

## **WARWICK DISTRICT COUNCIL**

**TO:** HEALTH AND CONTROL COMMITTEE - 12<sup>th</sup> January 2000

**SUBJECT:** EFFECT OF TELECOMMUNICATIONS MASTS ON HEALTH

**FROM:** ENVIRONMENTAL HEALTH BUSINESS UNIT

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### **PURPOSE OF REPORT**

At the meeting of this committee on 17<sup>th</sup> November 1999 a motion was referred by Councillor Mrs Goode, contained in Item 5 of the agenda;

“In view of the substantial public concern regarding potential health hazards from telecommunication masts, this committee calls for a report, with a view to a District-wide ban on telecommunication masts being sited in residential areas.”

The purpose of this report is to provide information in response to the motion.

### **BACKGROUND**

In September 1998 a briefing note was prepared for Members in order to give information on research into the health effects of exposure to electromagnetic fields arising from power sources, such as overhead cables. Since that time, increasing concern has been expressed regarding the health effects of mobile telephone handsets and their base stations.

Mobile telephone handsets operate between 800 - 1800 Hz although new models can operate up to 2100 Hz. Base stations operate at radio frequencies between 800 Hz - 10 GHz. Handsets and base stations emit and receive radio frequencies. Radio waves are a form of non-ionising radiation. Radio frequencies (RF) between 1 MHz and 10 GHz are known to cause heating due to energy absorption.

Base stations usually consist of a metre long antenna mounted on another structure. The antenna emits a confined ‘spot light’ beam of RF that is parallel to the ground. There is a narrow vertical spread so the RF intensity below the antenna is low. To ensure maximum efficiency, power is directed away from the base unit. The transmissions from the base station are variable depending on the number of calls made and the number of transmitters in operation in the vicinity.

The National Radiological Protection Board (NRPB) is the Government appointed advisory body on both ionising and non-ionising radiation. The NRPB guideline for mobile telephones has been developed to ensure that there are no heating effects when a mobile telephone is used. The NRPB has also developed guidelines for exposure to RF's emitted by base stations. Again, at this level of exposure, the radio frequencies emitted by base stations should not cause any heating.

### **Research**

Exposure to RF fields of low intensity does not produce significant heating. However, such exposure has been shown to alter electrical activity in the brains of cats and rabbits by changing calcium ion motility. These effects are not well established and implications for humans are not sufficiently well understood to provide a basis for restricting human exposure to RF fields of low intensity at this stage.<sup>1</sup>

The preliminary results of a recent study by a Swedish cancer specialist, Dr Lennart Hardell, suggest that the use of mobile 'phones has resulted in an increase in a rare type of brain tumour. This study is in its early stages and the results are not conclusive<sup>2</sup>.

Cancer studies have not produced convincing evidence for an effect on tumour incidence. A recent study involving exposure of genetically engineered mice to an RF transmitting antenna showed increased incidence of cancer, however this cannot be considered representative of human exposure conditions.<sup>1</sup>

Research undertaken by Dr G Hyland, a theoretical physicist at Warwick University, states that the non-thermal effects of exposure to RFs were not taken into account when safety standards were determined. His concern is that the frequencies emitted by base stations and mobile 'phones correspond with the frequency of alpha brainwaves, thus affecting neural processes. Dr Hyland's report has not yet been published and as such no other scientist has been able to replicate experiments to support his theory.<sup>3</sup>

The House of Commons Science and Technology Committee, having listened to evidence on the potential health effects of exposure to mobile telephones and base stations, recently concluded that neither posed a risk to health. However, as a precautionary measure and to reassure the public, the Committee has recommended that a lower emission standard is imposed to bring Britain in line with the European Union.

The NRPB Advisory Group on Non-Ionising Radiation, chaired by the eminent epidemiologist Sir Richard Doll, has addressed the question of possible long term health effects arising from the use of mobile telephony. The conclusion of this study was that there is no firm evidence to support claims that exposure to the level of radio frequencies emitted by either mobile telephones or their base stations cause ill health.

### **Ongoing research**

The NRPB has formed an Independent Expert Group on Mobile Phone Technology to review research into the health effects of mobile 'phones and base stations. The group are expected to report in early 2000. At the present time, the NRPB's position remains unchanged, in that there are no proven health effects of exposure to the radio frequencies emitted by either mobile telephones or base stations. Nonetheless, the NRPB has also stated that the lack of evidence does not prove absence of risk and endorses the need for further research into this subject.

An International Electromagnetic Frequency Project was established in 1996. This body also reviews scientific research into, amongst other things, mobile telephones and their base stations. The project is due to complete in 2006.

