situated in each Area Office and the Regional Office. To ensure robustness each system holds the same recipient contact details and warning messages. This allows warnings for any Area to be issued from any of the four systems should faults occur.

The AVM system can issue warnings via telephone, fax and pagers. They are capable of making 1,200 voice calls per hour with current voice message lengths. All warning messages have been set up in advance as templates. The only editing that is done in real time is that the

time and data is added to the faxes and any locally specific information e.g. forecast information and localities which may be affected.

During the autumn 2000 and winter 2001 event the Hampshire and Isle of Wight machine did experience some problems which required backup arrangements to be used as listed below:

- 10th October 2000. The Hampshire AVM system played the incorrect acknowledgement message. This fault was fixed by the system supplier.
- 13th October 2000. The Hampshire AVM system failed and could not issue warnings. This fault was fixed by the system supplier.
- 2nd November 2000. The Hampshire AVM system failed. The system was restarted by the supplier.
- 6th November 2000. The Hampshire AVM system failed. This fault was fixed by the system supplier.

The AVM is a reliable and effective system. Since it came into operation in the Area on 12th September 2000, it has faced a number of teething problems. However requirements for AVM2 are being developed at the present time, and are to be issued next year.

Floodline

The Agency provides a 'Dial and Listen', local-rate national telephone service known as Floodline for advice and information about flooding. Floodline came into operation on 13th September 2000 and has generally worked well. When a caller dials floodline they have an option to hear recorded information for flooding in their area. It should be updated or recorded every 12 hours or whenever a warning changes.

Outgoing Floodline - Initially the recorded messages prepared by the Area Office did not become attached to the quick dial numbers.

Incoming Floodline - The Hampshire Area Incident Room received a number of calls for which the areas affected were not in the region. The Floodline Call Centre filters calls using postcodes only, and therefore calls do not always get transferred to the correct area. The Call Centre is then unable to take back misdirected calls and pass them to the correct office.

Flood Wardens

There are a number of flood wardens in the area, who have volunteered to contact up to 10 people to advise them of any flood warnings issued. This is efficient as more people are contacted in a shorter time period. If the flood wardens are not contactable via AVM, all people who would be contacted by the flood wardens are contacted directly from AVM.

Local Media

Flood warning information was disseminated to the following local media contacts via the AVM system:

- Radio – BBC Radio Solent; Ocean FM/South Coast FM/ Power FM; 2CR FM; 107.6 Kestrel FM; Radio Victory 107.4; South City FM; Wave 105.2 FM; Isle of Wight Radio
- Television – BBC South; Meridian TV South East Region
- Other – AA Roadwatch; Teletext; BBC Weather Centre; Independent Weather Productions

Sirens and Public Address Systems

There are five loud hailer systems in the Hampshire Area Office and one loud hailer system in the Isle of Wight Office, which are available for use. No sirens or public address systems were used during the autumn 2000 flood event. The loud hailer systems are reserved for major AVM system failures and severe flood warnings for coastal areas.

3.3.4 Success Rate of Warnings Issued

AVM

The number of AVM recipients has increased significantly over the past few years, and a large number of people were sent flood warnings via the AVM system. The AVM system records the number of calls made, and the number of aborted calls. Generally AVM is an effective system contacting a huge majority of recipients.

Floodline

A large number of people contacted floodline during the flood event to find out further information regarding the potential flooding in their area. Information returned from questionnaires would indicate generally that floodline was a useful source of information. However there were times when the information on floodline was either out of date due to the time lapse between updates or when flood events were not forecast but happened relatively quickly. For example the floodline text late on the evening of 5th November indicated no flooding risk at Wallington, although the village was flooded in the early hours of the 6th November.

Flood Wardens

If a flood warden cannot be contacted then the AVM system will automatically send flood watches and flood warnings to all recipients of the flood wardens messaging. However further than this the success of the use of flood wardens is unknown as at the moment there is limited feedback from Flood Wardens

Local Media

According to questionnaire data few people were warned via the local media. This is either because they do not consider it a specific warning to their area or they do not listen to TV or radio weather forecasts.

Weather forecasts may refer to both severe weather warnings and flood warnings. This often confuses members of the public and therefore the warning service provided by the local media could be improved.

3.4 RECOMMENDATIONS

SO/H/FW/1 AVM Warning Recipients

<u>Issue</u>	<p>The properties receiving flood warnings did not always flood.</p> <p>The AVM recipient database should be refined for areas affected during the event. People who were not flooded in the 2000-20001 event should only receive flood warnings and severe flood warnings. However if people were flooded, it is recommended that they receive flood watches and flood warnings and severe flood warnings.</p>
<u>Recommendations</u>	<ul style="list-style-type: none"> • Refine the AVM recipient database

SO/H/FW/2 AVM Contact Numbers

<u>Issue</u>	<p>All numbers called from the AVM system are tried three times before being aborted. It is important that all people registered on AVM receive the correct warnings, therefore any problem contacts should be investigated.</p> <p>The time lapse between people registering for AVM and being on the system and hence receiving calls is between 10 days and 3 weeks.</p>
<u>Recommendations</u>	<ul style="list-style-type: none"> • Confirm existing AVM numbers. • Update regional AVM database at more frequent intervals

SO/H/FW/3 Floodline

<u>Issue</u>	<p>The Floodline Recorded Message System provided information to thousands of members of the public during the floods. At present there are a limited number of message boxes for information and therefore providing information to the public is often inefficient. In addition updating the message boxes takes a long time as it covers a large area.</p> <p>At present there is no separate area to record information on groundwater flooding and therefore information is recorded in the catchment area. This makes the recordings very long and cumbersome. It is therefore recommended an additional box be set up to record</p>
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	groundwater information only.
<u>Recommendations</u>	<ul style="list-style-type: none"> Review the need for additional message boxes on the Floodline Recorded Message System

SO/H/FW4 Public Awareness

<u>Issue</u>	<p>All properties located in the 1 in 100 year flood plain are sent information annually regarding flooding. This information pack gives people the opportunity to join the AVM system. However a majority of people do not 'opt in' to the scheme and so major efforts are still required to recruit more members.</p> <p>It is recommended that the Agency increase communication with Flood Wardens. This will ensure the Flood Wardens have a greater knowledge of the role the Agency has in its flood warning capacity. It may enable the Agency to obtain further detailed information regarding flooding in individual villages.</p>
<u>Recommendations</u>	<ul style="list-style-type: none"> Raise public awareness and encourage people to receive direct flood warnings Improve communication with flood wardens

SO/H/FW/5 Warning Messages

<u>Issue</u>	The voice messages sent via the AVM system are often very 'hard hitting', which has led to an over response by the public in some locations. Therefore the content of the message should be changed appropriately
<u>Recommendations</u>	<ul style="list-style-type: none"> Reword AVM warning code scripts

SO/H/FW/6 Flood Watches and Warnings

<u>Issue</u>	<p>At times catchment watches, flood watches and flood warnings were in place for a number of days. It would be useful if updates were issued to remind people the status of the catchment watch, flood watch or flood warning.</p> <p>When issuing or re-issuing catchment watches, flood watches and flood warnings the floodline text should be updated to provide up to date</p>
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	information to members of the public whom contact floodline.
Recommendations	<ul style="list-style-type: none"> • Reissue Catchment Watches, Flood Watches and Flood Warnings at appropriate intervals (e.g. every 48 hours) • Update Floodline Text

SO/H/FW/7 Revised Flood Warning Areas

<u>Issue</u>	<p>Some flood warning areas cover large areas (e.g. Lower and Upper Test, Lower and Upper Itchen). However within flood warning area there are river reaches which react very differently. For example Tadburn Lake reacts quickly to rainfall, while the remainder of the Lower Test reacts slowly to rainfall. Therefore it is recommended that the flood warning areas be investigated and possibly divided up into small areas, in order to provide a more accurate flood warnings, relevant to all recipients.</p> <p>At present the Hampshire catchment is split into four main catchments (Test Valley, Itchen Valley, New Forest and East Hampshire). As catchment watches are issued following a Heavy Rainfall Warning catchment watches are sent to all Hampshire catchments at the same time. This seems to cause confusion to Professional Partners and others who do not understand the difference between a catchment watch split into a number of areas and a flood watch. Therefore it is recommended that catchment watches be altered so as only one catchment watch is issued for the whole of Hampshire. An additional catchment watch is still to be issued for the entire Isle of Wight catchment.</p>
<u>Recommendations</u>	<ul style="list-style-type: none"> • Review Flood Warning Areas for the River Test • Promote one Hampshire Catchment Area

SO/H/FW/10 River Meon Catchment

<u>Issue</u>	During the autumn 2000 flood the River Meon was not part of a formal four stage Flood Warning Area. A number of properties were affected without any means of issuing warnings.
<u>Recommendations</u>	<ul style="list-style-type: none"> • Create a Flood Warning Area for the River Meon

<u>SO/H/FW/10 Media</u>	
<u>Issue</u>	The media do not always seem to appreciate of the difference between flood watches, flood warnings, severe flood warnings and severe weather warnings. This can cause confusion and lead to the public to over reacting. It is recommended that the media be further educated so as they understand the meaning of each of the above and therefore can use each phrase appropriately.
<u>Recommendations</u>	<ul style="list-style-type: none">• Further educate local media in the understanding of flood warnings and weather information

4 EMERGENCY RESPONSE/STANDARDS OF DEFENCE

4.1 INTRODUCTION

This event proved the most testing for the Agency (and its predecessor organisations) in 40 years. Following the Easter 1998 flooding the Agency had introduced and exercised both a new flood warning code system and a new set of incident management procedures for Flood Defence in September 2000.

All functions within the Area were mobilised to deal with the event, proving that the Agency is greater than the sum of its parts. This flexibility has proven to be one of its core strengths.

New procedures had been in place at Regional and Area level over the summer for Flood Warning, Flood Defence Operations, Flood Forecasting and Monitoring and for the opening and operation of Area Incident Rooms (AIRs). Areas had been issued with the enhanced Regional Incident Procedures (RIPs) as early as May 2000, and Area Incident Procedures were issued in September 2000 and a further Regional Incident Procedures update in October 2000. Thus all areas started the events with the most up to date procedures. New procedures were adhered to, with their greater emphasis on pro-active response to forecasts of heavy rainfall and severe weather.

4.2 AREA SUMMARY

4.2.1 Area Incident Room (AIR)

Friday 15th September 2000 Event

No Area Incident Room was opened due to the speed with which the situation developed. Staff from Customer Services were used for flood warning delivery and Business Services provided assistance with call handling alongside Flood Defence staff. During the busiest period around 13:00 seven multi functional staff were working solely on incident management in the Flood Defence office.

With further rainfall forecast for the evening, preparations were made to open the AIR at 20:30. Flood defence and multi functional staff were rostered from 18:00 Friday through to 20:30 Saturday. However events on the ground Friday evening meant that the AIR was not opened and the staff stood down. Area management from the Flood Defence office continued and was finally ended at 01:50 Saturday morning. Staff returned to Colvedene Court at 10:00 Saturday to review the situation, update the Floodline messages, issue warnings and a final HELP report.

Monday 9th October to Monday 16th October 2000 Event

The Area Incident Room was manned from 17:00 Monday 9th October through to 09:00 Wednesday 11th October. The total number of staff hours to manage and support the event in Hampshire and Isle of Wight Area equated to over 175 hours. The staffing rotas are detailed in Appendix G.

Sunday 29th October to Tuesday 31st October 2000 Event

The Area Incident Room was manned from 13:00 Sunday 29th October through to 21:00 Monday 30th October. The staffing rotas are detailed in Appendix G.

Sunday 5th November to Wednesday 8th November 2000 Event

The Area Incident Room was manned from 13:00 Sunday 5th November through to 21:00 Monday 6th November. The staffing rotas are detailed in Appendix G.

November 2000 to May 2001 Event

Much of the flooding that occurred during this period was due to rising groundwater. During this period there were few specific events that lasted for only a few days, and therefore an area incident room was not often required. Flood monitoring was constantly undertaken throughout the period by the FWDO, flood warning team and water resources staff. The AIR was only opened if heavy rain was occurring so causing surface water flooding as well as increasing groundwater levels. An AIR was open at the following times:-

- Thursday 7th December 19:15 – 23:30
- Saturday 9th December 09:30 – 17:45
- Sunday 10th December 10:30 – 21:15
- Tuesday 12th December 13:00 to Wednesday 13th December 01:00
- Sunday 31st December 22:00 to Monday 1st January 02:00

The staffing rotas are detailed in Appendix G.

4.2.2 Liaison with Professional Partners**Agency Area Liaison**

Communication between the area offices and the region was formally carried out using Head Office Emergency Liaison (HELP) reports and Situation Reports (SITREPs). The Hampshire Area office kept the regional office well informed using these reports. A list of HELP reports and SITREP are included in Appendix H.

The region also produced SITREPs which were distributed around the areas so as each area had an appreciation of what other areas in the region were doing. A list of regional SITREPs is included in Appendix H.

Regional Liaison

During the autumn 2000 flood event there was very little inter-regional co-operation. In the Hampshire Area Office a number of calls were received for places situated in the Thames and

South West regions. However very little information was known about the management of the event in other regions.

External Liaison

External liaison worked well. This was due to the efforts to liaise over the previous year. Survey results show that customers' views of the Agency are significantly higher now than after the flooding in May 2000. Detailed results are in found in the 'Autumn 2000 Floods Review-Regional Report' (Environment Agency Southern Region). Consultants, who conducted a survey of professional partner views, comment:

"Overall, most professional partners seem to feel that the Agency is providing a better service now than in May 2000."

Communications with the Fire and Rescue Service

Throughout the flood event there was regular contact between the Isle of Wight Fire and Rescue Service and the Agency. After the event the Fire Service provided useful information about which properties had been affected by flooding.

The Hampshire Fire and Rescue Service was involved in the autumn 2000 flood event and they have a record of all telephone calls received. They have given information regarding flooding calls to the Agency but this data has proved difficult to analyse. Therefore the extent of involvement is unknown at this stage.

Communications with Local Authorities

Members of the public call either the Agency or the local authorities asking for advice or some help. However often people will contact the wrong organisation and therefore it is important that the Agency have a good knowledge of the response being provided by professional partners so as useful and relevant information may be passed on to members of the public.

There was regular exchange of information between the Agency and the Isle of Wight Council Emergency Planning Team, Highways Team, IOW Fire and Rescue Control and Southern Water throughout the event.

There was also detailed communication with Portsmouth City Council Emergency Planning Team advising of the latest situation regarding the failure of Eastney Pumping Station.

Parish Councils

During the groundwater event newsletters were sent to a number of people including parish council so as to update them on the flooding situation in their area.

4.2.3 Performance of Agency Defences

Agency defences generally performed well throughout the event. No Agency defences failed during the event. Problems associated with Agency defences included:

- *Wallington* – overtopping of the defence wall on 5th November 2000 causing flooding to Wallington village. The part of the defence that was overtopped was inadequate as it was of a lower standard than the remainder of the defence wall.
- *Ryde* – the pumping station on the Monkton Mead Brook at Ryde was overloaded during the autumn 2000 event, and caused flooding in Ryde on two occasions.
- *Frogmore* – the defence wall at Frogmore only operates effectively when the stop boards are in place. During the flood event the stop boards were not in place and water was able to reach the towpath and hence causing flooding to properties along the towpath.

4.2.4 Calls handled in Area Incident Room

The number of calls received by the Hampshire Area Incident Room was enormous. The nature of the calls was also very variable. The main subjects of telephone calls included:

- *AVM* – people wishing to be added to the AVM system, people wishing to be removed from the AVM system
- *Report flooding* – people reporting flooding to individual properties and areas. The information received by the Agency was variable from person to person. Many people telephoned reporting property flooding however in reality water was still a distance from their property
- *Demand for sandbags* – people asking for sandbags in order to protect their individual property.
- *Report fallen trees/blocked culverts etc* – people reporting fallen trees in the river which were causing backing up of water and therefore may cause flooding.

There is no formal record of the number of calls received by the Agency. A majority of telephone calls taken from 5th November 2000 are recorded on Area Incident Room Log Sheets. However prior to this date there was no formal recording system of telephone calls made to the incident room.

It is estimated that between 5th and 8th November approximately 250 calls were received and information recorded regarding the call. It is thought that in the order of 100 calls were received and recorded during the opening of the AIR during the groundwater event, starting mid November 2000. However many further calls were not recorded as they were received by staff during working hours.

4.3 KEY OPERATIONAL ACTIONS

In Hampshire operational activities were carried out by flood defence operational staff and Direct Works staff. On the Isle of Wight operational activities were carried out by flood defence staff, multi-functional staff and Brightstone Landscaping, a contractor used for all work on the island.

Throughout the event monitoring was done at many sites. A number of flood defence and water resources were involved in visiting at risk sites to ensure no blockages were restricting flow in the area. Throughout the event specific sites that were monitored included Romsey, St Mary Bourne, Winchester and Meon Valley in Hampshire; and Freshwater, Alverstone, Newchurch, Morton Common, Ryde, Springvale and Seaview on the Isle of Wight. Following monitoring staff were able to instruct Direct Works or Contractors to carry out any work necessary so as to keep water levels down.

Direct Works staff were responsible for ensuring all grills throughout Hampshire were kept clear, and if severe weather was forecasted gangs went out to ensure grills were clear. Direct Works staff also removed any blockages, which were causing restriction of water. Staff were also involved in large scale sandbagging operations such as at Wallington and Exton.

Specific emergency response work was carried out at some sites following extensive flooding of the area. For example on 5th November Agency staff constructed a sandbag wall across the road into Exton in order to stop further water entering the village and divert the water back into the River Meon. On the night of 5th November the flood wall in the village of Wallington was overtopped. In response Agency staff increased the standard of the existing flood wall using sandbags so as it was of equal standard to the remainder of the flood wall.

During December 2000 the water levels in Bishops Waltham ponds' increased and caused flooding to a number of properties. The Agency constructed a temporary channel in the road so as to lower the water level in the pond and therefore reduce flooding.

In other areas Agency staff worked prior to the event so as to reduce the impact of flooding. For example in St Mary Bourne a large number of sandbags were placed along the river bank in order to prevent the Bourne Rivulet from overtopping its banks. This worked very well and limited flooding was reported in the village.

A detailed log of work carried out is shown in Appendix J. However it is unlikely that it is all recorded as due to the nature of the event all work was undertaken quickly and consequently may not have been recorded.

4.4 OPERATIONAL ACTIVITIES BY PROFESSIONAL PARTNERS

4.4.1 Fire and Rescue Service

The Isle of Wight Fire and Rescue Service were at Ryde and appliances were in attendance throughout the night of 9th/10th October. The IOW Fire and Rescue was also in attendance at Alverstone on 10th October

Hampshire Fire and Rescue staff were in attendance at Wallington on the night of 5th/6th November 2000.

4.4.2 Local Authorities

Hampshire County Council

At Twyford Hampshire County Council pumped water across the B335. They were also involved in the diversion of the river flow at Cheriton and construction of a new causeway at Ropley.

Isle of Wight

The Isle of Wight Council distributed sand bags to residents in Ryde and opened an incident room (9th October to 00:30 10th October). The Isle of Wight Council attended the flooding event at Alverstone.

Portsmouth City Council

Portsmouth City Council declared a Major Incident at 14:45 on 15th September. Surface water and sewer flows backed up in the sewer system and flooded extensive low lying areas in Portsmouth and Southsea when the Eastney pumping station flooded. Environment Agency Environmental Protection staff were in attendance both at the Eastney site and at the Tactical Co-ordination Centre. Direct Works assisted in the pumping operation on Saturday 16th September and continued to remain on standby on site.

Portsmouth City Council offered evacuation to the following roads: Taswell Road, Napier Road, Duncan Road, St Vincent's Road, Exmouth Road, Marmion Road, Fontwell Road, Chester Place, Malvern Road, Hamilton Road, Brandon Road, Freestone Road, Worthing Road, St Simons Road, Onslow Road, St Catherine's Road and Airport Service Road. It is believed that 5 evacuations took place.

Fareham Borough Council

Fareham Borough Council staff were in attendance at Wallington on the night of 5th/6th November 2000. The council also offered evacuation to the residents of Wallington following the overtopping of defences on the river Wallington. However none of the residents wanted to be evacuated.

Basingstoke and Deane Borough Council

Following consultation between the Agency and Basingstoke and Deane District Council extensive sandbagging was undertaken along the Bourne Rivulet in St Mary Boume.

Salisbury District Council

Salisbury District Council provided a large number of sandbags to residents in Pitton and were involved in the pumping of water from the village throughout the flooding event.

Other Organisations

Ryde Residents Association

Exchange of information was carried out with this association.

Hambledon Parish Council

They set up a flood control centre in the Parish Hall and kept a detailed record of all properties affected by flooding.

Kings Worthy Parish Council

The Parish Council is co-ordinating the data collection of the flooding that occurred in the Springvale Road area.

4.5 STANDARDS OF DEFENCE

4.5.1 Performance of Agency Defences

Within the Hampshire and Isle of Wight Area there are a number of flood defences and flood alleviation schemes, which reduced or prevented flooding in certain areas during the Autumn 2000/Winter 2001 event.

Test Valley

Wherwell – A flood bank was constructed in 1996, which reduces the risk of flooding. No flooding was recorded in this area.

Romsey – New bank works have been constructed at Fishlake in order to control flow. No flooding was recorded in this area. In addition there are many sluices through Romsey, which were successfully operated and managed during the Autumn 2000 event. The main sluices include Abbey Water Sluice, Greatbridge Sluices, Oxlease Sluice and Greatbridge Industrial Estate Sluices

Rumbridge - There is a river defence system above and below Rumbridge. Above Rumbridge the defence takes the form of a wall, and below Rumbridge it takes the form of an earth bank. No flooding was recorded in this area.

Calmore Canal – There is an earth bank along the Calmore Canal, adjacent to Knightwood Road. The earth bank is deigned to prevent 5 properties from being flooded. No flooding was reported in the area.

Totton – The causeway at Totton was designed to prevented tidal and fluvial flooding.

River Anton - The overspill weir at Town Mill, Andover was reconstructed. There was no reported flooding in Andover.

Itchen Valley

Swaythling – The Agency maintains a floodwall at Swaythling and a flood bank at the Fleming Arms. These defences were designed for a 1 in 50-year event. No flooding was recorded in this area.

Millbrook – Defence walls along the Tanners Brook were able to prevent the centre of Millbrook flooding.

King's Somborne – The Environment Agency regraded the stream through the village. The Council replaced the old ford by an Irish Ford.

New Forest Rivers

Brockenhurst – The flood alleviation scheme constructed in 1994 on The Weir prevented the centre of Brockenhurst being flooded twice during the autumn 2000 event. The design standard of this protection scheme is a 1 in 25 year event.

Milford-on-Sea – The Milford Dam flood alleviation scheme has been designed to store water during high flows. The gate operation is automatic and if there is a power loss air pressure will close the gate to the fail-safe condition. It will open on resumption of power although the gas cylinder will need changing. This defence prevented Milford village from flooding four times during the Autumn 2000 event. No main river flooding was recorded in the area.

East Hampshire

Wallington – The Agency maintains a floodwall through the village of Wallington and at Broadcut. The defence through Wallington village was exceeded by floodwaters. However the defence wall on the other side of the channel was not overtopped and no flooding was reported to the adjacent industrial units. The Agency maintain a bank surrounding Riverdale Cottages, Wallington which prevented these properties being flooded internally.

There is a balancing pond system at Brambles Farm Industrial Estate, Waterlooville at the head of the river.

Havant – A board can be installed at Crosslands Drive, Havant to divert flow from the River Lavant to the Hermitage Stream via a pipe link, designed for a 1 in 50 event. This pipe link was operational and was partially successful during the autumn 2000 flood event.

River Hamble – A balancing system north of the M27 near Bursledon prevents flooding downstream. No main river flooding was recorded in the area.

Hedge End – A balancing system, including a bypass channel and dams, behind the Botleigh Grange Hotel, limits flooding downstream.

East Meon – The River Meon has been placed in a concrete channel through the centre of East Meon, therefore preventing properties being flooded during the autumn 2000 event.

Wickham – The flood alleviation scheme allows water from the River Meon to surcharge bridges, and then the recreation area. This system protects a number of properties downstream from being flooded.

Isle of Wight Rivers

Ryde – The pumping station on the Monkton Mead Brook at Ryde was installed to reduce the risk of flooding especially when tide locked. However this was overwhelmed on two occasions during the Autumn 2000 – Spring 2001 event. A scheme was underway to replace the old pumping station and the new station was operational for the winter of 2001.

Bembridge Sluices – The Bembridge Sluices comprise of an automated penstock, tilting gate and tidal flaps. It is designed to exclude the tide and allow flood flows to discharge from the Eastern Yar. There was widespread flooding in the Yar valley and to a limited number of properties and caravan parks.

4.5.2 Provisional Assessment of Damage to Agency Defences

Test Valley

No significant damage was caused to Agency defences.

Itchen Valley

No significant damage was caused to Agency defences.

New Forest

No significant damage was caused to Agency defences.

East Hampshire

Wallington – The defence wall that was overtopped on 5th November was not severely damaged by floodwater. However as this wall is of a lower standard than the remainder of the defence wall it is recommended that this part be upgraded.

Isle of Wight

Ryde – No damage was caused to the pumps at Ryde following overloading, although they do appear to be unreliable. The existing pump are due to be replaced by the new Monktonmead pumping station which is expected to be fully operational by the winter of 2002.

4.5.3 Performance of Third Party Defences

Test Valley

No information is known about the performance of third party defences.

Itchen Valley

No information is known about the performance of third party defences.

New Forest

No information is known about the performance of third party defences.

East Hampshire

Wallington – A third party defence at 53 Wallington Shore Road, Wallington failed during the Autumn 2000 floods, causing flooding to 5 properties (1 internally).

Havant – Warren Dam, constructed and operated by Havant Borough Council, is a flood storage area on a non-main tributary of the Hermitage Stream. Its overflow is taken by a 1200mm diameter pipe into Hermitage Stream.

Isle of Wight

Carisbrooke – Water is impounded in a small pond at Carisbrooke Waterworks, (owned by Southern Water Plc) the level being maintained by an adjustable sluice. The overflow then passes over a small weir, the total drop in water level between these two structures is about 1.8m in normal conditions.

4.6 RECOMMENDATIONS

<u>SO/H/ER/1 Incident Room</u>	
<u>Issue</u>	<p>During the autumn 2000 to spring 2001 event the Hampshire office had no dedicated Incident Room, working instead from the flood defence office. The lack of specialist facilities did not assist in the event management resulted in normal working procedures being disrupted.</p> <p>It is important that everybody in the incident room has details of the flood event, so as to gain a general appreciation of the incident. It would therefore be helpful if everyone in the incident room would stop at frequent intervals (say once an hour) to communicate the flood event details. It is recommended that the ABC has a general appreciation of the situation and that this is part of the ABC role.</p>
<u>Recommendations</u>	<ul style="list-style-type: none">• Provide a dedicated Area Incident Room equipped for event management.• Review the situation at frequent intervals to communicate details to all duty officers.• Always promote an Area Base Controller when the AIR open.

	<ul style="list-style-type: none"> Record hours of people involved in emergency response.
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SO/H/ER/2 Staffing

<u>Issue</u>	At the moment there is no duty ABC in Hampshire and led to overworking of the FWDO during critical times. However a duty ABC may be inappropriate all year.
<u>Recommendation</u>	<ul style="list-style-type: none"> Review Hampshire Area requirement for a duty ABC.

SO/H/ER/3 Recording Operation Work Undertaken

<u>Issue</u>	Many of the emergency works that were carried out were recorded in the ODO diary. However a number of works were not recorded, for example, construction of a temporary channel at Bishops Waltham
<u>Recommendation</u>	<ul style="list-style-type: none"> Record emergency works in the ODO diary

SO/H/ER/4 Recording Information

<u>Issue</u>	During the flood event the incident room received a lot of information. The majority of this data was only recorded on a white board in the incident room. However when the board become full, all the data was erased and generally not recorded. It is therefore recommended that all data on the board be photographed at the close of every working day.
<u>Recommendation</u>	<ul style="list-style-type: none"> Regularly record details of information boards.

SO/H/ER/5 Recording Calls

<u>Issue</u>	During the flood events of September and October 2000 there was no specific procedures for recording telephone conversations, and therefore any conversations were not recorded in any detail. At the beginning of November 2000 an AIR form was introduced and therefore more detailed information was recorded. However information recorded on these telephone forms is often quite vague and the extent of the flooding in the particular area is unknown.
<u>Recommendation</u>	<ul style="list-style-type: none"> Record all telephone calls adequately.

SO/H/ER/6 Call Handling System

<u>Issue</u>	The Agency telephone system has not kept pace with current call handling requirements. Calls are sometimes put through to the wrong office, and therefore people have to be transferred. It is possible to do this transfer directly by using the telephone system. However the majority of people are unable to do this and will ask the caller to the telephone another office. At the moment the operation of the telephone network is not fully understood, and it is unclear what happens to Floodline calls when the Floodline is busy. Currently it would seem that contacting the Agency in different ways provides different levels of service. At the moment there is no way of effectively monitoring the number of calls received.
<u>Recommendations</u>	<ul style="list-style-type: none"> • Review requirements and introduce improved call handling and monitoring system • Provide training on the working of the call handling system.

SO/H/ER/7 HELP Reports/SITREPs

<u>Issue</u>	A number of HELP reports and SITREPs were prepared. However during the earlier stages of the event there seems some confusion about the use of HELP reports and/or SITREPs. However in latter stages the use of HELP and SITREP reports seems to be correct.
<u>Recommendation</u>	<ul style="list-style-type: none"> • Ensure information is recorded in appropriate report format.

SO/H/ER/8 Communication

<u>Issue</u>	<p>Communication internally and externally is of key importance for the success of an emergency response during flood events.</p> <p>Internal communication within the area flood defence team is crucial, the FWDO and ODO being most important. The response by the Environment Agency is crucial to the public perception of the Agency.</p> <p>Also communications between the Environment Agency and local authorities, emergency services and other response organisations is important. The Environment Agency relationship with local authorities is improving but better communication would be helpful.</p>
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	Parish Councils provide useful information on the flooding event due to the support network and information network found within local parishes. Therefore liaison with parish councils and support of community Flood Action Plans would be beneficial.
<u>Recommendation</u>	<ul style="list-style-type: none"> • Improve communication links

SO/H/ERI10 Weather and Telemetry Information

<u>Issue</u>	<p>During a flood event much data is received regarding weather forecasting, river level station, flow level stations and rainfall gauges. All data should be filed in clearly marked folders indicating the dates for which information is included. It is important to keep all information during a flood event, even if the data indicates little or no rainfall.</p> <p>During the Autumn 2000 to Spring 2001 event some data has been lost and some data between the major events has been destroyed. However due to the nature of the event, and much of the flooding in Hampshire has been caused due to groundwater all data is important and a complete record of data should have been recorded. It is important that some provision be made for archiving the data</p>
<u>Recommendations</u>	<ul style="list-style-type: none"> • File all data relating to the event appropriately

SO/H/ER/11 River Wallington Defences

<u>Issue</u>	<p>At Wallington the river defence, consisting of a brick wall was overtopped affecting a number of houses internally.</p> <p>It is advised that the standard of the defence be reviewed and to determine whether further work will be required. This may include raising of the flood defences and/or replacing the footbridge opposite the White Horse Public House so as to increase hydraulic capacity under the bridge.</p> <p>At the southern end of Wallington Shore Road the River Wallington is tidal. 53 Wallington Shore Road had a small privately owned wall to provide protection from the high tides. The wall failed during the event and cost benefit analysis should need to be undertaken by the Agency to determine whether the repair of the wall is economically viable as it protects numbers 53, 54, 55 and 56. It is therefore recommended that this wall be reconstructed.</p>
<u>Recommendations</u>	<ul style="list-style-type: none"> • Upgrade Agency defences at Wallington to a consistent standard.

	<ul style="list-style-type: none">• Reconstruct wall at 53 Wallington Shore Road to reduce tidal flooding.
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SO/H/ER/11 River Meon Stop Logs

<u>Issue</u>	Some of the flooding experienced in Frogmore was due to the stop logs not being placed in the defence. The water was able to leave the main channel through the gap and enter the adjacent properties.
<u>Recommendation</u>	<ul style="list-style-type: none">• Ensure stop logs are placed in defence at Frogmore when appropriate.

SO/H/ER/13 Monkton Mead Pumping Station

<u>Issue</u>	<p>During the autumn 2000 event the Monkton Mead Brook overtopped its banks on September 15th 2000 and October 10th 2000. Some properties have been flooded three or four times in the last two years.</p> <p>Problems giving rise to flooding of properties in the Monktonmead catchment include:</p> <ul style="list-style-type: none">• Surcharging of the sewers with surface water, causing flooding with diluted sewage and surface water from drains• Flooding of properties in Westhill Road and Simeon Street direct from the Monkton Mead Brook overflowing its banks.• Percolation of water through the soil into the sub ground floors or basements in The Strand and West Hill Road. <p>Construction of the replacement improved Monkton Mead Pumping Station commenced in Spring 2001.</p>
<u>Recommendations</u>	<ul style="list-style-type: none">• The scheme should be constructed and fully operational before winter 2001.

5 DATA COLLECTION

5.1 FLOOD ENVELOPE

5.2 PROPERTY AFFECTED

Individual properties, which were affected by flooding through the Autumn 2000 to Spring 2001, are recorded in Appendix K. This chapter in the report summaries this list indicating the number of properties flooded internally and externally in each location. A selection of maps to indicate flooded properties is also included.

5.2.1 Friday 15th September 2000 Event

Test Valley

There was no reported flooding in the Test Valley on 15th September 2000.

Itchen Valley

Eastleigh – One property reported internal flooding. It is likely that flooding was caused due to surface water or blocked drains (Data source: telephone conversation)

New Forest

Hythe – One property reported external flooding.

East Hampshire

Fareham – One property reported internal flooding. This property is located adjacent to the tidal section of the River Wallington. A further property is known to have experienced internal flooding due to sewage. (Data source: telephone conversation/RCC)

Gosport – Six properties reported internal flooding due to surface water. (Data source: RCC)

Portsea Island – On 15th September 2000 as Southern Water Services Eastney Pumping Station failed due to exceptionally heavy rainfall. Widespread surface water and combined effluent flooding was reported throughout the city. The Agency sent approximately 900 questionnaires to properties on Portsea Island, of which 276 questionnaires were returned. 105 of these properties reported internal flooding and it is estimated that up to 200 properties were flooded internally.

Portsmouth City Council has indicated areas on Portsea Island, which were affected by flooding, and the number of properties in these areas totals 2797. However other areas are believed to have been affected but not recorded by Portsmouth City Council. It is therefore estimated that up to 3000 further properties were affected by external flooding. Only a limited number of exact addresses are known and they are included in the address list, the majority remain unknown.

Waterlooville – Internal flooding was reported of six properties due to heavy rainfall, surface water runoff and inadequate drainage. (Data source: Havant Borough Council).

Havant – Internal flooding was reported to 25 properties. The majority of these properties were flooded due to heavy rainfall and inadequate drainage, with high river levels exacerbating the situation as surface water was unable to flow into local watercourses. A limited number of properties were flooded from West Brook (ordinary watercourse). Further problems were caused when the Bellmouth automatic sluice on the River Hermitage failed and operated erratically. (Data source: Havant Borough Council)

Hayling Island – Internal flooding was reported to two properties due to heavy rainfall, surface water runoff and inadequate drainage. (Data source: Havant Borough Council).

Emsworth – Internal flooding was reported to five properties due to heavy rainfall, surface water runoff and inadequate drainage. (Data source: Havant Borough Council).

Rowlands Castle – Three properties were reported to have flooded internally when the ‘swallow hole’ at the junction of College Close and Redhill Road filled up very quickly and overflowed into Redhill Road. In addition the sewerage system surcharged in this area. The exact addresses are unknown and are therefore not included in the address list. (Data source: Letter from Rowlands Castle Parish Council).

Isle of Wight

Wootton – One property flooded internally and required water to be pumped out from the house by the Fire and Rescue Service. (Data source: IOW Fire and Rescue Service)

Ryde – The Fire and Rescue Service were involved in pumping water out of 20 properties in The Strand area when surface water from roads entered the combined sewer system and was unable to discharge into the Brook as levels were high. No additional flooding is believed to have occurred. (Data source: IOW Fire and Rescue Service)

Seaview – One property flooded internally and required water to be pumped out from the house by the Fire and Rescue Service. (Data source: IOW Fire and Rescue Service) A further property was affected by flooding. (Data source: telephone conversation)

Shanklin – Five properties were flooded internally and required water to be pumped out by the Fire and Rescue Service. Some road flooding also occurred in the area. (Data source: IOW Fire and Rescue Service)

Freshwater – One property flooded internally and required water to be pumped out from the house by the Fire Service. (Data source: IOW Fire and Rescue Service)

5.2.2 Monday 9th October to Monday 16th October 2000 Event

Test Valley

There was no reported flooding in the Test Valley.

Itchen Valley

There was no reported flooding in the Itchen Valley.

New Forest

There was no reported flooding in the New Forest.

East Hampshire

Wallington – 1 property flooded internally on 9th October due to surface water being unable to enter drains due to blockages. A further three properties were flooding externally due to the overtopping of the River Wallington. Some road flooding also occurred in the area. (Data source: telephone conversation).

Gosport – A number of properties in St Luke's Road, Crossways and Forton Road were flooded internally due to surcharging of Southern Waters' sewer system and/or failure of a pumping station. The exact addresses are unknown and not included in the address list. (Data source: Gosport Borough Council)

Waterlooville - Eight properties were internally flooded on the night of 9th/10th October due to a surcharging Southern Water Sewer. (Data source: Havant Borough Council)

Isle of Wight Rivers

Ryde – On the night of 9th/10th October the Fire Service were involved in pumping water out of 39 flooded properties. It is estimated that the flooding this time was similar to the flooding of December 1999, and that approximately 72 properties were flooded internally mainly in The Strand, Simeon Street and Westhill Street. A number of properties were affected directly from fluvial flooding while the remainder flooded due to a combination of surface water, combined sewers and fluvial flooding.

A further two properties were flooded in the town and required water to be pumped out by the Fire Service including a holiday park. (Data source: Agency report and IOW Fire and Rescue Service)

Alverstone – On the night of 09th/10th October the Eastern Yar overtopped its banks affecting four properties (two internally and two externally) near Alverstone Bridge. Alverstone Road was closed due to flooding and there was extensive field flooding reported in the area. A further property in the village required water to be pumped out by the Fire Service. (Data source: Agency Questionnaire, IOW Fire and Rescue Service)

Newchurch – On the night of 9th/10th October the Eastern Yar overtopped its banks affecting two caravan parks and four properties (three internally and one externally). There was some road flooding and extensive field flooding in the area. (Data source: Agency Questionnaire and Agency report)

Newport – Five properties were affected by flooding on the night of 9th/10th October. The Fire Service was involved in pumping out three properties, and a further one was flooded internally. (Data source: IOW Fire and Rescue Service and telephone conversations).

Seaview – Four properties flooded internally on the night of 9th/10th October of which three required water to be pumped out by the Fire Service. (Data source: IOW Fire and Rescue Service and telephone conversation)

Sandown – Four properties and a caravan park flooded internally on the night of 9th/10th October and required water to be pumped out by the Fire Service. (Data source: IOW Fire and Rescue Service)

Whiteley Bank – One property flooded internally on the night of 9th/10th October and required water to be pumped out by the Fire Service. (Data source: IOW Fire and Rescue Service)

Whitwell – Two properties flooded internally on the night of 9th/10th October and required water to be pumped out by the Fire Service. (Data source: IOW Fire and Rescue Service)

Shanklin – On the night of 9th/10th October two properties flooded internally, one property requiring water to be pumped out by the Fire Service. (Data source: IOW Fire and Rescue Service).

Godshill – Two properties flooded internally on the night of 9th/10th October and required water to be pumped out by the Fire Service. (Data source: IOW Fire and Rescue Service)

Lake – One property flooded internally on the night of 9th/10th October and required water to be pumped out by the Fire Service. (Data source: IOW Fire and Rescue Service).

Brading – One property flooded internally on the night of 9th/10th October and required water to be pumped out by the Fire Service. (Data source: IOW Fire and Rescue Service).

Sandown – Two properties flooded internally on the night of 9th/10th October, with one requiring water to be pumped out by the Fire Service. (Data source: IOW Fire and Rescue Service and Agency questionnaire)

Bembridge – Four properties flooded internally on the night of 9th/10th October and required water to be pumped out by the Fire Service. (Data source: IOW Fire and Rescue Service)

Niton – One property flooded internally on the night of 9th/10th October and required water to be pumped out by the Fire Service. (Data source: IOW Fire and Rescue Service).

Atherfield – One property flooded internally on the night of 9th/10th October and required water to be pumped out by the Fire Service. (Data source: IOW Fire and Rescue Service).

Merstone – One property flooded internally on the night of 9th/10th October and required water to be pumped out by the Fire Service. (Data source: IOW Fire and Rescue Service).

Wroxall – One property flooded externally on the night of 9th/10th October. (Data source: telephone conservation)

5.2.3 Sunday 29 October to Tuesday 31 October 2000 Event

Test Valley

Totton – A number of properties experienced flooding in different parts of Hounslow. Five properties in Jacobs Gutter Lane were affected by flooding (three internally, two externally) due to the overtopping of an ordinary watercourse. Two properties reported internal flooding on Eling Hill on the night of 29th October 2000, due to surface water runoff and inadequate drainage. Two further properties in the town experienced externally flooding. (Data source: New Forest District Council, Agency Questionnaire)

Woodlands – One property was affected internally and one externally in late October 2000. It is likely that flooding was caused to surface water runoff and inadequate drainage. (Data source: New Forest District Council).

Calmore – One property was affected internally and three externally in late October 2000. It is likely that flooding was caused to surface water runoff and inadequate drainage. (Data source: New Forest District Council).

Bartley – Three properties in Shepherds Close were flooded internally as Bartley Water overtopped its banks. One further property was affected externally. (Data source: New Forest District Council)

Cadnam – Three property was affected internally and two externally in late October 2000. It is likely that flooding was caused to surface water runoff and inadequate drainage. (Data source: New Forest District Council).

Coppythorne – One property was affected internally and one externally in late October 2000. It is likely that flooding was caused to surface water runoff and inadequate drainage. (Data source: New Forest District Council).

Ashurst – One property was affected internally and one externally in late October 2000. It is likely that flooding was caused to surface water runoff and inadequate drainage. (Data source: New Forest District Council).

Romsey – One property flooded internally. (Data source: Agency Questionnaire)

Itchen Valley

West End – One property reported internal flooding due to the River Itchen overtopping its banks upstream of Woodmill.

Chandlers Ford – A school was flooded internally and externally due to the overtopping of an ordinary watercourse and rising groundwater levels.

New Forest

Marchwood – Three properties were affected internally in late October 2000. It is likely that flooding was caused to surface water runoff and inadequate drainage. (Data source: New Forest District Council).

Everton – One property was affected externally in late October 2000. It is likely that flooding was caused to surface water runoff and inadequate drainage. (Data source: New Forest District Council).

Brockenhurst – Six properties were affected internally in Sway Road. It is likely that flooding was caused to surface water runoff and inadequate drainage. Two properties were affected externally in the Balmer Lawn Road due to the overtopping of the River Lymington. (Data source: New Forest District Council).

Sway – Three properties were affected internally and two externally in late October 2000. It is likely that flooding was caused to surface water runoff and inadequate drainage. (Data source: New Forest District Council).

New Milton – One property was affected internally and two externally in late October 2000. It is likely that flooding was caused to surface water runoff and inadequate drainage. (Data source: New Forest District Council).

Milford on Sea – Two properties was affected externally in late October 2000. It is likely that flooding was caused to surface water runoff and inadequate drainage. (Data source: New Forest District Council).

Hordle – Two properties were affected externally in late October 2000. It is likely that flooding was caused to surface water runoff and inadequate drainage. (Data source: New Forest District Council).

Boldre – One property was affected externally in late October 2000. It is likely that flooding was caused to surface water runoff and inadequate drainage. (Data source: New Forest District Council).

Pilley – One property was affected externally in late October 2000. It is likely that flooding was caused to surface water runoff and inadequate drainage. (Data source: New Forest District Council).

Lyndhurst – One property was affected externally in late October 2000. It is likely that flooding was caused to surface water runoff and inadequate drainage. (Data source: New Forest District Council).

Hythe – Two properties were affected internally and one externally in late October 2000. It is likely that flooding was caused to surface water runoff and inadequate drainage. (Data source: New Forest District Council).

Keyhaven – One property was affected externally in late October 2000. It is likely that flooding was caused to surface water runoff and inadequate drainage. (Data source: New Forest District Council).

Lymington – Three properties were affected externally in late October 2000. It is likely that flooding was caused to surface water runoff and inadequate drainage. (Data source: New Forest District Council).

Downton – One property was affected internally in late October 2000. It is likely that flooding was caused to surface water runoff and inadequate drainage. (Data source: New Forest District Council).

Minstead – One property was affected internally in late October 2000. It is likely that flooding was caused to surface water runoff and inadequate drainage. (Data source: New Forest District Council).

East Hampshire

Hayling Island – 14 properties were affected by flooding late October 2000 due to ordinary watercourses overtopping their banks. (Data source: Havant Borough Council)

Waterlooville – Two properties were affected by flooding late October 2000 due to heavy rainfall and inadequate drainage. (Data source: Havant Borough Council)

Havant - One property was affected by flooding late October 2000 due to heavy rainfall and inadequate drainage. The drainage systems did not work effectively because the high river levels restricted the flow from these drainage systems. (Data source: Havant Borough Council)

Purbrook – Two properties were affected by flooding late October 2000 due to heavy rainfall and inadequate drainage. (Data source: Havant Borough Council)

Emsworth – Four properties were affected by flooding late October 2000 due to heavy rainfall and inadequate drainage. (Data source: Havant Borough Council)

Isle of Wight

There was no reported flooding on the Isle of Wight.

5.2.4 Sunday 5th November to Wednesday 8th November 2000 Event

Test Valley

Ashurst – One property was affected externally in early November 2000. It is likely that flooding was caused to surface water runoff and inadequate drainage. (Data source: New Forest District Council).

Calmore – Two properties were affected internally and one externally in early November 2000. It is likely that flooding was caused to surface water runoff and inadequate drainage. (Data source: New Forest District Council).

Cadnam – Two properties were affected internally and five externally in early November 2000. It is likely that flooding was caused to surface water runoff and inadequate drainage. (Data source: New Forest District Council).

Totton – Two properties were affected externally in early November 2000. It is likely that flooding was caused to surface water runoff and inadequate drainage. (Data source: New Forest District Council).

Woodlands – One property was affected internally and two externally in early November 2000. It is likely that flooding was caused to surface water runoff and inadequate drainage. (Data source: New Forest District Council).

Bartley – Two properties were affected internally and two externally in early November 2000. It is likely that flooding was caused to surface water runoff and inadequate drainage. (Data source: New Forest District Council).

Ower – One property was affected internally in early November 2000. It is likely that flooding was caused to surface water runoff and inadequate drainage. (Data source: New Forest District Council).

Sherfield English – One property was flooded due to surface water. (Data source: telephone conversation)

Romsey – Four properties were affected by flooding (one internally and two externally and a further property experienced cellar flooding) due to the main river exceeding its banks. A further property was internally flooded due to an overflowing sewer. (Data source: Agency Questionnaire, telephone conversations)

Stockbridge – Rising groundwater in the area caused two properties to have flooded internally. It is likely that flooding of these properties continued for a number of weeks. (Data source: telephone conversation)

Itchen Valley

Southampton – One property was flooded internally. (Data source: telephone conversation)

Eastleigh – Two properties experienced internal sewage flooding early November 2000 due to Chickenhall Sewage Treatment Works (STW) overflowing its tanks. (Data source: telephone conversation)

Colden Common – One property was flooded externally. (Data source: telephone conversation)

New Forest

Brockenhurst – Five properties were affected externally in early November 2000. It is likely that flooding was caused to surface water runoff and inadequate drainage. (Data source: New Forest District Council).

Hordle – Seven properties were affected externally in early November 2000. It is likely that flooding was caused to surface water runoff and inadequate drainage. (Data source: New Forest District Council).

Lymington – Six properties were affected internally and eleven externally in early November 2000. It is likely that flooding was caused to surface water runoff and inadequate drainage. (Data source: New Forest District Council).

Pennington – Four properties were affected internally and four externally in early November 2000. It is likely that flooding was caused to surface water runoff and inadequate drainage. (Data source: New Forest District Council).

Milford on Sea – Two properties were affected internally and one externally in early November 2000. It is likely that flooding was caused to surface water runoff and inadequate drainage. (Data source: New Forest District Council).

East End – One property was affected internally in early November 2000. It is likely that flooding was caused to surface water runoff and inadequate drainage. (Data source: New Forest District Council).

Downton – One property was affected internally in early November 2000. It is likely that flooding was caused to surface water runoff and inadequate drainage. (Data source: New Forest District Council).

Sway – Two properties were affected internally in early November 2000. It is likely that flooding was caused to surface water runoff and inadequate drainage. (Data source: New Forest District Council).

Everton – Two properties were affected externally in early November 2000. It is likely that flooding was caused to surface water runoff and inadequate drainage. (Data source: New Forest District Council).

Lyndhurst – Three properties were affected externally in early November 2000. It is likely that flooding was caused to surface water runoff and inadequate drainage. (Data source: New Forest District Council).

Minstead – One property was affected internally in early November 2000. It is likely that flooding was caused to surface water runoff and inadequate drainage. (Data source: New Forest District Council).

Bransgore – One property was affected internally in early November 2000. It is likely that flooding was caused to surface water runoff and inadequate drainage. (Data source: New Forest District Council).

Winsor – One property was affected internally in early November 2000. It is likely that flooding was caused to surface water runoff and inadequate drainage. (Data source: New Forest District Council).

Keyhaven – One property was affected externally in early November 2000. It is likely that flooding was caused to surface water runoff and inadequate drainage. (Data source: New Forest District Council).

Boldre – One property was affected internally in early November 2000. It is likely that flooding was caused to surface water runoff and inadequate drainage. (Data source: New Forest District Council).

New Milton – Three properties were affected internally and three externally in early November 2000. It is likely that flooding was caused to surface water runoff and inadequate drainage. (Data source: New Forest District Council).

Barton-on-Sea – Two properties were affected externally in early November 2000. It is likely that flooding was caused to surface water runoff and inadequate drainage. (Data source: New Forest District Council).

East Hampshire

Bishops Waltham – One property reported external flooding on 6th November. (Data source: telephone conversation).

Wallington – 65 properties were affected by flooding, in the North Wallington and Wallington Shore Road area on the night of 5th/6th November. 46 properties were flooded internally and 19 externally. Wallington Shore Road and North Wallington were also flooded. Flooding occurred because the defences on the River Wallington through the village were exceeded. The situation was exacerbated by water backing up against the footbridge over the river where the river defences were lower. Flooding was worsened at the southern end of Wallington Shore Road due to the failure of a third party tidal defence. (Data source: Agency Questionnaire).

Upham – One property was internally flooded due to surface runoff. Some road was also reported in the area. Flooding continued for a number of weeks, as groundwater levels remained high. (Data source: Winchester City Council, telephone conversation).

Titchfield – Two properties are known to have been flooded internally and six externally. (Data source: Agency Questionnaire and telephone conversations).

Wickham – 24 properties are known to have been affected by flooding (ten internally and 19 externally) in the Fareham Road area. This occurred due to a combination of the River Meon overtopping its banks and poor drainage. (Data sources: Agency Questionnaire and site visit)

Droxford – One property is known to have been flooded internally on the night of 5th/6th November 2000 due to the River Meon overtopping its banks. (Data source: telephone conversation).

Meonstoke – On the night of 5th/6th November the River Meon overtopped its banks at the northern end of the village. Flooding continued for a number of weeks due to high river levels in the River Meon, high groundwater levels, surface water runoff and inadequate drainage. Five properties are known to have been affected by flooding (three internally and two externally). Road flooding and extensive field flooding was reported in the area. (Data source: Agency Questionnaire, site visit and telephone conversations).

Corhampton – On the night of 5th/6th November the River Meon overtopped its banks. Flooding continued for a number of weeks due to high river levels in the River Meon, high groundwater levels, surface water runoff and inadequate drainage. Eight properties were affected by flooding (two flooded internally, one experienced cellar flooding only, and five external flooding). Road flooding and extensive field flooding was also reported. (Data source: Agency Questionnaire, site visit and telephone conversation).

Exton – On the night of 5th/6th November the River Meon overtopped its banks upstream of the village. Flooding continued for a number of weeks due to high river levels in the River Meon, high groundwater levels, surface water runoff and inadequate drainage. 15 properties are known to have been affected by flooding (six internally and nine externally). Road flooding also occurred in the village and there was some field flooding reported. (Data source: Agency Questionnaire and site visit).

Warnford – Ten properties are known to have been affected by flooding (three internally and seven externally). Some road flooding also occurred in the village. Flooding occurred due to groundwater and poor drainage. The River Meon did not go out of bank through this village. (Data source: Agency Questionnaire and site visit).

West Meon – On the night of 5th/6th November the River Meon overtopped its banks upstream of the village. Flooding continued for a number of weeks due to high river levels in the River Meon, high groundwater levels, surface water runoff and inadequate drainage. Floodwater became contaminated with sewage due to overflowing of some septic tanks in the village. 33 properties are known to have been affected by flooding (13 internally, 18 externally and an additional two properties experience cellar flooding). Road flooding also occurred in the village and there was some field flooding reported. (Data source: Agency Questionnaires and site visit).

Frogmore – On the night of 5th/6th November river levels in the Meon were high and flooding occurred to eight properties (two internally and six externally) due to river levels and surface water runoff. Some properties were flooded as the stop log defences at Frogmore were not in position and therefore water was able to flood onto the footpath. Flooding continued for a number of weeks due to high river levels in the River Meon, high groundwater levels and surface water runoff. (Data source: Agency Questionnaire and site visit).

Swanmore – Two properties were affected by external flooding due to surface water and inadequate drainage. (Data source: telephone conversation).

Denmead – Two properties were affected by flooding due to surface water and blocked highway drains. (Data source: telephone conversation)

Newtown – One property was flooded internally due to an inadequate culvert. (Data source: telephone conversation).

Havant – Two properties were affected by external flooding due to overtopping streams and inadequate culverts. (Data source: telephone conversation).

Isle of Wight

Brading - Seven properties in Nicholas Close were affected by flooding (six externally and one internally) due to the overtopping of an ordinary watercourse. (Data source: Agency Questionnaire).

Cowes – Three properties were flooded (one internally and two externally) due to surface water runoff. (Data source: telephone conversation).

Newport – Three properties were flooded internally due to surface water runoff. (Data source: telephone conversation).

Gunville – One properties was flooded externally due to the overtopping of an ordinary watercourse. (Data source: telephone conversation).

5.2.5 November 2000 to May 2001

Test Valley

Netley Marsh – One property was affected externally in mid November 2000. It is likely that flooding was caused to surface water runoff and inadequate drainage. (Data source: New Forest District Council).

Calmore – One property was affected externally in mid November 2000. It is likely that flooding was caused to surface water runoff and inadequate drainage. (Data source: New Forest District Council).

Bartley – Two properties were affected externally in mid November 2000. It is likely that flooding was caused to surface water runoff and inadequate drainage. (Data source: New Forest District Council).

Romsey

Middlebridge Street – One property (Public House) reported internal flooding. (Data source: telephone conversation)

Other - Two properties in Green Hill View reported external flooding and a further property in Romsey reported internal flooding. (Data source: Agency Questionnaire and telephone conversation)

Rivermead Close – 21 properties were affected by externally flooding as the River Test overtopped its banks. A further property experienced cellar flooding.

Budds Lane – Fishlake Stream, a ‘main river’ overtopped its banks in mid December 2000. Water then flowed across the water meadows and into the Budds Lane area. Four residential properties were internally flooded and three further residential properties experienced external flooding. In addition eight industrial units were flooded internally and a further seven were affected externally. Road flooding and field flooding was also reported in the area. Two further properties reported flooded (one internal and one external). Flooding continued for a number of weeks due to high groundwater levels. (Data source: Agency Questionnaire)

King’s Somborne – Flooding in the village was caused due to rising groundwater and overtopping of the Sombourne Stream. One property reported external flooding and some road flooding was experienced.

Pitton – Floodwater originated from high groundwater levels further upstream in the valley, and then flowed into Pitton as surface water runoff. Peak flooding occurred in early February 2001.

The water flowed down the High Street causing external flooding to 17 properties. Flooding continued for a number of weeks, as groundwater levels have remained high. The extent of flooding was reduced significantly as Salisbury District Council carried out extensive sandbagging and pumping prior and throughout the event. (Data source: Agency Questionnaire)

Nether Wallop – In mid December 2000 the Wallop Brook, a ‘main river’, overtopped its banks in the village. Overtopping occurred at The Old Forge, and water began to flow into the village. Villagers worked hard so as to prevent flooding to Rose Cottages, and diverted the water flow down Church Lane. Eight properties were flooded internally and a further eight affected externally due to the overtopping of the Wallop Brook. Flooding continued until early January 2001 due to high groundwater levels and surface water runoff. (Data source: Agency Questionnaire)

Stockbridge – Throughout autumn 2000 and winter 2001 groundwater levels were rising in the area causing surface water runoff. Road flooding occurred in the village, and one property reported internal flooding. Flooding continued for a number of weeks due to high groundwater levels.

Broughton – One property reported internal flooding. (Data source: telephone conversation)

Monkton – One property reported internal flooding. (Data source: telephone conversation)

Weyhill Bottom – On 14 December 2000 Hampshire County Council accidentally released water from Appleshaw, so causing water to flow down into Weyhill Bottom. There was flooding to four properties (two internally and two externally) in the village and extensive road flooding. Flooding continued for a number of weeks due to high groundwater levels and surface water runoff. (Data source: Agency Questionnaire)

Rambridge Park – In late December 2000 springs began to reappear north of Rambridge Park. Two properties were externally flooded due to surface water runoff originating from

these springs. Flooding continued for a number of weeks due to high groundwater levels and surface water runoff. (Data source: Agency Questionnaire)

Kimpton – In early December 2000 huge amounts of surface water began to runoff from the surrounding fields north of Cow Lane. Water then flowed down Cow Lane, Kimpton Road and into The Green due to an inadequate drainage system. High groundwater levels caused some springs to reappear in the south of the village causing further flooding

28 properties were affected (seven internally and 21 externally) due to high groundwater levels and surface water runoff. An additional two were affected by external flooding due to reappearing springs. Flooding continued through to mid February due to high groundwater levels and Southern Water pumped the local stream for short periods until May to keep the sewerage system clear. (Data source: Agency Questionnaire)

Penton Mewsey – River flows in the River Anton were very high in November and December 2000 due to the high quantity of rainfall that had fallen in recent months. The Saw Mill experienced extensive external flooding but there was no reported internal property flooding in the area. Flooding continued for a number of weeks due to high groundwater levels

Appleshaw – Groundwater levels began to rise in the village during November 2000. A number of properties experienced cellar flooding but no further internal flooding was reported. The exact addresses are unknown and are therefore not included in the address list. Some road flooding was reported in the area. Flooding continued for a number of weeks due to high groundwater levels and surface water runoff and was exacerbated by inadequate drainage. (Data source: Agency Questionnaire)

Hatherden – Flooding commenced mid December 2000. Three properties (including the Public House) were flooded internally, two experienced cellar flooding (including Hatherden Primary School) and a further five were affected by external flooding due to surface water runoff originating from the springs near Hatherden Farm. The situation was worsened, as the drainage system along the main road is inadequate and was unable to cope with the large quantities of water. Levels peaked in February 2001 and flooding continued for some properties into March 2001. (Data source: Agency Questionnaire)

St Mary Bourne and Swampton – In early December 2000 the Bourne Rivulet, a 'main river' overtopped its banks at the upstream end of the villages. 14 properties (two internally and 12 externally) were affected by a combination of the overtopping river and high groundwater levels. Flows rose continually during the autumn 2000 and peaked in late December at 4 m³/s and again in February. Flooding continued in the village up to mid February due to high groundwater levels and surface water runoff.

Flooding would have been worsened had not the Environment Agency and local authority undertaken preventative prior to the beginning of the flooding event. Prior to flooding the Environment Agency and Basingstoke and Deane District Council had placed a number of sandbags along the riverbanks to prevent overtopping of river banks or third party defences. Consequently there was no internal flooding in the village due to fluvial flooding.

The large quantities of groundwater caused the surcharging of Southern Waters sewer system onto the streets. This also caused water levels in toilets to be high and therefore unusable. People throughout the village were only able to use their toilets after the Southern Water tanker had pumped away large quantities of water. There is one report of a property having its bathroom flooded on two separate occasions due to the surcharging of the sewerage system. Southern Water was involved in pumping water out throughout the event.

There was also extensive field flooding and road flooding in the area during the flood event. (Data source: Agency Questionnaire)

Stoke – During December 2000 the Bourne Rivulet, a ‘main river’, overtopped its banks through the village of Stoke. The water from the river then flowed through the village causing road flooding. 12 properties were affected directly by water overtopping from the ‘main river’ (two internally and ten externally). Flooding continued for a number of weeks due to high groundwater levels and surface water runoff. (Data source: Agency Questionnaire)

Hurstbourne Tarrant – In December 2000 the Bourne Rivulet, a ‘main river’, and a tributary running down Netherton Valley to Hurstbourne Tarrant (non main river) overtopped causing some flooding to the village. Further flooding in the village was caused due to rising groundwater levels and surface water runoff. No property flooding was reported but road flooding occurred in the village. Flooding continued for a number of weeks due to high groundwater levels event. (Data source: Agency Questionnaire)

Upton – During autumn 2000 and winter 2001 groundwater levels rose continually and began to cause flooding in mid December 2000. A number of springs also began to reappear during this time causing surface water runoff. Ten properties were affected by floodwater (one internally, three experienced cellar flooding and six externally). Flooding continued for a number of weeks due to high groundwater levels and surface water runoff. Levels remained high until June 2001 when they started to fall rapidly. (Data source: Agency Questionnaire)

Deane – One property reported cellar flooding. Overtopping of the River Test caused internal flooding to three or four properties. The exact addresses of these properties is not known and therefore are not included in the address list.

Chilbolton – One property reported internal flooding. (Data source: telephone conversation)

Barton Stacey – Throughout autumn 2000 and winter 2001 groundwater levels were rising in the area causing surface water runoff. Road flooding occurred in the village, but no internal property flooding was recorded in the area. Flooding continued for a number of weeks due to high groundwater levels

Sutton Scotney – Throughout the autumn 2000 and winter 2001 groundwater levels rose significantly and from mid December 2000 large quantities of surface water runoff came off the South Down and into the village of Sutton Scotney. The situation in the village was worsened as springs also began to reappear in the village.

The surface water runoff accumulated in the area above Victoria Hall car park. The surface water caused flooding at this location, as the culvert which runs under the main road of the

village was of inadequate size and not totally free from debris. It was therefore unable to cope with all the water and the water ran across the road to Witts Cottage, which was internally flooded. Water then continued to flow north up Oxford Street causing road flooding. Further up Oxford Street water was unable to enter drains and ditches due to blockages and therefore the water remained above ground causing flooding to 19 properties along Oxford Street (six internally and 13 externally).

Flooding continued until mid February 2001 due to high groundwater levels and surface water runoff. (Data source: Agency Questionnaire)

Wonston – One property reported cellar flooding. (Data source: telephone conversation)

Stoke Charity – One property reported internal flooding. (Data source: telephone conversation)

West Stratton – The road through West Stratton was flooded due to high groundwater levels. One property experienced cellar flooding. Flooding continued for a number of weeks, as groundwater levels remained high. (Data source: Winchester City Council)

Vernham Dean – The lower parts of the village were affected by flooding due to rising groundwater. Groundwater levels at the George Inn rose rapidly from 101.07m AOD on 18th September to 127.30m AOD on 20th December. From mid December peak groundwater fell through to early February 2001 when then rose again and peaked at 124.98m AOD. The high groundwater levels mainly caused problem with septic tanks, and no internal flooding has been reported.

