



Guidelines for Separation of Agricultural and Residential Land Uses

Establishment of Buffer Areas

August 2012

Definitions

Agricultural land use - The use of land for the production of food, fibre and timber, including grazing, cropping, horticulture and forestry.

Buffer area/zone - A buffer is formed to create an area of separation between conflicting land uses.

Buffer element - A natural or artificial feature within a buffer area that mitigates an adverse impact, including open ground, vegetation or constructed/acoustic barrier.

No-spray zone - An area in which direct application of the agricultural chemical is prohibited; this area is specified in distance between the closest point of direct chemical application and the nearest boundary of a site to be protected, unless otherwise specified on a product label (APVMA).

Registered pesticide - A pesticide that is registered under the Agvet Code of Western Australia Part 2

Residential development - Urban subdivision, low-density residential subdivision and rural allotments created primarily for residential purposes and other places used as human accommodation, excluding dwellings associated with bonafide agricultural holdings.

Sensitive land use - Land uses considered to be potentially sensitive to emissions from industry and infrastructure including residential developments, hospitals, hotels, motels, hostels, caravan parks, schools, hospitals, nursing homes, child care facilities, shopping centres, playgrounds, and some public buildings.

Separation distances - The total linear distance between a source and a sensitive receptor.

Spray Drift - The movement of pesticide away from the target area in the atmosphere. The three main forms of drift are droplet drift, vapour drift and particulate drift.

Vegetative barrier - A vegetative barrier is usually a tree or shrub line that is located on the downwind side of a sprayed area to protect an area susceptible to spray drift. Vegetation is sometimes planted deliberately to filter spray drift from the environment.

Abbreviations

APVMA - Australian Pesticides and Veterinary Medicine Authority, a Commonwealth government statutory authority established in 1993 to centralise the registration of all agricultural and veterinary chemical products and labels into the Australian marketplace

DOH - Department of Health

Introduction

This document has been developed to consolidate the current Department of Health (DOH) position for the establishment of buffer areas in new residential subdivisions where possible conflicts with existing agricultural land use exist. The need for a formal policy arises as an increasing number of residential developments encroach on land previously occupied for agricultural use and concerns are raised or health impacts reported. Buffer areas can reduce conflict, health impacts and resulting complaints from conflicting agricultural, residential and other urban land uses.

The DOH has largely adopted the best practice standards described by the Queensland Department of National Resources in their "Planning Guidelines: Separating Agricultural and Residential Land Uses – August 1997" and supported by CSIRO (2002). Other jurisdictions have used similar processes.

Purpose

This document provides specific requirements to assist local governments, developers, land owners and consultants in providing adequate separation from conflicting land uses. These guidelines should be used in conjunction with State Planning Policy 4.1 (draft for public comment WAPC July 2009) and *Guidance for the Assessment of Environmental Factors No 3 Separation distances between industrial and sensitive land uses* (Environmental Protection Authority, (June 2005).

All chemical use must comply with existing legislation. Spraying practices will also need to comply with the APVMA "no spray zone" which is being introduced to the labels of new and existing pesticides. A designated buffer area under these guidelines will contribute to the area included as a "no spray zone", allowing a greater portion of agricultural land to be available for crops where a large "no spray zone" applies.

Scope

This document provides recommendations on the minimum separation distance required between agricultural land use and residential land use based on current scientific knowledge and industry practice. These separation distances may be applied to other proposed sensitive land uses.

Single residential dwellings located in land zoned Rural, Agricultural or equivalent in local and regional planning schemes are excluded from this document.

Objective

The objective of this guideline is to avoid conflicts arising from proposed residential developments and other sensitive land use near existing agricultural land. This guideline will assist in minimising health and nuisance impacts from chemical use and dust.

Limitations

Considering the complexity in determining a safe buffer distance applicable to multiple situations it is important that the design of buffer areas is based on the best possible evidence and is conservative in its approach.

Vegetative buffers may not be suitable where the chemicals in use may result in vapour drift (eg. soil fumigants) or where herbicide spray drift would impact on the vegetative buffer. In these circumstances a 300m buffer distance would apply.

Safe application of chemicals, design and use of spray technology/equipment and requirements under existing legislation are not specifically covered by this document. Buffers are not substitutes for good spray management practices.

