SJB Planning

The Secretary
Department of Planning and Environment
GPO Box 39
Sydney NSW 2001

Attn: Robert Byrne

Via email: robert.byrne@planning.nsw.gov.au

25 May 2015

Re: State Significant Development SSD 6594
Blayney Export Meats Smallstock Abattoir – Newbridge Road, Blayney

Dear Robert,

Executive Summary

State Significant Development SSD 6594 is a fundamentally flawed Development Application (DA) and warrants refusal.

There is a substantial lack of information necessary to allow an objective and professional merit assessment of the application and this deficiency is, of itself, reason for refusal. This is with regard to both the proposed consolidation of existing development consents and the feral goat abattoir.

The application seeks to consolidate the existing development consents for the site. The application documentation does not include any information regarding the approved drawings, details of compliance with conditions of consents, modifications to consents etc.

We have been advised that there is a long history of non-compliance with conditions of consent. Conditions that have been ignored were imposed in order to mitigate unacceptable impacts of development. The application in turn ignores the non-compliance with conditions and appears to assume the status quo – that these conditions and mitigation measures will not be met or enforced. In addition, one development consent on which the application purports to rely has in fact lapsed and cannot be relied upon, being DA 9/2009 for the construction of a dry goods warehouse. The status, level of compliance and reliance upon existing development consents is inadequately dealt with in this current application. It is our submission that the Department of Planning and Environment cannot rely on the inadequate and selective information concerning the existing consents as provided by the applicant.

With regard to both the existing operations and the proposed feral goat abattoir, this submission assesses the likely impacts of the development and recommends refusal due to the unacceptable and unavoidable impacts. In our opinion the feral goat abattoir is incapable of being made “acceptable” by way of a conditional consent. The development is of a scale, intensity and impact that reveals that the goat abattoir is not suitable for the subject site.

L2/490 Crown St, Surry Hills
Sydney NSW 2010
planning@sjb.com.au
sjb.com.au
T 61 2 9380 9911
F 61 2 9380 9922

Table of Contents

List of Attachments

1.0 Introduction

SJB Planning acts on behalf of Karen and David Somervaille, owners and residents of "Athol", inclusive of Athol Gardens wedding reception centre, a heritage listed property located at 84 Newbridge Road Blayney, opposite the subject site. Mr and Mrs Somervaille will be directly, significantly and permanently impacted by the proposed development.

This submission provides a detailed analysis of the proposed development, based on a range of expert assessment and advice and concludes that the development should be refused. The reasons are set out in the conclusion at Section 9.

2.0 Information relied upon

This submission has been prepared relying upon:

- All of the information lodged with the SSD application, as available during the exhibition period on the Department of Planning and Environment (the Department) website; and
- Blayney Local Environmental Plan 2012
- The following information:
  - Visual and heritage assessment report prepared by Richard Lamb of Richard Lamb and Associates (Attachment 1)
  - Critique of Health Risk Assessment prepared by Dr John Shepherd (Attachment 2);
  - Acoustic assessment review prepared by Renzo Tonin of Renzo Tonin and Associates (Attachment 3);
  - Odour assessment review prepared by Steve Hayes of the Odour Unit (Attachment 4); and
  - Legal advice prepared by Maddocks Lawyers (provided separately to this submission).

3.0 The Subject Site and Affected Property

3.1 Athol Gardens

Athol is an historic property located in the rural setting of the southern side of Newbridge Road Blayney, directly opposite the subject site, as shown below in Figure 1.

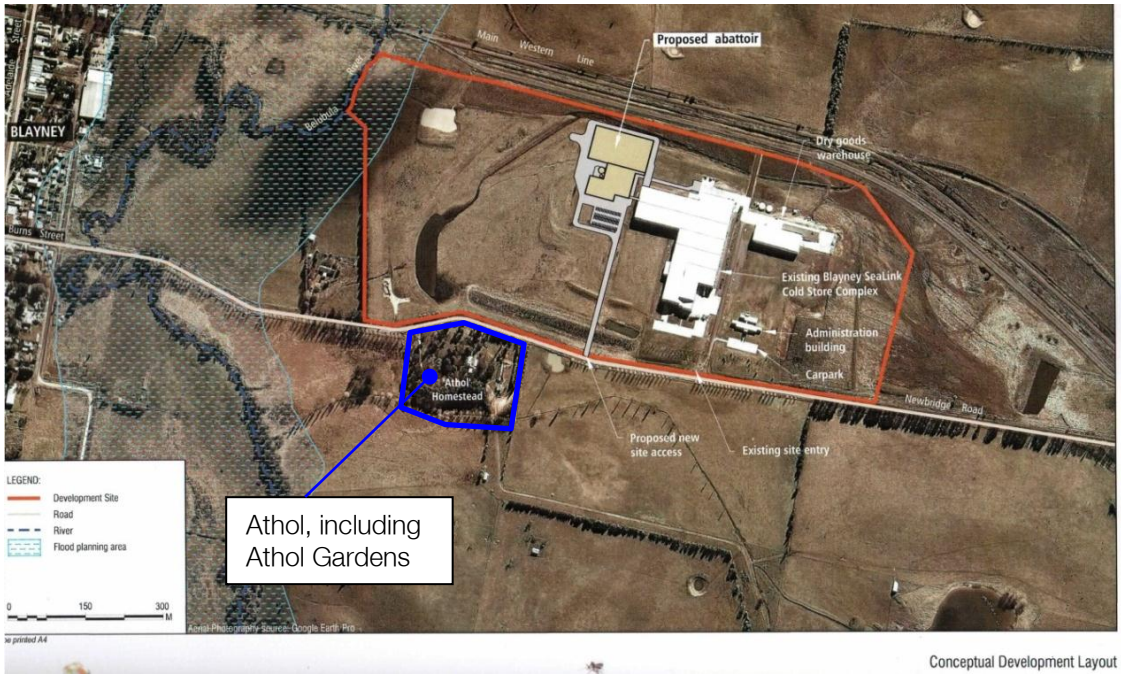


Figure 1: Relationship of subject site and "Athol" fronting Newbridge Rd and opposite the feral goat abattoir (Source: SLR Consulting)

Athol is a heritage listed property that is both a private residence and also operates as a successful garden wedding and reception centre business, Athol Gardens, since 2004. The property has development consent for the function centre business.