Rookley – Throughout Autumn 2000 and Spring 2001 groundwater levels were rising in the area causing surface water runoff. Road flooding occurred in the village, but no internal property flooding was recorded in the area. Flooding continued for a number of weeks due to high groundwater levels.

Farley – One property reported external flooding. (Data source: Agency Questionnaire)

Itchen Valley

Shirley – One property reported cellar flooding. (Data source: telephone conversation)

Fishers Pond – High groundwater levels caused flooding to four properties (one internally, three externally) along Hensting Lane in December 2000. Flooding continued for a number of weeks, as groundwater levels remained high. Part of Hensting Lane was closed due to flooding.

Owslebury – Stags Lane was flooded due to high groundwater levels in mid December 2000. One property reported internal flooding and a further property was flooded externally. Flooding continued for a number of weeks, as groundwater levels remained high. (Data source: Winchester City Council)

Twyford – Groundwater levels in the Twyford area began to rise in October/November 2000. There were large volumes of surface water runoff from the surrounding South Downs,

causing flooding to properties. Flooding occurred in Hazeley Road due to rising groundwater and in Finches Lane due to an inadequate culvert. Flooding continued for a number of weeks, as groundwater levels remained high.

Morestead – High groundwater levels and poor drainage caused flooding at the pond crossroads in mid December 2000. There was no reported internal property flooding. Flooding continued for a number of weeks, as groundwater levels remained high. (Data source: Winchester City Council)

Hursley – Groundwater levels in the Hursley area began to cause flooding in mid December 2000. High groundwater levels in Hursley village directly caused flooding to 16 properties (three internally, nine cellar and four externally) along Main Road.

In addition groundwater caused surcharging of the Southern Water sewer system, causing additional flooding in Southend Close. Flooding experienced in this area of Hursley was therefore contaminated with sewage. Four properties experienced flooding (two internally and two externally) in this area. (Data source: Agency Questionnaire)

Winchester

Park Avenue – The Art College and St Bedes School were flooded internally. Park Avenue was also flooded. (Data source: Winchester City Council)

River Park – The Leisure Centre was flooded internally and River Park was flooded extensively. (Data source: Winchester City Council)

Durngate Terrace – The road was flooded. (Data source: Winchester City Council)

The Broadway – During mid December 2000 surface water culverts along The Broadway were surcharging causing street flooding. The culverts were unable to discharge into the River Itchen due to the high water levels. (Data source: Winchester City Council, site visit)

Bridge Street – One property experienced internal flooding due to high river levels in the River Itchen. (Data source: site visit)

Water Lane – The River Itchen overtopped its banks causing road flooding upstream of City Mill. (Data source: Winchester City Council)

College Street – Abbey Mill Stream was backing up due to high volumes of water and therefore causing internal flooding to parts of Pilgrims School. (Data source: Winchester City Council)

Other – Three further properties in the town reported cellar flooding. (Data source: telephone conversation)

Littleton – Properties were internally flooded along Main Road and North Drive due to high groundwater levels and surface water runoff. The exact addresses are unknown and are therefore not included on the address list. Also properties in Pitter Close were flooded internally as their private pumping station became inundated due to the high volumes of

water, therefore flood water was contaminated with sewage. However again the exact addresses are unknown. The situation was worsened due to an inadequate drainage system in the village.

The Andover Road entrance of the Sir John Moors Barracks experienced extensive external flooding due to high groundwater levels. Flooding continued for a number of weeks, as groundwater levels remained high. (Data source: Winchester City Council)

King's Worthy – Groundwater levels began to rise in the hills above Kings Worthy through autumn 2000 and winter 2001. In early December 2000 this caused surface water runoff to drain down the valley into King's Worthy. The situation was worsened as the ditches and culverts in the village were inadequate for dealing with the volume of floodwater that occurred throughout the event.

Some properties was flooded internally in Springvale Road but the exact addresses are unknown and are therefore not included in the address list. Springvale Road was closed due to fast flowing groundwater between Lovedon Lane and Bedfield Lane. Flooding continued for a number of weeks, as groundwater levels remained high. (Data source: Winchester City Council)

Easton – The River Itchen overtopped its banks in mid December 2000 at the northern end of the village causing flooding to one property. Flooding continued for a number of weeks, as groundwater levels remained high. (Data source: Winchester City Council and residents correspondence)

Martyr Worthy – Throughout autumn 2000 and winter 2001 groundwater levels were rising in the area causing surface water runoff. Road flooding occurred in the village at the bottom of Chilland Lane and Church Lane, but no internal property flooding was recorded in the area. Flooding continued for a number of weeks due to high groundwater levels remained high. (Data source: Winchester City Council, Letter from Itchen Valley Parish Council)

Chilland – One property reported internal flooding. (Data source: telephone conversation)

Itchen Abbas – The River Itchen overtopped its banks in mid December 2000 causing flooding of the B3047. No internal property flooding was reported. Flooding continued for a number of weeks, as groundwater levels remained high. (Data source: Winchester City Council)

Brown Candover and Chilton Candover – Groundwater levels in the area began to rise during autumn due to excessive rainfall amounts. These high groundwater levels began to cause flooding in early December 2000, with old springs to reappearing in the village.

Eleven properties were affected by flooding (four internally and seven externally). The main road through the village was flooded and extensive field flooding also occurred. The situation was worsened as the culverts in the village were inadequate to cope with the volumes of water. The main road through the village became the secondary river channel.

Flooding continued for many weeks, as groundwater levels remained and only started to fall in late May 2001. (Data source: Agency Questionnaire and site visit)

Preston Candover – 24 properties were affected by flooding (12 internally, two experienced cellar flooding and ten externally). The Rector of Preston Candover reported on 20th February that five properties had been evacuated in the village. The main road through the village was flooded and extensive field flooding also occurred. The situation was worsened due to an inadequate drainage system in the village. Flooding continued for a number of weeks, as groundwater levels remained high and only started to fall in late May 2001. (Data source: site visit)

Old Alresford – Groundwater levels began to rise in Old Alresford throughout autumn 2000 and spring 2001. Levels were high and began to cause flooding mid December 2000. The rise in groundwater levels caused old springs to reappear in the village.

Eight properties in the Kiln Lane area of the village were flooded internally due to springs and surcharging sewers. The main road through the village was also flooded.

In addition two further properties on the western side of the village were affected externally due to surface water runoff from the surrounding hills.

Flooding continued for many of weeks, as groundwater levels remained high and continued into May. (Data source: Agency Questionnaire and site visit)

Bishops Sutton – Two properties experienced cellar flooding due to rising groundwater. Flooding continued for a number of weeks, as groundwater levels remained high. (Data source: RCC fax and telephone conversation)

Ropley – The A31 was closed due to fast flowing groundwater. There was no reported internal property flooding. Flooding continued for a number of weeks, as groundwater levels remained high. (Data source: Winchester City Council)

Cheriton – The River Itchen exceeded its banks in mid December 2000 in the centre of the village as the bridges were inadequate to cope with the flow. This caused flooding of 30 properties (ten internally and 20 externally). There was extensive flooding of the village green and some road flooding was reported. The situation was worsened as water was also unable to leave the village quickly and easily due to the poor drainage system in the village. Flooding continued for a number of weeks, as groundwater levels remained high. (Data source: Agency questionnaire, site visit)

Bramdean – Groundwater levels began to rise on the hills above Bramdean throughout autumn 2000 and spring 2001 due to excessive rainfall amounts. In early December 2000 groundwater levels were so high that water began to flow off the hills and into the village. The rise in groundwater levels caused old springs to reappear in the village.

During the flood event seven properties were affected internally, four experienced cellar flooding and four were flooded externally. Extensive field flooding also occurred. The A272 was also closed due to fast flowing groundwater. The situation in Bramdean was worsened, as the drainage system in the village was inadequate to deal with the flood flows.

Flooding continued for a number of weeks, as groundwater levels remained high and was still continuing late January 2001. (Data source: Agency Questionnaires, site visits)

New Forest

Ashley – One property was affected externally in mid November 2000. It is likely that flooding was caused to surface water runoff and inadequate drainage. (Data source: New Forest District Council).

Milford on Sea – One property was affected internally and four externally in mid November 2000. It is likely that flooding was caused to surface water runoff and inadequate drainage. (Data source: New Forest District Council).

Lymington – One property was affected internally and three externally in mid November 2000. It is likely that flooding was caused to surface water runoff and inadequate drainage. (Data source: New Forest District Council).

Pennington – Three properties were affected externally in mid November 2000. It is likely that flooding was caused to surface water runoff and inadequate drainage. (Data source: New Forest District Council).

Hythe – One property was affected externally in mid November 2000. It is likely that flooding was caused to surface water runoff and inadequate drainage. (Data source: New Forest District Council).

Everton – One property was affected externally in mid November 2000. It is likely that flooding was caused to surface water runoff and inadequate drainage. (Data source: New Forest District Council).

Boldre – One property was affected externally in mid November 2000. It is likely that flooding was caused to surface water runoff and inadequate drainage. (Data source: New Forest District Council).

Totton – One property was affected externally in mid November 2000. It is likely that flooding was caused to surface water runoff and inadequate drainage. (Data source: New Forest District Council).

East End – One property was affected internally in mid November 2000. It is likely that flooding was caused to surface water runoff and inadequate drainage. (Data source: New Forest District Council).

East Hampshire

Durley – Manor Road was flooded probably due to surface water drainage. due to high groundwater levels. There was no reported internal property flooding. (Data source: Winchester City Council)

Curdridge – The road was flooded. There was no reported internal property flooding. Flooding continued for a number of weeks, as groundwater levels remained high. (Data source: Winchester City Council)

Chalton – One property reported internal flooding. (Data source: email from RCC)

Bursledon – One property reported external flooding. (Data source: telephone conversation)

Dean – Groundwater levels in Dean were high throughout the autumn and winter of 2000/2001. There was no reported internal property flooding although cellars were affected. Flooding continued for a number of weeks, as groundwater levels remained high. Some property owners dug trenches which helped drain water locally. (Data source: Winchester City Council)

Bishops Waltham – A number of properties were flooded as the north and south pond at Bishops Waltham overtopped their banks. Sheltered housing for the elderly had to be evacuated. The exact addresses of all the flooded properties are unknown and are not included on the address list. The high water levels also caused flooding to the Lower Lane car park and the footbridge at St Bonnet Drive. Flooding continued for a number of weeks, as groundwater levels remained high. (Data source: Winchester City Council)

East Meon – One property reported internal flooding. (Data source: telephone conversation)

West Meon – One property reported internal flooding. (Data source: telephone conversation)

Titchfield – One property reported internal flooding. (Data source: telephone conversation)

Wickham – A number of properties had to be evacuated in December due to overtopping of the River Meon. The exact addresses of the properties are unknown and are therefore not included in the address list. (Data source: telephone conversation and Winchester CC)

Havant – One property reported external flooding. (Data source: telephone conversation)

Hamble – One property reported internal flooding. (Data source: telephone conversation)

Soberton – Groundwater flooding in the village began in early November and continued to late March 2001. In total groundwater flooding affected four properties internally. Flooding continued for a number of weeks, as groundwater levels remained high. These high volumes of water also caused the council sewage works to be inundated and therefore some toilets were unusable. Some road flooding was also reported in the area. (Data source: Winchester City Council)

Hayling Island – Two properties reported external flooding. (Data source: telephone conversation)

Denmead – A number of properties were flooded. However the exact addresses are unknown and are therefore not included in the address list.

Hambledon – Over 130 properties in the village were affected by flooding.

- In East Street 18 properties were flooded internally, 24 experienced cellar flooding only and a further 12 properties were affected externally.

- In High Street and Church Lane one property was flooded internally, six experienced cellar flooding only and a further nine properties were affected externally.
- In West Street, Speltham Hill and Vicarage Lane nine properties were flooded internally, seven experienced cellar flooding only and a further four properties were affected externally.
- In outer West Street, Cams Hill, Worlds End Road and Hoe 12 properties were flooded internally, eleven experienced cellar flooding only and a further nine properties were affected externally.
- In Green Lane 12 properties were flooded internally, and a further four properties were affected externally.
- Flooding continued for a number of weeks, as groundwater levels remained high. The exact addresses of all the properties are unknown and therefore not all are included in the address list. However the map does not indicate all flooded properties.

Beeches Hill – Beeches Hill experienced groundwater flooding. No internal property flooding was reported. Flooding continued for a number of weeks, as groundwater levels remained high. (Data source: Winchester City Council)

Finchdean – 12 properties were flooded internally and a further seven were affected externally.

Rowlands Castle - 12 properties (three internally and nine externally) have been flooded in Dean Lane End. Some road flooding was also reported in the area. Two significant water flows combine at Dean Lane End. The Lavant Stream flows down the eastern side of the railway alongside Dean Lane End to Finchdean Road, passing under the road bridge at Dean Lane End and then down the valley to Rowlands Castle. This watercourse normally flows for a few weeks every year and causes no problems to properties. A further flow of water passed under the railway bridge. The water from the road is not drained away adequately and flooding under the railway bridge occurs. Flooding continued for a number of weeks, as groundwater levels remained high.

Isle of Wight

Wootton – One property reported internal flooding. (Data source: telephone conversation)

Date		Location	No of properties flooded internally	No of properties with flooded cellars	No of properties flooded externally	Cause of flooding and further comments
15 th September 2000	Itchen Valley	Eastleigh	1			
	New Forest	Hythe	1			
	East Hampshire	Fareham	2		3000	Surface water runoff/inadequate drainage
		Gosport	6			Failure of Eastney Pumping Station
		Portsea Island	200			Surface water runoff/inadequate drainage
		Waterlooville	6			Surface water runoff/inadequate drainage
		Havant	25			Surface water runoff/inadequate drainage
		Hayling Island	2			Surface water runoff/inadequate drainage
		Emsworth	5			Surface water runoff/inadequate drainage
		Rowlands Castle	3			Surface water runoff/inadequate drainage
	Isle of Wight	Wootton	1			
		Ryde	20			
		Seaview	2			
		Shanklin	5			
		Freshwater	1			
	Total		280		3000	
09 th - 16 th October 2000	East Hampshire	Wallington	1		3	
		Gosport *	10			
		Waterlooville	8			Surcharging of Southern Water sewer
	Isle of Wight	Newchurch	3		1 2	Overtopping of Eastern Yar
		Alverstone	2			Overtopping of Eastern Yar
		Ryde	74			
		Newport	5			
		Seaview	4			
		Sandown	5			
		Whitley Bank	1			
		Whitwell	2			
		Shanklin	2			
		Godshill	2			
		Lake	1			
		Brading	1			
		Sandford	2			
		Bembridge	4			
		Niton	1			

Date		Location	No of properties flooded internally	No of properties with flooded cellars	No of properties flooded externally	Cause of flooding and further comments
29 th – 31 st October 2000		Atherfield	1			
		Merstone	1			
		Wroxall	1			
		Totals	131		6	
	Test Valley	Totton	5		4	Overtopping of ordinary watercourse/surface water runoff
		Woodlands	1		1	
		Calmore	1		3	Surface water runoff/inadequate drainage
		Bartley	3		1	Overtopping of ordinary watercourse
		Cadnam	3		2	
		Copythorne	1		1	
		Ashurst	1		1	
		Romsey	1			
	Itchen Valley	West End	1			Overtopping of River Itchen
		Chandlers Ford	1			
	New Forest	Marchwood	3			
		Everton			1	
		Brockenhurst	6		2	
		Sway	3		2	
		New Milton	1		2	
		Milford-on-Sea			2	
		Hordle			2	
		Boldre			1	
		Pilley			1	
		Lyndhurst			1	
		Hythe	2		1	
		Keyhaven			1	
		Lymington			3	
		Downton	1			
		Minsted	1			
	East Hampshire	Hayling Island	14			
		Waterlooville	2			
		Havant	1			
		Purbrook	2			
		Emsworth	4			
		Total	58		32	

Date		Location	No of properties flooded internally	No of properties with flooded cellars	No of properties flooded externally	Cause of flooding and further comments
5 th – 8 th November 2000	Test Valley	Ashurst			1	
		Calmore	2		1	
		Cadnam	2		5	
		Totton			2	
		Woodlands	1		2	
		Bartley	2		2	
		Ower	1			
		Sherfield English	1			
		Romsey	2	1	2	
		Stockbridge		2		
	Itchen Valley	Southampton	1			
		Eastleigh	2			
		Colden Common			1	
	New Forest	Brockenhurst			5	
		Hordle			7	
		Lymington	6		11	
		Pennington	4		4	
		Milford-on-Sea	2		1	
		East End	1			
		Downton	1			
		Sway	2			
		Everton			2	
		Lyndhurst			3	
		Minstead	1			
		Bransgore	1			
		Winsor	1			
		Keyhaven			1	
		Boldre	1			
		New Milton	3		3	
		Barton-on-Sea			2	
	East Hampshire	Bishops Waltham			1	
		Wallington	46		19	Overtopping of River Wallington
		Upham	1			
		Titchfield	2		6	Overtopping of River Meon
		Wickham	10		19	Overtopping of River Meon

Date	Location		No of properties flooded internally	No of properties with flooded cellars	No of properties flooded externally	Cause of flooding and further comments
		Droxford	1			Overtopping of River Meon Overtopping of River Meon Overtopping of River Meon Overtopping of River Meon Overtopping of River Meon Overtopping of River Meon Overtopping of River Meon
		Meonstoke	3		2	
		Corhampton	2	1	5	
		Exton	6		9	
		Warnford	3		7	
		West Meon	13	2	18	
		Frogmore	2		6	
		Swanmore			2	
		Denmead	1			
		Newtown	1			
		Havant			2	
	Isle of Wight	Cowes	1		2	Overtopping of ordinary watercourse
		Newport	3			
Brading		1		6		
Gunville				1		
	Total		133	6	161	
November 2000 – May 2001	Test Valley	Netley Marsh			1	Overtopping of River Test Overtopping of River Test
		Calmore			1	
		Bartley			2	
		Romsey				
		Middlebridge Street	1			
		Other	1		2	
		Budds Lane	13		11	
		Rivermead Close	21	1		
		Kings Sombourne			1	
		Pitton			17	
		Nether Wallop	8		8	
		Stockbridge	1			
		Broughton	1			
		Monkton	1			
		Weyhill Bottom	2		2	
		Rambridge Park			2	
		Kimpton	7		21	
		Penton Mewsey			1	

Date		Location	No of properties flooded internally	No of properties with flooded cellars	No of properties flooded externally	Cause of flooding and further comments
		Hathenden	3	2	5	Groundwater
		St Mary Bourne	2		12	Overtopping of Bourne Rivulet/ Groundwater
		Stoke	2		10	
		Upton	1	3	6	
		Deane *	4			
		Chilbolton	1			
		Sutton Scotney	6		13	Groundwater/surface water runoff/inadequate drainage
		Wonston		1		
		Stoke Charity	1			
		West Stratton		1		
		Farley			1	
	Itchen Valley	Shirley		1		
		Fishers Pond	1		3	Groundwater springs
		Owlsebury	1		1	
		Twyford *	5			
		Hursley	5	9	6	Groundwater
		Winchester	5	3		Groundwater
		Littleton *	8			
		Headbourne Worthy	1		12	
		Kings Worthy *	5			
		Easton	1			
		Chilland	1			
		Brown Candover	2		4	Groundwater/surface water runoff/inadequate drainage
		Chilton Candover	2		3	Groundwater/surface water runoff/inadequate drainage
		Preston Candover	12	2	10	Groundwater/surface water runoff/inadequate drainage
		Old Alresford	8		2	Groundwater/surface water runoff
		Bishops Sutton		2		Groundwater
		Cheriton	10		20	Overtopping of River Itchen/groundwater
		Bramdean	7	4	4	Groundwater/surface water runoff/inadequate drainage
	New Forest	Ashley			1	
		East End	1			
		Totton			1	
		Everton			1	
		Boldre			1	

Date	Location		No of properties flooded internally	No of properties with flooded cellars	No of properties flooded externally	Cause of flooding and further comments	
		Milford-on-Sea	1		4		
		Lymington	1		3		
		Pennington			3		
		Hythe			1		
	East Hampshire	Chalton	1				
		Bursledon				1	
		Bishops Waltham	10				
		East Meon	1				
		West Meon	1				
		Titchfield	1				
		Wickham *	5				Overtopping of River Meon
		Havant				1	
		Hamble	1				
		Soberton	4				
		Hayling Island				2	
		Denmead *	10				
		Hambleton	53	48	28		Groundwater/surface water runoff/inadequate drainage
		Rowlands Castle	3		9		Groundwater/surface water runoff/inadequate drainage
	Finchdean	12		7		Groundwater/surface water runoff/inadequate drainage	
Isle of Wight	Wootton	1					
Total		256	77	244			
Grand totals			858	83	3443		

* Indicates the number of properties flooded at this location are estimate

5.3 LOCATION OF SUPPORTING DOCUMENTATION

Throughout the autumn and winter of 2000 and 2001 much information and data was collected.

5.3.1 Aerial Photography and Video Footage

Some aerial photography and video footage was recorded for flooding of the Eastern Yar and the River Meon. A copy of these videos is located in the Hampshire Area Flood Defence Office.

5.3.2 Photographs

Numerous photographs were taken during the autumn 2000/winter 2001 flooding event for a large number of sites. A selection of photographs taken during the event at various sites throughout Hampshire and Isle of Wight showing the extent of flooding and operational work undertaken is included in Appendix K. All photographs are saved in g/Common/Flood Defence/ Photographs/Strategic Planning/Photographs/ Photographs Flooding events/2000-1.

5.3.3 Agency Questionnaires

Questionnaires were sent to properties in the affected areas throughout the Hampshire and Isle of Wight areas. Questionnaires have only been retained and are located in the Hampshire Area Flood Defence Office.

5.3.4 Press Releases

A large number of press releases were issued between Autumn 2000 and Spring 2001, regarding the flooding situation. Press releases are produced by region, and therefore the flooding situation within Hampshire and the Isle of Wight is included in the flooding situation for Southern Region (Kent, Sussex, Hampshire and the Isle of Wight). Copies of all press releases are located on the Agency Intranet.

5.3.5 Press Cuttings

The flooding event was given much media coverage, and a large number of press cuttings were collated from the event. All press cuttings are located in the Hampshire Area Flood Defence Office.

5.3.6 Additional Mapping

Portsmouth City Council provided the Agency with a map of Portsmouth and Southsea indicating all areas affected by flooding due to the failure of Eastney pumping station. The map also located discharge points.

5.3.7 Incident Room Log Sheets

A majority of the calls received were later than 5th November were recorded on incident room log sheets. The log sheets include information on the location of the flooding problem, the

flooding problem and advice given. These are located in the Hampshire Area Flood Defence Office.

5.3.8 Other

Portsmouth – Further information regarding the flooding of Portsmouth due to the failure of Eastney pumping station can be found in the Hampshire Area Environmental Protection Office.

Property Flooded – Local Authorities have also been involved in the collation of flooding incidents from surface water and non-main rivers, and therefore some data is available at the local authorities. However the quality and quantity of data held up the local authorities is very variable.

5.4 PERFORMANCE OF DATA COLLECTION ACTIVITIES

Following the event a number of data collection activities were undertaken:

5.4.1 Aerial Photography and Video Footage

- Aerial photography and video footage of the Eastern Yar flown Wednesday 11/10/00.
- Aerial photography and video footage of the Meon and Eastern Yar valleys flown Tuesday 7th November 2000.

Aerial photography and video footage provides useful information for a large area. This information is most useful at the peak of flooding, however useful at any point during the flood event. The photograph can record the sequence of flooding and a lower bound of the flood envelope that the maximum recorded.

5.4.2 Site Visits

During the event Agency staff visited a number of sites to determine the extent of flooding. Data collected during the event was useful, however affected properties could only be determined if pumps were in operation or if staff could see the water in the property. Therefore it is likely that not all properties affected internally were noted.

For the earlier events Agency staff/ Consultants visited the site a significant time after the event. Data collected during this event was again useful, but it is unlikely that all flooded properties were noted due to the time lapse, and therefore a significant reduction in water levels.

5.4.3 Questionnaires

Questionnaires were sent to the properties at the following locations:

- Titchfield, Wickham, Meonstoke, Corhampton, Exton, Warnford, West Meon and Frogmore in early November.

- Wallington in early November.
- Brading, after flooding caused by the overtopping of an ordinary watercourse.
- Hounsdown, New Forest after flooding caused by the overtopping of an ordinary watercourse.
- Alverstone and Newchurch in the Eastern Yar catchment.
- Upton, Stoke, St Mary Bourne, Kimpton, Weyhill Bottom, Rambridge Park, Appleshaw, Hatherden, in late November 2000 and mid February 2001.
- Preston Candover, Chilton Candover, Brown Candover, Old Alresford, Bramdean, Cheriton between late November 2000 and mid February 2001.
- Hambledon, Finchdean, Rowlands Castle, Soberton between late November 2000 and mid February 2001.

Questionnaires provide much useful information about flooding from individual properties. However approximately 40% of questionnaires are returned and therefore the extent of flooding to other properties is unknown.

5.4.4 Photographs

During the events or following the events flood defence and multi-functional staff took photographs of flooding. Photographs provide a very useful snapshot of the situation in individual areas.

5.4.5 Local Authorities Data

During the flood event a number of people may contact local authorities and therefore they may hold some relevant flooding information. Following the event local authorities were contacted by the Agency in order to obtain information.

5.4.6 Fire and Rescue Service Data

The Isle of Wight Fire and Rescue Service has sent a list of properties that they know to have been flooded i.e. properties requiring pumping out. This list is reliable and is a good source of data. However the Fire Service will only be interested in the properties which were flooded internally and required pumping and therefore does not give an overview of the extent of the flooding.

5.4.7 Telephone Conversation

Information received from telephone calls can be unreliable.

5.5 RECOMMENDATIONS

SO/H/EI/1 Local Drainage Problems

<u>Issue</u>	<p>Many properties in the Hampshire Area were flooded totally or partly due to blocked and inadequate drainage systems.</p> <p>The Environment Agency does not maintain surface water gullies, although it does have a supervisory duty in relation to drainage issues. The Agency could collect data from flood events so that persistent problems can be brought to the attention of the local authority. It is considered that a regularly maintained surface water drainage system would reduce the areas flooded and hence the number of properties flooded. However, the reduction in storage on flooded roads together with more rapid concentration of flow may increase flood levels downstream.</p> <p>At present highway drainage systems are designed for a 1 in 1 or 1 in 2 year return period, therefore the drains were unable to cope with a majority of the rain.</p>
<u>Recommendation</u>	<ul style="list-style-type: none"> • The drainage system design standard should be reviewed for future schemes.

SO/H/EI/2 Regulations

<u>Issue</u>	<p>Some properties in the flooded areas had the floor level significantly above the ground level, and were only externally flooded. If a minimum difference between the ground level and floor level was required a number of properties would have been prevented from such extensive flooding. However such a planning requirement presents conflicts with building regulations which require wheelchair access for all new developments.</p>
<u>Recommendation</u>	<ul style="list-style-type: none"> • A planning requirement should be a minimum height difference between the ground level and floor level

SO/H/EI/3 Funding for Flood Prevention Works

<u>Issue</u>	<p>Flooding in Hampshire and the Isle of Wight was from main river, surface water, ordinary watercourses, highways drainage and groundwater.</p> <p>A single statutory authority, either the Agency or a local authority, be designated to undertake works to prevent flooding. Further resources,</p>
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	<p>both financially and staff, would be required. However as a minimum it is recommended the Agency collect information regarding flooding due to ordinary watercourses and present this data to local authorities. This will give an opportunity for people to appreciate the flooding problems caused by ordinary watercourses and apply political pressure for additional funding.</p> <p>In addition many incidents were due to minor flooding and could be solved, with only minor works being carried out. It is recommended that a grant system is introduced so as individual householders or statutory authorities are able to undertake such minor works to ordinary watercourses.</p>
<u>Recommendations</u>	<ul style="list-style-type: none"> • Further funding is required for works to main river and ordinary watercourses

SO/H/EI/4 Data Collection

<u>Issue</u>	<p>Much of the data quoted above has been collated from telephone calls, Agency questionnaires and local councils. However the reliability of this data is uncertain and it is therefore recommended that each site affected by flooding is visited during the flood event where practical so as to assess the exact extent of the flooding.</p> <p>Many calls received by Floodline are from very worried members of the public and therefore the information received often tends to exaggerate the extent and depth of flooding. It is therefore difficult to assess the extent of flooding.</p> <p>Questionnaires are sent out to all main areas affected by flooding. However not all questionnaires are returned and therefore the extent of the flooding is not known.</p> <p>Liaison with the Association of Parish Councils and individual Parish Councils throughout the event would be helpful and may lead to further details being known about the event itself. It was discovered in late March 2001 that the Association of Parish Councils had devised a questionnaire to send to individual councils to determine the extent of the flooding in the area. It would have been useful if such questionnaires could have been done jointly between the Agency and the Parish Councils.</p> <p>The overall number of properties that flooded during the Autumn 2000 to Spring 2001 event was estimated from site visits significantly after the flood event. This delay is not desirable, but as no site visits had recorded data previously this was the most effective way to estimate the</p>
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	total number of properties affected, both externally and internally.
<u>Recommendations</u>	<ul style="list-style-type: none">• Agency staff to confirm extent of flooding after flood events.• Increased communication with Parish Councils

SO/H/EI/5 Questionnaires

<u>Issue</u>	The percentage of returns is unknown as no record is kept of the exact addresses where questionnaires are delivered. It would be useful if this was recorded so as the efficiency of the sending of questionnaires could be determined.
<u>Recommendation</u>	<ul style="list-style-type: none">• Record number and location to where questionnaires were delivered so as return rate can be estimated or non-returns pursued.

6 PUBLIC RELATIONS

6.1 INTRODUCTION

Public relations are taking an increasingly major role in flood events, not only to help disseminate the warnings but also to provide information to the public through news broadcasts and printed media. Through television and radio the Agency can reach many more people with its warnings than the AVM direct warning service which can be vital for visitors to the area and those on the move.

The Agency has a pro-active approach to public relations, issuing press releases to fill in more details than given with the warnings and arranging interviews/photo shoots. This has established a positive relationship with the press which the Agency seeks to maintain.

6.2 OVERVIEW OF MEDIA RESPONSE

Throughout Autumn 2000 and Spring 2001 there has been considerable media interest. Media activities included radio interviews by Agency staff, a radiophone in, public meetings, TV interviews, telephone interviews for the press and press releases. The Area Manager, Flood Defence and Water Resources staff mainly fielded these activities.

Generally there was high and positive media interest, with media being helpful.

Details of media activities are shown in Appendix L.

6.3 SPECIFIC ISSUES

6.3.1 Portsmouth

On Friday 15th September 2000 Southern Water Services Eastney pumping station failed, flooding about 200 homes in the Southsea area of Portsmouth with raw sewage. The incident attracted a huge amount of media attention due to the human interest angle, which included an infant school flooded with up to 30cm of sewage and the children had to be evacuated. Other stories included homes being demolished, the risk of electrocution and sewage related illness. On the evening of the event, the Agency was the only organisation willing to be interviewed with the Hampshire Area Manager appearing live on the BBC.

From a public relations point of view the incident was difficult to handle as the media were looking to the Agency as regulators to control and punish Southern Water for the pollution.

A news release was issued on Monday 18th September 2000 entitled, 'Environment Agency investigates Portsmouth and Southsea incident', which mentioned that a preliminary report would be available from the Agency by the 20th September. By this stage the local newspaper, The Portsmouth News (circulation 73,000 per day) was running updates on the story on the front page every morning.

Pressure was put on the Agency when it was obliged to give the water company emergency permission to pump the sewage into Eastney Lake on the banks of the wildlife haven of

Langstone Harbour. The Portsmouth News has front headlines such as 'Tide of Filth' and although the dilution factor meant that there was no long term threat to the lake, public perception was of irreversible damage.

The interim report was issued and the Hampshire Area Manager and Environment Protection Manager attended a public meeting on the incident on Monday 2nd October 2000.

6.3.2 Ryde

A particular problem with the situation at Ryde is that some people had been flooded three (in a few cases four) times in the last two years. There are a few people in the area wishing to attribute blame to the Agency for the situation and these seemed to include Local Councillors.

In general the tone of the interviews was aggressive to the Agency at the beginning of the event "how many times do these people need to be flooded before something is done?" but got more sympathetic after scale of the events in Sussex and Kent became apparent. For example the BBC at the public meeting at Ryde on 11th October, seemed to be trying to 'hype' the public reaction.

6.4 RECOMMENDATIONS

SO/H/PR/1 Public Meetings

<u>Issue</u>	Public meetings give an opportunity for the both the Agency and members of the public to express their opinion on the flooding event.
<u>Recommendation</u>	<ul style="list-style-type: none">• Undertake public meetings where possible

7 HEALTH AND SAFETY

7.1 OVERVIEW OF HEALTH AND SAFETY ARRANGEMENTS

Health and Safety is of paramount importance during a flood event and there are a number of considerations to be taken into account if working outside the office.

7.1.1 General Safety Considerations

- The EA safety directives must be complied with.
- Site specific risk assessments for structures are available and must be read before entering the site. Health and safety codes of practice, management procedures manual and risk management manual are available in the office.
- A list of PPE must be completed and kept up to date. This will be checked every six months, and equipment missing will be replaced. No person should go to site without this minimum equipment.
- The ODO and all operation standby must be fully aware of the requirements for the emergency procedures for any construction work.
- In the event of construction work requiring to be done the EWF/Contractor must comply with the emergency risk assessment
- If an asset with known electric supply fails then an electrician must be in attendance to ensure the structure is safe before gaining access.
- If for any reason the officer is uncertain about safety on a site then always have two people in attendance. This applies to all occasions.

Call Outs during Normal Working Hours

Lone Working and health and safety policy of the Agency must be followed. A generic risk assessment is available and must be read and complied with. Site specific risk assessments are available.

Call Outs outside Normal Working Hours

If the site is within a public area and with adequate lighting then lone working may be appropriate but in all other cases there should always be two persons in attendance for safety. The other person may be a standby officer or arrangements made with Emergency Work Force (EMF). On the Isle of Wight the other person maybe a fellow office worker (there is a standby list) or one of the Contractors employees. Those called out must phone the ODO when arriving on site and when returned as an added safety measure. The ODO keeps a log of all those called out including EWF and contractor staff. The responsibility for checking the safety of the EWF/Contractor lies with EDO/Contractor.

7.2 HEALTH AND SAFETY DURING EVENT

There were no specific health and safety issues during the event.

7.3 RECOMMENDATIONS

<u>SO/H/HS/1 Lone Working</u>	
<u>Issue</u>	There is an increased awareness and adoption of improved procedures for monitoring of lone workers from the AIR. If people are lone working it is important that they can easily be contacted at all times and that they may contact someone easily at all times.
<u>Recommendation</u>	<ul style="list-style-type: none">• Ensure lone working procedures are adhered to.

<u>SO/H/HS/2 Training</u>	
<u>Issue</u>	A number of staff in the Area office were recruited via Changing Needs in Flood Defence and therefore were new to the Agency at the. They had not undergone appropriate training for health and safety issues and it was not appropriate to send them on to site. Health and safety should be a high priority for new staff so as all staff can be fully utilised in the flood event.
<u>Recommendation</u>	<ul style="list-style-type: none">• Ensure all staff are trained appropriately.

8 REFERENCES

Bullen Consultants (May 2000). Monkton Mead Flood Alleviation Study. Draft Engineers Report. Environment Agency, Southern Region

Environment Agency (September 2000). Hampshire Area Flood Warning Procedures – Volume 1 Flood Warning Duty Officer

Environment Agency (September 2000). Hampshire Area Flood Warning Procedures – Volume 2 Assistant Flood Warning Duty Officer

Environment Agency (September 2000) Area Operations Procedures Operation Duty Officer

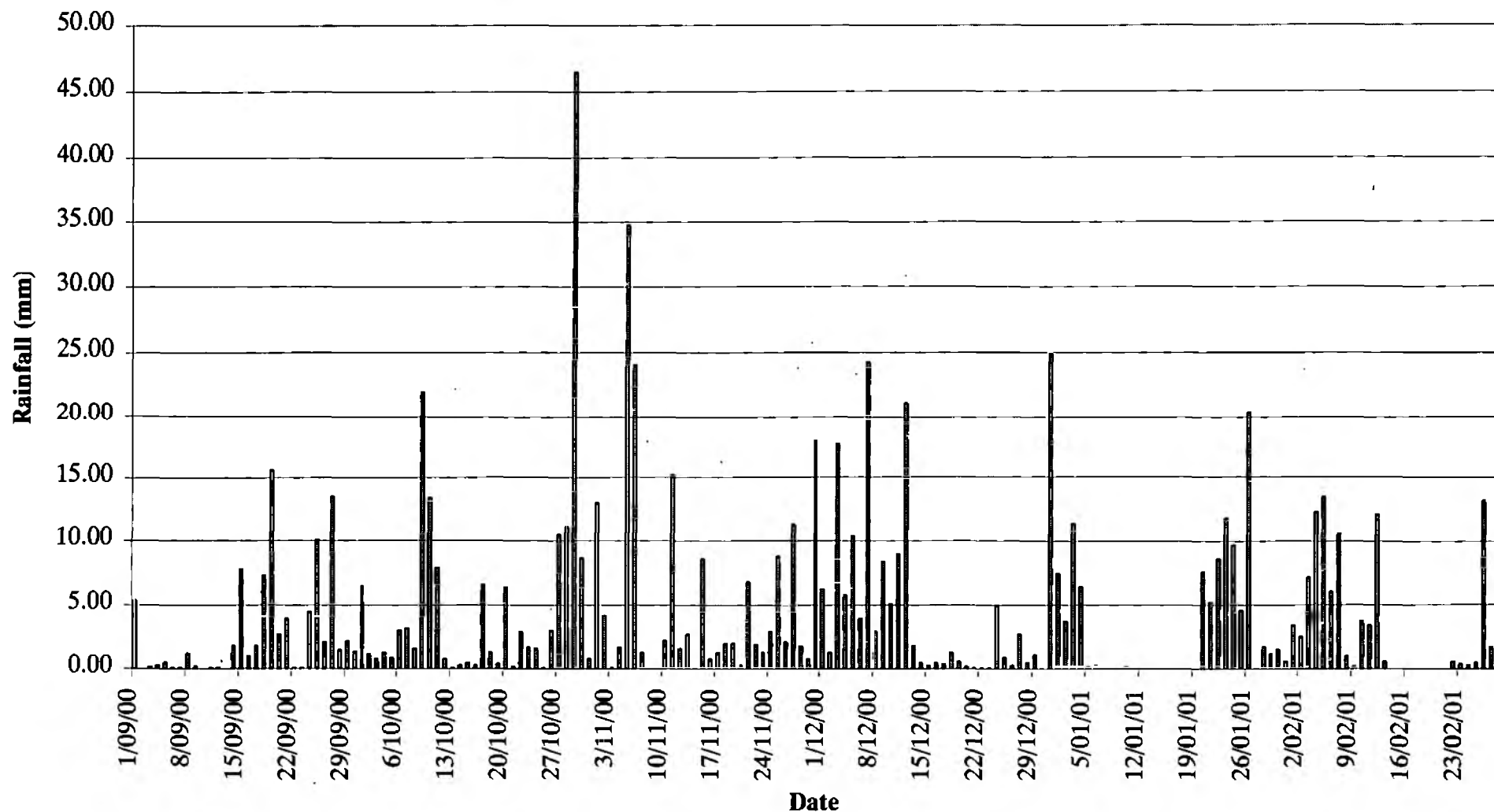
Environment Agency (September 2000) Hampshire and Isle of Wight Area Incident Procedures

Environment Agency (October 2000) Autumn 2000 Floods Review Regional Report

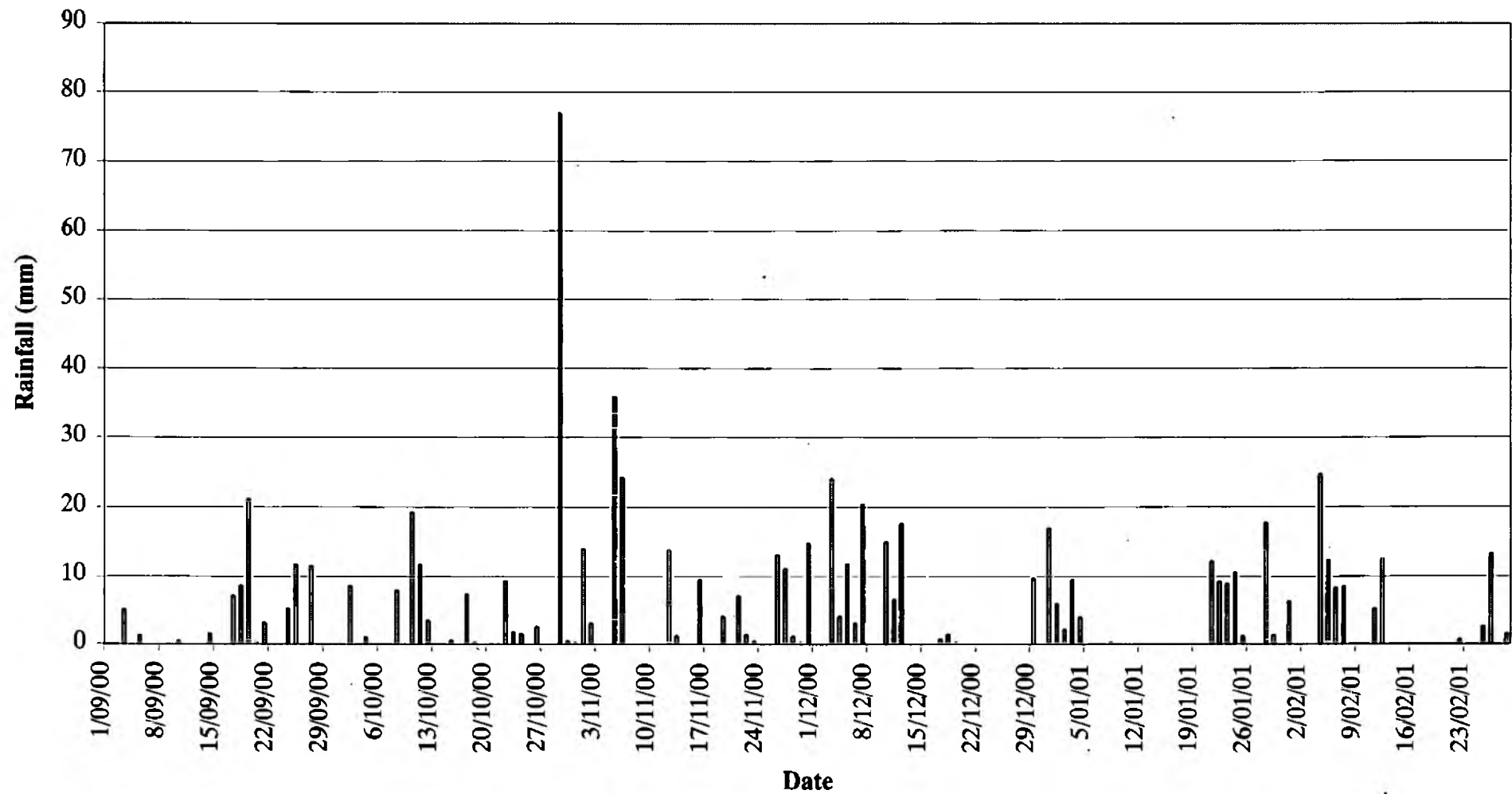
APPENDIX A: Rainfall Data

The following pages contain rainfall data for selected sites in the Hampshire and Isle of Wight Area.

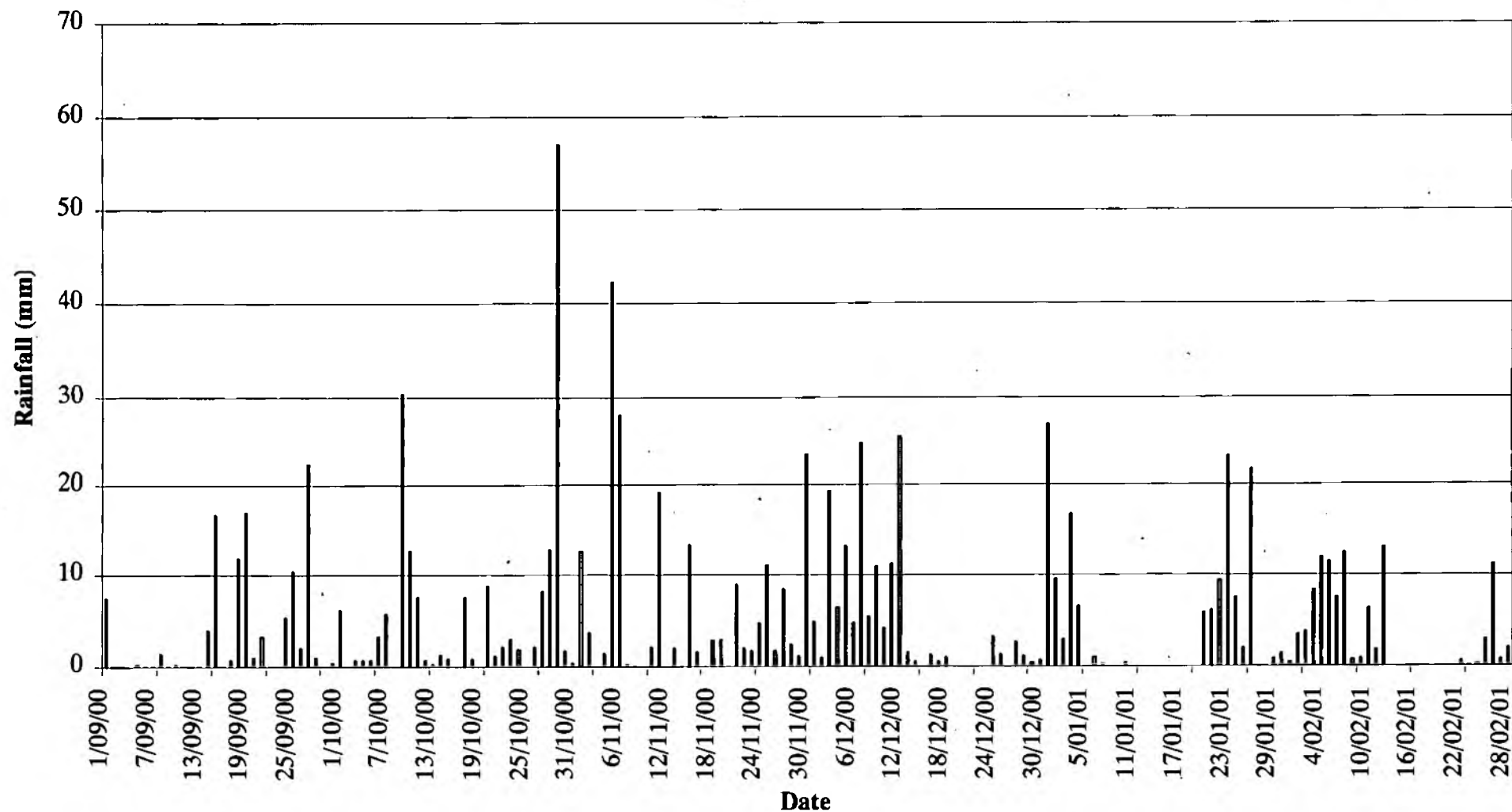
A bar chart to show average daily rainfall totals in the River Test catchment



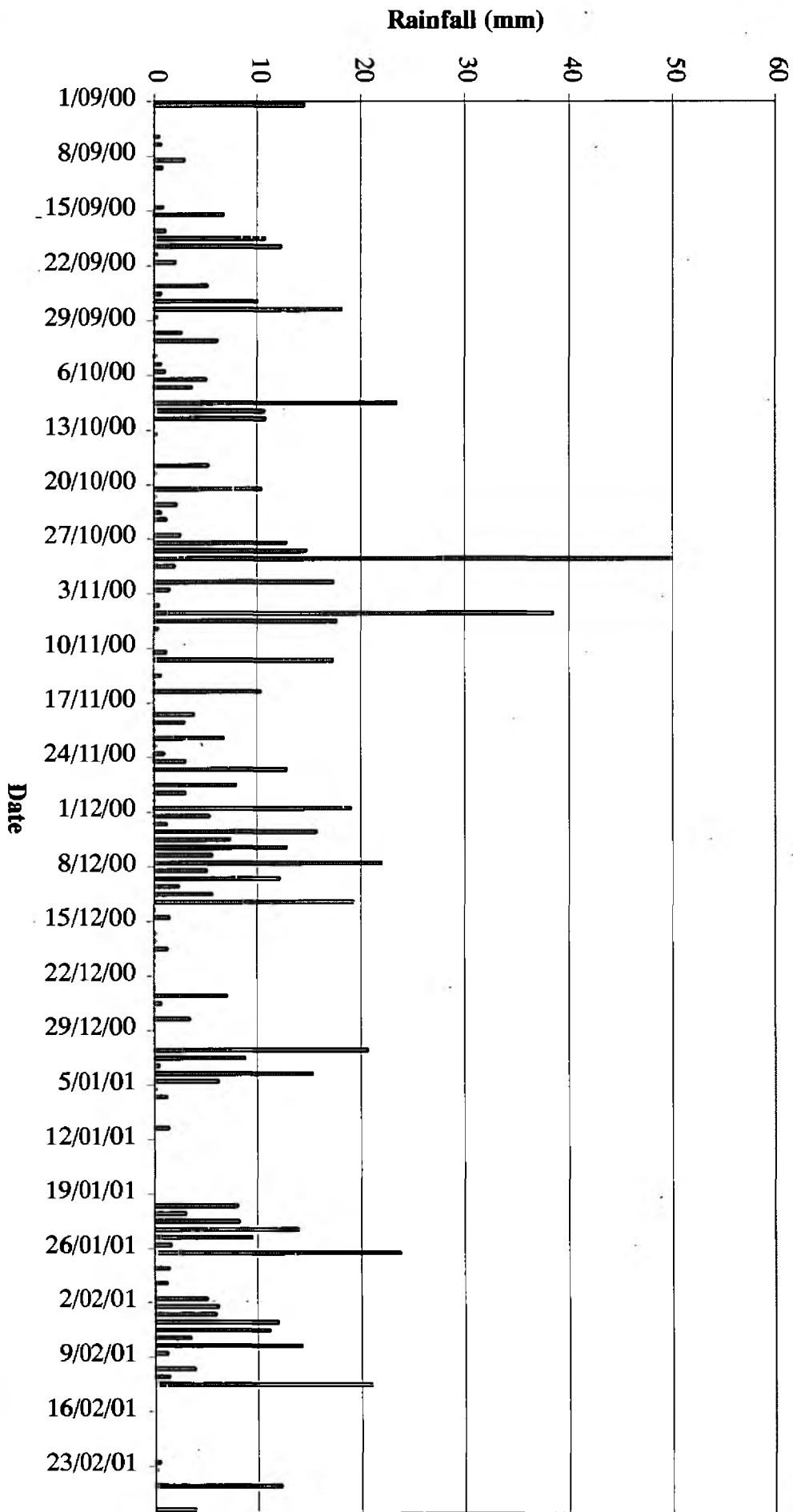
A bar chart to show daily rainfall totals at Andover



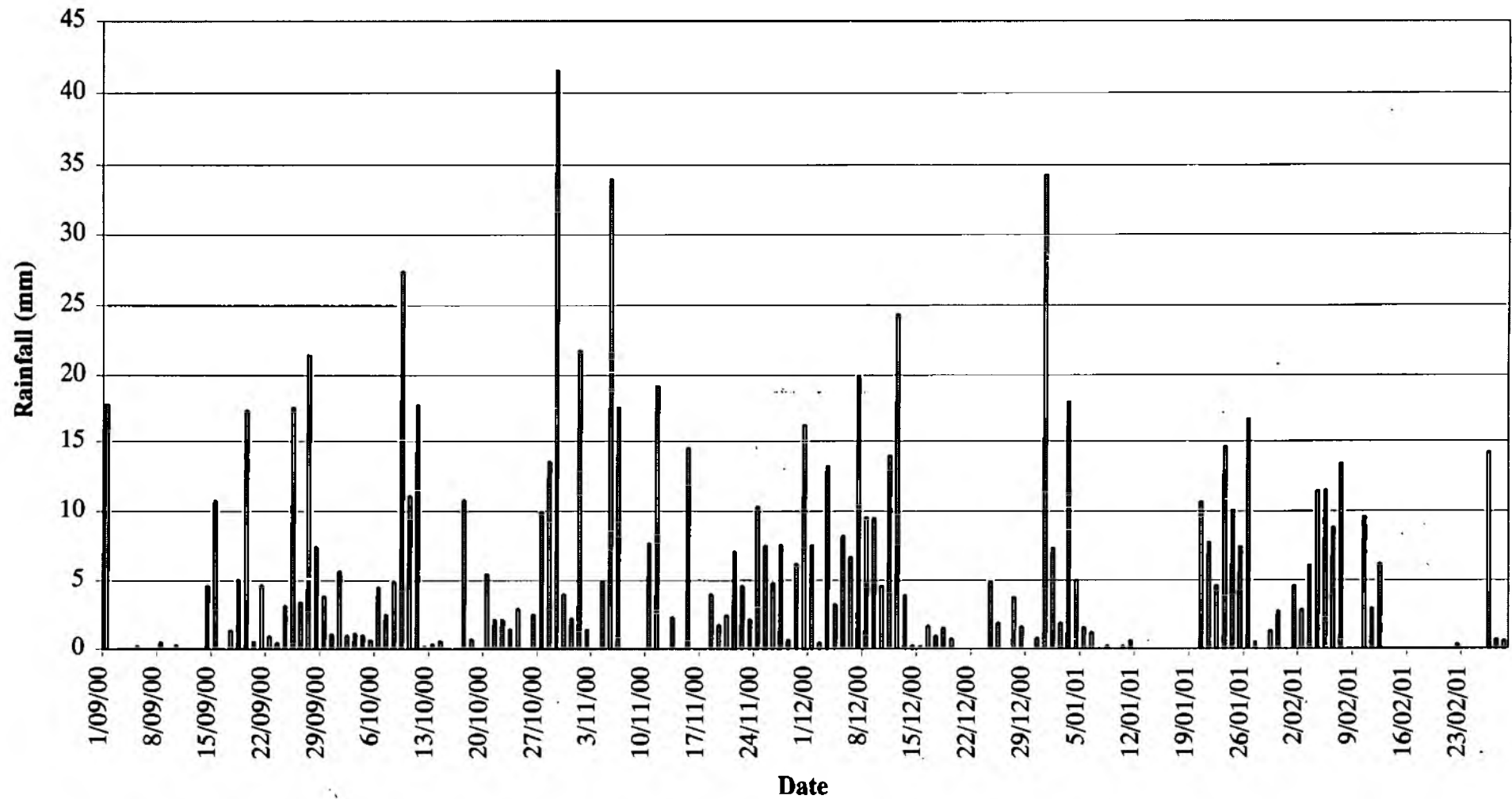
A bar chart to show average daily rainfall totals in River Itchen catchment



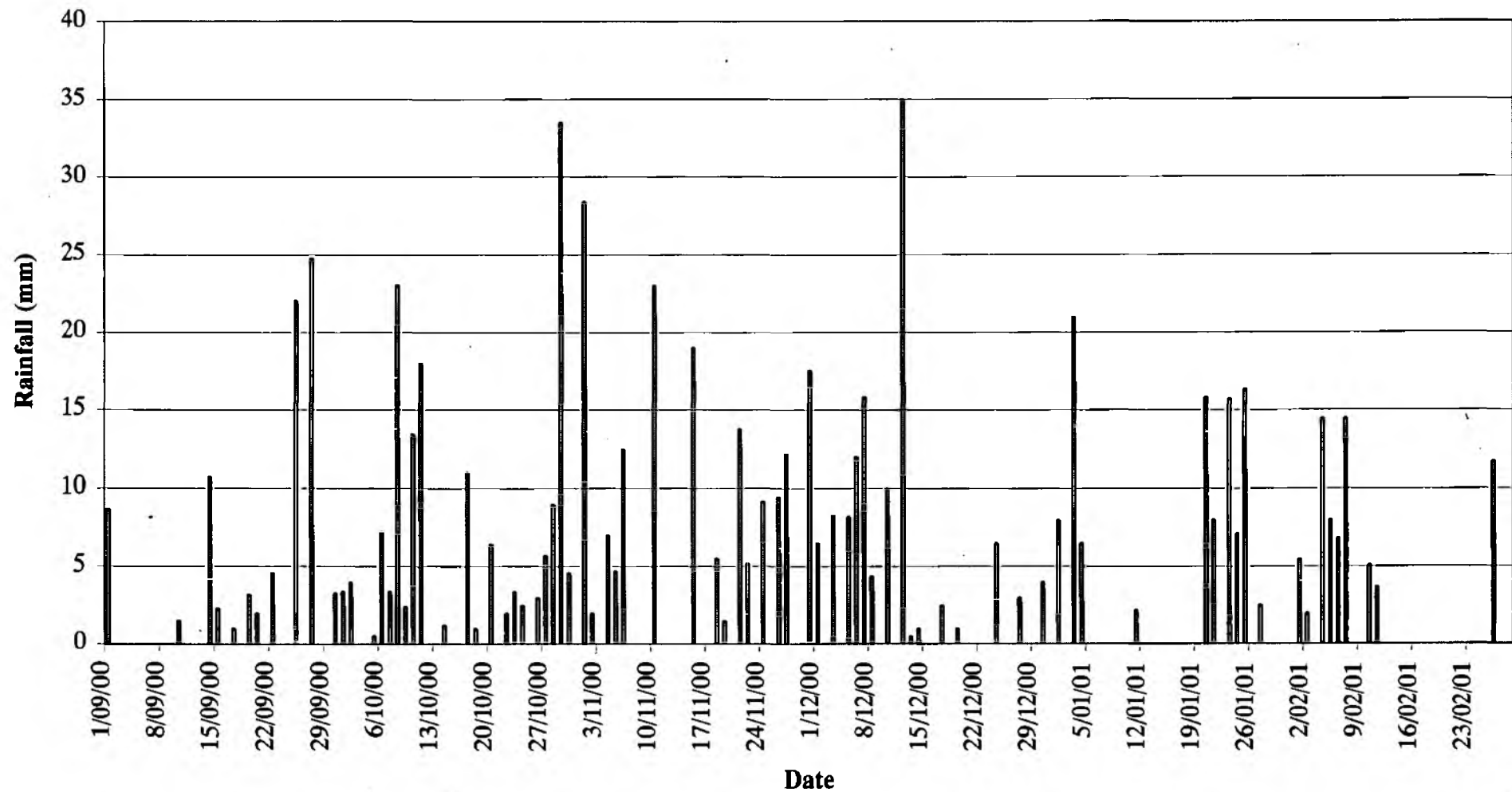
A bar chart to show daily rainfall totals at Preston Candover



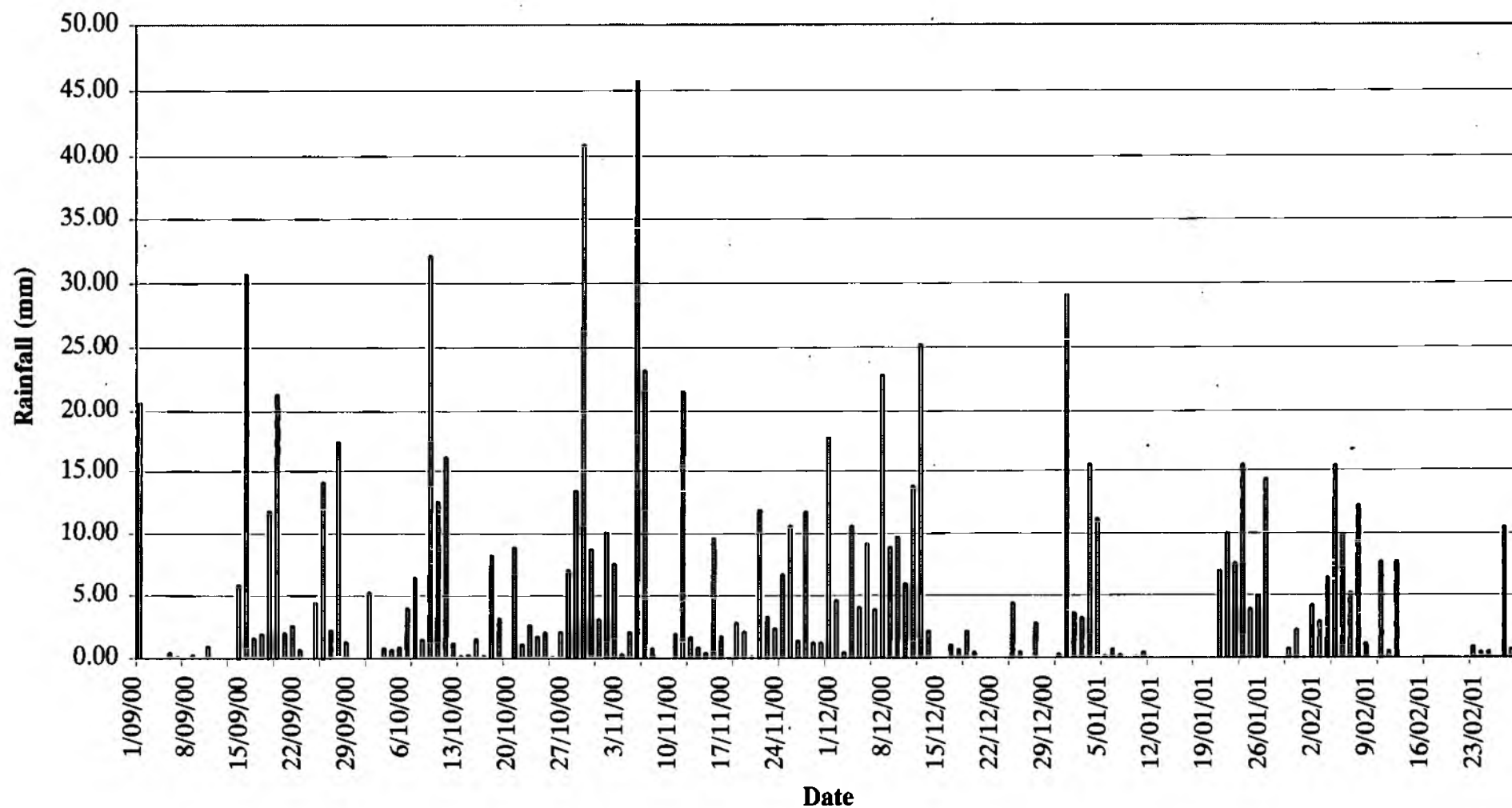
A bar chart to show average daily rainfall totals in the New Forest

