Appendix A

www.oxford.gov.uk

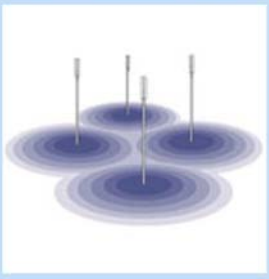
OXFORD CITY COUNCIL

Local Development Framework

Telecommunications

Supplementary Planning Document





Adopted September 2007

[details of adoption] and is available for downloading at http://www.oxford.gov.uk/spd

Planning Policy
Oxford City Council
Ramsay House
10 St. Ebbes Street
OXFORD
OX1 1PT

Tel: 01865 252847
Fax: 01865 252144
planningpolicy@oxford.gov.uk

[PLC logo]

Translations available

অনুবাদের ব্যবস্থা আছে
提供有翻譯本
तरजमे उपलब्ध हैं
ਤਰਜਮੇ ਮਿਲ ਸਕਦੇ ਹਨ
ترجمہ دستیاب ہے

T: 01865 **252735**

Front page photos:

1	2	3
4	5	6
7	8	9

1. *Camouflage-painted monopole (Source: Vodafone)*
2. *Phone mast combined with street furniture, Birmingham (Source: Vodafone)*
3. *Microcell antenna mounted on a building in Oxford City centre (photo by author)*
4. *Antenna disguised as a chimney (Source: Stappard Howes, Chertsey., Surrey)*
5. *Diagram showing how a cell network operates (Source: Ofcom website http://www.ofcom.org.uk)*
6. *'Tree mast' at Bartlemas, Oxford (photo by author)*
7. *Antennas on weathervane of Grade II listed church, Windsor (Source: Vodafone)*
8. *Streetworks monopole alongside light column, Oxford (photo by author)*
9. *Phone mast disguised as traditional street furniture (Source: T-mobile)*

CONTENTS

Appendices

SECTION 1: THE MOBILE PHONE NETWORK

Purpose of SPD

1. The adopted Oxford Local Plan 2001-2016 (OLP) includes **Policy CP.24 – Telecommunications**, concerning proposals for developing telecommunications networks. The Policy seeks to balance environmental, visual, amenity and health concerns with the future development needs of the mobile technology networks.

2. This Supplementary Planning Document (SPD) sets out in detail the City Council's policy and procedure on different types of telecommunications development to support Policy CP.24. Areas of guidance include:
   - background to how the networks operate;
   - overview of national and regional policy;
   - guidance on consultation;
   - outline procedure for network development and new proposals;
   - information expected as part of a submission for telecoms development;
   - design and siting guidance (including policy on site sharing);
   - dealing with health concerns.

Background

3. The mobile phone industry continues to grow. In September 2006, the industry estimated there were more than 65 million mobile phones in use in the UK.[1] Five companies are currently licensed by the Government under the Telecommunications Act 1984 to operate mobile phone networks in the UK. They are:
   - '3' (formally Hutchinson 3G);
   - O2 (formally BT Cellnet);
   - Orange;
   - T-Mobile (formally One 2 One);
   - Vodafone.

4. Most mobile phones operate on the 'second generation' or 2G network, which is already well established. A new 'third generation' or 3G network is providing additional mobile services such as emails, video conferencing and other high-capacity data transfer. 3G licences issued by Government require that each operator's network covers 80% of the UK's population with mobile phone users by the end of 2007, although development of the 3G networks is likely to continue as overall network capacity is increased. 3G is currently responsible for the majority of new mobile network infrastructure.

5. ***Figure 1*** shows in simplified form how a network operates. The network consists of a system of coverage cells, which in urban areas are generally 200-500 metres apart (although this can vary depending on the number of users, land use and topography). A base station in the cell centre emits and receives radio signals to and from mobile phones in use. Some of the resources that explain in more detail how the mobile phone network works are listed in ***Appendix 7***.

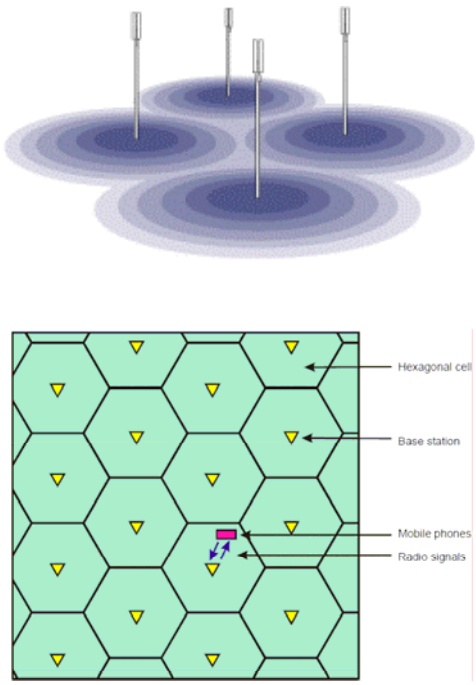


Figure 1 How the network operates

6. There are four 2G networks in the UK (one for each of the operators listed above, except '3').

[1] Mobile Operators' Association, September 2006

All these networks have different cell boundaries.

7. Five 3G networks are provided separately by the commercial telecommunications operators. The 2G network operators can normally modify their existing 2G sites to incorporate the new 3G networks. However, because 3G operates at a higher frequency, the cells created by base stations are smaller than their 2G counterparts. Additional base stations are often required to fill gaps in the 3G coverage; this is illustrated in ***Figure 2***. The 3 network only operates on a 3G system, so 3 is developing its network from scratch.

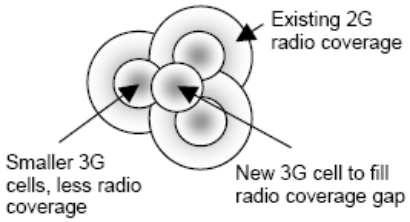


Figure 2 3G cell network rollout

8. As well as the conventional mobile phone networks, other radio-based communications systems are also operational in the UK. An example is TETRA (Terrestrial Trunked Radio), which has been used to develop the Airwave emergency services radio system. The Airwave network was completed in 2005. The railway industry also uses radio masts and antennas (national planning regulations currently class these as permitted development, if intended for operational use). Wi-fi is a further radio-based technology which allows wireless computer internet access, and is becoming commonplace.

Exposure to radiowaves

9. Mobile phones and their base stations transmit and receive radio signals using electromagnetic frequencies (EMF). These can also occur naturally from the earth's magnetic field or from a range of sources such as domestic appliances, power lines and electric trains.

10. In recognition of public concern about possible health effects from EMF emissions from mobile phones and associated base stations, the Government set up in 2000 an Independent Expert Group on Mobile Phones, chaired by Sir William Stewart. Key conclusions of the group's report (usually referred to as the 'Stewart Report') were that:

- the balance of evidence indicates that there is no general risk to the health of people living near to base stations where the exposures are only small fractions of guidelines;
- gaps in scientific knowledge nevertheless justified a precautionary approach to mobile phone technology;
- lower guideline thresholds for public exposure to EMF should be adopted as a precautionary measure.

11. The lower guideline thresholds referred to are set by the International Commission on Non-Ionizing Radiation Protection (ICNIRP). These are lower than the previously used guideline thresholds set by the National Radiological Protection Board (NRPB), by a factor of between 6.5 and 11 within the mobile phone frequency range (in terms of power density).[2] Since publication of the Stewart Report, and the subsequent revision of Government and industry policy on the issue, all mobile phone technology keeps to the ICNIRP reference levels for public exposure to EMF.