The wedding and reception centre and homestead are surrounded by manicured lawns and private gardens that retain the original character of the property.

The business occupies:

(a) The gardens to the east, north and west of the homestead, including the front lawn and ceremonial rose arbour to the north where wedding ceremonies are held;
(b) The purpose built garden terrace room, opening onto the gardens to the north and east (and able to be closed in the event of unfavourable weather with clear plastic blinds) and adjoining conservatory in which sit down meals are served;
(c) The commercial kitchen;
(d) The male, female and disabled toilets;
(e) A storage room for crockery, cutlery, glasses, kitchen equipment and tables;
(f) The heritage listed mill/stables to the east of the homestead, used for accommodation in connection with wedding functions as; and
(g) The car park to the south of the mill/stables, with parking for 50 cars and one (1) bus.

The premises are also licensed, with operating hours of 10.00am to midnight (Monday to Saturday) and 10.00am to 10.00pm (Sunday)

The business caters mainly for the following types of functions:

- Wedding ceremonies;
- Wedding receptions;
- Engagement parties;
- Fundraising events;
- Milestone birthdays;
- Christmas parties
- Naming ceremonies;
- Luncheons and high teas; and
- Corporate special events.

Since commencing operation in 2004, Athol Gardens has hosted:

- 121 wedding ceremonies/receptions; and
- 51 other functions. These have included events for Rotary Club of Blayney, Inner Wheel Club, View Club, Blayney Shire Council, Central Tablelands Water, Blayney Family Medical Centre, Heritage Schools, Cowra Medical Practice, St Joseph's Primary School, Blayney Vet Clinic, Newman's Buses, Landmark, Hill & Crofts, Australian Open Gardens Scheme and Bathurst Garden Club.

Wedding ceremonies and receptions generally occur between late September and late April. Typically a function starts with a ceremony in the gardens at 3.00-3.30pm and the reception concludes at 12 midnight. Over the last few years, Athol Gardens has been averaging about 25-30 functions a year.

In addition to the business operations, Athol Gardens has a policy of making the gardens, function centre and all facilities available at no cost for charitable fundraising events at least twice a year.

Charitable and fundraising functions that have occurred have raised money for:

- A dynavox machine to enable a young cerebral palsy sufferer to communicate;
- Garden improvements for Lee Hostel;
- Two local children with severe medical conditions;
- The Sudanese community in Orange;
- A High Tea for Multiple Sclerosis;
- A trust fund for the education of three children of a mother killed in a car crash;
- CanAssist Blayney branch;
- The establishment of Little Athletics in Blayney;
- A new community bus for Blayney Health Service;
- A 'spring bling' garden ramble for St Joseph's Primary School;
- The 50th anniversary of Inner Wheel, Blayney; and
- Various Rotary dinners and garden luncheons for local projects.

A total in excess of $100,000 has been raised for charity and community projects from these events held at Athol Gardens.

Athol Gardens directly employs two (2) part time bar staff, a part time gardener and a 3-day a week function assistant. The catering function is contracted out to a local restauranteur, who employs from five (5) to eight (8) staff for functions at Athol Gardens, depending on the size and nature of the function.

All supplies are sourced locally. This includes Bathurst Laundry, run by Glenray Industries, who employ people with disabilities. Most of the catering supplies and liquor purchases come from IGA Blayney. Wines are sourced from local wineries, in particular Angullong, Bantry Grove, Sons & Brothers, Logan, Cumulus and Phillip Shaw. CSU Bathurst is used for printing, Wraprite Orange for kitchen consumables, Bloody Good Marketing for website design and local electricians, plumbers, carpenters and other tradespeople, repairers and contractors. The facility is a major source of work and economic activity for local photographers, celebrants, bus operators, florists, musicians, DJs and decorators.

Athol Gardens is a very significant local business making a major contribution to the local and regional economy. Through its activities and support of fundraising, Athol Gardens also makes a significant positive social contribution to Blayney and regional community.

Athol is set within the RU1 Primary Production zone under Blayney Local Environmental Plan 2012 (BLEP).

3.2 The Subject Site and Operations

Figure 1 above shows the proximity of the subject site to Athol. The two properties are directly opposite with direct lines of site and share access from Newbridge Road.

While the existing SeaLink buildings and operations are set slightly to the north-east of the Athol homestead and formal gardens, the buildings are nonetheless visible, making a prominent and dominant statement in the rural landscape.

Figure 2: View of subject site from edge of Athol Garden north east of ceremonial garden area showing Newbridge Road, the ineffective visual bund and landscape in the foreground within the site (Source: Richard Lamb and Associates)

The proposed goat abattoir and its ancillary facilities will be to the north east and directly opposite the homestead and gardens. The proposed turkey nest dam, with a waste water holding capacity equivalent to that generated from the processing of 100,000 goats will be situated within 75m of the Athol front entrance and 120m from the rose arbour where wedding ceremonies are held. The location and size of the open waste water holding dam is clear in Figure 1.

Newbridge Road, fronting the gardens will accommodate B-double and semi-trailer trucks 24 hours, 7 days per week.