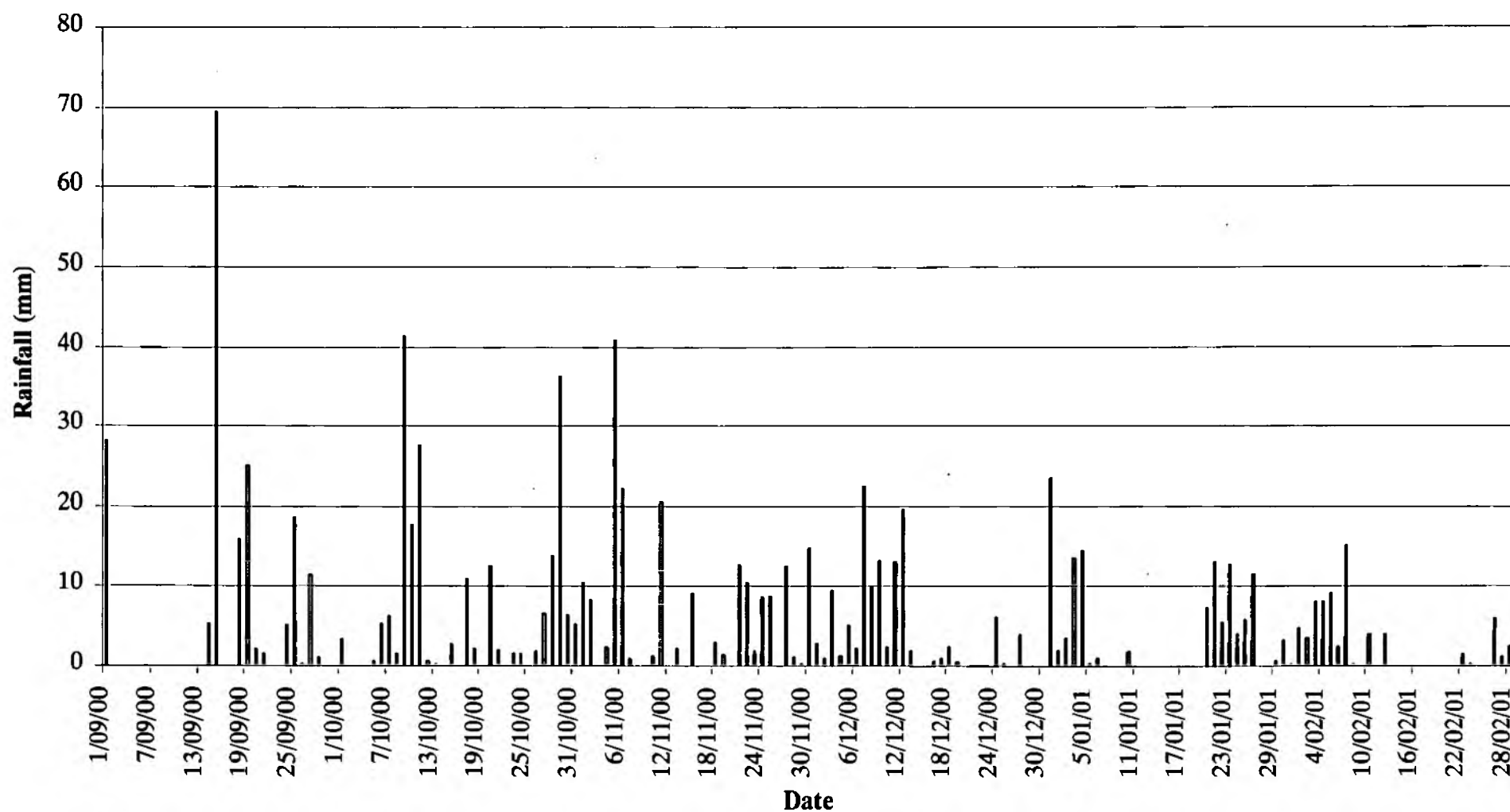


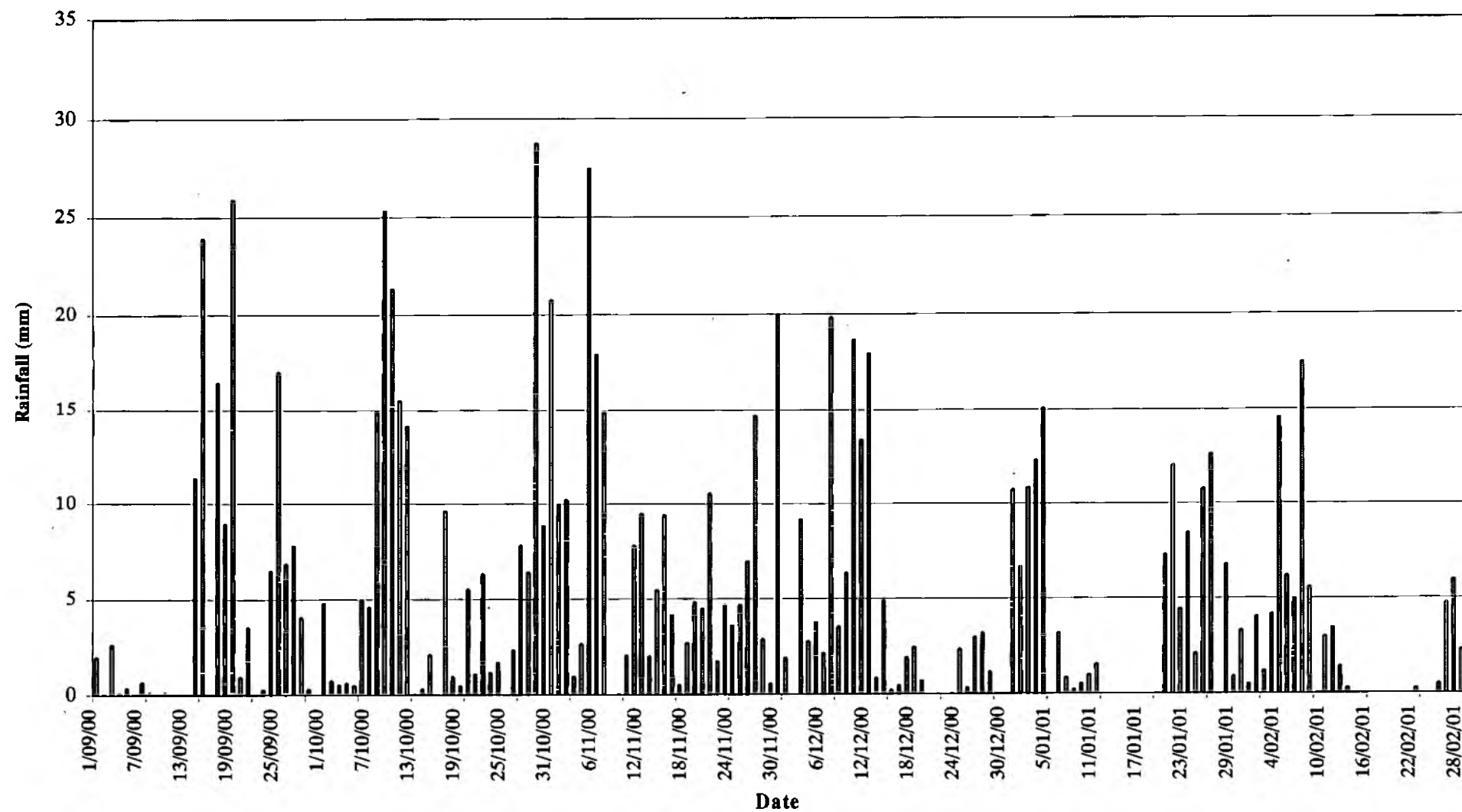
A bar chart to show daily rainfall totals at New Milton



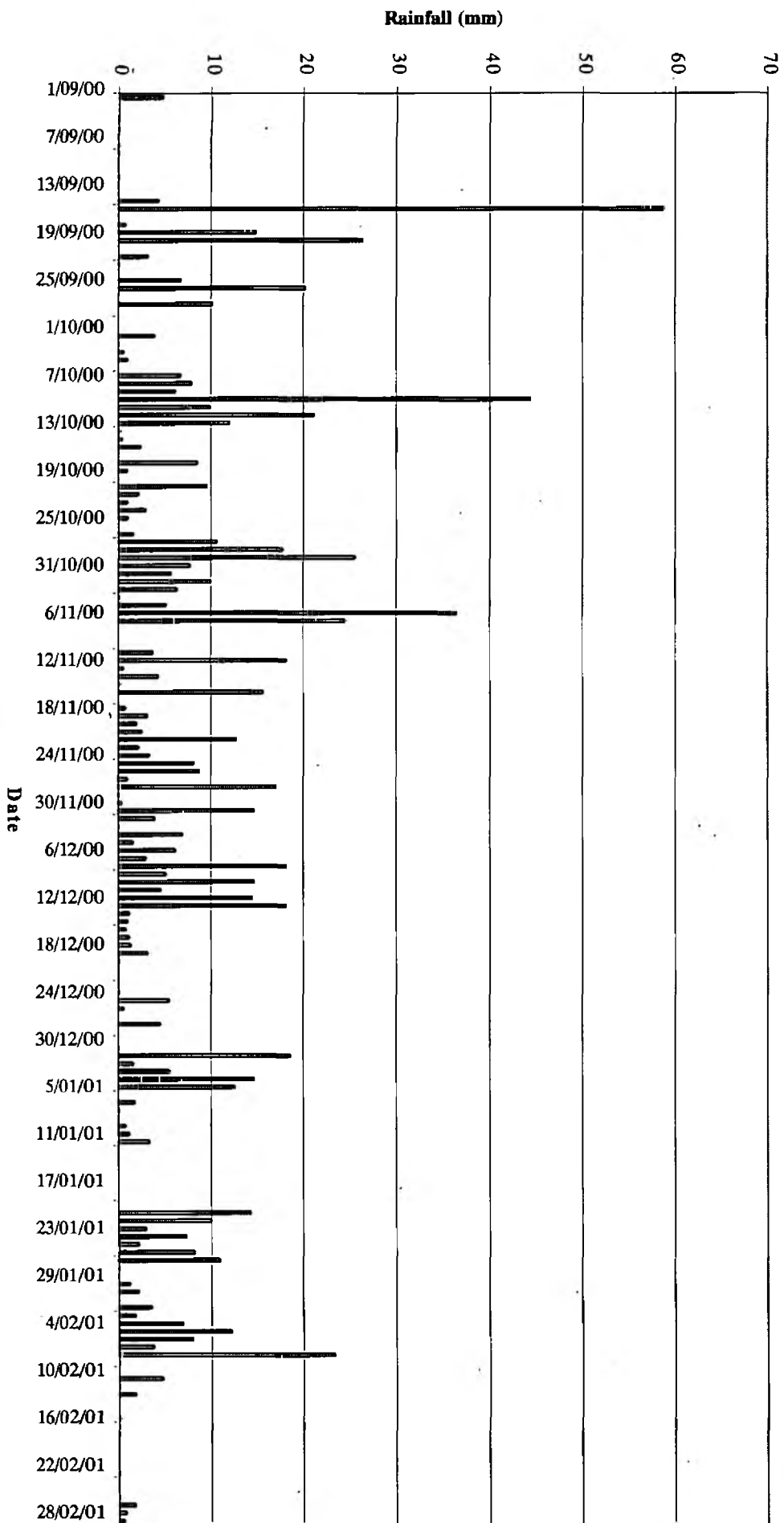
A bar chart to show average daily rainfall totals in East Hampshire



A bar chart to show daily rainfall totals at Havant

A bar chart to show the average daily rainfall totals on the Isle of Wight

A bar chart to show the daily rainfall totals at Chale



APPENDIX B: WEATHER FORECASTS

B.1 FRIDAY 15 SEPTEMBER 2000 EVENT

B.1.1 Wednesday 13 September 2000

Agency Flood Warning Forecast and Response Update. Received 17:31 13/09/00

High confidence in nil rain for Wednesday, medium confidence in light frontal rain on Thursday in the day. Problems may occur Thursday pm/Friday am if the front moving across the region from the west to east slows down causing more intense persistent rain. However, at the moment the model (medium confidence) is predicting that the rain will move steadily across the region, reducing the risk of intense rain. Friday will have slightly more rain but improving through the day as this front moves away with a better outlook for the weekend.

- Wednesday 13/09/00: No rain forecast. Met Office has high confidence in this forecast.
- Thursday 14/09/00: 5-10mm frontal rain. The front is expected to be progressive and move across the region minimising the risk of intense rain. However, the front could slow down in the evening, and produce higher intensity rainfall. The timing of the rain is Hants Thursday late pm. Low risk of thundery showers Thursday pm. Met Office has medium confidence in this forecast.
- Friday 15/09/00: Continuation of rain from Thursday night with the same risk of intense persistent rain early am. This rain will move away through the day giving 8-15mm Low threat of thunder Friday early am. Met Office has medium confidence in this forecast.
- Weekend: Continuing to improve for the weekend 3-8mm Saturday, 2-5mm Sunday. Met Office has medium confidence.

Flood Risk

- Wed: Surface water flooding: nil; fluvial flooding: nil (low rainfall and high SMD); coastal flooding: nil (neap tides).
- Thurs: Surface water flooding: possible localised flooding occurring within the region late Thurs pm if frontal rain intensifies and thundery showers develop - very low risk; fluvial flooding: nil (low rainfall and high SMD); coastal flooding: nil (neap tides).
- Fri: Surface water flooding: possible localised flooding occurring within the region late Fri am if frontal rain intensifies and thundery showers develop - very low risk; fluvial flooding: nil (low rainfall and high SMD); coastal flooding: nil (neap tides).
- Sat: Surface water flooding: nil; fluvial flooding: nil (low rainfall and high SMD); coastal flooding: low risk (spring tides). Low pressure system moving across southern North Sea. STFS current position is that no significant surges will result. This position will be reviewed daily.

B.1.2 Thursday 14 September 2000**Met Office Daily Forecast. Received 05:00 14/09/00**

A waving cold front will spread outbreaks of rain erratically to all parts from the west during the day and this will be followed by a very wet evening and night, when some high rainfall totals are possible.

Hampshire Precipitation from 06:00 today to 06:00 tomorrow: VH 20 mm or more, Medium Confidence, Frontal Rain, Timing 10:00-06:00.

B.1.3 Friday 15 September 2000**Met Office Daily Forecast. Received 05:35 15/09/00**

An active front will cross the region from the west this morning leaving an area of benign weather in its wake this afternoon. This evening showers, locally heavy and prolonged, are expected to follow from the west, clearing the region to the east around dawn on Saturday.

Hampshire Precipitation from 06:00 today to 06:00 tomorrow: H 13 to 19mm, Low Confidence, Rain then Showers, Timing 06:12-17:03.

Met Office Heavy Rain Warning (number 24). Received 13:52 15/09/00. Warning issued at 13:19, valid until 18:00 on 15/09/00

Outbreaks of heavy rain with localised thunderstorms will affect eastern Hampshire, east of the Isle of Wight, West Sussex, East Sussex and Kent this afternoon. Rainfall rates will temporarily reach 32mm/hr. Rainfall totals will be mostly 15 to 20mm across the area, but locally 40mm. The rain will clear from the west and south west during the afternoon.

Hampshire (Test Catchment, East Hampshire) and IOW catchments 10-15 mm. Time period 13:00 to 14:00.

Agency Flood Warning Forecast Update. Received 16:57 15/09/00

The exceptionally heavy rain that has fallen in Hants will move away to the east within the next hour, Sussex in the next 4 hours and Kent in the next 6 hours. Rain rates will exceed 30mm/hr but will be short lived. Between 8pm and 10pm heavy rain will move down from the NW affecting Hants and West Sussex with totals of 10-20mm. High risk of surface water flooding in Hants, Sussex and Kent due to localised total exceeding 40mm during the next 6 hours. Hants rivers are responding but not at rates which will exceed trigger levels for issuing warnings currently. The risk of fluvial flooding on the IOW is medium currently.

Met Office Heavy Rain Warning (number 31). Received 20:15 15/09/00. Warning issued at 19:40, valid until 22:00 on 15/09/00

After the earlier heavy rain, further clumps of heavy showers have developed in response to daytime heating over Dorset and Devon where temperatures reached 21 C. These showers

are now translating east or east-north east across the region. Instantaneous rates of 32mm/hr are occurring locally and will add considerable quantities to some parts of the region.

All Hampshire and IOW catchments 20 mm + Time period 08:00 to 22:00.

Met Office Flash Warning of Severe Weather. Received 22:07 15/09/00. Issued by the Met Office at 20:23, valid until 23:59 on 15/09/00

Slow moving heavy thunderstorms will continue through this evening with further localised flooding. Driving conditions will be hazardous with standing water and surface spray.

B.1.4 Tuesday 19 September 2000

Met Office Early Warning of Severe Weather, Early Warning of Heavy Rain. Received 12:17 19/09/00. Issued by the Met Office at 10:45 on 19/09/00.

Overall Risk Assessment: The probability of disruption due to severe weather conditions in parts of the UK within the next 24 hours is 60 %.

Regional risk assessment for the occurrence of severe weather conditions between ?? (fax unclear) on 19/09/00 and 13:00 on 20/09/00: Central southern England 30 %.

This warning is an update to that issued at 09:35 on 18/09/00. A slow moving frontal system over eastern England will edge erratically west today, extending rain into parts of northern England and Scotland later today and overnight, with rain not finally clearing north east Scotland until later on Wednesday. Rainfall amounts now look likely to be smaller than thought earlier, but the risk remains of heavy rain and possibly thunder, extending into eastern parts of Britain later today and tonight. There is an additional risk of locally large accumulations from thundery showers over south west England and south Wales later today.

Met Office Flash Warning of Severe Weather. Received 21:19 19/09/00. Warning issued at 20:24

Persistent and at times heavy rain will continue to affect much of central southern England, the east Midlands, south east England and East Anglia this evening and the early part of the night. Widespread standing water and localised flooding may result in hazardous driving conditions.

Met Office Heavy Rain Warning (Number 68). Received 23:23 19/09/00. Warning issued at ??, valid until 03:00 20/09/00

Further pulses of heavy rain with rates locally greater than 10mm/h and totals in excess of 15mm are expected overnight and will clear north-eastwards later.

All Hampshire and IOW catchments 20 mm + Time period 22:00 to 03:00.

B.1.5 Wednesday 27 September 2000

Met Office Gale Warning Received 23:37 27/09/00. Warning issued at 23:07

Sea Area Wight southerly Gale Force 8 continuing.

B.2 MONDAY 9 OCTOBER TO MONDAY 16 OCTOBER 2000 EVENT**B.2.1 Monday 9 October 2000**

Met Office Gale Warning. Received 00:30 09/10/00. Issued at 23:55 8/10/00

Sea area Wight southerly Gale Force 8 expected later.

Met Office Daily Forecast. Received 06:35 9/10/00

An unsettled day with weather fronts moving slowly east through the day, bringing outbreaks of heavy rain across all parts during this morning. Southerly winds will increase fresh to strong, with gales developing along the coast. Rain will clear all but the east tonight, with scattered showers following into western parts.

Hampshire Precipitation from 06:00 today to 06:00 tomorrow: VH 20mm or more, Medium Confidence, Rain/Showers, Timing 07:00-06:00.

Met Office Heavy Rain Warning (number 25). Received 10:32 9/10/00. Warning issued at 09:52, valid until 06:00 on 10/10/00

Rain, occasionally heavy, will spread east across the region later this morning and will persist through this afternoon and this evening. The rain should turn more showery in nature after midnight. Rainfall amounts are likely to be in the range of 20 to 30mm, but locally up to 35 mm, with greater falls expected this afternoon and this evening.

All Hampshire and IOW catchments 20mm + Time period 10:00 to 05:00.

Met Office Flash Warning of Severe Weather. Received 13:10 9/10/00. Issued by the Met Office at 10:26. Valid until 18:00 on 9/10/00

A band of heavy, persistent rain crossing the country during the later part of the morning and through the afternoon will result in standing water and localised flooding. Strong winds and spray may exacerbate otherwise difficult and hazardous driving conditions.

Met Office Early Warning of Severe Weather, Early Warning of Heavy Rain. Received 13:16 9/10/00. Issued by the Met Office at ? on 9/10/00 (fax very unclear)

Overall Risk Assessment: The probability of disruption due to severe weather conditions in parts of the UK within the next 48 hours is 60 %.

Regional risk assessment for the occurrence of severe weather conditions between 12:00 on 9/10/00 and 06:00 on 11/10/00: Central southern England 40 %.

This is the first warning of possible disruption due to heavy and persistent rain. A rapidly deepening low pressure system will move north east across England and Wales today and then return westwards across Scotland tomorrow. Bands of heavy rain around the low centre will spread across most parts of the UK with 20-25mm of rain in places. However, the rain will become slow moving across parts of Scotland tonight and during tomorrow and up to 60 mm of rain is possible over areas exposed to the east. Another deepening low pressure system will then run across southern England and East Anglia later tomorrow and early Wednesday bringing prolonged rain to those areas. In addition to these bands of rain, it will be windy at times with gusts of up to 60mph in exposed areas. Localised flooding is possible. This warning will be updated tomorrow morning 10/10/00.

Met Office Gale Warning. Received 13:50 9/10/00. Issued at 10:50 9/10/00

Sea area Wight severe Gale Force 9 veering westerly soon

Phone from FDO 18:30 9/10/00

2.7 cumecs forecast for 21:00 at Tadburn Lake.

Phone from FDO 19:19 9/10/00

St Johns likely to go to H4 soon. IOW could get 3-5mm of rain over the next hour.

Phone from FDO 21:40 9/10/00

5 –10mm block of rain about 30/45 minutes away.

B.2.2 Tuesday 10 October 2000

Met Office Daily Forecast. Received 05:28 10/10/00

Some showers are expected to run along coastal areas this morning. A small area of low pressure is then expected to run across southern England during Tuesday evening and into Wednesday morning, bringing rain to most of the region overnight and strong, perhaps gale force winds to some southern coastal areas.

Hampshire Precipitation from 06:00 today to 06:00 tomorrow: H 13-19mm, Medium Confidence, Showers, then Rain, Timing showers 06:00-12:00, rain 16:00–04:00.

Phone from FDO 11:00 10/10/00

Next band of rain due to arrive Hants 17:00-18:00 with up to 15mm of rain, patchy showers, high intensity in some areas.

Met Office Early Warning of Severe Weather, Early Warning of Heavy Rain. Received 11:58 10/10/10. Issued by the Met Office at 11:00 on 10/10/00

Overall Risk Assessment: The probability of disruption due to severe weather conditions in part of the UK within the next 48 hours is 70 %.

Regional risk assessment for the occurrence of severe weather conditions between 12:00 on 10/10/00 and 18:00 on 11/10/00: Central southern England 50 %.

This is an update of the early warning issued at 09:00 yesterday on 9/10/00, for prolonged and heavy rainfall. Large amounts of rain have already fallen over many parts of the UK, and further slow moving areas of moderate rain are expected to spread from the North Sea into northern and central Scotland today. The rain will tend to turn more showery with time but slow bands of rain or showers may give further swells of rain across other northern parts of the UK throughout the period. Also a deepening low will bring a further spell of heavy rain across the southern half of England and Wales, reaching the south west this afternoon and other southern parts by midnight, a further 15-20mm is likely in places. This rain will extend north eastwards towards the Humber before clearing eastern England early tomorrow. This warning will be updated tomorrow morning 11/10/00.

Agency Flood Forecasting Update Fax MDV1. Received 12:34. Issued 11:30 10/10/00

Some light showers around today, clearing away around lunchtime. A Band of rain moving eastwards is expected into Hampshire around 17:00. This band will be fairly fast moving and is likely to give rainfall totals of 10-15 mm across wide areas. This main band of rain will be followed by showers, mainly along the southern coast, some of which could be heavy, lasting the rest of the night and into tomorrow morning. Showers, some heavy, are then likely to develop across the region tomorrow. The Met Office now gives this forecast high confidence.

Met Office Gale Warning. Received 12:36 10/10/00. Issued at 11:59 10/10/00

Sea area Wight westerly severe Gale Force 9 backing south westerly soon.

Met Office Heavy Rain Warning (number 44). Received 15:02 10/10/00. Warning issued at 14:35, valid until 08:00 on 11/10/00

Rain will arrive from the south west during this evening and become prolonged and heavy at times before more showery weather follows during the night. This showery weather is likely to be more widespread over Sussex and Kent than areas further to the west. Rainfall amounts will reach 15-20mm in places.

All Hampshire and IOW catchments 20mm + Time period 18:00 to 08:00.

Agency Flood Forecasting Update Fax MDV2. Received 15:39. Issued 15:50 10/10/00

The Met Office issued a heavy rainfall warning at 14:35 today. This fax expands upon that warning. The heavy rainfall warning essentially confirms the forecast MDV1. Frontal system passing across the region 18:00 – 00:00 will give totals of 10-15mm, possibly up to 20mm in places, over widespread areas. This will be followed by showers to around 08:00 tomorrow, giving further totals of up to around 5mm in places. The Met Office has good confidence in this forecast. There are likely to be showers tomorrow from about 10:00 which are expected to give 3-8mm of rain.

Agency Latest Weather Forecast. Received 22:21 10/10/00. Issued at 10:02 10/10/00

From 10 pm to 01:00 11mm of rain across the region (average). Peaks up to 15mm, peak intensity 16-24mm/hr. As the front moves north east, things will clear, between 01:00 and 04:00 3-4mm (some heavy showers but isolated), clearing daybreak. 11/10/00 am – showers. 11/10/00 pm – scattered showers.

Met Office Gale Warning. Received 23:47 10/10/00. Issued at 23:23 10/10/00

Sea area Wight storm Force 10 veering westerly and decreasing severe Gale Force 9 soon.

B.2.3 Wednesday 11 October 2000**Met Office Daily Forecast. Received 05:16 11/10/00**

Complex low pressure persists across the British Isles with a strong and unstable south westerly wind prevailing across the region.

Hampshire Precipitation from 06:00 today to 06:00 tomorrow: H 13-19mm, Moderate Confidence, Showers, Timing throughout.

Agency Forecasting Update. Received at 06:35 11/10/00. Issued at 0500 11/10/00

Following the latest Met Office forecast, I have just spoken to the forecaster who has highlighted that we may be in for a continued system of 'feeder' showers from the south west throughout the rest of the night and Wednesday day. Whilst each set of isolated showers remain patchy and do not have significant intensities and accumulations, the combined effect could be accumulation for up to 20-25mm in places (higher than forecast) until 2300 of the 12th. Levels that rose following the frontal rain on Tuesday evening are continuing to be buoyed by these shower systems. The only sensible recommendation at this stage is a watching brief on known hot spots and key sites. Slower responding rivers continue to rise.

Met Office Heavy Rain Warning (number 66). Received 07:57 11/10/00. Warning issued at 07:27, valid until 18:00 on 11/10/00

Heavy, perhaps thundery showers are expected to develop during the morning. Rainfall rates could exceed 10mm/hr at times. Accumulations may not strictly meet warning criteria but, in view of the amount of rainfall over the past few days, these showers are likely to add to any problems. They may also arrange themselves in lines along the south westerly wind giving some prolonged rain in some areas. Accumulations up to 15mm are possible in a few places by this evening.

All Hampshire and IOW catchments 10-15mm Time period 10:00 to 18:00.

Met Office Early Warning of Severe Weather, Early Warning of Heavy Rain. Received 11:33 11/10/00. Issued by the Met Office at 09:44 on 11/10/00

Overall Risk Assessment: The probability of disruption due to severe weather conditions in part of the UK within the next 26 hours is 70 %.

Regional risk assessment for the occurrence of severe weather conditions between 10:00 on 11/10/00 and 09:00 on 12/10/00: Central southern England 60 %.

This is an update of the disruption due to heavy rain. Further heavy rainfall is likely across the British Isles today, either in the form of frequent showers or longer spells of rain, giving 15-25mm in places, sufficient to cause further flooding problems and dangerous driving conditions. This is expected to be the last update of this warning.

Met Office Flash Warning of Severe Weather. Received 22:18 11/10/10. Issued by the Met Office at 17:44. Valid until 06:00 on 12/10/00

Here is a flash warning of heavy rain affecting parts of central and south England and south east England. Outbreaks of heavy rain will become slow moving/prolonged across many of these areas this evening and overnight. With the recent high rainfall totals, and already notified high river levels, some flooding is expected. In addition to standing water, the heavy rain and extensive spray will cause significant problems for road users. Motorists are advised to take particular care. The main risk communities are currently: Greater London, Kent, Surrey, East and West Sussex, Hampshire and the Isle of Wight.

Met Office Gale Warning. Received 23:37 11/10/00. Issued at 23:05 11/10/00

Sea area Wight south westerly severe Gale Force 9 decreasing Gale Force 8 soon.

B.2.4 Thursday 12 October 2000

Met Office Daily Forecast. Received 05:59 12/10/00

A slow moving band of rain lying across much of Kent and Sussex and eastern parts of Hampshire will edge only gradually eastwards through today. There are heavy bursts of rain within the band and these, coupled with prolonged outbreaks, will lead to high accumulations. The main band should be clearing into the North Sea this evening but there are still likely to be showers feeding up from the channel.

Hampshire Precipitation from 06:00 today to 06:00 tomorrow: H 13-19mm, High Confidence, Rain then Showers.

Met Office Heavy Rain Warning (number 90). Received 04:48 12/10/00. Warning issued at 04:08, valid until 14:00 on 12/10/00

The band of showery rain currently affecting the region will persist well into this afternoon and possible into early afternoon period, especially across Sussex and western parts of Kent. Within this band of rain is a narrower band of fairly intense rain with rainfall rates locally up to 15-20mm per hour. Typically rainfall amounts, from now until the early afternoon period, are likely to be 20-25mm, but could locally reach 50mm. These values are in addition to what has already fallen. The showery band should edge eastwards late morning and into this afternoon.

All IOW catchments 20mm + Time period until 14:00.

Agency Flood Forecasting Update, Ref DB121000. Received at 10:50 12/10/00. Issued at 10:00 12/10/00

Met Office forecast as of 09:00. There will be scattered showers overnight and clearing tomorrow. The band of rain is supposed to clear off to the east. The Met Office forecast for yesterday 20-25mm, however had 100-110mm at Plumpton and Barcombe. Suggested assumed at least 25-35mm over the rest of the daylight hours with isolated higher intensities. The showers do not appear to be moving eastwards as quickly as forecast.

Output from HYRAD: Scattered heavy showers continuing in intensity over the downs.

Agency Flood Forecasting Update, Ref DB121001. Received at 12:58 12/10/00. Issued at 12:50 12/10/00

Latest update from the Met Office is as follows: Forecast accumulations remain as previous, namely in Hampshire showers this afternoon, clearing overnight. The general overview is that trough of low pressure is set to move over Dorset into Hampshire, causing showers to clear from the west. The outlook for tomorrow generally is one of scattered showers with winds from the north, north-west. For Saturday the high pressure from the east should cause more stable conditions and fewer showers.

Output from HYRAD: Scattered heavy showers continuing in intensity over the downs.

Met Office Heavy Rain Warning (number 93) Received 15:38 12/10/00. Warning issued at 15:13, valid until 03:00 on 13/10/00.

Slow moving bands of thundery showers, will add to heavy rain already received over the last 24 hours. Accumulations of 15 to 25mm are possible in those areas affected.

All Hampshire and IOW catchments 15-19mm, except New Forest Catchment 0-5mm Time period until 15:00-21:00

Agency Flood Forecasting Update. Ref MDV3. Received at 17:13 12/10/00.

The band of heavy showers that we have been experiencing is now expected to persist longer than originally forecast. It will move gradually eastwards during the night and tomorrow. Rainfall totals are very difficult to forecast, as they will largely depend upon whether the showers band together, as they have been doing, or whether they remain more isolated. Some places could receive very little further rainfall, other places could see significantly more than 20+mm referred to in the Heavy Rainfall Warning. Hyrad needs to be watched to see where the banding is happening. Hampshire is likely to receive lower rainfall totals.

Met Office Gale Warning. Received 17:50 12/10/00. Issued at 16:52 12/10/00

Sea area Wight gales now ceased.

B.2.5 Friday 13 October 2000**Met Office Daily Forecast. Received 04:43 13/10/00**

Showers have currently moved eastwards into the Channel and southern North Sea. There is still a risk, though, that showers will develop inland again today, although even these should be clearing into the North Sea by late afternoon.

Hampshire Precipitation from 06:00 today to 06:00 tomorrow: 0 Less than 1mm, Medium Confidence, Dry.

Agency Flood Forecasting Update MDV4. Received 13/10/00 11:41. Issued at 10:07 13/10/00

Latest update from the Met Office: The band of heavy showers has now decayed and moved away to the East, so today should be largely dry, although there is some risk of showers in south east Kent. Saturday should also be dry. Sunday is expected to see a weather front move eastwards into Hampshire, bringing cloud and possibly some rain, during the day moving back westwards. A warm front should move into the Region from the continent on Monday, and is expected to bring showery rain.

Hyrad: Supports the above forecast to HYRAD's maximum forecast lead time of 6 hours.

B.2.6 Saturday 14 October 2000**Met Office Daily Forecast. Received 05:57 14/10/00**

A ridge of high pressure over eastern Britain will slowly decline and this will allow weather fronts over western Britain to edge slowly eastwards. However, they should grind to a halt before reaching Kent and Sussex.

Hampshire Precipitation from 06:00 today to 06:00 tomorrow: L 1-4mm, Medium Confidence, Frontal Rain, Timing 11:00-22:00.

B.2.7 Sunday 15 October 2000**Agency Flood Forecasting Update DB1510001. Received 15/10/00 02:22**

2-Day Summary: Dry rest of Sunday morning until Sunday night/Monday morning. Warm front with thundery showers. Average accumulations of 25mm, shower intensity at 12-15mm/hr.

Latest update from Met Office: Still dry for the rest of Sunday until late Sunday (22-23:00). The warm front moving in from the East will contain thundery showers giving average accumulations of 20-25mm, with cells generating shower intensities of potentially 12-15mm/hr. This is forecast to affect all areas, decreasing in severity to the west. The worst period will be in the early hours, followed by a lull and then further showers. The showers will be persistent through into Monday before clearing during Monday pm and early Tuesday: Good ridge of high pressure lasting 24 hours through Tuesday. The next front will

arrive on Tuesday pm/early Wednesday. This is a more conventional Atlantic front arriving in a band from the West. It will affect all areas, particularly the Downs and will bring approximately 2-3 hours heavy rain. Accumulation estimates are approx 10-15mm (anticipate higher accumulations over the Downs. This will leave showers/unsettled conditions. On Thursday, continued showers/unsettled conditions. On Friday another large system is due to arrive. The Met Office has been tracking its development over the past two days and are unsure whether it will be a wind or rain event. Watch this space. At present, the outlook for the rest of Monday is for unsettled conditions. We will have to pay close attention to Hyrad to monitor for any more intense showers contained within the front, which given previous forecasts could well occur.

Met Office Daily Forecast. Received 05:38 15/10/00

A weak ridge of high pressure across southern England will collapse during the day as low pressure drifts north from the Mediterranean. This low pressure area is expected to deepen in the southern North Sea as it continues northwards overnight.

Hampshire Precipitation from 06:00 today to 06:00 tomorrow: 0 Less than 1mm, Low Confidence, Frontal Rain, Timing 03:00 onwards.

Agency Flood Forecasting Update Ref DB151002. Received at 06:22 15/10/00. Issued at 05:32

Flood forecasting platform, Hampshire models too early to run.

We have looked at what 25mm has done previously. Note that for the figures below the catchments started much drier and the rain was less intense and over a longer duration. Hampshire: Totals should be lower. Watch rises on the usual suspects, particularly urban catchments. The weather is coming for real, its been tracking through France giving large rainfall totals.

Agency Flood Forecasting Update MDV7. Received 15/10/00 12:32. Issued at 12:17 15/10/00

Latest update from Met Office: The overall picture for the next few days is largely as earlier forecasts, with a front pushing up and westwards from the continent into Kent and Sussex tonight. This is likely to give it's highest rainfall totals in east Kent with totals decreasing westwards. There are no indicative rainfall totals/timings for this system. The totals/timings depend upon how quickly the system moves, both in terms of when it arrives over Kent and how long it stays around for. As the system clears, it is likely that a second front will push into the region from the west, which could bring some further heavy showers. Tuesday daytime should be dry, but an Atlantic low pressure system is expected to pass through the region on Tuesday night/Wednesday morning. It's too early to have much confidence in forecast rainfall totals, but there's obviously the potential for significant rain. The remainder of Wednesday and Thursday should see a mixture of wet and dry spells, before the next large system arrives on Friday.

Met Office Heavy Rain Warning (number 108). Received 17:19 15/10/00. Warning issued at 16:39, valid until 18:00 16/10/00

An area of rain is expected to spread from the south east during tonight and looks likely to persist well into tomorrow before clearing away eastwards. The rain will be heavy at times, especially in Sussex and Kent. Accumulations over the next 24 hours could reach 35mm in some of these eastern parts of the region, while further west 10-15mm look a more likely maximum total. The extreme west of Hampshire may escape with even smaller accumulations.

All Hampshire and IOW catchments 5-12mm, except New Forest Catchment 5-10mm. Time period until 23:00-15:00.

Agency Flood Forecasting Update MDV8. Received 15/10/00 17:03. Issued at 16:03 15/10/00

Latest update from the Met office is as follows: The overall picture for the next few days is largely as earlier forecasts, with a front pushing north westwards from the continent into Kent and Sussex tonight, bringing rain to these areas from midnight onwards. The Met Office tonight now expects the highest rainfall totals to occur further west than originally thought, however possibly over East Sussex and West Kent. This will also result in some rain in Hampshire. Maximum rainfall totals from this front are expected to be 30-40mm. This system will move off eastwards during the course of tomorrow afternoon but will be replaced by a second front moving in from the west bringing showers to the region. Rainfall totals for the period 00:00-18:00 16/10/00 could be as high as 50mm. The highest intensity rainfall is expected to occur between 06:00 –12:00 16/10/00, when totals could be up to 25mm. Tuesday daytime should be dry, but an Atlantic low pressure system is expected to pass through the Region on Tuesday night/Wednesday morning. It's too early to have much confidence in forecast rainfall totals but up to 25mm is suggested. The remainder of Wednesday and Thursday should see a mixture of wet and dry spells. The large system forecast for Friday is now expected to pass to the north of the region, and so shouldn't bring much rain, although this forecast could easily change.

Agency Flood Forecasting Update DB1510002. Received 15/10/00 22:32

Latest update from the Met Office: The front pushing in from the east will arrive as forecast bringing rain to Kent and Sussex from midnight onwards. The front is expected to move further west than previously indicated, giving rain to Hampshire. The heaviest pulse is expected to occur between 06:00 and 12:00 on 16th, with totals up to 25mm or 35mm during this period. Accumulations could be higher over the Downs. The system will be pushed back eastwards by another front moving in from the west itself bringing accumulations of 5-10mm in the afternoon of the 16th. Rainfall totals between 00:00 – 20:00 for the 16th could be high as 40-50mm. Monday overnight could have some isolated showers/unsettled conditions. Tuesday should be dry. The next front to arrive is an Atlantic low expected to move in on Tuesday night/Wednesday morning. Forecast totals are up to 25mm (with low confidence at this point). Wednesday and Thursday should see a mixture of unsettled conditions. There is a large system forecast for Friday, however it is too early to say whether this will actually hit Southern region.

Hyrad: The Hyrad forecast is showing up 'low intensity' preliminary pulses. The real Nimrod QC data is showing light bands of rain with the occasional lighter patch. There are no further higher intensity images. It must be pointed out that fronts moving in from the East are poorly covered on the radar and we will not get much prior warning of the heavy stuff.

We have looked at what 25mm has done previously. Note that for the figures below the catchments started much drier and the rain was less intense and over a longer duration. Hampshire: Totals should be lower. Watch rises on the usual suspects, particularly urban catchments.

B.2.8 Monday 16 October 2000

Agency Flood Forecasting Update PG161000#1. Received 16/10/00 03:22. Issued at 03:00

Latest update from the Met office is as follows: Weather front moving north west from France is continuing to develop and intensify. The weather front will bring rain of intensities generally 2-4mm hr but locally higher. Due to the weather front passing over the Channel, there will be some heavier showers developing as warm moist air rises once the front moves on land. Currently French rain gauges are indicating totals of 9-12mm over the previous 6 hours. The rain will be heaviest in E Kent with localised totals up to 50mm in the next 18 hours. Totals in the rest of Kent and East Sussex 20-30mm. Totals are expected to be lower in West Sussex and Hants. Light showers are now moving in from the Channel and widespread rain across the region is expected to develop over the next 2-3 hours. The heaviest rain is expected to arrive in approximately 3 hours time. Widespread low intensity rain is then expected to continue throughout the day. The next Met Office Model runs will be available at 5am.

Hyrad: The Hyrad forecast is producing poor forecast output. The Nimrod Actuals are currently overestimating and the blue areas are reflections of cloud. This will correct itself as the front moves on land and will provide the most accurate weather radar info.

Met Office Daily Forecast . Received 05:38 16/10/00

Complex low pressure and associated fronts over France are drifting north whilst a cold front over Ireland moves steadily eastwards to cross the region through this afternoon and evening.

Hampshire Precipitation from 06:00 today to 06:00 tomorrow: M 5-12mm, Moderate Confidence, Frontal Rain, Timing 06:00 to 18:00.

Met Office Early Warning of Severe Weather, Early Warning of Heavy Rain. Received 10:41 16/10/00. Issued by the Met Office at 09:44 on 16/10/00

Overall Risk Assessment: The probability of disruption due to severe weather conditions in part of the UK within the next 10? hours is 80 %.

Regional risk assessment for the occurrence of severe weather conditions between 10:00 on 16/10/00 and 00:00 on 17/10/00: Central southern England 20 %.

A depression moving into the North Sea this morning is already spreading rain into the south east, the rain becoming more persistent and occasionally heavy through today. Accumulations of 15-25mm are likely with a continuing risk of totals as high as 35-40mm in a few areas, giving rise to further disruption problems. The rain is expected to turn more showery later this afternoon or this evening, eventually dying out overnight.

B.3 SUNDAY 29 OCTOBER TO TUESDAY 31 OCTOBER 2000 EVENT

B.3.1 Wednesday 25 October 2000

Met Office Gale Warning. Received 11:55 25/10/00. Warning issued at 10:58

Sea Area Wight westerly Gale Force 8 continuing.

B.3.2 Friday 27 October 2000

Met Office Daily Forecast. Received 05:53 17/10/00

A warm front has pushed through overnight and the associated cold front will follow from mid morning. This should clear into the Channel during the afternoon, but will return northwards through the evening and overnight.

Hampshire Precipitation from 06:00 today to 06:00 tomorrow: M 5-12mm, Moderate Confidence, Frontal Rain, Timing 09:00 to 06:00.

Agency Flood Forecasting Update 271000DB1. Received 27/10/00 12:08. Issued at 11:13

Latest update from the Met Office is as follows: (The Met Office rang which is worrying. They will be issuing a Severe Weather Warning. Now they now have). The frontal system moving eastwards over us at the moment will move through quickly but will be pulled back and be reactivated by a further front moving in from the west. The current front is forecast to grind to a halt over the south coast/ channel towards the evening and then move back westwards. Forecast accumulations are 20-30mm in west. On Saturday (1500-1800) the warm front scheduled to come through will bring further accumulations of 5-6mm (intense but short lived), with gale force SW winds (F6/7). Sunday will be unsettled with a secondary low coming in on Sunday night bring severe gale force winds.

General overview: Stormy unsettled weather over the weekend and into next week. The prognosis does not look good. The Met Office issued a severe weather warning at 10:45 27/10/00 60% risk to central southern England of severe weather, severe gales and heavy rain. Warning summarised (fax is very unclear): 'A stormy spell looks probable with a series of vigorous lows moving over or very close to the UK. First is due to develop on Saturday into a cell centre swinging north east close to north England to be over north Scotland by early Sunday, with further prolonged and heavy rain spreading over many parts. 25-30mm in 24 hours is likely with gales exceeding 70mph especially in the north and west. Further fast moving lows will follow during Sunday and overnight on Monday, with further heavy rain and a significant risk of gusts exceeding 70mph in southern areas. Rainfall totals

over this period are expected to exceed 50mm in many parts with perhaps twice that over hilly regions. This will be updated at 0930 28/10/00.

Detailed Accumulations: Current front Friday 1100-1800 5-6mm. 1800- midnight- possibly higher on south coast if front stops over coast (no extra details known as yet).

- Fri 27th 0000- Sat 28th 1200: 30mm in Hants.
- Sat 28th 1500-1800: 6-7mm (10mm in places as front moves in).
- Sat 28th 1900-Sun 29th 0800: Further showers 4-5mm.
- Sun 29th 0800-1900: Further showers 3-4mm.
- Sun 29th night: High accumulations (50mm across region?-double in hilly areas? This is a suggested amount as no detail is available as yet - could be higher based on severe weather warning forecast.

Winds much as previous forecast, SW 6/7 (gusting 8) for rest of day today, easing S5/6 overnight backing southerly and increasing S 6/7 Sat am, increasing S7/8, gusting 9 with the front on Saturday. Sunday S 6/7, Sunday night (2nd front) S, severe Gale Force 8/9.

Output from HYRAD: Current front looks like it is weakening. This would fit in with the reorganisation forecast for later.

This outlook of heavy rain and gales will cause problems. We will keep a close eye on the front as it moves today. Draw attention to severe weather warning forecast for Sunday night 50mm (may double in hilly regions). We will update on how that translates for the southern region when we get the detail. No need to say that 30mm overnight tonight on the IOW, with the current tidal situation will cause problems.

Met Office Heavy Rain Warning (number 155). Received 14:39 27/10/00. Warning issued at 13:50, valid until 21:00 on 28/10/00

Two bands of rain will affect the region during the next 24 to 36 hours. The first of which will edge northwards across the region tonight. The rain should ease off for a time later tomorrow morning. The second band of rain, which will also be heavy, will spread from the west during the course of Saturday afternoon. Rainfall amounts are likely to be between 20 and 30mm, with the greater falls expected tonight and at first tomorrow. Hampshire is likely to see the higher totals, with 15 to 20mm more likely further east. Obviously we will be monitoring the situation and will update the warning if necessary.

All Hampshire and IOW catchments 20 mm + Time period 21:00 to 18:00.

Met Office Early Warning of Severe Weather, Early Warning of Severe Gales and Heavy Rain. Received 14:40 on 27/10/00. Issued by Met Office at 10:45 on 27/10/00

Overall risk assessment: The probability of disruption due to severe weather conditions in part of the United Kingdom within the next 24 hours is close to 80%.

Regional risk assessment for the occurrence of severe weather conditions between 06:00 28/10/00 and 18:00 30/10/00: Central Southern England: 50%.

This is an update of the early warning issued at 09:20 on 26/10/00. A stormy spell looks probable, with a series of vigorous lows moving over or very close to the UK. The first of these lows is expected to develop on Saturday (28th) into a deep centre swinging north east close to Northern Ireland to be over northern Scotland by early Sunday (29th), with further prolonged and heavy rain spreading across many parts. A further 25-30mm in 24 hours is likely, accompanied by widespread gales and gusts exceeding 70mph, especially likely in the north and west. Further fast moving lows will follow during Sunday and overnight into Monday (30th), with further heavy rain and a significant risk of gusts exceeding 70mph in exposed western and southern parts. Rainfall totals over this period are expected to exceed 50mm in many parts with perhaps twice over hilly regions. This warning will be further updated tomorrow at 09:30, unless superseded by the issue of flash warnings.

Met Office Gale Warning. Received 17:47 27/10/00. Warning issued at 17:20

Sea Area Wight gales now ceased but south westerly Gale Force 8 expected later.

Agency Flood Forecasting Update 271000DB2. Received 27/10/00 19:18. Issued at 18:39

The current front is organising itself into a more consistent band which is striking into the West of Hampshire and looks set to bring the accumulations forecast, although sooner than predicted. The long range forecast from the German Met Office is showing a consistent picture with the front arriving on Saturday afternoon bringing intense but fast moving showers. The forecast for Sunday night/ Monday remains uncertain.

The latest breakdown from the Met Office is as follows:

- Fri 27 to 00:00: Scattered showers wind SW F6/7.
- Sat 28 00:10 - 08:00: Rain 10-12mm wind S/SW F6/7.
- Sat 28 15:00 - 18:00: Drizzle 1-4mm wind S F7/8 (9).
- Sat 18:00 - Sun pm: Scattered showers wind S F7.
- Sun pm to Mon am: Frontal low rain 25-30mm wind (large error bounds) SW F8/9.

Output from HYRAD: Current front is reorganising as predicted although looks set to arrive ahead of schedule.

If the rain forecast for Sun night/Mon am arrives as predicted it will be interesting. The confidence in this forecast is low at the moment. The 12-24 hour forecast confidence is good although it will be interesting to see what accumulations occur over the Downs. Met Office is keen to point out that the low coming on Sat pm could go either up the Bristol or English Channel. If it goes up the English Channel it could cause problems in the midnight sat/ early Sun high tide.

B.3.3 Saturday 28 October 2000**Agency Flood Forecasting Update Ref: PG281000#1. Received at 01:38 28/10/00**

Latest from Met Office: The warm and cold fronts will bring 20-25 mm between 0000 and 1200 hrs 28/10/00 in Hants and W Sussex. Totals will be lower in Eastern areas, 10-15mm. Inshore winds will increase this morning up to Force 8 SSW, SW 60mph. The warm front will have moved away through the morning and will be followed by the cold front, which will clear away tonight and will be followed by showers. During Sunday there will be showers and the winds will increase through day with gusts up to 80mph SW. Rainfall totals Sunday night, Monday morning 20-30mm. Currently confidence is mod-high, although there is some doubt as to the forecast track of the systems.

Met Office Daily Forecast. Received 06:25 28/10/00

Weather fronts moving north and then east through today, will bring outbreaks of rain, sometimes heavy, and with south to south westerly winds increasing strong to gale force. The rain will clear east through this afternoon and evening, giving way to an unstable south westerly airflow with scattered and squally showers, some heavy with a risk of thunder.

Hampshire Precipitation from 06:00 today to 06:00 tomorrow: VH 20mm +, Medium Confidence, Rain/Showers, Timing 06:00 to 06:00.

Met Office Gale Warning. Received 00:05 28/10/00. Warning issued at 23:43 27/10/00

Sea Area Wight south westerly sever Gale Force 9 expected later.

Met Office Early Warning of Severe Weather, Early Warning of Severe Gales and Heavy Rain. Received 11:32 on 28/10/00. Issued by Met Office at 10:21 on 28/10/00

Overall risk assessment: The probability of disruption due to severe weather conditions in part of the United Kingdom within the next 72 hours is 90%.

Regional risk assessment for the occurrence of severe weather conditions between now and 12:00 30/10/00: Central southern England: 60%.

This is an update of the early warning issued at 09:20 yesterday. A stormy spell is likely to continue over the weekend and into Monday, with a series of vigorous lows moving over or very close to the UK. Further fast moving lows will follow during Sunday and overnight into Monday, with further heavy rain and a significant risk of gusts exceeding 70mph in exposed western and southern parts. Strong and damaging winds near these systems are most likely over England and Wales on Monday morning with gusts to 85mph possible. Rainfall totals over the period are expected to exceed 50mm in many parts with perhaps twice that over hilly regions. This warning will be further updated tomorrow at 09:30 unless superseded by the issue of flash warnings.

Agency Flood Forecasting Update PG281000#2. Received at 11:56 on 28/10/00. Issued at 11:20

Latest from Met Office is as follows: Showers and drizzle throughout the day. The cold front moving across the region during this afternoon and evening bringing totals 13mm in Hants and West Sussex. The winds will drive coastal showers inland overnight into Sunday am bringing additional 2-6mm along coastal areas of the region. Additionally there may be some convective activity. During Sunday morning an additional 4mm is expected from showers up to 12 noon. 20-25mm next 24 hours Hants & W Sussex. Heaviest rain is expected Sunday evening. Total 20-30mm. Two low pressure systems will move in from the Atlantic. The first will strengthen winds and bring in some rain. The second will be deeper and have very high winds, force 10-12. 60-70mph, with heavy rain. Severe weather warning issued at 11:00 am BST indicates 60% chance of totals 50mm plus. Greatest problems will be along coastal areas with strong winds, surge and significant wave action. An additional STFS forecast was requested for Saturday pm.

Agency Flood Forecasting Update Ref: 28100001. Received at 14:14 on 28/10/00

The front moving in from the west is striking towards Hampshire at the present time. The highest intensities are forecast to pass the north of Hampshire. The outlook overnight is for blustery conditions with strengthening winds and intense but isolated showers. The outlook for Sunday remains uncertain. The Met Office will be more certain of the position of the central low after the model results for this afternoon (1700). The position of the low will determine whether we get more rain and less intense winds or vice-versa. Obviously this will be critical for whether we get 25mm or 50mm.

Latest breakdown from Met Office:

- Sat 28th 1300 – 2100: Hants & IOW 6-8mm S/SW F 7/8.
- Sat 28th 2100 – Sun 29th 0900: Blustery shower particularly in the West & IOW & across all S coast. Accumulations are possible 912mm max if showers coincident. SW F6.
- Sun 1500 – 2100: Leading pulse 5-8mm in Hants. SW F7.
- Sun pm/Mon am: Frontal low - @ 25 – 30mm ? (Large error bounds) SW F 8/9.

Hyrad Output: Current front is still shaping up to go eastwards – highest intensities to north.

Agency Flood Forecasting Update Ref: DB2810002. Received at 19:42 on 28/10/00. Issued at 18:03

Following the front moving in today, we will be left with a period of unsettled showers moving in from the south west. The next front will be a pulse off the warm front preceding the main front at 1500. The outlook beyond this front is for a weakening occluded front to follow in behind. Accumulations are unknown at the present time.

Latest Detail breakdown from Met Office is as follows:

- Sat 28th 2100 – Sun 29th 1500: Blustery showers particularly in the west, IOW and across all S Coast. Accumulations of 15-20mm are possible over this 18 hour period on coastal areas as the SW picks up moisture from the channel. Totals should be significantly lower inland. WSW F6/7 Gusting * in coastal areas. At 1400, prior to front, increasing WSW, F8 Gusting 9/10.
- Sun 1500 – 2100: Leading warm front pulse 5-8mm in Hants. The orientation of this is NE-SW and it will move eastwards. SSW F9 (Gusting F10); *Sun 1800 – 2100*. Showers & unsettled conditions. SW F6/7.
- Sun 2100 – Mon 0600: Frontal low moving in. Southern will get strong wind average SW F9/10, gusting 11/12 (80mph). Accumulations forecast are 10-15mm across regions, with 15-25mm over Downs. The worst will be 0000 and 0300 Sun am.

Hyrad Output: Current front disappearing off Kent coast.

Met Office Gale Warning. Received 23:59 28/10/00. Warning issued at 23:36

Sea Area Wight south westerly severe Gale Force 9 increasing to Storm Force 10 later.

B.3.4 Sunday 29 October

Met Office Early Warning of Severe Weather, Early Warning of Heavy Rain & Very Strong Winds. Received 11:24 on 29/10/00. Issued by Met office at 09:10 29/10/00.

Overall risk assessment: The probability of disruption due to severe weather conditions in parts of the UK within the next 36 hours is 90%.

Regional risk assessment for the occurrence of severe weather conditions between 12:00 on Sun 29/10/00 and 15:00 (? Fax unclear) on Mon 29/10/00: Central southern England: 80%.

This is an update of the early warning issued at 09:30 yesterday, Sat 28/10/00. The stormy spell is likely to continue today and into Monday with further vigorous lows moving over or very close to the UK. Two developing depressions will track quickly across England and Wales this afternoon and overnight bringing spells of persistent and heavy rain to many parts of England and Wales with rainfall totals in excess of 50mm in places. Strong and damaging winds on the southern flanks of these lows are expected with gusts of 70/80mph possible, especially in the south and probably in excess of 90mph in the more exposed locations. This warning will be further updated tomorrow at 09:30 unless superseded by the issue of flash warnings.

Agency Flood Forecasting Update Ref: DB291002. Received at 14:27 on 29/10/00

Met Office predictions as follows: The Met Office has high confidence in the predicted forecast accumulations and wind speeds for the two fronts. There is a pulse off the warm front preceding the main front moving in from the west arriving in Hants at 1500. It will be N-S aligned as it sweeps quickly through Hants, Sussex and then Kent. It is reported to intensify as it moves eastwards, giving higher accumulations as it does so.

Latest detail breakdown from Met Office:

- Sun 29th 1200-1500: Blustery showers particularly in the west and IOW and across all S Coast. Accumulations of 3-5mm are possible over this 3 hour period on coastal areas as the SW picks up moisture from the Channel. Totals should be significantly lower inland. WSW F8 Gusting 9/10; Coastal areas. At 1400, prior to first front, increasing WSW, F8 Gusting 9/10.
- Sun 1500-2100: Leading warm front pulse 12-15mm all areas. The orientation of this is N-S, turning NE-SW as it moves eastwards. The front will arrive in Hants by 1500 and will clear Kent coast by 2100. It should clear Hants by 1900. SW F 7/8 (Gusting F10); At 2100, prior to main front winds will increase again SW backing S, F8-9 on coast, Gusting 11, F6-8 inland, Gusting 9-10.
- Sun 2200-Mon 0900: Frontal low moving in. Low centred over Wales. Southern will get strong winds average of SW, F9-10, gusting 11 (80mph). Accumulations forecast are 20-30mm across all areas. This is a more intense feature and contains very intense localised convective cells within the front that could bring 40-50mm in places. The worst will be between 0000 and 0600 Mon am.
- Mon 0900-1200: Front clearing Hants first, will linger over Kent until 1200. Winds will decrease to SW F5-6, gusting 7/8 on coast still
- Between 1200 Sun & 1200: Mon 25-35mm is expected over all 3 areas with 50-55mm under localised convective cells. The low will be 972 mbar in it's trough. The low centre will be over mid Wales at 2100 and will move ENE over Lincolnshire to reach the coast by 0600. It will then track E,NE into Sea area Forties by 1200 and turn NR to end up by the Norwegian coast by 2300.
- Mon 1200-1800: Squally scattered showers still SW F 5/6. Accumulations of 5-6mm; General outlook is blustery showers with south westerly winds through until Wednesday. Wednesday night sees a developing frontal system – high winds again – no detail on accumulations as yet.

Agency Flow Forecasting Update Ref DB291002. Received at 16:29 29/10/00. Issued at 12:39

Rain forecasts were assumed to be from now (otherwise models perform extremely badly). When looking at the actual outputs bear this in mind. Below is discussed the real peak times for each model below: Leigh Park model shows a fall on 12mm of rain, which is not clever and therefore no confidence. Likewise for Tadburn Lake and Millbrook, model does not seem to predict rise well, and they are set to rise with this much rain; Eastern Yar: currently decreasing but will rise even on this first pulse of rain.

Met Office Flash Warning of Severe Weather. Received 18:15 29/10/10. Issued by the Met Office at 16:30

Here is a flash warning of severe gales and heavy rain for Wales, south west England, central southern England, south east England and East Anglia and Lincolnshire.

Agency Flood Forecasting Update Ref: DB291002. Received at 22:38 on 29/10/00

Latest Update as follows: Outlook much the same as previous with the Met Office continuing to forecast the previous accumulations for rain and wind strengths, although forecast gust speeds have dropped a notch or two. Second front is now forecast to arrive in Hants at 2300/0000.

Latest breakdown from Met Office:

- Up to 2015 Hants has had 5-12 mm (av. 8mm) in 4 hrs, 7-17mm (av. 13mm) in 12 hrs.
- Sunday 2100 front has pushed into all areas as forecast giving the above totals so far. The remainder until 2300 would be 6mm in Hants, 8mm Sussex & 10mm Kent.
- Slight lull between 2200-2300 winds dropping to F5/6.
- Sun 2300-Mon 0000: Prior to main front winds will increase again. SW backing S, F8/9 on coast, gusting 10, F6-8 inland, gusting 9.
- 00:30-09:00: Frontal low moving in. Southern is still forecast strong winds average of SW F9-10, gusting 10/11 (80mph). Accumulations forecast are 20-30mm across all areas. This is an intense feature and contains very intense localised convective cells within the front that could bring 40-50mm in places, particularly over the Downs. The worst will be between 0000 and 0600 Monday am.
- Mon 0900-1200: Front clearing Hants first, will linger over Kent until 1200. Winds will decrease to SW F5-6 gusting 7/8 on coast still.
- Low track as previously forecast.
- Mon 1200-1800: Squally scattered showers, still SW F5/6. Accumulations of 5-6mm.
- Tues until 2300: Still squally scattered showers (2-5mm).
- Tues pm – Wed am: Thundery, convective showers from NW bringing 7-10mm (av. 5 mm). Not a front as such, potential reorganisation of showers.
- Output from HYRAD: Hyrad is tracking the rain so far quite well after the off missing image or two.

Met Office Gale Warning. Received 23:51 29/10/00. Warning issued at 21:42

Sea Area Wight south westerly storm Force 10 increasing violent storm Force 11 imminent.

B.3.5 Monday 30 October 2000

Agency Flood Forecasting update Ref: PG301000#1. Received at 03:21 on 30/10/00. Issued at 0200 30/10/00

Latest from Met Office as follows: Heaviest rain yet to arrive. 20-25mm is expected. Totals higher than this are likely in some areas. Heavier rain should clear Hants by 10am and Kent by 11am. High Winds are now moving in from SW. 60-70mph, 90mph in some areas. Showers will follow in behind the main low pressure system. Showers will be concentrated along south coast this afternoon. 5-8mm likely in E Sussex and SE Kent. Some thundery showers may develop giving higher totals. The effect of the rain will be levels continuing to rise over the next 10-15hrs in all areas, depending on the speed of response of the catchments.

Agency Flood Forecasting Update Ref:PG301000#3. Received at 10:50 on 30/10/00

Latest from Met Office as follows: The heaviest rain and winds have now passed over the region. Rain is now dying out in Hants/IOW and W Sussex. Rain is moving out of E Sussex and only 1-5mm in Kent is expected before rain clears away. Showers are likely to follow with totals this afternoon 1-5mm. Later this evening showers will move from the SW and may become heavy bringing totals 5-10mm in some places, widespread totals 5mm likely. Tuesday morning showers will die out with only 1-2mm expected during 24hrs. Rivers will continue to rise during the day after the rain ceases as the high flows move down rivers. Some levels may not fall until late this evening and into the early hours.

Tuesday am: The tributaries of the Medway are exceptionally high and will continue to rise throughout the day. Flows on the Stour are very high and rising slowly. In Hants Lymington, the East Hants' rivers, Monktonmead are all being closely monitored.

Met Office Gale Warning. Received 13:59 30/10/00. Warning issued at 11:15

Sea Area Wight South westerly violent storm Force 11 decreasing to severe Gale Force 9 soon.

Met Office Heavy Rain Warning (number ??). Received 13:59 30/10/00. Warning issued at 04:56, valid until 12:00 on 30/10/00

Heavy and thundery showers are possible this morning, chiefly close to the south coast. The showers should die away early this afternoon. However a band of persistent and sometimes heavy rain will spread from the west later this afternoon and will linger into this evening. A brief drier interlude is possible later this evening before another band of heavy rain sweeps in from the west. This band of rain is not expected to clear until later tomorrow morning. Amounts of rain are likely to be in the range 20 to 40mm, but could be as much as 50mm locally. The heavier falls are expected later tonight and at first tomorrow morning.

All Hampshire and IOW catchments 20mm + Time period until 09:00 (30th).

Agency Flood Forecasting Update Ref: DB30100001. Received at 15:41 on 30/10/00.

Latest from Met Office as follows: The outlook is for continued squally but isolated showers accompanying the continued SW wind. The trough of low pressure remains with us through towards the end of the week is still providing the mechanism for further showers/rain (unsettled conditions) towards the end of the week. However, respite today and hopefully Tues/Wed will be welcome.

Latest Detail Breakdown from Met Office:

- Mon 30/10/00 Now – Midnight: Continued squally isolated showers. Accumulations of 3-6mm. SW F6/7 (Gusting F8).
- Tues 00:30- 0800: Potential for showers in the channel to organise themselves into a rainy band that will sweep across the IOW, Sussex and into Kent. This could bring potentially 10-12mm but will be a very narrow band. Elsewhere, amounts are predicted to be 2-4mm. SW F 6/7 (Gusting F8).
- Backing Westerly 4-5 (gusting 6).
- Tuesday: Winds still W 4-5 (gusting 6), outlook is scattered isolated showers. Accumulations 2-4mm.
- Wednesday: Same as Tuesday. Winds still W 4-5 (gusting 6), outlook is scattered isolated showers. Accumulations 2-4mm.
- Wednesday pm - Thurs am: Next frontal system moves in from the West. Forecast accumulations are @15mm (provisional low confidence forecast).
- Thurs: 15mm potential as low pressure remains still close. Mm (Provisional low confidence forecast).
- Fri: 15mm potential as low pressure remains still close. Mm (Provisional low confidence forecast).