Establishment and maintenance of buffer areas

New residential developments should protect the rights of the existing agricultural producers to continue to perform farming activities on their land.

The following measures should be implemented at the earliest possible planning stage to minimise impacts on public health:

1. Where land is approved for subdivision or residential development the prospective proponent must be advised by the local government of the requirement for buffer areas to be included.
2. Applications for development are to consider and describe the existence and location of surrounding land uses, including viticultural and agricultural activities, and site the development in a position which will not result in the potential for land use conflict between neighbouring land uses.
3. Applications for a site being developed for residential purposes are to include buffer areas that are planned and funded by the proponent of that development, unless otherwise determined by mutual agreement with existing land owners (including land owned by State and Local Authorities).
4. Buffer areas should apply from the boundary to boundary of the conflicting land uses.
5. Consideration needs to be given to the time in which an area remains “mixed use”. Buffer areas may be temporary and can be reserved for public open spaces or further residential development once conflicting agricultural land use has ceased. Residential subdivision applications may include future residential lots that will fall within the buffer area that will be constructed only when neighbouring agricultural activities have ceased.
6. Persons intending to live in or adjacent to an agricultural land use area need to be fully informed of the agricultural practices and their potential impact on health or amenity before they settle into the area.

7. Where a vegetative buffer is planned, the proposals must state who is responsible for planting and maintaining the buffer area vegetation. The vegetative buffer needs to be planted and established before building approval is granted. A legal agreement must be established that specifies the legal and ongoing obligations on the developers, local government and landowners.
8. Any alternative design is based on a thorough analysis of the specific site conditions by an expert and should be approved by the Environmental Protection Authority/ Department of Health.

EPA Guidelines require the following separation distances for common agricultural uses:

Industry	Description of Industry	Buffer Distances
Market Gardens	Broad Scale Operations	300-500m
Orchards		500m
Turf-farms and lawns		500m
Vineyards		500m

The precise design of the buffer will depend on many different factors including the chemicals used, method of application, the site, the proposed land-uses and the adjacent or nearby land use and characteristics including road reserves and existing vegetation.

The following minimum requirements will be considered suitable by the DoH:

1. A separation distance of 300m for to control spray drift, dust, smoke and ash.
2. Alternatively a 40 m separation distance can be used where a vegetative buffer has been adequately designed, implemented and maintained in accordance with these guidelines.
3. Vegetative buffers will not be operational until trees reach the minimum effective height to control spray drift. Residential areas should not be developed within 300m until this time.

Natural geographical features (watercourses and ridge lines), public open spaces, road reserves etc. can be used to meet the required separation distances. Areas reserved for public open spaces should not be designed for recreational use (eg. playground, community facilities) until agricultural activities are ceased.

In some circumstances a temporary, suitably designed constructed buffer with 50% porosity and of sufficient height may be accepted (ie. where residential development of existing agricultural land is likely to occur before a vegetative buffer can be established and chemicals used are of low public health risk). Temporary buffers are subject to the same design criteria as permanent ones to ensure their effectiveness. Constructed buffers should be submitted for approval as an alternative design.

Requirements for Vegetative buffers

To be effective barriers to spray drift, the vegetated buffers need to meet the following criteria:

- Be located as close as practicable to the point of release of the spray.
- A minimum total width of 40m made up of 10m cleared fire break area either side of a 20 m wide planted area.
- Contain random plantings of a variety of tree and shrub species of differing growth habitats, at spacings of 4-5m.
- Include species with long, thin (needle-like) and rough (furry/hairy) foliage which facilitates the more efficient capture of spray droplets and which are fast growing and hardy;
- Foliage should be from the base to the crown; mixed plantings of trees may be required to ensure there are no gaps in the lower canopy.
- Provide a permeable barrier which allows air to pass through the buffer. A porosity of 0.5 is acceptable (that is, approximately 50% of the screen should be air space).
- Have a mature tree height twice the height of the spray release height.
- Have mature height and width dimensions which do not detrimentally impact upon adjacent crop land.

Applications for development where biological buffers are proposed shall include a detailed landscaping plan indicating the extent of the buffer area, the location and spacing of trees and shrubs and a list of tree and shrub species. The application shall also contain details concerning the proposed ownership of the buffer area and the means by which the effectiveness of the buffer is to be maintained.

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