

HSE Consultation Document 211 on Land Use Planning

Buncefield Board response

1. Introduction

1. The Board recognised at the outset of its work that Land Use Planning (LUP) was going to be one of the most complex and sensitive issues raised by the Buncefield incident. In the immediate aftermath of the explosion there were calls for a complete development moratorium in wide swathes around this and similar sites. While such a reaction was entirely understandable in the circumstances, the Board felt it was also necessary to consider the possible social and economic consequences of such a restriction, and to seek to strike an appropriate balance between the risks and benefits of development.
2. Once the broad sequence of events in the Buncefield incident became clearer (as set out in the Board's third progress report in May 2006), the Board took the view that a measured approach was needed. The likelihood of a similar explosion was low, and could be made lower still by a programme of actions designed to increase the reliability of primary containment. While not underestimating the effect of continuing uncertainty on local communities, particularly those directly affected by the Buncefield incident, the Board attached importance to reaching conclusions that are considered, costed and sustainable.
3. At the time of publishing its third progress report in May 2006 the Board asked HSE to review as a matter of urgency the basis and standard of the advice it provides to planning authorities. The Board appreciates HSE's response and the effort it has made in developing this Consultative Document.
4. The Board offered initial observations on these issues in paragraphs 80-86 of its Initial Report, published in July 2006, but did not think it sensible to go beyond this while HSE was conducting its review. In particular, the Board observed at paragraph 85 "We will be interested to know HSE's views on the desirability and feasibility of an approach to advise on developments around sites like Buncefield based more on consideration of risk. Under such an approach, the likelihood of major incidents, taking into account all the measures in place against them, would play a more explicit part than hitherto in determining planning advice."
5. In addition, at paragraph 86, the Board noted the incremental development around Buncefield and suggested that more attention should be paid to the total population at risk from a major hazard site. It therefore welcomed the cross-Government work on societal risk co-ordinated by the Cabinet Office. This work has resulted in the second Consultation Document, published on 2 April. The Board is considering a separate response to this but has taken account of its contents in what follows.

2. General Observations

6. Before dealing with the specific questions posed by the Consultation Document, it is appropriate to make some general observations to set the responses in context.
7. The Board has been approaching its work in an integrated way and sees LUP as underpinning a hierarchy of improvements as follows:
 - (a) Design and operation of sites to reduce inherent risks. This issue was addressed in the Board's fifth report published on 29 March;
 - (b) Emergency preparedness and response to mitigate the remaining risks. This is the subject of a report to be published in the near future; and
 - (c) LUP to be responsive to levels of risk that continue to be presented by each particular site.
8. With this in mind and given what the Board said in its Initial Report, it would like to see a LUP system that takes more account of the actual measures taken to achieve prevention and control to reduce the likelihood of loss of primary containment, so that LUP restrictions are targeted appropriately and are not unnecessarily severe. We had hoped to see some option(s) in which the consultation distance was based upon a quantification of the likelihood of hazardous occurrences on site leading to a major incident and resultant risk of harm to people, and not only related to the configuration and local circumstances of the Buncefield site.
9. Therefore, the Board feels that a fuller analysis of the quantified risk based options referred to in paragraph 8 is merited to promote a wider ranging discussion. It recognises that there are difficulties with this approach, for example in relation to human error, the assessment methodology to be used, and uncertainties related to data. However, the Board considers that a closer comparative analysis of the merits and limitations of the protection concept approach against the risk concept approach remains necessary to reach sound long term decisions on changes either to the planning system as a whole, or to the advice offered by HSE to planners within that system.
10. The Board also believes that the issues of LUP and Societal Risk (SR) are inextricably linked and would have preferred to see a single Consultative Document dealing with both issues in an integrated way. The current system seems to take account of SR up to a point, for instance in assigning sensitivity levels to zones, but does not tackle incremental development (see paragraph 5 above).
11. The system relating to major hazard sites is both complex and fragmented. It involves the granting of Hazardous Substance Consents, the setting of zones and consultation distances by HSE, and decisions about individual planning applications by the local authority, but without any overt linkage to the Safety Reports that top-tier sites are required to produce under COMAH. As is currently evident in Hemel Hempstead, it can cause particularly acute difficulties for local authorities where Consents exist but have not been used, or where operations have ceased and there is uncertainty about future intentions.