3.3 Existing Development Consents

The application seeks to consolidate existing consents granted for the SeaLink operations on the site. Based on research undertaken regarding these consents, a summary table of the history of performance relative to these consents is included below. Our clients have advised that Blayney Shire Council acknowledges that it has been unable to ensure compliance with landscaping conditions for the existing SeaLink facility (see comments under recommendation 12 of its response to the EIS for SSD 6594).

We are including this information as the subject application relies heavily on compliance with conditions of approval and adoption of best management practices to ensure that environmental impacts are not greater than those assessed in the EIS.

While reliance on compliance with conditions may be appropriate in the case of some forms of development, in this instance there would appear to be a history revealing that the existing SeaLink development is not meeting conditions of consent and not adequately mitigating identified impacts. Given this history, reliance on compliance with conditions of consent or adherence to operational procedures should carry little weight in the assessment process.

DA	Condition	Non-compliance	Evidence
59/01/02	22. That adequate sediment and soil erosion controls be installed	Earthworks were commenced without sediment control works specified in the applicant's Construction Plan being implemented. Result was discharge of sediment laden water into Belubula River and Carcoar Dam following heavy rain	Prosecution by EPA for pollution under s.120 (2) of POEA Act and fine imposed. See *EPA v Metziya Pty Ltd*[2003] *NSWLEC 196*
59/01/02	11d. That landscaping (in the vicinity of the building) be completed within 24 months of occupation	Relevant landscape plan was not lodged. Landscaping never provided.	Blayney Council answer to GIPA request confirmed that no 11d landscape plan was ever lodged
59/01/02	11e. That a tree buffer zone on the southern boundary be incorporated into the landscape plan	Plan lodged but trees never planted by the applicant. Ultimately in DA 155/2008 Council undertook to plant the trees.	Council records
29/02/03	Same landscaping conditions as in DA 59/01/02	Same non compliance. In a letter dated 10 November 2004 in response to an objection about non-compliance with the landscaping condition, the Council wrote that "the applicant has advised that landscaping works along Newbridge Road will be commenced before the end of the year"	Blayney Council answer to GIPA request The trees were not planted until 2009 - 5 years later - and then by Council.
29/02/03	34. That lighting of the facility is planned so as to avoid potential for direct views of lights from public streets, the surrounding area and Blayney"	Lighting was not screened	Screened lighting not provided until complaint made in 2014 by our clients to the applicant's representative in connection with abattoir application.
29/02/03	8. That applicant shall meet the full cost of widening and strengthening of Newbridge Rd where required to accommodate the	No widening or strengthening of Newbridge Rd took place	No works to Newbridge Road. Repaving in 2013 undertaken at Council expense.

DA	Condition	Non-compliance	Evidence
	proposed vehicle loadings.		New bridge over Belubula River built in 2014 with Council funds (70%) and grants.
155/2008	6(a) "That a detailed landscape plan be submitted for approval by Council within 2 months of the date of this development consent" [ie by 21/7/2008] 6(b) "That the approved landscaping be completed within 3 months of the date of this development consent" [ie by 21/8/2008] 6(d)(i). "That landscaping plans include the effective screening of the development from the property "Athol "by means of: A screen of suitable advanced evergreen trees (approved by Council in consultation with the owner of "Athol") on the western boundary of Lot 1 DP 1073048 for the purposes of braking up the bulk of the buildings	No consultation with owners of Athol ever took place. No landscaping plan required by condition 6 was ever submitted. No screen of suitable evergreen trees was ever planted (due to be completed by 21 August 2008). Note: after the building had been constructed and the owners of Athol drew Council's attention to the fact that landscaping had not been commenced, the applicant applied on 8 January 2009 to modify the development consent by removing condition 6. Despite strenuous objection, Council agreed to this modification.	Blayney Council answer to GIPA request confirmed that no condition 6 landscape plan was lodged.
155/2008	15. Noise study of overall cumulative noise impacts of all developments and traffic generated at Athol boundary to be undertaken within 6 months of the date of the consent (ie by 21/11/2008). Strategies and controls to mitigate noise impacts to be implemented within 12 months (ie by 21/5/2009)	No such noise study was ever undertaken. Therefore there were no strategies or controls to be implemented.	Blayney Council answer to GIPA request
8/2009	29(c)(i). A screen of suitable advanced evergreen trees	No consultation with owners of Athol ever took place.	Blayney Council answer to GIPA request confirmed that no

DA	Condition	Non-compliance	Evidence
	(approved by Council in consultation with the owner of "Athol") on the western boundary of Lot 1 DP 1073048 for the purposes of braking up the bulk of the buildings	No landscaping plan required by condition 29(c) was ever submitted. No screen of trees ever planted on western boundary of lot 1.	condition 29 landscape plan was lodged
8/2009	11. Noise study at the Athol boundary to be undertaken within 6 months of the date of the consent (ie by 11/5/2009)	No such noise study was ever undertaken. There was a Noise study dated 26/11/2010 (ie 2 years later) by Indigo Acoustics and in June 2011 by Colson Budd but then only in connection with the rezoning proposal (ie did not consider additional traffic from new SeaLink developments).	Blayney Council answer to GIPA request
9/2009	Deferred Commencement Consent. Conditional on completing within 2 years a Traffic Study detailing "the effect of the proposed development on the existing road network, structures and neighbouring properties"	Traffic Study due to be completed by 11/11/2010. This has not been done, so this DA for a 19,128m^2 dry goods warehouse has lapsed.	Blayney Council answer to GIPA request confirmed that condition has not been met, development consent has not issued and therefore this consent has lapsed
Modification of DAs 155/2008, 8/2009 and 9/2009	Modification to remove landscape conditions 6 of DA 155/2008 and condition 29(c) of DA 8/2009	Modification partially granted in April 2009 in effect on new condition requiring that the landscaping be relocated. This was accompanied by a plan showing the location and height of the required landscape mound and type and size of trees.	The new condition was ignored for 4 years and cursory plantings only occurred when Council stepped in

Table 1: History of consents and compliance performance

This history of non-compliance is compounded by the fact that all of these development consents were granted to enable a major warehouse complex to be built on land then zoned Rural, apparently inconsistent with the zoning objectives and without any master plan for the precinct or any applicable development control plan.

