



## Buckinghamshire County Council

# *Report to Overview and Scrutiny*

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**Committee:** Environment and Community Services.  
**Date:** 14 December 2005.  
**Title:** Highway Flooding Update.  
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### **Introduction and summary**

During the past five years (i.e. since the severe groundwater flooding of Winter 2000/01) the Overview and Scrutiny Committee has received regular updates regarding highway-flooding issues in Buckinghamshire. The Chairman has asked that this update report be produced to highlight any significant issues in relation to highway flooding that have occurred during the past year or are predicted this winter.

### **Recommendation**

The Overview and Scrutiny Committee is invited to NOTE the report.

### **Background information**

The past twelve months have been relatively dry, in fact the Environment Agency have reported that this period has been the sixth driest 12 month period in the Thames Region North East Area since records began in around 1920. For this reason groundwater levels have been continuing to decline and some chalk streams have been dry for many months.

The Meteorological Office has made a long range forecast that this winter has a 65% probability of being harder than normal, with the strong possibility of a prolonged cold spell from December through to the end of February. It is foreseen as being a central European type of winter with a higher than normal proportion of easterly weather flows bringing lower than average precipitation. For the main it would be colder than average but also drier (a separate information briefing paper has been sent to all County Councillors regarding preparations for the predicted cold weather).

Generally, groundwater and river levels have not posed a high risk to highway flooding in Buckinghamshire during the past twelve months and at this stage there is nothing to suggest there is a high risk for the rest of this winter period. A copy of the Environment Agency's groundwater plots is appended to this report, which show steadily declining water levels in four key monitoring wells.

Although the past twelve months have been relatively dry, October was the second consecutive month with above average rainfall, this coupled with Autumn leaf fall has resulted in a number of localised flash floods affecting small areas of carriageway across Buckinghamshire. Such flash flooding is not unusual and is dealt with by Area Office staff in conjunction with our contractors, Fitzpatrick.

During the 2004/05 around £195,000 was spent on highway drainage schemes and this year (2005/06) around £145,000. This work is developed as part of the local structural maintenance programme and funded from the Local Transport Plan maintenance block allocation. Schemes are prioritised on the basis of reducing risk to road users and flood risk to property.

The Environment Agency continued to issue regular information updates to help us prepare to deal with potential highway flooding and the most recent October 2005 summary update is appended to this report.

### **Local Contacts:**

The local contacts for operational highway flooding matters are:

**Chiltern, South Bucks and Wycombe:** Mark Averill (Group Manager Area Maintenance South) 01494 475321.

**Aylesbury Vale:** Tim Fowler (Group Manager Area Maintenance North) 01296 383767.

### **Background Papers**

Previous update reports to the Overview and Scrutiny Committee.



## **Thames Region - NE Area**

### **Water Resources Summary – October 2005**

#### **Summary**

October was the second consecutive month with above average rainfall in NE Area. However, groundwater levels have continued to decline in all of the key observation boreholes with 4 out of 8 remaining below drought trigger level. Flows at all key gauging stations have increased largely because of runoff from urban areas. Soil Moisture Deficits have decreased to slightly below the LTA.

#### **Rainfall**

NE Area received 144 percent of the long-term average (LTA) monthly rainfall with most of the rainfall in the second half of October. Despite recent rainfall this has been the sixth driest 12 month period in NE Area since records began in around 1920. The highest total rainfall was in Chilterns East with 95mm, 51mm of which fell between the 18<sup>th</sup> and 25<sup>th</sup> of October.

#### **Soil Moisture, Recharge and Groundwater Levels**

As a result of the rainfall the average Soil Moisture Deficits (SMDs) decreased and are slightly below average for the October. In Chiltern East there was 12mm of Effective Rainfall and 11mm in the Lee Chalk, this is slightly below the LTA. Groundwater levels have continued to decrease in all key wells at near the average rate for October. All of the key wells are well below the LTA with Ballingdon Farm, Ashley Green, Stonor and Lilley Bottom all below drought trigger levels.

