

POLICY DC 4.2

PLANNING FOR HAZARDS AND SAFETY

BACKGROUND NOTES

Planning for hazardous industry has become an increasingly important facet of land use planning in recent years. Overseas catastrophes have heightened public awareness of the hazards associated with some industry and activities. The Government of Western Australia has responded by developing a more informed approach to hazardous industry siting and has established controls and standards, in consultation with the public of Western Australia (EPA Bulletin 278).

In recognition of the importance, yet complexity, of hazardous industry planning, the Australian Planning Ministers established a National Task Force into Hazardous Industry and Safety Planning in 1986. This Task Force has been chaired by the NSW Department of Planning, which is a recognised leader in this area. Policies and Guidelines in areas related to hazardous industry planning have been developed in NSW and these have been considered in the development of this policy.

In addition there is a need to provide guidance in other land use planning matters where there is a real, or perceived, level of risk. These include storage and transport of dangerous goods, planning for contaminated land, and the need to carefully plan areas prone to bushfires and coastal areas prone to storm surge and severe shoreline movement.

This policy seeks to provide guidance to planners, local authorities and developers in planning to prevent the occurrence of potentially hazardous events and to mitigate the effects of any such events, should they occur and in ensuring that the appropriate procedures are followed in the consideration of proposals.

Other relevant policies contained in the Development Control (including subdivision) Policy Manual include;

DC 3.4 Rural Land Use Planning Policy

DC 4.1 Industrial Subdivision

DC 6.1 Country Coastal Planning Policy

Guidelines - Planning for Better Bushfire Protection.

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1. INTRODUCTION

- 1.1. No "risk" is defined as the likelihood of any unwanted consequences. The basis for determining the acceptability of risk relates to standards or guidelines.
- 1.2. Various levels of risks are tolerated on a daily basis. Risk taken with free choice and full knowledge may be described as voluntary risk. Where the individual does not have knowledge of the risks or is not entirely free to choose to avoid the risk exposure, then the risk may be termed non-voluntary. While people may be prepared to expose themselves to quite high levels of risk in undertaking certain activities (such as playing sports or driving cars), involuntarily imposed risks (such as that arising from a hazardous industrial development) generally are only acceptable to society at quite low levels of risk.
- 1.3. When a risk is to be imposed on an individual or group the concept of 'acceptability' of that risk for the decision making process is that it should be low relative to other known and tolerated risks.
- 1.4. The determination of risk guidelines for hazardous development and the definition of hazardous activities are matters within the domain of the Environmental Protection Authority (EPA) under the Environmental Protection Act 1986 and the Department of Mines under the Explosives and Dangerous Goods Act 1961. While the technical determination of risk levels will be considered by these authorities, planning authorities should be familiar with the issues and consider the planning implications and strategies for minimising risk exposure.
- 1.5. The main objective of this policy is to ensure that the planning process addresses exposure of the public to risk from man-made and natural events. The risk implications of a proposed development should be taken account of and weighed against factors which need to be considered in land use planning. The policy highlights the principles which will guide the State Planning Commission in its considerations and also identifies the procedures within and associated with the planning process which should be followed to ensure that appropriate considerations and referrals are taken account of.

2. DEFINITIONS FOR THE PURPOSE OF THIS POLICY

Contaminated Land is defined as land which, because of previous or present uses at or near the site, contains materials that give rise either directly or indirectly to immediate or long-term hazards to human health or the environment.

Hazardous Industry means an industry which, when in operation and when all measures proposed to minimise its impact on the locality have been employed (including measures to isolate the industry from existing or likely future development on other land in the locality), would pose a significant risk in relation to the locality, to human health, life or property, or to the biophysical environment. Examples of such industry include oil refineries and chemical plants but would generally exclude light, rural or service industries.