12. The Document only considers direct physical harm to people because HSE does not have the remit to incorporate other harms to communities, including those arising from the potential impact to property, livelihoods, amenities and the environment. The LUP system should have regard to the wider consequences resulting from the co-location of hazardous industrial sites with communities and/or sensitive environmental features, e.g. important aquifers.
13. A further point is the anomaly that major pipelines carrying gasoline are not subject to LUP controls. The Pipelines Safety Regulations, which came into force in 1996, currently include gasoline pipelines under the general duties applicable to all pipelines (covering design, construction and installation, operation, maintenance and decommissioning). However, gasoline pipelines are excluded from the additional duties for pipelines conveying fluids with a major accident hazard potential. There are therefore no requirements to produce an emergency plan and land use planning zones around gasoline pipelines, even though potential hazards are high.
14. In summary, the Board's general approach rests on the view that there is a need for a wider review of the whole system, embracing:
 - (a) an approach that brings about reductions in the likelihood of any major incident and ensures that the site operating standards and precautions are factored into the LUP decisions;
 - (b) a system that registers and responds to the cumulative effects of serial planning decisions other than by just expanding the zone distances; and
 - (c) an approach that effectively integrates into the planning system for major hazard sites the knowledge of site operators, the expertise of HSE and the judgement of planning officials.

3. Economic Issues

15. LUP is an issue where a balance has to be struck between potentially conflicting considerations, sometimes characterised as 'Public Protection v Public Prosperity'. There is a clear need for a thorough understanding of the economic impact of planning changes that might place more severe restrictions on the use of land.
16. In assessing the economic effect of planning changes, the Regulatory Impact Assessment (RIA) accompanying the Document has a very narrow focus. In relation to costs, it considers only those to owners or developers who have planning applications refused. In relation to benefits, they are expressed only in terms of the avoidance of a fatality. The 'break even' point derived in the RIA reflects only these two variables.
17. The case for Options 3 & 4 is based on these economic arguments. The RIA uses some fairly complex economic analysis to reach the tentative conclusion that development should only be restricted within the Development Proximity Zone that is being proposed for Option 4. It argues that restricting development beyond this (i.e. to

the inner, middle and outer zones) would mean the costs would greatly outweigh the benefits.

18. However, the Board feels that the analysis in the RIA is not particularly robust and believes that many other factors need to be considered, while recognising that this will be a difficult task. For instance, other costs of development being refused could include reduced provision of affordable housing and local amenities, while benefits could include avoiding disruption to local businesses and damage to the value of houses and other property. These additional factors will influence the 'break even' point. The answer it will then give depends on the values assigned to the other costs and benefits.
19. In the Board's opinion, the crucial measures of the costs and benefits of restricted development do not capture all the variables involved, with the result that the case set out in the RIA is not convincingly established.

4. Comments on the Consultative Document

20. The Document has chosen to be particularly narrow in its scope. 'Buncefield-type' sites represent only one category of major hazard site. By limiting the scope of the Document, both to Buncefield type sites and to certain highly flammable substances only, it has introduced the danger that any new policy adopted for the 60 or so large-scale petrol storage depots will be at variance with policy for other sites presenting broadly comparable risks.
21. Given this, the Board believes that no decisions should be taken that prejudice future developments in LUP policy. It also believes that HSE should not, as a result of the current consultation, reach conclusions that prejudice a wider review of the system and the principles that underlie it.
22. In particular, the approaches in Options 3 & 4 represent significant policy changes and yet if adopted would only apply to Buncefield-type sites. This would create inconsistency within the COMAH regime of sites handling large quantities of highly flammable substances other than petroleum products and also those where toxic hazards exist.
23. Buncefield has created more uncertainty in the technical understanding of the hazards associated with such sites and this would point to a cautious approach, until such time as there is a better understanding of these events. If any changes are made they should be presented as a precautionary and provisional response in the absence of confirmatory scientific evidence, and no more.
24. Authoritative scientific evidence is not yet at hand which would underpin permanent choices between the options presented in the Document, or indeed others that could be put forward. Yet the impact of such choices will be highly significant and long term. The zones are based upon observed damage around the Buncefield site and an interpretation of the severity of the explosion, but with no view on the obvious questions

the changes would prompt from, for instance, the operators of major hazard sites other than fuel storage facilities.