#### **River Flows**

Flows at all the key gauging stations increased during October. However, all rivers apart from the Brent and Crane are still below trigger level. The increases in the Chalk Streams are likely to be because of urban runoff rather than any increases in baseflow from the groundwater. Apart from where there are significant clayey drift deposits such as in the Upper Stort and Upper Rib chalk river sources have not started to migrate upstream yet and there remain large stretches of dry river bed.

#### **Water Resources Situation**

Despite recent rainfall little recharge has occurred and nearly all of the rivers and half the boreholes monitored remain below drought trigger level. However, the SMD is now below average and so further high rainfall is likely to cause significant recharge. This makes the next few months critical if the region is to avoid an even more serious drought next summer.

**Groundwater & Contaminated Land (Team B)**

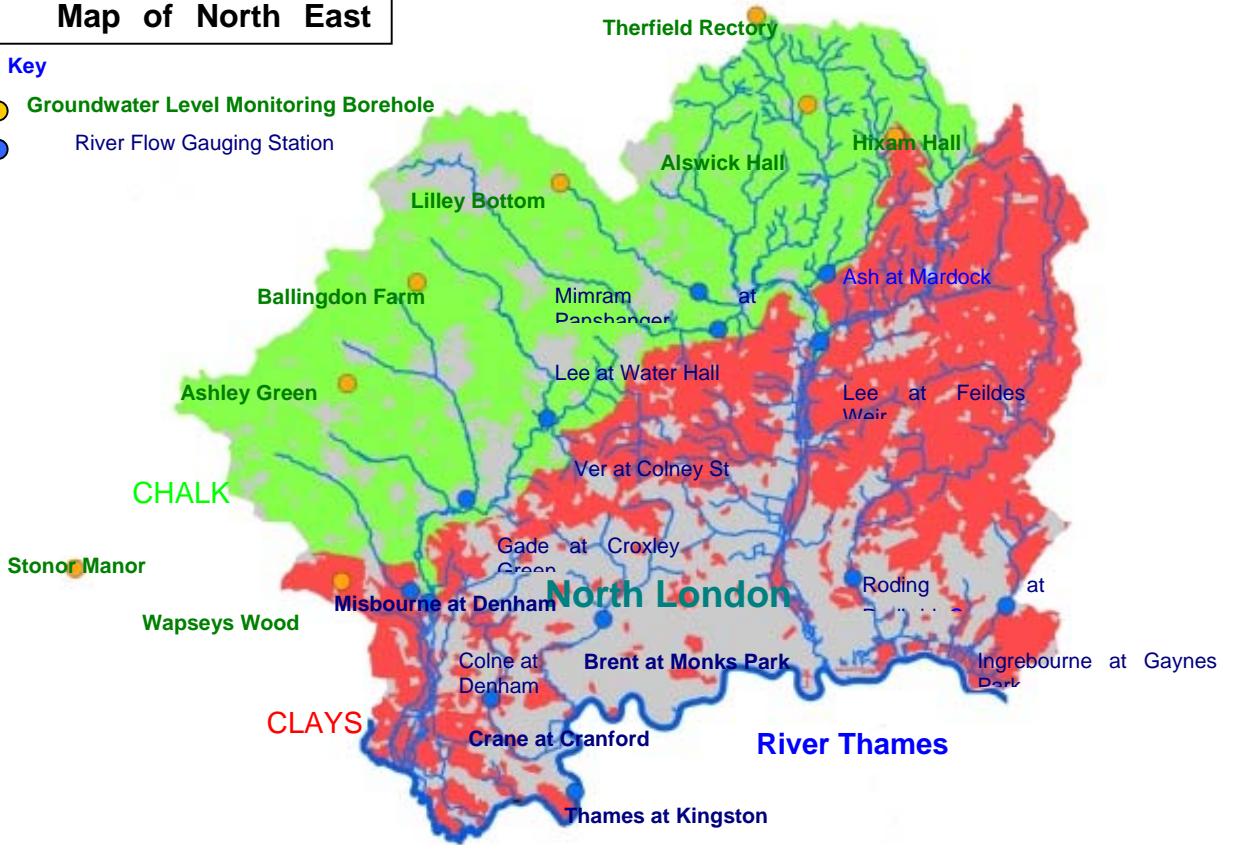
**DB November 2005**

# Map of North East

## Key

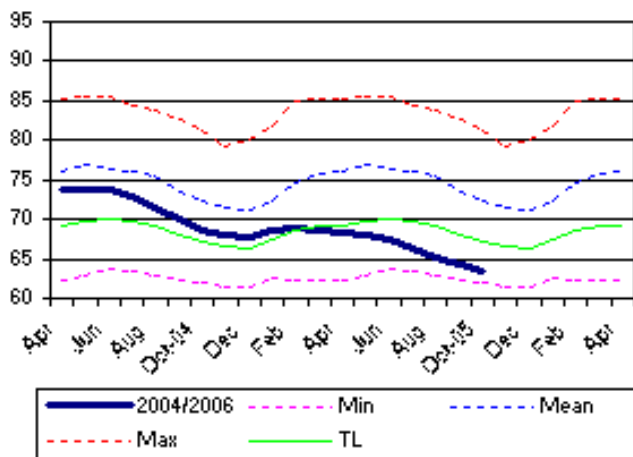
● Groundwater Level Monitoring Borehole

● River Flow Gauging Station

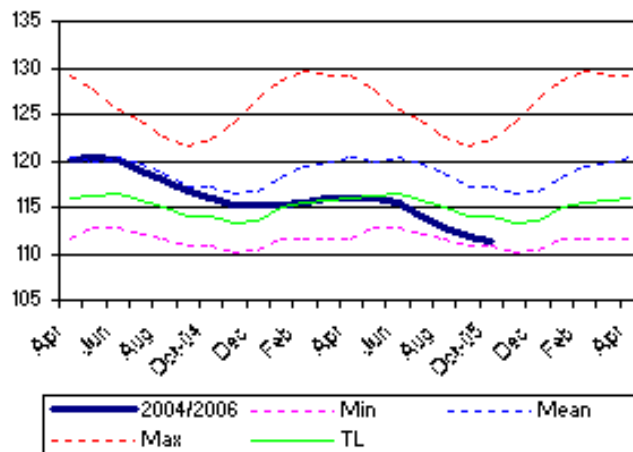


# Groundwater Levels

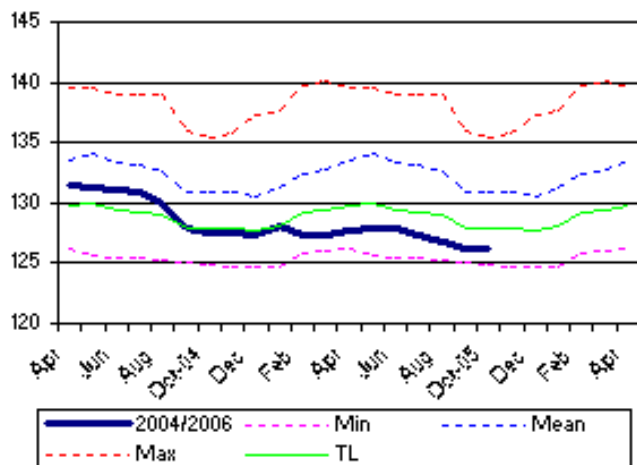
**CHILTERN WEST - Stonor**



**CHILTERN NORTH CENTRAL - Ashley Green**



**CHILTERN EAST - Ballingdon Farm**



**CHILTERN SOUTH CENTRAL - Wapsey Wood**

