SECTION 22 - LAND USE BUFFERS

22.1 INTRODUCTION

Rural land use conflicts come in a variety of different forms. Land use buffers are an accepted land use planning tool and have an important role in reducing risk of land use conflict and impacts between incompatible land uses through separation of land uses.

Buffers provide increasing certainty in the planning approval process and minimise the potential for conflict to occur. It needs to be remembered that conflicts can occur between: individual rural activities and/or natural resource users; commercial land users and residents; land uses and the natural environment. The purpose and application of buffers will vary depending upon the individual circumstances. Buffers are an important tool to reduce land use conflicts but are not the only tool. The role and value of buffers can however be undermined if they are reduced by encroaching land use.

Key points
While buffers are important in managing land use conflicts, they do not lessen the need for sound land use planning practices, in particular the strategic planning processes of appropriate zoning and land use strategy development.

As well, they do not replace the need for the individual assessment of a proposal based upon the specific characteristics of the site, the locality and the proposal itself. Aspects such as scale of development, topographic and climatic conditions, environmental attributes and the nature and sensitivity of uses within the locality will influence the required impact mitigation measures and the separation distances that are considered necessary and appropriate in the circumstances. Innovative solutions to land use conflict and interface issues is to be encouraged.

22.2 ROLE OF BUFFERS

Defining minimum buffer distances between incompatible land uses and key natural resource assets is a useful mechanism for reducing and avoiding the threat of land use conflict issues between incompatible land uses. However, buffers have their limitations and need to be used with caution and in combination with other strategies to reduce land use conflict risks and manage interface issues.

Management practices can also be used to reduce land use conflicts, additional to the establishment and maintenance of buffers. There are various documents that prescribe minimum separation distances between incompatible land uses.

Table 22.1 is a guide to minimum separation distances for primary industries.

Table 22.2 outlines the minimum buffers for environmental assets.

Table 22.3 outlines the minimum buffers for other rural land uses. The buffers recommended should be used as a starting point and guide only in the absence of any other or more appropriate separation arrangements.

Local and site specific circumstances and application of relevant policies and specific guidelines will dictate the minimum separation required and what is reasonable and appropriate in the circumstances.

It is not possible to prescribe a minimum buffer distance for all interface situations. In such cases, Tables 1-3 include an alternative approach such as site specific assessment. This site specific assessment is comparable to the assessment that would be typically undertaken to satisfy the requirements of Section 79C of the EP&A Act. The minimum buffer distances need to be used and applied in combination with the planning principles previously outlined to ensure the desired outcome is achieved.

Key points
Complying with an adopted buffer setback will help decrease the potential for conflict though it cannot guarantee that land use conflict and interface issues will be totally removed. Variables such as changes in ownership of adjoining lands, changes in land use and management practices and variable climatic conditions can affect the success of land use buffers.

Similarly, complying with a buffer setback does not guarantee that a development proposal will be approved by the consent authority. Mitigation of land use conflict and the application of land use buffers are part of a broader consideration of environmental, social and economic factors which an approval authority must take into account in determining the merits of a given land use proposal.

22.3 TYPES OF BUFFERS

Separation buffers are the most common and involve establishing a physical separation between land uses where conflict could arise. The aim of doing this is to reduce the impacts of the uses solely by distance separation, rather than by any physical means such as earthworks or vegetation planting. These can be fixed separation distances or variable.

Fixed separation distances generally apply in the absence of evidence that an alternate lesser buffer will be effective in the circumstances. Variable separation distances are calculated based on the site specific circumstances given factors such as the scale of the development, risk of conflict and risk to the adjoining environment have regard to accepted procedures for assessing these risks.

The odour assessment process in NSW involving stationary sources is a form of a variable buffer as it varies according to specifics of the development and the site.

Biological and vegetated buffers are buffers created by vegetation planting and physical landscaping works. They are most commonly designed to reduce visual impact and

reduce the potential for airborne-created conflict such as chemical spray drift and dust and can help provide environmental protection through vegetated filter strips and riparian plantings.