Output from HYRAD: Hyrad is tracking the rain so far quite well after the off missing image or two.

Agency Flood Forecasting Update Ref: DB30100002. Received at 18:38 on 30/10/00. Issued at 17:17

Latest from Met Office as follows: The outlook is still for continued squally but isolated showers accompanying the continued SW wind. The trough of low pressure remains with us through towards the end of the week is still providing the mechanism for further showers/rain (unsettled conditions) towards the end of the week. However, respite today and hopefully Tues/Wed will be welcome.

Latest Detail Breakdown:

- Mon 30/10/00 1700-0000: Continued squally isolated showers. Accumulations of 3-6 mm. SW F 6/7 (Gusting F8).
- Tues 00:15- 06:00: Potential for showers in the channel to organise themselves into a rainy band that will sweep across the IOW, Sussex and into Kent. The more detailed breakdown between 00:00 and 06:00 is Hants/IOW 8-9mm, Sussex 14mm, Kent 10mm. The Met Office has highlighted that there will be localised intense cells within this that could bring accumulations of 15-20mm in places. SW F 6/7 (Gusting F8).
- Wind backing Westerly F4-5 (gusting 6).
- Tues: Wind still W 4-5 (gusting 6), outlook is scattered isolated showers. Accumulations 2-4mm.
- Wed: Same as Tues – Winds still W 4-5 (gusting 6), outlook is scattered isolated showers. Accumulations 2-4mm.
- Wed pm/Thurs am: Next frontal system moves in from the West. Forecast accumulations are @ 15mm (provisional low confidence forecast).
- Thurs: 15mm potential as low pressure still remains close (provisional low confidence forecast).
- Fri: 15mm potential as low pressure still remains close (provisional low confidence forecast).

Hyrad Output: Current radar echoes show activity in the Channel with parts of the south coast being intersected.

B.3.6 Tuesday 31 October 2000

Agency Flood Forecasting Update Ref: DB3010003. Received at 00:38 on 31/10/00

Latest from Met Office as follows:

The outlook is still for continued squally but isolated showers accompanying the continued SW wind. However, the Met Office now has the wind veering round to the west, north west, cutting off the source of moisture for the showers and hopefully bringing drier conditions over Tuesday to the front on Wednesday night. However, prior to this we will still have showers coming up from the south west.

Latest Breakdown as follows:

- Mon 30/10/00-0000: Continued squally isolated showers. Accumulations of 3-6mm being observed. SW F 6/7 (Gusting F8).
- Tues 00:15-06:00: Potential for showers in the Channel to organise themselves into a rainy band that will sweep across the IOW, Sussex & Kent. The more detailed breakdown between 00:00- 06:00 is Hants/IOW 8-9mm, Sussex 14mm, Kent 10mm. The

Met Office has highlighted that there will be localised intense cells within this that could bring accumulations of 15-20mm in places, particularly on exposed coastal areas. SW F 6/7 (Gusting F8).

- Wind backing Westerly F4-5 (gusting 6).
- Tues: Winds still 4-5 (Gusting 6), outlook is scattered isolated showers. Accumulations 2-4mm.
- Wed: 0300: Wind veers back SW bringing in showers, SW F6-7, bringing accumulations of 5-6mm across all areas.
- Wed 20:00-Thurs 10:00: Low moves in from the West on Thursday. The confidence in the forecast is low, with a 60% chance of 5mm, 30% chance of 12-15mm.
- Thurs: Showery conditions now dropped to 5-10mm (still a provisional low confidence forecast).
- Fri: Showery conditions, now dropped to 5-10mm (still a provisional low confidence forecast.).

Hyrad : Radar showing livley echoes coming in from the Channel.

Met Office Daily Forecast. Received 05:18 31/10/00

An unstable and showery inflow covers the region, but with showers most around coastal fringes today becoming more widespread inland for a time tonight. Winds casing a little before ?? later.

Hampshire Precipitation from 06:00 today to 06:00 tomorrow:

M 5-12mm, High Confidence, Showers, Timing am/pm.

Agency Flood Forecasting Update Ref PG311000#1. Received at 07:09 31/10/00. Issued at 0600 31/10/00

The heavy showers that have brought an additional 5-15mm during the night have now moved east out of the region and little additional rain is expected for the next 36 hours. Winds have now dropped to F5/6 and are expected to decrease further. A series of fronts will pass across the region during Wednesday night through to Saturday. These are expected to bring an additional 30-40mm during this period, 10-15mm each day. All catchments are expected to respond to this rain and H1 and H2 trigger levels are likely to be exceeded. H3 at some sites. Key catchments in the next 96 hours will remains Monktonmead and Lymington.

Many river levels across the region have fallen significantly below levels observed yesterday.

Agency Flood Forecasting Update Ref PG311000#2. Received at 10:26 31/10/00. Issued at 0900 31/10/00

The majority of river levels across the region have fallen significantly below levels observed yesterday.

The latest Met Office Forecast:

- Wed night–Thurs am: A front will bring widespread rain to the region with totals of 20-25mm expected along IOW and along Hants coastline. Lower totals are expected inland 10-15mm, locally up to 20mm.
- Thurs pm: Showers similar to those last night will bring totals of 5-15mm to all areas though the higher totals will be very localised.
- Fri: Scattered showers 5-15mm. Higher totals will be localised. Generally the higher totals are expected in Hants, IOW.
- Winds W-SW F5/6. All catchments are expected to respond to this rain and H1 and H2 trigger levels are likely to be exceeded. Key catchments in the next 96 hours will remain Monktonmead and Lymington.

Met Office Gale Warning. Received 10:41 31/10/00. Warning issued at 09:27

Sea Area Wight south westerly severe Gale Force 9 now decreased Gale Force 8, veering westerly imminent.

Agency Flood Forecasting Update Ref DB3110001. Received at 14:19 31/10/00. Issued at 12:30

The latest update is as follows: The outlook is for continued unsettled conditions accompanying the SW winds which act as a feeder mechanism for bridging moisture and hence showers in from the channel. The outlook for tonight is supposedly much the same as last night with banded showers. Wednesday day should be drier before the arrival of the frontal low on Thursday morning. Thursday/Friday are forecast to have scattered showers.

- Tues 31st 1200-2200: Generally clear conditions. Isolated showers more likely on south coast later. SW F5/6 (gusting F6).
- Tues 31st 2100-2350: Showers tracking in from SW. These will affect Hants/IOW (3-4mm). SW F4/5 (gusting F6).
- Wed 1st 0010-0900: General outlook: much the same outlook as last night with showers forming in bands moving in from the west.
- 0010-0300: Hants 2-4mm Winds SW4-5
- 0300-0600: Showers clearing Hants 1-2mm. Higher accumulations expected for coastal areas.

- 0600-0900: Showers clearing Hants.

Summary accumulations for this period 0000-0900: Hants 3-6mm.

- Wed 1st 0900-1200: Showers clearing.
- Wed 1st 1200-1800: Clear spell, isolated showers.
- Wed 1st 1800-2330: Very little rain, clear, some showers on coast 1-2mm.

Thurs 2nd 0200-1000: Discreet frontal low moving in from the Bay of Biscay towards Holland which is forecast to 'clip' south east England. Confidence in this is moderate (50-60%). Rainfall accumulations Hants 10-15mm. Winds S-SSW F8 (gusting 60mph).

As this gets closer the detail and confidence of the forecast will increase.

Met Office Weather Watch on Potentially Severe Weather 16:00 31/10/00. Warning issued at 15:58

Weather Watch of Heavy Rain affecting south west Scotland, Northern Ireland, England and Wales. Frequent and heavy showers are expected to move into Northern Ireland, south west Scotland and western parts of England and Wales this evening before extending towards south east England overnight. This may increase the risk of flooding, the largest rainfall totals are expected across north west England and south east England. On Thursday, further heavy and prolonged showers are likely over western and southern England and Wales.

Met Office Heavy Rain Warning (number 218). Received 18:44 31/10/00. Warning issued at 16:57, valid until 12:00 on 01/11/00

Occasional showers are likely this evening. Overnight the showers are likely to become more frequent, especially close to the south coast where they could ~~come a hand~~ and give a longer spell of rain. The showers could be heavy and thundery. Amounts of rain are ~~likely~~ to be in the range 10 to 20mm with the coastal fringe seeing the higher value. The shower should become chiefly confined to the English Channel during tomorrow morning.

All IOW catchments 20mm + Time period 00:00-10:00.

Agency Flood Forecasting Update Ref DB31100002. Received at 20:25 31/10/00. Issued at 18:46

Following the Met Office's recent update: They are essentially saying the same thing but upping the amounts for tonight considerably. They are also downgrading the severity of the Thursday morning front. To summarise, the detailed Heavy Rainfall Warning: Showers could be heavy and thundery. 10-20mm across all areas, 20mm + for IOW between 0000-1200. Winds increasing to SW F6/7.

- Wed 1st 1200-2300: Scattered isolated showers to all areas (2-3mm potentially in parts SW F4/5 (gusting F6).

- Thurs 2nd 0000-1000: The latest from the Met Office has the centre of the low tracking a lot further south. Rainfall accumulations Hants 5-10mm Winds S-SSW F6/7 (gusting 50mph).
- Thurs 2nd pm: Low pressure, scattered showers trailing the low. Potential accumulations of 5-10mm across all areas. The Met Office state that the winds will slow-giving more rain on those showers.
- Fri 3rd pm: Similar outlook 5-10mm.
- Sat 4th: Ridge of high pressure should bring better conditions.
- Sun 5th/Mon 6th: Another frontal low: 25mm estimated and high winds.
- Tues 7th-Thurs 9th: Continued unsettled weather rainy/showery conditions.

B.3.7 Wednesday 1 November 2000

Met Office Daily Forecast. Received 11:55 01/11/00

A showery westerly flow will affect the British Isle AMMEND to issue as showers enhanced in latest run bringing higher totals for Thursday in particular. Next main belt still looks like Sunday.

Hampshire Precipitation from 06:00 today to 06:00 tomorrow:

0 Less than 1mm, High Confidence, Showers, Timing am.

Met Office Early Warning of Severe Weather, Early Warning of Heavy Rain. Received 12:10 on 01/11/00. Issued by Met office at 09:55 01/11/00.

Overall risk assessment: The probability of disruption due to severe weather conditions in part of the UK within the next 48 hours is 80%.

Regional risk assessment for the occurrence of severe weather conditions between 0300 on 2/11/00 and 0900 03/11/00: Central southern England: 40%.

This is the first issue of a warning of prolonged and at times heavy rain developing over England and Wales on Thursday. A low will deepen as it moves east into Wales early on Thursday, turning north east and moving across north east England by Thurs evening. The associated area of showery rain will merge into longer spells of rain across Wales and south west England before dawn with a band of sometimes heavy rain then swinging north east across other central, eastern and northern parts of England and later south east Scotland. Current indications are that rainfall totals will be around 10mm in the south. This will surely exacerbate the flooding problems. The warning will be updated at 0930 tomorrow unless superseded by a flash warning.

Agency Flood Forecasting Update Ref DB0111001. Received at 20:51 01/11/00. Issued at 18:35

The latest update is as follows: The outlook is for potentially more serious weather as we will receive two fronts in quick succession tomorrow morning.

Wed 1st – 0300 Tues 2nd: Mainly dry, scattered isolated showers on coastal areas. Winds will remain SW5/6 on coastal areas (possibly gusting 7). Dry until the early hours on Wed morning. The first front will move through from the NW bring rain to all areas. Accumulations are 15mm in Hants. This will move into Hants and IOW between 0300-0400. The rain will clear Hants by 1000.

Following closely behind this will be a second system, which has the potential to bring very heavy convective thunderstorms. The Met Office is only predicting an extra 5-10mm with these showers but various web sites are showing much higher potential for convective showers. These accumulations could be between 10-20mm in places. There is great uncertainty in this part of the forecast. These heavier showers should clear by 1800. The outlook for the rest of Thurs night is for continued SW, bringing scattered showers, higher on the coast.

- Fri 3rd: Scattered isolated showers SW 5/6, accumulation averages of 205mm. Heaviest on coast, same conditions all day until midnight.
- Sat 4th: A trough will move in from the west in the early hours of Sat am, bringing in 3-5mm. It is followed by a ridge of high pressure bringing stable conditions through the rest of Sat evening until midnight.
- Sun 5th: Deep Atlantic low moving into Ireland, bringing 10mm across all areas. Heaviest showers on coast, winds will increase S7/8.

Output from HYRAD; currently showing scattered isolated echoes.

Met Office Gale Warning. Received 16:54 01/11/00. Warning issued at 15:25

Sea Area Wight south westerly Gale Force 8 continuing.

Met Office Heavy Rain Warning (number 12). Received 19:36 01/11/00. Warning issued at 17:28, valid until 17:00 on 02/11/00

Outbreaks of rain are likely to arrive late in the night or early on Tuesday morning. The rain is likely to be prolonged and heavy for a time before being replaced by blustery showers following from the south west. Overall amounts of rain are likely to reach 10mm to 15mm in most places, but totals may reach 20mm in some spots. Rainfall rates may reach 10mm per hour at times.

All IOW catchments 20 mm + Time period 04:00-13:00.

Met Office Gale Warning. Received 23:44 01/11/00. Warning issued at 22:00

Sea Area Wight gale now ceased. South westerly Gale Force 9 expected soon.

B.4 SUNDAY 5 NOVEMBER TO WEDNESDAY 8 NOVEMBER 2000 EVENT**B.4.1 Thursday 2 November 2000****Agency Weather Forecast Update. Received at 05:34 02/11/00. Issued at 04:30**

The latest Met Office forecast: Thurs: The warm front moving up from the SW has slowed significantly and is not expected to bring significant rain to region until 08-10 today. A trough following behind showers tracking W-SW, winds strengthening 5-6. Accumulations between midnight and Thurs 12:00 are estimated to be 10-15mm in all areas. There is a possibility of heavier rain developing as the rain moves on land and if this does occur accumulations will be higher 20-25mm. Showers will follow behind the warm front these will be scattered but some could be heavy in nature if they become organised. Totals up to 10mm all areas in the afternoon. Total for next 24 hours, likely 20-25mm, exceptionally 30-35mm. The winds are expected to change direction during Thursday night into Friday to NW, thus eliminating the risk of showers continuing from the SW.

- Fri: Scattered showers 1-5mm. Higher totals will be localised. Generally the higher totals are expected in Hants, IOW.
- Sat: Scattered showers across the Region, total accumulations 1-5mm.
- Sun: Low pressure will bring rain to the Region. Current forecast is for 15-20mm. This system is expected to develop. Need to watch carefully.

Met Office Daily Forecast. Received 11:04 02/11/00

A small area of low pressure will deepen as it moves across southern Ireland, the Irish Sea and northern England. Overnight the low will become slow moving close to the coast of north east England.

Hampshire Precipitation from 06:00 today to 06:00 tomorrow:

H 13-19mm, Medium Confidence, Showers, Timing 0600-0600.

Met Office Heavy Rain Warning (number 25). Received 11:04 02/11/00. Warning issued at 09:50, valid until 03:00 on 03/11/00

The band of heavy rain (with thunderstorms) will continue moving eastwards during the morning. The back edge has already (11 09:30) cleared the New Forest and the far west of the Isle of Wight. Another 5mm is expected across Hampshire and the Isle of Wight until it clears by 11:00. Scattered showers will then follow from the west or south west. Some heavy showers can be expected across the coastal strip and the Isle of Wight during the afternoon, evening and night, giving 5 to 10mm in localised coastal areas.

Rivers in East Hampshire, New Forest and Isle of Wight 15-20mm 09:30-06:00.

Met Office Gale Warning. Received 11:23 02/11/00. Warning issued at 09:47

Sea Area Wight south westerly severe Gale Force 8 veering south westerly soon.

Met Office Early Warning of Severe Weather, Early Warning of Severe Gales & Heavy Rain. Received at 12:15 on 02/11/00 2000. Issued by Met Office at 10:19 on 02/11/00

Overall risk assessment: The probability of disruption due to severe weather conditions in part of the UK within the next 144 hrs is 80%.

Regional risk assessment for the occurrence of severe weather conditions between 12:00 on Sunday, 5/11/00 and 23:59 on Tuesday 7/11/00: Central southern England: 70%.

This is the first warning of disruption due to heavy rain and gales later on Sunday and into the first part of next week. A developing depression today is already producing heavy rain across England and Wales. This heavy rain will spread to parts of Scotland overnight before moving away, through tomorrow and Saturday. There will be a general respite with sunny spells and showers. However a deepening depression moving east off the Atlantic later on Sunday will become slow moving close to or over south-eastern Britain through Monday and Tuesday, bringing further prolonged and occasionally heavy rain across many areas, with a risk also of localised severe gales. Rainfall totals up to 25-50mm are likely and, at this early stage, the more southern and eastern parts of Britain are at greatest risk from the higher totals, with a lower risk for the north west. Similarly the strongest winds are most probable across the south and the east of Britain, with gusts up to 70 miles per hour or more in exposed areas. This warning will be updated at 09:30 tomorrow.

Met Office Gale Warning. Received 15:26 02/11/00. Warning issued at 12:25

Sea Area Wight south easterly Gale Force 8 increasing severe Gale Force 9 imminent.

Agency Flood Forecasting Update Ref: DB0211002. Received at 20:01 on 2/11/00. Issued at 18:59

The latest update is as follows: The highest intensity rainfall has gone through but the continued southwesterlies bringing heavy showers are set to continue until 09:00 Friday am. The next big event is for Sunday night/Monday which will be allow centered over Southern and is forecast to bring 25-50mm rain. Confidence in the forecast is high. There is no let up for the moment.

Latest detail breakdown from Met Office is as follows:

- Thursday 02-Friday 03 Nov 09:00: Heavy isolated showers set to continue, being heavier in coastal areas and with amplifications over the Downs.
- Today midday until midnight: Each set of showers could bring 5mm each. A series of showers could bring 10-15mm by midnight.

- From 00:15 to 09:00: Further accumulations of 10-15mm on the coast and 5-10mm inland.
- Totals from now until 09:00 tomorrow are forecast to be 20-30mm across coastal areas where showers coincide. Winds will remain SW7 on coastal areas (possible gusting 8).
- 09:00 Friday 03 Nov: Winds backing westerly cutting off the source of moisture and bring dry conditions. Few scattered isolated showers. Friday all day into Sat am will be dry.
- Sat 04 Nov: Isolated showers early in the morning (1-3mm across all areas). Dry all rest of Saturday through Saturday night into Sunday morning.
- Sun 05 Nov: Discreet frontal low is forecast to arrive directly over Southern region. It will slow as it moves in, bring very high accumulations. The worse conditions are expected in Hampshire and the IOW. Between 12:00 05/11/00 and 18:00 06/11/00, the Met Office are forecasting 25-50mm with 60% confidence. The first pulse will arrive Hants and IOW by 12:00, Kent by 16:00 and will bring 5-10mm. There should be a clear spell before the next associated fronts and troughs stream though. This will then be followed by a sustained period of high rainfall (with the worst being Monday morning) all the way through 'til Monday evening. The forecast is for scattered showers overnight on Monday.
- The outlook for Tuesday 7th is for drying conditions as the low moves away. This will continue through until the end of next week.

Hyrad: Currently showing scattered isolated echoes.

B.4.2 Friday 3 November 2000

Met Office Gale Warning. Received 00:15 03/11/00. Warning issued at 22:20

Sea Area Wight south easterly severe gale force 9 decreasing. Gale Force 8 soon.

Met Office Daily Forecast. Received 06:31 03/11/00

An occluded front will move east this morning across southern England, becoming more showery in nature as it does so. A trough of low pressure will then move east overnight, clearing way tomorrow morning.

Hampshire Precipitation from 0600 today to 0600 tomorrow:

M 5-12 mm, Medium Confidence, Rain then showers, Timing: 0600-0600.

Agency Flood Forecasting Update Ref PG031100#1. Received at 07:17 03/11/00. Issued at 06:00 03/11/00

The latest Met Office forecast: Showers are expected to continue to trend SW-NE. They maybe heavy at times and SE will receive the higher totals during the next 12 hours.

Hampshire 4-8mm. There will be some scattered showers this evening and these will bring 6-8mm in the 48 hours 1800 03/11/00 – 1800 05/11/00. Midday Sunday the next low pressure system will move in from the west bringing strong winds and rain. As the system approaches it is expected to elongate and so giving an extended period of rain. Estimates of rain are very unclear but 25mm for 24 hours midday Sunday-Monday is likely. The low pressure will linger over the SE through into Tuesday and during this period showers could increase totals by a further 25mm. Further updates will be sought at regular intervals. Catchments will remain saturated through the weekend and will respond significantly to the forecast 50mm during the 48 hours 1200 05/11/00-07/11/00 requiring Flood Watches and Warnings to be reviewed.

Met Office Early Warning of Severe Weather, Early Warning of Severe Gales & Heavy Rain. Received at 13:23 on Friday 3/11/00. Issued by Met Office at 09:30 on Friday 03/11/00

Overall risk assessment: The probability of disruption due to severe weather conditions in part of the UK within the next 108 hrs is 90%.

Regional risk assessment for the occurrence of severe weather conditions between 12:00 on Sunday, 5/11/00 and 23:59 on Tuesday 7/11/00: Central southern England: 70%.

This is an update of the warning issued at 10:19GMT yesterday of disruption due to heavy rain and gales later on Sunday and into the first part of next week. Latest indications are that a deep depression will move east across southern England during Monday. It's associated frontal system will bring further periods of rain, heavy at times, into south western Britain and Northern Ireland by Sunday evening, moving across remaining southern parts of England and northern England and south east Scotland by the end of Monday. The rain will be accompanied by gales with a risk of severe gales. Rainfall totals of 25-30mm are likely, mostly across England and Wales. The strongest winds are most probable overnight Sunday into Monday, as easterly winds turn northerly. Gusts of 70mph or more are possible in exposed areas. The greater risk of disruption will be from heavy rain.

Agency Flood Forecasting update Ref. DB 4110001. Received at 16:13 03/11/00. Issued at 13:55

The latest update is as follows: The bright clear conditions are forecast to continue through until Sunday as per previous forecasts. There is a chance of some isolated showers bringing 1-2mm in the early hours of Saturday morning. The details for Sun 5th and Mon 6th is as follows:

Leading edge of showers from 1300 Sun 5th. The rain will spread into Hampshire and the IOW by 1500. Forecast accumulations between 1500 and midnight are in the region of 15-20mm across all areas. Winds will reach F7, possible gale F8 from the SE and will back around from the north later. Accumulations from midnight until 1800 Mon 6th are forecast to be 15-30mm. Within the frontal system there will be convective thundery showers bringing high intensities within the frontal system. The worst most active part of the storm is forecast to be between 0030 and 0700 on Monday morning. Totals for 1200 Sun to 1800 Mon are 30-50mm. Met Office confidence in this forecast is 70%. The outlook for Mon evening into

Tues is for unsettled showery conditions as the low remains in proximity. These showery conditions will persist into Tues and Wed bringing accumulation over this period of 15-20mm. The outlook for the rest of the week is for unsettled conditions.

A catchment this saturated will respond very quickly to rain of this intensity. There is no probably no need to state the obvious that this quantity and intensity of rain will cause widespread problems if it arrives as forecast. All the usual hotspots will respond. As we get nearer Sun, more detail on which areas are likely to be worse hit should be available.

Met Office Gale Warning. Received 18:39 03/11/00. Warning issued at 17:16

Sea Area Wight gale now ceased.

B.4.3 Saturday 4 November 2000

Met Office Daily Forecast. Received 06:17 04/11/00

A transient ridge of high pressure will bring settled conditions to all parts through today and tonight. A low pressure system is expected to push across during Sunday, though, with the low not exiting into the North Sea until later on Tuesday. This will bring a spell of very wet and windy weather.

Hampshire Precipitation from 0600 today to 0600 tomorrow: 0 Less than 1mm, High Confidence, Dry, Timing: N/A.

B.4.4 Sunday 5 November 2000

Met Office Daily Forecast. Received 06:41 05/11/00

An area of low pressure will deepen in the south west approaches today before running through the English Channel and into the North Sea by the end of Tuesday. A spell of very wet and windy weather is expected as associated fronts cross the region during this afternoon and evening while, thereafter, there is potential for heavy and thundery showers until the low clears completely from the region by Wednesday.

Hampshire Precipitation from 0600 today to 0600 tomorrow:

VH 20 mm or more, High Confidence, Rain then showers, Timing: 1400-0600.

Met Office Gale Warning. Received 07:37 05/11/00. Warning issued at 05:14

Sea Area Wight south easterly Gale Force 8 expected later.

Met Office Gale Warning. Received 10:00 05/11/00. Warning issued at 05:20

Sea Area Wight south easterly Gale Force 9 increasing severe Gale Force 9 soon.

Met Office Heavy Rain Warning (number 49). Received 10:00 05/11/00. Warning issued at 08:09, valid until 08:00 on 06/11/00

Some mostly light showers are likely this morning and into this afternoon, but more persistent and often heavy rain will arrive during the second half of the afternoon or early evening and last well into tonight. Clearer showery weather will follow later. Overall amounts should reach 15 to 25mm, but perhaps as much as 35mm in places. Rainfall rates will exceed 10mm per hour at times.

All Hampshire and IOW catchments 20mm + Time period 14:00 –03:00.

Met Office Early Warning of Severe Weather, Early Warning of Severe Gales & Heavy Rain. Received at 11:45 on Sunday 5 November 2000. Issued by Met Office at 09:15 on 05/11/00

Overall risk assessment: The probability of disruption due to severe weather conditions in part of the UK within the next 48 hrs is 90%.

Regional risk assessment for the occurrence of severe weather conditions between 12:00 on Sunday, 5/11/00 and 00:01 on Wednesday 8/11/00: Central southern England: 70%.

This is an update of the warning issued at 09:30 UTC yesterday. The depression is deepening as expected and will move eastwards through the English Channel before turning northwards in the North Sea on Wednesday, although the associated frontal rain band will move gradually northwards across southern Britain during today, Sunday. There will be further heavy rain in slow moving showery bands in the south near the low centre. Unfortunately, the frontal rain band will become slower moving in the north and we cannot at this stage be sure of exactly where it will slow down. However, rainfall totals of 25mm are likely on lower ground and twice this amount or more on hills exposed to the south east or east. The strongest winds with gusts of around 70mph are most likely to be in the south west this afternoon and the greater risk of disruption remains from the heavy rain.

This warning will be updated tomorrow morning, Monday 06/11/00 unless superseded by flash messages.

Met Office Flash Warning of Severe Weather. Received at 13:27 05/11/00. Issued by the Met at 11:40 05/11/00. Valid until 1800 05/11/00

There is a flash warning of heavy rain affecting the Midlands, Wales, south west England and central southern England.

A band of heavy rain, now over parts of south west England and south Wales will move north east through the afternoon to affect the rest of Wales, the west Midlands, and parts of central southern England, with rainfall amounts of around 25mm in places. The rain will also be accompanied by strengthening winds, which may gust to around 60mph in the more exposed parts. Local flooding is likely and driving conditions will be hazardous with standing water and blowing spray.

Agency Flood Forecasting Update Ref: DB5110001. Received at 14:53 on 5/11/00

Latest from the Met Office as Follows: As forecast, the frontal system associated with the low are upon us. The Met Office has reissued it's Early Severe Weather Warning, with a 70% probability of severe weather for southern and south east England.

The details for Sun 5th into Mon 6th as follows:

The leading edge of showers will start from 1300 Sunday 5th is now visible on Hyrad. The rain will spread into Hants & IOW by 1400. Forecast accumulations between 1500 and midnight (Sun) are in the region of 15-25mm across all areas. The most intense rain will be between 1600-2000 for Hants, 1700-2200 for Sussex & 1800-0000 for Kent. Winds will reach Force 7 possibly Gale Force 8 from the SE.

Accumulations from 00:30 until 23:30 on Monday 6th (the whole day) are forecast to be 15-30 mm. This will be brought by heavy, slow moving, thundery convective showers. They will be scattered, highly variable in intensity and difficult to predict spacially. Some parts could receive nothing, other areas as high as 35mm. There will be enhancement over the Downs as well, so expect higher totals there.

Winds will back round to the South West (F4) which gives the feeder mechanism (the Channel moisture) for the heavy showers.

- Totals for Midday Sunday – 22:30 Monday are approximately 30-50mm.
- The outlook for Tuesday (7th) is much the same as Monday with unsettled showery conditions giving average accumulations of 15mm (with a range of 5-30mm likely) whilst the low remains in proximity.
- Wednesday remains much the same. Nominal accumulations are again 15mm (expect this to change as the forecast becomes more accurate).
- From Thursday the wind will be from the north west, cutting off the source of showers, bringing drier conditions.
- Friday/Saturday – Outlook is for more settled conditions. There is no additional frontal low forecast to come through yet!

Hyrad: Hyrad is tracking the front well.

Agency Flow Forecasting Update Ref DB5110002. Received at 17:20 05/11/00. Issued at 15:15

Certain models run on the FFP are giving poor output at the present time (Millbrook, Tadburn Lake). Based on the previous event of 02/11 when 20-25mm fell: Botley Road has a lag of 4 hours from rainfall to peak. If worst of rain is by 2000, then expect to peak at or near 2300. Last time it got to 17.05m AOD, this time could reach 17.6m AOD at 2200-2300. Ower on the Blackwater takes 15 hours to peak. Last time it got to 9.2m AOD. This time it will do at least the same, peaking at 9.2-9.3m AOD by 1000-1100 on 06/11/00.

Met Office Warning of Severe Weather. Received at 18:06 5/11/00. Issued by the Met at 16:16

This is a flash warning of heavy rain affecting north east England, The Midlands, Wales, south west England, central southern England, south east England, East Anglia and Lincolnshire.

A broad band of heavy rain is covering much of southern England. Rainfall amounts are likely to be between 25 and 35mm in places. The heavy rain will be accompanied by strong to gale force winds, with gusts to around 60mph in exposed parts. Local flooding is likely and driving conditions will be hazardous with standing water and blowing spray.

Met Office Gale Warning. Received 18:38 05/11/00. Warning issued at 16:41

Sea Area Wight Sever Gale Force 9 veering south westerly and decreasing Gale Force 8 soon.

Agency Weather Update. Received 22:41 05/11/00. Issued at 21:09

Rainfall received so far (as at 20:35): Rainfall received to 20:40, previous 12 hours data 30-36mm in Hants. Weather update is that the first front has come through with the worst of the weather being in the west. However the latest satellite images show a large mass of cloud and rain over northern France, which is coming northwards over the channel bringing those heavier showers as forecast. There is no let up in the situation. We are slightly ahead of the forecast accumulations (particularly in Hants) so expect the worse from now on. Rest of the forecast remains as previous. Note also that on the satellite image the front that came through earlier is starting to come back round on us for another go on Wednesday, which is what gives the high totals for Wednesday. Accumulations from 0030-2330 on Mon 6th are forecast to be 15-30mm. These will be brought by heavy slow moving thundery convective showers. They will be scattered, highly variable in intensity and difficult to predict spatially. Some parts could receive nothing, other areas as high as 35mm. There will be enhancement over the Downs as well, so expect higher totals there. Winds will back round to the SW (F4), which gives the feeder mechanism (the Channel moisture) for the heavy showers. Totals for midday Sunday to 2330 Mon re approx 40-50mm. The outlook for Tues 7th is much the same as Mon with unsettled showery conditions giving average accumulations of 15mm (with a range of 5-30mm likely) whilst the low remains in proximity. Wed remains much the same. Nominal accumulations are again 15mm (expect this to change as the forecast becomes more accurate). From Thurs the wind will be from the north west, cutting off the source of showers, bringing drier conditions. Friday and Sat outlook is for more settled conditions. There is no additional frontal low forecast to come through as yet.

B.4.5 Monday 6 November 2000**Met Office Daily Forecast. Received 06:26 6/11/00**

An area of low pressure will start off close to the Brest Peninsula and will then move north east across the English Channel, becoming centred over Kent this evening and for most of the night. Tomorrow morning the low will continue to move north east, with its centre running along the Essex coast.

Hampshire Precipitation from 0600 today to 0600 tomorrow:

M 5-12 mm, High Confidence, Showers or rain, Timing: 0600-0600.

Met Office 5 Day forecast. Received 07:58 06/11/00. Issued at 05:00 06/11/00

Headline (significant weather): An unsettled period of weather associated with a deep area of low pressure across the country, the centre tracking fast through the English Channel. There will be strong or gale force winds in western and northern areas and outbreaks of heavy and persistent rain.

This morning and this afternoon: In south, bright or sunny intervals and showers, some heavy and prolonged, this zone edging north through Midlands. Windy gales in places, feeling cold.

- **This evening and overnight:** The south will have clear intervals and scattered outbreaks of showery rain. Windy, with gales on exposed coasts and hills.
- **Tuesday:** Bands of showery rain will continue to circulate around the area of low pressure centred near south east England. The south will be at risk from heavy thundery showers, spreading well inland at times.
- **Wednesday:** In south there will be some bright or sunny intervals and further showers, perhaps thunder/hail and most frequent near coasts exposed to strong northerly winds, gales are possible. Mostly rather cold.
- **Thursday:** In south clear or sunny periods, but with showers over exposed coastal areas. The showers likely to extend in land in favoured places. Showers are likely to be heavy at first with hail and small risk of thunder but should become lighter and less frequent during the day. Temperatures generally around normal.
- **Friday:** Any showers around exposed coasts gradually dying out, otherwise good clear or sunny periods in all areas. Frost in many inland areas at first but with daytime temperatures near normal.

Agency Flood Forecasting Update Ref:PG61100#1. Received at 10:35 on 6/11/00

Latest from the Met Office as follows: The heavier rain that brought up to 60mm of rain last night has now cleared away. The centre of the low pressure system will move slowly across the south coast today and will be pivoting in east Sussex by this evening. Light but continuous rain is expected along coastal areas with some heavy showers developing especially this afternoon. Widely expected totals up to midnight: Hants: 10-12mm. The amount of rain that the heavier showers bring is uncertain. However, they will be localised along the coast and totals may be as high as 30mm up to midnight. Showers should die out overnight as the wind changes direction and keep the heavier showers off the south coast. Estimated totals for Tuesday 5-10mm. Long term outlook is better with showers clearing on Wednesday and no low pressure systems following in behind.

Met Office Early Warning of Severe Weather, Early Warning of Heavy Rain. Received at 12:00 on 6/11/00. Issued by the Met at 09:39 on 6/11/00

Overall risk assessment: The probability of disruption due to severe weather conditions in parts of the UK within the next 60 hours is 90%.

Regional risk assessment for the occurrence of severe weather conditions between 12:00 on Monday 6 November 2000 and 00:00 on Thursday 9 November 2000: Central southern England: 40%.

This is an update of the warning issued at 09:15 UTC yesterday. The belt of heavy rain has now moved northwards out of south Wales, central and southern England. The low pressure centre will move slowly eastwards over northern France or the English Channel during today, becoming slow moving near south east England on Tuesday before moving northwards in the North Sea. Slow moving shower bands may give locally heavy rain in southern England, especially in the south east with totals of 25mm or more.

Agency Flood Forecasting Update Ref : PG61100#2. Received at 13:11 on 6/11/00

Latest from the Met Office as follows: The centre of the low pressure is now in the English Channel and moving toward East Sussex and SE Kent. The centre of the low pressure is slow moving and has associated with it showers that are rotating anti-clockwise. These will bring heavy showers that will be slow to move away. The highest totals will be along the coast in Hants, IOW, Sussex and Kent. The showers will be thundery at times and high localised totals are expected. The totals below are typical ranges, the last figure is the local max expected. Close monitoring is required of the showers as they develop to pick up any local heavy cells.

- 6/11/00 Hants 10-12 mm (15 mm) : 12:00- 00:00.
- 7/11/00 Hants 5-8 mm(12 mm) : 00:00-00:00.
- Showers will begin to clear as the centre of the low pressure moves NE toward the North Sea.

Agency Flood Forecasting Update Ref: DB06110001 Received at 15:43 on 6/11/00

Latest from the Met Office as follows: The centre of the low remains over northern France, bringing continued showers to Sussex and Hampshire and IOW. These are due to clear during the night but remain persistent until then. The showers can be seen circling the centre of the low on Hyrad.

Details for the rest of Monday 6th as follows: The showers moving in from the channel are supposed to be dying 'in-situ' according to the Met Office. However, every new radar run seems to show more showers spreading in from the Channel to West Sussex and Hampshire. The Met Office has now forecast the following: From 1400 until midnight Monday: Hants & IOW 7mm. However, this is more likely to be 10-15mm for both Hants & Sussex until midnight.

Tuesday: The Met Office predicts dry for Hants & Sussex. The outlook for the rest of the day in all areas is dry conditions.

Wednesday: Showers dying out 4-5 mm all areas. Winds W-NW F3/4.

Thursday: Weak troughs coming through. Winds W-SW F3/4 (2-5mm max).

Friday: Same – Weak troughs coming through. Winds W-SW F3/4 (2-5mm max). Higher pressure developing.

Saturday: Decaying front coming from NW – weakening as it comes through. Estimated rainfall 1-5mm.

Sunday: Outlook is dry.

Agency Flood Forecasting Update Ref: DB06110002. Received at 21:47 on 6/11/00. Issued at 20:16

Latest from the Met Office as follows: The centre of the low will move eastwards slowly, bringing northerly winds with a lower potential for showers.

- Monday 2000-0000: Winds NE F3-4 Hants 3-6mm.
- Tuesday all day 0000-Wed 0000: Hants 2-4mm Winds NNW.
- Wednesday (all day): Winds from SW, bringing more showers, Hants 2-3mm.
- Thursday (all day): Winds from SW, bringing more showers, Hants 0-2mm.
- Friday: High pressure ridge will hold showers off. 1-2mm scattered showers in each area.
- Saturday: Decaying front coming in from NW bringing 2-3mm to all areas. More unsettled, changeable conditions.
- Sunday: Another band of showers associated with low over Scotland. 4-6mm possible over each area.

B.4.6 Tuesday 7 November 2000

Met Office Daily Forecast. Received 06:04 7/11/00

An area of low pressure will start off centred across Kent this morning. Through today the low will move away north eastwards, across the Thames Estuary and then parallel to the Essex coast, becoming centred off the Norfolk coast by midnight. As the low is moving away so slowly it will continue to feed bands of showers across southern England today and overnight.

Hampshire Precipitation from 0600 today to 0600 tomorrow:

H 13-19mm, Medium Confidence, Showers or rain, Timing: 0600-0600.

Agency Weather Update Paul Goodwill 07/11/00 0700. Received at 08:19 7/11/00

The low pressure currently sitting over SE Kent will move away gradually NE into the southern North Sea during next 18 hours. As it does so winds will change direction to NW bringing the rainfall currently in northern England southwards. However as it moves southwards it is expected to die out. Showers are the immediate concern. They will be triggered by instability this afternoon and will be slow moving. The heavier showers are more likely to occur in Kent.

Today will be 3-4mm in places, however, localised totals may exceed 20mm where heavier showers linger. The heavier showers are expected to die out overnight but some totals of 508mm may occur locally, and are more likely in Kent. Isolated showers are expected through Wednesday, Thursday and Friday totals 1-2mm, locally up to 4mm. The next low pressure system will move in from the west during Friday and through Saturday bringing 10-15mm. However this will need to be updated daily as the system approaches the UK.

Met Office Heavy Rain Warning (Warning no 52) Cancelled. Received at 16:12 07/11/00. Issued at 14:53 07/11/00

Having assessed the latest development, your current warning (that expires at 2200 07/11/00) is cancelled. As a guide we expect around 5mm at most in your area during the rest of today.

B.4.7 Friday 08 November 2000**Met Office Daily Forecast. Received 07:39 8/11/00**

Low pressure continues to dominate the weather patterns, with cloud and further patchy and lighter rain in many areas today to be followed by showers later.

Hampshire Precipitation from 0600 today to 0600 tomorrow: L 1-4mm, Medium Confidence, Rain then showers, Timing: 0600-0600.

Agency Weather Forecast Update Ref GM081100#. Received 08/11/00 15:01. Issued 08/11/00 13:50.

The latest Met Office Forecast (as at 13:00 GMT):

Wednesday: For most area in the region the rest of the day will remain mainly dry. Only light scattered showers are expected this afternoon and over night particularly in coastal areas. Totals where showers occur are expected to be 1-3mm.

Thursday: A similar risk of light scattered showers exists (most: offshore) but the risk will ease during the day as a ridge of high pressure moves in for Thursday pm and Friday. The night is expected to be cold and dry. Totals where showers occur are expected to be 1-2mm, most areas dry.

Friday and the Weekend: The day is expected to start with a similar risk of light scattered showers. Low pressure moving in from the Atlantic will bring new rain bands for late on Friday (the timing is now later than previous forecast this morning). These bands are

expected to arrive before midnight on Friday in Hampshire/IOW moving west to east across the region. The rain is expected to stay for much of Saturday and into Sunday before becoming showery again. Totals are uncertain at this stage but may be of the order of 5-10mm for late Friday/Saturday and another 5-15mm for Sunday (i.e. 10-25mm overall totals from late Friday-Sunday).

Next week will continue unsettled with wet and windy spells or brighter interludes with showers.

B.5 THURSDAY 9 NOVEMBER TO 28 FEBRUARY 2001 EVENT

B.5.1 Thursday 9 November 2000

Met Office Early Warning of Severe Weather. Early Warning of Heavy Rain. Received at 11:20 9/11/00. Warning issued at 09:18 9/11/00.

Overall risk assessment: The probability of disruption due to severe weather conditions in part of the United Kingdom within the next 84 hours is 60 percent.

Regional risk assessment for the occurrence of severe weather conditions between 18:00 10/11/00 and 23:59 12/11/00: Central southern England: 40%.

This is the first warning of disruption due to prolonged at times heavy rain on Saturday and Sunday. Another deep Atlantic depression will move into the western approaches of the British Isle during the weekend. The associated frontal system will bring further rain to all area on Friday, though amounts will be mostly below 5mm but become slow moving over southern England during Saturday and Sunday. Rain will be prolonged and become heavy at times over these southern area, and especially south eastern England through Saturday and Sunday with a risk of further accumulations of 25-50mm in places. This warning will be updated at 09:20 tomorrow.

B.5.2 Friday 10 November 2000

Met Office Daily Forecast. Received at 06:38 10/11/00

A shallow ridge of high pressure will topple east through today as Atlantic weather fronts encroach from the west. These fronts will bring rain across all areas overnight, coupled with freshening winds, and with the fronts set to remain slow moving then through Saturday and into the first half of Sunday. South westerly gales developing through the Channel tonight.

Hampshire Precipitation from 0600 today to 0600 tomorrow: M 5-12mm, Medium Confidence, Showers/rain, Timing Rain 16:00-06:00.

Agency Flood Forecasting Update Ref DB10110001. Received 10/11/00 09:13. Issued 10/11/00 08:48

The latest update is as follows: Yesterday the Met Office issued an early warning of severe weather (25-50mm over weekend). This will be updated this morning. The Agency expects a heavy rainfall warning some time today.

- Fri 10th until afternoon: dry.
- Fri 10th: Rain getting into Hants between 1800-2000. Light frontal rain, total until midnight 1-3mm. Winds SW 5/6.
- Sat 11th 00:01-12:00: Forecast accumulations of 10-12mm all areas. Winds SW 7-8. Rain still frontal and widespread.
- Sat 11th 12:01-23:59: Forecast accumulations 15-20mm all areas. Winds SSW 6-7. Heavier more intense frontal rain.
- Saturday Totals: 25-35mm (40mm possible in places).
- Sun 12th 00:01-12:00: Rain now clearing more quickly than previously thought. Forecast accumulations. Hants 4-7mm (clearing by 0600). Winds SSW F 5-6.
- Sun 12th 1201-2359: Forecast accumulations 5-10mm all areas. Scattered showers, possible banding as troughs come through. Winds SW F5-6.
- Sunday totals: 15-25mm.
- Mon 13th: Scattered showers 3-8mm. Winds WSW F3-4. Troughs accompanying front.
- Tues 14th: Showers dying out, high pressure building NF2.
- Wed 15th: High pressure, fog in morning.
- Thurs 16th: Settled and dry.
- Severe Weather Warning: Issued at 09:18 09/11/00.

Agency Flood Forecasting Update Ref DB10110002. Received 10/11/00 16:00. Issued 10/11/00 15:36

The latest update is as follows: Yesterday the Met Office issued an Early Warning of Severe Weather (25-50mm over weekend). This was updated this morning. We will also expect a Heavy Rainfall Warning sometime today (not arrived yet).

- Friday 10th: Rain getting into Hants between 1800-2200. Light frontal rain, totals until midnight 2-4mm (5mm max) Winds SW 5/6.
- Sat 11th 0001 1200: Forecast accumulations 8-12mm all areas. Winds SW 7/8. Rain still frontal and widespread. Higher totals on South Downs.
- Sat 11th 1201-2359: Forecast accumulations 15-20mm all areas. Winds SSW 6/7. Heavier more intense frontal rain, some 'ripples' (Banding of showers).
- Sat totals: 25mm (north Hants-35mm (40mm possible in places) (South Downs and Coastal areas).

- Sun 12th 0001-1200: Rain now clearing more quickly than previously thought. Forecast accumulations Hants 4-7mm (clearing by 0600). Winds SSW F5/6.
- Sun 12th 1201-2359: Forecast accumulations 4-7mm all areas. Scattered showers, possible banding as troughs come through. Winds SW F5/6.
- Sun Totals: 10-20mm.
- Mon 13th: Scattered showers 3-6mm. Winds WSW F3/4. Troughs accompanying front.
- Tues 14th: Showers dying out, high pressure building NF2.
- Wed 15th: High pressure, fog in mornings.
- Thurs 16th: Next frontal system. No detail as yet.
- Severe Weather Warning: Issued at 09:40 10/11/00.

Agency Flood Forecasting Update Ref PG101100#1. Received 10/11/00 19:45. Issued 10/11/00 19:30

25-35mm is forecast for the next 24 hours followed by 10-20mm on Sunday. The timing of the majority of this rain is the greatest area of uncertainty in terms of forecasting likely catchment response. In the Nov 5-6 event the majority of rain fell during an 8-9 hour period. Totals experienced were in the range Hants/IOW 30-40mm. Generally levels should not reach those experienced 5/6 Nov as most river levels have now fallen to those prior to 5 Nov and the rainfall forecast is less and over a longer period. This is on the basis of the rainfall being as forecast. If the rainfall is higher 35-45mm Sat and 15-25mm Sunday, then levels could reach those observed on 5/6 Nov.

Hants: With spring tides over the weekend Monktonmead could again exceed H3 of the higher totals fall over the catchment prior to high tide. The key will be the timing of the rainfall in relation to high tide Sat pm and Sun am.

Agency Flood Forecasting Update Ref PG101100#2. Received 10/11/00 23:45. Issued 10/11/00 23:30

Heavy rain has already fallen in coastal area as the warm front has passed over- Hants 4mm. The next front is slowing and will bring broken pulses of heavy rain. An additional 2-5mm is expected overnight but during tomorrow waves will develop along the front which will lie IOW up to Norfolk. The heaviest rain is likely to fall late afternoon and into the evening in Hants. Locally totals front this period of rain could locally exceed 25mm. The front will move away by Sunday midday but will be followed by a tough on Sunday afternoon. This will bring showers, locally up to 10mm. The showers will clear away overnight Sunday. The outlook is better for next week with several days of settled weather. Clearly 25mm during Saturday evening and through until Sunday morning will be the danger period and the development of heavy showers will need to be monitored closely.

B.5.3 Saturday 11 November 2000

Met Office Heavy Rain Warning (Warning number 102). Received at 00:08 11/11/00. Warning issued at 22:51 10/11/00. Valid until 12:00 12/11/00

A waving weather front is likely to bring outbreaks of occasionally heavy rain to the area during the period. Rainfall totals between 25-40mm are possible locally.

All Hampshire and IOW catchments 20mm+ (15-25mm likely) Time period: Now until midday Sunday.

Met Office Daily Forecast. Received at 05:19 11/11/00

An area of low pressure will lie close to the coast of Northern Ireland both today and overnight tonight, with an associated slow moving and waving weather front straddling the EA Southern region. A more showery air stream should encroach into western parts overnight.

Hampshire Precipitation from 0600 today to 0600 tomorrow:

H 13-19mm, Medium Confidence, Frontal, Timing Sporadic bursts - best of any dry spells likely around noon today, with heaviest rain expected this evening.

Met Office Gale Warning. Received 07:29 11/11/00. Warning issued at 02:56 11/11/00

Sea Area Wight southerly Gale Force 6 expected soon.

Agency Flood Forecasting Update Ref DB10110001. Received 11/11/00 09:48. Issued 11/11/00 09:12

The latest update is as follows: Rainfall totals for the previous 24 hours (as at 0700 11/11/00) Hants 0.5-4.0mm. The current rain bands are moving very quickly and should give only 3-4mm accumulations. A Gale Warning of SW F8 was issued in the early hours.

- Sat 11th 0800-2359: Forecast accumulations 8-10mm all areas. Winds SW 7/8. Banded showers. Higher totals on South Downs.
- Sun 12th 0001-0900: Forecast accumulations Hants 15-20mm. Heavier more intense slow moving frontal rain forecast to rain stationary over Sussex and Kent.
- Sun 12th 1200-2359: Forecast accumulations 2-5mm all areas. Further trough coming through late afternoon/early evening.
- Sun night/Monday: Dry.
- Mon 13th: Isolated showers 2-4mm. Winds WSW F3/4.
- Tues 14th: Showers dying out, high pressure building NF2.

- Wed 15th: High pressure, fog in mornings.
- Thurs 16th: Still high pressure.
- Fri 17th: High pressure weakening, weak front arriving some rain.

Severe Weather Warning: Issued at 09:40 10/11/00.

Met Office Early Warning of Severe Weather, Early Warning of Heavy Rain. Received at 12:38 11/11/00. Warning issued at 09:47 11/11/00.

Overall risk assessment: The probability of disruption due to severe weather conditions in part of the United Kingdom within the next 30 hours is 60 percent.

Regional risk assessment for the occurrence of severe weather conditions between 10:00 11/11/00 and 16:00 12/11/00: Central southern England: 40%.

This is an update of the warning re-issued at 0930 yesterday 10/11/00. The frontal system forecast by the Met Office is currently over southern Britain and is expected to edge south west during today. However it will become stationary close to south east England tonight before moving away on Sunday. A further 10-15mm can be expected over southern counties of England but there is a risk of 20-30mm over parts of south east England before the frontal system clears away, this may exacerbate flood problems locally. The exact location of the *** remains uncertain and there is a possibility that it will clear somewhat more quickly. To the north of the frontal band frequently heavy showers circulating the *** which will move north east across northern areas of the British Isles after midnight tonight, will bring 20-40mm of rain to some exposed areas. North Wales may be at risk from further localised flooding and is still included in this warning with 30% risk.

This warning will be updated at 09:30 tomorrow unless superseded by flash warnings.

Agency Flood Forecasting Update Ref DB10110002. Received 11/11/00 15:54. Issued 11/11/00 15:50

General overview: Rainfall totals for the previous 24 hours (as at 1530 11/11/00) Hants 5-12mm. As a wave develops on the front it will slow down and give higher accumulations. This will be worse in the west.

The latest update is as follows:

- Sat 11th 1500-1800: Forecast accumulations 4-5mm all areas. Winds SW 7/8. Banded showers. Higher totals on South Downs.
- Sat 11th 1800-Sun 12th 1200: Forecast accumulations 15-20mm Hants. Heavier more intense slow moving frontal rain, forecast to remain stationary over Sussex and Kent. Worst in the East.
- Sun 12th 1200-2359: Forecast accumulations 2-5mm all areas. Further trough coming through late afternoon/early evening.

- Sun night/Monday: Dry.
- Mon 13th: Isolated showers 2-4mm. Winds WSW F3/4.
- Tues 14th: Showers dying out, high pressure building NF2.
- Wed 15th: High pressure, fog in mornings.
- Thurs 16th: Still high pressure.
- Fri 17th: High pressure weakening, weak front arriving some rain.

Severe Weather Warning: Issued at 09:47 11/11/00 for SE England, 20-30mm.

Agency Flood Forecasting Update Ref PG111100#1. Received 11/11/00 22:43. Issued 11/11/00 22:30

The wave of heavy rain that has developed along the cold front is still moving across the region trending SW-NE. This will continue to move slowly eastwards through the night passing out of Kent tomorrow morning. The heavier rain has now moved out of Hants but will be followed by showers. A second wave is currently forming over France and may move up to south coast tomorrow night. Hopefully the heavier rain will be over northern France with only showers along south coast.

Accumulations from the Met Office 2100 model run:

- 2100-0000 14-18mm
- 0000-0300 2-4mm
- 0300-0600 1-2mm
- 0600-0900 0-2mm
- Totals 17-26mm
- 0900-0000 5mm

B.5.4 Sunday 12 November 2000

Met Office Daily Forecast. Received at 05:44 12/11/00

Low pressure will lie centred close to Scotland today, feeding a showery south westerly air stream across much of the region although waving weather front will initially still affect eastern most areas, before it clears away into the near continent through the morning.

Hampshire Precipitation from 0600 today to 0600 tomorrow:

M 5-12mm, Medium Confidence, Showers, Timing: Any time today, but more confined to coast tonight.

Met Office Gale Warning. Received 05:47 12/11/00. Warning issued at 02:56 12/11/00

Sea Area Wight southerly Gale Force 8 continuing.

Agency Flood Forecasting Update Ref DB12110001. Received 12/11/00 09:22. Issued 12/11/00 08:44

General overview: Rainfall totals for the previous 24 hours (as at 0700 12/11/00) Hants 15-24mm. Showers weakening as front moves east. Scattered showers in coastal areas through rest of Sunday. Drier outlook for next week.

The latest update is as follows:

- Sun 12th 0800-1800: Forecast accumulations 2-5mm all areas. SW F3/4 bringing coastal showers spreading inland, will become less active overnight.
- Sun 12th 1800-Mon 13th 0800: Forecast accumulations 2-5mm all areas SW 3-4.
- Mon 13th: Scattered showers 2-10mm. Winds W F3.
- Tues 14th: Showers dying out, some instability, pressure building.
- Wed 15th: High pressure killing showers. Dry.
- Thurs 16th: Still high pressure. Dry.
- Fri 17th: Still high pressure. Dry.
- Sat 18th: High pressure.
- Sun 19th: High pressure.

Severe Weather Warning: Issued at 04:49 12/11/00 for SE England, update of previous warning, showers in south east.

B.5.6 Friday 24 November 2000

Met Office Daily Forecast. Received at 09:33 24/11/00

A mostly cloudy day with a misty start. A little brightness for a time then clouding over with a little light and patchy rain later today and overnight.

Hampshire Precipitation from 0600 today to 0600 tomorrow:

0 Less than 1mm, Low Confidence, Patchy light rain, Timing 18:00-06:00.

Agency Current Weather. Received at 15:06 24/11/00. Issued at 13:49 24/11/00

The current disturbingly high echoes on Hyrad, south of the Lizard have been confirmed by the Met Office to be heading our way. There is uncertainty at the moment as to the actual intensities as at the distance out that the rain is, the radar beam is very high and will be picking up activity in the upper cloud layer. It may be that this rain will intersect a lower drier layer and intensities will be less. Assuming that ground totals will be lower, the Met Office is now saying more like 6-8mm rather than 2-3mm. If what's being displayed is real we could see more like 25-30mm over a 3-4 hour period.

B.5.7 Monday 27 November 2000**Met Office Daily Forecast. Received at 05:15 27/11/00**

A complex warm front structure will move north east across the United Kingdom during Monday. This will bring occasional rain to southern England and introduce a very mild air stream. A broad and ridged warm sector is expected to cover southern England during Tuesday, before a weakening cold front moves east during Wednesday afternoon and evening.

Hampshire Precipitation from 0600 today to 0600 tomorrow:

M 5-12mm, High Confidence, Rain, Timing 0900-0300.

B.5.8 Tuesday 28 November 2000**Met Office Daily Forecast. Received at 06:22 28/11/00**

A low pressure system has moved into the west of the country pushing its associated warm front across the area. It has left the area in broad warm sector conditions. The low pressure systems cold front is expected to push through tomorrow but as a weak feature. Further fronts will push in later on Thursday but may take until Saturday to clear.

Hampshire Precipitation from 0600 today to 0600 tomorrow:

L Less than 1mm, Medium Confidence, Drizzle, Timing 0600-1000.

B.5.9 Wednesday 29 November 2000**Met Office Daily Forecast. Received at 05:41 29/11/00**

A low pressure system is drifting up the western side of Ireland and is currently pushing it's associated cold front across the area. A ripple running along this cold front is expected to bring some showery rain, particularly to eastern parts. This system will move away but the next Atlantic depression is lining up to take its place. So further wet and windy weather is expected to sweep across the area.

Hampshire Precipitation from 0600 today to 0600 tomorrow:

L 1 to 4mm, Medium Confidence, Showers, Timing 0800-1800.

B.5.10 Thursday 30 November 2000

Met Office Heavy Rain Warning (Warning number 223). Received at 19:02 30/11/00. Warning issued at 17:30 30/11/00. Valid until 18:00 30/11/00

An area of rain, heavy at times, is expected to spread from the south during the second half of the night. Over the next 24 hours accumulations of 15-20mm are expected in many areas, particularly in parts of Sussex and Kent, with a possibility of 25mm over the higher ground. The rain is expected to have cleared to the east by Friday evening.

Note also, there will be some outbreaks of rain spreading from west to east across the area during this evening. These should clear by midnight and accumulations from these are expected to be small.

All Hampshire and IOW catchments 10-15mm Time Period 03:00-15:00.

B.5.11 Friday 1 December 2000

Met Office Daily Forecast. Received at 06:41 01/12/00

A Series of fronts and troughs will cross the area today. There will be prolonged and sometimes heavy rain during the morning and afternoon, before brighter showery weather spreads from the west.

Hampshire Precipitation from 0600 today to 0600 tomorrow:

VH 20mm+, Medium Confidence, Rain, Timing 0600-1800.

Agency Weather Forecast Update Reference 0112GM#1. Received at 09:31 01/12/00, Issued at 0800 01/12/00

- Friday 1st: Existing frontal rain is now getting patchy but still contains heavier burst within it. Rain will be clearing this pm but not until dark over Kent. Some showers will follow.
- Saturday 2nd: Showers will affect coastal area in particular with an occluded front moving in later in the day. This will bring more prolonged rain but not high intensities. With the earlier showers it is thought this will push totals into the medium bracket (5-12mm).
- Sunday 3rd: The pattern is almost repeated. The morning will be showery with an occluded front moving from the south west of UK by midday to be over London by midnight. This will bring the prolonged afternoon rain for all areas with totals up to 12mm.
- Monday 4th: The occlusion of Sunday will remain almost stationary bringing prolonged rain for much of the day. The next front will also be rushing in from the SW to bring heavier rain from late afternoon and evening to add to the totals-current forecasts is up to 20mm for the day.

- **Tuesday 5th:** Winds (F6-7) will push the occlusion away and the front from late Monday will lie along a line, stretching along the south coast into E Anglia. This will result in patchy light rain but waves along the front will bring heavier spells of rain within it. The heaviest rain on Tuesday is expected in the afternoon with daily totals exceeding 20mm.

Confidence generally Moderate from Saturday to Tuesday.

Output from HYRAD: Heaviest rain now moving from SSW out of Hants and into Sussex and Kent, becoming patchy, with clearer showery spell following. NIMROD forecasts have currently failed and a Met Office call has been logged.

B.5.12 Sunday 3 December 2000

Met Office Gale Warning. Received 17:39 03/12/00. Warning issued at 16:07 03/12/00

Sea Area Wight southerly Gale Force 8 expected later.

B.5.13 Monday 4 December 2000

Met Office Daily Forecast. Received 07:11 04/12/00

A low pressure system to the west of the country is pushing its associated cold front across the area, and will maintain a strong showery flow across the area once it has done so. A further Atlantic depressions are expected to run up from the south, pushing frontal systems across the area on Tuesday, before merging with the original low. That low will slowly drift away, only to be replaced as the next system moves in on Thursday.

Hampshire Precipitation from 0600 today to 0600 tomorrow:

M 5-12mm, Medium Confidence, Rain then showers, Timing Rain 0600-1000.

Met Office Gale Warning. Received 18:11 04/12/00. Warning issued at 16:43

Sea Area Wight southerly Gale Force 8 continuing.

B.5.14 Tuesday 5 December 2000

Met Office Daily Forecast. Received 08:03 05/12/00

A front will push in from the west this morning then become slow moving for a time across central England this afternoon before clearing to east this evening. A showery south westerly air stream will become established in it's wake. The odd trough circulating in this flow is expected to bring showers across in the fairly brisk south to south westerly winds.

Hampshire Precipitation from 0600 today to 0600 tomorrow:

H 13-19mm, Low Confidence, Frontal, Showers late in period, Timing 0800-1600 and 0400-0600.

Met Office Early Warning of Severe Weather, Early Warning of Heavy Rain and Severe Gales. Received 12:52 on 05/12/00. Warning Issued at 09:28 05/12/00.

Overall risk assessment: The probability of disruption due to severe weather conditions in part of the United Kingdom within the next 96 hours is 60 percent.

Regional risk assessment for the occurrence of severe weather conditions between 09:00 07/12/00 and 09:00 09/12/00: Central southern England: 40%.

This is a first warning from the Met Office of heavy rain and possible severe gales over northern and western parts of the UK. A vigorous depression to the south west of Britain early on Thursday is expected to move north across Ireland and then become slow moving close to Scotland during Friday. The associated area of heavy rain is likely to sweep northwards across the United Kingdom, with heaviest and more prolonged rainfall over Northern Ireland, Wales and western districts of England and Scotland. Rainfall amounts during the two days generally around 25mm but in western parts reaching 40-60mm in exposed places. This may lead to problems with flooding. Gales are also expected around the depression, with severe gales in exposed western parts, gusts will possibly exceed 70mph to the south of the depression for a time, threatening Northern Ireland, north-west England and southern Scotland on Friday. This warning will be updated at 09:00 tomorrow.

B.5.15 Wednesday 6 December 2000**Met Office Daily Forecast. Received at 05:55 06/12/00**

A run of mild, showery, south westerly winds covers the region, easing in strength slowly today. Showers will die out tonight as cloud pushes up from the south ahead of a rapid deepening low set to run north from Biscay into the Irish Sea on Thursday bringing some strong winds/gales and heavy rain to the area.

Hampshire Precipitation from 0600 today to 0600 tomorrow:

M 5-12mm, Medium Confidence, Showers, Timing 0600-2400.

Met Office Early Warning of Severe Weather, Early Warning of Severe Gales and Heavy Rain. Received at 11:26 06/12/00. Warning issued at 09:19 06/12/00.

Overall Risk Assessment: The probability of disruption due to severe weather conditions in part of the United Kingdom within the next 72 hours is 80 percent.

Regional risk assessment for the occurrence of severe weather conditions between 09:00 on 07/12/00 and 09:00 09/12/00: Central southern England 60%.

This is an update of the early warning issued by the Met Office at *** yesterday. A vigorous depression is forecast by the Met Office to approach south western Britain later on Thursday and move north over the Irish Sea/Eastern Ireland through Friday to become slow moving close to Scotland by early Saturday. Confidence in the predicted track of this low is moderate to high but there is some potential for the low to track slightly further east. Associated bands of heavy rain are likely to sweep across the United Kingdom during

tomorrow and Friday, with the heaviest and most prolonged rainfall over Northern Ireland, Wales and Western districts of England and Scotland. Rainfall amounts during the two days generally around 25mm but in western parts reaching 40-60mm in exposed places. This may lead to problems with flooding. Gales are also expected around the depression, with severe gales and possible storm force winds in exposed western parts. Gusts will possibly exceed 70-80mph to the south of the depression for a time, threatening south west England and Wales on Thursday night and Northern Ireland, northern England and southern Scotland on Friday. This warning will be updated at 0900 tomorrow unless superseded by flash messages.

