

17 January 2019
Ref: 56/2018

TSA Management
241 Adelaide Street
Brisbane NSW 4000

Attention: Sue Folliott

Dear Sue

**RE: Amended Response to Agency Submissions Tweed Valley Hospital (SSD 9575)
Land Use Conflict Risk Assessment Mixed Agricultural Use on Proposed Tweed
Valley Hospital Lot 11 DP 1246853 Cudgen Road, Cudgen**

Tim Fitzroy & Associates (TFA) has been requested by TSA Management to respond to issues raised by the Department of Industry (DoI) and Tweed Shire Council (TSC) with regard to the *Land Use Conflict Risk Assessment Mixed Agricultural Use on Proposed Tweed Valley Hospital Lot 11 DP 1246853 Cudgen Road, Cudgen* (TFA Ref; 56/2018, 18 October 2018).

1. Department of Industry (DoI)

Department of DPI Agriculture supports the development of well vegetated buffers on the western, southwestern and southern boundaries of the hospital. These buffers are to be maintained through the life of the hospital in an effort to minimise conflicts arising from the hospital and its users around standard agricultural practices. The proposed buffer width of 10m on the western and south-western boundary is considered insufficient to prevent land use conflict risk should intensification of agricultural production occur on the adjoining land.

DPI Agriculture requests the hospital design factor in possible changes in land use (intensification of use) on the block of land on the western boundary of the hospital site. The consultants in their various reports only consider how it has been used in the past, not how it could be used in the future with a change in ownership or enterprise.

TFA Response

TFA acknowledge the comments of DPI Agriculture with respect to the implementation and maintenance well vegetated buffers in an effort to minimise conflicts arising around the proposed hospital and its users and standard agricultural practices.

The proposed vegetated buffers have been developed following an assessment of the specific risk and consequences of conflicts between the proposed Tweed Valley Hospital commercial development and adjoining agricultural uses. Despite there being no existing agricultural land use on the adjacent property to west TFA have adopted the *precautionary principle* in proposing a 3.0m high, 10m wide vegetated buffer along the south western/western boundary with the proposed hospital site. The design / siting of the development enables a future increase in the buffer width to the order of 20 to 30m total vegetated buffer width should this be required as a result of intensification of adjoining agricultural production. Refer to attached 'Agricultural Buffer (West Boundary)' plan.

It is important to note that the *Living and Working in Rural Areas Handbook* (DPI et al 2007) does not include reference to separation distances between agriculture and commercial activity such as those proposed on the Project Site.

While a default buffer area of 300m width is recommended between *State and Regionally Significant Farmland* and *residential development* DPI (2007) does not stipulate a setback from commercial/industrial developments to *State and Regionally Significant Farmland*.

The proposed development will house staff and patients within airconditioned buildings, serviced with reticulated water supply with minimal outdoor exposure when compared to an equivalent residential setting.

As noted, the neighbouring property to the west is fallow. The proposed development incorporates a 10m wide vegetated buffer along the western and south western boundary coupled with a carpark for 240 cars, a service yard and ambulance bay prior to the Hospital. The development has been designed as such so that any outdoor use areas for staff and patients and visitors are restricted to the northern side of the hospital. The building therefore providing an additional shield to those described above to agricultural activities.

In addition, the development site natural topography comprises an L-shape ridge line which returns approximately parallel to the west title boundary. The hospital ground level is to be located at approximately +28.00 AHD with the lowest basement level located at approximately +23.5 AHD – refer to EIS, Appendix C, section 4.3. The adjacent neighbouring land at its highest point is elevated at approximately +18.00 AHD, falling to approximately +9.00 AHD at the lowest point along the common boundary. The height difference at the south west corner of the site is approximately 10m and the level difference adjacent to the lowest habitable level of the hospital is approximately 14.5m. As advised in the LUCRA report Appendix J, the buffer should be composed of a minimum mature tree height of 3m in response to local crop spraying methods. The combination of 10m agricultural buffer and elevation differential with the adjacent site ground level will contribute to increased buffer effectiveness.

Guidelines including DPI (2007) have been developed to consider appropriate measures to mitigate potential land use conflicts between existing agricultural uses and new residential developments to minimise instances of incompatibility. However, as a precautionary approach, the design / siting of the development enables a future increase in the buffer

width to the order of 20 to 30m total vegetated buffer width should this be required as a result of intensification of adjoining agricultural production. . Refer to attached 'Agricultural Buffer (West Boundary)' plan.