[2] Mobile Phones and Health. Report of the Independent Expert Group on Mobile Phones (2000), paragraph 6.31

SECTION 2: POLICY FRAMEWORK

12. All planning decisions have to be taken in accordance with the development plan unless other material considerations indicate otherwise. Planning authorities must also take account of national planning policies and government advice. The paragraphs below summarise the main relevant advice arising from Government guidance and the emerging Regional Spatial Strategy.

Oxford Local Plan 2001-2016 (OLP) (adopted November 2005)

13. Policy CP.24 forms the basis of this SPD, and is set out in full in ***Appendix 1***. Several other policies in the OLP may also be material in terms of location and appearance; ***Appendix 2*** gives an overview of these.

Draft South East Plan (SEP) (2006)

14. The SEP will, when adopted, constitute the Regional Spatial Strategy (RSS) for the South East, and will therefore form part of the Development Plan. The Draft SEP was submitted to the Government in March 2006, and the final document is likely to be adopted in early 2008. The Draft SEP supports improvements to communications technology that increase access to goods and services without increasing the need to travel.

Planning Policy Guidance 8: Telecommunications (PPG8) (2001)

15. PPG8 sets out the Government's advice on planning for telecommunications development, and is a material consideration in determining planning applications and applications for prior approval. The guidance is based on the following principles:

- facilitate the growth of new and existing telecommunications systems, while keeping the environmental impact to a minimum;
- ensure consumer choice, in terms of provision and services available;
- emphasise national policies for the protection of the quality of countryside and urban areas;
- consider the significance of, and need for, the proposed development as part of a national network;
- local planning authorities should not seek to prevent competition between different operators, and should not question the need for the system which the proposed development is to support.

16. Specific recommendations made in PPG8 include strong support for mast and site sharing, where this represents the optimum environmental solution; use of existing buildings to mount antennas; support for innovative design solutions; and the submission of a certificate to demonstrate compliance with ICNIRP thresholds for public exposure to radiofrequency (RF) emissions. It also encourages operators and local planning authorities to hold annual discussions about rollout plans for each authority's area.

17. PPG8 may in future be superseded by a new Planning Policy Statement (PPS). This would also be material consideration in determining planning or prior approval applications for new telecommunications development.

The Code of Best Practice on Mobile Phone Network Development (2002)

18. In 2002, the Office of the Deputy Prime Minister issued a Code of Best Practice. This offers Government best-practice guidance for local authorities and network operators on developing the mobile phone network. It also recommends procedural (but mainly non-statutory) standards for consultation arrangements, and information which should be submitted to local planning authorities as part of the planning process. The Code is likely to be revised in coming years, in the light of practical experience.

19. The City Council supports the key principles expressed in the Code, namely effective and meaningful public consultation, and ensuring transparency of information. These principles have been applied throughout this SPD. The City Council also supports the 'Operators' Ten Commitments', which the main mobile network operators adopted to show they were willing to address community concerns. In relation to the planning process, the Ten Commitments pledge thorough consultation and communication before and during the formal planning application stage, and co-operation on site sharing.[3]

[3] The Operators' Ten Commitments are set out in full in the Code of Best Practice on Mobile Phone Network Development (ODPM, 2002) (Annex C), and on the Mobile Operators' Association website (see ***Appendix 8*** for details)

SECTION 3: PROCEDURE FOR NEW PROPOSALS

Types of development

20. Telecommunications development falls into four main categories, each having a different set of statutory procedures and conditions. The following paragraphs summarise the main types of development falling into each category; conditions that apply; and the formal decision-making process. Note that this is a broad outline of planning procedure, and should under no circumstance be interpreted as the law.[4]

'De minimis' equipment

21. Many microcell- and picocell-type base stations (see ***Glossary)*** are so small that they are barely noticeable, so they are not classed as development. These often look like burglar alarms on the outside of buildings. They do not normally need planning permission; however, the City Council should be given 1 calendar month's prior notification (see paragraph 23 below). However, full planning permission and listed building consent will be needed where works to a listed building are involved (see advice below).

Photo 1: Example of a microcell antenna which could be classed as 'de minimis'

*Permitted development **not requiring** prior approval*

22. This includes antennas on a building or similar structure where the antenna is less than 4 metres high, and radio equipment housing with a volume of 2.5m^3 or less, unless in a Conservation Area or Site of Special Scientific Interest (SSSI) or on a listed building (see below). The following conditions apply to telecommunications permitted development:

- Antennas and apparatus shall, as far as practicable, be sited so as to minimise its effect on the external appearance of the building.
- Antennas and apparatus will be removed as soon as reasonably practicable after they are no longer required for telecommunication purposes.

23. The City Council must be notified of any such development at least 1 calendar month before it takes place, and during this period it will try to let the developer know of any issues of concern.

*Permitted development **requiring** prior approval*

24. This includes any mast 15m or less in height, or any antenna on a building or structure where the antenna would exceed the height of the building by 4m or more. It also includes radio equipment housing with a volume of over 2.5m^3, and some development ancillary to radio equipment (e.g. fences, access roads). Development within a Conservation Area or SSSI, or on a listed building, is excluded from permitted development rights.

25. Additional procedural conditions apply to this type of development, by which the City Council has 56 days to notify the applicant whether prior approval is required, and whether the design and siting are acceptable. The developer gains deemed consent if the City Council does not respond within 56 days of receiving the application. In practice, prior approval applications are treated in the same way as applications for full planning permission,

[4] Advice in paragraphs 21 to 28 is a summary interpretation of the planning regulations applicable to the Electronic Communications Code Operators, who are defined by the Communications Act 2003 (As Amended). It is not intended to state or substitute the law. Refer to Parts 24 and 25 of the Town and Country Planning (General Permitted Development) (Amendment) (England) Order 2001 (As Amended) for the full regulations relating to telecommunications development classed as permitted development.

and carry the same requirement to formally consult the public. The City Council's procedures and policy for prior approval applications are set out below.

Full planning permission

26. Development which is not classed as permitted development requires full planning permission. This includes:

- ground-based masts exceeding 15m in height (except like-for-like replacement);
- some roof-mounted antennas more than 6m in height (depending on the height of the building);
- some building-mounted antennas facing a highway within 20m of the highway;
- development that would result in more than two antenna systems on a building less than 15m high, or three antenna systems on a building 15m high or more;
- development on a listed building or scheduled ancient monument;
- development in a Conservation Area or Site of Special Scientific Interest (SSSI).

27. Where full planning permission is required, the City Council will normally determine the application within eight weeks of it being registered, including a three-week period for public comment. Development cannot proceed without the benefit of planning permission.

Listed building consent

28. Listed building consent is required for works to a listed building (internal or external) that in any way affect its special interest as a listed building. The timescale for determination is the same as for a planning application. Works to Grade I and II* listed buildings have to be checked by the Government Office before a decision can be issued. Further advice is set out below.

29. Buildings in ecclesiastical use may be exempt from requiring listed building consent. Prospective applicants should consult the City Council's conservation team for further advice.

30. The City Council should be informally involved in planning telecoms networks well ahead of any formal submission. A procedural framework for this process is set out in the following section.