Agency Weather Forecast Update Reference 06120001. Received at 13:32 06/12/00. Issued at 12:00 16/12/00

The new run of the Met Office Model has increased the amount of rainfall expected for Thursday 07/12/00 to VH (20mm+).

Hampshire: Up to midday 5mm, 12:00-15:00 16mm, 15:00-18:00 22mm. Total 43mm in that time period. The model does tend to overestimate, and the forecaster is looking at totals of 35-40mm in Hampshire, a little less on the IOW.

The next model run comes in later this afternoon and I will update you then with any further information.

B.5.16 Thursday 7 December 2000

Met Office Daily Forecast. Received at 04:43 07/12/00

A vigorous Atlantic weather system will track north through the Irish Sea, with associated weather fronts feeding strong winds and heavy rain northwards through all parts today, followed by a blustery and showery south westerly air stream tonight and during Friday.

Hampshire Precipitation from 06:00 today to 06:00 tomorrow:

VH 20mm+. High Confidence. Frontal then showers, Timing 0900-2000.

Met Office Heavy Rain Warning (Warning Number 27). Received at 07:13 07/12/00. Issued at 05:15 07/12/00. Valid until 08:00 on 08/12/00

Periods of rain will arrive from the south from late morning onwards and become heavy at times before turning more showery during this evening or early tonight. By dawn on Friday rainfall amounts are likely to have reached 25 to 50mm with rainfall rates over 10mm per hour at all times.

All Hampshire and IOW catchments 20mm+ Timing 14:00-21:00.

Met Office Early Warning of Severe Weather, Early Warning of Severe Gales and Heavy Rain. Received at 11:23 07/12/00. Issued at 09:19 07/12/00

Overall Risk Assessment: The probability of disruption due to severe weather conditions in part of the United Kingdom within the next 48 hours is 80 percent.

Regional risk assessment for the occurrence of severe weather conditions between 09:00 on 07/12/00 and 09:00 09/12/00: Central southern England 70%.

This is an update of the early warning issued by the Met Office 0919UTC yesterday. A vigorous depression is forecast by the Met Office to approach south western Britain later today and move north over the Irish Sea through Friday to become slow moving close to Scotland by early Saturday. Position of the centre at midday Friday will be between North Channel and Northumberland, associated bands of heavy rain area likely to sweep across the United Kingdom, with the heaviest and most prolonged rainfall over northern and western districts of the UK. Rainfall amounts during the two days generally around 25mm but in western areas reaching 50-75mm in exposed places. Gales are also expected around the depression, with severe gales and locally storm force winds in exposed southern and western parts of England, Wales and perhaps southern England. Gusts will exceed 60mph widely to the south of the depression, locally in excess of 80mph in more exposed locations. This warning will be updated at 09:00 tomorrow unless superseded by flash messages.

Met Office Gale Warning. Received at 18:29 07/12/00. Issued at 17:07 07/12/00

Sea Area Wight Gale Force 8 veering south westerly and increasing severe Gale Force 9 soon.

B.5.17 Friday 8 December 2000**Met Office Daily Forecast. Received 05:24 08/12/00**

A very strong and gusty south westerly air stream will affect the region, in association with a vigorous area of low pressure centred across north western parts of the British Isles. Embedded troughs will feed blustery showers across many parts.

Hampshire Precipitation from 06:00 today to 06:00 tomorrow:

M 5-12mm, Moderate Confidence, Showers, Timing- almost anytime.

Met Office Gale Warning. Received at 11:59 08/12/00. Issued at 10:30

Sea Area Wight south westerly storm Force 10 decreasing Gale Force 8 imminent.

Agency Weather Forecast Update Reference DB08120001. Received at 15:16 08/12/00. Issued at 13:27 08/12/00

- General Overview: The south westerly winds will continue to bring unsettled conditions and intense localised fast moving showers. The outlook for the next five days is for continuing unsettled conditions with various fronts and troughs.

- Friday 08/12/00: Very variable and very difficult to predict. The Met Office is now saying 5-10mm with potentially 15mm where showers band together. The showers are fast moving but are very active, thundery and intense. There is a lot of activity in the channel coming in our way. These will be worst in coastal areas. The showers should be less active overnight.
- Saturday 09/12/00: Showers in the morning, winds still strong south westerly. More intense showers associated with a trough predicted for the afternoon. Outlook 5-10mm but with intense, isolated fast moving showers again.
- Sunday 10/12/00: Occluded weather front arriving- more active, bringing approximately 5-10mm forecast at the present time.
- Monday 11/12/00: More troughs following front 5-10mm, Monday pm more active front (but at least it will kill showers).
- Tuesday 12/12/00: More significant system building.

Output from HYRAD: Intense showers on HYRAD are tracking towards Hampshire (currently) and to Sussex and E Kent later in the afternoon. The likely location of these showers is almost impossible to predict. It is sufficient to know that the processes of their formation are in place and to watch Hyrad closely form their landfall.

B.5.18 Saturday 9 December 2000

Met Office Daily Forecast. Received at 06:23 09/12/00

The low pressure area responsible for the rain event yesterday is now off the coast of north east Scotland and filling as it moves away. Weather fronts associated with a deep low pressure area off the coast of Newfoundland, will spread rain across southern England overnight followed by **** weather tomorrow.

Hampshire Precipitation from 06:00 today to 06:00 tomorrow:

M 5-12mm, Medium Confidence, Showers/Frontal, Timing- showers mainly am; occluded front tonight from circa midnight. Clearing by 0600.

Agency Weather Forecast Update. Received at 11:17 09/12/00. Issued at 0900 09/12/00

- Saturday 09/12/00 09:00-dusk: The weather during this period will be dominated by showers pushing into the region from the Channel, and some of these showers will form into lines. Rainfall rates will be highly variable, with coastal areas and the Isle of Wight expected to see up to about 5mm of rain during the period, whilst inland areas should receive a bit less, perhaps 1-3mm. Winds generally SW6. The tides are currently intermediate between springs and neaps, and the forecast surges are generally small and negative, so no coastal problems are anticipated.
- Saturday 09/12/00 dusk – Sunday 10/12/00 06:00: The first few hours of this period should see drier weather as the showers are dampened down. However, an eastwards

moving front will push into Hampshire from about 22:00 Saturday and is expected to start moving into Kent from about 01:00 Sunday. It is expected to clear Kent by about 06:00 Sunday. Rainfall totals for the period are forecast to be 6-12mm across widespread areas. Winds generally 8 or SW 5-7 and increasing through this range during the period.

- Sunday 10/12/00 daytime: This period will again be dominated by showers moving in from the Channel. They are expected to be light and scattered in the morning, but will become heavier and more widespread from about noon. This is forecast to produce rainfall totals of up to 10mm for Hampshire, the Isle of Wight and Sussex coast during the afternoon, whilst Kent and inland Sussex are expected to receive up to 2-5mm. Winds SW 6-7.
- Sunday 10/12/00 Night: This is expected to be dry due to a small ridge of high pressure.
- Monday 11/12/00: Monday should see further fronts arriving from the south west, with the heaviest rain likely to occur late morning/early afternoon, and in another pulse on Monday night. Forecast rainfall totals are around 10mm. Winds SW 5-6.
- Tuesday 12/12/00: A further frontal system will cross the Region. There is currently considerable doubt over the timing and intensity of the associated rainfall, but it could lead to significant accumulations. Winds SW 5-6.

Met Office Gale Warning. Received at 19:57 09/12/00. Issued at 16:01

Sea Area Wight south westerly Gale Force 8 expected soon.

Met Office Heavy Rain Warning (Warning Number 68). Received at 23:06 09/12/00. Issued at 21:38 09/12/00. Valid until 21:00 10/12/00.

Outbreaks of rain will soon begin spreading across the Region. Rainfall rates should be no more than 3-4mm/hr with quantities totally around 10mm overnight. However, squally showers are expected during tomorrow, which will bring instantaneous rainfall rates of 20mm/hr and another total of around 10mm in some areas.

All Hampshire and IOW catchments 20mm+ Timing 22:00-18:00.

B.5.19 Sunday 10 December 2000

Met Office Daily Forecast. Received at 05:52 10/12/00

Overnight frontal system soon clearing north eastwards this morning. Dry for a time before bands of showers push across during the day. Some of these likely to be heavy and thundery. Showers dying out this evening ahead of another frontal system. Most of the activity passing to the north of the region but cloud tending to thicken overnight with patchy rain and drizzle likely.

Hampshire Precipitation from 06:00 today to 06:00 tomorrow:

M 5-12mm, Medium Confidence, Showers, Timing 0600-2100.

Met Office Early Warning of Severe Weather, Early Warning of Heavy Rain (Correction). Received at 11:26 10/10/00. Issued at 09:16 10/10/00.

Overall Risk Assessment: The probability of disruption due to severe weather conditions in part of the United Kingdom within the next 72 hours is 80 percent.

Regional risk assessment for the occurrence of severe weather conditions between 12:00 on 11/12/00 and 12:00 13/12/00: Central southern England 40%.

This is the first warning from the Met Office of prolonged and at times heavy rain as further active frontal systems cross the UK over the next three days.

Heavy showers will affect Wales and southern England today giving short bursts of heavy rainfall. Subsequently, three further frontal systems will bring more prolonged rain. The burst mainly to western and northern areas tonight but extending south eastwards on Monday, the second will spread further rain eastwards during Monday night and the third which is expected to be the most active, will cross all areas during the second half of Tuesday. Rainfall totals in some western areas will exceed 50mm over the period with the greatest totals over the high ground, and 25/30mm will be further exacerbated. Strong to gale force winds will often accompany the rain at times.

This warning will be updated at 0900 tomorrow.

Met Office Gale Warning. Received at 18:20 10/12/00. Issued at 16:43 10/12/00

Sea Area Wight south westerly Gale Force 8 continuing.

B.5.20 Monday 11 December 2000**Met Office Daily Forecast. Received at 04:47 11/12/00**

A series of active fronts will slide across the region from the south west through Monday. On Tuesday the area will be in mild air sandwiched between two fronts, however, late in the day a cold front will speed in from the west to introduce clearer and cooler air.

Hampshire Precipitation from 0600 today to 0600 tomorrow:

H 13-19mm, Medium Confidence, Frontal, Timing 11:00-22:00.

Met Office Early Warning of Severe Weather, Early Warning of Severe Gales and Heavy Rain. Received at 12:00 11/12/00. Issued at 09:15 11/12/00.

Overall Risk Assessment: The probability of disruption due to severe weather conditions in part of the United Kingdom within the next 48 hours is 90 percent.

Regional risk assessment for the occurrence of severe weather conditions between 09:00 on 11/12/00 and 09:00 13/12/00: Central southern England 60%

This is an update of the early warning issued by the met office at 09:16 yesterday, Sunday 10/12/00.

The Met Office is forecasting further rain, heavy in places, across Wales, the Midlands, East Anglia and southern England today as a frontal system moves slowly south east. A second frontal trough will spread rain into western and northern areas during Tuesday morning again some of it heavy, rainfall from these two systems will amount 10 to 20mm in many parts with higher values in western hills. This will clear last but a third system is expected to follow with prolonged rain reaching south west England on Tuesday afternoon and sweeping north east across all areas, giving a further 15 to 25mm. In addition this third system will be accompanied by gale force winds, with a moderate probability of severe gales (gusts 60-80mph) across southern parts. Combined with high spring tides this could add to flooding exacerbated by the prolonged and heavy rainfall. This warning will be updated around 09:00 tomorrow.

Agency Weather Flood Forecast Update. Received 11/12/00

Latest update from the Met Office is as follows:

- Mon 11th: 5-10mm totals for the whole day. Overnight the frontal system slow upon hitting the continent with the majority of rain over the Channel.
- Tues 12th: Persistent rain will arrive midday in IOW and southern Hampshire. Rain totals of 15-20mm over the region, some areas will receive 25mm. Will leave region between 2100-2200. This will be followed by strong winds F6/7 increasing F8 in coastal areas by midnight.
- Wed 13th: Winds reach F9 by 0300 and will last until 0900. Winds will ease by midday. Showers during the day.
- Thurs 14th: Showers will produce 5-10mm in coastal areas, with 5mm inland.
- Fri 15th: Small ridge of high pressure will be replaced by low pressure from midday and in return this will leave the region by midnight.

The 10 day period is unsettled. The Met Office has reasonable confidence in the forecast up to Friday. Weather model run tonight will provide better certainty about Friday. Output from Hyrad: Hampshire received up to 6mm, IOW up to 10mm.

B.5.21 Tuesday 12 December 2000

Met Office Heavy Rain Warning (Warning Number 99). Received at 05:59 12/12/00. Issued at 04:17 12/12/00. Valid until 06:00 13/12/00.

Outbreaks of rain will become heavier and more persistent this morning, and especially this afternoon, but the rain should clear away this evening leaving blustery showers tonight.

All Hampshire and IOW catchments: 20mm+ Timing 06:00 – 22:00.

Met Office Gale Warning. Received at 06:32 12/12/00. Issued at 04:32 12/12/00

Sea Area Wight south westerly Gale Force 8 expected soon.

Met Office Gale Warning. Received at 11:28 12/12/00. Issued at 10:07 12/12/00

Sea Area Wight south westerly Gale Force 8 increasing severe Gale Force 9 soon, increasing storm Force 10 later.

Met Office Early Warning of Severe Weather, Early Warning of Severe Gales and Heavy Rain. Received at 11:58 12/12/00. Issued at 09:49 12/12/00

Overall Risk Assessment: The probability of disruption due to severe weather conditions in parts of the United Kingdom within the next 30 hours is 80 percent.

Regional risk assessment for the occurrence of severe weather conditions between 09:00 on 11/12/00 and 09:00 13/12/00: Central southern England 60%.

This is an update on the early warning issued by the Met Office at 009:15 yesterday Monday 11/12/00.

The Met Office is forecasting further spells of heavy rain today and tonight as a vigorous Atlantic depression tracks north eastwards across the British Isles, exacerbating flooding problems. A further 20-30mm of rain is likely in many areas with 50mm or more possible over some of the hills of Wales and western England. In addition strengthening winds will reach gale force in places, especially across the south where there may be severe gales in the more exposed parts overnight (gusts around 70mph).

Agency Weather Forecast Update. Received at 19:27 12/12/00. Issued at 1:50 12/12/00

Model from STFS has been under reading by 10-20cm on model runs today.

- Latest update from Met Office is as follows:
- Tues 12th: According to Met Office rain totals up to 18:00 hrs for the system so far today, will be 11mm for Hampshire & Kent 4mm. However, HYRAD outputs would suggest the Met Office is underestimating. Output from HYRAD as of 16:00 on RTS Hampshire 20mm in last 24 hours, 10mm in last 4 hours, 3mm in last 1 hour.
- 18:00 up to midnight: 6mm in Hampshire. The heaviest rain in Hampshire will be 17:00 to 21:00. From HYRAD estimate between 17:00-19:00 up to 10mm of rainfall in Hampshire.
- Midnight up to 06:00 Wednesday: There will be a lull before the showers. 1mm in coastal areas. HYRAD would suggest local showers with accumulations of 2-5mm. Winds gale F9 initially south, turning SW strongest from 2300-0500.
- From now until Wednesday could get another 10-12mm (does not agree with Met Office).
- Wed 0600-1800: 5-10mm accumulated rain in localised areas. Showers.
- Wed 1200-Thurs am: 8mm in Hampshire.

- Thurs 14th: Winds from the north, showers from midday, 50% of any rain, 20% of 5mm, 10% 12mm.
- Fri 15th: A chilly day starting with ground frost. Light winds from the NW increasing into the day, bring showers throughout Fri night/ Sat morn. Probably 7mm over the period.
- Sat 16th: Showery, cold and breezy day. Temp during the day 7, confidence is low.

Met Office Gale Warning. Received at 23:41 12/12/00. Issued at 22:13 12/12/00

Sea Area Wight South westerly storm Force 10 decreasing Gale Force 8 soon.

B.5.22 Wednesday 13 December 2000

Met Office Daily Forecast. Received at 06:54 13/12/00

Showery and unsettled conditions will persist over the next few days, the showers gradually becoming fewer into Friday as winds turn to the north. For today, the showers will be heavy at times with a risk of thunder mixed in and accompanied by some very squally winds, especially first thing. Strong to gale force south westerly winds will ease slowly over the next 24 hours.

Hampshire Precipitation from 0600 today to 0600 tomorrow:

M 5-12mm Low confidence Showers Timing 06:00-06:00

Agency Weather Forecast Update Fax Reference 13120001. Received at 11:28 13/12/00. Issued at 10:00

Latest update from Met Office is as follows (although it is not too different from the last update 16:00 12/12/00): Bands of showers will be passing through the region today (13th Dec). It is expected that most areas will receive between 5-10mm from now (10:00am) until 09:30 tomorrow. Winds are strong at the moment 44/45kts (50mph) but will begin to ease later this afternoon/evening. Coastal areas could see 30kts with gusts of 35kts, inland areas 10kts with gusts of 15kts. Tomorrow (Thurs 14/12/00) the forecast is for showers to be blown onto the coastal fringe during the day, with another 2-5mm expected across the region. A trough moving SE later in the day will push the showers back out to sea which will cut off the showers leaving a relatively dry night. Friday should therefore be a cold start with a ground frost probable, although a trough could bring a few mms later in the day, with light winds from the NW increasing into the day.

Agency Weather Forecast Update Fax Reference 13120002. Received at 18:38 13/12/00. Issued at 1700

The bands of showers passing through the region have been more widespread and heavier than predicted by the Met Office earlier today. For tomorrow, the Met Office has increased the amount of rain expected. Overall totals of 1-4mm have been quoted, although local totals of 5-10mm could be seen. The winds will be dying down tomorrow, F3-4 (10-15kts),

meaning the showers may not be pushed through as quickly (again supporting the higher rainfall totals). Friday should have a cold start with a ground frost, but showers will move into the region, giving 1-4mm. Light winds from the NW increasing into the day (F3-4). For Saturday, the Met Office has given totals of 1-4mm, although there is low confidence about the forecast. This should become clearer as Saturday approaches, but it is possible that higher rainfall totals will be received – as the Met Office put it “Saturday looks ‘messy’”! Sunday should be mostly dry.

B.5.23 Thursday 14 December 2000

Met Office Gale Warning. Received at 00:33 14/12/00. Issued at 23:11

Sea Area Wight gale now ceased.

Agency Weather Forecast Update. Received at 00:57 14/12/00. Issued at 2245 13/12/00

Latest update from Met Office is as follows:

- Tonight: 0-4mm from showers into the early morning – chance 30-40%. Winds still S-SW, strongest now (F4 inland, gusting F4-6 on coast). In early hours the winds will marginally ease.
- Thurs 14th to early afternoon: Winds S-SW F4 gusting F4/6. Showers producing 0-5mm.
- Thurs afternoon to early evening: Wind turning N of NW F4 gusting to F5/6. Dry 0mm.
- Thurs night to early Friday: A weak trough arriving early evening from the NW bringing a maximum of 1-2mm.
- Fri 15th: Pressure building resulting in a dry day with a steady breeze from the NW.
- Sat 16th: Mainly dry during the day. Late evening a conclusion arrives in the Region.

Confidence in the above is good.

- Sunday 17th: Mainly dry, 0-1mm of rain
- Into next week: Low confidence. Low pressure returning to SW and in the Channel. Unsettled. Leading to light rain

Output from HYRAD: As of 21:00 hrs on RTS Hampshire 4mm in last 12 hours.

Model from STFS has been under reading by 10-20cm on model runs today.

Met Office Daily Forecast. Received at 06:59 14/12/00

Pressure is gradually building from the west promising a quieter interlude for a few days. Rain today will be in the form of showers, chiefly near the coast. There may be a longer spell of rain late morning close to the Kent and East Sussex coast. A weak trough will bring some

showers from the south later tonight, as winds, veer north easterly later Thursday night showers will be kept offshore so Friday should be mostly fine and dry.

Hampshire Precipitation from 0600 today to 0600 tomorrow:

M 5-12mm, Low Confidence, Showers, Timing 06:00-18:00 & 03:00-06:00.

B.5.24 Friday 15 December 2000

Met Office Daily Forecast. Received 05:09 15/12/00

With a weak ridge across the area Friday will be mostly fine and dry, with a clear and frosty night to follow. Weak fronts will edge from the west over the weekend bringing a little light and patchy rain later.

Hampshire Precipitation from 0600 today to 0600 tomorrow:

0 Less than 1mm, High Confidence, Dry.

B.5.25 Saturday 16 December 2000

Met Office Daily Forecast. Received 04:30 16/12/00

A weak front creeps eastwards with a weak ridge of high pressure then extending across the area.

Hampshire Precipitation from 0600 today to 0600 tomorrow:

L 1-4mm, Medium Confidence, Drizzle/sleety, Timing 12:00-21:00

B.5.26 Sunday 17 December 2000

Met Office Daily Forecast. Received 05:17 17/12/00

Weak weather fronts will become very slow moving across central and southern England over the next few days as pressure starts to rise over Scandinavia.

Hampshire Precipitation from 0600 today to 0600 tomorrow:

L 1-4mm, High Confidence, Rain/Drizzle, Timing 20:00-04:00

B.5.27 Monday 18 December 2000

Met Office Daily Forecast. Received at 06:05 18/12/00

Staying unsettled at first today with a little residual drizzle left across the east, but with a small wave expected to run through the English Channel bringing some showery bursts of rain across the region today. Once this goes through, a moist flow will maintain a little patchy drizzle overnight, with a heavier spell of rain edging east tomorrow coupled with a

freshening south easterly wind. Beyond this conditions are expected to stay rather cloudy but mostly dry, with light or moderate south to southeast winds.

Hampshire Precipitation from 0600 today to 0600 tomorrow:

L Less than 1mm, Medium Confidence, Showery rain drizzle overnight, Timing 10:00-19:00 & 00:00-06:00.

Agency Weather Forecast Update Fax Reference KH 18/12/00/01. Received at 11:30 18/12/00. Issued at 1100 18/12/00

Weather Overview: The band of rain currently visible on HYRAD will be arriving in Hants shortly moving north easterly into Sussex and Kent this afternoon. This will bring patchy showers with some longer spells of rain. Between now and 18:00 the following average and maximum localised rain is expected: Hampshire: average 2mm, maximum 6mm.

Between 18:00 and 00:00 there will be another 2-3mm of rain with it clearing Kent by 3am. Tomorrow a band of rain will move in from the south west reaching Hampshire by midday bringing 5mm to all areas and leaving Kent by the evening. Once this band of rain has cleared it will be dry through Friday and possibly Saturday.

B.5.28 Tuesday 19 December 2000

Met Office Daily Forecast. Received at 05:17 19/12/00

A moist south easterly airflow will be maintained over the coming week, with mild temperatures and rather cloudy conditions. Apart from patchy drizzle developing overnight, weather fronts straddled down the west today will bring nothing more than a little light rain in Hampshire. Further fronts are expected to move into the west later on Saturday to bring a little more rain.

Hampshire Precipitation from 0600 today to 0600 tomorrow:

L Less than 1mm, Medium Confidence, Rain/ drizzle, Timing 06:00-06:00.

Agency Weather Forecast Update Fax Reference KH 19/12/00/01. Received at 11:40 19/12/00. Issued at 1100 19/12/00

Weather Overview: The band of rain currently visibly on HYRAD over the west of the country will gradually move into Hampshire today bringing on average 1mm of rain, maybe up to 4mm, with 1mm of rain in Sussex and Kent. It should then be mainly dry with some drizzle until Saturday. There will be a front moving in on Saturday which currently looks like it will mainly affect the west, but could move into Dorset and Hampshire bringing up to 4mm of rain and will clear by Sunday. The winds will move to the north east at the weekend which will help move the rain away. More detail will be known about this front later on in the week.

B.5.29 Thursday 21 December 2000**Met Office Daily Forecast. Received at 04:49 21/12/00**

Little changes with the light to moderate south easterly wind bringing another dry but mostly cloudy day with more of the same in store for the next 48 hours.

Hampshire Precipitation from 0600 today to 0600 tomorrow:

0 Less than 1mm, High Confidence, Dry, Timing n/a.

B.5.30 30 December 2000**Met Office Flash Warning of Severe Weather. Received at 2220 31/12/00. Issued at 21:38 31/12/00. Valid until 0800 01/01/01.**

Heavy rain over southern parts of England is expected to spread northeast across the remainder of England during the next 6 hours. The concentration of this heavy rain and in some areas melting snow will lead to localised flooding and make driving conditions dangerous.

B.5.31 Monday 1 January 2001**Met Office Daily Forecast. Received at 04:33 01/01/01**

A low pressure area centred to the west of Rockall at midnight is expected to be centred over Shannon by 18:00 today. Its associated fronts will clear southern England during the morning but troughs are expected to develop in the strong south to south westerly flow.

Hampshire Precipitation from 0600 today to 0600 tomorrow:

M 5-12mm, Medium Confidence, Rain then showers, Timing rain am, showers thereafter.

B.5.32 Friday 5 January 2001**Agency Weather Forecast Update Fax Reference KH 05/01/01/01. Received at 10:18 05/01/01**

Weather Overview: Last night's band of rain is now just clearing Kent, following on from this there will be light and patchy rain, plus a band currently visible on HYRAD moving up from the SW maybe bringing another 2mm. In addition to this there is some rain currently developing over Spain which could move up to the south coast bringing heavy showers, arriving at around 3pm and clearing by 9pm today. The latest Met Office model run has the bulk of the showers affecting the coastal fringe contained within a line from Newhaven to Dover, possibly bringing 15-20mm of rain. North west of this line, rainfall totals will drop off significantly. The Met Office is monitoring it and will keep the Agency updated on its progress.

Gale Warnings Wight: Severe Gale Force 9, veering westerly and decreasing Gale Force 8 imminent (Issued at 05/01/01 08:37).

Heavy Rainfall Warnings: Early Warning of Severe Weather, Early Warning of Heavy Rain issued at 08:20 05/01/01. Possible 10-15mm of rain between 0900 and 2100 today due to heavy coastal showers.

B.5.33 Monday 8 January 2001

Met Office Daily Forecast. Received at 05:53 08/01/01

The remnants of an old occlusion will clear early this morning leaving a weak ridge across the area. This ridge is then expected to build, helping to hold at bay Atlantic depressions, at least for a day or so.

Hampshire Precipitation from 0600 today to 0600 tomorrow:

0 Less than 1mm, Medium Confidence, Showers, Timing 06:00-08:00.

B.5.34 Tuesday 9 January 2001

Met Office Daily Forecast. Received at 04:50 09/01/01

The weak transient ridge currently across the area will decline allowing an Atlantic depression to approach the country. The depression is expected to push its associated frontal in from the southwest overnight tonight.

Hampshire Precipitation from 0600 today to 0600 tomorrow:

M 5-12mm, Medium Confidence, Rain, Timing From 00:00.

Met Office Gale Warning. Received at 05:44 09/01/01. Issued at 04:55

Sea Area Wight easterly Gale Force 8 expected soon.

B.5.35 Wednesday 10 January 2001

Met Office Daily Forecast. Received at 04:46 10/01/01

An area of low pressure will slip eastwards close to the north coast of France today, before sliding southeast into central Europe tonight, into tomorrow morning. An associated occlusion will bring rain to many parts of the region, especially the south coast of Kent and Sussex, and near gale force winds are possible near to exposed headlands along the south coast.

Hampshire Precipitation from 0600 today to 0600 tomorrow:

M 5-12mm, Medium Confidence, Frontal, Timing becoming locally heavy until 19:00, then lighter/more patchy

B.5.36 Thursday 11 January 2001**Met Office Daily Forecast. Received at 03:35 11/01/01**

A weak occluded front will lie close to the south coast of England this morning on the periphery of a larger area of high pressure centred to the northwest of Scotland. Due to the location of the high, it will feed a brisk north easterly air stream across southern Britain. The influence of the occluded front will diminish this afternoon and overnight tonight, as it begins to slip away to the south allowing pressure to build slowly from the north.

Hampshire Precipitation from 0600 today to 0600 tomorrow:

0 Less than 1mm, High Confidence, Frontal drizzle, Timing 06:00-13:00.

Met Office Gale Warning. Received at 04:17 11/01/01. Issued at 03:04

Sea Area Wight north easterly Gale Force 8 continuing.

B.5.37 Friday 12 January 2001**Met Office Daily Forecast. Received at 04:26 12/01/01**

A weak occluded front running through the Channel will slowly move away south westwards over the next day or so. Meanwhile, an area of high pressure will become established over northern Scotland with the centre slowly drifting eastwards over the weekend and into next week.

Hampshire Precipitation from 0600 today to 0600 tomorrow:

0 Less than 1mm, Medium Confidence, Dry, No timing

Met Office Gale Warning. Received at 10:24 12/01/01. Issued at 09:24

Sea Area Wight north easterly Gale Force 8 continuing.

B.5.38 Saturday 13 January 2001**Met Office Daily Forecast. Received at 04:14 13/01/01**

A large anticyclone is expected to intensify, as it remains slow moving in the central North Sea over the weekend. The high cell will become established over Denmark by Monday morning, before it drifts further away to the east during the week.

Hampshire Precipitation from 0600 today to 0600 tomorrow:

0 Less than 1mm, High Confidence, Dry, No timing.

Met Office Gale Warning. Received at 04:20 13/01/01. Issued at 03:28

Sea Area Wight gale now ceased.

B.5.39 Sunday 14 January 2001**Met Office Daily Forecast. Received at 04:06 14/01/01**

The large anticyclone, currently positioned in the central North Sea, will remain slow moving during Sunday before drifting east or southeast towards eastern Germany and Poland by Monday afternoon and evening.

Hampshire Precipitation from 0600 today to 0600 tomorrow:

0 Less than 1mm, High Confidence, Dry, No timing.

B.5.40 Monday 15 January 2001**Met Office Daily Forecast. Received at 06:22 15/01/01**

High pressure will dominate conditions again today keeping the south of England dry, with a strong east to north east winds through the English Channel gradually easing as a south westerly airflow slowly becomes established.

Hampshire Precipitation from 0600 today to 0600 tomorrow:

0 Less than 1mm, High Confidence, Dry, No timing

Met Office Gale Warning. Received at 07: 06 15/01/01. Issued at 07:06

Sea Area Wight gale now ceased.

B.5.41 Thursday 18 January 2001**Met Office Daily Forecast. Received at 04:40 18/01/01**

High pressure over Scandinavia is producing a slack flow across the area and giving a settled if rather cold spelt of weather. This settled spell is likely to last into the weekend before the high drifts away. Atlantic depressions are then expected to move in, pushing their associated frontal systems across the area.

Hampshire Precipitation from 0600 today to 0600 tomorrow:

0 Less than 1mm, High Confidence. A small risk of a shower in the west of the county at first, otherwise dry, Timing 0600-1900.

B.5.42 Friday 19 January 2001**Met Office Daily Forecast. Received at 05:38 19/01/01**

A weakening ridge of high pressure extends from Scandinavia to the west of the Iberia and maintains a slack flow across the region and maintains the cold but settled spell of weather across the region.

Hampshire Precipitation from 0600 today to 0600 tomorrow: 0 Less than 1mm, High Confidence, Dry, Timing n/a.

B.5.43 Saturday 20 January 2001**Met Office Daily Forecast. Received at 04:19 20/01/01**

A slack pressure gradient will affect the region today, although an upper vortex will bring a risk of the occasional wintry shower, chiefly to eastern areas. An upper ridge will follow from the west later today, to kill off the showers for the evening before an Atlantic weather system arrives overnight.

Hampshire Precipitation from 0600 today to 0600 tomorrow: L 1-4mm, High Confidence, Frontal rain/sleet tonight, Timing 0100 onwards.

B.5.44 Monday 22 January 2001**Met Office Gale Warning. Received at 18:00 22/01/01. Issued at 17:29**

Sea Area Wight gale now ceased.

B.5.45 Tuesday 23 January 2001**Met Office Daily Forecast. Received at 05:06 23/01/01**

An Atlantic depression is expected to run in and up the western side of the country, pushing its associated frontal systems across the region. A showery flow will develop in wake of the weather fronts with frequent and heavy showers feeding across the southern coastal counties.

Hampshire Precipitation from 0600 today to 0600 tomorrow: VH 20+mm, Medium Confidence, Rain then showers, Timing from 0900.

Met Office Gale Warning. Received at 05:49 23/01/01. Issued at 05:30

Sea Area Wight south westerly Gale Force 8 expected later.

Met Office Heavy Rain Warning (Warning Number 122). Received at 09:02 23/01/01

Issued at 08:39 23/01/01. Valid until 07:00 24/01/01

Outbreaks of rain will arrive from the south west this morning and turn heavy before it turns more showers later today and into tonight. Overall rainfall amounts in your area are likely to reach 25mm to 50mm in places in your area with rainfall rates exceeding 10mm per hour at times.

All Hampshire and IOW catchments 20mm+ Timing 1000-1500.

B.5.46 Thursday 25 January 2001

Met Office Early Warning of Severe Weather, Early Warning of Heavy Rain. Received at 12:36 25/01/01. Issued at 09:27 25/01/01

Overall Risk Assessment: The probability of disruption due to severe weather conditions in part of the United Kingdom within the next 48 hours is 70 percent.

Regional risk assessment for the occurrence of severe weather conditions between 12:00 on 06/01/01 and 09:00 27/01/01: Central southern England 60%.

This is the first issue of a new warning from the Met Office of possible disruption as a result of heavy rain. A depression is expected to move eastwards just to the south of Britain later on Friday bringing a prolonged spell of rain to parts of southern Britain. Rainfall totals of 20-30mm of rain are possible, the rain clearing eastwards during Saturday. This may lead to further flooding problems. Strong to gale force winds are likely through the English Channel, with a small risk of localised severe gales. This warning will be updated at about 0920 26/01/01.

B.5.47 Friday 26 January 2001

Met Office Daily Forecast. Received at 05:04 26/01/01

Today will start with a continuation of the locally heavy showers across the region with sunny spells between. Yesterday's forecast discussed a depression moving up the English Channel tonight with some heavy rain, and the possibility that this may track further south. Current expectations are more in line with the depression crossing northern France with less impact on southern UK. Hence precipitation totals are considerably downgraded over the regions with perhaps only the southern coastal regions seeing any notable quantities.

M 5-12mm, Low Confidence, Showers then rain, Timing Showers to 1500, rain 1800 to 0300.

B.5.48 Saturday 27 January 2001

Met Office Daily Forecast. Received at 03:52 27/01/01

A depression, currently centred in the southern North Sea will drift towards Denmark by tonight. The next Atlantic depression is expected to move southeast towards the Bay of Biscay. This should give a relatively quiet spell of weather for south and south east England this weekend.

Hampshire Precipitation from 0600 today to 0600 tomorrow: 0 less than 1mm, High Confidence, Coastal showers, Timing 0600 to 0600.

Met Office Gale Warning. Received at 10:04 27/01/01. Issued at 09:36

Sea Area Wight gale now ceased

B.5.49 Sunday 28 January 2001**Met Office Daily Forecast. Received at 04:00 28/01/01**

A depression currently centred in the Bay of Biscay will continue moving away to the south east during Sunday and Monday. At the same time, a ridge of high pressure is expected to move east across the United Kingdom.

Hampshire Precipitation from 0600 today to 0600 tomorrow: 0 less than 1mm, High Confidence, Dry, No timing.

B.5.50 Monday 29 January 2001**Met Office Daily Forecast. Received at 05:48 29/01/01**

High pressure across the UK today will give way to Atlantic fronts during the remainder of the week.

Hampshire Precipitation from 0600 today to 0600 tomorrow: 0 less than 1mm, High Confidence, Dry, No timing.

B.5.51 Tuesday 30 January 2001**Met Office Daily Forecast. Received at 05:33 30/01/01**

Pressure will fall away today as a weather front makes slow eastwards progress across the South of England with a return to more unsettled conditions this week. A succession of frontal system is expected to move from west to east over the next few days.

Hampshire Precipitation from 0600 today to 0600 tomorrow: L 1-4mm, Medium Confidence, Rain/drizzle, Timing 0600-0600.

B.5.52 Wednesday 31 January 2001**Met Office Daily Forecast. Received at 05:33 31/01/01**

A weak front lies north to south down the middle of the UK and will weaken and decay entirely during today. A new front will approach from the west tomorrow, again slowing down to lie over the region for much of the period late Thursday to midday Friday.

Hampshire Precipitation from 0600 today to 0600 tomorrow: 0 Less than 1mm, High Confidence, Drizzle, Timing 0600-1200

B.5.53 Thursday 1 February 2001**Met Office Daily Forecast. Received at 04:02 01/02/01**

A ridge of high pressure will decline today as a frontal system pushes in from the west. The front will slow as it crosses the UK, not clearing the east coast until around midday Friday. Another weak ridge follows but then further fronts and low pressure swing north east across

the country for Saturday. Some weak ridging returns for Sunday and Monday before more fronts arrive Monday night.

Hampshire Precipitation from 0600 today to 0600 tomorrow: M 5-12mm, Medium Confidence, Rain, Timing 1800-0600

B.5.54 Friday 2 February 2001

Met Office Daily Forecast. Received at 06:16 02/02/01

A frontal system is presently making slow progress across England, and this is not expected to clear east out of Kent until Midday. A weak ridge will then bring a dry spell, although a further band of rain will reach Hampshire around midnight. A dry interlude will develop for a time on Saturday morning but further frontal waves running north eastwards will maintain mild moist south westerly through until early on Monday with spells of at time heavy rain. Although dry during most of the daylight hours on Monday further rain will reach the area in the evening.

Hampshire Precipitation from 0600 today to 0600 tomorrow: M 5-12mm, Medium Confidence, Rain, Timing 0100-0600.

B.5.55 Saturday 3 February 2001

Met Office Daily Forecast. Received at 04:42 03/02/01

A frontal system is currently passing east across southern Britain with the cold front expected to take rain clear from Kent by mid morning. A weak ridge of high pressure should then dominate through the remaining day light hours, but then overnight a further frontal system will spread northeast across all parts.

Hampshire Precipitation from 0600 today to 0600 tomorrow: H 13-19mm, Medium Confidence, Rain, Timing 1800-0600.

Met Office Heavy Rain Warning. Received at 15:33 03/02/01. Issued at 14:58 03/02/01. Valid until 15:00 04/02/01.

Rain will spread across the region this evening and will persist through the night and also Sunday morning. The rain is likely to be heavy at times. The rain should eventually clear away during the early part of Sunday afternoon. Amounts are likely to be in the range 15-20mm.

All Hampshire and IOW catchments 20mm+ Timing 1900-1300.

B.5.56 Sunday 4 February 2001

Met Office Daily Forecast. Received at 04:25 04/02/01

A wet start with some locally heavy rain moving eastwards, followed by showery conditions later in the day.

Hampshire Precipitation from 0600 today to 0600 tomorrow: H 13-19mm, Medium Confidence, Rain then showers, Timing 0600-0600.

B.5.57 Monday 5 February 2001

Met Office Daily Forecast. Received at 03:55 05/02/01

Continuing mild and changeable with a mostly dry start then a band of rain followed by showers before another area of rain crosses the region overnight.

Hampshire Precipitation from 0600 today to 0600 tomorrow: M 5-12mm, Medium Confidence, Rain then showers, Timing 1000-0000.

Met Office Gale Warning. Received at 16:44 05/02/01. Issued at 16:19

Sea Area Wight south westerly Gale Force 8 continuing.

Met Office Heavy Rain Warning (Warning number 30). Received at 18:30 05/02/01. Issued at 17:24 05/02/01. Valid until 04:00 05/02/01

An area of rain is expected to move northeast across southern England later this evening and early tonight. Rainfall totals of 15mm can be expected.

All Hampshire and IOW catchments 15-20mm Timing 1900-0300.

Agency Weather Forecast Update. Received at 19:08 05/02/01

Latest update from Met Office is as follows:

Tonight: 10-15mm frontal rain possible 20mm in higher grounds. The heavy rainfall warning issued at 7:30, was an error. Met Office cannot guarantee but more likely as in this forecast.

- Tues 6th early morning: Dry spell.
- Tues 6th day/night: Showers in coastal areas, totals of 2-3mm.
- Wed 7th day: Dry weather.
- Wed night/Thurs morn: Frontal system arriving from the West, could give high totals, but model is unable to predict.

Output from Hyrad: Hampshire: Last 24 hours: 8mm, Last 12 hours: 2mm.

Heavy rainfall warnings: Issued at 17:30 05/02/01 across region.

B.5.58 Tuesday 6 February 2001**Met Office Daily Forecast. Received at 04:05 06/02/01**

A brisk and gusty showery south westerly air stream will affect the region today and tonight, followed by a minor ridge of high pressure during Wednesday, ahead of a weather system which will spread cloud and rain from the south during Wednesday night.

Hampshire Precipitation from 0600 today to 0600 tomorrow: M 5-12mm, Medium Confidence, Showers, Timing Showers most likely daylight hours today

B.5.59 Wednesday 7 February 2001**Met Office Daily Forecast. Received at 04:29 07/02/01**

Scattered showers at first will give way to a mainly fine end to the day. The evening will see cloud increase from the south and soon after midnight persistent frontal rain will move in, the rain persisting throughout Thursday morning then gradually turning more showery later in the day.

Hampshire Precipitation from 0600 today to 0600 tomorrow: M 5-12mm, High Confidence, Showers then rain, Timing Showers until 1500, rain 0001-0600.

Met Office Gale Warning. Received at 19:59 07/02/01. Issued at 19:41

Sea Area Wight south westerly Gale Force 8 expected soon.

Met Office Gale Warning. Received at 22:04 07/02/01. Issued at 21:49

Sea Area Wight south westerly Gale Force 8 veering northerly soon.

B.5.60 Thursday 8 February 2001**Met Office Daily Forecast. Received at 05:52 08/02/01**

Rain will be persistent this morning as a depression moves northeast through the Channel. It should die away from all but the south coast and the east of the area this afternoon, and it should be dry everywhere by mid-evening. Tomorrow a ridge of high pressure will build giving most places a dry and fine day, but it will be frosty early and late.

Hampshire Precipitation from 0600 today to 0600 tomorrow: M 5-12mm, High Confidence, Frontal rain, Timing 0600-1400.

Met Office Gale Warning. Received at 16:39 08/02/01. Issued at 16:22

Sea Area Wight gale now ceased.

B.5.61 Saturday 10 February 2001**Met Office Daily Forecast. Received at 04:52 10/02/01**

Low pressure brings a mild and breezy weekend with outbreaks of rain and drizzle at time.

H 13-19mm, Medium Confidence, Frontal rain, Timing 1100-0600.

B.5.62 Sunday 11 February 2001**Met Office Daily Forecast. Received at 05:07 11/02/01**

A front currently to the north of the region will slowly work its way southwards during Monday bring some rain during the day to most of the region. Thereafter, high pressure will build keeping it largely dry for much of the rest of the week.

Hampshire Precipitation from 0600 today to 0600 tomorrow: L 1-4mm, High Confidence, Frontal rain, Timing 0500-0600.

Met Office Early Warning of Severe Weather, Early Warning of Heavy Rain. Received at 09:30 11/02/01. Issued at 08:45 11/02/01

Overall Risk Assessment: The probability of disruption due to severe weather conditions in part of the United Kingdom within the next 36 hours is 70 percent.

Regional risk assessment for the occurrence of severe weather conditions between 12:00 on 06/01/01 and 09:00 27/01/01: Central southern England 20%

This is the first warning of disruption due to prolonged rain, issued by the Met Office. Outbreaks of rain along a slow moving frontal zone across Wales and northern England will be prolonged and heavy at times, especially over the hills. The rain area will broaden tonight as a low moves east along it. The low is expected to be over East Anglia by midday Monday with the front moving south east, probably clearing the south east during the evening. Already substantial rain has fallen in parts of north Wales, and present indications are for a further 50mm of rain in some upland area of Wales, northern England and the Midlands. Amounts of rain further south and east depend on the speed at which the front clears and there is a small possibility that it will be slower to clear the south east than our models indicate. This warning will be updated at 0930 tomorrow, or by prior issue or flash warnings

B.5.63 Monday 12 February 2001**Met Office Daily Forecast. Received at 05:48 12/02/01**

A frontal system will clear through south eastwards during today bringing colder weather by this evening. High pressure developing overnight and continuing through coming days.

Hampshire Precipitation from 0600 today to 0600 tomorrow: M 5-12mm, Medium Confidence, Frontal rain, Timing 0900-1500.

Met Office Flash Warning of Severe Weather. Received at 12:16 12/02/01. Issued at 11:24 12/02/01. Valid until 1900 12/02/01

An area of heavy rain will move slowly south eastwards today clearing from south east England this evening. This is expected to cause further localised flooding with hazardous conditions on some roads.

Agency Weather Forecast Update. Issued at 13:03 12/02/01

Following issue of Flash Warning of Severe Weather at 11:24, details for Southern as below.

- 10-15mm between 1000 and 2000 tonight region wide.
- Rain clearing Hants/Sussex by 16:00.
- Highest totals of 15mm expected to be over higher ground.
- Rain will become lighter into evening.

Next model run at 1500, update will follow.

Agency Weather Forecast Update. Issued at 16:18 12/02/01

- Front moving SE across Region.
- Rain expected to clear Hants by 1700/1800.
- Current heavy pulses if rain may give a further 5mm by this evening.
- This should give daily totals of 5-10mm in Hants.
- Then dry and cold until Thursday.

Met Office Gale Warning. Received at 22:25 12/02/01. Issued at 22:15

Sea Area Wight gale now ceased.

B.5.64 Tuesday 13 February 2001**Met Office Daily Forecast. Received at 04:19 13/02/01**

Pressure will continue to build, with an anticyclone becoming centred over Oxfordshire by midday tonight. This will give a period of dry and settled weather. Temperatures will be near or a little above normal by day, and close to normal at the coast overnight, although it will become cold overnight inland.

Hampshire Precipitation from 0600 today to 0600 tomorrow: 0 Less than 1mm, High Confidence, Dry, Timing n/a.

B.5.65 Wednesday 14 February 2001**Met Office Daily Forecast. Received at 05:14 14/02/01**

An intense area of high pressure is firmly established across England. On Friday morning a weak cold front will slide south east through this feature reinforcing it and making the high last through the weekend.

Hampshire Precipitation from 0600 today to 0600 tomorrow: 0 Less than 1mm, High Confidence, Dry, Timing n/a.

B.5.66 Thursday 15 February 2001**Met Office Daily Forecast. Received at 04:17 15/02/01**

High pressure continues to dominate the weather for the foreseeable future bringing a respite from the rain. There will be a weak front in the area late Friday to early Saturday but this could be capable of no more than a little patchy drizzle with amounts less than 1mm.

Hampshire Precipitation from 0600 today to 0600 tomorrow: 0 Less than 1mm, High Confidence, Dry, Timing n/a.

B.5.67 Friday 16 February 2001**Met Office Daily Forecast. Received at 06:10 16/02/01**

High pressure persists. The weather is expected to stay dry until at least Thursday.

Hampshire Precipitation from 0600 today to 0600 tomorrow: 0 Less than 1mm, High Confidence, Dry, Timing n/a.

B.5.68 Saturday 17 February 2001**Met Office Daily Forecast. Received at 05:53 17/02/01**

High pressure persists over southern UK.

Hampshire Precipitation from 0600 today to 0600 tomorrow: 0 Less than 1mm, High Confidence, Dry, Timing n/a.

B.5.69 Sunday 18 February 2001**Met Office Daily Forecast. Received at 05:20 18/02/01**

The cell of high pressure bringing the settled and dry weather to the area will gradually slip southwest into the Atlantic over the coming day, enabling a front to come southwards and stall over the area on Monday evening. The front will be weak with next to no rainfall associated with it, but will bring more in the way of cloud to the area from Monday afternoon onwards. On Thursday another weak front will push south, bringing patchy light rain.

Hampshire Precipitation from 0600 today to 0600 tomorrow: 0 Less than 1mm, High Confidence, Dry, Timing n/a.

B.5.70 Monday 19 February 2001

Met Office Daily Forecast. Received at 03:56 19/02/01

A large anticyclone will remain centred just to the south west of the United Kingdom during Monday. At the same time a very weak cold front is expected to rift south, before a very weak warm front moves east during Tuesday.

Hampshire Precipitation from 0600 today to 0600 tomorrow: 0 Less than 1mm, High Confidence, Dry, Timing n/a.

B.5.71 Tuesday 20 February 2001

Met Office Daily Forecast. Received at 05:13 20/02/01

High pressure remains centred to the south west of Cornwall. A north westerly air stream is now established across southern England, in this weak fronts will bring the occasional outbreak of patchy light rain. On Thursday colder air will follow in the wake of a cold front from the north. Friday could see wintry showers late in the day. On Saturday morning a polar low sweeping down the North Sea is expected to bring snow showers or longer periods of snow, more especially to Kent, but also some into Sussex and perhaps Hampshire.

Hampshire Precipitation from 0600 today to 0600 tomorrow: 0 Less than 1mm, High Confidence, Frontal, Timing 2300-0600.

B.5.72 Wednesday 21 February 2001

Met Office Daily Forecast. Received at 05:49 21/02/01

The region will be in a cloudy warm sector today, with a weak cold front edging across from the north to bring occasional drizzle later. Pressure will be fairly high throughout.

Hampshire Precipitation from 0600 today to 0600 tomorrow: 0 Less than 1mm, High Confidence, Warm sector/frontal drizzle, Timing Anytime during period, but more especially tonight.

B.5.73 Saturday 24 February 2001

Met Office Daily Forecast. Received at 04:23 24/02/01

A cold northerly type covers the region and with plenty of shelter. Many places will avoid the showers. However, Kent in particular will see some snow flurries this morning but overall amounts will be small. Overnight tonight a trough will bring a band of rain of wintry showers across the region, but again amounts will be small.

Hampshire Precipitation from 0600 today to 0600 tomorrow: L 1-4mm, High Confidence, Scattered showers, Timing 0600-0900, 2400-0400.

Met Office Early Warning of Severe Weather and Heavy Snow. Received at 11:20 24/02/01. Issued at 0900 24/02/00

Overall Risk Assessment: The probability of disruption due to severe weather conditions in parts of the United Kingdom within the next 72 hours is 80 percent.

Regional risk assessment for the occurrence of severe weather conditions between 21:00 on 25/02/01 and 09:00 27/02/01: Central southern England 20%

This is the first warning of potential disruption due to heavy snow. A complex area of low pressure and associated frontal systems is forecast by the Met Office to develop and move east across the British Isles during the next three days. With existing cold air reluctant to move away this is expected to produce substantial snowfall in some areas. The exact track of the system remains uncertain but the highest risk of snow will be in southern Scotland and northern England. Further snow showers are likely in the short term on many areas with generally small amounts but more persistent snow will reach the north west late on Sunday and extend south east. Travel will become dangerous. The low complex will move to the east later with snow spreading south behind it, through amounts will generally be smaller.

B.5.74 Sunday 25 February 2001**Met Office Daily Forecast. Received at 06:12 25/02/01**

With the overnight trough clearing away to the south, the day will be dominated by a ridge of high pressure restricting any precipitation inland to isolated wintry showers. On Mon a further frontal system will be approaching from the west. The behaviour of this system remains difficult to predict but it looks likely to bring a spell of slightly milder weather with rain rather than snow, but it will turn colder and drier again for the end of the week.

Hampshire Precipitation from 0600 today to 0600 tomorrow: 0 Less than 1mm, High Confidence, Showers, Timing 0600-1800.

Met Office Severe Weather Warning. Received at 12:16 25/02/01. Issued at 11:08.

Regional risk assessment for the occurrence of severe weather conditions: Southern England 20%.

A complicated area of low pressure and assorted frontal systems is forecast to develop as it moves east across the UK tonight and tomorrow. With the cold air reluctant to move out of the way this is expected to produce substantial amounts of snow. Most likely will be the north east. More snow is likely on Monday. Wind speeds expected to increase leading to drifting and blizzard conditions.

B.5.75 Monday 26 February 2001**Met Office Daily Forecast. Received at 04:26 26/02/01**

A cold front, currently positioned in the Irish Sea, will drift east across southern England this afternoon and evening. An area of low pressure is expected to become established near the south coast of England by midday on Tuesday.

Hampshire Precipitation from 0600 today to 0600 tomorrow: M 5-12mm, Medium Confidence, Showers, frontal rain, wintry showers, Timing 0600-1500, 1500-2100, 2100-0600.

Met Office Gale Warning. Received at 04:29 26/02/01. Issued at 03:13

Sea Area Wight southerly Gale Force 8 expected later.

B.5.76 Tuesday 27 February 2001**Met Office Daily Forecast. Received at 03:59 27/02/01**

Low pressure will lie centred just to the west of the region, bringing an unsettled and showery day to all parts. The showers most widespread near to the south coast in association with a trough, but with the possibility of a small wave developing on a cold front out to the east, which will bring outbreaks of more general rain to Kent this morning

Hampshire Precipitation from 0600 today to 0600 tomorrow: M 5-12mm, Medium Confidence, Showers, Timing Anytime during period.

Met Office Gale Warning. Received at 06:32 27/02/01. Issued at 05:56

Sea Area Wight gale now ceased.

B.5.77 Wednesday 28 February 2001**Met Office Daily Forecast. Received at 06:13 28/02/01**

Area of low pressure over northern France. Associated front now crossing area and will later merge with second front (currently over Wales) and then the combined area will drift eastwards. The precipitation will be a mix of showers or longer outbreaks of rain, sleet or occasional snow.

Hampshire Precipitation from 0600 today to 0600 tomorrow: L 1-4mm, Medium Confidence, Frontal/showers, Timing Anytime within period.

APPENDIX C: RIVER DATA

The following pages contain river data for selected sites in the Hampshire and Isle of Wight Area.

A graph to show water flow at Chilbolton (total)



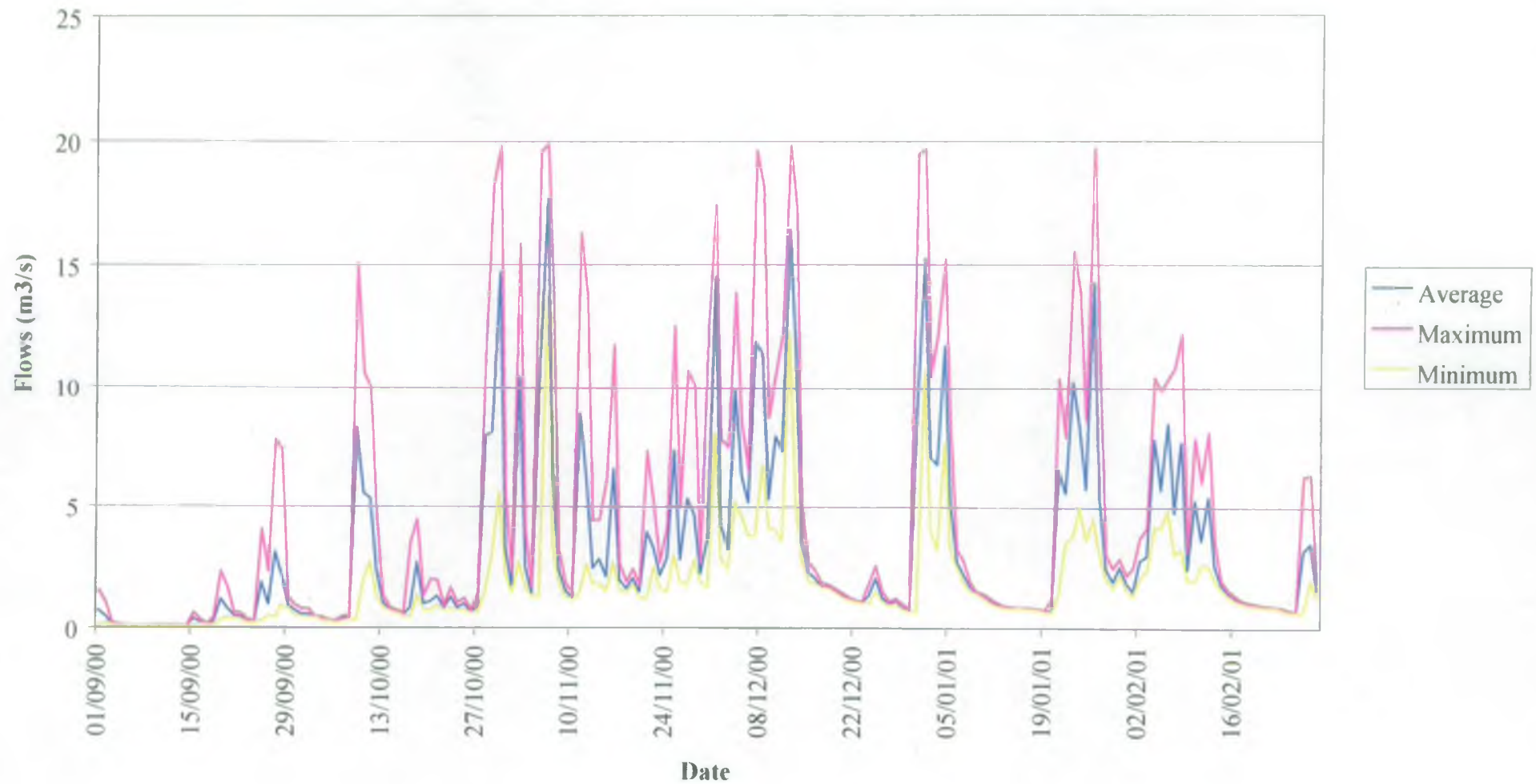
A graph to show the water flows at Testwood (River Test)

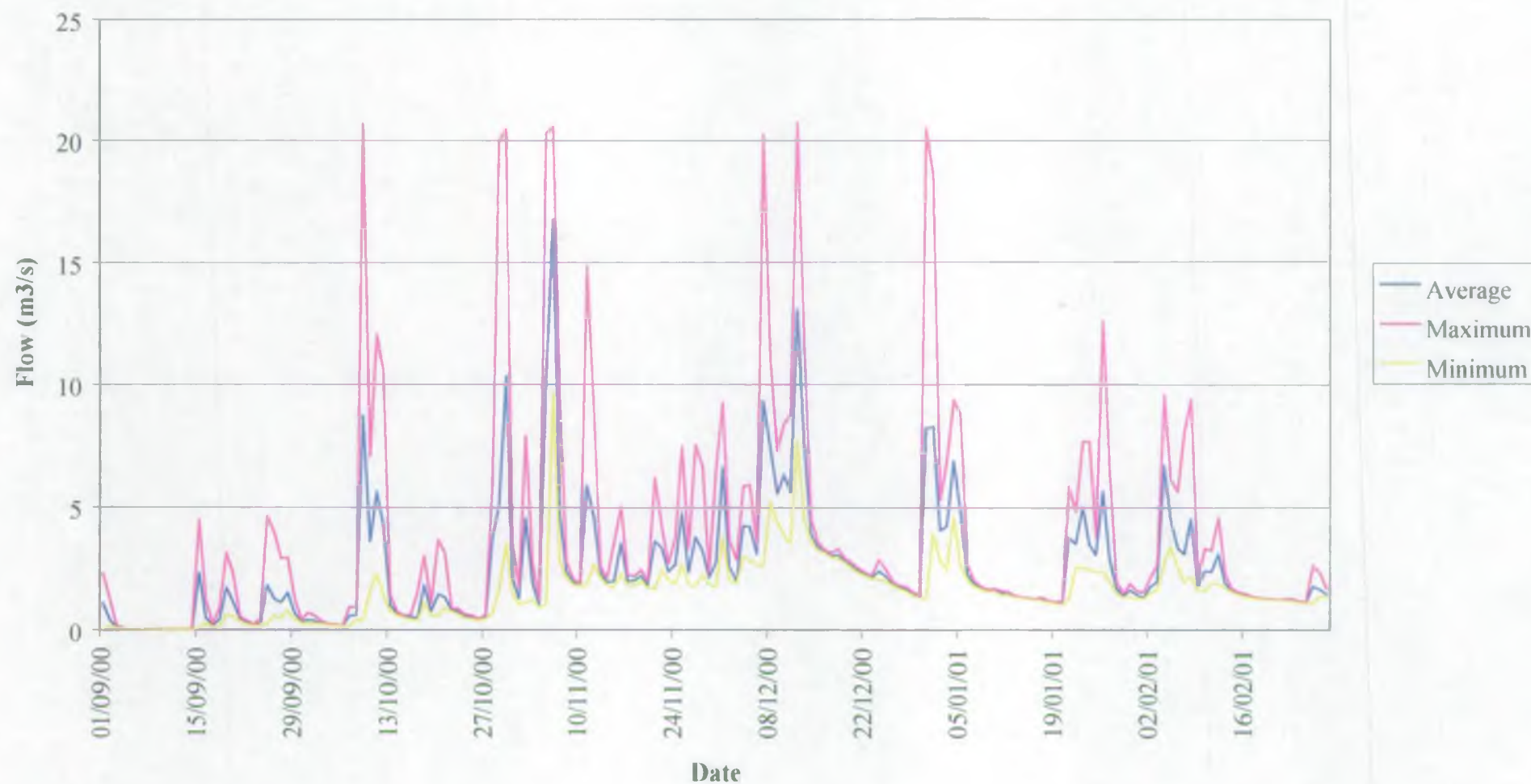


A graph to show the river flows in the River Itchen

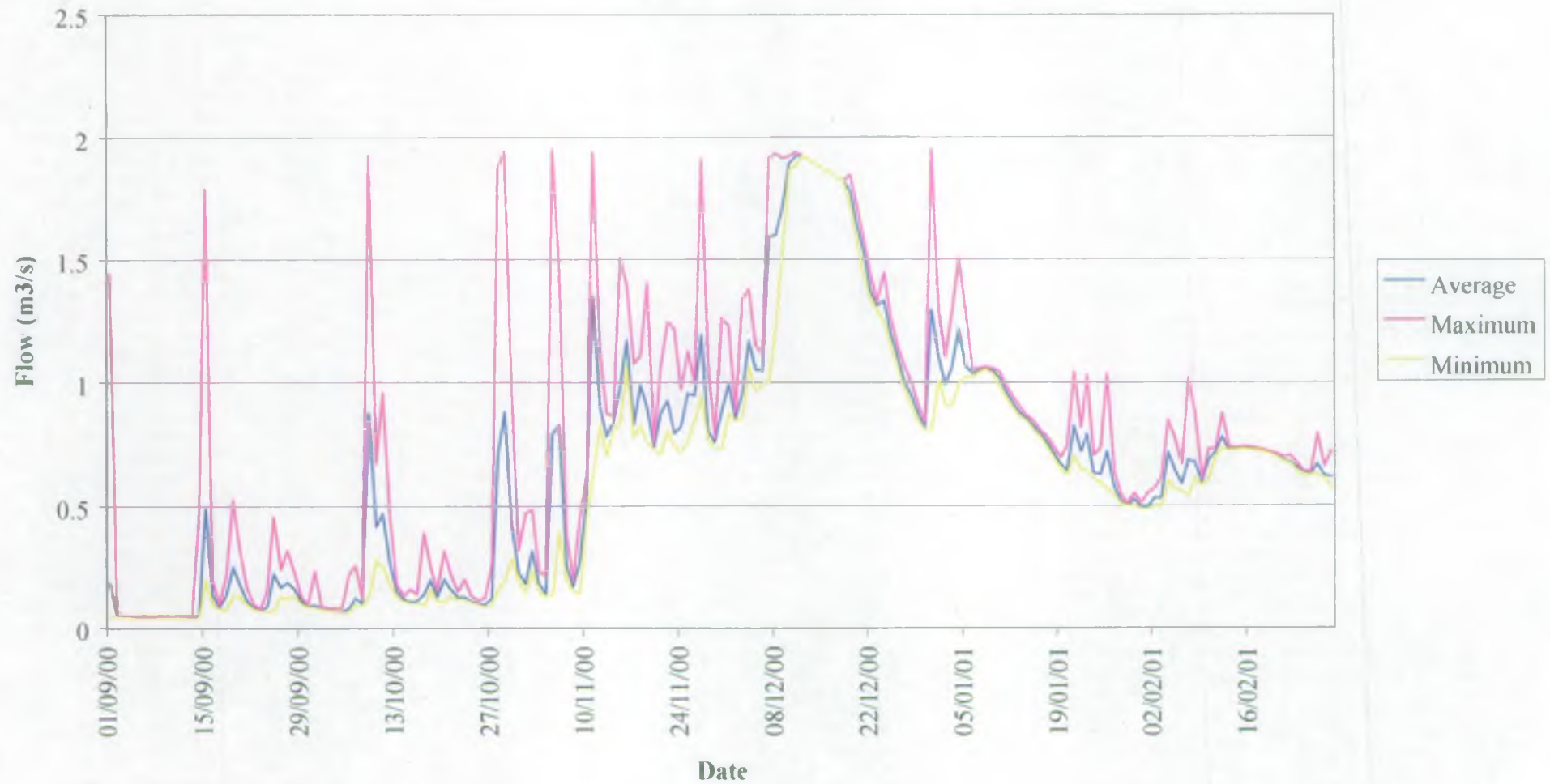


A graph to show water flow at Brockenhurst (River Lymington)



Graph to show water flow at North Fareham (River Wallington)

Graph to show water flows at West Meon (River Meon)

Graph to show water flow at Leigh Park (River Lavant)



APPENDIX D: TIDE DATA

Flooding in Hampshire and the Isle of Wight during the autumn and winter 2000 and 2001 was mainly caused due to fluvial flooding, surface water flooding and groundwater. There was only limited flooding caused by or influenced by tides levels and the associated surges.