4.0 Missing and Inadequate Information

· Lack of details regarding existing consents relied upon

Other than listing the existing consents and providing copies of the written approvals, the application provides no supporting documentation such as the stamped approved drawings, approved technical documents, details/audits of compliance with conditions of consent, outstanding compliance matters, and approved modifications.

Without all of this supporting information we would submit that the Department, as the assessing authority, and ultimately the relevant consent authority, will have no clear understanding of what is being applied for and what is being requested by way of a consolidated development consent.

· Lack of properly dimensioned and scaled drawings

The application (both the existing operations and the goat abattoir) is not supported by any dimensioned or scaled drawings. It is impossible for any person to know the building height, footprint, floor space or setbacks. There are no existing surveyed ground levels or proposed ground levels.

We note that the Project Team, as detailed on page 11 of the EIS, does not include an architect or draftsperson. The application is entirely lacking this essential information.

The lack of proper drawings is, of itself, adequate grounds for refusal of the application. We would submit that it is not a properly compiled application and does not meet the statutory provisions of Clause 50 and Schedule 1 of the Environmental Planning and Assessment Regulation 2000. The application does not meet the requirements of the Secretary's Environmental Assessment Requirements (SEARs), issued on 14 August 2014.

The lack of proper drawings also renders the visual analysis supporting the application as deficient and of little value in assisting with an accurate and objective assessment. The visual analysis provides no details of the siting or height of the building, supporting infrastructure or proposed mitigation measures.

· Survey information

There is no survey provided with the application. A boundary and levels survey should be a mandatory requirement for the lodgement and proper assessment of any development, and particularly a State Significant Development.

Without this baseline information, together with properly scaled and dimensioned drawings including existing and proposed Relative Levels (RLs) it is difficult to see how the application meets the provisions of Clause 50 and Schedule 1 of the Environmental Planning and Assessment Regulation 2000 and equally difficult to see how the Department can undertake an accurate and professional assessment. The application does not meet the requirements of the SEARs.

We note that the existing cold store buildings on the site sit on a raised and level earth pad, with a notable fall in ground level to the west, in the location of the abattoir building and associated facilities such as car parking and access road. This issue is discussed further below.

· Earthworks, level changes etc.

The existing cold store buildings on the site sit on a raised and level earth pad, with a notable fall in ground level to the west, in the location of the abattoir building and associated facilities such as car parking and access road.

There are no details of the proposed earthworks, extent of fill or finished ground levels, relating to the abattoir site, the car park or the new roads.

There are no details of the extent of earthworks, extent of fill or finished ground levels for the proposed visual bund that forms part of the application. There are no dimensioned or scaled drawings showing the length of the visual bund. There is no analysis of the impact of earthworks on water movement across the site.

- Economic and social impact

  Details are provided in Section 6.7 regarding the deficiencies with the information supporting the application. In short, there is no proper assessment of the economic impact on the Athol Gardens business opposite the abattoir site. There is also no acknowledgement of the important social contribution that Athol Gardens and the heritage item make to the Blayney and regional community and the impact that the abattoir will have.

- Assessment of groundwater impact

  The site is subject to specific provisions of Blayney Local Environmental Plan 2012 (BLEP) regarding *groundwater vulnerability*. There is no assessment of risk to contamination of groundwater, notwithstanding that there is proposed to be waste water holding dam within the mapped area under BLEP. This is discussed further in Section 7.1.

  The lack of this information results in the application not meeting the requirements of the SEARs which specifically nominate the need to address groundwater impacts.

- Flood liable land

  The site is within an area defined as flood liable land for the purposes of BLEP as it is mapped in the Blayney Flood Study Report (Jacobs, 2015). There is no assessment of compliance with the relevant provisions of BLEP regarding flooding. This is discussed further in section 7.2.

  Again, the lack of this information results in the application not meeting the requirements of the SEARs. Attachment 2 to the SEARs includes comments from Blayney Shire Council that refer to the Flood Study and the need to consider flooding.

5.0 Permissibility

Pursuant to BLEP the majority of the subject site is zoned IN1 General Industrial. The application has been lodged on the basis that the abattoir use is a *livestock processing industry*, as defined in the BLEP. The definition of the use is:

> ***livestock processing industry*** *means a building or place used for the commercial production of products derived from the slaughter of animals (including poultry) or the processing of skins or wool of animals, derived principally from surrounding districts, and includes abattoirs, knackeries, tanneries, woolscours and rendering plants.*

The EIS describes in great detail that the animals to be slaughtered are not derived principally from surrounding districts and are in fact imported from western NSW and other regions. The proposal does not meet the definition of a livestock processing industry in BLEP.

The location of the proposed turkey nest dam, an integral component of the application is located on land zoned RU2 Rural Landscape. Livestock processing industries and rural industries, as defined in BLEP are prohibited in the zone. The proposed turkey nest dam is a prohibited development.

Maddocks Lawyers have provided separate legal advice to Mr and Mrs Somervaille regarding the permissibility issue among other legal shortfalls, and this advice is provided separately to this submission.

6.0 Assessment of Likely Impacts

6.1 Visual Impact

An independent heritage and visual impact assessment has been undertaken by Dr Richard Lamb and Associates, a copy of which is included at Attachment1.