Landscape and ecological buffers refer to the use of existing vegetation to help reduce the impacts from development. They are mostly used to protect a sensitive environment by maintaining or enhancing existing habitat and wildlife corridors.

Property management buffers refer to the use of alternative or specialised management practices or actions at the interface between uses where the potential for conflict is high. The aim of these buffers is to reduce the potential of conflict arising in the first place. Examples include siting cattle yards well away from a nearby residence to reduce potential nuisance issues, and adopting a specialised chemical application regime for crops close to a residence or waterways with the aim of minimising off-site impacts on neighbours and the environment.

Other buffers
There are other statutory and recommended buffers that can apply to a specific sites and situations. These include:
• bushfire protection buffers
• mosquito buffers
• airport buffers
• power line buffers
• rifle range buffers
• railway line buffers
• cultural heritage buffers.

Key points
People intending to develop within a rural area or within the rural/residential interface should contact council to find out about the buffer requirements specific to their locality, site and the land use proposed.

Similarly, with regard to Aboriginal cultural heritage issues, including significant sites, places and landscapes, it is recommended that you consult with the local Aboriginal Land Council.

Buffer zones and management options will vary according to the significance of a site, its locality, the topography of the land and its relationship to a range of other geographic and culturally relevant factors.

22.4 SUMMARY OF MINIMUM BUFFERS

The following tables summarise the minimum buffers to reduce land use conflicts and protect the values of key environmental assets and rural production areas. The separation distances in the tables represent a synthesis of existing recommended and best practice minimum buffer distances.

As such, and given the varying sources they are drawn from, they represent an approximation of what constitutes best practice and a level of separation that will assist to minimise rural land use conflict at this time while acknowledging that site specific and development specific factors will always play a role in determining the most appropriate level of separation and approaches to conflict avoidance.

It is acknowledged that appropriate buffer distances may vary between proposals based on local topographic, climate, environmental and social considerations. The minimum buffer distances do not apply to existing developments that have already been approved. The conditions of consent placed on these developments form the minimum standards that these developments should achieve.

Where a new dwelling is proposed on an existing vacant lot that has a dwelling entitlement, the setbacks and buffers normally required may not necessarily be appropriate or practical. In these cases, council will need to use discretion to determine the most appropriate location, design and arrangement for the new dwelling. The principle of conflict avoidance should be maintained and the maximum achievable buffer and conflict avoidance measures implemented.

Table22.1: Minimum buffers (metres) for primary industries

(NB: The desirable buffer in the circumstances will be the separation distance and conflict avoidance strategy that protects: community amenity, environmental assets, the carrying out of legitimate rural activities in rural areas and the use of important natural resources.)

		Residential areas & urban development	Rural dwellings	Education facilities & pre-schools	Rural tourist accommodation	Watercourses & wetlands	Bores & wells	Potable water supply/ catchment	Property boundary	Roads
Piggeries[1]	Housing & waste storage	1000	500	1000	500	100	SSD	800	100	100
	Waste utilisation area	500	250	250	250	100	SSD	800	20	20
Feedlots[2]	Yards & waste storage	1000	500	1000	1000	100	SSD	800	100	100
	Waste utilisation area	500	250	250	250	100	SSD	800	20	20
Poultry[3]	Sheds & waste storage	1000	500	1000	500	100	SSD	800	100	100
	Waste utilisation area	500	250	250	250	100	SSD	800	20	20
Dairies[4]	Sheds & waste storage	500	250	250	250	100	SSD	800	100	100
	Waste utilisation area	500	250	250	250	100	SSD	800	20	20
Rabbits[5]	Wet shed, ponds & irrig.	300	150	150	150	100	SSD	800	50	50
	Dry shed	120	60	120	60	100	SSD	800	20	20
Other intensive livestock operations[6]		500	300	500	300	100	SSD	800	100	100
Grazing of stock		50	50	50	50	BMP	SSD	BMP	NAI	BMP
Sugar cane, cropping & horticulture		300	200	200	200	BMP	SSD	BMP	NAI	BMP
Greenhouse & controlled environment horticulture		200	200	200	200	50	SSD	SSD	50	50
Macadamia de-husking		300	300	300	300	50	SSD	SSD	50	50
Forestry & plantations		SSD	SSD	SSD	SSD	STRC	SSD	SSD	BMP	STRC
Bananas		150	150	150	150	BMP	SSD	SSD	BMP	BMP
Turf farms[8]		300	200	200	200	50	SSD	SSD	BMP	SSD
Rural industries (incl. feed mills and sawmills)		1000	500	500	500	50	SSD	SSD	SSD	50
Abattoirs		1000	1000	1000	1000	100	SSD	800	100	100
Potentially hazardous or offensive industry		1000	1000	1000	1000	100	SSD	800	100	100
Mining, petroleum, production & extractive industries		500 1000*	500 1000*	500 1000*	500 1000*	SSD	SSD	SSD	SSD	SSD