Ryde on the Isle of Wight was the only town to experience significant flooding due to the influence of high tides and surges. Flooding occurred in the town both on the 15th September and on the night of 9th-10th October. Therefore the table below only includes tide levels and surges for Ryde on 15th September 2000 and 9th – 10th October 2000.

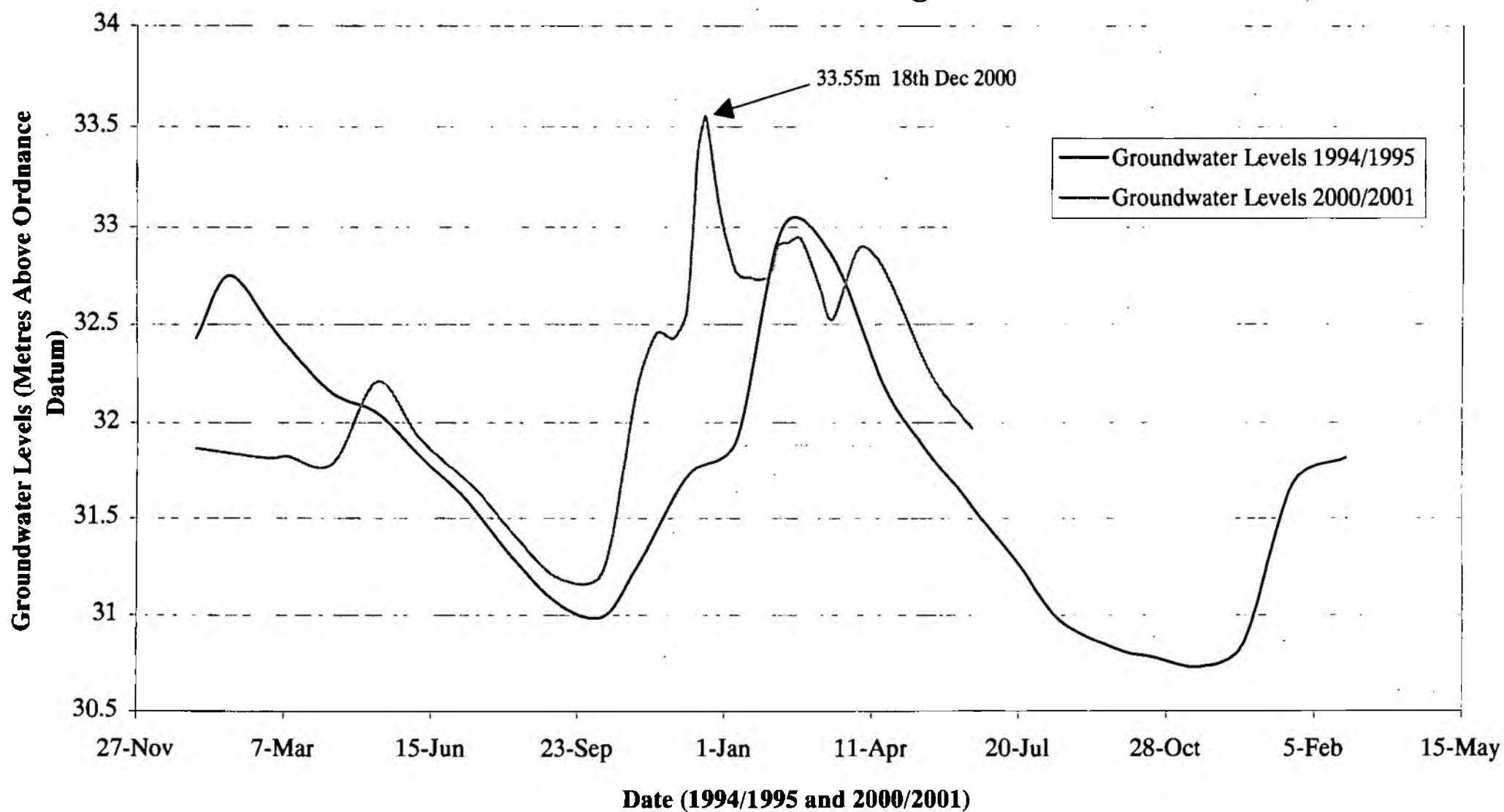
Date	Time	Tide Level	Surge
15 th September 2000	04:34	-1.69	-
	11:25	1.52	0.16
	16:51	-1.57	-
	23:30	1.52	0.03
9 th October 2000	01:41	-0.90	-
	08:50	1.14	0.09
	14:09	-0.92	-
	21:01	1.10	0.28
10 th October 2000	02:21	-1.15	-
	09:30	1.37	0.25
	14:45	-1.18	-
	21:37	1.33	0.64

Note: The surge values used are the values predicted for Southampton Water.

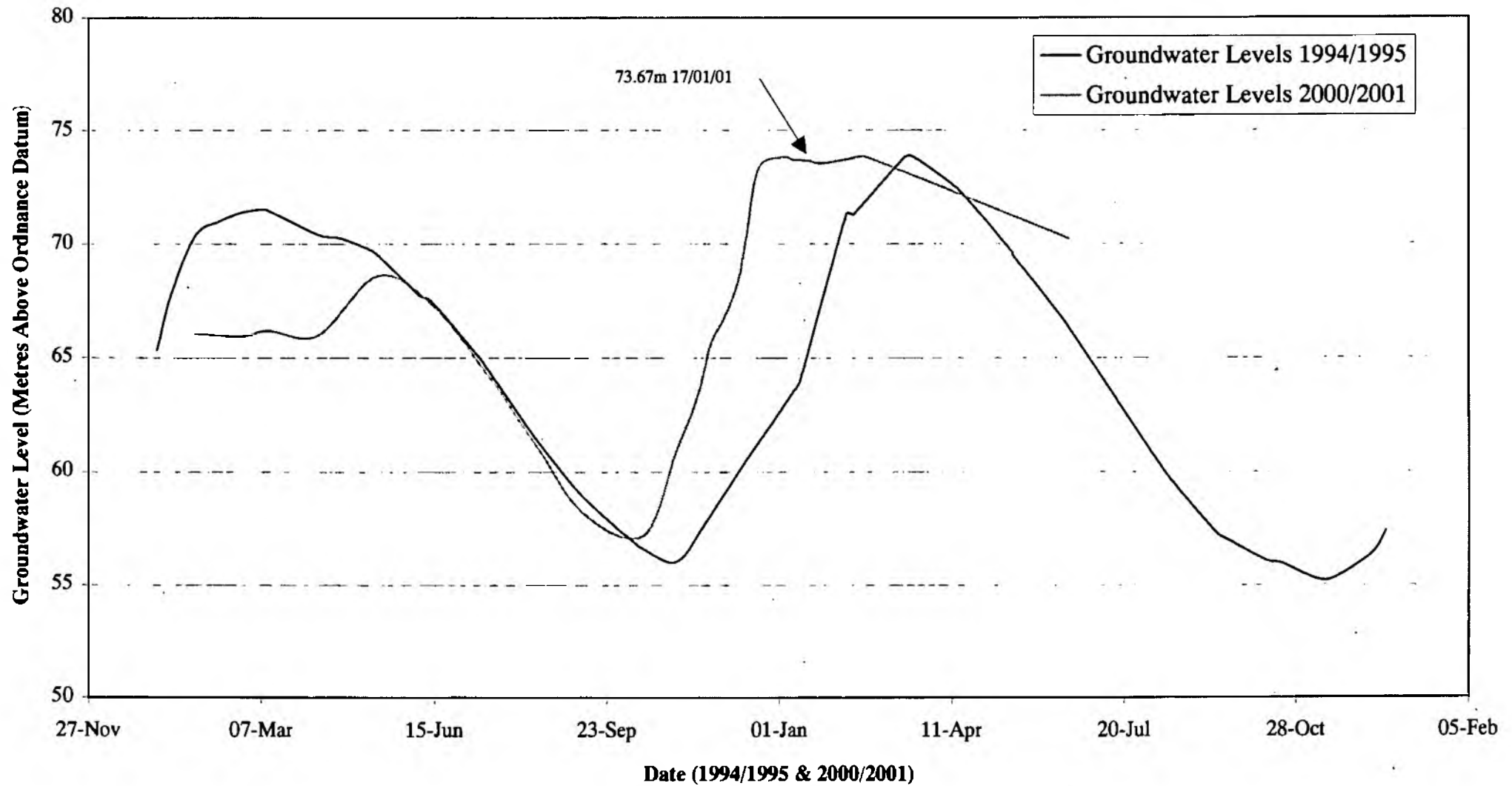
APPENDIX E: GROUNDWATER DATA

The following pages contain groundwater data for selected sites in the Hampshire and Isle of Wight Area.

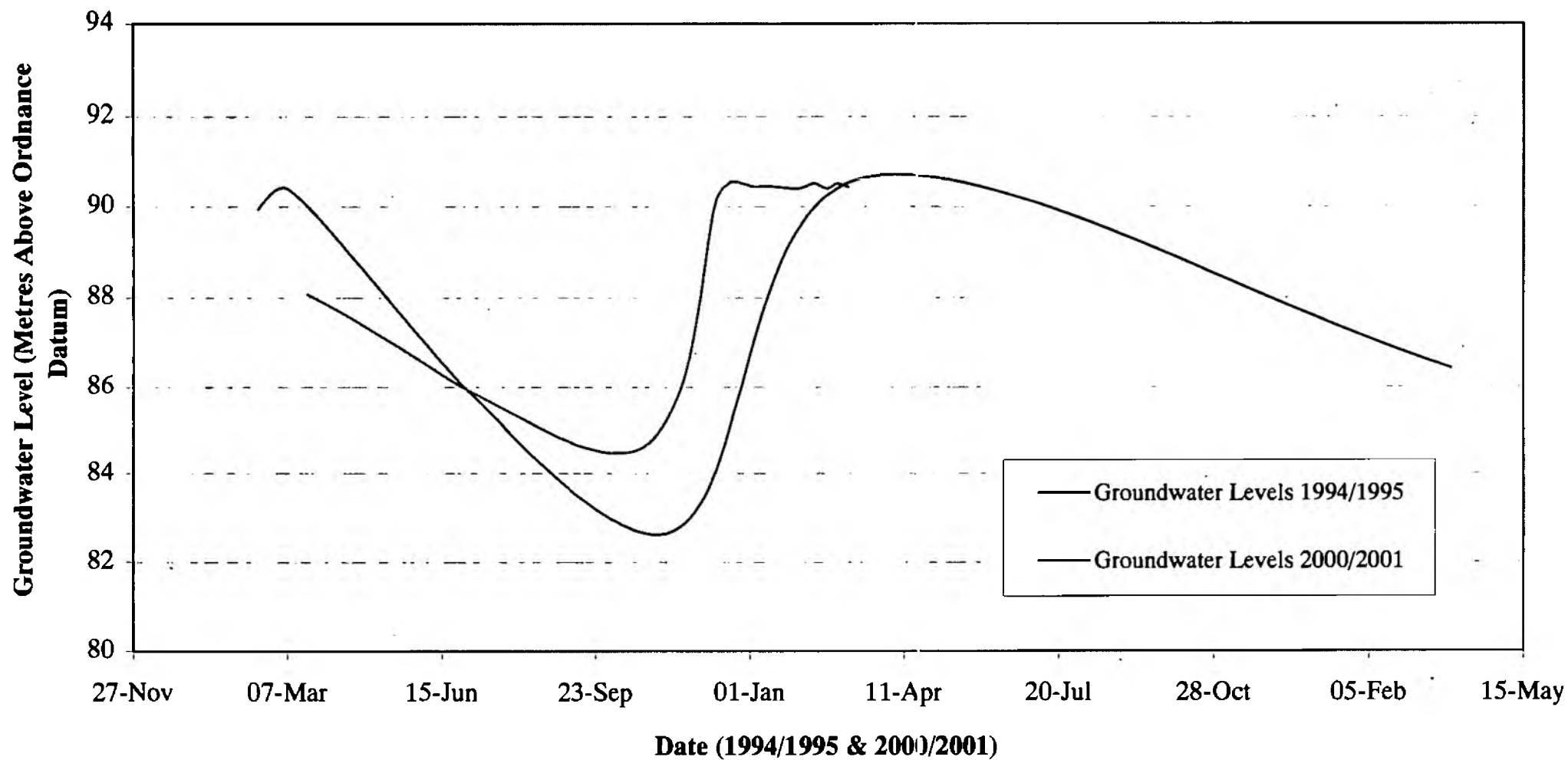
Groundwater Levels at Kings Somborne



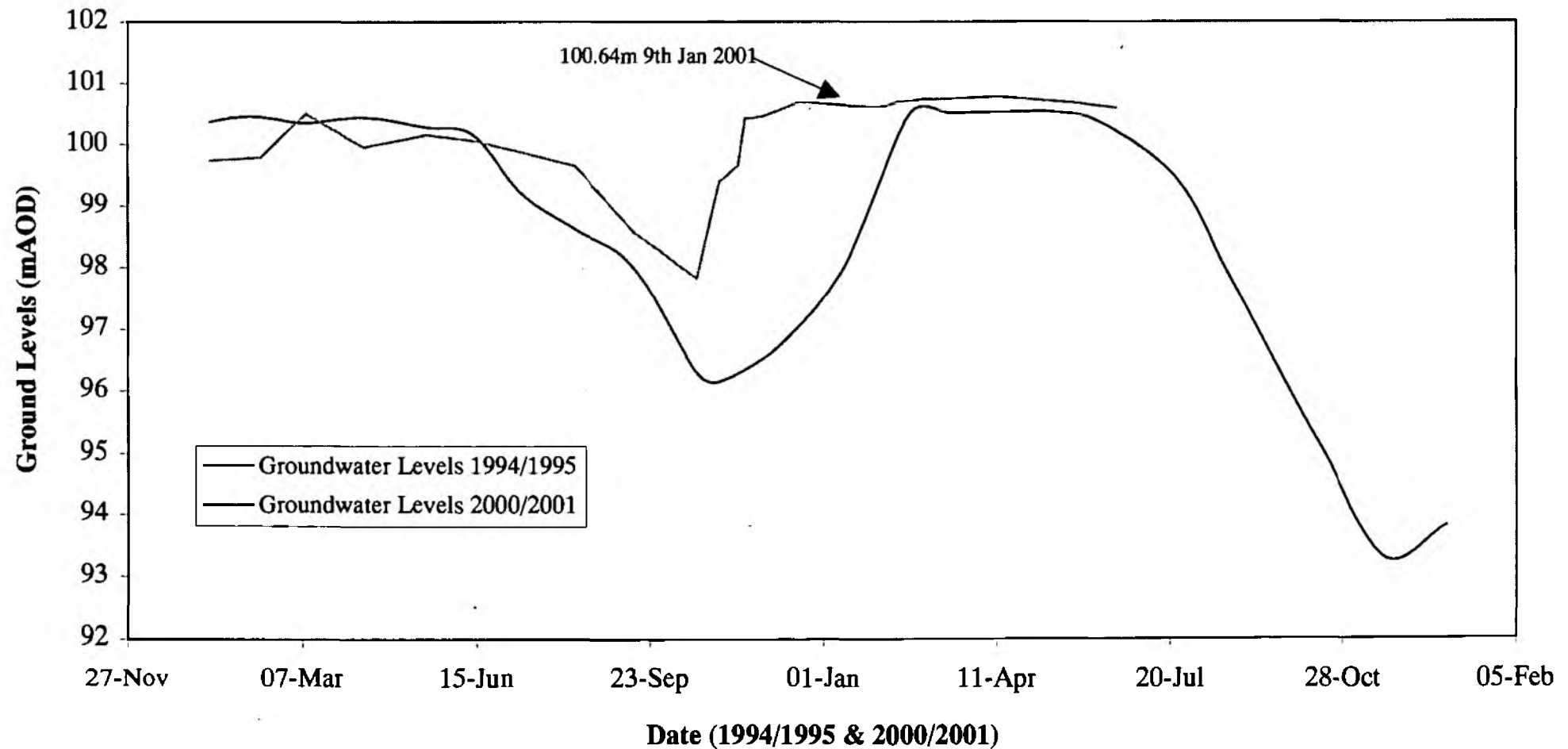
Groundwater Levels at Pitton (469) SU 2072 3075



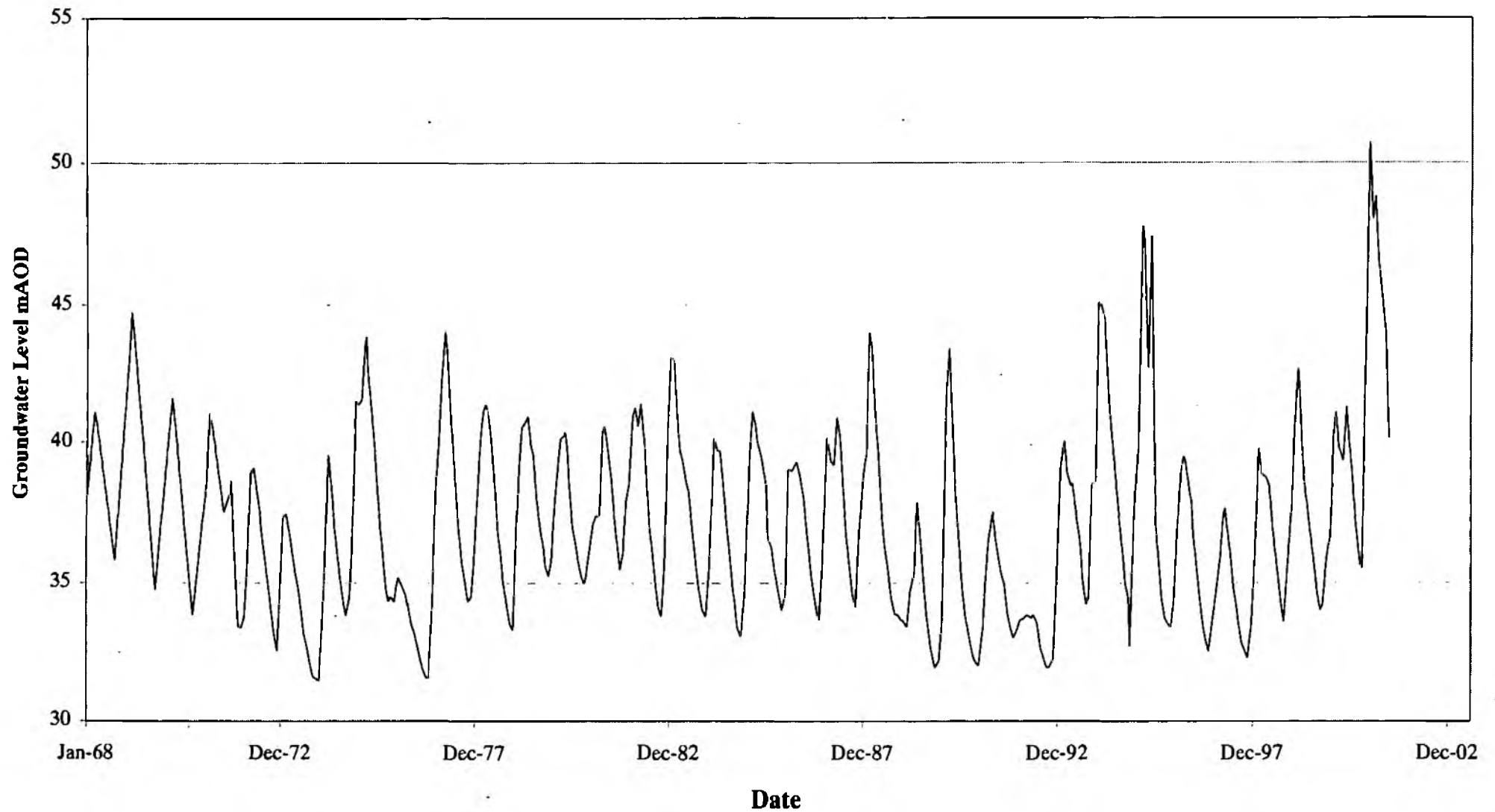
Groundwater Levels at Well Cottage, Appleshaw



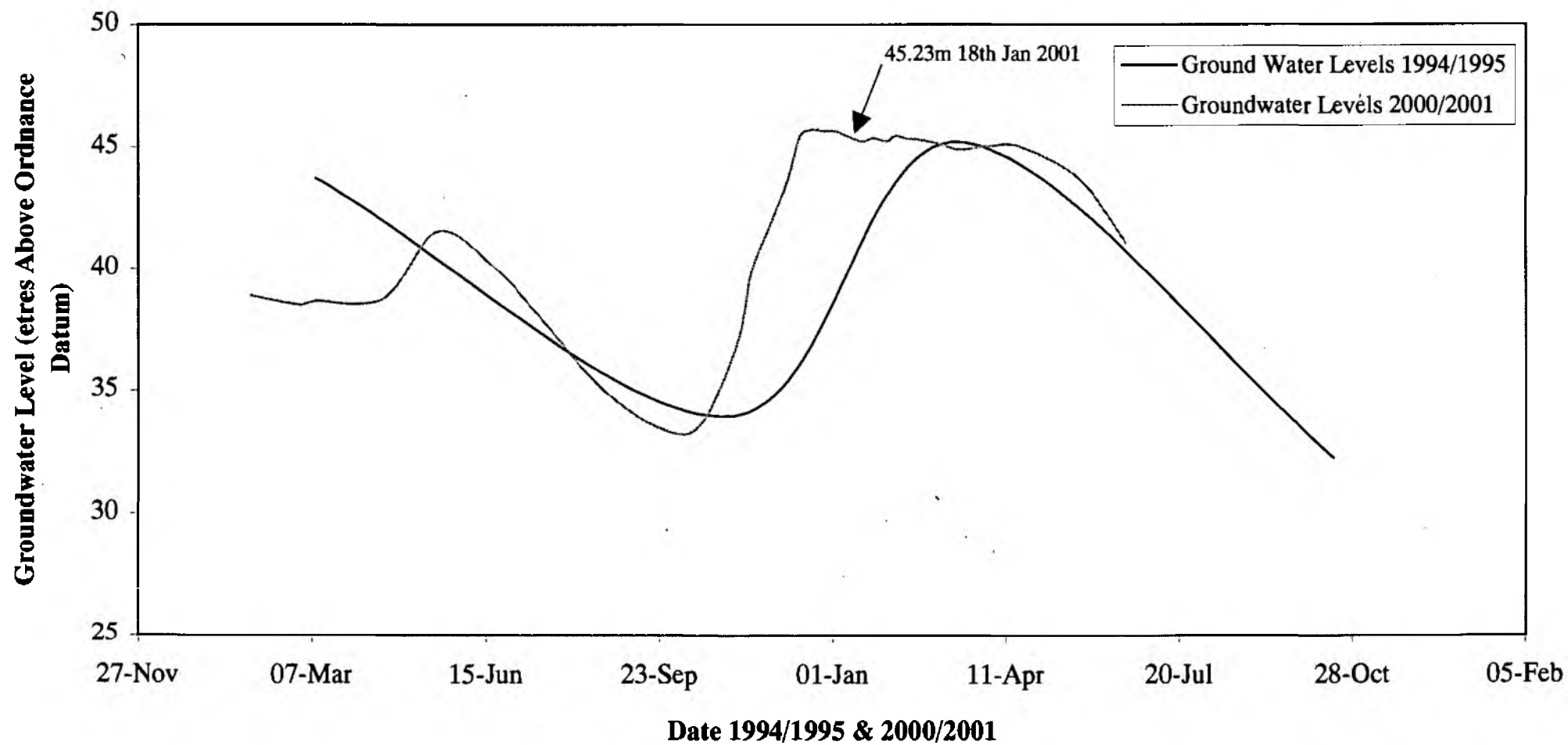
Groundwater Levels at Hurstbourne Tarrant (169) SU 3812 5350



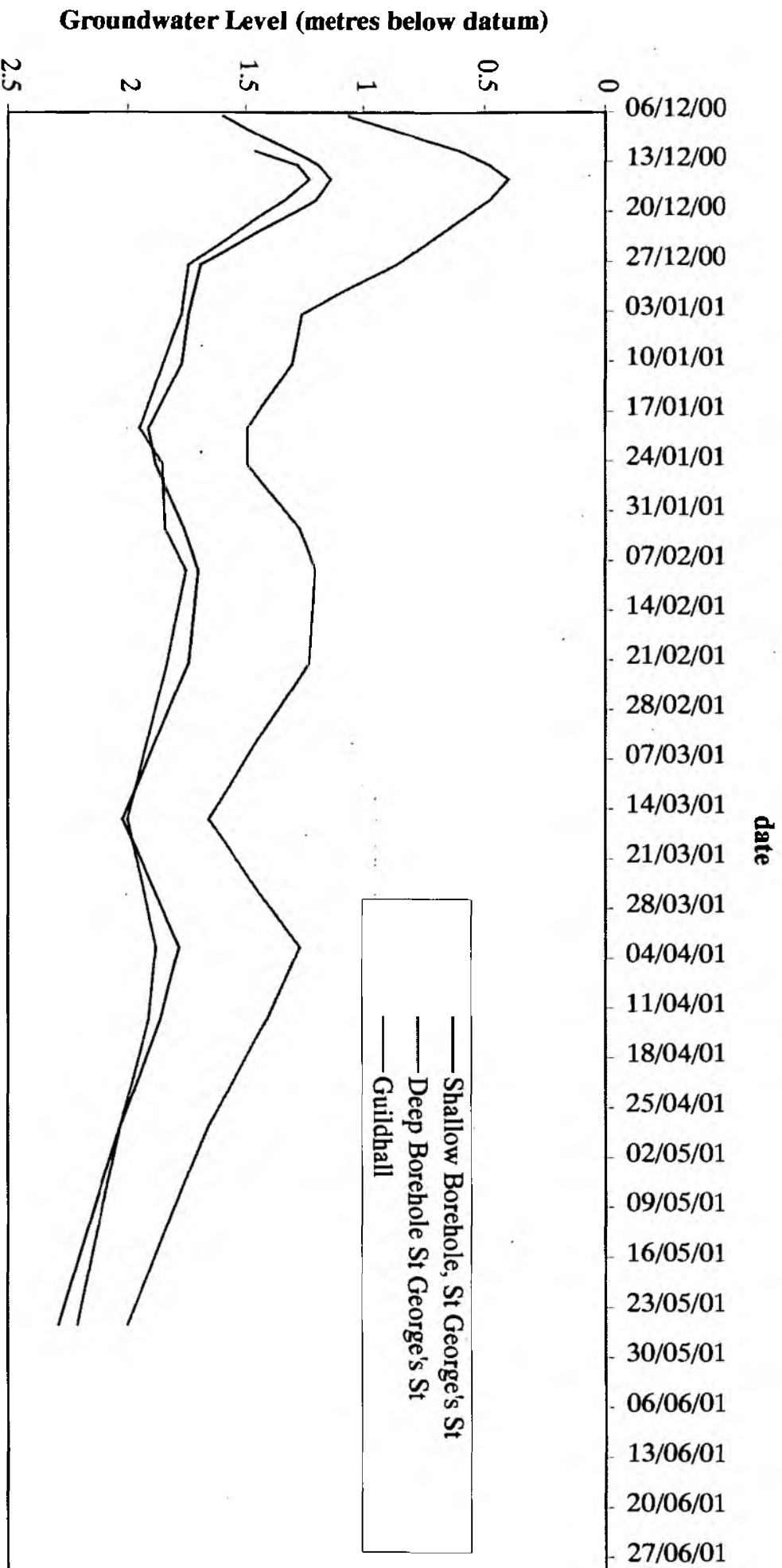
Historic Groundwater Levels at Chalkdale, Owslebury



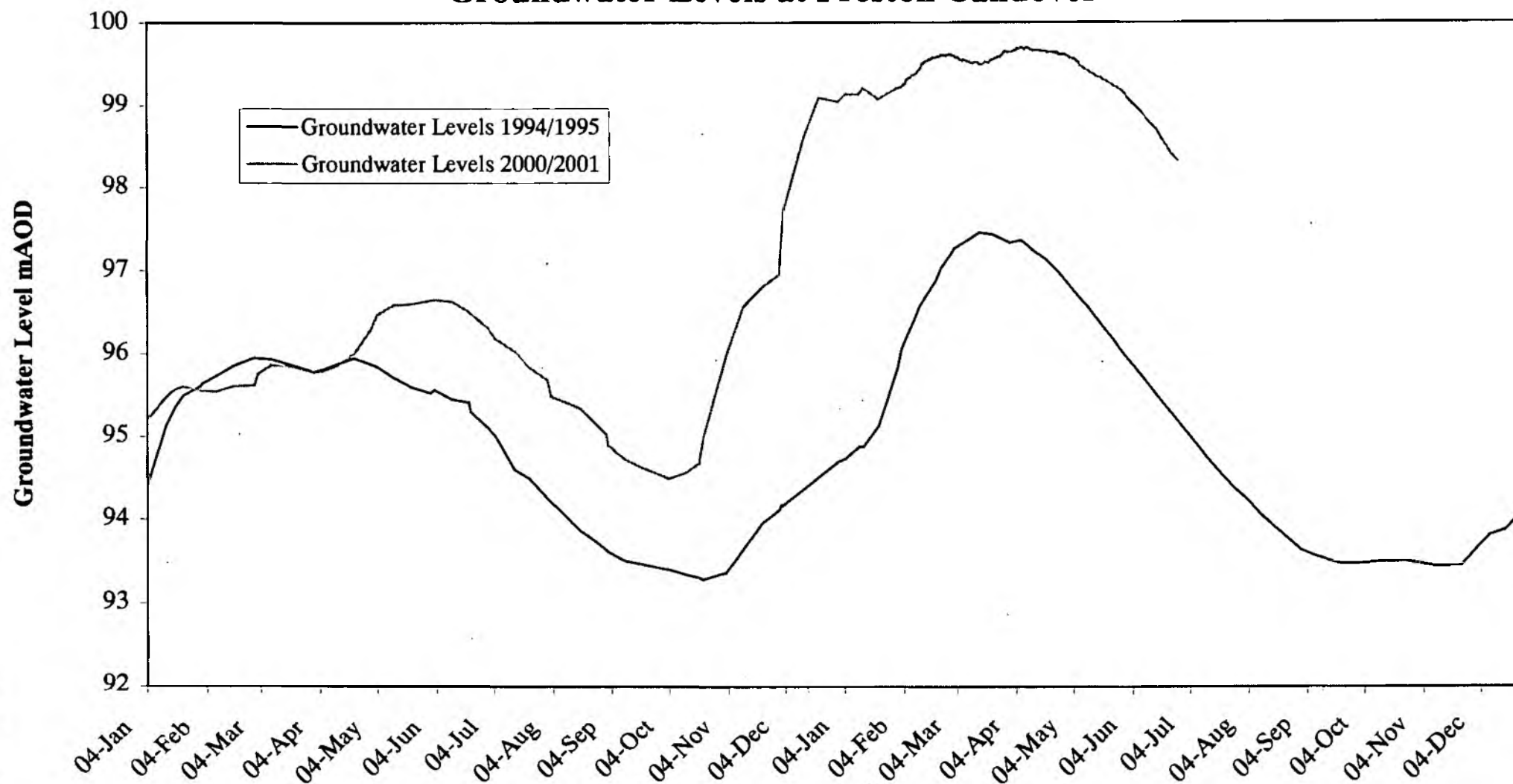
Groundwater Levels at Hursley SU 4283 2484

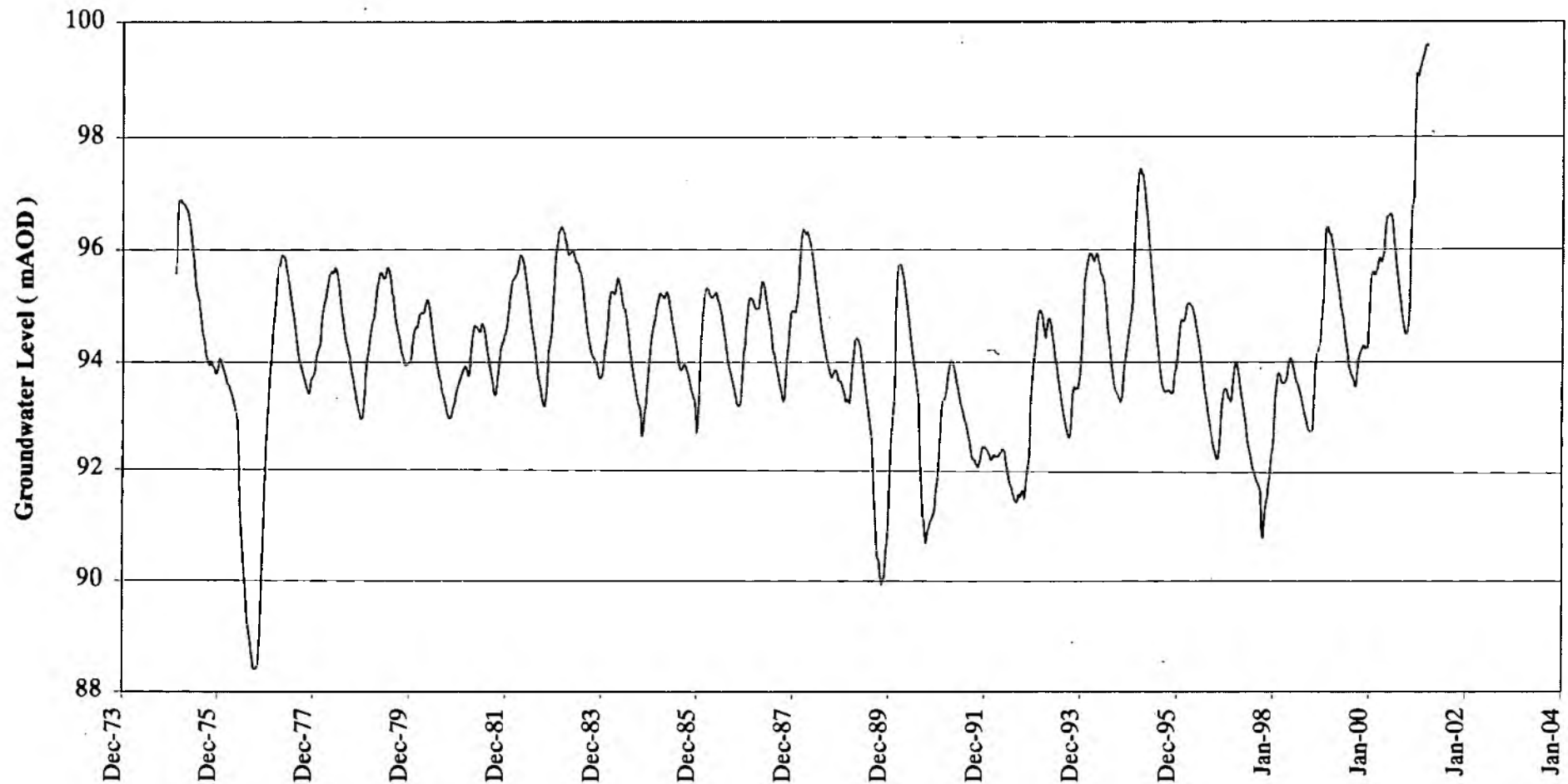


Groundwater Levels at Winchester



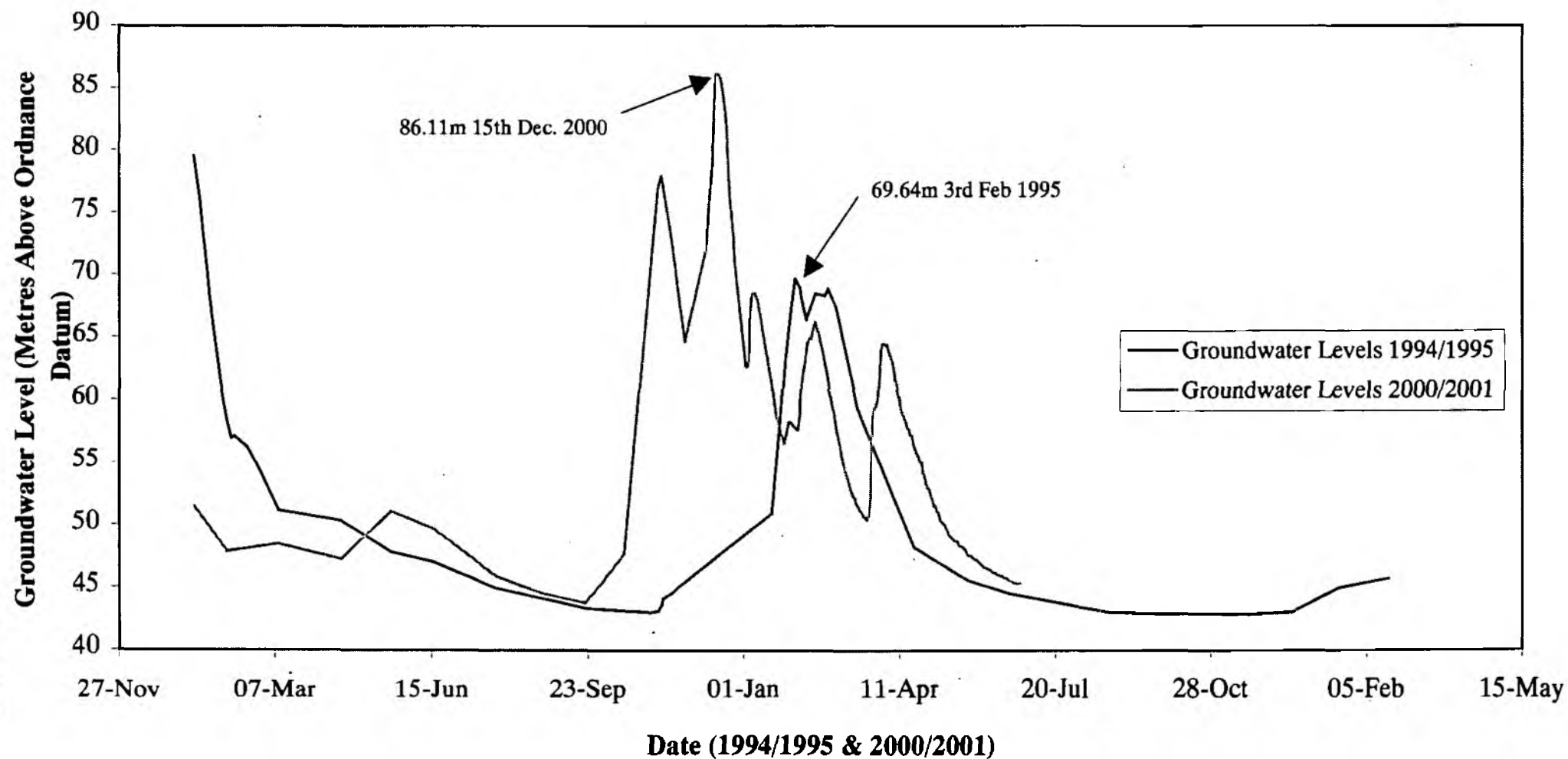
Groundwater Levels at Preston Candover



Graph showing historic groundwater levels at Preston Candover

Groundwater Levels at Broadhalfpenny Down

SU 6767 1663



APPENDIX F: FLOOD WARNINGS AND AVM STATISTICS

Flood Watches are issued when there is a possibility of flooding from rivers, the sea, overland flow and ordinary watercourses. A Flood Watch is triggered when: -

- The Met office forecast significant rainfall over a 24-hour period over a sensitive and/or saturated catchment.
- Receipt of a heavy rainfall warning or severe weather warning from the Met Office (confirmed by Nimrod/Hyrad forecasts) for a sensitive catchment
- Forecast of thunderstorm activity from the Met Office when rainfall rates and accumulations exceed relevant criteria (dependent on catchment type)
- Forecast of rapid snow melt
- Forecast of high tide levels that may give rise to 'tide lock' in the lower reaches of rivers
- Forecasts from the FDO, based on telemetry data (rain gauge, river level, groundwater levels etc), weather radar data, trigger level exceedence, rain gauge alarms, flow forecasting model.

Flood Warnings are issued when flooding from rivers and the sea and other related sources is imminent. A Flood Warning is triggered when: -

- Forecasts from the FDO, based on telemetry data (rain gauge, river level, groundwater levels etc), weather radar data, trigger level exceedence, rain gauge alarms, rainfall forecasts (eg Hyrad) flow forecasting model.
- Forecast rainfall from the Met office, including Weather centre forecasted and warnings, Nimrod and GANDOLF
- Site observations

It is aimed to issue a Flood Warning to the public at least two hours prior to property flooding, but it is recognised this is not practicable in all cases, for example fast responding urban catchments. However as flood warning is not a precise science flood watches and warnings may not always be issued correctly throughout the event.

Time	Warning Issued	Watercourse	Ref No	All Clear
15/09/00				
13:20	Flood Watch	Western Yar	F2D1	Upgraded on 15/09/00
13:20	Catchment Flood Watch	IOW Catchment	G2	Updated on 16/09/00
13:30	Flood Watch	Monkton Mead	F2C1	Upgraded on 15/09/00
13:30	Catchment Flood Watch	East Hampshire Catchment	G1C	Updated on 16/09/00
14:00	Flood Warning	Monkton Mead	F2C1	Updated on 16/09/00
14:00	Flood Warning	Medina (Lukely Brook)	F2A1	Updated on 16/09/00
14:05	Flood Warning	Western Yar	F2D1	Updated on 16/09/00
18:30	Catchment Flood Watch	New Forest Catchment	G1D	Updated on 16/09/00
18:40	Catchment Flood Watch	Test Catchment	G1A	Updated on 16/09/00
18:50	Catchment Flood Watch	Itchen Catchment	G1B	Updated on 16/09/00
16/09/00				
09:15	Catchment Flood Watch Update	Test Catchment	G1A	16/09/00 10:30
09:15	Catchment Flood Watch Update	Itchen Catchment	G1B	16/09/00 10:30
09:15	Catchment Flood Watch Update	East Hampshire Catchment	G1C	16/09/00 10:30
09:15	Catchment Flood Watch Update	New Forest Catchment	G1D	16/09/00 10:30
09:15	Catchment Flood Watch Update	IOW Catchment	G2	16/09/00 10:30

Time	Warning Issued	Watercourse	Ref No	All Clear
09:45	Flood Warning Update	Western Yar	F2D1	16/09/00 10:30
09:45	Flood Warning Update	Monkton Mead	F2C1	16/09/00 10:30
09:45	Flood Warning Update	Medina (Lukely Brook)	F2A1	16/09/00 10:30
18/09/00				
06:00	Catchment Flood Watch	East Hampshire Catchment	G1C	Updated on 18/09/00
06:35	Catchment Flood Watch	IOW Catchment	G2	Updated on 18/09/00
13:25	Catchment Flood Watch	New Forest Catchment	G1D	19/09/00 11:00
13:35	Catchment Flood Watch	Test Catchment	G1A	19/09/00 11:00
13:45	Catchment Flood Watch	Itchen Catchment	G1B	19/09/00 11:00
14:00	Catchment Flood Watch Update	East Hampshire Catchment	G1C	19/09/00 11:00
14:00	Catchment Flood Watch Update	IOW Catchment	G2	19/09/00 11:00
27/09/00				
17:00	Flood Watch	Monkton Mead	F2C1	28/09/00 14:05
17:50	Catchment Flood Watch	IOW Catchment	G2	29/09/00 11:00
18:15	Catchment Flood Watch	New Forest Catchment	G1D	28/09/00 14:30
29/09/00				
08:15	Flood Watch	Milford on Sea to Calshot	C13A	

Time	Warning Issued	Watercourse	Ref No	All Clear
9/10/00				
12:30	Catchment Flood Watch	Test Catchment	G1A	13/10/00 14:14
12:40	Catchment Flood Watch	Itchen Catchment	G1B	13/10/00 14:17
12:45	Catchment Flood Watch	East Hampshire Catchment	G1C	13/10/00 14:59
12:55	Catchment Flood Watch	New Forest Catchment	G1D	13/10/00 15:05
13:10	Catchment Flood Watch	IOW Catchment	G2	13/10/00 15:11
16:15	Flood Warning	Monkton Mead	F2C1	13/10/00 15:21
16:45	Flood Watch	Medina (Lukely Brook)	F2A1	Upgraded on 09/10/00
17:50	Flood Warning	Medina (Lukely Brook)	F2A1	13/10/00 15:36
18:00	Flood Watch	Caul Bourne	F2D3	13/10/00 15:42
18:50	Flood Watch	Lower Test	F1A2	13/10/00 15:50
19:15	Flood Warning	Gurnard Luck	F2C2	Downgraded on 10/10/00
19:40	Flood Watch	Eastern Yar	F2B1	Upgraded on 10/10/00
20:08	Flood Watch	Lower Lymington	F1D2	13/10/00 16:34
20:12	Flood Watch	Upper Lymington	F1D1	13/10/00 17:51
20:47	Flood Watch	Western Yar	F2D1	13/10/00 17:57
10/10/00				

Time	Warning Issued	Watercourse	Ref No	All Clear
06:46	Flood Warning	Eastern Yar	F2B1	Downgraded on 13/10/00
11:00	Flood Watch	Gurnard Luck	F2C2	13/10/00 15:55
13/10/00				
18:04	Flood watch	Eastern Yar	F2B1	17/10/00 09:50
16/1000				
11:24	Flood Watch	Monkton Mead	F2C1	17/10/00 09:55
11:33	Flood Watch	Western Yar	F2D1	17/10/00 10:02
11:41	Flood Watch	Medina (Lukely Brook)	F2A1	17/10/00 10:09
12:11	Catchment Flood Watch	Isle of Wight Catchment	G2	17/10/00 10:40
12:13	Catchment Flood Watch	Test Catchment	G1A	17/10/00 10:17
12:14	Catchment Flood Watch	Itchen Catchment	G1B	17/10/00 10:23
12:15	Catchment Flood Watch	East Hants Catchment	G1C	17/10/00 10:29
12:15	Catchment Flood Watch	New Forest Catchment	G1D	17/10/00 10:35
27/10/00				
16:20	Flood Watch	Milford on Sea to Calshot	C13A	
16:59	Catchment Flood Watch	Test Catchment	G1A	
17:19	Flood Watch	Monkton Mead	F2C1	Upgraded on 28/10/00

Time	Warning Issued	Watercourse	Ref No	All Clear
17:25	Catchment Flood Watch	IOW Catchment	G2	
17:34	Catchment Flood Watch	Itchen Catchment	G1B	
17:40	Catchment Flood Watch	East Hants Catchment	G1C	
17:47	Catchment Flood Watch	New Forest Catchment	G1D	
28/10/00				
18:56	Flood Warning	Monkton Mead	F2C1	Downgraded on 31/10/00
19:45	Flood Watch	Gurnard Luck	F2C2	Upgraded on 30/10/00
22:10	Flood Watch	Blackwater & Cadnam	F1A3	Upgraded on 30/10/00
29/10/00				
00:25	Flood Watch	Eastern Yar	F2B1	Upgraded on 29/10/00
23:10	Flood Warning	Eastern Yar	F2B1	Downgraded on 01/11/00
23:40	Flood Watch	Upper Lymington River	F1D1	Upgraded on 30/10/00
30/10/00				
04:20	Flood Watch	Lower Test	F1A2	01/11/00 12:04
04:40	Flood Warning	Upper Lymington River	F1D1	Downgraded on 31/10/00
04:50	Flood Warning	Lower Lymington River	F1D2	31/10/00 15:55
06:10	Flood Warning	Lavant Stream	F1C3	31/10/00 14:10

Time	Warning Issued	Watercourse	Ref No	All Clear
06:55	Flood Warning	Lower Itchen	F1B2	31/10/00 14:50
07:30	Flood Warning	Monks Brook	F1B3	31/10/00 15:40
08:30	Flood Warning	Gurnard Luck	F2C2	31/10/00 14:00
08:59	Flood Warning	Blackwater & Cadnam	F1A3	Downgraded on 31/10/00
31/10/00				
15:05	Flood Watch	Upper Lymington River	F1D1	01/11/00 12:12
15:15	Flood Watch	Monkton Mead	F2C1	01/11/00 12:56
15:25	Flood Watch	Blackwater & Cadnam	F1A3	01/11/00 12:36
1/11/00				
11:54	Flood Watch	Eastern Yar	F2B1	
20:15	Flood Watch	Monkton Mead	F2C1	03/11/00 15:45
20:45	Flood Watch	Eastern Yar	F2B1	03/11/00 15:55
02/11/00				
12:05	Flood Watch	Gurnard Luck	F2C2	Upgraded on 02/11/00
14:05	Flood Warning	Gurnard Luck	F2C2	Downgraded on 02/11/00
16:40	Flood Watch	Gurnard Luck	F2C2	03/11/00 15:20
17:50	Flood Warning	Blackwater & Cadnam	F1A3	03/11/00 15:10

Time	Warning Issued	Watercourse	Ref No	All Clear
5/11/00				
14:32	Flood Watch	Monkton Mead	F2C1	Upgraded on 05/11/00
14:37	Flood Watch	Gurnard Luck	F2C2	Upgraded on 05/11/00
14:43	Flood Watch	Lower Test	F1A2	Upgraded on 05/11/00
15:07	Flood Watch	Blackwater & Cadnam	F1A3	Upgraded on 05/11/00
15:12	Flood Watch	Eastern Yar	F2B1	Upgraded on 05/11/00
15:43	Catchment Flood Watch	Test Catchment	G1A	
15:47	Catchment Flood Watch	Itchen Catchment	G1B	
15:50	Catchment Flood Watch	East Hants Catchment	G1C	
15:53	Catchment Flood Watch	New Forest Catchment	G1D	
15:56	Catchment Flood Watch	Isle of Wight Catchment	G2	08/01/01 16:45
16:55	Flood Watch	Upper Lymington River	F1D1	Upgraded on 06/11/00
17:52	Flood Warning	Monkton Mead	F2C1	Downgraded on 08/11/00
18:53	Flood Warning	Gurnard Luck	F2C2	08/11/00 14:02
19:11	Flood Warning	River Medina	F2A1	08/11/00 14:12
20:27	Flood Warning	Lower Test	F1A2	Downgraded on 10/11/00
20:35	Flood Watch	Monks Brook	F1B3	Upgraded on 05/11/00

Time	Warning Issued	Watercourse	Ref No	All Clear
20:40	Flood Warning	Blackwater & Cadnam	F1A3	08/11/00 14:19
20:54	Flood Warning	Monks Brook	F1B3	08/11/00 14:53
21:15	Flood Warning	Eastern Yar	F2B1	Downgraded on 10/11/00
23:10	Flood Warning	Wallington	F1C1	08/11/00 14:26
6/11/00				
00:30	Flood Warning	Upper Lymington River	F1D1	Downgraded on 08/11/00
00:45	Flood Warning	Lower Lymington River	F1D2	Downgraded on 07/11/00
09:00	Flood Watch	Danes Stream	F1D3	08/11/00 15:04
14:46	Flood Warning	Lower Itchen	F1B2	08/11/00 13:41
7/11/00				
10:00	Flood Watch	Upper Test	F1A1	14/11/00 11:37
11:35	Flood Watch	Lower Lymington River	F1D2	08/11/00 15:21
8/11/00				
13:55	Flood Watch	Monkton Mead	F2C1	14/11/00 12:32
14:43	Flood Watch	Upper Lymington River	F1D1	14/11/00 12:18
14:55	Flood Warning	Lower Itchen	F1B2	Downgraded on 10/11/00
10/11/00				

Time	Warning Issued	Watercourse	Ref No	All Clear
11:49	Flood Watch	Eastern Yar	F2B1	14/11/00 12:25
12:11	Flood Watch	Lower Test	F1A2	14/11/00 11:49
12:26	Flood Watch	Lower Itchen	F1B2	14/11/00 12:06
11/11/00				
18:38	Catchment Flood Watch	Test Catchment	G1A	
18:46	Flood Watch	Itchen Catchment	G1B	
18:54	Catchment Flood Watch	East Hants Catchment	G1C	
18:57	Catchment Flood Watch	New Forest Catchment	G1D	
19:01	Catchment Flood Watch	Isle of Wight Catchment	G2	
19:45	Flood Watch	Lavant Stream	F1C3	Upgraded on 11/11/00
20:52	Flood Warning	Lavant Stream	F1C3	Downgraded on 11/11/00
21:30	Flood Warning	Gurnard Luck	F2C2	Downgraded on 12/11/00
22:07	Flood Watch	Lavant Stream	F1C3	14/11/00 12:12
22:48	Flood Watch	Blackwater & Cadnam	F1A3	14/11/00 12:00
12/11/00				
17:30	Flood Watch	Gurnard Luck	F2C2	14/11/00 12:37
16/11/00				

Time	Warning Issued	Watercourse	Ref No	All Clear
10:00	Flood Watch	Eastern Yar	F2B1	17/11/00 10:45
21/11/00				
15:50	Catchment Flood Watch	Isle of Wight Catchment	G2	28/11/00 14:44
16:20	Catchment Flood Watch	Test Catchment	G1A	28/11/00 14:59
16:30	Catchment Flood Watch	Itchen Catchment	G1B	28/11/00 15:11
16:40	Catchment Flood Watch	East Hants Catchment	G1C	28/11/00 15:19
16:45	Catchment Flood Watch	New Forest Catchment	G1D	28/11/00 15:26
25/11/00				
00:01	Flood Watch	Eastern Yar	F2B1	Re-issued on 27/11/00
17:30	Flood Watch	Milford on Sea to Calshot	C13A	
23:30	Flood Watch	Monkton Mead	F2C1	Re-issued on 27/11/00
27/11/00				
22:03	Flood Watch	Eastern Yar	F2B1	Re-issued on 28/11/00
22:54	Flood Watch	Monkton Mead	F2C1	28/11/00 14:33
28/11/00				
00:01	Flood Watch	Eastern Yar	F2B1	Re-issued on 29/11/00
00:24	Flood Warning	Gurnard Luck	F2C2	28/11/00 16:07

Time	Warning Issued	Watercourse	Ref No	All Clear
29/11/00				
11:38	Flood Watch	Eastern Yar	F2B1	Re-issued on 01/12/00
30/11/00				
10:46	Catchment Flood Watch	Test Catchment	G1A	
10:55	Catchment Flood Watch	Itchen Catchment	G1B	
11:01	Catchment Flood Watch	East Hants Catchment	G1C	
11:09	Catchment Flood Watch	New Forest Catchment	G1D	
11:17	Catchment Flood Watch	Isle of Wight Catchment	G2	
01/12/00				
03:05	Flood Watch	Eastern Yar	F2B1	Upgraded on 01/12/00
03:10	Flood Watch	Monkton Mead	F2C1	Upgraded on 01/12/00
05:35	Flood Warning	Eastern Yar	F2B1	Downgraded on 01/12/00
06:15	Flood Watch	Gurnard Luck	F2C2	03/12/00 12:01
09:10	Flood Watch	Upper Lymington River	F1D1	03/12/00 12:17
10:33	Flood Warning	Monkton Mead	F2C1	Downgraded on 01/12/00
11:58	Flood Watch	Blackwater & Cadnam	F1A3	03/12/00 12:32
15:30	Flood Watch	Monkton Mead	F2C1	

Time	Warning Issued	Watercourse	Ref No	All Clear
02/12/00				
16:45	Flood Watch	Eastern Yar	F2B1	Re-issued on 07/12/00
04/12/00				
12:20	Flood Watch	Blackwater & Cadnam	F1A3	Re-issued on 07/12/00
20:20	Flood Watch	Upper Test	F1A1	
20:32	Flood Watch	Lower Test	F1A2	Re-issued on 07/12/00
05/12/00				
13:51	Flood Watch	Upper Itchen	F1B1	
13:59	Flood Watch	Lower Itchen	F1B2	Upgraded on 07/12/00
07/12/00				
07:05	Flood Watch	Blackwater & Cadnam	F1A3	Upgraded on 07/12/00
07:05	Flood Watch	Tanners Brook	F1A4	14/12/00 11:29
07:12	Flood Watch	Monks Brook	F1B3	14/12/00 11:36
07:15	Flood Watch	Lavant Stream	F1C3	Upgraded on 12/12/00
07:20	Flood Watch	Upper Lymington River	F1D1	Upgraded on 07/12/00
08:30	Flood Watch	Eastern Yar	F2B1	Upgraded on 07/12/00
08:31	Flood Watch	Monkton Mead	F2C1	Upgraded on 07/12/00

Time	Warning Issued	Watercourse	Ref No	All Clear
08:39	Flood Watch	Western Yar	F2D1	14/12/00 14:28
08:40	Flood Watch	Thorley Brook	F2D2	14/12/00 14:36
08:40	Flood Watch	Caul Bourne	F2D3	14/12/00 14:44
09:20	Flood Watch	Lower Test	F1A2	Upgraded on 07/12/00
18:25	Flood Warning	Monkton Mead	F2C1	Downgraded on 09/12/00
18:45	Flood Warning	Lower Itchen	F1B2	Re-issued on 10/12/00
19:30	Flood Warning	Eastern Yar	F2B1	Downgraded on 09/12/00
20:00	Flood Warning	Upper Lymington River	F1D1	Downgraded on 09/12/00
20:15	Flood Warning	River Wallington	F1C1	Downgraded on 07/12/00
20:30	Flood Watch	Gurnard Luck	F2C2	14/12/00 14:16
20:45	Flood Watch	Hermitage Stream	F1C2	14/12/00 11:48
22:30	Flood Watch	Milford on Sea to Calshot	C13A	Re-issued on 09/12/00
23:15	Flood Warning	Blackwater & Cadnam	F1A3	Downgraded on 09/12/00
23:20	Flood Warning	Lower Test	F1A2	Re-issued on 10/12/00
23:30	Flood Watch	River Wallington	F1C1	Upgraded on 12/12/00
09/12/00				
12:05	Flood Watch	Blackwater and Cadnam	F1A3	15/12/00 10:30

Time	Warning Issued	Watercourse	Ref No	All Clear
12:37	Flood Watch	Upper Lymington River	F1D1	14/12/00 11:53
13:19	Flood Watch	Eastern Yar	F2B1	Re-issued on 10/12/00
13:32	Flood Watch	Monkton Mead	F2C1	Re-issued on 10/12/00
21:42	Flood Watch	Milford on Sea to Calshot	C13A	Re-issued on 10/12/00
10/12/00				
09:05	Flood Watch	Monkton Mead	F2C1	Re-issued on 10/12/00
15:30	Flood Warning	Upper Test	F1A1	Re-issued on 12/12/00
15:50	Flood Warning	Lower Test	F1A2	Re-issued on 12/12/00
16:00	Flood Warning	Upper Itchen	F1B1	Re-issued on 12/12/00
16:10	Flood Warning	Lower Itchen	F1B2	Re-issued on 12/12/00
16:40	Flood Watch	Monkton Mead	F2C1	Upgraded on 12/12/00
17:30	Flood Watch	Eastern Yar	F2B1	Upgraded on 12/12/00
23:09	Flood Watch	Milford on Sea to Calshot	C13A	Re-issued on 12/12/00
12/12/00				
09:40	Flood Watch	Milford on Sea to Calshot	C13A	Re-issued on 12/12/00
12:48	Flood Warning	Upper Test	F1A1	Re-issued on 19/12/00
12:58	Flood Warning	Lower Test	F1A2	Re-issued on 13/12/00

Time	Warning Issued	Watercourse	Ref No	All Clear
13:04	Flood Warning	Upper Itchen	F1B1	Re-issued on 22/12/00
13:12	Flood Warning	Lower Itchen	F1B2	Re-issued on 22/12/00
13:24	Flood Warning	Eastern Yar	F2B1	Downgraded on 14/12/00
13:45	Flood Warning	River Hamble	F1E1	Downgraded on 22/12/00
16:19	Flood Watch	Milford on Sea to Calshot	C13A	
16:27	Flood Watch	Southampton Water	C13B	
16:31	Flood Watch	Hamble to Chichester Harbour	C13C	
16:36	Flood Watch	West Side of Portsmouth, Langstone and Chichester Harbours	C13D	
16:42	Flood Watch	East Side of Portsmouth and Langstone Harbours	C13E	
16:48	Flood Watch	Needles to Cowes	C14A	
16:52	Flood Watch	East Cowes to Sandown	C14B	
16:56	Flood Watch	South Isle of Wight	C14C	
18:20	Flood Warning	Lavant Stream	F1C3	Re-issued on 13/12/00
19:20	Flood Warning	Monkton Mead	F2C1	Downgraded on 13/12/00
19:40	Flood Watch	River Medina	F2A1	14/12/00 13:42
21:30	Flood Warning	River Wallington	F1C1	Downgraded on 13/12/00
13/12/00				

Time	Warning Issued	Watercourse	Ref No	All Clear
15:27	Flood Warning	Lower Test	F1A2	Re-issued on 22/12/00
13:08	Flood Watch	River Wallington	F1C1	14/12/00 11:43
13:36	Flood Warning	Lavant Stream	F1C3	Downgraded on 22/12/00
16:41	Flood Watch	Monkton Mead	F2C1	14/12/00 14:05
17:15	Flood Watch	Milford on Sea to Calshot	C13A	
14/12/00				
13:49	Flood Watch	Eastern Yar	F2B1	15/12/00 10:24
19/12/00				
14:28	Flood Warning	Upper Test	F1A1	Re-issued on 22/12/00
22/12/00				
14:30	Flood Warning	Upper Test	F1A1	Downgraded on 30/12/00
14:45	Flood Warning	Lower Test	F1A2	Downgraded on 30/12/00
15:00	Flood Warning	Upper Itchen	F1B1	Downgraded on 30/12/00
15:05	Flood Warning	Lower Itchen	F1B2	Downgraded on 30/12/00
15:10	Flood Watch	River Hamble	F1E1	08/01/01 12:05
15:20	Flood Watch	Lavant Stream	F1C3	08/01/01 12:00
30/12/00				