The annual rollout

31. All five main network operators have committed to submitting details each year of all their proposed development sites for the forthcoming year. They normally submit this information every autumn. The City Council is committed to making this information publicly available, and will publish on its website an indicative map of proposed site locations from the information submitted by the operators. Copies of this map, and all information submitted, will also be available at Planning Reception for public viewing.

32. On receiving the annual rollout, the City Council will normally invite the operators to a meeting to discuss the proposed pattern of development. The City Council may comment on particular sites where concerns have been identified, and point out areas that it believes offer scope for sharing sites or infrastructure.

33. The City Council will also indicate areas in Oxford where there are significant development proposals, and encourage operators to take account of the location and type of new development when planning their networks. Operators and site developers should ensure that all development proposals integrate network infrastructure into the overall scheme.

34. Operators will be expected to take account of all comments made by the City Council in response to the annual rollout when submitting planning and prior approval applications. However, such comments will, in all cases, be informal, and will not therefore prejudice any future formal recommendation to or decision by the City Council.

Pre-application discussion

Proposals requiring planning permission or prior approval

35. PPG8 and the Code of Best Practice make clear that operators are expected to hold pre-application discussions with the City Council, and in some cases local residents, schools and colleges. The City Council's Statement of Community Involvement (SCI) strongly encourages developers to consult the Council and community at an early stage, and to consider arranging a local meeting. The Code of Best Practice sets out different levels of consultation appropriate to different site circumstances, under a system referred to as the Traffic Light Model (TLM). The applicant will then use the rating assigned (green, amber or red), as pre-agreed between parties, to draw up a 'consultation plan' (which should be included in a consultation statement). Developers should also consult statutory and other expert bodies at the pre-application stage as appropriate

36. ***Appendix 3*** summarises the TLM. Prospective developers must understand Oxford's character as a unique mix of dense urban (mainly residential) development, interspersed with sensitive areas of open landscape, 16 conservation areas, and a historic City centre of international significance. These features should be reflected in the traffic light rating.

37. The City Council expects applicants to submit plans and information to the planning department for pre-application comment at least 14 days before making a formal application. Submitting and discussing them earlier would allow officers to contribute to the consultation plan, and comment on the proposal, in a more meaningful way. Early pre-application discussions allow the City Council to suggest alternative sites or designs that may be preferable to the one proposed, and allow full community engagement. This stage also allows officers to clarify what information will be required as part of the formal planning submission.

38. The City Council will expect submission of the following information at the pre-application stage:

- details of the search area and pre-proposal coverage plot;
- an indicative list of feasible alternative sites that have been assessed;
- plans and elevations to scale, to indicate the scale and appearance of the proposal;
- a draft Health and Radiation Impact Analysis (HRIA), to outline the format of information to be submitted on radiofrequency emissions (see Section 4) below;
- a draft consultation plan, including details of any public consultation already conducted.

Permitted development proposals not requiring prior approval

39. Some telecommunications base stations can be installed under permitted development rights, or as *de minimis* development. The City Council must be informed of all permitted development proposals at least 1 calendar month before work starts on site, so that it can pass on any local concerns to the operator.

40. The City Council will wish to be satisfied that the conditions for permitted development have been met. The City Council will encourage operators to submit scale plans and elevations at the time they inform the Council of their proposals. Operators are further encouraged to submit supporting information in accordance with the checklist in ***Appendix 4***, where the proposal would be rated amber or red under the TLM.

Proposals involving works to a listed building

41. The City Council encourages prospective applicants to discuss preliminary proposals as for other types of application. Preliminary work should include an analysis of the architectural and historic interest of the host building and an assessment of how the proposals may affect that special interest. Applicants should seek

further advice from the City Council's conservation team.

Formal submission

42. Developers must make a formal application to the City Council planning department for all telecoms developments requiring planning permission or prior approval. They should not apply until informal consultation has taken place, as agreed with the City Council, and until they have done all they can to address any concerns expressed.

43. The formal submission must include all information required by OLP Policy CP.24, in line with the guidance in this document. It should also conform to Code of Best Practice principles and procedures. Applicants are recommended to complete the checklist in ***Appendix 4*** when preparing their submission.

44. When an application for planning permission, prior approval or listed building consent is submitted, the City Council will advertise the application in the local newspaper. The City Council may ask the developer to display a notice on site where it is clearly visible from the public highway, and will notify local households in writing. Anyone can comment on a proposal within 21 days of the application being advertised.

45. The City Council will determine planning and prior approval applications based on the information submitted at the time the application is registered, and any subsequent information submitted in good time. The City Council will refuse applications that do not comply with the OLP saved policies and LDF documents, including this SPD. It will consider objections to an application made on valid planning grounds.

Proposals requiring full planning permission

46. Proposals which require full planning permission are normally determined within eight weeks of registration with the Planning Department. This type of development cannot be implemented until planning permission has been granted.

Proposals requiring prior approval

47. The City Council must determine an application that requires prior approval for siting and design within 56 days of receiving it. The application content must comply with the relevant regulations in the General Permitted Development Order (GPDO) (as amended) and PPG8 Annex 1 (or any future replacement). Additional information must also be submitted in line with the guidance in this SPD.

SECTION 4: SUBMISSION CONTENT

Consultation statement

48. The Oxford Statement of Community Involvement (SCI) states that all planning applications should be accompanied by a consultation statement outlining what pre-application consultation took place, its results and how these have been taken into account in the final application. This requirement is particularly important for telecommunications development, given its sensitive nature.

49. A draft consultation plan should ideally have been submitted at the pre-application stage. This draft should be revised if necessary, in light of the City Council's comments on the consultation plan during the pre-application stage. The final consultation statement should include:

- details of the TLM assessment method and outcome;
- whether any public representative, school, college or other organisation has been consulted; the relevant contact(s) approached; the method and date(s) of consultation, and the outcome;
- details of any wider public consultation by voluntary notice, letter or leaflet (e.g. to local residents), including date(s) sent/posted, consultees' addresses, the information that was provided; and summary responses;
- details and date(s) of any public or stakeholder meeting that has been attended, including issues discussed, outcomes and actions proposed.

Plans, drawings and elevations

50. All plans, drawings and elevations should be to scale, and should accurately show all existing surrounding features and structures, whether built or natural. In particular, it is important to show clearly all features that may affect whether the proposal is visually acceptable (or otherwise). Details of mitigation measures (such as planting), and colouring or camouflage of equipment, should also be made clear.

51. The City Council will expect applicants to submit a photo montage, accurately portraying the proposed development from significant viewpoints.

Need for development

52. Policy CP.24 requires developers to demonstrate the need for proposed telecommunications development. Applicants must submit coverage plots, shown on an Ordnance Survey (OS) base map, to show the level of network coverage within the target area before and after the proposed development. The information should be shown in a way that makes clear the relative signal strength, for example 'in-building coverage', 'in-car coverage', 'outdoor coverage', etc. (see ***Figure 3***). *A* brief justification for the increased level of coverage sought, specifically relating to the needs of the local area, should accompany this information.

Figure 3: Coverage plot where blue areas represent low ('outdoor only') levels of network coverage

Alternative sites and site shares

53. Policy CP.24 also requires developers to show that alternative existing telecoms sites are unavailable for site sharing. Developers proposing a new site must therefore submit evidence that other sites are unsuitable.