Dr Lamb is a professional consultant specialising in visual impacts and landscape heritage based on 40 years of teaching and research in landscape architecture, architecture, heritage conservation and urban planning and 20 years of experience as a consultant and expert witness in matters concerning visual impacts and landscape heritage.

Dr Lamb's findings are not repeated in detail but are summarised below. Dr Lamb raises substantial concerns regarding the methodology used for the visual analysis supporting the DA, the weight or rigour given in the EIS to the cumulative visual impact and comments that in his opinion the cumulative visual impact will be significant.

- The scenic character and quality that currently exists is already significantly and negatively affected by visibility of the existing SeaLink facility;
- The proposed development in concert with that SeaLink facility will have a significant cumulative impact on the scenic value and quality of the landscape;
- There will be a significant impact on the view from Athol, the importance of which is increased by the use to which Athol is put as a tourism and commercial enterprise, which is compatible with and assists in the conservation of its heritage values;
- The visual analysis accompanying the application accepts that the DA proposes the consolidation of the existing consents and does not consider these existing consents but focuses on the abattoir and associated infrastructure. Many visual impact mitigation measures that were supposed to be carried out (terms of past consents) have in fact not occurred;
- The assessment criteria and methodology for assessing visual effect and visual impact used in the EIS are confused and confusing. There is no explanation as to how the criteria have been assessed and what relative weight has been given to each to arrive at an overall level of Visual Significance;
- There is inadequate weight or rigour given in the EIS to the cumulative visual impact and the fact is that there will be significant cumulative impact;
- The use of panoramic images (as used in the visual analysis accompanying the EIS) raises concerns about their use as the primary analytical tool for visual impact assessment. This is because they distort the view by stitching together images which have individual centres of perspective, into a single image. The effect of this is to show totally artificial relationships between parts of the view. One critical limitation of panoramic images is that they do not represent the objective visual effects on specific viewing places with realism and accuracy;
- While mitigation measures such as planting and bunds are proposed no visualisations of the likely effect of the bunds and plantings on views from Newbridge Road or Athol are provided in the visual impact analysis or the EIS;
- With regard to impacts on views of and from Athol, the findings in the EIS of Moderate visual significance does not appear to logically arise out of the application of the criteria used in the view impact assessment; and
- There will be significant cumulative impact of the proposal if approved, and the landscape proposed in the consolidated consent has little likelihood of performing an adequate level of mitigation of those impacts.

6.2 Heritage Impact

As mentioned above, Dr Lamb's comprehensive comments are provided at Attachment 1. Dr Lamb has reviewed the Heritage Impact Statement (HIS) and concluded that the document is inadequate. Dr

Lamb's comments in regard to the HIS and also in regard to his assessment of Athol are summarised below:

- Athol is Item 179 in the Schedule of items of cultural heritage in the BLEP and listed on the State Heritage Inventory (No. 1160092);
- The listing in the BLEP is "Athol", homestead, mill/stable and garden;
- The HIS is not based on an analysis of the heritage item, its setting, curtilage or views and it does not answer the questions posed in the Heritage Manual for preparing a Statement of Heritage Impact;
- The author did not visit Athol or its gardens and therefore the HIS does not include any independent visual analysis and relies on images used for the visual impact analysis accompanying the DA. Those images are all panoramic and do not portray the visual quality and character of the heritage item, Athol, accurately;
- There are no independent observations made or used in the HIS, which would be expected with regard to the views of and from and the nature and character of the curtilage of Athol, since these are the subject of the questions to be answered in an HIS;
- With regard to views, Athol would be considered to be of significance for aesthetic heritage values as an item important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in the local area;
- Athol would satisfy inclusion criteria as being aesthetically distinctive and a local landmark, exemplifying the tastes of colonial design and siting. A partly screened outlook to the pastoral landscape beyond is typical and characteristic of properties of the provenance of Athol;
- The relationship between Athol and the cultural landscape over which it presides including the subject development site is therefore such that heritage values are not confined to the site occupied by Athol;
- While the physical curtilage of the item (Athol) does not include the development site, the setting of the item as viewed from the cultural landscape to which it is inextricably bound by the historical heritage processes outlined in the HIS (Part 3) does include the development site and is a significant consideration with regard to impacts on heritage values. The HIS is dismissive of this relationship;
- The HIS appears to include little in the way of original content, as it virtually reproduces the findings of the visual impact assessment. Little specific consideration has been given to impacts on heritage values despite the fact that the visual impact assessment rightly did not address this issue. There is no acknowledgement made that there may be heritage values affected;
- Consideration has not been given as to whether the location of the proposal is within the view shed of the heritage item, or in its setting, as viewed from the surrounding landscape. The answer to these questions is in fact yes;
- The absence of close consideration of the siting issue is also found in the answer to the second question: Why is the development required to be adjacent to the heritage item?
- The answer given in the HIS does not address heritage impacts. It answers the question by stating that it is a convenience to locate the facility where it is proposed, because of the zoning and the proximity of existing facilities. It goes on to mention totally irrelevant issues to heritage values, such as the benefits of the proposal in terms of energy consumption;
- The value of the place will be diminished by the loss of the remaining prospect of a northerly view from the garden and its replacement by a view of large industrial buildings. The scenic value and quality of the view formerly part of the setting of the garden will be diminished; and
- A reasonable assessment on this matter would conclude that the proposal is simply in the wrong location or at the least a sub-optimal location as regards heritage impacts. There are other locations on the same development site on which the impacts of the proposed development would be less, or zero (for example east of the existing SeaLink facililty instead of west of it as proposed).

6.3 Health Risk Assessment and Impact

Dr John Shepherd has prepared a *Critique of Health Risk Assessment*, included at Attachment 2.