Dangerous Goods are those substances declared as dangerous goods listed in the Schedule to the Explosives and Dangerous Goods (Classification of Dangerous

Goods) Order 1988 pursuant to Section 42 (2) (b) of the Explosives and Dangerous Goods Act 1961 of a sufficient quantity to require a premises to be placarded under that Act.

Risk means the likelihood of any unwanted consequences such as death, injury, damage to property or damage to the environment.

Hazard means a set of conditions that has the potential to cause such unwanted consequences.

Individual Risk means the likelihood that a person will die or will be injured.

Risk Analysis refers to the quantified risk analysis required by the EPA at an early stage of the environmental impact assessment process where a project involves a significant element of risk. The analysis should include identification of the relevant hazards, a quantification of their consequences and the likelihood of their occurrence.

3. POLICY OBJECTIVES

- To ensure that developments are reviewed with a view to maintaining appropriate public safety.
- To maintain acceptably low risk exposure through appropriate planning procedures.
- To provide guidelines for the consideration of the influence of existing risk levels in the planning process.
- To provide for the development of industries and activities which are hazardous but which are desirable for the benefit of the wider community.

4. GENERAL POLICIES FOR HAZARDOUS DEVELOPMENT

4.1 GENERAL STATE PLANNING COMMISSION POLICY FOR HAZARDOUS DEVELOPMENT

4.1.1 Development should be planned to minimise and otherwise control risks. Land use planning should contribute to safety by;

- securing compatible land uses,
- providing adequate buffers and providing for safe transport routes,
- ensuring that infrastructure, such as fire and other emergency services, are considered and will have appropriate access.

4.2 PROCEDURAL GUIDELINES

4.2.1 Generally the environmental impact assessment process will require that alternative locations will be investigated to ensure that all steps have been taken to minimise risks.

4.2.2 The consequences of the more likely hazardous events should be contained within the boundaries of the installation by

appropriate engineering design. Calculation of distances relating to such events within the boundary of a site (and their impact outside the site) will be undertaken by the proponent subject to audits by the EPA and the Department of Mines.

- 4.2.3 Where there is an existing risk from a hazardous installation, additional hazardous development should not add significantly to the existing risk. In such circumstances the cumulative effect of hazardous developments should not exceed the risk criteria laid down and determined by the EPA.

5. HAZARDOUS INDUSTRY

5.1 STATE PLANNING COMMISSION POLICY ON HAZARDOUS INDUSTRY

- 5.1.1 New hazardous development shall be located in industrial areas, separated from residential areas.
- 5.1.2 Where practicable, town planning schemes should provide zones specifically for hazardous industry which prohibit all habitation (such as caretakers residence) and non-hazardous industries that are labour intensive and/or that have a retail component.
- 5.1.3 Hazardous industry areas should have buffer zones. The extent of buffer zones should be determined in the context of an assessment of the type of existing or likely industry to be accommodated in the hazardous industry zone.
- 5.1.4 The likely future use of the land in the buffer zone should be considered when assessing hazardous development, and controls should be provided within the town planning scheme to ensure that uses likely to increase residential use, or commercial activities attracting significant volumes of employees or customers, are restricted.
- 5.1.5 Any development which introduces a substantial number of people into an area where the individual risks are significant when compared with other risks to which they are exposed in everyday life should be avoided. Some people such as hospital patients, children at school or the elderly are more vulnerable to hazards and less able to take evasive action relative to the general residential population. Uses likely to attract these groups should be particularly discouraged in proximity to hazardous industry.
- 5.1.6 In planning for new industrial development it is desirable to select areas where a buffer zone can be maintained in the long term. Public ownership of a buffer zone may be the most appropriate safeguard to ensure that use of land in the buffer zone is secured.