54. The City Council maintains a map database of operational and proposed sites, based on the main network operators' annual rollout plans. This is shown on the City Council's website (see ***Appendix 7*** for the website address). Before submitting an application, applicants

should refer to this, and should liaise with the other operators, to check whether there is any opportunity for site or mast sharing in their search area. The City Council may ask for evidence that they have made appropriate enquiries about this. The supporting statement should include a map showing the search area on an OS base, and all existing telecoms sites and alternative new sites in this area.

55. Applicants should make site visits in the search area to assess whether other buildings or structures are potentially suitable for the development proposed. The City Council will look for evidence that they have visited sites and have enquired whether alternative existing buildings and structures are available or suitable.

56. If a potentially suitable site is found to be unavailable (for example where a building owner is unwilling to allow use of their property), this should be confirmed in writing or by email. Occasionally, applicants may persistently fail to contact potential site owners. Therefore, they should log all correspondence and telephone calls and, where applicable, they should show they have exhausted all available means of contact.

57. All alternative sites assessed should be listed in the supporting statement. The list should include clear site references, and should detail for each site the reasons for rejection. Supporting justification, such as letters or emails from unwilling landowners, should be appended[5] for each rejected site. Any reasons for rejection made on technical or design grounds should be supported by a description and, if helpful, an illustration to show exactly what the constraint is. (Reasons simply stating 'rejected due to technical constraints' or similar will not be accepted.)

Design and siting

58. Mobile phone masts and antennas should always be located and designed to respect their context and the amenity of those living, working or spending time in the locality. Applicants will be expected to submit a design statement to show how the proposed equipment has been designed to minimise visual impact. The design statement should also describe how the equipment has been sited as unobtrusively as possible in relation to its context. The statement may need to refer to alternative siting and design options considered and rejected, and give reasons for rejection.

59. Many environmentally sensitive areas in Oxford merit special regard to siting and design. Key OLP policies are summarised in ***Appendix 2***. For example, impact on conservation areas and listed buildings, view cones and the historic skyline, the Oxford Green Belt, and designated nature conservation sites will be material and require special consideration. If proposals may affect listed buildings or conservation areas, the design statement must specifically examine the impact on the building or historic environment.

60. Any proposal affecting a roof structure should be accompanied by an independent ecological survey, unless the applicant has otherwise satisfied the City Council that no bats are present. The survey should assess impact on any bat population, and demonstrate full mitigation.

Photo 2: Listed buildings: (a) Antennas disguised as weathervane (b) Poorly sited antennas

61. The City Council is aware that numerous design solutions are available to mobile network developers, and will need to be

[5] Any third party should be made aware in advance that their correspondence may be included in public planning files. If they object to this, the planning officer should be informed, and may still require confidential sight of such correspondence.

satisfied that the most appropriate design has been chosen.

62. In general, telecommunications equipment should be painted an appropriate colour to relate to background and surroundings or existing features. Prominent building-mounted antennas and equipment should be appropriately disguised and camouflaged to blend in with the building and streetscape. Equipment cabinets should be kept to a minimum, and should be as small and unobtrusive as possible. Further examples and advice can be obtained from sources given in ***Appendix 7***.

(a) ✔

(b) ✔

(c) ✘

Photo 3: Camouflage - (a) and (b) Antennas disguised to blend in with building features (source: Stappard Howes, Chertsey, Surrey) (c) Overly prominent or multiple antennas detract from streetscene (Summertown, Oxford)

63. All painting and screening must be well maintained. A condition may be imposed on planning permissions to ensure regular maintenance.

64. Where proposed development may affect a footpath or the public highway, applicants should have regard to how equipment siting may affect pedestrian movements and visibility splays for all highway users. Good, safe access for service vehicles to the proposed apparatus should also be demonstrated. The City Council will consult the highway authority on these matters where appropriate.

Practice note: 'Tree masts'

Photo 4 ***(a)*** ✔ ***(b)*** ✘

Masts disguised as trees may be appropriate in certain contexts to make them less obtrusive. However, the following will normally apply:

- The mast must be well screened by, and mix well with, real trees.
- The mast must not stand out too prominently against the sky and other contrasting backgrounds.
-
- The City Council may apply a tree preservation order (TPO) to surrounding trees, to ensure appropriate screening.
-
- The City Council will apply conditions to subsequent TPO treeworks applications to ensure appropriate pruning.
- Materials and paint must be chosen with care so the mast looks well maintained.

65. The City Council will support proposals that use existing or replacement street furniture (e.g. street lighting columns) on a case-by-case basis if this represents the best overall solution,

and subject to the legal, technical and policy requirements of the highway authority.[6]

Photo 5: Example of replacement street light incorporating a base station (Source: Agent, T-mobile)

Future network capacity

66. Policy CP.24 requires that the developer consider the need to design new equipment to take account of future demands, including those of other network operators. This could be done by providing spare future capacity on a new mast, or by means of considerate siting on an existing structure or building to allow space for further installations. Designing in extra capacity should help to rationalise the future spread of network infrastructure, and reduce urban clutter.

Photo 6 (a) & (b): Multiple masts can cause unacceptable clutter (examples in Oxford area)

67. The City Council accepts that there may be technical and design constraints on achieving additional spare capacity in some cases. For example, providing spare capacity on a standard monopole mast may necessitate increasing the height and bulk of the mast so much that the design is unacceptable. Nevertheless, where the design has not allowed for additional future capacity, the design statement needs to explain why this is not feasible or practicable. Developers may be expected to supply illustrations (such as elevations or a photo montage) to show why they have not provided for future capacity.

68. The City Council will consider the availability of new technologies that allow further rationalisation and sharing of mobile network infrastructure, and which may bring significant environmental benefits. The City Council will encourage developers to take advantage of any future system that reduces the need for potentially obtrusive masts, antennas or equipment in Oxford.

Health and Radiation Impact Analysis (HRIA)

69. Health considerations and public concern can in principle be material considerations in determining telecommunications applications. The City Council acknowledges that the balance of scientific evidence to date indicates that there is no general risk to the health of people living near to base stations, but also recognises the need for a precautionary approach given the gaps in scientific knowledge. The City Council will encourage developers to position antennas in the way which is least likely to cause objections on grounds of perceived health risk, where there is any school, nursery, playground or playgroup in the area.

70. The International Commission on Non-Ionizing Radiation Protection (ICNIRP) has recommended maximum public exposure guidelines for radiofrequency (RF) radiation emission. Government guidance states that all mobile phone base stations must comply with these standards, and that applicants must submit a certificate showing compliance with the ICNIRP guidelines with all applications for planning permission or prior approval. The City Council accepts the ICNIRP guidelines as an appropriate precautionary standard, on the basis of current scientific evidence.

[6] See Appendix 7 for contact details for the Local Highway Authority.

71. The City Council will require applicants to submit further detail on expected RF emission, presented in a way that transparently and proactively addresses likely concerns. Applicants must show how, and to what degree, the proposal complies with ICNIRP standards by submitting a Health and Radiation Impact Analysis (HRIA). This should not be treated as an additional health safeguard, but should illustrate compliance with ICNIRP standards. ***Appendix 5*** sets out a template for the HRIA, which should include:

(a) a front cover giving the site reference and title 'Health and Radiation Impact Analysis';
(b) an introduction to set out purpose and content;
(c) a concise background and context, including a brief explanation of how RF exposure relates to our day-to-day lives, and reference to appropriate up-to-date scientific research on its effects.