Time	Warning Issued	Watercourse	Ref No	All Clear
20:15	Flood Watch	Upper Test	F1A1	Upgraded on 01/01/01
20:25	Flood Watch	Lower Test	F1A2	Upgraded on 01/01/01
20:35	Flood Watch	Upper Itchen	F1B1	Upgraded on 01/01/01
20:50	Flood Watch	Lower Itchen	F1B2	Upgraded on 01/01/01
31/12/00				
23:15	Flood Watch	Upper Lymington River	F1D1	Upgraded on 01/01/01
23:25	Flood Warning	Monkton Mead	F2C1	Downgraded on 02/01/01
23:40	Flood Watch	Western Yar	F2D1	02/01/01 16:40
23:50	Flood Watch	Thorley Brook	F2D2	02/01/01 16:45
01/01/01				
00:00	Flood Watch	Caul Bourne	F2D3	02/01/01 16:50
00:15	Flood Watch	Gurnard Luck	F2C2	Upgraded on 01/01/01
00:25	Flood Watch	Eastern Yar	F2B1	08/01/01 11:28
01:00	Flood Warning	Gurnard Luck	F2C2	02/01/01 16:29
01:23	Flood Watch	River Wallington	F1C1	Upgraded on 01/01/01
06:53	Flood Warning	River Wallington	F1C1	Downgraded on 02/01/01
07:11	Flood Warning	Upper Lymington River	F1D1	Downgraded on 02/01/01

Time	Warning Issued	Watercourse	Ref No	All Clear
07:32	Flood Warning	Upper Test	F1A1	08/01/01 14:25
07:46	Flood Warning	Lower Test	F1A2	08/01/01 14:30
07:58	Flood Watch	Blackwater and Cadnam	F1A3	08/01/01 11:18
14:36	Flood Warning	Upper Itchen	F1B1	08/01/01 14:38
16:04	Flood Warning	Lower Itchen	F1B2	08/01/01 14:44
02/01/01				
16:03	Flood Watch	River Wallington	F1C1	08/01/01 11:47
16:11	Flood Watch	Upper Lymington River	F1D1	08/01/01 11:36
16:17	Flood Watch	Monkton Mead	F2C1	08/01/01 11:54
21/01/01				
12:43	Flood Watch	Eastern Yar	F2B1	Upgraded on 27/01/01
23/01/01				
20:27	Flood Watch	Monkton Mead	F2C1	24/01/01 12:05
25/01/01				
10:01	Catchment Flood Watch	Test Catchment	G1A	
10:07	Catchment Flood Watch	Itchen Catchment	G1B	
10:12	Catchment Flood Watch	East Hants Catchment	G1C	

Time	Warning Issued	Watercourse	Ref No	All Clear
10:21	Catchment Flood Watch	New Forest Catchment	G1D	
10:30	Catchment Flood Watch	Isle of Wight Catchment	G2	29/01/01 15:30
10:37	Flood Watch	Blackwater and Cadnam	F1A3	Upgraded on 26/01/01
26/01/01				
20:15	Flood Watch	Monks Brook	F1B3	27/01/01 15:40
21:25	Flood Watch	Monkton Mead	F2C1	27/01/01 15:10
21:35	Flood Watch	Gurnard Luck	F2C2	27/01/01 15:30
21:45	Flood Watch	Lower Test	F1A2	27/01/01 14:45
23:10	Flood Warning	Blackwater and Cadnam	F1A3	27/01/01 12:45
27/01/01				
05:45	Flood Warning	Eastern Yar	F2B1	Downgraded on 27/01/01
12:00	Flood Watch	Eastern Yar	F2B1	29/01/01 15:00
05/02/01				
12:04	Catchment Flood Watch	Test Catchment	G1A	
12:08	Catchment Flood Watch	Itchen Catchment	G1B	
12:16	Catchment Flood Watch	East Hants Catchment	G1C	
12:19	Catchment Flood Watch	New Forest Catchment	G1D	

Time	Warning Issued	Watercourse	Ref No	All Clear
12:23	Catchment Flood Watch	Isle of Wight Catchment	G2	
06/02/01				
17:20	Flood Watch	Blackwater and Cadnam	F1A3	
08/02/01				
03:03	Flood Watch	Eastern Yar	F2B1	Upgraded on 08/02/01
03:04	Flood Watch	Monkton Mead	F2C1	Upgraded on 08/02/01
05:03	Flood Warning	Eastern Yar	F2B1	Downgraded on 09/02/01
06:26	Flood Warning	Monkton Mead	F2C1	
06:33	Flood Watch	Gurnard Luck	F2C2	Upgraded on 08/02/01
10:25	Flood Warning	Gurnard Luck	F2C2	Downgraded on 08/02/01
17:25	Flood Watch	Gurnard Luck	F2C2	
-	Flood Watch	Milford on Sea to Calshot	C13A	
-	Flood Watch	Needles to Cowes	C14A	
-	Flood Watch	East Cowes to Sandown	C14B	
09/02/01				
13:33	Flood Watch	Eastern Yar	F2B1	
12/02/01				

Time	Warning Issued	Watercourse	Ref No	All Clear
08:43	Flood Watch	Milford on Sea to Calshot	C13A	
22:00	Flood Watch	Lower Itchen	F1B2	

No	Warning Number	Paged AFWDO (Y/N)	AVM-G/C/S/O	FW Area Code	Warning	Date	Time (24hrs)	Initials	Total	Success	Aborted	Standown Date	Standown Time	Standown Initials	AVM-G/C/S/O (Standown)
1	S/001	No	C	F2D1	WATCH	15/9/00	13.20	LS	23	20	3				
2	S/002	No	C	F2D1	WATCH	15/9/00	13.20	LS	9	7	2				
3	S/003	No	C	F2C1	WATCH	15/9/00	13.30	LS	23	19	4				
4	S/004	No	C	F2C1	WATCH	15/9/00	13.30	LS	46	33	15				
5	S/005	No	G	G2	WATCH	15/9/00	13.20	LS							
6	S/006	No	C	G1C	WATCH	15/9/00	13.30	LS							
7	S/007	No	C	F2C1	WARNING	15/9/00	14.00	LS	98	71	29				
8	S/008	No	C	F2D1	WARNING	15/9/00	14.05	LS	36	33	3				
9	S/009	No	C	F2A1	WARNING	15/9/00	14.00	LS	59	45	14				
10	S/010	No	C	G1D	WATCH	15/9/00	18.30	LS	45	42	4				
11	S/011	No	C	G1A	WATCH	15/9/00	18.40	LS	49	44	5				
12	S/012	No	C	G1B	WATCH	15/9/00	18.50	LS	50	44	6				
13	S/013	No	C	G1A	WATCH	15/9/00	09.15	LS	49	42	7	16/9/00	10.30	LS	C
14	S/014	No	C	G1B	WATCH	15/9/00	09.15	LS	50	42	8	16/9/00	10.30	LS	C
15	S/015	No	C	G1C	WATCH	15/9/00	09.15	LS	55	42	13	16/9/00	10.30	LS	C
16	S/016	No	C	G1D	WATCH	15/9/00	09.15	LS	45	39	6	16/9/00	10.30	LS	C

No	Warning Number	Paged AFWDO (Y/N)	AVM-G/C/S/O	FW Area Code	Warning	Date	Time (24hrs)	Initials	Total	Success	Aborted	Standown Date	Standown Time	Standown Initials	AVM-G/C/S/O (Standown)
17	S/017	No	C	G2	WATCH	15/9/00	09.15	LS	38	35	3	16/9/00	10.30	LS	C
18	S/018	No	C	F2D1	WARNING	15/9/00	09.45	LS	36	33	3	16/9/00	10.30	LS	C
19	S/019	No	C	F2C1	WARNING	15/9/00	09.45	LS	98	66	32	16/9/00	10.30	LS	C
20	S/020	No	C	F2A1	WARNING	15/9/00	09.45	LS	59	54	5	16/9/00	10.30	LS	C
21	S/030	Yes	C	G1C	WATCH	18/9/00	06.00	LS	55	51	4				
22	S/031	Yes	G	G2	WATCH	18/9/00	06.35	LS	38	36	2				
23	S/032	No	C	G1C	WATCH	18/9/00	14.00	JG	55	45	10	19/9/00	11.00	JG	C
24	S/033	No	C	G2	WATCH	18/9/00	14.00	JG	38	33	5	19/9/00	11.00	JG	C
25	S/034	No	C	G1A	WATCH	18/9/00	13.35	JG	49	41	8	19/9/00	11.00	JG	C
26	S/035	No	C	G1B	WATCH	18/9/00	13.45	JG	50	42	8	19/9/00	11.00	JG	C
27	S/036	No	C	G1D	WATCH	18/9/00	13.25	JG	45	39	6	19/9/00	11.00	JG	C
28	S/037	No	C	F2C1	WATCH	27/9/00	17.00	CM	80	60	20	28/9/00	14.05	NS	C
29	S/038	No	C	G2	WATCH	27/9/00	17.50	CM	48	44	4	29/9/00	11.00	CM	C
30	S/039	No	C	G1D	WATCH	27/9/00	18.15	CM	56	50	6	28/9/00	14.30	NS	C
31	S/040	Yes	G	C13A	WATCH	29/9/00	08.15	NG							
32	S/041	No	C	G1A	WATCH	9/10/00	12.30	TAG	57	48	9	13/10/00	14.14	TAG	C

No	Warning Number	Paged AFWDO (Y/N)	AVM-G/C/S/O	FW Area Code	Warning	Date	Time (24hrs)	Initials	Total	Success	Aborted	Standown Date	Standown Time	Standown Initials	AVM-G/C/S/O (Standown)
33	S/042	No	C	G1B	WATCH	9/10/00	12.40	TAG	59	47	12	13/10/00	14.17	TAG	C
34	S/043	No	C	G1C	WATCH	9/10/00	12.45	CC	64	51	13	13/10/00	14.59	TAG	C
35	S/044	No	C	G1D	WATCH	9/10/00	12.55	CC	57	50	7	13/10/00	15.05	TAG	C
36	S/045	No	C	G2	WATCH	9/10/00	13.10	BR	33	27	6	13/10/00	15.11	TAG	C
37	S/046	No	C	F2C1	WARNING	9/10/00	16.15	NS	131	100	33	13/10/00	15.21	TAG	C
38	S/047	No	C	F2A1	WATCH	9/10/00	16.45	NS	57	51	6				
39	S/048	No	C	F2A1	WARNING	9/10/00	17.50	TAG	72	64	8	13/10/00	15.36	TAG	C
40	S/049	No	C	F2D3	WATCH	9/10/00	18.00	TAG	45	39	6	13/10/00	15.42	TAG	C
41	S/050	No	C	F1A2	WATCH	9/10/00	18.50	TAG	83	72	11	13/10/00	15.50	TAG	C
42	S/051	No	C	F2C2	WARNING	9/10/00	19.15	TAG	66	59	7				
43	S/052	No	C	F2B1	WATCH	9/10/00	19.40	TAG	53	47	6				
44	S/053	No	C	F1D2	WATCH	9/10/00	20.08	TAG	62	61	10	13/10/00	16.34	TAG	C
45	S/054	No	C	F1D1	WATCH	9/10/00	20.12	TAG	65	57	8	13/10/00	17.51	TAG	C
46	S/055	No	C	F2D1	WATCH	9/10/00	20.47	TAG	49	40	9	13/10/00	17.57	TAG	C
47	S/056	No	C	F2B1	WARNING	10/10/00	06.46	JG	71	60	11				

No	Warning Number	Paged AFWDO (Y/N)	AVM-G/C/S/O	FW Area Code	Warning	Date	Time (24hrs)	Initials	Total	Success	Aborted	Standown Date	Standown Time	Standown Initials	AVM-G/C/S/O (Standown)
48	S/051a	No	C	F2C2	WATCH	10/10/00	11.00	TAG	83	72	11	13/10/00	15.55	TAG	C
49	S/056	No	C	F2B1	WATCH	13/10/00	18.04	TAG	71	64	7	17/10/00	09.50	NS	C
50	S/057	No	C	F2C1	WATCH	16/10/00	11.24	TAG	131	103	30	17/10/00	09.55	TAG	C
51	S/058	No	C	F2D1	WATCH	16/10/00	11.33	TAG	49	41	8	17/10/00	10.02	TAG	C
52	S/059	No	C	F2A1	WATCH	16/10/00	11.41	TAG	57	50	7	17/10/00	10.09	TAG	C
53	S/060	No	C	G1A	WATCH	16/10/00	12.13	TAG	57	48	9	17/10/00	10.17	TAG	C
54	S/061	No	C	G1B	WATCH	16/10/00	12.14	TAG	59	49	10	17/10/00	10.23	TAG	C
55	S/062	No	C	G1C	WATCH	16/10/00	12.15	TAG	64	52	12	17/10/00	10.29	TAG	C
56	S/063	No	C	G1D	WATCH	16/10/00	12.15	TAG	57	49	8	17/10/00	10.35	TAG	C
57	S/064	No	C	G2	WATCH	16/10/00	12.11	TAG	48	40	8	17/10/00	10.40	TAG	C
58	S/095	No	C	C13A	WATCH	27/10/00	16.20	NS	90	87	11				
59	S/096	No	C	G1A	WATCH	27/10/00	16.59	NS	57	50	7				
60	S/097	No	C	F2C1	WATCH	27/10/00	17.19	NS	131	115	16				
61	S/098	No	C	G2	WATCH	27/10/00	17.25	NS	48	43	5				
62	S/099	No	C	G1B	WATCH	27/10/00	17.34	NS	59	50	9				

No	Warning Number	Paged AFWDO (Y/N)	AVM-G/C/S/O	FW Area Code	Warning	Date	Time (24hrs)	Initials	Total	Success	Aborted	Standown Date	Standown Time	Standown Initials	AVM-G/C/S/O (Standown)
63	S/100	No	C	G1C	WATCH	27/10/00	17.40	NS	64	53	11				
64	S/101	No	C	G1D	WATCH	27/10/00	17.47	NS	57	49	8				
65	S/102	No	C	F2C1	WARNING	28/10/00	18.56	NS	131	118	13				
66	S/103	No	C	F2C2	WATCH	28/10	19.45	NS	54	48	6				
67	S/104	No	C	F1A3	WATCH	28/10	22.10	NS	56	49	7				
68	S/105	No	C	F2B1	WATCH	29/10	00.25	NS	53	28	6				
69	S/106	No	C	F2B1	WARNING	29/10	23.10	SY	72	61	11				
70	S/107	No	C	F1D1	WATCH	29/10	23.40	SY	65	55	10				
71	S/108	No	C	F1A2	WATCH	30/10	04.20	SY	83	68	15	1/11/00	12.04	TAG	C
72	S/109	No	C	F1D1	WARNING	30/10	04.40	SY	91	77	14				
73	S/110	No	C	F1D2	WARNING	30/10	04.50	SY	79	67	12	31/10	15.55	NS	C
74	S/111	No	G	F1C3	WARNING	30/10	06.10	SY				31/10	14.10	CC	C
75	S/112	No	C	F1B2	WARNING	30/10	06.55	TAG	75	59	16	31/10	14.50	NS	C
76	S/113	No	C	F1B3	WARNING	30/10	07.30	TAG	71	56	15	31/10	15.40	NS	C
77	S/114	No	C	F2C2	WARNING	30/10	08.30	TAG	66	55	12	31/10	14.00	CC	C

No	Warning Number	Paged AFWDO (Y/N)	AVM-G/C/S/O	FW Area Code	Warning	Date	Time (24hrs)	Initials	Total	Success	Aborted	Standown Date	Standown Time	Standown Initials	AVM-G/C/S/O (Standown)
78	S/115	No	C	F1A3	WARNING	30/10	08.59	TAG	64	51	13				
79	S/116	No	C	F1D1	WATCH	31/10	15.05	NS	91	81	10	1/11	12.12	TAG	C
80	S/117	No	C	F2C1	WATCH	31/10	15.15	NS	131	110	23	1/11	12.26	JG	C
81	S/118	No	C	F1A3	WATCH	31/10	15.25	NS	64	51	13	1/11	12.36	TAG	C
82	S/119	No	C	F2B1	WATCH	1/11	11.54	TAG	71	59	12				
83	S/120	No	C/G	F2C1	WATCH	1/11	20.15	CM	131	115	18	3/11	15.45	NS	C
84	S/121	No	C	F2B1	WATCH	1/11	20.45	CM	53	37	6	3/11	15.55	NS	C
85	S/122	No	C	F2C2	WATCH	2/11	12.05	BM	54	51	4				
86	S/123	No	C	F2C2	WARNING	2/11	14.05	TAG	66	58	8				
87	S/124	No	C	F2C2	WATCH	2/11	16.40	TAG	66	61	6	3/11	15.20	NS	C
88	S/125	No	C	F1A3	WARNING	2/11	17.50	SY	64	57	7	3/11	15.10	NS	C
89	S/157	No	C	F1B2	WATCH	10/11	12.26	TAG	74	60	14	14/11	12.06	TAG	C
90	S/158	No	C	G1A	WATCH	11/11	18.38	TAG	53	48	5				
91	S/159	No	C	G1B	WATCH	11/11	18.46	TAG	55	49	6				
92	S/160	No	C	G1C	WATCH	11/11	18.54	TAG	60	54	6				
93	S/161	No	C	G1D	WATCH	11/11	18.57	TAG	53	49	4				

No	Warning Number	Paged AFWDO (Y/N)	AVM-G/C/S/O	FW Area Code	Warning	Date	Time (24hrs)	Initials	Total	Success	Aborted	Standown Date	Standown Time	Standown Initials	AVM-G/C/S/O (Standown)
94	S/162	No	C	G2	WATCH	11/11	19.01	TAG	44	41	3				
95	S/163	No	C	F1C3	WATCH	11/11	19.45	TAG	51	46	5				
96	S/164	No	C	F1C3	WARNING	11/11	20.52	TAG	58	52	6				
97	S/165	No	C	F2C2	WARNING	11/11	21.30	TAG	64	55	9				
98	S/166	No	C	F1C3	WATCH	11/11	22.07	TAG	58	54	4	14/11	12.12	TAG	C
99	S/167	No	C	F1A3	WATCH	11/11	22.48	TAG	52	44	8	14/11	12.00	TAG	C
100	S/170	Yes	C	F2C2	WATCH	12/11	17.30	CM	64	52	12	14/11	12.37	TAG	C
101	S/171	No	C	F2B1	WATCH	16/11	10.00	BJM	49	44	5	17/11	10.45	NS	C
102	S/172	No	C	G2	WATCH	21/11	15.50	CC	44	39	5	28/11	14.44	CC	C
103	S/173	No	C	G1A	WATCH	21/11	16.20	CC	53	46	7	28/11	14.59	CC	C
104	S/174	No	C	G1B	WATCH	21/11	16.30	CC	55	47	8	28/11	15.11	CC	C
105	S/175	No	C	G1C	WATCH	21/11	16.40	CC	60	51	9	28/11	15.19	CC	C
106	S/176	No	C	G1D	WATCH	21/11	16.45	CC	53	49	4	28/11	15.26	CC	C
107	S/177	Yes	C	C13A	WATCH	25/11	17.30	BR	90	79	11				
108	S/178	Yes	G	F2C1	WATCH	25/11	23.30	BR							
109	S/179	Yes	G	F2B1	WATCH	25/11	00.01	BR							

No	Warning Number	Paged AFWDO (Y/N)	AVM-G/C/S/O	FW Area Code	Warning	Date	Time (24hrs)	Initials	Total	Success	Aborted	Standown Date	Standown Time	Standown Initials	AVM-G/C/S/O (Standown)
110	S/180/1	Yes	C	F2B1	WATCH	27/11	22.03	LS	49	46	3				
111	S/182	Yes	C	F2C1	WATCH	27/11	22.54	LS	124	105	19	28/11	14.33	CC	C
112	S/183	Yes	C	F2B1	WARNING	28/11	00.01	LS	71	64	7				
113	S/184	Yes	C	F2C2	WATCH	28/11	00.24	LS	50	46	4	28/11	16.07	CC	C
114	S/185	No	C	F2B1	WATCH	29/11	11.38	TAG							
115	S/186	No	C	G1A	WATCH	30/11	10.46	TAG	53	48	5				
116	S/187	No	C	G1B	WATCH	30/11	10.55	TAG	55	48	7				
117	S/188	No	C	G1C	WATCH	30/11	11.01	TAG	60	50	10				
118	S/189	No	C	G1D	WATCH	30/11	11.09	TAG	53	48	5				
119	S/190	No	C	G2	WATCH	30/11	11.17	TAG	44	41	3				
120	S/190A	Yes	C	F2B1	WARNING	01/12	05.35	LS	70	60	10				
121	S/191	Yes	G	F2C2	WATCH	01/12	06.15	LS	50	41	9	3/12	12.01	LS	C
122	S/192	Yes	G	F2C1	WATCH	01/12	03.10	LS	126	93	33				
123	S/193	Yes	G	F2B1	WATCH	01/12	03.05	LS	50	47	3				
124	S/194	Yes	C	F1D1	WATCH	01/12	09.10	LS	62	56	6	3/12	12.17	LS	C
125	S/195	Yes	C	F2C1	WARNING	01/12	10.33	LS	128	103	27				

No	Warning Number	Paged AFWDO (Y/N)	AVM-G/C/S/O	FW Area Code	Warning	Date	Time (24hrs)	Initials	Total	Success	Aborted	Standown Date	Standown Time	Standown Initials	AVM-G/C/S/O (Standown)
126	S/196	No	C	F1A3	WATCH	01/12	11.58	TAG	52	46	6	3/12	12.32	LS	C
127	S/197	No	C	F2C1	WATCH	1/12	15.30	TAG	124	102	22				
128	S/198	No	C	F2B1	WATCH	2/12	16.45	LS	71	64	7				
129	S/199	No	G	F1A3	WATCH	2/12	12.20	(RCC)							
130	S/200	Yes	C	F1A1	WATCH	4/12	20.20	TAG	81	73	8				
131	S/201	Yes	C	F1A2	WATCH	4/12	20.32	TAG	82	72	10				
132	S/202	No	C	F1B1	WATCH	5/12	13.51	TAG	58	52	6				
133	S/203	No	C	F1B2	WATCH	5/12	13.59	TAG	52	47	5				
134	S/204	No	C	F1A3	WATCH	7/12	07.05	TAG	52	48	4				
135	S/205	No	C	F1A4	WATCH	7/12	07.05	TAG	51	47	4	14/12	11.29	TAG	C
136	S/206	No	C	F1B3	WATCH	7/12	07.12	TAG	50	46	4	14/12	11.36	TAG	C
137	S/207	No	C	F1C3	WATCH	7/12	07.15	TAG	51	48	3				
138	S/208	No	C	F1D1	WATCH	7/12	07.20	TAG	60	57	3				
139	S/209	No	C	F2B1	WATCH	7/12	08.30	TAG	48	45	3				
140	S/210	No	C	F2C1	WATCH	7/12	08.31	TAG	118	97	22				
141	S/211	No	C	F2D1	WATCH	7/12	08.39	TAG	45	41	4	14/12	14.28	JG	C

No	Warning Number	Paged AFWDO (Y/N)	AVM-G/C/S/O	FW Area Code	Warning	Date	Time (24hrs)	Initials	Total	Success	Aborted	Standown Date	Standown Time	Standown Initials	AVM-G/C/S/O (Standown)
142	S/212	No	C	F2D2	WATCH	7/12	08.40	TAG	41	38	3	14/12	14.36	JG	C
143	S/213	No	C	F2D3	WATCH	7/12	08.40	TAG	41	37	4	14/12	14.44	JG	C
144	S/214	No	C	F1A2	WATCH	7/12	09.20	TAG	82	72	10				
145	S/215	No	C	F2C1	WARNING	7/12	18.25	LS	122	103	19				
146	S/216	No	C	F1B2	WARNING	7/12	18.45	LS	75	65	9				
147	S/217	No	C	F2B1	WARNING	7/12	19.30	LS	67	57	10				
148	S/218	No	C	F1D1	WARNING	7/12	20.00	LS	88	82	6				
149	S/219	No	C	F1C1	WARNING	7/12	20.15	LS	48	45	3				
150	S/220	No	C	F2C2	WATCH	7/12	20.30	LS	50	44	6	14/12	14.16	JG	C
151	S/221	No	C	F1C2	WATCH	7/12	20.45	LS	49	43	6	14/12	11.48	TAG	C
152	S/222	No	C	C13A	WATCH	7/12	22.30	LS	87	74	13				
153	S/223	No	C	F1A3	WARNING	7/12	23.15	LS	62	54	8				
154	S/224	No	C	F1A2	WARNING	7/12	23.20	LS	204	176	28				
155	S/225	No	C	F1C1	WATCH	7/12	23.30	LS	64	59	5				
156	S/126	No	C	F2C1	WATCH	5/11	14.32	TAG	131	109	22				
157	S/127	No	C	F2C2	WATCH	5/11	14.37	TAG	54	46	8				

No	Warning Number	Paged AFWDO (Y/N)	AVM-G/C/S/O	FW Area Code	Warning	Date	Time (24hrs)	Initials	Total	Success	Aborted	Standown Date	Standown Time	Standown Initials	AVM-G/C/S/O (Standown)
190	S/229	No	C	F2C1	WATCH	9/12	13.32	TAG	127	103	24				
191	S/230	Yes	C	C13A	WATCH	9/12	21.42	TAG	86	76	10				
192	S/231	Yes	C	F2C1	WATCH	10/12	09.05	TAG	248	209	39				
193	S/232	No	C	F1A1	WARNING	10/12	15.30	BR	182	149	33				
194	S/224a	No	C	F1A2	WARNING	10/12	15.50	BR	204	161	43				
195	S/233	No	C	F1B1	WARNING	10/12	16.00	BR	76	63	13				
196	S/216a	No	C	F1B2	WARNING	10/12	16.10	BR	74	58	16				
197	S/234	No	C	F2C1	WATCH	10/12	16.40	BR	124	104	20				
198	S/235	Yes	C	F2B1	WATCH	10/12	17.30	BR	70	62	8				
199	S/238	Yes	C	C13A	WATCH	10/12	23.09	TAG	86	71	16				
200	S/239	No	C	C13A	WATCH	12/12	09.40	JG	86	83	4				
201	S/240	No	C	F1A1	WARNING	12/12	12.48	TAG	149	131	18				
202	S/241	No	C	F1A2	WARNING	12/12	12.58	TAG	203	169	34				
203	S/242	No	C	F1B1	WARNING	12/12	13.04	TAG	76	63	13				
204	S/243	No	C	F1B2	WARNING	12/12	13.12	TAG	74	57	17				
205	S/244	No	C	F2B1	WARNING	12/12	13.24	TAG	66	56	10				

No	Warning Number	Paged AFWDO (Y/N)	AVM-G/C/S/O	FW Area Code	Warning	Date	Time (24hrs)	Initials	Total	Success	Aborted	Standown Date	Standown Time	Standown Initials	AVM-G/C/S/O (Standown)
206	S/245	No	C	F1E1	WARNING	12/12	13.45	TAG	68	59	9				
207	S/246	No	C	C13A	WATCH	12/12	16.19	TAG	87	77	8				
208	S/247	No	C	C13B	WATCH	12/12	16.27	TAG	219	187	32				
209	S/248	No	C	C13C	WATCH	12/12	16.31	TAG	118	100	18				
210	S/249	No	C	C13D	WATCH	12/12	16.36	TAG	181	153	28				
211	S/250	No	C	C13E	WATCH	12/12	16.42	TAG	140	120	20				
212	S/251	No	C	C14A	WATCH	12/12	16.48	TAG	95	80	15				
213	S/252	No	C	C14B	WATCH	12/12	16.52	TAG	74	62	12				
214	S/253	No	C	C14C	WATCH	12/12	16.56	TAG	39	35	4				
215	S/254	No	C	F1C3	WARNING	12/12	18.20	NS	58	53	5				
216	S/255	No	C	F2C1	WARNING	12/12	19.20	NS	122	94	28				
217	S/256	No	C	F2A1	WATCH	12/12	19.40	NS	52	45	7	14/12	13.42	TAG	C
218	S/257	No	C	F1C1	WARNING	12/12	21.30	NS	83	65	18				
219	S/260	No	C	F1A2	WARNING	13/12	15.27	TAG	203	164	39				
220	S/258	No	C	F1C1	WATCH	13/12	13.08	TAG	83	70	13	14/12	11.43	TAG	C
221	S/259	No	C	F1C3	WARNING	13/12	13.36	TAG	58	49	9				

No	Warning Number	Paged AFWDO (Y/N)	AVM-G/C/S/O	FW Area Code	Warning	Date	Time (24hrs)	Initials	Total	Success	Aborted	Standown Date	Standown Time	Standown Initials	AVM-G/C/S/O (Standown)
158	S/128	No	C	F1A2	WATCH	5/11	14.43	TAG	83	67	16				
159	S/129	No	C	F1A3	WATCH	5/11	15.07	TAG	56	47	8				
160	S/130	No	C	F2B1	WATCH	5/11	15.12	TAG	53	47	5				
161	S/131	No	C	G1A	WATCH	5/11	15.43	TAG	57	51	6				
162	S/132	No	C	G1B	WATCH	5/11	15.47	TAG	59	52	7				
163	S/133	No	C	G1C	WATCH	5/11	15.50	TAG	64	55	9				
164	S/134	No	C	G1D	WATCH	5/11	15.53	TAG	57	49	8				
165	S/135	No	C	G2	WATCH	5/11	15.56	TAG	48	43	5	8/1/01	16.45	TAG	C
166	S/136	No	C	F1D1	WATCH	5/11	16.55	TAG	65	54	9				
167	S/137	No	C	F2C1	WARNING	5/11	17.52	TAG	131	112	19				
168	S/138	No	C	F2C2	WARNING	5/11	18.53	TAG	66	55	10	8/11	14.02	TAG	C
169	S/139	No	C	F2A1	WARNING	5/11	19.11	TAG	72	64	8	8/11	14.12	TAG	C
170	S/140	No	C	F1A2	WARNING	5/11	20.27	TAG	202	173	29				
171	S/141	No	C	F1B3	WATCH	5/11	20.35	TAG	54	48	6				
172	S/142	No	C	F1A3	WARNING	5/11	20.40	TAG	64	53	11	8/11	14.19	TAG	C
173	S/143	No	C	F1B3	WARNING	5/11	20.54	TAG	71	61	10	8/11	14.53	TAG	C

No	Warning Number	Paged AFWDO (Y/N)	AVM-G/C/S/O	FW Area Code	Warning	Date	Time (24hrs)	Initials	Total	Success	Aborted	Standown Date	Standown Time	Standown Initials	AVM-G/C/S/O (Standown)
174	S/144	No	C	F2B1	WARNING	5/11	21.15	TAG	71	60	11				
175	S/145	No	C	F1C1	WARNING	5/11	23.10	CM	68	54	14	8/11	14.26	TAG	C
176	S/146	No	C	F1D1	WARNING	6/11	00.30	CM	65	56	9				
177	S/147	No	C	F1D2	WARNING	6/11	00.45	CM	69	58	11				
178	S/148	No	C	F1D3	WATCH	6/11	09.00	JG	66	56	10	8/11	15.04	TAG	C
179	S/149	No	C	F1B2	WARNING	6/11	14.46	TAG	75	61	14	8/11	13.41	TAG	C
180	S/150	No	C	F1A1	WATCH	7/11	10.00	CM	85	76	9	14/11	11.37	TAG	C
181	S/151	No	C	F1D2	WATCH	7/11	11.35	CM	80	74	13	8/11	15.21	BR	C
182	S/152	No	C	F2C1	WATCH	8/11	13.55	TAG	134	106	27	14/11	12.32	TAG	C
183	S/153	No	C	F1D1	WATCH	8/11	14.43	TAG	91	82	9	14/11	12.18	TAG	C
184	S/154	No	C	F1B2	WARNING	8/11	14.55	BR	150	123	27				
185	S/155	No	C	F2B1	WATCH	10/11	11.49	TAG	70	57	13	14/11	12.25	TAG	C
186	S/156	No	C	F1A2	WATCH	10/11	12.11	TAG	204	173	31	14/11	11.49	TAG	C
187	S/226	No	C	F1A3	WATCH	9/12	12.05	TAG	62	53	9	15/12	10.30	TAG	C
188	S/227	No	C	F1D1	WATCH	9/12	12.37	TAG	90	79	11	14/12	11.53	TAG	C
189	S/228	No	C	F2B1	WATCH	9/12	13.19	TAG	70	59	11				

No	Warning Number	Paged AFWDO (Y/N)	AVM-G/C/S/O	FW Area Code	Warning	Date	Time (24hrs)	Initials	Total	Success	Aborted	Standown Date	Standown Time	Standown Initials	AVM-G/C/S/O (Standown)
222	S/261	No	C	F2C1	WATCH	13/12	16.41	TAG	122	97	24	14/12	14.05	TAG	C
223	S/262	No	C	C13A	WATCH	13/12	17.15	JG	87	77	10				
224	S/263	No	C	F2B1	WATCH	14/12	13.49	TAG	66	55	11	15/12	10.24	TAG	C
225	S/265	No	C	F1A1	WARNING	19/12	14.28	TAG	159	138	21				
226	S/266	No	C	F1A1	WARNING	22/12	14.30	NS	159	138	21				
227	S/267	No	C	F1A2	WARNING	22/12	14.45	NS	203	164	39				
228	S/268	No	C	F1B1	WARNING	22/12	15.00	NS	160	135	25				
229	S/269	No	C	F1B2	WARNING	22/12	15.05	NS	172	141	31				
230	S/270	No	C	F1E1	WATCH	22/12	15.10	NS	72	61	11	8/1	12.05	BJM	C
231	S/271	No	C	F1C3	WATCH	22/12	15.20	NS	61	53	8	8/1	12.00	BJM	C
232	S/272	Yes	C	F1A1	WATCH	30/12	20.15	SCY	312?	272?	46				
233	S/273	No	C	F1A2	WATCH	30/12	20.25	SCY	436?	371?	65				
234	S/274	No	C	F1B1	WATCH	30/12	20.35	SCY	80	69	11				
235	S/275	No	C	F1B2	WATCH	30/12	20.50	SCY	86	72	14				
236	S/276	Yes	C	F1D1	WATCH	31/12	23.15	SCY	66	56	10				
237	S/277	No	C	F2C1	WARNING	31/12	23.25	SCY	129	96	33				

No	Warning Number	Paged AFWDO (Y/N)	AVM-G/C/S/O	FW Area Code	Warning	Date	Time (24hrs)	Initials	Total	Success	Aborted	Standown Date	Standown Time	Standown Initials	AVM-G/C/S/O (Standown)
238	S/278	No	C	F2D1	WATCH	31/12	23.40	SCY	50	39	11	2/1	16.40	TAG	C
239	S/279	No	C	F2D2	WATCH	31/12	23.50	SCY	46	38	8	2/1	16.45	TAG	C
240	S/280	No	C	F2D3	WATCH	1/1/01	00.00	SCY	46	39	7	2/1	16.50	TAG	C
241	S/281	No	C	F2C2	WATCH	1/1	00.15	SCY	57	45	12				
242	S/282	No	C	F2B1	WATCH	1/1	00.25	SCY	55	42	13	8/1	11.28	BJM	C
243	S/283	No	C	F2C2	WARNING	1/1	01.00	SCY	68	55	13	2/1	16.29	TAG	C
244	S/284	No	C	F1C1	WATCH	1/1	01.23	SCY	71	63	8				
245	S/285	Yes	C	F1C1	WARNING	1/1	06.53	SCY	88	68	20				
246	S/286	No	C	F1D1	WARNING	1/1	07.11	SCY	92	81	11				
247	S/287	No	C	F1A1	WARNING	1/1	07.32	SCY	159	138	21	8/1	14.25	TAG	C
248	S/288	No	C	F1A2	WARNING	1/1	07.46	SCY	218	182	36	8/1	14.30	TAG	C
249	S/289	No	C	F1A3	WATCH	1/1	07.58	SCY	58	50	8	8/1	11.18	BJM	C
250	S/290	Yes	G	F1B1	WARNING	1/1	14.36	TAG	80	60	20	8/1	14.38	TAG	C
251	S/291	Yes	G	F1B2	WARNING	1/1	16.04	TAG	86	64	22	8/1	14.44	TAG	C
252	S/292	No	C	F1C1	WATCH	2/1	16.03	TAG	88	68	20	8/1	11.47	BJM	C
253	S/293	No	C	F1D1	WATCH	2/1	16.11	TAG	92	84	8	8/1	11.36	BJM	C

No	Warning Number	Paged AFWDO (Y/N)	AVM-G/C/S/O	FW Area Code	Warning	Date	Time (24hrs)	Initials	Total	Success	Aborted	Standown Date	Standown Time	Standown Initials	AVM-G/C/S/O (Standown)
254	S/294	No	C	F2C1	WATCH	2/1	16.17	TAG	129	97	34	8/1	11.54	BJM	C
256	S/295	Yes	C	F2B1	WATCH	21/1	12.43	LS	124	103	23				
257	S/296	Yes	C	F2C1	WATCH	23/1	20.27	TAG	53	46	7	24/1	12.05	TAG	C
258	S/297	No	●	G1A	WATCH	25/1	10.01	TAG	60	55	5				
259	S/298	No	C	G1B	WATCH	25/1	10.07	TAG	57	49	8				
260	S/299	No	C	G1C	WATCH	25/1	10.12	TAG	62	54	8				
261	S/300	No	C	G1D	WATCH	25/1	10.21	TAG	54	50	4				
262	S/301	No	C	G2	WATCH	25/1	10.30	TAG	44	37	7	29/1	15.30	NS	C
263	S/302	No	C	F1A3	WATCH	25/1	10.37	TAG	56	51	5				
264	S/303	No	C	F1B3	WATCH	26/1	20.15	JG	56	51	5	27/1	15.40	JG	C
265	S/304	No	C	F2C1	WATCH	26/1	21.25	JG	124	109	15	27/1	15.10	JG	C
266	S/305	No	C	F2C2	WATCH	26/1	21.35	JG	54	95	13	27/1	15.30	JG	C
267	S/306	No	C	F1A2	WATCH	26/1	21.45	JG	117	205	35	27/1	14.45	JG	C
268	S/307	No	C	F1A3	WARNING	26/1	23.10	JG	65	115	15	27/1	12.45	JG	C
269	S/308	Yes	C	F2B1	WARNING	27/1	05.45	JG	141	119	22				
270	S/309	No	C	F2B1	WATCH	27/1	12.00	JG	70	60	10	29/1	15.00	NS	C

No	Warning Number	Paged AFWDO (Y/N)	AVM-G/C/S/O	FW Area Code	Warning	Date	Time (24hrs)	Initials	Total	Success	Aborted	Standown Date	Standown Time	Standown Initials	AVM-G/C/S/O (Standown)
271	S/310	No	C	G1A	WATCH	5/2	12.04	TAG	60	56	4				
272	S/311	No	C	G1B	WATCH	5/2	12.08	TAG	57	51	6				
273	S/312	No	C	G1C	WATCH	5/2	12.16	TAG	62	55	7				
274	S/313	No	C	G1D	WATCH	5/2	12.19	TAG	54	50	4				
275	S/314	No	C	G2	WATCH	5/2	12.23	TAG	44	40	4	6/3	15.03	TAG	C
276	S/315	No	C	F1A3	WATCH	6/2	17.20	SY	56	53	4	9/2	14.00	TAG	C
277	S/316	Yes	C	F2B1	WATCH	8/2	03.03	SY	53	56	9				
278	S/317	No	C	F2C1	WATCH	8/2	03.04	SY	124	89	67				
279	S/318	No	C	F2B1	WARNING	8/2	05.03	SY	70	59	12				
280	S/319	No	C	F2C1	WARNING	8/2	06.26	SY	126	104	22	9/2	14.22	TAG	C
281	S/320	No	C	F2C2	WATCH	8/2	06.33	SY	54	47	7				
282	S/K/611	No	C	C2	WARNING	8/2	08.34	SY	1382	1119	283				
283	S/K/612	No	C	C4	WARNING	8/2	08.45	SY	386	302	91				
284	S/K/613	No	C	C6	WARNING	8/2	08.51	SY	332	284	52				
285	S/321	No	C	F2C2	WARNING	8/2	10.25	TAG	65	58	7				
286	S/322	No	C	F2C2	WATCH	8/2	17.25	TAG	65			9/2	14.45	TAG	C

No	Warning Number	Paged AFWDO (Y/N)	AVM-G/C/S/O	FW Area Code	Warning	Date	Time (24hrs)	Initials	Total	Success	Aborted	Standown Date	Standown Time	Standown Initials	AVM-G/C/S/O (Standown)
287	S/323	Yes	C	C13A	WATCH	8/2		SCY							
288	S/324	Yes	C	C14A	WATCH	8/2		SCY							
289	S/325	Yes	C	C14B	WATCH	8/2		SCY							
290	S/326	No	C	F2B1	WATCH	9/2	13.33	TAG	70	58	12	13/2	11.25	TAG	C
291	S/327	Yes	C	C13A	WATCH	12/2	08.43	SCY	92	99	16				
292	S/328	Yes	C	F1B2	WATCH	12/2	22.00	TAG	75	71	4	13/3	12.07	TAG	C

F.1 15TH SEPTEMBER 2000 EVENT

All catchment watches, flood watches and flood warnings are shown in the table above. No severe flood warnings were issued.

Test Valley

A catchment watch was issued on 15/09/00 at 18:40, and updated on 16/09/00 at 09:15. The All Clear was given on 16/09/00 at 10:30. No further flood watches or warnings were issued for the Test Valley.

Itchen Valley

A catchment watch was issued on 15/09/00 at 18:50, and updated on 16/09/00 at 09:15. The All Clear was given on 16/09/00 at 10:30. No further flood watches or warnings were issued for the Itchen Valley.

New Forest

A catchment watch was issued on 15/09/00 at 18:30, and updated on 16/09/00 at 09:15. The All Clear was given on 16/09/00 at 10:30. No further flood watches or warnings were issued for New Forest rivers.

East Hampshire

A catchment watch was issued on 15/09/00 at 13:30, and updated on 16/09/00 at 09:15. The All Clear was given on 16/09/00 at 10:30. No further flood watches or warnings were issued in East Hampshire.

Isle of Wight Rivers

A catchment watch was issued on 15/09/00 at 13:20, and updated on 16/09/00 at 09:15. The All Clear was given on 16/09/00 at 10:30.

A flood warning was issued for the River Medina catchment on 15/09/00 at 14:00 to 22 properties. This warning was then updated on 16/09/00 at 09:45 and again issued to 22 properties. The all clear was given at 16/09/00 at 10:30.

A flood watch was issued for the Western Yar catchment on 15/09/00 at 13:20 to 3 properties. This was then upgraded to a flood warning at 14:05, of which 4 properties received warning information. This warning was then updated on 16/9/00 at 09:45 and again issued to 4 properties. The all clear was given at 16/09/00 at 10:30.

A flood watch was issued for the Monkton Mead Brook catchment on 15/09/00 at 13:30 to 70 properties. This was then upgraded to a flood warning at 14:00 and again the information was received by 70 properties. This warning was updated on 16/09/00 at 09:45 and again issued to 70 properties. The all clear was given at 16/09/00 at 10:30.

No flood watches or warnings were issued for the Thorley Brook catchment, the River Caulbourne catchment, the Gurnard Luck catchment or the Eastern Yar catchment.

Hampshire Coastal Areas

No flood watches or warnings were issued for Hampshire coastal areas.

Isle of Wight Coastal Areas

No flood watches or warnings were issued for Isle of Wight coastal areas.

F.2 9TH OCTOBER TO 16TH OCTOBER 2000 EVENT

All catchment watches, flood watches and flood warnings are shown in the table above. No severe flood warnings were issued.

Test Valley

A catchment watch was issued on 09/10/00 at 12:30. The All Clear was given on 13/10/00 at 14:14. A further catchment watch was issued on the 16/10/00 at 12:13, which was given the all clear on 17/10/00 at 10:17.

A flood watch was issued for the Lower Test on 09/10/00 at 18:50 to 29 properties. The All Clear was given on 13/10/00 at 15:50.

Itchen Valley

A catchment watch was issued on 09/10/00 at 12:40. The All Clear was given on 13/10/00 at 14:17. A further catchment watch was issued on the 16/10/00 at 12:14, which was given the all clear on 17/10/00 at 10:23.

New Forest Rivers

A catchment watch was issued on 09/10/00 at 12:55. The All Clear was given on 13/10/00 at 15:05. A further catchment watch was issued on the 16/10/00 at 12:15, which was given the all clear on 17/10/00 at 10:35.

A flood watch was issued for the Lower Lymington River on 09/10/00 at 20:08 to 8 properties. The All Clear was issued on 13/10/00 at 16:34.

A flood watch was issued for the Upper Lymington River on 09/10/00 at 20:12 to 10 properties. The All Clear was issued on 13/10/00 at 17:51.

East Hampshire

A catchment watch was issued on 09/10/00 at 12:45. The All Clear was given on 13/10/00 at 14:59. A further catchment watch was issued on the 16/10/00 at 12:15, which was given the all clear on 17/10/00 at 10:29.

No further flood watches or warnings were issued for the any rivers in East Hampshire.

Isle of Wight Rivers

A catchment watch was issued on 09/10/00 at 13:10. The All Clear was given on 13/10/00 at 15:11. A further catchment watch was issued on the 16/10/00 at 12:11, which was given the all clear on 17/10/00 at 10:40.

A flood watch was issued for the River Medina catchment on 09/10/00 at 16:45 to 10 properties. This was then upgraded to a flood warning on 09/10/00 at 17:50 and issued to 22 properties. The All clear was given on 13/10/00 at 15:36. A further flood watch was issued to 10 properties on 16/09/00 at 11:41 which was given the All Clear on 17/10/00 at 10:09.

A flood watch was issued for the Eastern Yar catchment on 09/10/00 at 19:40 to 8 properties. This was upgraded to a Flood Warning on 10/10/00 at 06:46 and issued to 22 properties. This was then downgraded to a Flood Watch on 13/10/00 at 18:04 and issued to 8 properties. The All Clear was issued on 17/10/00 at 09:50.

A flood warning was issued for the Monkton Mead Brook catchment on 09/10/00 at 16:15 to 70 properties. The All Clear was given on 13/10/00 at 15:21. A further flood watch was issued to 70 properties on 16/10/00 at 11:24, which was given the All Clear on 17/10/00 at 09:55.

A flood warning was issued for the Gurnard Luck catchment on 09/10/00 at 19:15 to 13 properties. This was downgraded to a Flood Watch on 10/10/00 at 11:00 and issued to 5 properties. The All Clear was given on 13/10/00 at 15:55.

A flood watch was issued for Caulbourne on 09/10/00 at 18:00 to 0 properties. The All clear was given on 13/10/00 at 15:42.

A flood watch was issued for the Western Yar on 09/10/00 at 20:47 to 4 properties. The All Clear was given on 13/10/00 at 17:57. A further flood watch was issued to 3 properties on 16/10/00 at 11:33, which was given the All Clear on 17/10/00 at 10:02.

Hampshire Coastal Areas

No flood watches or warnings were issued for Hampshire coastal areas.

Isle of Wight Coastal Areas

No flood watches or warnings were issued for Isle of Wight coastal areas.

F.3 29TH OCTOBER TO 31ST OCTOBER 2000 EVENT

All catchment watches, flood watches and flood warnings are shown in the table above. No severe flood warnings were issued.

Test Valley

A catchment watch was issued on 27/10/00 at 16:59.

A flood watch was issued for the Blackwater and Cadnam River on 28/10/00 at 22:10 to 4 properties. This was upgraded to a flood warning on 30/10/00 at 08:59 and issued

to 8 properties. This was downgraded on 31/10/00 at 15:25 and issued to 4 properties. An All Clear was issued on 01/11/00 at 12:36. A further flood warning was issued to 8 properties on 02/11/00 at 17:50 and given the All Clear on 03/11/00 at 15:10.

A flood watch was issued for the Lower Test Valley on 30/10/00 at 04:20 to 29 properties. An All Clear was issued on 01/11/00 at 12:04.

Itchen Valley

A catchment watch was issued on 27/10/00 at 17:34.

A Flood Warning was issued for the Lower Itchen on 30/10/00 at 06:55 to 18 properties. An All Clear was issued on 31/10/00 at 14:50.

A flood Warning was issued for the Monks Brook on 30/10/00 at 07:30 to 16 properties. An All Clear was issued on 31/10/00 at 15:40.

New Forest Rivers

A catchment watch was issued on 27/10/00 at 17:47.

A flood watch was issued for the Upper Lymington River on 29/10/00 on 23:40 to 10 properties. This was upgraded to a Flood Warning on 30/10/00 on 04:40 and issued to 30 properties. This was downgraded to a Flood Watch on 31/10/00 at 15:05 and issued to 10 properties, an All Clear was then issued on 01/11/00 at 12:12.

A flood warning was issued for the Lower Lymington River on 30/10/00 at 04:50 to 26 properties. An All Clear was issued on 31/10/00 at 15:55.

East Hampshire

A catchment watch was issued on 27/10/00 at 17:40.

A flood warning was issued for the Lavant Stream on 30/10/00 at 06:10 to 6 properties. An All Clear was issued on 31/10/00 at 14:10.

Isle of Wight Rivers

A catchment watch was issued on 27/10/00 at 17:25.

A flood watch was issued for the Eastern Yar on 29/10/00 at 00:25 to 8 properties. This was upgraded to a flood warning on 29/10/00 at 23:10 and issued to 22 properties. This was downgraded to a flood watch on 01/11/00 at 11:54 and issued to 8 properties. The flood watch was then reissued on 01/11/00 at 20:45. The All Clear was issued on 03/11/00 at 15:55.

A flood watch was issued for the Monkton Mead Brook on 27/10/00 at 17:19 to 70 properties. This was upgraded to a flood warning on 28/10/00 at 18:56 and issued to 70 properties. This was then downgraded on 31/10/00 at 15:15 and issued to 70 properties. An All Clear was issued on 01/11/00 at 12:56. A further flood watch was issued on 01/11/00 at 20:15 to 70 properties and the All Clear was given on 03/11/00 at 15:45.

A flood watch was issued for Gurnard Luck on 28/10/00 at 19:45 to 5 properties. This was upgraded to a flood warning on 30/10/00 at 08:30 and issued to 13 properties. The All Clear was issued on 31/10/00 at 14:00. A further flood watch was issued on 02/11/00 at 12:05 and issued to 5 properties, this was upgraded to a flood warning on 02/11/00 at 14:05 and issued to 13 properties. The flood warning was downgraded on 02/11/00 at 16:40 and issued to 5 properties. The All Clear was issued on 03/11/00 at 15:20.

Hampshire Coastal Areas

A flood watch was issued for Milford on Sea to Calshot on 27/10/00 at 16:20 to 30 properties. Flood watches are automatically given the All Clear 2 hours after high water.

Isle of Wight Coastal Areas

No flood watches or warnings were issued for Isle of Wight coastal areas.

F.4 5TH NOVEMBER TO 8TH NOVEMBER 2000

All catchment watches, flood watches and flood warnings are shown in the table above. No severe flood warnings were issued.

Test Valley

A catchment watch was issued on 05/11/00 at 15:43.

A flood watch was issued for the Lower Test on 05/11/00 at 14:43 to 29 properties. This was upgraded to a Flood Warning on 05/11/00 at 20:27 and issued to 138 properties. The flood warning was downgraded on 10/11/00 at 12:11. The all clear was given on 14/11/00 at 11:49.

A flood watch was issued for the Upper Test on 07/11/00 at 10:00 to 27 properties. The all clear was given on 14/11/00 at 11:37.

A flood watch was issued for the Blackwater and Cadnam River on 05/11/00 at 15:07 to 4 properties. This was upgraded to a Flood Warning on 05/11/00 at 20:40 and issued to 8 properties. The All Clear was issued on 08/11/00 at 14:19.

Itchen Valley

A catchment watch was issued on 05/11/00 at 15:47.

A flood watch was issued for Monks Brook on 05/11/00 at 20:35 to 2 properties. This was then upgraded to a flood warning on 05/11/00 at 20:54 and issued to 16 properties. The All Clear was given on 08/11/00 at 14:53.

A flood warning was issued for the Lower Itchen on 06/11/00 at 14:46 to 18 properties. The all clear was given on 08/11/00 at 13:41. A further flood warning was issued on 08/11/00 at 14:55, and again issued to 18 properties, this was downgraded on 10/11/00 at 12:26. The all clear was given on 14/11/00 at 12:06.

New Forest Rivers

A catchment watch was issued on 05/11/00 at 15:53.

A flood watch was issued for the Upper Lymington River on 05/11/00 at 16:55 to 10 properties. This was upgraded to a Flood Warning on 06/11/00 at 00:30 and issued to 30 properties. It was then downgraded on 08/11/00 at 14:43 and issued to 10 properties. The all clear was given on 14/11/00 at 12:18.

A flood warning was issued for the Lower Lymington River on 06/11/00 at 00:45 to 26 properties. This was then downgraded to a flood watch on 07/11/00 at 11:35 and issued to 8 properties. The all clear was given on 08/11/00 at 15:21.

A flood watch was issued for Danes Stream on 06/11/00 at 09:00 to 10 properties. The All Clear was issued on 08/11/00 at 15:04.

East Hampshire

A catchment watch was issued on 05/11/00 at 15:50.

A flood warning was issued for the River Wallington on 05/11/00 at 23:10 to 23 properties. The All Clear was issued on 08/11/00 at 14:26.

Isle of Wight Rivers

A catchment watch was issued on 05/11/00 at 15:56. The All Clear was given on 08/01/01 at 16:45.

A Flood Warning was issued for the River Medina on 05/11/00 at 19:11 to 22 properties. An All Clear was issued on 08/11/00 at 14:12.

A flood watch was issued for the Eastern Yar on 05/11/00 at 15:12 to 8 properties. This was upgraded to a Flood Warning on 05/11/00 at 21:15 and issued to 22 properties. This was downgraded on 10/11/00 at 11:49. The all clear was given on 14/11/00 at 12:25.

A Flood Watch was issued for Monkton Mead Brook on 05/11/00 at 14:32 to 70 properties. This was upgraded to a Flood Warning on 05/11/00 at 17:52 and issued to 70 properties. This was then downgraded on 08/11/00 at 15:55 and issued to 70 properties. The all clear was given on 14/11/00 at 12:32.

A Flood Watch was issued for Gunard luck on 05/11/00 at 14:37 to 5 properties. This was upgraded to a Flood Warning on 05/11/00 at 18:53 and issued to 13 properties. The All Clear was issued on 08/11/00 at 14:02.

Hampshire Coastal Areas

No flood watches or warnings were issued for Hampshire coastal areas.

Isle of Wight Coastal Areas

No flood watches or warnings were issued for Isle of Wight coastal areas.

F.5 9TH NOVEMBER 2000 TO 28TH FEBRUARY 2001 (GROUNDWATER EVENT)

All catchment watches, flood watches and flood warnings are shown in the table above. No severe flood warnings were issued.

Test Valley

A catchment watch was issued on 11/11/00 at 18:38. The catchment watch was re-issued on 21/11/00 at 16:20 and the All Clear was given on 28/11/00 14:59. A catchment watch was issued on 30/11/00 at 10:46. A further catchment watch was issued on 25/01/01 at 10:01. A further catchment watch was issued on 05/02/01 at 12:04.

The following were issued for the Lower Test:

- A Flood Watch on 10/11/00 at 12:11 to 29 properties. An All Clear was issued on 14/11/00 at 11:49.
- A Flood Watch on 04/12/00 at 20:30 to 29 properties, which was re-issued on 07/12/00 at 09:20. This was upgraded to a flood warning on 07/12/00 at 23:20 and issued to 138 properties, which was re-issued on 10/12/00 (15:50), 12/12/00 (12:58), 13/12/00 (15:27). The warning was reissued on 22/12/00 (14:45) to 172 properties. The warning was downgraded on 30/12/00 at 20:25 and issued to 62 properties. The watch was then upgraded on 01/01/01 at 07:46 and issued to 172 properties. The All Clear was issued on 08/01/01 at 14:30.
- A flood watch on 26/01/01 at 21:45 and issued to 62 properties. The all clear was given on 27/01/01 at 14:45.

A Flood Watch was issued for the Upper Test on 04/12/00 at 12:20 to 27 properties. This was upgraded to a Flood Warning on 10/12/00 at 15:30 and issued to 82 properties. The warning was re-issued on 12/12/00 (12:48). On 19/12/00 (14:28) and 22/12/00 (14:30) the warning was reissued to 125 properties. The warning was downgraded on 30/12/00 at 20:15 and issued to 63 properties. The watch was then upgraded on 01/01/01 at 07:32 and issued to 125 properties. The All Clear was issued 08/01/01 at 14:25.

Itchen Valley

A catchment watch was issued on 11/11/00 at 18:46. The catchment watch was re-issued on 21/11/00 at 16:30 and the All Clear was given on 28/11/00 15:11. A catchment watch was issued on 30/11/00 at 10:55. A further catchment watch was issued on 25/01/01 at 10:07. A further catchment watch was issued on 05/02/01 at 12:08.

The following were issued for the Lower Itchen:

- A Flood Watch was issued on 10/11/00 at 12:26 to 3 properties. An All Clear was issued on 14/11/00 at 12:06.

- A Flood Watch was issued on 05/12/00 at 13:59. This was upgraded to a flood warning on 07/12/00 at 18:45 and issued to 18 properties. This warning was re-issued on 10/12/00 (16:10), 12/12/00 (13:12). On 22/12/00 (15:05) the warning was reissued to 45 properties. This was downgraded on 30/12/00 at 20:50 and issued to 10 properties. This was then upgraded on 01/01/01 at 16:04 and issued to 45 properties. The All Clear was issued on 08/01/01 at 14:44.
- A flood watch on 12/02/01 at 22:00 and issued to 23 properties.

A Flood Watch was issued for the Upper Itchen on 05/12/00 at 13:51 to 10 properties. This was upgraded on 10/12/00 at 16:00 and issued to 22 properties. The warning was re-issued on 12/12/00 (13:04). On 22/12/00 (15:00) the warning was reissued to 25 properties. The warning was downgraded on 30/12/00 at 20:35 and issued to 23 properties. This was then upgraded on 01/01/01 at 14:36 and issued to 25 properties. The All Clear was issued on 08/01/01 at 14:38.

A Flood Watch was issued for the Monks Brook on 07/12/00 at 07:12 to 2 properties. The All Clear was issued on 14/12/00 at 11:36. A flood watch was issued on 16/01/01 at 20:15 to 2 properties. The All Clear was issued on 27/01/01 at 15:40.

New Forest Rivers

A catchment watch was issued on 11/11/00 at 18:57. The catchment watch was re-issued on 21/11/00 at 16:45 and the All Clear was given on 28/11/00 15:26. A catchment watch was issued on 30/11/00 at 11:09. A further catchment watch was issued on 25/01/01 at 10:21. A further catchment watch was issued on 05/02/01 at 12:19.

The following were issued for the Blackwater and Cadnam:

- A flood watch was issued on 11/11/00 at 22:48 to 4 properties. An All Clear was issued on 14/11/00 at 12:00.
- A flood watch to 4 properties on 01/12/00 at 11:58, with the All Clear being issued on 03/12/00 at 12:32.
- A flood watch on 04/12/00 at 12:20 to 4 properties. The Watch was reissued on 07/12/00 at 07:05, then upgraded to a flood warning on 07/12/00 at 23:15 and issued to 8 properties. It was downgraded to a flood watch on 09/12/00 at 12:05 and issued to 4 properties. The All Clear was given on 15/12/00 at 10:30.
- A flood watch on 01/01/01 at 07:58 was issued to 4 properties. The all clear was given on 08/01/01 at 11:18.
- A flood watch on 25/01/01 at 10:37 was issued to 4 properties. It was upgraded on 26/01/01 at 23:10 and issued to 8 properties. The All Clear was issued on 27/01/01 at 12:45.
- A flood watch on 06/02/01 at 17:20 was issued to 4 properties.

The following were issued for the Upper Lymington river:

- A Flood Watch on 01/12/00 at 09:10 to 10 properties. An All Clear was issued on 03/12/00 at 12:17.
- A flood watch on 07/12/00 at 07:20 to 10 properties. This was then upgraded to a flood warning on 07/12/00 at 20:00 and issued to 30 properties. This was then downgraded on 09/12/00 at 12:37. The all clear was given on 14/12/00 at 11:53.
- A Flood Watch on 31/12/00 at 23:15 and issued to 12 properties. It was upgraded on 01/01/01 at 07:11 and issued to 35 properties. This was then downgraded on 02/01/01 at 16:11. The all clear was given on 08/11/00 at 11:36

A Flood Watch was issued for Tanners Brook at 07/12/00 at 07:05 to 4 properties. An All Clear was issued on 14/12/00 at 11:29.

East Hampshire Rivers

A catchment watch was issued on 11/11/00 at 18:54. The catchment watch was re-issued on 21/11/00 at 16:40 and the All Clear was given on 28/11/00 15:19. A catchment watch was issued on 30/11/00 at 11:01. A further catchment watch was issued on 25/01/01 at 10:12. A further catchment watch was issued on 05/02/01 at 12:16.

The following were issued for the Lavant Stream:

- A flood watch on 11/11/00 at 19:45 to 3 properties. This was upgraded to a flood warning on 11/11/00 at 20:52 and issued to 6 properties. It was then downgraded to a flood watch on 11/11/00 at 22:07 and issued to 3 properties. An all clear was issued on 14/11/00 at 12:12.
- A flood watch on 07/12/00 at 07:15 to 3 properties. This was then upgraded to a flood warning on 12/12/00 at 18:20 and issued to 6 properties and re-issued on 13/12/00 at 13:36. This was downgraded on 22/12/00 at 15:20 and issued to 4 properties. The All Clear was issued on 08/01/01 at 12:00.

The following were issued for the River Wallington:

- A Flood Warning on 07/12/00 at 20:15 to 23 properties. This was then downgraded to a Flood Watch on 07/12/00 at 23:30 and issued to 12 properties. It was then upgraded to a Flood Warning on 12/12/00 at 21:30. This was downgraded on 13/12/00 at 13:08. The All Clear was given on 14/12/00 at 11:43.
- A Flood Watch on 01/01/01 at 01:23 and issued to 16 properties, this was upgraded on 01/01/01 at 06:53 and issued to 29 properties. The Flood Warning was then downgraded on 02/01/01 at 16:03. The All Clear was issued on 08/01/01 at 11:47

A Flood Watch was issued for the Hermitage Stream on 07/12/00 at 20:45 to 1 properties. An All Clear was issued on 14/12/00 at 11:48.

A Flood Warning was issued for the River Hamble on 12/12/00 at 13:45 to 12 properties. This was downgraded on 22/12/00 at 15:10 and issued to 3 properties. The All Clear was issued on 08/01/01 at 12:05.

Isle of Wight Rivers

A catchment watch was issued on 11/11/00 at 19:01. The catchment watch was re-issued on 21/11/00 at 15:50 and the All Clear was given on 28/11/00 14:44.

A catchment watch was issued on 30/11/00 at 11:17. A further catchment watch was issued on 25/01/01 at 10:30. A further catchment watch was issued on 05/02/01 at 12:23.

The following were issued for the Eastern Yar:

- A flood warning was downgraded to a flood watch on 10/10/00 at 11:49 and issued to 8 properties. The All Clear was issued on 14/11/00 at 12:25.
- A flood watch to 8 properties on 16/11/00 at 10:00, and all cleared on 17/11/00 at 10:45.
- A Flood Watch to 8 properties for the Eastern Yar on 25/11/00 at 00:01. It was re-issued on 27/11/00 (22:03), 28/11/00 (00:01), 29/11/00 (11:38) and 01/12/00 (03:05). The watch was upgraded to a flood warning on 01/12/00 at 05:35 and issued to 22 properties. This was then downgraded on 02/12/00 at 16:45 and issued to 8 properties, being reissued on 07/12/00 at 08:30. The watch was then upgraded to a flood warning on 07/12/00 at 19:30 and issued to 22 properties. This was downgraded to a flood watch on 09/12/00 at 13:19, being re-issued on 10/12/00 at 17:30. The watch was upgraded to a flood warning on 12/12/00 at 13:24 and issued to 22 properties. This was downgraded on 14/12/00 at 13:49. The All Clear was issued at 15/12/00 at 10:24.
- A Flood Watch on 01/01/01 at 00:25 to 11 properties. The All Clear was issued on 08/01/01 at 11:28.
- A flood watch on 21/01/01 at 12:43 to 11 properties. It was upgraded on 27/01/01 at 05:45 and issued to 23 properties. It was then downgraded on 27/01/01 at 12:00. The All Clear was issued on 29/01/01 at 15:00.
- A flood watch on 08/02/01 at 03:03 to 11 properties. This was upgraded on 08/02/01 at 05:03 and issued to 23 properties. This was then downgraded on 09/02/01.