Nonetheless, as stated previously the proposed buffer (10m wide and 3m high) on the south west/western boundary is deemed to be acceptable given the:

- Nature of the proposed land use (proposed air-conditioned Hospital with reticulated town water);
- Limited exposure and resultant risk to hospital staff, patients and visitors when compared to full residential occupation;
- Distance attenuation to hospital building inclusive of large carpark, service yard and ambulance bay; and
- Natural topography between the adjoining western allotment (+18 to +9m AHD) and the proposed hospital (+28m AHD).

2. Tweed Shire Council (TSC)

Fragmentation and setbacks

The Assessment states that the site is located on the north eastern margin of the Cudgen Plateau, and as such removal of the site from productive agricultural will not result in fragmentation; however, the ability of adjoining agricultural land to operate without restriction should be clearly established prior to finalising layout of development on the site. The agricultural impact assessment does not provide any guidance on the standard setback requirements for separation from agricultural land.

TFA Response

The submitted EIS is supported by a comprehensive Land Use Conflict Risk Assessment for the proposed Tweed Valley Hospital (TFA Ref; 56/2018, 18 October 2018).

This LUCRA has concluded that the Project Site is suitable for the proposed State Significant Development Application for the hospital subject to the recommendations provided further below.

This LUCRA is based on:

- a review of Concept Proposal;
- discussions with TSA Management;
- site inspection; and
- review of surrounding landuses.

In assessing the potential risk of land use conflict associated with the proposed Tweed Valley Hospital and existing adjoining agricultural landuses, three key documents are relevant, namely: *Living and Working in Rural Areas – A handbook for managing land use*

conflict issues on the New South Wales North Coast, produced by NSW Department of Primary Industries 2007; *Tweed Sustainable Agriculture Strategy*, Tweed Shire Council June 2006; and the *Draft Rural Land Strategy*, Tweed Shire Council.

LUCRA's were initially conceived in the *Living and Working in Rural Areas Handbook* (Department of Primary Industries *et.al* 2007) by the Centre for Coastal Agricultural Landscapes in partnership with the Northern Rivers Catchment Management Authority as a tool to better manage potential land use conflicts between residential development and rural activities and environmental attributes/assets on the NSW North Coast. Heath Infrastructure has chosen to adopt the LUCRA tool to better identify potential land use conflicts risks associated with the proposed development and existing agricultural landuses and where necessary propose mitigation options to address any unacceptable risks.

The *Living and Working in Rural Areas Handbook* (Department of Primary Industries *et.al* 2007) denotes a number of recommended buffer distances to residential areas as described below:

- 300 metres from State and regionally significant farmland;
- 100 metres to wetlands;
- 50 metres to native vegetation/habitat;
- 50 metres to minor waterways;
- 300 metres to sugar cane, cropping and horticulture;
- 200 metres to greenhouse and controlled environment horticulture.

Tweed Shire Council's Draft *Kingscliff Locality Plan, Volume 2 – Precinct Plans* nominates typical buffers of 80 metres to agricultural land for residential development around the locality of the Project Site. It notes these buffers may increase depending on the specifics of the proposed development and the nature of the adjoining agricultural land uses.

The more conservative buffers from the *Living and Working in Rural Areas Handbook* have been used in this assessment.

It is noted that the surrounding land use includes:

- fallow horticultural land and redundant Greenhouse/ Nursery (formerly Earth and Colour Nursery) to the west;
- a market garden, inclusive of ground vegetable crops and road side stall to the south and south south-west across Cudgen Road;
- ground vegetable cropping to the south-west across Cudgen Road;
- scattered dwellings and the Kingscliff TAFE to the south and south-east across Cudgen Road;
- the main Kingscliff urban/ residential area to the east and vegetated rural land inclusive of wetlands and a watercourse to the north.

A site inspection coupled with a review of aerial photography has confirmed:

1. The distance between the closest proposed hospital building and the existing vegetable cropping to south (Lot 1 DP1803772, Cudgen Road) is approximately 100 metres.
2. The distance between the closest proposed hospital building and the unused former plant nursery to the west (Lot 6 DP 727425, Cudgen Road) is approximately 60 metres.
3. The distance between the closest proposed hospital building and the sweet potato farm to the south west (Lot 101 DP 866795, Cudgen Road) is approximately 280 metres.