5.2 PROCEDURAL GUIDELINES

- 5.2.1 Proposals that are likely to be hazardous may require assessment by the EPA under the Environmental Protection Act or the Department of Mines under section 45 of the Explosives and Dangerous Goods Act.
- 5.2.2 For a particular proposal it will usually be necessary to prepare a Preliminary Risk Analysis to quantify the risk levels in areas around the proposal. The proponent would also be expected to identify the existing land uses exposed to various risk levels. Of particular concern is the location of the most exposed residents or other members of the public.
- 5.2.3 If exposure, and all other potential impacts, are judged to be acceptable the EPA would recommend that the proposal could proceed, subject to certain recommendations relating to the management of impacts. These would include more detailed levels of hazard and risk analysis as the design and construction of the proposal proceeds. Normally there would be recommendations to cover emergency planning, both on-site and off-site.
- 5.2.4 In making the decision on permitting a proposal, the Minister for the Environment may adopt some or all of the EPA's recommendations as conditions, and may add additional conditions at the request of other decision makers. These conditions then are binding on the proponent and other decision makers.
- 5.2.5 Planning authorities should participate fully in the assessment process, firstly to provide the most up-to-date information on surrounding existing and proposed land uses, and secondly to obtain feedback on the implications of the final Ministerial conditions for land use planning. Such feedback could include recommendations as to the adequate separation distances from other land uses or the views of the public conveyed through any public participation process or assessment of social impact.
- 5.2.6 Separation distances generally will be determined by the Department of Mines and the EPA in the context of these assessments. Standard setbacks and conditions have been used for the approval of existing dangerous goods premises. It is therefore important to ensure the maintenance of these setbacks when developments are occurring in the vicinity of existing premises. The planning authority should contact the Explosives and Dangerous Goods Division of the Mines Department for advice on separation distances.
- 5.2.7 The EPA's Guidelines on Risks and Hazard of Industrial Developments on Residential Areas in Western Australia (Bulletin 278) establish risk guidelines for adjacent residential land and for assessing the acceptability of risk levels. The criteria include all components of risk including fire, explosion and toxic gas emissions.

6. STORAGE OF DANGEROUS GOODS

6.1 STATE PLANNING COMMISSION POLICY ON STORAGE OF DANGEROUS GOODS

- 6.1.1 Significant quantities of dangerous Goods should be stored in areas zoned Industrial or reserved for an appropriate special purpose.
- 6.1.2 In considering proposals for development of warehouses, open air storage and industries involving storage, a planning authority should establish whether dangerous goods, or materials that may cause a hazard in the event of a fire, are to be stored on site.

6.2 PROCEDURAL GUIDELINES

- 6.2.1 The storage of dangerous goods must meet the regulatory requirements of the Department of Mines and EPA and the relevant Australian Standards in terms of design and separation distances. Referral of applications involving the storage of dangerous goods should be to the Department of Mines and the EPA to determine the appropriate standards and the need, in some instances, for a risk assessment.
- 6.2.2 A risk analysis, should one be required, would identify the ways in which the storage could be so designed to reduce or eliminate risk. Regulatory controls administered by the Department of Mines establish the procedures for dealing with emergencies.

7. TRANSPORTATION OF DANGEROUS GOODS

7.1 STATE PLANNING COMMISSION POLICY ON TRANSPORT OF DANGEROUS GOODS

- 7.1.1 While this matter is not necessarily related to land use planning and is generally covered by other legislation, planners should take account of the resulting transport requirements when locating a hazardous facility. Consideration should be given to road reserve widths and routes to facilitate safe road or rail transport options.
- 7.1.2 In granting development approval a planning authority may consider it to be appropriate to specify the way in which goods will access the site from adjacent roads.

7.2 PROCEDURAL GUIDELINES

- 7.2.1 In negotiations with a proponent, in conjunction with the regulatory agencies, it may be appropriate to consider the actual route to be taken in transporting goods to and from a site or specify a particular mode of transport, such as rail. It would be inappropriate to impose such conditions on a development approval.