The European Commission Expert Group (UK Chairman) on Mobile Phones has produced a set of research recommendations covering cellular studies, experimental investigations in animals, human volunteer studies and epidemiology. This work is being taken forward within the EC Fifth Framework Programme.

### **The 'Precautionary Principle'**

There has been a great deal of discussion in many authorities regarding the relevance of the 'precautionary principle' when applied to the installation of telecommunications masts. In essence the 'precautionary principle' means that in the absence of conclusive evidence to prove that radio waves from telecommunication masts do not cause ill health, authorities should err on the side of caution and not permit their installation, or require the applicant to consider other sites away from sensitive properties.

A number of local authorities have taken this approach. Indeed, Warwickshire County Council does not allow the erection of masts on any of its buildings. Earlier this year Warwick District Council itself decided to withdraw permission for the installation of telecommunication masts on its buildings. Several other local authorities have followed suit.

The Scottish Parliament is currently considering adopting the precautionary principle and evidence is currently being considered by the Transport and Environment Committee.

The difficulty that arises from the use of the precautionary principle is that it is not based on anything quantifiable. It therefore becomes impossible to set 'safe' distances. It would also be very difficult to defend in a planning appeal situation.

### **Planning Considerations**

Many telecommunication masts do not require formal planning consent as they are considered to be 'permitted developments'. Planning Policy Guidance 8 deals with the development of telecommunication facilities. In this guidance note it is stated that radiation is a matter for the Health and Safety Executive and should not be dealt with under the planning system.

There have been a number of planning appeals involving the installation of telecommunication masts. In Mohammed Al Fayed -v- Elmbridge District Council the Judge concluded that whilst health and safety is a 'material consideration' it is not effectively a planning issue because responsibility for health and safety in this instance lies with the Health and Safety Executive.

In an appeal lodged by Vodafone following refusal by the Royal Borough of Windsor and Maidenhead for the installation of a telecommunications mast, the Planning Inspector concluded that there were '...insufficient reasons for withholding permission for reasons of health and safety...' The appeal was dismissed, however, on the grounds of adverse visual impact.

Current scientific evidence indicates that exposure to RFs emitted by base stations is unlikely to produce cancers. However, the recommendation of the World Health Organisation (WHO) is that fences or barriers should be erected around antennae to prevent unauthorised access. A further recommendation is, that when siting base stations, aesthetics and the public's sensitivities should be taken into account.

### **KEY ISSUE STRATEGIES**

None relevant

### **CONCLUSIONS**

There is a distinct lack of conclusive epidemiological studies into this subject. Further studies are currently being undertaken in order to produce clear and replicable conclusions.

At the present time, the lack of conclusive evidence means that an objection to a planning application for the installation of a telecommunications mast on health grounds would be difficult to sustain. The precautionary principle has been used by a number of local authorities however this approach has not stood up to scrutiny when examined at planning inquiries.

More research into the subject is being undertaken and it is possible that the guidance given to local authorities will change in response to further information.

## RECOMMENDATIONS

That this committee notes the report and reaches a decision as to whether to recommend to the Council that the 'precautionary principle' be applied to planning decisions related to applications for telecommunication masts.

## BACKGROUND PAPERS

Report to Housing Committee 7 January 1997 - The siting of telecommunication masts on council buildings

## REFERENCES AND BIBLIOGRAPHY

1. World Health Organisation Fact Sheet No. 193
2. Electronic Telegraph issue 1459
3. Report presented to the House of Commons Science and Technology Committee
  - a) Environmental Health News, Vol. 14 No. 46, 26 November 1999
  - b) Daily Telegraph, Thursday September 23 1999
  - c) NRPB Response Statement, R9/99, September 22 1999
  - d) The Guardian, Friday December 3 1999
  - e) NRPB Advisory Group on Non-Ionising Radiation, Comment on American Study of Residential Magnetic Fields and Childhood Leukaemia. February 2 1998
  - f) International EMF Project 1997-1998 Progress Report
  - g) Letter from Department of Health dated 23 July 1999 headed 'Mobile phone base stations'
  - h) Information from Powerwatch website
  - i) Electromagnetic Fields and the Risk Of Cancer, report of an Advisory Group on Non-Ionising Radiation, Chairman Sir Richard Doll. Radiological Protection Bulletin No. 154 pp10-12
  - j) Memorandum submitted by the Department of Trade and Industry to the Select Committee on Science and Technology. Report prepared 22 September 1999
  - k) Health issues related to the use of hand-held radiotelephones and base transmitters. International Commission on Non-Ionising Radiation Protection (ICNIRP) Health Physics, Vol. 70, number 4. April 1996

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**Areas affected:** District wide