72. The HRIA must also include a site specific analysis of RF emissions. The City Council strongly prefers this to be an **RF Map Plot**, to show on a map the RF distribution arising from the proposed site, relative to ICNIRP maximum exposure levels, as shown in ***Appendix 6(a)***. This should be plotted on an OS base map, and should be accompanied by a clear, non-technical explanation.

73. The City Council will expect submission of such an RF Map Plot as part of the HRIA alongside planning and prior approval applications for apparatus on or near a school or its grounds, nursery, playgroup or playground. These land uses should be clearly identified on the plot.

74. An **RF Profile** as detailed in ***Appendix 6(b)*** may be an acceptable alternative to the RF Map Plot, only if agreed with the planning department. This must include maximum exposures, measured as a proportion of ICNIRP, specifically stated for all schools and colleges (including their grounds), playgroups and playgrounds within the cell area. It must also include a clear, non-technical explanation of the figures, terms and technical information contained within it, and refer to how the information set out relates to local context and character.

75. In all cases, detailed technical data should be appended to the main report. These data should include the completed technical information and justification details required by the Code of Best Practice Supplementary Information Template (Annex F, parts 4 and 5). A completed and signed Certificate of Compliance with ICNIRP guidelines should also be appended.

GLOSSARY

2G (second generation) The international operating standard currently used by most mobile telephone users, also called **GSM**. 2G systems operate at a frequency of 900 or 1800 MHz.

3G (third generation) The newest operating standard currently being rolled out by the main network operators, which allows high-speed data capabilities and multimedia facilities. Also called **UTMS**. 3G systems operate at a slightly higher frequency of 1900 or 2100 MHz.

Alternative site assessment An assessment of the suitability of all potential sites for a base station in the operator's search area. This can include various factors such as visual amenity, technical suitability, and land or building ownership.

Annual rollout The main network operators are committed to sharing with local authorities all sites where they would like to put new base stations, over a year. This information is passed to the City Council each autumn.

Antenna The part of a base station that sends and receives radiowaves to mobile phone handsets. Antennas are normally supported at height by a mast, and are sometimes hidden or disguised.

Base station A set of mobile phone transmitters, antennas and other associated apparatus used to create a coverage cell.

Coverage cell The area of network coverage provided by one set of mobile phone transmitters and associated apparatus.

Coverage plot A map-based plot of the various predicted levels of mobile phone network coverage generated by one or more base stations.

De minimis Small changes to the built environment which are not considered as development, and are therefore not subject to planning law. Building-mounted microcells (see below) often fall into this category.

Electromagnetic frequency (EMF) The type of electric and magnetic wave energy which includes the radiowaves used by mobile phone networks.

Health and Radiation Impact Analysis (HRIA) An analysis of the amount of electromagnetic radiation likely to be generated by a telecommunications installation, to be set out in the context of public health concerns.

ICNIRP This stands for 'International Commission on Non-Ionising Radiation Protection'. ICNIRP standards are used in the UK and Europe to set the level for public exposure to mobile phone radiowave emissions.

Lattice mast A type of ground-based mobile phone mast that has a lattice structure, which is normally used for supporting large or multiple antennas.

Macrocell The most powerful type of base station, which provides the main capacity and coverage for the mobile phone networks.

Microcell Less powerful base stations, often mounted on the sides of buildings, which provide infill coverage and additional capacity in urban and suburban areas.

Monopole A type of ground-based mobile phone mast commonly used in urban settings, which looks like a large vertical pole (similar to a telegraph pole).

Network operator There are five main operators in the UK, each of which manages its own network to provide coverage to its mobile phone users.

Permitted development Development that is exempt from express planning consent as set out in the General Permitted Development Order 2001 (as amended).

Picocell The smallest type of base station, usually located inside buildings to boost network coverage and capacity.

Prior approval A type of permission required for the siting and design of some telecommunications development which has permitted development rights. Such applications must be decided within 56 days or the developer automatically has deemed consent.

Radiofrequency (RF) Electromagnetic radiation used for telecommunications.

RF Map Plot A map-based plot of predicted electromagnetic radiation emissions arising from a particular base station, which will relate to ICNIRP standards.

RF Profile A text-and-table profile of predicted electromagnetic radiation emissions arising from a particular base station, relating to ICNIRP standards, which may be used as an alternative to a map-based plot in some cases.

Stewart Report An independent report published in 2000 by the Independent Expert Group on Mobile Phones, which made recommendations on the use of mobile phones and networks in relation to health.

Traffic Light Model (TLM) The system used by prospective applicants to assess the level of consultation likely to be needed for a particular telecommunications development. The model takes into account how far the development is likely to raise sensitive issues in terms of environment, planning and community concern, and results in a Traffic Light Rating (TLR).

APPENDIX 1

Policy CP.24 from Oxford Local Plan 2001-2016

2.22 Telecommunications

2.22.1 Some telecommunication development may take place as permitted development. Telecommunication operators wishing to carry out development under the General Permitted Development Order (GPDO) are advised to carry out discussions with the City Council before doing so. Pre-application discussions with the City Council should also take place when prior approval or a full planning application is to be submitted. When seeking planning permission or prior approval, telecommunication operators are required to provide clear evidence that they have fully investigated options for using existing buildings, site sharing and alternative sites. When seeking permission for new sites for telecommunication development, applicants must demonstrate that they have made provision for future demands and site sharing.

2.22.2 Where planning permission is required, the City Council will take account of technical constraints on locating such equipment, the operational requirements, and the legal obligations of telecommunications operators. However, this must be balanced against the need to avoid, as far as possible, the use of unsightly equipment. The planning system should provide for such development, including new forms of broadcasting. The City Council recognises the importance of always ensuring the best outcome in environmental terms, particularly when considering the suitability of mast and site sharing. In addition, developers should minimise any visual impact through careful siting and sensitive use of materials, colour and design of telecommunication equipment. They should also look for ways to disguise or camouflage proposed facilities. Visual impact is of particular concern in listed buildings, conservation areas, green belt, and areas of safeguarded land.

2.22.3 There is significant public concern about health considerations in relation to telecommunication development. The siting of telecommunications equipment raises environmental concerns regarding health and noise issues. However, scientific research on the health implications of telecommunications development is currently inconclusive. Health considerations and public concern can in principle be a material consideration in determining applications for planning permission and prior approval.

2.22.4 Developers can reduce concerns over the health impact of telecommunications development by submitting information on this matter alongside proposals for new equipment. This should be in the form of a Health and Radiation Impact Analysis (HRIA) which provides details on the expected microwave and other radiation from the proposed equipment and how this relates to the EU ICNIRP guidelines. The City Council will issue further information on the content of an HRIA, from time to time, as a Supplementary Planning Document.

POLICY CP.24 - TELECOMMUNICATIONS
Planning permission, or prior approval, will only be granted for the installation of external apparatus necessary for the transmission or receipt of telecommunications where it is demonstrated that: a. alternative existing sites are unavailable for site sharing, and applicants have fully explored the possibility of erecting antennas on an existing building, or other structure, and have demonstrated the need for the development; b. the siting and appearance of the apparatus, including any location or landscape design requirements, have been designed to minimise the impact on amenity; c. installations are sited to be as unobtrusive as possible; d. applicants who propose to carry out telecommunications development have considered the need to include additional capacity to take account of the growing demands for network development, including that of other operators; and e. applicants have submitted a Health and Radiation Impact Analysis (HRIA).