* Recommended minimum buffer distance for operations involving blasting.

NAI: Not an issue.
SSD: Site specific determination (no standard or simple buffer distance applies).
BMP: Best management practice to apply given site circumstances. Buffer and/or management practice should represent duty of care to the environment and the public and include measures necessary to protect bank stability, maintain riparian vegetation and protect water quality. The incorporation of best management practice measures in property and farm plans is encouraged.
STRC: Subject to relevant codes.
Buffer distances represent the recommendations of the North Coast Land Use Conflict Working Group following a synthesis of existing guidelines and policy. In some cases, specific and relevant guidelines may require larger buffers or lesser buffers than those prescribed may be appropriate in the circumstances.

Notes:
1. Subject to environmental assessment in accordance with National *Environmental Guidelines for Piggeries* (APL 2004) and *Assessment and Management of Odour from Stationary Sources in NSW* (DEC 2006)

2. Subject to environmental assessment in accordance with *NSW Feedlot Manual* (NSW Agriculture 1997) or *A Producers Guide to Starting a Small Beef Feedlot in NSW* (NSW Agriculture, 2001) and *Assessment and Management of Odour from Stationary Sources in NSW* (DEC 2006)
3. Subject to environmental assessment in accordance with *NSW Poultry Farming Guidelines* (NSW Agriculture 1996), NSW Meat Chicken Guidelines (NSW Agriculture 2004), *Assessment and Management of Odour from Stationary Sources in NSW* (DEC 2006)
4. Subject to environmental assessment in accordance with *NSW Guidelines for Dairy Effluent Resource Management – Draft* (NSW Agriculture 1999), and *Assessment and Management of Odour from Stationary Sources in NSW* (DEC 2006)
5. Subject environmental assessment in accordance with *Rabbit Farming: Planning and development control guidelines* (NSW Inter-Departmental Committee on Intensive Agriculture, 1999) and environmental assessment in accordance with *Assessment and Management of Odour from Stationary Sources in NSW* (DEC 2006)
6. Subject to environmental assessment in accordance with *Assessment and Management of Odour from Stationary Sources in NSW* (DEC 2006) and any other relevant guideline or policy
7. Subject to environmental assessment in accordance with *Guidelines for the Development of Controlled Environment Horticulture* (NSW DPI 2005)
8. Subject to environmental assessment in accordance with *Turf Farming – Guidelines for Consent Authorities in NSW* (NSW Agriculture 1996)

Table 22.2: Minimum buffers (metres) for key environmental assets

	Residential areas & urban development	Rural settlement & on-site waste systems	Education facilities & pre-schools	Rural tourist accommodation
Native vegetation/habitat	50	50	50	50
Ecosystem & wildlife corridors	50	50	50	50
Estuaries & major waterways	100	100	100	100
Minor waterways	50*	50*	50*	50*
Wetlands	100	50*	50*	50*
SEPP 26 littoral rainforests	100	100	100	100
State & regionally significant farmland	300	300	300	SSD

* Site assessment is necessary as 50m buffer may be inadequate given groundwater, soil type, topography and site factors.
NAI: Not an issue.
SSD: Site specific determination (no standard or simple buffer distances apply).
STRC: Subject to relevant codes.
Buffer distances represent the recommendations of the North Coast Land Use Conflict Working Group following a synthesis of existing guidelines and policy. In some cases, specific and relevant guidelines may require larger buffers or lesser buffers than those prescribed may be appropriate in the circumstances.