It is important to note that the *Living and Working in Rural Areas Handbook* does not include reference to separation distances between agriculture and commercial activity such as those proposed on the Project Site.

While a default buffer area of 300m width is recommended between *State and Regionally Significant Farmland* and *residential development* the DPI does not stipulate a setback from commercial/industrial developments to *State and Regionally Significant Farmland*.

Recommendations for Vegetated Buffers

Based on the proximity of the existing vegetable cropping to the south of the proposed Tweed Valley Hospital we recommend a series of vegetated buffers to provide an effective safeguard to spray drift.

1. A **vegetated buffer** based on the following criteria is to be installed on the Project Site along the southern boundary:
 - contain random plantings of a variety of tree and shrub species of differing growth habits, at spacings of 4–5 m for a minimum width of 30 m.
 - include species with long, thin and rough foliage which facilitates the more efficient capture of spray droplets;
 - provide a permeable barrier which allows air to pass through the buffer. A porosity of 0.5 is acceptable (approximately 50% of the screen should be air space);
 - foliage is from the base to the crown;
 - include species which are fast growing and hardy; and
 - have a mature tree height at least 3m;

2. **Supplementary plantings** are to be installed between the existing row of mixed trees and shrubs on the western and south-western boundary of the Project Site based on the following criteria to form an improved vegetative screen:
- contain random plantings of a variety of tree and shrub species of differing growth habits, at spacings of 2–3 m for a minimum width of 10 m;
 - include species with long, thin and rough foliage which facilitates the more efficient capture of spray droplets;
 - provide a permeable barrier which allows air to pass through the buffer. A porosity of 0.5 is acceptable (approximately 50% of the screen should be air space);
 - foliage is from the base to the crown;
 - include species which are fast growing and hardy; and
 - have a mature tree height at least 3m;

Note: The Pesticides Act 1999 regulates the use of pesticides in NSW. Management practices must either eliminate spray drift or at least minimise it to a level where it will not cause adverse health impacts.

- Open spaces for patients should not be located along the southern frontage. By locating courtyards and balconies on the opposite side of the buildings to the southern farmland, the buildings themselves will provide physical screening of farm activities.
- Hospital buildings will be air-conditioned. The air intake for air-conditioning should not be located on the southern side of the building/s.
- Roof water shall not be utilised for potable use
- Any roof water utilised for secondary uses should be fitted with a first flush diverter and adequately filtered in accordance with the relevant Australian Standards for non-potable secondary use/s.

Recommendations for Noise Impacts

Hospital operations; machinery, air conditioning, aircraft (helicopter), vehicles (staff, patients, visitors, deliveries, waste collection), generators, night work, from the proposed Tweed Valley Hospital are to be addressed in the Noise Impact Assessment to ensure that any noise impacts are sufficiently attenuated so as to comply with the Noise Policy for Industry (NSW EPA 2017) and the Interim Construction Noise Guidelines (DECC, 2009).

Recommendations for Stormwater Management

The preparation of a Soil and Water Management Plan for the construction phases of the development will be required to minimise the potential for erosion and sediment runoff to adjacent farm land, water courses and wetlands.

A Stormwater Management Strategy for the operation phase of the development has been developed. Implementation of this strategy will adequately address the issues of sediment and nutrient runoff and pollution of adjacent farm land, water courses and wetlands.

Recommendations for Traffic and Access

Measures to reduce traffic impacts have been addressed in the Traffic Impact Assessment with regard to both construction and operations. The Tweed Valley Hospital entrance has been located so it is not directly opposite the farms. Other appropriate controls relating to turning lanes and lane dividers are proposed to adequately address traffic concerns. Implementation of the recommendations in the Traffic Impact Assessment will adequately address traffic and access issues.