APPENDIX 2

Siting and design: relevant Oxford Local Plan (OLP) policies

The table below is a list of OLP policies that may be particularly relevant to the siting and design of telecommunications apparatus. Refer in all cases to the full policies and supporting text in the Oxford Local Plan 2001-2016. Note that OLP policies will, over time, be superseded by the new policies in the Local Development Framework (LDF).

Context	OLP Policies
The historic environment	Conservation Areas and their settings (**HE.7**) Listed Buildings and their settings (**HE.3**) Buildings of Local Interest (**HE.6**) View Cones (**HE.9**) High Buildings Area (**HE.10**) Important Parks and Gardens and their settings (**HE.8**) Nationally Important Monuments (**HE.1**) Archaeological deposits (**HE.2**)
Sensitive landscapes and the natural environment	Oxford Green Belt (**NE.1, NE.2**) Safeguarded Land (**NE.3**) Oxford's watercourses (**NE.6**) Trees and hedgerows (**NE.15, NE.16**) Biodiversity value (**NE.17**) Special Areas of Conservation (SAC) and Sites of Special Scientific Interest (SSSI) (**NE.18**) Sites of Local Importance for Nature Conservation (SLINC) and Local Nature Reserves (LNR) (**NE.19**) Wildlife corridors (**NE.20**) Species protection (**NE.21**)

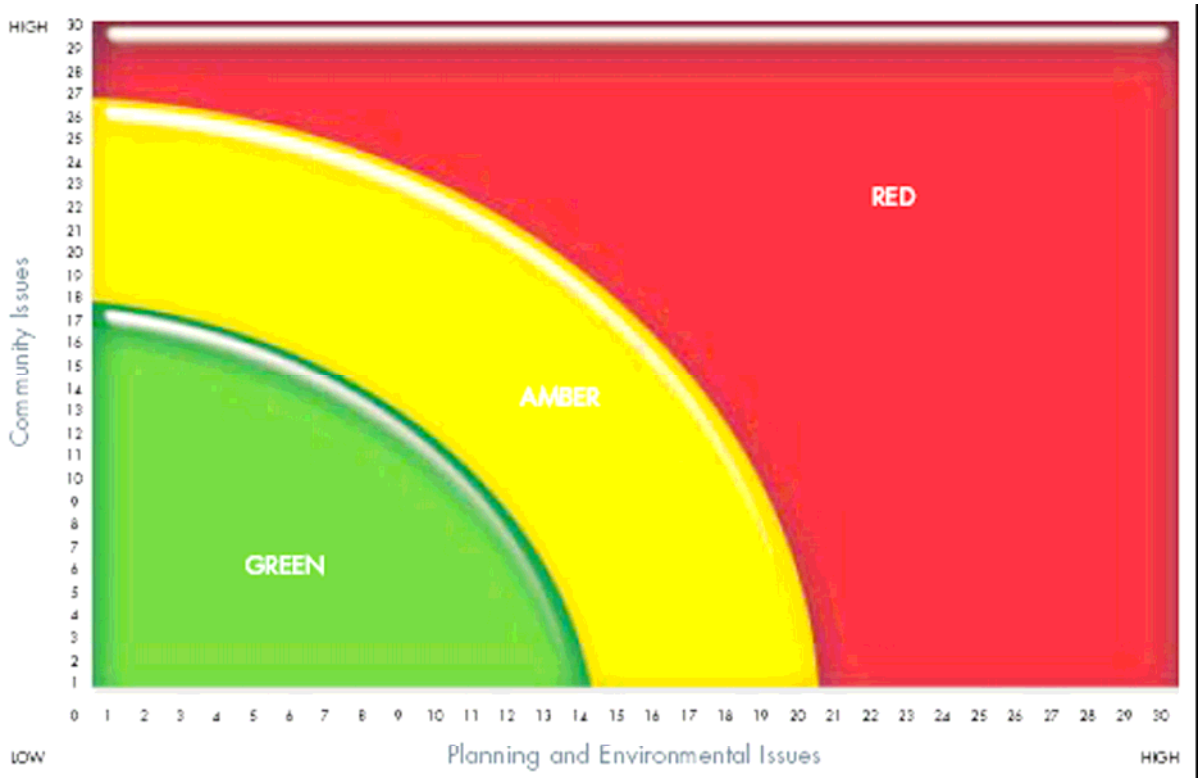
Urban design (general)	Efficient use of land (**CP.6**) Urban design (**CP.7**) Designing development to relate to its context (**CP.8**) Landscape design (**CP.11**)

APPENDIX 3

Summary of Traffic Light Model for public consultation

Summary of Annex D in the Code of Best Practice on Mobile Phone Network Development (ODPM, 2002)

The Traffic Light Model must be used to give an overall Rating for each proposed site. The Model combines elements of subjectivity and objectivity and is intended as a guide to the degree of consultation necessary. Once the Rating has been determined then the Consultation Strategy is used to provide the options available in respect of the level of public consultation. It is important to seek the City Council's input into the process. The rating for each site is to reviewed at least once – in particular after pre-application consultation.



Scoring system (outline) *(0 = nil impact, higher figures = greater impact)*

Community issues (vertical axis)	Views and attitudes of local communities	Social political (e.g. City Council policy, previous planning decisions)	Media (interest and coverage)
Score	0-15	0-10	0-5

Planning and environmental issues (horizontal axis)	Sensitive land use (in relation to homes, schools, nurseries, playgrounds, hospitals etc)	Siting and appearance (screening, impact on skyline, townscape clutter, historic environment, height and appearance etc.)	Planning (planning policies relating to site; site history)
Score	0-15	0-10	0-5

What types of sites might be rated…		
green	**Amber**	**red**
• site shares on structures well away from residential property and/or schools; • industrial land use; • beside main highways, away from residential properties.	• streetworks in mixed commercial/residential areas, though not close to boundaries of residential properties; • rooftop installations on offices or other commercial buildings, not close to schools; • ground-based towers in greenfield sites, close to recognised statutory designations or heritage sites.	• streetworks close to residential property, residential boundaries, schools and nurseries; • base stations close to schools, including school grounds; • rooftop installations on residential buildings, schools or colleges, or very close to such sites; • ground-based towers in recognised statutory designations or heritage sites • installations in or near to historic monuments.

*The information in this table is based on informal advice given in **"Working with the Community: Handbook on mobile telecoms community consultation for best siting practice"** (MOA, 2004)*

***TLM Consultation strategy** (see main text of SPD for the City Council's guidance on consultation in Oxford)*

green	amber	red
Pre-application stage		
• contact with the City Council; • meeting with Officer.	• contact with the City Council; • meeting with Officer; • letter to Ward Councillor; • letter to Parish Council (where one exists). *Optional* • 'tour of options' with City Council; • neighbour and stakeholder consultation mail shot; • voluntary consultation notice; • informal 'drop-in' session; • key stakeholder briefing session.	• contact with the City Council; • meeting with Officer; • letter to Ward Councillor; • letter to Parish Council (where one exists). *Optional* • 'tour of options' with City Council; • neighbour and stakeholder consultation mail shot; • voluntary consultation notice; • informal 'drop-in' session; • key stakeholder briefing session; • leaflets deposited in community venues; • public notice in local press.
Application stage		
	Optional • site meeting with planning officer; • on-site visual demonstration; • attend planning committee meeting.	*Optional* • site meeting with planning officer; • on-site visual demonstration; • attend planning committee meeting.