Table 22.3: Minimum buffers (metres) for other land uses

	Residential areas & urban development	Rural settlement	Education facilities & pre-schools	Rural tourist accommodation
Waste facilities	300	300	300	300
Sewerage works	400	400	400	400
Dip sites[1]	200	200	200	200
Boarding kennels	500	500	500	500
Stock yards including cattle yards	200	200	200	200
Stock homes/stables[2]	SSD	SSD	SSD	SSD
Effluent re-use areas[3]	SSD	SSD	SSD	SSD

SSD: Site specific determination (no standard buffer distances apply).
Notes:
1. The Cattle Tick Dip Site Management Committee (DIPMAC) recommends a nominal 200 metre radius assessment zone around cattle dip sites. Residential development proposed within this zone should be subject to a contaminated lands assessment to determine the extent of contamination and risks posed by contamination. The assessment and any proposed remediation works must also meet the requirements of *State Environmental Planning Policy No. 55 – Remediation of Land*. Urban encroachment onto working cattle\ dip sites is to be avoided where possible.
2. Subject to assessment in accordance with NSW Department of Environment and Conservation publication *Environmental Management on the Urban Fringe – Horse Properties on the Rural Urban Fringe*, *Best Practice Environmental Guide for Horses* (2004).
3. Subject to assessment in accordance with NSW Department of Environment and Conservation publication *Use of Effluent by Irrigation* (2003) or local policy as adopted by individual councils.

22.4.1 Muswellbrook and Denman Sewerage Treatment Plant

Objective

a) To ensure that new development in the vicinity of the Sewerage Treatment Plant is not adversely affected by odour nuisances arising from the operation of that facility.

b) To ensure that the Sewerage Treatment Plant's location is secured against relocation pressure resulting from future encroachment or intensification of development within the buffer zone.

c) To control the inappropriate development of activities close to the Sewerage Treatment Works Buffer Area to avoid land use conflicts.

Controls

(i) In considering application for residential development in the area identified on the maps below, Council shall not approve any increase in residential density on land over that which exists at present unless it is satisfied that:

(a) the likely adverse impacts of the proposed development will not impact the existing and continued operations of the Sewerage Treatment Works Buffer Area.

(b) the likely adverse impact of the development on the existing and continued operations of the Sewerage Treatment Works Buffer Area is minimal.

(c) the development is sited to maximise the distance between the development and the Sewerage Treatment Works Buffer Area to minimise potential land use conflict.

(d) the development is suitably located to minimise any views of the Sewerage Treatment Works Buffer Area to avoid any likely adverse visual impact

(e) the development has employed measures that will mitigate the effects from the Sewerage Treatment Works Buffer Area.

(f) the intensity of development is such that it would reasonably be anticipated for the subject site.

Muswellbrook Sewerage Treatment Plant

Denman Sewerage Treatment Plant

22.5 VARIATION PROVISIONS

In certain circumstances variations from the recommended standard buffer distances may be justified. Councils and government agencies which provide advice or regulate activities have the discretion to approve a reduced buffer or require an increase in the required buffer in the circumstances and to require the implementation of any reasonable conflict avoidance measures.

Buffers can be varied for reasons such as the scale of the proposal, topographic and micro-climatic conditions, technological advancements, operational considerations and arrangements, sensitivity of surrounding lands and land use within the locality.

Applications for variations must be accompanied by justification for the variation and assessment of the implications of the variation of the buffer distance on the values of key environmental assets, rural activities, primary industries and community amenity.

In accordance with the principles of ESD, and in the interest of avoiding and reducing rural land use conflict issues, a precautionary approach should be applied to variations.