Dr Shepherd holds degrees in Bachelor of Medicine and Bachelor of Surgery from Adelaide University. He is a fellow of the Royal College of Surgeons of Edinburgh and holds an Advanced Diploma of the Royal Australian College of Obstetrics and Gynaecology. He was founding president of the Australian College of Rural and Remote Medicine. In 2003 he was awarded an Order of Australia (AM) for services to Rural Medicine.

Dr Shepherd has prepared an independent review and assessment of the Health Risk Assessment (HRA) that accompanies the DA. Dr Shepherd has concluded as follows:

> *"….. the HRA is simply wrong, and in places is misleading and is not backed by a single relevant research article. The fact that the authors of the HRA are insufficiently qualified to provide the opinions contained within that document is of particular concern. The HRA contains a number of misstatements and systematically underplays the risks arising from the proposed development."*

Dr Shepherd states that the HRA should be rejected and that the matters of concern arising from the development cannot be sufficiently dealt with by way of condition, nor are the mitigation strategies identified in the HRA sufficient. In Dr Shepherd's opinion:

> *"The site is not suitable for a feral goat abattoir, and the transport route is similarly unsuitable, particularly because it passes a number of sensitive receptors including schools, the hospital and attached nursing home, and finally the retirement village.*
>
> *…The spread of Q fever is a serious issue to be taken into consideration in determining whether to grant development consent to application SSD6594. Q fever is debilitating, has a high level of infectivity and can be acute in humans, with a 2% death rate in hospital cases."*

The flaws contained in the HRA, as identified by Dr Shepherd, are numerous and serious and his critique requires detailed reading and comprehension in order to fully appreciate the risks associated with the development. Contained below are some summarised comments and quotes.

Dr Shepherd's critique includes a detailed explanation of the major health risk, being Q fever (Q-F). Q-F is an infectious disease in certain animals that can be passed onto humans (a zoonotic disease). Dr Shepherd comments that the HRA has a fundamental problem in that the authors have not understood the nature of Q-F *and its proclivity for feral goats*. The HIA has assumed that the risk of Q-F from feral goats is the same or at least similar to that from other domesticated animals such as sheep, cattle or domesticated goats but this is not the case. Dr Shepherd provides an extremely detailed and expert explanation of why feral goats offer a very high risk of Q-F.

Dr Shepherd's risk assessment includes a review of the proposed transport of the goats. Dr Shepherd states that:

> "*the massive Q-F infection rate of 52% for SA & NSW feral goats, being 4.5x greater than in a combined test of sheep and cattle in WA, it is obvious that they provide a HIGHER RISK rate of infection transmission by the breathing in of aerosols by those people living along the feral goat transport route rather than sheep and cattle……. It is a totally unsupportable statement on pg. 4, para 3 of the HRA, to say "therefore the risk of zoonoses transmission to the transport route communities and the Blayney community are likely to be negligible".*

Dr Shepherd's critique reviews in great detail the proposed design of the holding pen, together with comments regarding cleaning and risk mitigation of aerosol & dust production and emissions. Dr Shepherd notes that the proposed collection and transport of skins, manure, dead carcases, offal, blood, bone trimmings etc. has the potential to further expose the Blayney community to infective waste.

Similarly, Dr Shepherd's critique includes a very detailed assessment of the likely prevailing winds and the associated risks, heavily criticising the assumptions in the HRA. This criticism and apparent false assumptions contained in the HRA, apply equally to the assessment of odour impact of the abattoir. Dr Shepherd asserts that the most regular of all precise wind direction is towards Blayney followed by Athol Homestead *"….. the Risk Mitigation procedures and precautions to prevent aerosol spread of the disease have been demonstrated to be unfeasible and completely beyond an honest assessment by the SLR assessors as well as the grasp of the proponents of this proposed abattoir."*

Dr Shepherd provides some critical comments regarding the proposed waste water management, questioning the reliability of the Cadia Chemical waste extraction plant effluent pipeline back to the mine and notably points out that the proposed turkey nest dam, operating as an emergency treated waste water collection pond, placing a high risk open air and contaminated sewer in close proximity to Athol and Tetlaw residences.

In Dr Shepherd's opinion "*the risks of infection to the Athol and Tetlaw residences from the abattoir is HIGH, and MEDIUM for all of Blayney. For transport route risk, it would be MEDIUM for all points exposed to the converged truck route and possibly LOW for other parts of Blayney."*

Dr Shepherd's critique is accompanied by a letter of support from Professor Andrew Lloyd, Professor of Medicine, a member of the Department of Infectious Diseases at the Prince of Wales Hospital in Sydney. The letter of support is included as part of Attachment 2. Professor Lloyd confirms that he has reviewed Dr Shepherd's critique and recommends as both comprehensive and accurate. Professor Lloyd's further comments include:

- *That it would be foolhardy to allow placement of an abattoir within one kilometre of the township (I would suggest five kilometres also has residual risk if the prevailing winds are towards the town or any nearby residents;*
- *The risk pertains not only to the abattoir and its immediate environs, but also to the roads leading to/from the facility, and water sources near to the facility which themselves also confer discernible risk of spread of aerosolised pathogens.*

6.4 Noise Impact

Renzo Tonin and Associates have reviewed the noise and vibration assessment that supports the EIS. The Tonin review is included at Attachment 3.

Mr Tonin confirms that the nearest receptor (receiver of noise impact) to the existing SeaLink operations and the proposed abattoir is Athol Gardens.

With regard to traffic generation and associated noise generation, Mr Tonin notes that the combined operation will generate 58 truck trips per day on Newbridge Road and through the township of Blayney comprising B-double, semi-trailer and rigid truck types. In addition there will be 362 motor vehicle trips per day.