25. There is a steer by HSE towards Option 4 as the preferred option but it is based on a new criterion, namely a risk-based building proximity zone. This option will raise many questions on how a risk-based inner zone is best determined, given the scientific uncertainties involved in its calculation.
26. While noting the statement in the Document (paragraph 4.2) that the proposed changes to LUP advice policy will only affect future developments, the Board considers that any new planning advice must inevitably have effects on existing developments. The likely consequences for house prices and insurance premiums, for instance, should receive recognition. In particular, such an approach does not address situations where for historical reasons there may already be a high concentration of development. The level of existing societal risk may be high as a result of this. We believe that in the light of this Principles P11 and P12 should be further scrutinised, and as we have argued above, taken into account in a more widely cast RIA.

Q1 Do you think that in the light of the Buncefield incident, the Objectives and Principles (in Annex 1) remain a sound basis for HSE's LUP advice to planning authorities?

27. The Board questions the appropriateness of using this narrowly based consultation for asking such an important question. The Board believes that any conclusions should be seen as provisional and followed up with some subsequent review and consultation on the workings of the whole system (see Paragraph 14 above).
28. Against this background, the Board agrees with P1-7, 9-10 and 13-14, as far as they go. The Board, however, believes that a risk-based, societal approach is needed and is not content with P8 as drafted. The second sentence in the "Supporting Information" provided with P8 about the use either of a hazard-based or risk-based approach is too imprecise to deal with incremental development because the advice offered by HSE on hazard-based effects does not address the cumulative risk to the whole exposed population. Some additional Principles would be required to reflect what the Board consider to be the right general approach.
29. In view of what is said in Paragraph 26 above, the Board considers there is an argument for further scrutiny of Principles 11 and 12.

Q2 Is it right to extend the CDs to the area of damage observed in the Buncefield explosion?

30. No. The Board thinks it unwise to adopt an interim policy of this sort while the science remains tenuous and the likely frequency of such events uncertain. It also creates inconsistency with the approach adopted at other COMAH highly flammables sites. In

addition it does not address the question of LUP advice based more on consideration of risk and giving recognition to measures which significantly reduce risk.

Q3 Should we change our assumptions about the vulnerability of individuals likely to be affected by such an incident?

31. This seems sensible in principle, given that an explosion hazard must now be recognised alongside the hazards deemed more credible before Buncefield, such as a major pool fire. This should be underpinned by a review and further research into this area. However, we remain concerned that any change of policy will only apply to Buncefield type sites when the implications are wider. Buncefield also demonstrated the vulnerability of people and communities from the effects of an event on property, economic assets, and the environment, as well as direct physical injury. These less direct and immediate effects need factoring in, no doubt in conjunction with other Government departments.

Q4 Which option best strikes the right balance between reducing the risk of harm to individuals and allowing economic and social developments in the vicinity of these sites

32. In the Board's view none of the options can be judged as providing the best (permanent) balance between risk and cost, and any steps now taken should be regarded as temporary pending a major rethink of the system. Indeed, a key question is how to judge 'the right balance' and what is the mechanism for deciding this. Local Planning Authorities have to make these decisions based on criteria which are not transparent.

33. Clearly Option 4 provides greater flexibility for development than Option 3, while Option 3 adopts a more precautionary position than Option 2. Option 4 therefore appears as a compromise position between precaution and development and has some regard to societal risk.

Q5 We would particularly like your views on Option 3, which gives the greatest level of protection to individuals and the greatest amount of land use control; and Option 4, which gives greater public safety protection than at present but allows more development than Option 3

34. As the Board has indicated in answer to Q4 above, it sees Option 4 as a compromise for a provisional approach pending a wider and deeper review of the current system as a whole. It can be seen as more risk-concept based than Option 3, but the consultation distance, outer, middle and inner zones are the same in both Options 3 and 4 and are derived from a protection-concept approach. However, if Option 4 is to be operated in a consistent way, various aspects will need clarifying, such as what is allowable in the new inner zone, how to interpret 'not normally occupied', and how account should be taken of existing businesses and housing already in the inner zone.