APPENDIX 4

Checklist for submitting an application for planning permission or prior approval

Information to be submitted	Relevant part of SPD	*Tick*
Consultation statement	Section 4, paragraphs 48-49	
Site location plan (to scale)	Section 4, paragraph 50	
Site layout plan (to scale)	Section 4, paragraph 50	
Elevations (to scale)	Section 4, paragraph 50	
Photo montages	Section 4, paragraph 51	
Search area plot (indicating alternative sites considered)	Section 4, paragraphs 52-54	
List of alternative sites assessed (with reasons for rejection)	Section 4, paragraphs 53-57	
Coverage plots (showing existing and proposed coverage)	Section 4, paragraph 52	
Design statement (to include designing in future capacity)	Section 4, paragraphs 58-68	
Health and Radiation Impact Analysis	Section 4, paragraphs 69-75	

APPENDIX 5

Health and Radiation Impact Analysis template

The HRIA should provide objective information on radiofrequency emissions from the proposed apparatus, specifically relating to where it is sited. It should be a separate bound document but should be submitted alongside other application documents and plans. The document should be presented simply and succinctly, so that a wide range of readers can understand it, while providing a full, transparent description of the radiofrequency emissions and how they relate to the site context.

Technical terms and figures should be clearly explained, and appropriate commentary provided. However, detailed technical data should be appended to the main report. This should include the standard best practice template as set out in the Code of Best Practice (Annex F, parts 4 and 5).

The following template should be used when preparing a HRIA.

Front cover

"Health and Radiation Impact Analysis for [*insert brief description of proposal and site address*]"

"Report of [*name, job title and qualifications of author*] on behalf of [*name of operator*]"

Introduction

Brief introduction to set out purpose and content of document.

Background and context

Brief simple explanation of how EMF and RF exposure relates to our day-to-day lives.
e.g. *"Radio frequency fields are a type of electromagnetic field. In nature, electromagnetic fields have always been with us – in lightning and in daylight itself - and virtually everyone in the modern world is exposed to electromagnetic fields generated by man-made sources. These include TV and radio, communications by the emergency services, medical and factory equipment, electronic car keys and baby-listening devices, and any household appliance that uses electricity…" etc.*

Explain how the precautionary principle is built into network development.
e.g. *"All [name of company] installations are designed to comply with the precautionary International Commission on Non-Ionising Radiation Protection (ICNIRP) public exposure guidelines as adopted in a European Union recommendation. The guidelines are made up of two parts: the first is based on established and proven science; the second part incorporates a safety factor. In this way, the guidelines come with a built-in precautionary element. The ICNIRP General public exposure guidelines are set at levels that are 50 times below the threshold at which adverse health effects may occur…" etc.*

Refer to up-to-date scientific research evidence – include a balanced summary of knowledge to date.
Include a brief review of national site audit programmes.
e.g. *"The Health Protection Agency (Radiation Protection Division) has taken many measurements of exposure levels at publicly accessible locations around macrocell base stations and in June 2000 NRPB Report R321 was published containing measurements taken at 118 locations from 17 different base station sites. Average*

exposures were found to be 0.002% of the ICNIRP public exposure guidelines and at no location was exposure found to exceed 0.2% of the guidelines. These measurements are ongoing.

Technical summary

Summarise the technical specifications for the proposal, e.g. maximum power output and frequency range, and how this relates to the maximum exposure quotient. (Append relevant figures.)

Radiofrequency profile

*Include a RF emissions profile specific to the site and its surrounding land uses. This should be a **RF Map Plot** (overlaid on an OS base map, showing site location, and colour key referring to ICNIRP* maximum levels – refer to **Appendix 6a**). Alternatively a **RF Profile** may be accepted, only if agreed with the planning department (see Telecommunications SPD main guidance and **Appendix 6b**). The plot or profile should, as far as possible, include emissions from any existing antennas on the site.*

Include non-technical explanation of RF Map Plot, or RF Profile,
e.g. "The plot shows that the highest possible beam intensity is less than 0.5% of the ICNIRP safety level for public exposure. Exposure at the nearest school is less than 0.01% of the ICNIRP safety level. The existence of building walls and structures will further reduce the level of exposure to even lower levels…" .

If relevant, describe how schools, nurseries, playgroups and playgrounds have been considered in siting and designing apparatus

*State the **maximum exposure quotient in relation to ICNIRP* guidelines**.*

Conclusion

Brief conclusion to summarise the information described above and how this addresses public health concerns.

Technical appendix

*Include a copy of a **signed and dated** Certificate of Compliance with ICNIRP standards.*

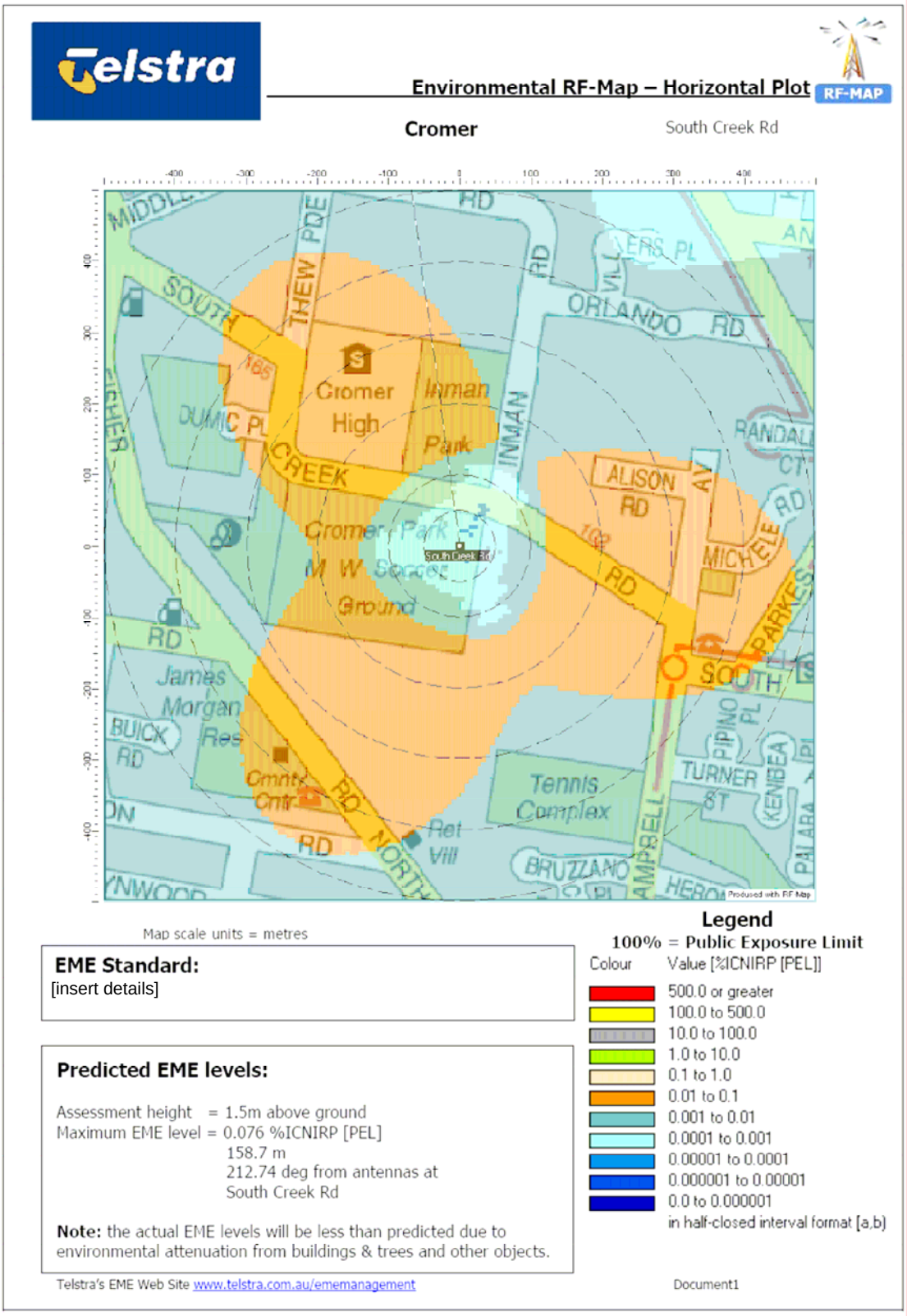
*Include any detailed technical information referred to in the main report (see also **Appendix 7**).*