8. NON-HAZARDOUS DEVELOPMENT OR ADJACENT TO HAZARDOUS LOCATIONS

8.1 STATE PLANNING COMMISSION POLICY ON PLANNING NEAR HAZARDOUS LOCATIONS

- 8.1.1 Hazard may be an additional consideration to be addressed in the siting of major new facilities such as airports, ocean ports or major installations or the planning of land around existing such facilities. It will generally be expected that a risk analysis be undertaken as part of the preparation of airport Master Plans.

(Noise is the main problem associated with planning near airports. This will be addressed in a separate policy.)

8.2 STATE PLANNING COMMISSION POLICY ON PLANNING FOR NATURAL EVENTS

- 8.2.1 Natural events include tropical and mid-latitude cyclones as well as earthquakes and their associated consequences, such as floods and land slip. Bushfires could also be regarded as hazardous natural events.
- 8.2.2 A planning authority is bound to consider information relating to the probability of extreme natural events in making planning decisions. (Legal advice is that a planning authority has a limited and general liability in terms of human safety and property damage if it gives approval to a development in the knowledge of a level of risk).
- 8.2.3 Rezoning in cyclone prone areas should proceed after account is taken of the storm surge hazard zone and there may be a need to refuse applications or require developers to raise floor levels in areas subject to storm surge hazard. Similarly, allowance should be made to accommodate naturally occurring shoreline movement particularly where that occurs in response to storm activity. The allowance to accommodate shoreline movement is necessarily additional to any reservation of coastal land for recreational purposes. The Country Coastal Planning Policy (DC 6.1) of the State Planning Commission, addresses these matters.
- 8.2.4 In areas prone to tropical cyclones it may be appropriate to place power lines underground to avoid possible risk and communications breakdown in the event of a cyclone.
- 8.2.5 Land within the floodways of river systems, as defined by the Water Authority of Western Australia, or watercourses liable to flooding, should not generally be developed for residential or commercial purposes. While recreational land use may be appropriate, improvements which could result in interference with the free flow of flood water should be avoided.
- 8.2.6 The development of land for residential or intensive rural uses should take account of fire hazard with development being strongly

discouraged in high hazard areas. Areas in which fire control measures, (firebreaks, buffer zones, fire access tracks, water supplies and fire suppression arrangements), cannot be practically met should be avoided. Details of bush fire evaluation and/or mitigation measures which have been or will be undertaken to the satisfaction of the Bush Fires Board and the local authority, should be provided in local rural strategies and applications to rezone and subdivide rural land likely to be prone to fire hazard. Account should be taken of the Planning for Better Bushfire Protection Guidelines.

8.2.7 Where land is subject to risks and possible hazards arising from radiation the advice of the Radiological Council should be sought.

- The extent to which future purchasers should be forewarned of any hazard by memorandum or covenants on titles or through appropriate town planning scheme provisions.

9. PLANNING FOR CONTAMINATED LAND

9.1 STATE PLANNING COMMISSION POLICY ON CONTAMINATED LAND

9.1.1 The State Planning Commission will not approve applications to rezone, develop or subdivide land which has been contaminated unless it is satisfied that the approval of the proposal is in the long term interest of the community, having regard to the advice of the EPA.

9.2 PROCEDURAL GUIDELINES

9.2.1 Where land may have been contaminated from past uses or current activities, redevelopment of the land should not proceed until a site history, description and preliminary sampling and investigation program has been completed. The results of such a program will indicate an appropriate course of action. Proposals to develop contaminated land, with a potential to cause significant environmental impacts, should be referred to the EPA for assessment.

9.2.2 Where it is proposed to rezone potentially contaminated land, and land adjacent to potentially contaminated land, for residential use, the EPA will normally require a full assessment to be undertaken to satisfactorily address the following:

- An audit of all contaminants that could be present in the sod, in the water table or on adjacent land.
- Sampling and testing of soil and water samples for possible contaminants.
- The safeguards which should be imposed on future development to ensure that chemicals are isolated and contained so as not to affect surface contact or water extraction or subsequent users.