Mr Tonin's review includes the following comments:

- The acoustic model used in the assessment assumes that 5% of goats bleat, which is unsubstantiated. Noise measurements at other comparably sized holding pens should be provided to support this claim.
- There is no detail provided of the anticipated sound level inside the building nor whether there will be acoustically absorbing material on the internal surfaces to control reverberation.
- The west opening of the abattoir building obliquely faces the Athol Gardens property and therefore this noise source should be quantified in more detail.
- The traffic noise assessment is in part lacking adequate information and is part in error.
  - The noise criteria used for Newbridge Road is wrong.

- The predicted noise level for the 80kph section of Newbridge road (opposite Athol Gardens property) used in the noise modelling is incorrect.
- The assessment states that all heavy vehicle activities (with the exception of livestock deliveries) should occur between 6.30am – 7.00pm. The application as lodged does not reflect this recommendation.
- With regard to the 6.00am – 7.00am transition period between night and day, the modelling in the assessment report does not state what is existing traffic and what is future traffic. "*Therefore, we are unable to calculate the existing traffic noise level at Athol Gardens without the site operating."*
- In respect of night-time truck noise on Newbridge Road and sleep disturbance, calculations should be provided to show the predicted noise levels at the Athol Gardens building.

With regard to construction noise, Mr Tonin comments as follows:

· The use of the Highly Noise Affected level as stated in the assessment is not appropriate *-quoting a level of 75dB(A) as being appropriate for Athol Gardens is ridiculous.*

· *The background noise level at Athol Gardens is 31dB(A) during the day. A level of 75dB(A) exceeds the background noise level by 44dB(A) which is overwhelming by any standard. A level of 75dB(A) might be appropriate in a city setting where background noise levels are much higher than at Athol Gardens. Therefore, the 75dB(A) "Highly Noise Affected" goal in the EPA's guideline is inappropriate in this instance.*

Mr Tonin concludes that there are serious issues that must be addressed by the proponent in respect to traffic noise and construction noise.

With regard to the assessment and determination of the application, it would seem clear that, based on the inadequate, and in some cases incorrect, acoustic information lodged, then development consent should not be given.

6.5 Odour Impact

Terry Shultz, Managing Director of The Odour Unit Pty Ltd has undertaken a review of the odour components of the EIS. The objectives of the review were to provide his assessment of the relevant section of the EIS and provide an overall opinion on the appropriateness of the buffer distance between the abattoir and Athol, including Athol Gardens.

Mr Shultz notes that the buffer distance to the sensitive Athol Gardens is only 330m, well below the 500m buffer distance recommended by the NSW EPA, and also comments that justification for the reduced distance has not been made.

Mr Shultz is of the expert opinion that:

· Odour assessment criterion adopted for the modelling in the EIS is inappropriate and does not take into account the sensitivity of people attending a wedding or other function at Athol Gardens*. "In adopting a 'one-size-fits all' benchmark for every receptor the assessment has failed to take into account that people attending a wedding or other organised functions at Athol Gardens would have an expectation for the highest air and amenity. The risk of negative impact to the business from an abattoir next door is therefore very high as a result."*

· The most stringent NSW EPA criterion should apply to the Athol Gardens property.

· With regard to the odour emissions inventory, the modelling is based on limited odour emission data collected from a simulated goat pen, supported by other data from cattle holding pens.

· The questionable sampling and airflow techniques and short stocking times resulted in odour concentrations that are unrealistically low.

· Given the failure of the proposal to meet the buffer distance criterion, the odour emission data lacks sufficient rigor and relevance.

- The actual odour emission rates from the proposed holding pens could be 5-10 times greater than that used in the modelling in the EIS.
- Maximum concentrations of odour typically occur during the evenings and overnight – at a time when typical wedding events at the Athol Gardens occur, from 4pm-12 midnight.
- The proposed rate of air exchange for the holding pens of once every 4 hours is low, with the distinct possibility of unpleasant conditions for workers and goats - possibly leading to doors being opened and kept open.

Mr Shultz recommends that any future odour emission data should be collected in a more realistic way than has occurred for the purposes of the EIS, using an integrated cross-flow airflow measurement and odour sampling method, on a goat holding pen where the animals have been held for time periods similar to that proposed at the abattoir.

Mr Shultz also comments that other odour management and mitigation measures require more detailed explanation, in view of the proximity to the Athol Gardens site. These include the frequency and method of pen cleaning, paunch removal and other odorous waste handling, and the ultimate fate of these waste materials on the site.

The conclusion of the review is that Odour Impact Assessment supporting the EIS "…*has found that the proposed development fails, by a considerable distance, to meet the basic requirements for a buffer/separation distance of 500m between the abattoir and the adjacent Athol Gardens facility.*

This review has raised major concerns about the accuracy and relevance of the odour emission input data to the odour dispersion model used in the assessment, to the extent that it considers the projections of ambient odour level at the Athol Gardens site to be unrealistically low."

We would add some further comments to Mr Shultz's review, as this only deals with the abattoir. The EIS does not consider or assess the odour impact of 4500 head of feral goats travelling in livestock trucks daily, 24 hours every day, through the centre of the Blayney township or passing less than 50m from the "ceremonial area" of Athol Gardens. The EIS estimates 12 livestock delivery truck movements per day (in bound with feral goats). This indicates an average of 375 animals per B-Double/semi-trailer. The lack of consideration of this impact is a serious deficiency in the EIS documentation.

6.6 Traffic Impact

The traffic assessment supporting the application contains errors, does not address some potential impacts and lacks sufficient analysis of likely impact.