*Include technical details required by the Code of Best Practice Supplementary Information Template (Annex F, part 4 – see **Appendix 7**).*

* International Commission on Non-Ionising Radiation Protection

APPENDIX 6(a)

Example of a RF Map Plot



Source: Telstra Corporation Ltd.

APPENDIX 6(b)

Example of a RF Profile

Site ABC123 - Reading

Calculations are undertaken to estimate the highest possible radio frequency fields and it is assumed that all channels are transmitting at full power, 24 hours a day. This is a highly unlikely set of circumstances, so in reality, day-to-day measurements will be much lower. It is also assumed that there is no obstruction to the signal by way of structural materials so **levels inside buildings are typically reduced further by a factor of ten**.

Calculations demonstrated that

	% of ICNIRP Public Exposure Guidelines	Bearing (degrees)	Distance (m)
Maximum Radio Wave Intensity	0.034 %ICNIRP [PEL]	219	37

Distance along bearing of 218.66 degrees (m)	% of ICNIRP Public Exposure guidelines
50	0.013
100	0.014
200	0.016
300	0.028
400	0.022
500	0.017

Location	% of ICNIRP Public Exposure Guidelines
St Peters School	0.023 %ICNIRP [PEL]
St Pauls School	0.017 %ICNIRP [PEL]
Reading General Hospital	0.0045 %ICNIRP [PEL]
1 High Street, Reading	0.001 %ICNIRP [PEL]

Source: Mobile Operators' Association

APPENDIX 7

Technical information

Developers should append the following information as part of the HRIA:

Maximum licensed power output		dBW
EiRP Power Output of each existing RF source already on the site (list)		dBW
Maximum exposure quotient in relation to ICNIRP guidelines[7] (at beam of greatest intensity)		

Developers must include the following declaration appended to the HRIA (taken from the Code of Best Practice on Mobile Phone Network Development)

ICNIRP Declaration attached ICNIRP public compliance is determined by mathematical calculation and implemented by careful location of antennas, access restrictions and/or barriers and signage as necessary. Members of the public cannot unknowingly enter areas close to the antennas where exposure may exceed the relevant guidelines. When determining compliance the emissions from all mobile phone network operators on the site are taken into account.	Yes	No

Frequency	
Modulation characteristics[8]	
Power output (expressed in EIRP in dBW per carrier) In order to minimise interference within its own network and with other radio networks, (NAME OF OPERATOR) operates its network in such a way that radio frequency power outputs are kept to the lowest levels commensurate with effective service provision. As part of (NAME OF OPERATOR)'s network, the radio base station that is the subject of this application will be configured to operate in this way.	
Height of antenna (m above ground level)	

[7] The total exposure due to all the radio signals acting together can be calculated from the data acquired from specialist monitoring equipment. This can then be divided by the ICNIRP guideline figure for maximum exposure, and presented as a quotient (e.g. 1 / 1,500 of ICNIRP guidelines). This should be as measured from the beam of greatest intensity (relating to the installation applied for).

[8] The modulation method employed in GSM is GMSK (Gaussian Minimum Shift Keying), which is a form of Phase Modulation. The modulation method employed in UMTS is QPSK (Quad Phase Shift Keying) which is another form of Phase Modulation.

APPENDIX 8

Useful contacts and resources

Note that the City Council is not responsible for the content or accuracy of external websites referred to in this SPD.

Oxford City Council				
Planning Policy	01865 252847	planningpolicy@oxford.gov.uk	http://www.oxford.gov.uk/planningpolicy	Queries relating to the contents of this SPD, and other planning policy documents
Planning Control & Conservation	01865 252860	planning@oxford.gov.uk	http://www.oxford.gov.uk/planning	Queries relating to specific site proposals, planning applications and listed building consent
ICT / Networking	01865 252284	rsproule@oxford.gov.uk	http://www.oxford.gov.uk	City Council contact on ICT and networks

Oxfordshire County Council				
Street lighting division	0800 317802	streetlighting@oxfordshire.gov.uk	http://www.oxfordshire.gov.uk	County Council contact for light - column swap-outs, or other proposals using street furniture that belongs to the local highway authority
Development Control (Highways)	01865 815961	geoffrey.arnold@oxfordshire.gov.uk	http://www.oxfordshire.gov.uk	Technical advice on highways matters, such as traffic and pedestrian safety
ICT / Networking	01865 810832	mark.winstanley@oxfordshire.gov.uk	http://www.oxfordshire.gov.uk	County Council contact on ICT and networks

Other organisations				
Mobile Operators' Association	020 7331 2015	info@ukmoa.org	http://www.mobilemastinfo.com/	Provides information and liaises on behalf of the five main mobile phone operators
3 (formerly Hutchinson 3G)	0845 604 3000	network@three.co.uk	http://www.three.co.uk/	Main contact details for 3
O2	01753 564 306	cellsnationalhelpdesk@o2.com	http://www.o2.com	Main contact details for O2
Orange	0870 376 8888	site.information@orange.co.uk	http://www.orange.co.uk/	Main contact details for Orange
T-mobile	0870 321 6047	networkinfo@t-mobile.co.uk	http://www.t-mobile.co.uk/	Main contact details for T-mobile
Vodafone	08454 450 450	emf.advisoryunit@vodafone.co.uk	www.vodafone.co.uk	Main contact details for Vodafone
Health Protection Agency	01235 831600	rpd@hpa-rp.org.uk	http://www.hpa.org.uk/radiation/	The Radiation Protection Division of the Health Protection Agency (incorporating the former National Radiological Protection Board) provides research links and advice on this issue
Mast Sanity	08704 322 377	coord.south@mastsanity.org	http://www.mastsanity.org	National campaign group
Mast Action UK	n/a	n/a	http://www.mastaction.co.uk	Campaign group website