Variation criteria could include:

- the extent, nature and intensity of the adjoining land uses
- the operational characteristics of the adjoining land uses
- the sensitivity of the adjoining and surrounding land uses
- off-site effects likely by the adjoining land uses and the potential to cause conflicts
- the potential land uses of the adjoining and surrounding lands
- topographical features and vegetation which may act to isolate and buffer land uses
- prevailing wind and climatic conditions that could help reduce conflicts
- any other specific mitigating factors.

Applications for variations should be made in writing to the council and presented in report style with the development application and be accompanied by relevant details, descriptions, assessments, maps, photos and plans. The application for variation should have regard to any relevant guidelines, codes and policy.

22.6 Land use conflict risk assessment

Land use conflict risk assessment (LUCRA) is an appraisal system developed to identify compatibility of land uses and the potential for conflict between adjoining land uses.

It is designed to help proponents of developments and the determining/consent authorities assess the potential for land use conflict. LUCRA is aimed at complementing development control and buffer requirements by providing a more thorough understanding of likely land use conflict issues at an individual development level so as to inform the application of land use conflict avoidance and buffer measures.

The aim of LUCRA is to address land use interface issues and risks between rural land uses in a proactive manner and before the land use proceeds or before a dispute arises and to highlight or recommend strategies that could help minimise conflict.

By undertaking a LUCRA at the individual property and development scale, the real risk of conflict between one land use and an adjoining rural land use can be more accurately identified. Site specific and relevant conflict minimisation and separation strategies can then be negotiated, proposed, implemented and evaluated.

Under LUCRA a number of issues associated with a proposal and other uses within a locality are considered to identify the potential areas of conflict. A simple ranking system is used to identify how serious the risk is.

The land use conflict risk assessment process outlined is a recommended planning and development design tool to avoid or better manage the potential conflicts between different and incompatible land uses in rural areas.

The process is not meant to be applied literally. Rather it should be used as a guide to how to assess the potential for conflict between land uses and the potential implications of the conflict. You can vary and adapt the process according to each particular situation.

The aim of this part of the DCP is not to prescribe a step-by-step process that should be followed. Rather it is meant to encourage planners and developers to proactively avoid land use conflict scenarios by considering the risk of conflict as early in the land use planning process as possible and be in a better position to address risks of conflict through sound planning, good design and responsible operations.

Why assess the risk of conflict?
Conflict can occur between land uses and people in rural areas when the activities or practices associated with one neighbour's land use interfere with another neighbour's enjoyment or use of land. It can also occur where there is a real or perceived environmental impact from an activity.

Land use change is the typical trigger for land use conflict. This change can be in the form of an entirely new land use in a rural area, a more intensive land use or where the environment is modified or perceived to be at risk of degradation. More subtle changes in land use, such as the interests and behaviours of a new neighbour can also lead to tensions between neighbours.

Conflict to do with land use and between neighbours can create serious stress for individuals, increase pressures on adjoining landowners and place additional resource demands on local and State government agencies. Managing this conflict retrospectively can be very hard and might not achieve a resolution resulting in ongoing conflict.

Commonly, inequity can be perceived if one party is seen as having achieved a result at the expense of the other party.

Some planning development decisions made in the past have created real potential for conflict between rural land uses and rural neighbours because not enough attention was paid to separating incompatible land uses. It is essential that future land use planning and development decisions be based on an understanding and appreciation of the need to separate incompatible land uses and to adequately manage risk of conflict between land uses at the planning, development design and assessment stages.

22.7 Land Use Buffer Controls

Objectives

a) To ensure that land use proposals are provided with buffers that will minimise the potential for existing or likely future land use conflicts

Controls

(i) In assessing development application for land uses listed in the tables in section 22.4, Council must not approve land uses that would result in non-compliance with the buffers specified unless it is satisfied that there is no potential for existing or future land use conflict to arise.

(ii) In considering the potential for land use conflict, Council must have regard to the variation provisions and a LUCRA prepared in accordance with the provisions of this section by the proponent.

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