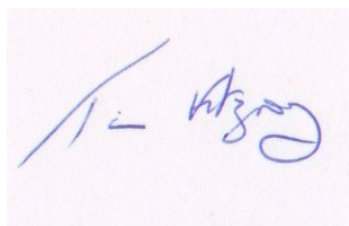
Other Considerations that have Informed this Assessment

A number of factors have led to this conclusion including:

- No aerial agricultural spraying is known to occur in the area. Given the use of ground cropping chemical application and small allotments within relatively close proximity of the Kingscliff TAFE and adjoining residential areas it is assumed that spray drift would be limited.
- Very fine or fine droplets pose the highest risk of spray drift; it is the single most important factor controlling drift potential. The higher droplets are released, the greater potential for drift. Given the adjacent land use consists of ground vegetable cropping and consequently the relatively low height at which spray is released the risk of spray drift is reduced.
- Given the nature and location of the Earth and Colour Hydroponic Nursery it is more than likely that any use of chemical sprays would be limited to the confines of the nursery operation.
- Fallow agriculture land (formerly sugar cane) and low intensity cattle (beef) grazing to the south west, offer little potential risk of conflict.
- Noise associated with agricultural activity which may lead to land use conflict in the locality would be intermittent noise from tractors and other machinery.

If you have any enquiries with regard to the content of this correspondence do not hesitate to contact me on ph 044 848 3837 or email tim@timfitzroy.com.au.

Kind regards,








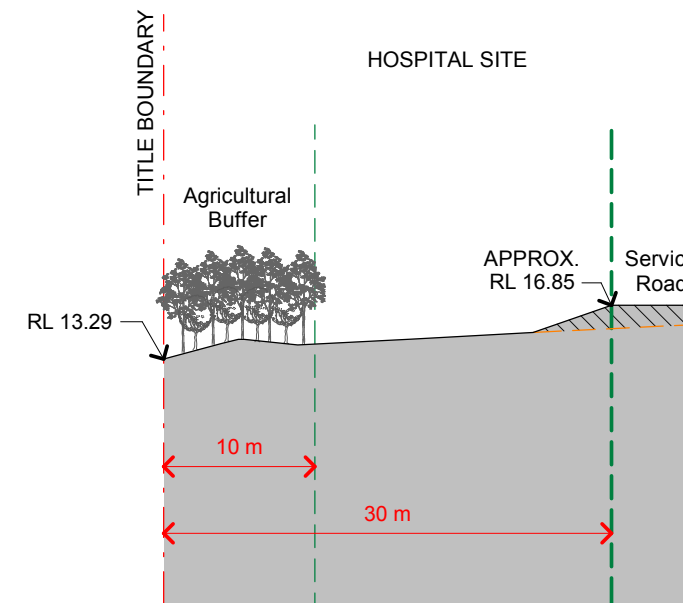
Tim Fitzroy

Environmental Health Scientist
Environmental Auditor

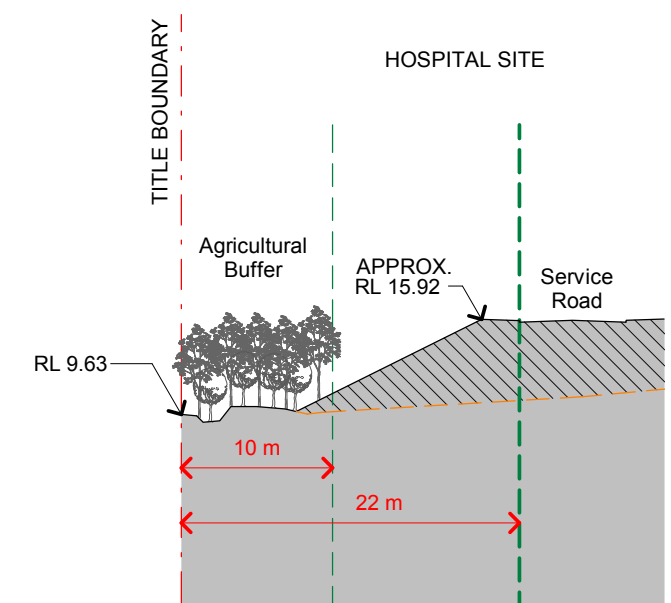


PLAN DIAGRAM - 1:2500

-  TITLE BOUNDARY
-  PROPOSED GROUND LINE
-  PROPOSED FILL
-  EXISTING GROUND LINE
-  AGRICULTURAL BUFFER



SECTION A - 1:500



SECTION B - 1:500

DATE: 15/01/2019 1:28:27 PM

AGRICULTURE BUFFER (WEST BOUNDARY)

TWEED VALLEY HOSPITAL

Scale As indicated@A3

Project Number 10363.00

Drawing Number SK-21