The following were issued for Western Yar: -

- A Flood Watch on 07/12/00 at 08:39 to 3 properties. An All Clear was issued on 14/12/00 at 14:28.
- A flood watch on 31/12/00 at 23:40 to 4 properties. The all clear was given on 02/01/01 at 16:40.

A Flood Watch was issued for Thorley Brook on 07/12/00 at 08:40 to 0 properties. An All Clear was issued on 14/12/00 at 14:36. A further flood watch was issued on 31/12/00 at 23:50 to 0 properties and the all clear was given on 02/01/01 at 16:45.

A Flood Watch was issued for Calbourne on 07/12/00 at 08:40 to 0 properties. An All Clear was issued on 14/12/00 at 14:44. A further flood watch was issued on 01/01/01 at 00:00 to 0 properties and the all clear was given on 02/01/01 at 16:50.

The following were issued for Gunard Luck:

- A flood warning on 11/11/00 at 21:30 to 13 properties. This was downgraded to a flood watch on 12/11/00 at 17:30 and issued to 5 properties. An All Clear was issued on 14/11/00 at 12:37.
- A Flood warning on 28/11/00 at 00:24 to 13 properties. An All Clear was issued on 28/11/00 at 16:07.
- A Flood Watch to 5 properties on 01/12/00 at 06:15 to 6 properties. An All Clear was issued on 03/12/00 at 12:01.
- A Flood Watch on 07/12/00 at 20:30 and issued to 5 properties. An All Clear was issued on 14/12/00 at 14:16
- A Flood Watch on 01/01/01 at 00:15 and issued to 6 properties. This was upgraded on 01/01/01 at 01:00 and issued to 14 properties. An All Clear was issued on 02/01/01 at 16:29.
- A flood watch on 26/01/01 at 21:35 and issued to 6 properties. The all clear was given on 27/01/01 at 15:30.
- A Flood Watch on 08/02/01 at 06:33 and issued to 6 properties. This was upgraded on 08/02/01 at 10:25 and issued to 14 properties.

The following were issued for the Monkton Mead:

- A Flood Watch on 25/11/00 at 23:30 to 70 properties. It was reissued to 70 properties on 27/11/00 at 22:54 and All Cleared on 28/11/00 at 14:33.
- A Flood Watch to 70 properties on 01/12/00 at 03:10. It was then upgraded on 01/12/00 at 10:33 and issued to 70 properties. It was then downgraded to a flood watch at 15:30 01/12/00. The Flood Watch was re-issued on 07/12/00 at 08:31. The Flood Watch was upgraded to a flood warning on 07/12/00 at 18:25 and issued to 70 properties. This was downgraded on 09/12/00 at 13:32 and re-issued on 10/12/00 (09:05 and 16:40). This watch was upgraded on 12/12/00 at 19:20 and issued to 70 properties. The warning was then downgraded on 13/12/00 at 16:41. The All Clear was issued on 14/12/00 at 14:05.
- A Flood Warning on 31/12/00 at 23:25 and issued to 74 properties. This was then downgraded on 02/01/01 at 16:17 and issued to 74 properties. The All Clear was issued on 08/01/01 at 11:54.

- A flood watch on 23/01/01 at 20:27 and issued to 74 properties. The all clear was given on 24/01/01 at 12:05.
- A flood watch on 26/01/01 at 21:25 and issued to 74 properties. The all clear was given on 27/01/01 at 15:10.
- A flood watch on 08/02/01 at 03:04 and issued to 74 properties. This was then upgraded on 08/02/01 at 06:26 and again issued to 74 properties. This was then downgraded on 08/02/01 at 17:25.

A Flood Watch was issued for River Medina on 12/12/00 at 19:40 to 10 properties, and the All Clear was issued on 14/12/00 at 13:42

Hampshire Coastal Areas

A Flood Watch was issued for Milford on Sea to Calshot on 25/11/00 at 17:30 to 30 properties. A flood watch was also issued on 07/12/00 (22:30), 9/12/00 (21:42) and 10/12/00 (23:09), 12/12/00 (09:40), 12/12/00 (16:19), 13/12/00 (17:15), 08/02/01 12/02/01 (08:43).

A flood watch was issued for Southampton Water on 12/12/00 at 16:27 to 97 properties.

A flood watch was issued for Hamble to Chichester Harbour on 12/12/00 at 16:31 to 61 properties.

A flood watch was issued for the west sides of Portsmouth, Langstone and Chichester Harbours on 12/12/00 at 16:36 to 119 properties.

A flood watch was issued for the east sides of Portsmouth and Chichester Harbours on 12/12/00 at 16:42 to 80 properties.

Isle of Wight Coastal Areas

A flood watch was issued for Needles to Cowes on 12/12/00 at 16:48 to 49 properties. A flood watch was also issued on 08/02/01 to 52 properties.

A flood watch was issued for East Cowes to Sandown on 12/12/00 at 16:52 to 30 properties. A flood watch was also issued on 08/02/01 to 36 properties.

A flood watch was issued for south Isle of Wight on 12/12/00 at 16:56 to 0 properties.

APPENDIX G: AREA INCIDENT ROOM STAFFING ROTAS

F.1 MONDAY 9TH OCTOBER – MONDAY 16TH OCTOBER 2000 EVENT

Time	Role	Name
Monday 9/10/00		
17:00-23:59	ABC	Tim Kermode
17:00-23:59	FWDO	Nigel Sell
17:00-23:59	AFWDO	Terri Gammon
17:00-23:59	ODO	Deborah Highton
17:00-23:59	Call handlers	Charlotte Creswell/ Steph Edwards
Tuesday 10/10/00		
00:00-08:00	ABC	Ian Tripp
00:00-08:00	FWDO	Alison Rennie
00:00-08:00	AFWDO	Bradley Randall
08:00-16:00	ABC	Tim Kermode
08:00-16:00	FWDO	Nigel Sell
08:00-16:00	AFWDO	Terri Gammon
08:00-16:00	ODO	Richard Rowland
08:00-16:00	Call handlers	Charlotte Creswell/ Rachael Fuller
16:00-23:00	ABC	Nigel Sell
16:00-23:00	FWDO	Andy Roberts
16:00-23:00	AFWDO	Steve Young
16:00-23:00	Call handlers	Steph Edwards
Wednesday 11/10/00		
23:00-06:30	ABC/FWDO	Ian Tripp
06:30-09:00	FWDO	Alison Rennie
06:30-09:30	AFWDO	Jim Garland

F.1.1 Site Inspections and Data Collection 9-10.10.00

Hants - Mike Newman

IOW - Linda Treasure, Teresa Prendergast, Cedric Stuart

F.1.2 Staff rostered but stood down

Claire Molyneaux, Steve Boddy, Lucy Sheffield, Heather Claricoats

F.2 SUNDAY 29TH OCTOBER – TUESDAY 31ST OCTOBER 2000 EVENT

Time	Role	Name
Sunday 29/10/00		
13.00-21.00	ABC	Tim Kermode
13.00-21.00	FWDO	Nigel Sell/Charlotte Creswell
13.00-21.00	AFWDO	Terri Gammon
13.00-21.00	ODO	Mike Mullins
21.00-05.00	ABC	Rod Murchie
21.00-05.00	FWDO	Ian Tripp
21.00-05.00	AFWDO	Steve Young
21.00-05.00	ODO	Deborah Higon
21.00-05.00	Call handlers	Anita Smith/ Heather Claricoats
Monday 30/10/00		
05.00-13.00	ABC	Tim Kermode
05.00-13.00	FWDO	Andy Roberts
05.00-13.00	AFWDO	Terri Gammon
05.00-13.00	ODO	Mike Newman
05.00-13.00	Call handlers	Claire Molyneaux
13.00-21.00	ABC	Nigel Sell
13.00-21.00	FWDO	Charlotte Creswell
13.00-21.00	AFWDO	Jim Garland

Time	Role	Name
13.00-21.00	Call handlers	Serena Haining

F.3 SUNDAY 5TH NOVEMBER – WEDNESDAY 8TH NOVEMBER 2000 EVENT

Time	Role	Name
Sunday 5/11/00		
13.00-21.00	ABC	Tim Kermode
13.00-21.00	FWDO	Ian Tripp
13.00-21.00	AFWDO	Terri Gammon
13.00-21.00	Call Handlers	Heather Claricoats/ Angie Vigor
21.00-05.00	ABC	Rod Murchie
21.00-05.00	FWDO	Alison Rennie
21.00-05.00	AFWDO	Claire Molyneaux
21.00-05.00	ODO	Mike Mullins
21.00-05.00	Call handlers	Anita Smith/ Nigel Thomas
Monday 6/11/00		
05.00-13.00	ABC	Tim Kermode
05.00-13.00	FWDO	Andy Roberts
05.00-13.00	AFWDO	Jim Garland
05.00-13.00	ODO	Deborah Higton
05.00-13.00	Call handlers	Serena Haining/ Charlotte Creswell
13.00-21.00	ABC	Rod Murchie
13.00-21.00	FWDO	Nigel Sell
13.00-21.00	AFWDO	Terri Gammon
13.00-21.00	Call handlers	Nigel Thomas

F.4 THURSDAY 9TH NOVEMBER 2000 - 28TH FEBRUARY 2001 EVENT (GROUNDWATER EVENT)

Time	Role	Name
Thursday 07/12/00		
19:15- 23:30	ODO	Mike Newman
19:15- 23:30	Call handlers	Sheila Baker
Saturday 09/12/00		
09:30-17:45	FWDO	Ian Tripp
Sunday 10/12/00		
10:30 – 18:00	ODO	Mike Newman
10:30 – 18:00	FWDO	Ian Tripp
12:00 – 18:00	Call handlers	Bradley Randall/Heather Claricoats
17:00 – 21:15	FWDO	Andy Roberts
Tuesday 12/12/00-Wednesday 13/12/00		
13:00 – 01:00	FWDO	Nigel Sell
13:00 – 01:00	ODO	Mike Newman
13:00 – 01:00	Call handlers	Anita Smith/ Sheila Baker
Wednesday 13/12/00		
10:00-12:00	Call handlers	Kim Smith
Sunday 31/12/00-Monday 01/01/01		
22:00-02:00	FWDO	Charlotte Creswell
22:00-02:00	AFWDO	Steve Young
22:00-02:00	ODO	Deborah Higton

APPENDIX H: SITREPS AND HELP REPORTS

H.1 AREA SITREPS AND HELP REPORTS

Throughout the event each Area Office produces Situation Reports (SitReps) reporting the flooding situation in their area. These are useful as they provide a general overview of the flooding situation at frequent intervals. HELP reports (Head Office Emergency Liaison Procedures) define the reporting and liaison routes between the regions and head office during a notifiable incident; in the majority of the events this was 10 properties flooded or more. The list below indicates when these reports are issued. A copy of each report is available in the Hampshire Area Office.

H.1.1 15th September 2000 Event

Help 1	15:30	15/09/00	SitRep 1	21:00	15/09/00
Help 2	17:45	15/09/00	SitRep 2	21:51	15/09/00
Help 3	11:20	16/09/00			
Help 1	17:45	27/09/00			
Help 2	18:15	27/09/00			

H.1.2 9th October to 16th October 2000 Event

Help 1	19:30	9/10/00	SitRep 1	14:30	11/10/00
Help 2	02:00	10/10/00	SitRep 2		12/10/00
Help 3	09:00	10/10/00	SitRep 3	14:30	12/10/00
Help 4	16:00	10/10/00			
Help 5	09:00	11/10/00			

H.1.3 Sunday 29th October to Tuesday 31st October 2000 Event

Help 1	15:30	29/10/00	SitRep 1	09:10	30/10/00
Help 2	20:30	29/10/00	SitRep 2	13:30	30/10/00
Help 3	04:30	30/10/00	SitRep 3	20:45	30/10/00
Help 4	13:00	30/10/00			

H.1.4 Sunday 5th November to Wednesday 8th November 2000 Event

Help 1	10:30	5/11/00	SitRep 1	23:15	5/11/00
			SitRep 2	05:00	5/11/00
			SitRep 3	09:30	5/11/00
			SitRep 4	14:30	6/11/00
			SitRep 5	10:00	7/11/00
			SitRep 6	14:00	7/11/00
			SitRep 8	09:30	8/11/00
			SitRep 9	14:00	8/11/00
			SitRep 10	09:10	9/11/00
			SitRep 11	14:00	9/11/00

H.1.5 9th November 2000 – 28th February 2001 Event (Groundwater Event)

SitRep	09:00	10/11/00
SitRep	14:00	10/11/00
SitRep	15:00	11/11/00
SitRep	09:00	13/11/00
SitRep	09:30	08/12/00
SitRep	14:00	08/12/00
SitRep	14:00	11/12/00
SitRep	14:00	13/12/00
SitRep	10:00	14/12/0

H.2 REGIONAL SITREPS AND HELP REPORTS

The region also produced SITREP which were distributed around the areas so that each area had an appreciation of what other areas in the region were doing. A list of regional SITREPs produced is listed below.

H.2.1 15th September 2000 Event

Sirep	21:00	15/09/00
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SitRep	21:35	15/09/00
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H.2.2 Monday 9th October to Monday 16th October 2000 Event

HELP	18:30	13/10/00
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SitRep S01	15:00	11/10/00
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SitRep S02	11:25	12/10/00
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SitRep S03	14:45	12/10/00
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SitRep S04	23:15	12/10/00
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SitRep S05	05:45	13/10/00
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SitRep S06	09:55	13/10/00
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SitRep S07	15:00	13/10/00
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SitRep S08	22:00	13/10/00
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SitRep S10	09:30	14/10/00
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SitRep S11	18:00	14/10/00
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SitRep S12	22:00	14/10/00
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SitRep S13	09:00	15/10/00
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SitRep S14	15:56	15/10/00
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SitRep S15	22:00	15/10/00
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SitRep S16	07:30	16/10/00
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SitRep S17	15:00	16/10/00
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SitRep S18	21:00	16/10/00
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SitRep S19	07:00	17/10/00
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SitRep S20	18:00	17/10/00
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H.2.3 Sunday 29th October to Tuesday 31st October 2000 Event

SitRep S01	10:00	30/10/00
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SitRep S02	14:00	30/10/00
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SitRep S03	21:00	30/10/00
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SitRep S04	10:00	31/10/00
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SitRep S05	14:00	31/10/00
SitRep S06	00:01	01/11/00
SitRep S07	10:00	01/11/00
SitRep S08a	15:00	01/11/00
SitRep S08b	15:20	01/11/00
SitRep S09	06:00	02/11/00
SitRep S10	09:00	02/11/00
SitRep S11	15:00	02/11/00
SitRep S12	10:00	03/11/00
SitRep S13	15:00	04/11/00

H.2.4 Sunday 5th November to Wednesday 8th November 2000 Event

SitRep S14	09:30	05/11/00
SitRep S15	15:00	05/11/00
SitRep S16	22:00	05/11/00
SitRep S17	08:00	06/11/00
SitRep S17	10:30	06/11/00
SitRep S17	15:00	06/11/00
SitRep S18	08:00	07/11/00
SitRep S19	15:00	07/11/00
SitRep S20	10:00	08/11/00
SitRep S21	15:00	08/11/00

H.2.5 9th November 2000 – 28th February 2001 Event (Groundwater Event)

SitRep S22	10:00	09/11/00
SitRep S23	14:30	09/11/00
SitRep S24	10:00	10/11/00
SitRep S25	15:00	10/11/00

SitRep S26	06:30	11/11/00
SitRep S27	10:00	11/11/00
SitRep S28	15:00	11/11/00
SitRep S29	22:00	11/11/00
SitRep S29	08:00	12/11/00
SitRep S30	08:40	12/11/00
SitRep S31	10:30	12/11/00
SitRep S32	10:30	13/11/00
SitRep S34	10:30	14/11/00
SitRep S35	10:30	15/11/00
SitRep S01	10:00	08/12/00
SitRep S02	14:00	08/12/00
SitRep S03	10:00	11/12/00
SitRep S04	15:00	11/12/00
SitRep S05	10:00	12/12/00
SitRep S06	15:00	12/12/00
SitRep S07	06:00	13/12/00
SitRep S08	10:00	13/12/00
SitRep S09	15:00	13/12/00
SitRep S10	10:00	14/12/00
SitRep S11	15:00	14/12/00
SitRep		15/12/00
SitRep	pm	15/12/00
SitRep	am	16/12/00
SitRep	am	19/12/00

SitRep	11:00	08/02/01
SitRep	16:00	08/02/01
SitRep	11:00	09/02/01
SitRep	14:00	13/02/01

APPENDIX I: OPERATIONAL ACTIVITIES

I.1 FRIDAY 15TH SEPTEMBER 2000 EVENT

- From 10:10 flood defence and contractor staff attended Bembridge Sluices and Monkton Mead Pumping Station following mains power failures.
- Direct Works and Brightstone Landscaping cleared and monitored grills and operated sluices.
- Flood defence staff were called out to Havant to inspect the flooding and found the Bellmouth sluice on the Hermitage Stream operating erratically. The sluice was manually opened and electrical repairs were undertaken after the event.
- A tree blockage at Langstone Mill Channel was removed.
- Agency staff assisted Portsmouth City Council to obtain pumps.

I.2 MONDAY 9TH OCTOBER – MONDAY 16TH OCTOBER 2000 EVENT

Monday 9th October 2000

- At 10:00 flood defence staff investigated Morton Brook, Lukely Brook, Monkton Mead, Newbridge, Caulbourne and Gurnard.
- Grills were cleared on the IOW and monitored continuously, starting at Monkton Mead.
- At 20:00 flood defence staff at Ryde monitored pumps and grill clearance.
- Multi-functional staff monitored events at Alverstone, Newchurch and Freshwater.
- The grill upstream of Milford Dam was reported as being blocked causing flooding to field. Gangs went out to clear as much as possible and returned Tuesday when water levels were down.
- Gangs were out from 16:00 until 00:30 clearing grills.
- Tidal doors at Keyhaven were closed for high tide.

Tuesday 10th October 20.00

- At 11:45 multi functional staff investigated Alverstone and Newchurch.
- At 12:00 IOW contractor began to clear grills.
- Southern Water (IOW) was told to remove part of the temporary road at Yar Bridge to reduce flood problems. The bridge was replaced the next day.

- At 19:00 flood defence staff called in a contractor to punch a hole in a temporary road at Morton Common (condition of consent). Multi functional staff monitored Springvale, Seaview, Ryde, Hunny Hill and St Cross.
- At 20:15 multi-functional staff were at Freshwater to check levels; no problems were reported.
- At 22:00 multi-functional staff investigated Morton Common
- At 01:00 there were problems at Wallington village as surface water was unable to get away therefore causing the house by the slipway to be flooded. Direct Works attended and resolved.
- A tree was jammed against the footbridge by White Horse Public House in Wallington and was removed.
- At 02:24 the H3 alarm at Brockenhurst was triggered, flood defence staff investigated the site; there were no problems at the site.
- At 12:30 Direct works cleared grill downstream of Wildern School.
- There were some problems clearing grills but there was no associated flood risk.

Wednesday 11th October 2000

- At 20:20 IOW contractor cleared grills at Ryde.
- At 20:20 one gang out investigated Morton Common; one gang out investigated Newport.
- At 20:30 multi functional staff were out at Freshwater; no problems were reported.
- At 21:15 gang out to clear St Cross Grill, Newport.
- At 23:45 pump 1 was overloaded at Monkton Mead. Flood defence staff attended site to reset pumps.

Thursday 12th October 2000

- At 19:15 flood defence staff investigated Havant; no problems reported.

Friday 27th October 2000

- Grills were cleared on the Isle of Wight.
- Electrician on standby at Ryde to ensure the pumps were operating for the high tide at midnight. Pumps were reset once during the night.
- Grills cleared in Hampshire.

Saturday 28th October 2000

- The midday tide at Ryde was monitored. IOW contractors were out checking grills. The electrician was on site at Monkton Mead, Ryde with one pump not working. The electrician was unsuccessful in repairing the pump.
- Multi-functional staff inspected sites at Newchurch, Freshwater and Alverstone. Multi functional staff checked the flat battery at St Johns.
- At high tide staff were at Ryde checking pumps and grill clearance.
- Gangs out in Isle of Wight all day clearing grills.
- Gangs out in Hampshire all day clearing grills.
- At 09:30 gang cleared blockage, causing flooding to road and driveway, due to overtopping of the Wallop Brook.
- Tidal doors at Lymington were closed for the midnight tide.
- At 12:20 Wherwell weed blockage was investigated. Gang called out to out to clear.
- Direct Works went to Iron Bridge to stop water coming out of bank. The area was partly flooded.
- At 17:40 a gang was out to clear grill at Romsey.

I.3 SUNDAY 29TH OCTOBER – TUESDAY 31ST OCTOBER 2000 EVENT**Sunday 29th October**

- Gangs were out in Isle of Wight throughout the day and evening clearing grills.
- Repair of Monkton Mead pump was impossible without new electric contacts.
- Contractors Attrill were at Springvale checking for any blockage.
- Agency arranged for Selwoods to deliver three 6 inch pumps to Ryde. The pumps were set up at Ryde by Attrill and were operating.
- Gangs were out in Hampshire throughout the day and evening clearing grills. They also cleared nine fallen trees/blockages.
- Staff inspected Romsey. The sluices through Romsey were managed to ensure flow balancing.
- The Milford Dam sequences failed and was reset.

- Temporary sandbag banks were constructed by Direct Works with assistance from Fisheries Staff on the River Meon to protect Iron Bridge and Wallington Village.

1.4 SUNDAY 5TH NOVEMBER – WEDNESDAY 8TH NOVEMBER 2000 EVENT

Sunday 05th November 2000

- At 08:00 Monkton Mead pumps were checked and were reported as set up correctly.
- At 16:00 grills on Isle of Wight were being cleared.
- At 19:45 flood defence staff inspected Freshwater; no reported problems.
- At 07:00 grills were cleared in Hampshire
- At 09:20 Direct Works cleared tree at Tadburn Lake.
- At 16:00 all grills in Hampshire were being cleared.
- At 17:30 flood defence staff investigated Romsey, especially Tadburn Lake; no reported problems.
- At 18:15 Direct Works cleared a tree across river upstream of road bridge by Monxton village hall.

Monday 06th November 2000

- Gangs out on IOW all day clearing grills.
- Gangs out in Hampshire all day clearing grills.
- 500 sandbags were deployed to protect Bridge Cottage, Wickham.
- At 00:30 flood defence staff were at Exton. Properties were flooded in village and others were threatened. Sandbags were laid to protect properties.
- At 01:15 direct works staff were at Wallington monitoring the situation.
- Blockages and trees were cleared on the Calmore Canal, Tadburn Lake and the Alre
- The bank was rebuilt at Iron Bridge.
- A large breach on the Meon upstream of Wickham was repaired.
- An additional pump was deployed to Riverdale Cottages in Wallington.

Tuesday 07th November 2000

- At 09:00 flood defence staff inspected the Eastern Yar area

- All Hampshire grills cleared.
- At 10:10 flood defence staff inspected Milford Dam.
- At 21:15 Water Resources staff were at the River Test monitoring levels. Water levels were remaining high.

I.5 THURSDAY 9TH NOVEMBER 2000 – 28TH FEBRUARY 2001 EVENT (GROUNDWATER EVENT)

Thursday 09th November 2000

- Small blockage against Lippen Lane Bridge, behind George and Falcon Pub, Warnford was removed.
- Tree upstream of Bucks Head, Meonstoke was removed.
- The temporary sandbags at Wickham were inspected and repaired as necessary. In addition the breach was also repaired.
- The sandbag works at Wallington were inspected and repaired as necessary.
- A large tree from River Itchen immediately opposite the Fulling Mill, Easton was removed.
- The bed of the Candover Stream within the boundary of Totford Pumping Station was cut.
- Blockages in Phillhill Brook were removed.
- The bed of River Itchen between upstream boundary of Teazles, Cheriton to the road was cut.
- A blockage on Monks Brook around Monks Bridge was removed.
- Hazel trees on the left bank of Monks Brooks near Concorde Club, Stoneham were removed.

Friday 10th November 2000

- The trees downstream of Crosslands Drive, Havant were removed.

Saturday 11th November 2000

- Sandbags were supplied and laid at Iron Mill, Wickham
- The breach at Saddlers Mill, Romsey was repaired.

Monday 13th November 2000

- A tree on Danes Stream, at Midhurst, Ashley Lane, Hordle was removed.
- A number of trees on the River Itchen at Church Farm House, Church Lane, Twyford were removed.

Tuesday 14th November 2000

- A small tree was removed from Calmore Canal, behind 23 Testwood Crescent, Calmore

Wednesday 15th November 2000

- At 10:30 flood defence staff investigated River Alver. No reported problems, except Stokes Bay outfall blocked.
- At 10:35 flood defence staff inspected St Mary Bourne.

Thursday 16th November 2000

- Tree across Monks Brook near Woodmill Activity Centre was removed.
- Tree in River Itchen alongside River Inn car park, Bishopstoke was removed.

Friday 17th November 2000

- A large blockage and clump of trees upstream of Sparshatts at Botley in Woodhouse Gully was removed.
- Sandbags at Exton were removed.
- A tree across the River Test at Timsbury was removed.
- A tree on Wallop Brook near the War Memorial, Over Wallop was removed.
- A large blockage on River Anton, behind South Street, Andover was removed.

Saturday 18th November 2000

- At 11:10 gang out to clear log in sluice at City Mill, Winchester.
- At 15:20 Eling Tide Mill gates were closed.

Tuesday 21st November 2000

- At 16:00 grills throughout Hampshire were being cleared.
- At 16:00 Keyhaven gates were instructed to be shut, gang stayed at Keyhaven to monitor.

- At 16:35 sandbags at Exton were replaced
- At 18:00 direct works staff removed blockage at Wickham Mill.
- Trees and rootball in River Lymington near Brockenhurst Bridge, Brockenhurst were removed.

Wednesday 22nd November 2000

- The sandbags at Exton were removed.
- A blockage upstream of Exton was cleared.
- A blockage behind CJH Tyre Services, Brockhampton Lane, Havant was cleared.
- There was a blockage jammed against pipe between St Albans Road and Bartons Road, Havant. The blockage was removed.

Thursday 23rd November 2000

- All Isle of Wight grills were cleared in morning.
- All Hampshire grills were cleared in morning

Friday 24th November 2000

- The blockage at City Mill, Winchester on River Itchen was removed.
- The blockage from Barge Canal, Romsey was removed.

Monday 27th November 2000

- The tidal flap at Keyhaven was repaired.
- The grills over outlet weed boom storage area at Stockbridge were repaired.

Wednesday 29th November 2000

- The blockages on Barton River near Bishopstoke were removed.
- The fencing panel in River Lymington just downstream of Watersplash, Brockenhurst was removed.

Friday 1st December 2000

- Sandbags were laid at Exton
- A tree was removed at Exton.

- A blockage was removed from a culvert at Meonstoke

Monday 04th December 2000

- Sandbags were supplied to Water Farm Cottages, Twyford.
- A blockage was removed at City Mill, Winchester

Tuesday 05th December 2000

- Blockage at Wickham Mill was removed.
- Weed was cut in River Dever from Old Mill Cottage to field boundary
- Two small trees from Barge Canal, just upstream of Plaza grill were removed.
- A coplastic flap valve was installed at Hockley Mill on River Itchen.

Wednesday 06th December 2000

- Branches were removed from river at Westbury House, West Meon.
- Direct Works staff checked culverts in the Meon Valley for blockages.
- A blockage at Fishlake was removed.
- Two small trees on River Itchen Navigation at The Malmes, Shawford were cleared.

Thursday 07th December 2000

- All Isle of Wight grills were cleared starting at 19:20.
- At 18:25 flood defence staff instructed the Monkton Mead temporary pumps to be started and to remain operational all night and for the am tide.
- At 20:00 flood defence staff monitored Monkton Mead area.
- At 21:15 multi functional staff investigated Freshwater.
- At 07:15 direct works cleared blockage at Tadburn Lake.
- Existing channel of River Meon, downstream of Wickham was excavated.
- A blockage was cleared on Candover Stream at Brown Candover
- Flood defence staff investigated Preston Candover.
- All Hampshire grills were cleared starting at 19:00

- At 20:35 flood defence staff monitored the Lavant Stream area.
- At 20:50 flood defence staff investigated Romsey; no problems.
- A fence panel from Tadburn Lake was removed.

Friday 08th December 2000

- At 08:00 flood defence staff investigated the Lower Itchen area (Riverside Park, Woodmill and White Swan).
- Sandbags were laid in St Mary Bourne
- The Lymington and Keyhaven gates were closed for 08:03 hour tide.
- Sandbags were laid upstream of Saddlers Mill.
- A tree was removed from Tadburn Lake

Saturday 09th December 2000

- At 09:30 Direct Works staff cleared grill at Bishops Waltham
- At 14:26 Direct Works staff cleared Crosslands Drive.

Sunday 10th December 2000

- At 15:10 flood defence staff instructed Monkton Mead pumps to be run continuously until further notice.
- At 10:00 flood defence investigated Romsey area, no major problems in Mill Lane
- At 10:00 flood defence staff investigated Twyford area.
- At 11:15 Direct Works staff instructed to clear all Hampshire grills.
- At 11:30 flood defence staff investigated Meon Valley; no problems.
- Lymington and Keyhaven gates were closed for 09:30 high tide.

Monday 11th December 2000

- A tree was removed from River Meon, downstream of Bridge Cottage.
- A tree was removed from Wallop Brook at Hatches Farm Cottage, between Nether and Middle Wallop.

Monday 18th December 2000

- The channel at Warnford was cleared.
- Sandbags were laid at St Mary Bourne

Tuesday 19th December 2000

- The steel plate on River Lavant at Crosslands Drive was removed. It was replaced with 6-inch boards with bolts to enable removal.

Wednesday 20th December 2000

- Sand bags were removed from road and ditch at Wickham. Sandbags were stored on site for future use.
- Grills were cleared along the River Lavant.
- Sandbags were laid upstream of Saddlers Mill

Monday 01st January 2001

- Sandbags were supplied to Fire Brigade at Wallington.

Wednesday 03rd January 2001

- A large piece of granite was removed from River Hamble at Palace House, Bishops Waltham
- Obstructions were removed from Wickham Mill Bridge

Thursday 04th January 2001

- 250 filled sandbags were delivered to Exton.
- A 3-inch pump was delivered and set up at Riversdale Cottages, Wallington.
- A large tree was removed from River Arle at rear of Pinglestone Farm Cressbeds, Alresford.

Monday 22nd January 2001

- Direct Works cleared blockage at Seaward Rise on Tadburn Lake at 17:15.
- Flood defence staff investigated sluice at Thruxton at 18:55 as it was reported it was causing flooding. No problems at the site.

Tuesday 23rd January 2001

- Flood defence staff checked Bishops Waltham at 18:00, no problems at the site.

Friday 26th January 2001

- At 20:30 flood defence staff investigated Tadburn Lake as water was out of bank at Seaward Rise, Romsey. No problems at Romsey, and all grills clear.
- At 21:20 Direct Works staff investigated Banner Street for possible flooding. No problems at the site and will go back tomorrow.
- At 23:15 flood defence staff investigated Wellow Mill. No problems in the area.

Saturday 27th January 2001

- At 01:20 flood defence staff investigated Gurnard.
- At 12:10 flood defence staff investigated Yarmouth Door and Eastern Yar.
- At 08:20 Direct Works staff investigated Banner Street, no problems at the site.
- At 09:00 flood defence staff reset door at Milford Dam.
- At 10:15 Direct Works instructed to clear all Romsey grills.
- At 10:55 flood defence staff investigated Woodmill, Southampton. Flood defence staff instructed Direct Works to open a small side door at Woodmill.

Saturday 03rd February 2001

- At 12:30 flood defence staff investigated Alresford.
- At 22:15 flood defence staff investigated Woodmill, Southampton, no problems at site.

Monday 05th February 2001

- At 21:25 one pump at Ryde failed.
- At 22:00 contractors on Isle of Wight instructed to clear grills and investigate failed pump at Ryde.
- At 17:30 flood defence staff investigated Tadburn Lake.

Thursday 15th February 2001

- At 15:00 Direct Works cleared blockage at Corhampton Mill.

APPENDIX J: CONSULTANTS REPORTS

Hampshire

'Winter 2000/2001 Groundwater and Fluvial Flooding in Hampshire' reports have been produced by consultants Halcrow for the following locations:

Appleshaw
Ashurst
Bishop's Sutton
Bishops Waltham
Bishopstoke
Boldre and Portmore
Braishfield
Bramdean
Bransgore
Brockenhurst
Broughton
Cadnam, Copythorne, Ower, Winsor and Bartley
Chalton
Chandlers Ford
Cheriton
Chilbolton
Chilland, Martyr Worthy and Easton
Chilton and Brown Candover
Corhampton and Meonstoke
Deane
Denmead
Droxford
East End
Eastleigh
Emsworth
Exton
Fareham
Finchdean and Dean Lane End
Frogmore and East Meon
Gosport
Hamble-le-Rice
Hambleton
Hatherden
Havant
Hayling Island
Headbourne Worthy
Hensting and Fishers Pond
Hursley
Hurstbourne Tarrant
Hythe

Kimpton
King's Sombourne
King's Worthy
Little Sombourne
Littleton
Lymington and Pennington
Marchwood
Milford-on-Sea and Downton
Minstead
Monxton
Nether Wallop
New Milton
Newtown
Old Alresford
Owslebury
Penton Mewsey
Pitton
Preston Candover
Purbrook
Romsey
Rowlands Castle
Shedfield
Sherfield English
Shirley
Soberton
Southwick
St Mary Bourne
Stockbridge
Stoke
Stoke Charity, Wonston, Sutton Scotney
Sway
Swaythling
Titchfield
Totton and Calmore
Twyford
Upham
Vernham Dean, Upton
Wallington
Warnford
Waterlooville
West Meon
West Stratton and Micheldever
West Tytherley
West Wellow
Weyhill Bottom
Wickham
Winchester

Woodlands and Netley Marsh

IOW

The 'IOW Flood Investigation Study' prepared by consultants WS Atkins considers flooding at the following locations:

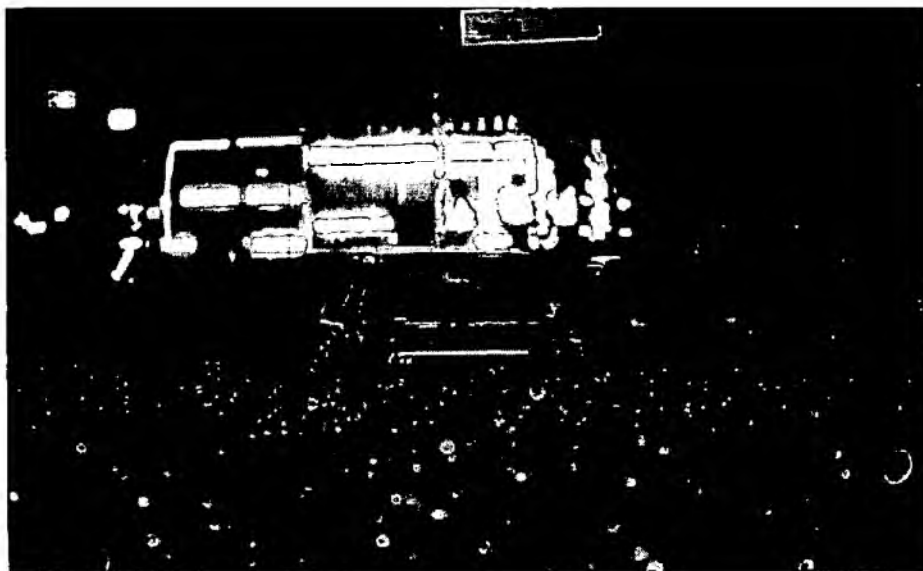
Alverstone
Atherfield
Bembridge
Brading
Cowes
Freshwater
Godshill
Gunville
Gurnard
Lake
Merstone
Newchurch and Langbridge
Newport
Sandford
Sandown
Seaview
Shanklin
Shorwell
Whitley Bank
Whitwell
Wootton

APPENDIX K: PHOTOGRAPHS

K.1 15TH SEPTEMBER 2000

K.1.1 East Hampshire

Portsmouth



Photograph 1: Depth of flooding in parts of Southsea on 15th September 2000. Flooding was caused by the failure of Eastney Pumping Station during a high intensity rainfall event.

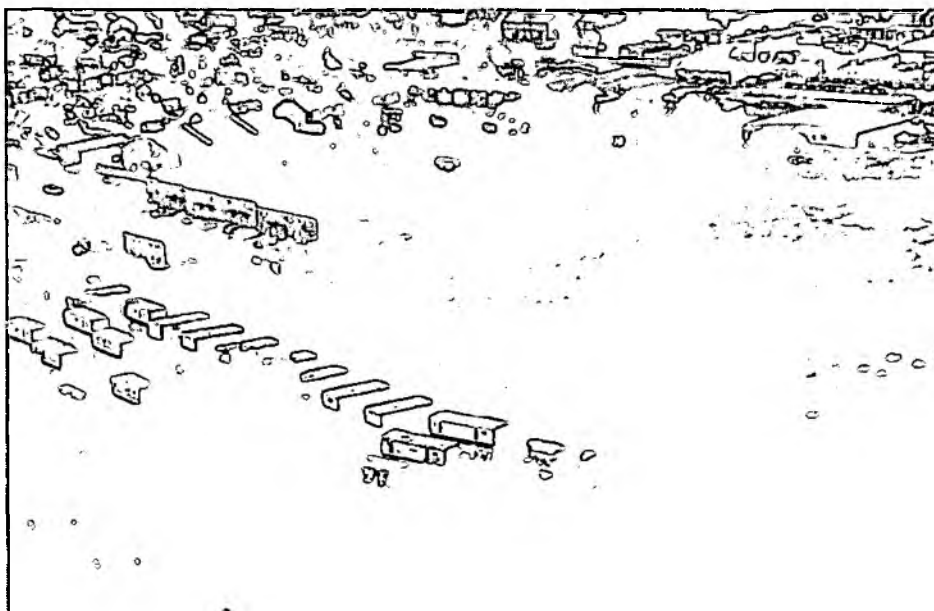
K.2 9TH – 16TH OCTOBER 2000

K.2.1 Isle of Wight

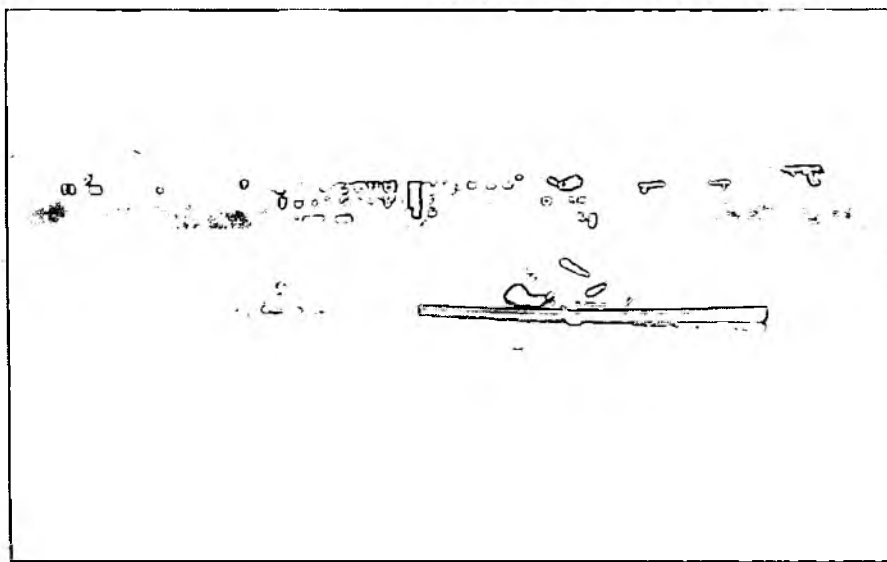
Eastern Yar



Photograph 2: Aerial view of part of the Eastern Yar valley. Flooding occurred due to the overtopping of the river banks.



Photograph 3: Aerial view of flooding at Sandown caused by the overtopping of the Eastern Yar banks.

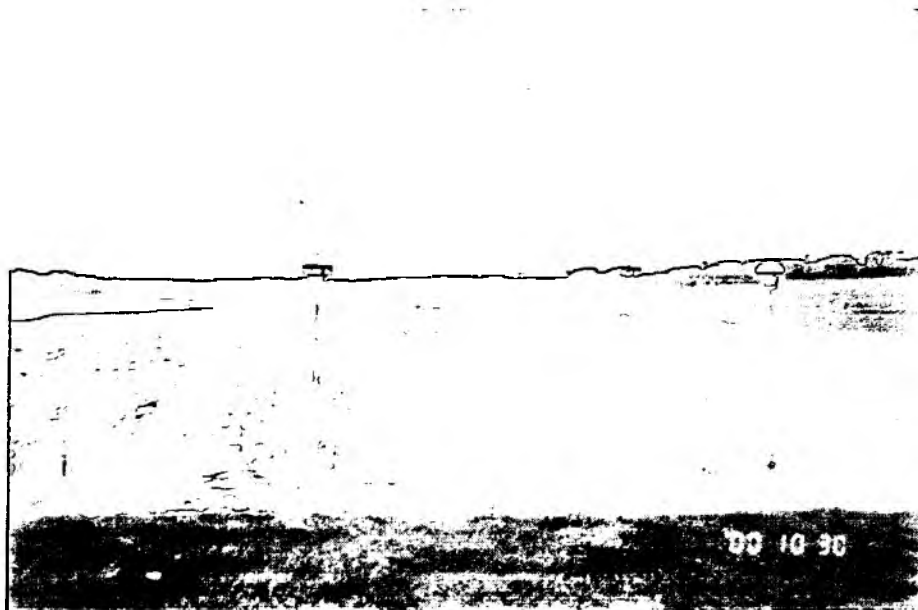


Photograph 4: Flooding to Simeon Street recreation ground. Estimates are of 70 properties affected in Ryde, with some properties having been flooded three times in the preceding 12 months. The Environment Agency has since constructed a new pumping station which was operational for the winter of 2001.

K.3 29TH - 31ST OCTOBER 2000

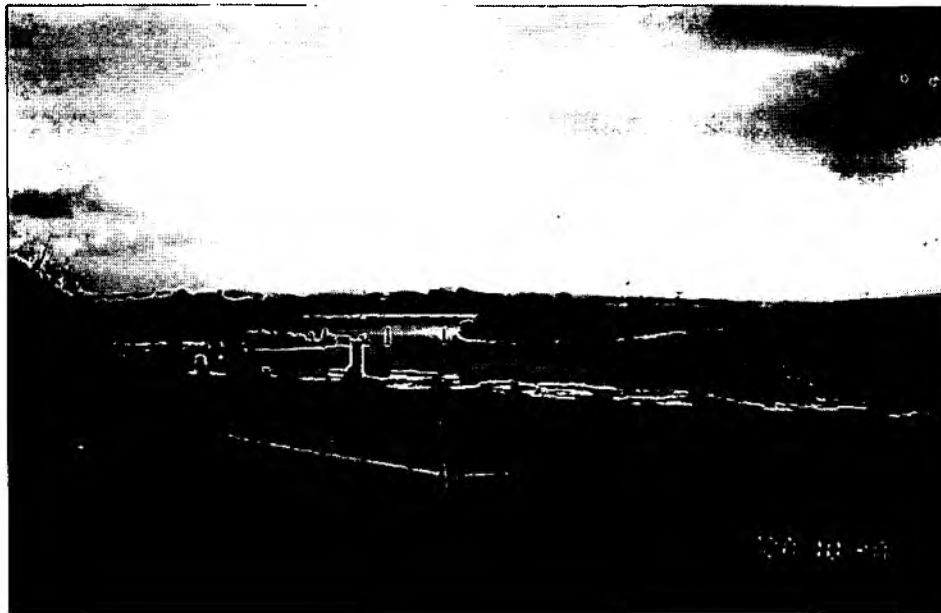
K.3.1 New Forest

Milford-on-Sea



Photograph 5: Extent of water retained upstream of Milford Dam. Successful operation of this Environment Agency structure prevented wide scale flooding of Milford-on-Sea.

Keyhaven



Photograph 6: Flooding at Vidle Van Farm, Keyhaven. Flooding occurred due to overtopping of the Avon Water.

K.4 5TH – 8TH NOVEMBER 2000

K.4.1 East Hampshire

Wallington



Photograph 7: Flooding occurred to 46 properties in North Wallington village due to the overtopping of existing defences.



Photograph 8: Improvements to the flood defence wall carried out by the Environment Agency following the flood event.

Wickham

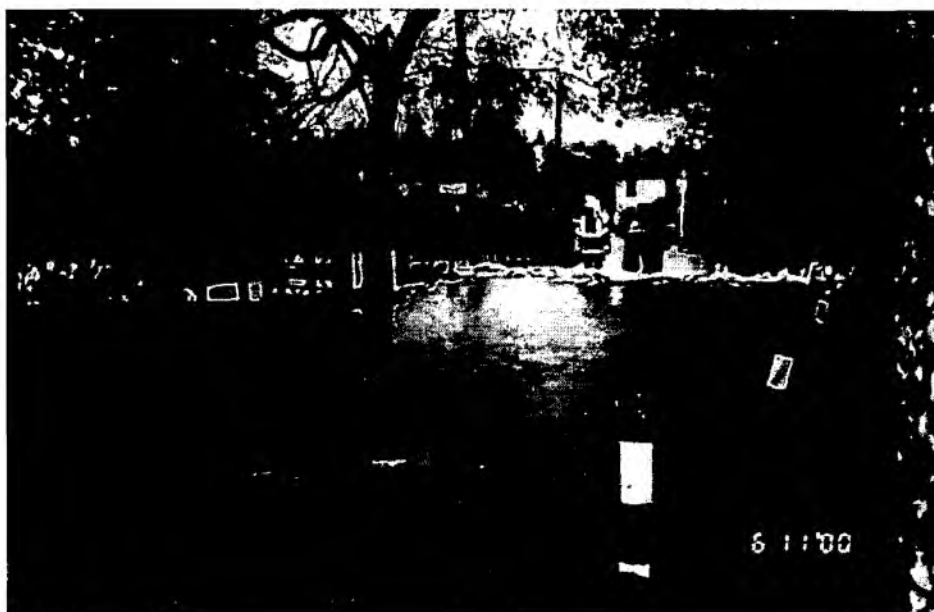


Photograph 9: 24 properties are known to have been affected by flooding (ten internally and 19 externally) at Wickham.

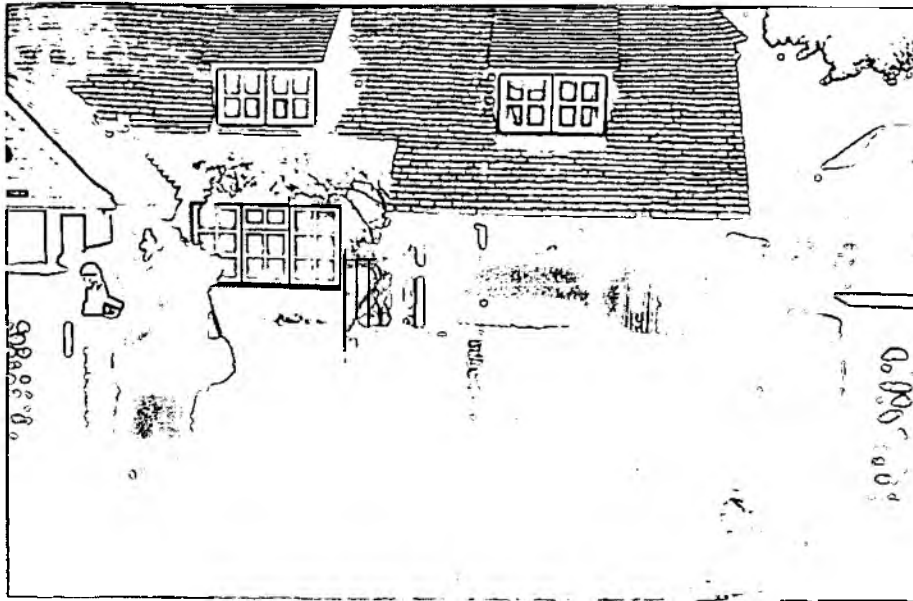


Photograph 10: Flooding to Meonside Court occurred due to the overtopping of an ordinary watercourse alongside the new housing development and inadequate drainage.

Exton



Photograph 11: Exton, looking south down Shoe Lane towards the village. In the background the temporary sand bags wall constructed by the Environment Agency in order to divert water back into the River Meon before reaching the village. Flooding occurred due to the River Meon overtopping its bank upstream of the village.



Photograph 12: Depth of flooding to some properties in Exton

K.5 9TH NOVEMBER 2000 – 28TH FEBRUARY 2001

K.5.1 Test Catchment

Romsey



Photograph 13: The extent of flooding at Rivermead Close, Romsey. Flooding occurred due to the overtopping of the River Test.



Photograph 14: Internal view of flooding at Budds Lane Industrial Estate.

St Mary Bourne



Photograph 3: Photograph showing the sandbagging carried out by the Environment Agency at St Mary Bourne in order to prevent overtopping of the Bourne Rivulet.



Photograph 4: Photograph showing the sandbagging carried out by Environment Agency at St Mary Bourne in order to prevent overtopping of the Bourne Rivulet

Sutton Scotney



Photograph 5: Photograph showing the extent of flooding at New Cottages, Sutton Scotney.

K.5.2 Itchen Catchment

Twyford



Photograph 6: Flooding of Finches Lane, Twyford due to high groundwater levels and ponding of spring flow.

Winchester



Photograph 19: Flooding at Durngate Terrace and North Walls caused by overtopping of the River Itchen.



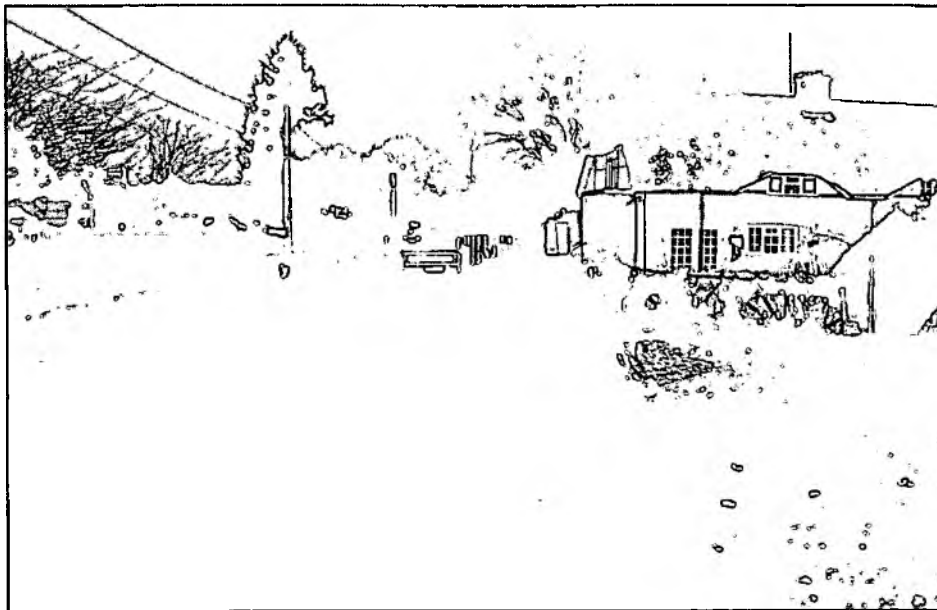
Photograph 20: Flooding to St Bede's Primary School, Winchester. The school remains closed and flood damage costs are estimated in excess of £1 million.

Littleton



Photograph 21: Flooding outside the St John Moore Barracks on the Andover Road. Five properties were affected by flooding at Littleton.

Brown Candover



Photograph 22: Flooding at Brown Candover. Properties at Chilton and Brown Candover suffered from prolonged flooding and required Portaloos due to problems with their septic tanks.

Preston Candover



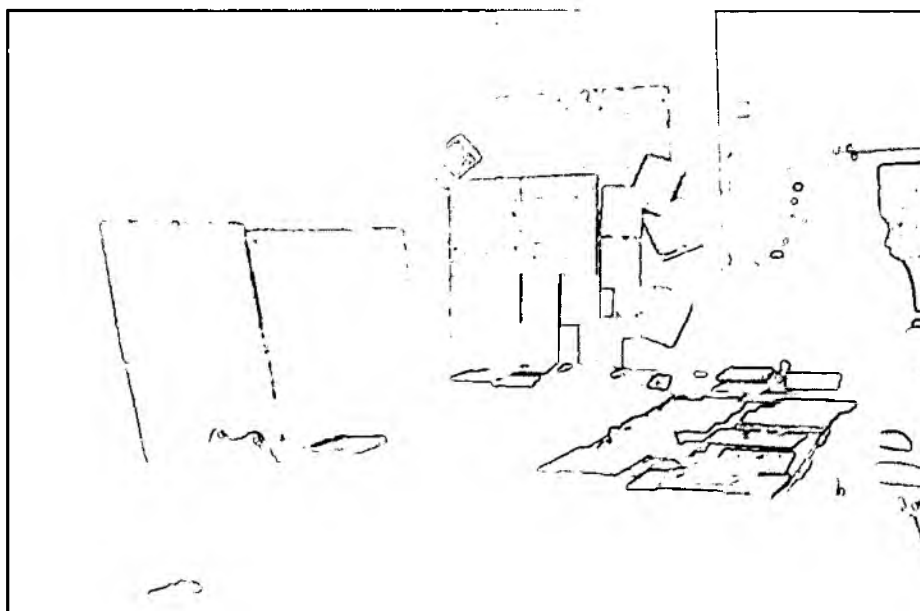
Photograph 23: Flooding at Preston Candover

K.5.2 East Hampshire

Hambleton



Photograph 24: In Hambleton 53 properties suffered internal (ground floor) flooding due to high groundwater flooding, with a further 48 suffering cellar flooding. Commercial losses were also suffered during the event.



Photograph 25: Hambleton Flood Information Centre in the village hall. The centre was manned by volunteers from the village and provided information to residents and assisted with those worst affected by flooding.

Wickham



Photograph 7: Flooding at Wickham Bridge on 13th December 2000.

APPENDIX L: MEDIA ACTIVITIES

A number of media activities took place throughout the flooding event (September 2000 to February 2001). A list of some media activities is shown below.

RADIO INTERVIEWS

10 th October 2000	Radio interviews with Radio Solent and Ocean FM
11 th October 2000	Radio interviews with Radio Solent and Ocean FM
30 th October 2000	Numerous local radio interviews; local radio interviews in Area Incident Room
5 th November 2000	Several interviews with Radio Solent; live interviews on Radio Solent up to midnight.
6 th November 2000	Radio interviews
7 th November 2000	Radio interviews
8 th November 2000	Radio interview for Radio Victory and Wave FM; radio interviews on groundwater situation.
9 th November 2000	Radio interviews on groundwater situation.
10 th November 2000	Radio interviews on groundwater situation.

Numerous radio interviews continued to be given throughout the groundwater event.

RADIO PHONE-IN

12th October - Isle of Wight Radio

PUBLIC MEETINGS

- 2nd October: Meeting held at Portsmouth following the issuing of interim report
- 11th October: Meeting held at Ryde, following flooding of the Monkton Mead, followed by radio and TV interviews
- October : An outside public meeting was held at Exton

TELEVISION

Interview for "Channel 12" – Isle of Wight cable TV

30th October - BBC news TV interviews

OTHER

Telephone interviews with newspapers particularly the Isle of Wight County Press

PRESS RELEASES

The Southern Region issued a number of press releases during the flood event. The list below indicates those which referred to the flooding situation in the Hampshire and Isle of Wight Area: -

- No 153 14 September 2000: Environment Agency prepares for rain across the region
- No 153 15 September 2000: Environment Agency issues first Flood Warnings and Flood Watches in southern England under new code system
- No 153A (Update) 15 September 2000 Time 15:30: Environment Agency issues first Flood Warnings and Flood Watches in southern England under new code system
- No 153A (Update) 15 September 2000 Time 19:00: Environment Agency warns further Flood Warnings are likely this evening - particularly in Hampshire and West Sussex
- No 157 18 September 2000 Time 8:00am Environment Agency warns heavy rainfall is likely to cause flooding across the region during the next 48 hours particularly in Hampshire and Isle of Wight
- No 158 18 September 2000: Environment Agency investigates Portsmouth and Southsea incident
- No 160 20 September 2000: Environment Agency publishes interim report of investigation into Portsmouth and Southsea incident
- No 165 26 September 2000: Environment Agency urges home and property owners across the south to be flood aware
- No 174 02 October 2000: Environment Agency regrets the need for Southern Water to pump sewage into Eastney lake
- No 178 5 October 2000 Environment Agency requests southern water to clean up beaches at Eastney and on Hayling island
- No 179 09 October 2000 (13:40): Environment Agency issues Flood Watches for Hampshire and the Isle of Wight
- No 179c 09 October 2000 (17:35): Environment Agency issues Flood Warning on the Isle of Wight
- No 180 09 October 2000 (20:30): Environment Agency warns more flooding is likely across the region in the next few hours - Flood Warnings have been issued on the Isle of Wight and East & West Sussex
- No 182 10 October 2000 (12.25): Environment Agency warns that further flooding is possible as a band of heavy rain approaches

- No 183 10 October 2000 (13:30): Environment Agency warns more flooding is likely across the region in the next few hours
- No 184 10 October 2000 (18:30): Environment Agency warns more flooding is likely across the region this evening - severe storms expected
- No 185 11 October 2000 Environment Agency releases initial findings into recent flooding at Monkton Mead on the Isle of Wight
- No 184 12 October 2000 (06:00): Environment Agency warns there is flooding across the region more heavy rain is expected for the next 9 hours - East Sussex and north west Kent at highest risk
- No 186a 12 October 2000 (09:00): Environment Agency warns there is flooding across the region more heavy rain is expected for the next 9 hours - East Sussex and north west Kent at highest risk
- No 186c 12 October 2000 (12:00): Environment Agency warns flooding across will continue during daylight hours - East Sussex and north west Kent at highest risk
- No 186d 12 October 2000 (15:00): Environment Agency warns flooding across the south will continue during - East Sussex and Kent at highest risk
- No 188 13 October 2000 (08.15): Environment Agency warns that further flooding is possible as some rivers across the region continue to rise
- No 189 14 October 2000 (11.04): Environment Agency asks people to remain vigilant while river levels slowly fall
- No 191c 15 October (00.17): Environment Agency asks people to remain on their guard as further rain is predicted over Sussex and Kent
- No 194 17 October 2000: Environment Agency warns people to remain on their guard despite today's dry weather
- No 205 27 October 2000 (16.45): Environment Agency urges people to be flood aware as heavy rain is expected over the weekend
- No 207 29 October 2000 (15.30): Environment Agency issues Flood Warnings as heavy rain and high winds threaten the south
- No 207a 29 October 2000 (17.20): Environment Agency issues Flood Warnings as heavy rain and high winds threaten the Isle of Wight
- No 208 30 October 2000 (06.30): Environment Agency warns severe flooding likely this morning across the region as the stormy weather intensifies

- No 209 30 October 2000 (09:00): Environment Agency warns severe flooding likely this morning across the region as the stormy weather continues
- No 209c 30 October 2000 (14:30): Environment Agency warns severe flooding still possible across the region following the overnight storm
- No 210 30 October 2000 (14:45): Environment Agency issues urgent appeal for the public to stay away from swollen rivers and streams
- No 214 1 November 2000 (07:45): Environment Agency says flooding situation improving but region remains on knife-edge
- No 216 01 November 2000 (16:15): Environment Agency continues to monitor as severe storm approaches the south
- No 216 2 November 2000 (09:30): Environment Agency warns more flooding likely as heavy rain sweeps across the region
- No 219 3 November 2000 (08:30): Environment Agency says no major problems overnight but warns there may be further severe flooding on Sunday
- No 219 5 November 2000 (16:00): Environment Agency warns severe flooding is likely across the region in the next 48 hours
- No 219 6 November 2000 (06:45): Environment Agency warns more severe flooding will occur across the region in the next 48 hours
- No 223 7 November 2000 (07:15): Environment Agency warns further severe flooding is likely across the region
- No 225 7 November 2000: Imminent groundwater flooding in east Hampshire
- No 226a 08 November 2000 (12:50): Environment Agency continues to monitor as river levels begin to fall across Hampshire and Kent
- No 228 10 November 2000 (09:00): Environment Agency warns further severe flooding is likely across the region during the next 72 hours
- No 228 11 November 2000 (10:00): Environment Agency warns further severe flooding is likely across the region during the next 48 hours
- No 230 12 November 2000 (09:00): Environment Agency says immediate flooding threat receding but warns many problems will remain across the region
- No 237 22 November 2000: The Environment Agency reminds people to continue to be prepared for flooding
- No 249 1 December 2000: Flood warnings follow heavy rain, remain vigilant says the Environment Agency

- No 254 7 December 2000 (09:00): Environment Agency warns the severe storm sweeping in across the region will cause widespread flooding
- No 257 7 December 2000 (16:00): Environment Agency concerned that expected storm will now cause widespread flooding during hours of darkness
- No 259 10 December 2000 (13:00): River levels rising across the south following more heavy showers
- No 260 11 December 2000 (12:30): Three fronts of heavy rain due to hit England and Wales Environment Agency warn public to be on their guard
- No 254 12 December 2000 (08:00) Environment Agency warns the severe storm sweeping in across the region will cause widespread flooding
- No 265 13 December 2000 (10.30): Yesterday's rainfall and the high spring tides are cause for concern says the Environment Agency
- No 267 13 December 2000 (16.30): Heavy rain of the last two days is causing flooding across the region
- No 268 13 December 2000 (17.30): Environment Agency warns flooding could last for several months in Hampshire
- No 269 14 December 2000 (10.20): The public should remain vigilant says the Environment Agency despite the respite in the weather
- No 272 21 December 2000: Environment Agency warns 7,000 homes remain at high risk of flooding across the south
- No 290 31 December 2000 (10.00): Environment Agency warns of new year flooding risk
- No 01 1 January 2001 (07.00): Environment Agency issues new year flood warning
- No 03 04 January 2001 (11.45): Second band of rain may cause flooding problems warns the Environment Agency
- No 06 5 January 2001 (07:00): Environment Agency warns of flooding across the region following a night of heavy rain
- No 06a (update) 5 January 2001 (09:00): Environment Agency warns of flooding across the region following a night of heavy rain
- No 24 26 January 2001 (16.30): Environment Agency warns that heavy rain could cause localised flooding.
- No 31 (update) 8 February 2001 (09:00): Environment Agency warns of severe flooding across the Region following a night of heavy rain

- No 33 8 February 2001 (18:30): Threat of flooding still very real warns the Environment Agency
- No 32 8 February 2001: Environment Agency sends in Emergency Teams following a night of torrential rain.
- No 34 9 February 2001 (06:00): Environment Agency warns that threat of flooding remains

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ENVIRONMENT AGENCY FLOOD LINE

0845 988 1188

ENVIRONMENT AGENCY EMERGENCY HOTLINE

0800 80 70 60



**ENVIRONMENT
AGENCY**