The conclusions in the report are flawed by some basic errors in calculations and assumptions:

- In calculating the annual traffic numbers in Table 2 for abattoir related traffic, there is an assumption of 5 day a week operation, when in fact it will be 7 days a week – an underestimation of 30%.
- An assumption has been made as to car-pooling involving 1.5 passengers per car (based on SeaLink experience). However for the abattoir this is likely to be an overestimation given that employees are predicted to come from more disparate regions. This increases the size of the car park and the number of light vehicles on the road.
- Adelaide Street (Mid Western Highway) is said to have a 60 km/h speed limit (para 3.2 pg 6). The speed limit is in fact 50 km/h. This has a bunching effect on the traffic (like experienced in school zones), putting greater pressure on delays at the Burns Road intersection turning right [heavy vehicles will not be able to quickly break into gaps in traffic], particularly in the pm peak which corresponds with peak flows on Adelaide Street.
- The statement that there is a DA for a 19,128m^2 dry goods warehouse is incorrect, as this DA has lapsed.

- Opposite the proposed new truck and car entrance into the abattoir there is an existing bus, wedding car and guest vehicle entrance to Athol Gardens car park. This physical relationship and the relationship between the existing vehicle movements and proposed vehicle movements is ignored in the traffic report.

  The Athol Gardens entrance is for buses bringing guests to and taking them home from functions. Buses are used for approximately 80% of weddings, arriving at 3.00 to 3.30pm and leaving at 12.00am. Passenger numbers are in the range 35 – 50. It is also the entrance for wedding cars collecting the bride from the Stables cottage and driving out to Newbridge Rd and re-entering via the main entrance.

The traffic report acknowledges that there is a nexus for the development to contribute a fair and reasonable proportion to pavement maintenance works in Newbridge Road via a Voluntary Planning Agreement that would need to be negotiated between the applicant and Blayney Shire Council (p 2of Executive Summary). The application documentation and the Statement of Commitments make no offer to contribute.

We note that the original DA for SeaLink (DA 59/01/02 condition 9) required upgrading/improvement of Newbridge Road and strengthening and widening be carried out and sight distance at the "S" bend at Athol be improved to a minimum 60kmh before the facility was operational.

We are advised that not only was Newbridge Road not upgraded or improved, but in April 2003 the speed limit was increased from 60 kph to 80 kph. For trucks, the stopping sight distance on a level road (with a 2.5 second reaction time) is 142 metres. It is worse in fact for trucks travelling east, because the road has a crest at the curve, so it is downhill. In any event, the distance from the curve to the main entrance to Athol is only 85 metres.

The heavy vehicle traffic increases have been:

- In 2002, for the original development, semi-trailer movements were then predicted to be 942 per annum, allowing for both ways (about 2.5 per day)[1].
- In 2015, the Intersect Report estimates the number of semi-trailers/ B-Doubles to be 58 per day at the Athol entrance (440 total vehicles (see p18)).

This is a 23 times increase in heavy vehicles since SeaLink was developed without any road modifications and in fact an increase in speed limit at the Athol entrance. This is very material if the cumulative impacts of the combined developments are being assessed and is ignored in the application documentation.

Further to the above, at the time of the rezoning of the subject site in 2012 to industrial land, Blayney Shire Council noted poor horizontal and vertical alignment at the "Athol" bend. It resolved in June 2012 "*to commence negotiations with Metziya Pty Ltd to acquire land necessary to realign portion of Newbridge Road to address the dangerous corner adjacent to the "Athol" property*."

Two and a half years on and nothing has happened.

In summary then, resulting from the Council's consideration of the original SeaLink DA and subsequently consideration of the 2012 rezoning, the Council has made it clear that Newbridge Road in the vicinity of the subject site required upgrade works, in order to accommodate the scale of then proposed development. The traffic report accompanying the current application acknowledges that there is a nexus for road improvements works but the application ignores all of this past and current advice and requirements.

In this regard, the application is lacking in proper consideration of the likely impacts of the development on the local road network.

[1] Information in Support of a Development Application (December 2001), Terra Consulting (NSW) Pty Ltd.

Finally, the proposal will be introducing B-double and semi-trailer vehicles into the local road system, through the township of Blayney and along Newbridge Road 24 hours, 7 days per week. These vehicles will be carrying, annually and continually, up to 1 million animals for slaughter, over distances of 6-8 hours, with inevitable odour and noise impacts, well in excess of the currently existing road and traffic conditions and experience. There is no qualitative impact assessment of the scale and nature of this form of vehicular traffic on the environment of Blayney or Newbridge Road. Based on the expert technical analysis and reporting informing and supporting this submission we submit that the impacts from both the volume and nature of the abattoir traffic will be unacceptable .

6.7 Economic Impact

The abattoir is proposed to operate 24 hours per day, 7 days per week (24/7) and process up to 4,500 head of animals per day, and up to 1 million per year. This is to occur with the main abattoir building being within approximately 380m of the Athol homestead and closer still to the function centre gardens.

Deliveries of livestock will occur night and day and animals will have travelled 6-8 hours in confined space. Trucks will be carrying animals covered in urine and faeces and highly stressed from the long journeys – travelling within 45m of the wedding ceremony garden. The trucks and their cargo will smell and will be noisy.

As outlined in detail within this submission, we do not accept the application documentation that asserts that there will be low and reasonable impact on Athol Gardens. There will be direct and unacceptable noise, odour, visual and health risk impacts.

The EIS prepared by SLR and the associated Socio-Economic Impact Assessment prepared by SGS Economics and Planning (October 2014) ignores the potential economic impact of the abattoir operating 24 hours per day, 7 days per week and processing up to 4,500 head of animals per day. This is a significant deficiency in the EIS.

The owners of Athol Gardens are of the opinion that the impact of the abattoir will be so significant that the business will be forced to close due to loss of business. Their submission regarding the anticipated impact and inevitable closure of their business is provided separately to this submission.

Based on the expert reports that accompany and inform this submission we are of the opinion that, as a result of the direct impacts from the abattoir, the economic impact on the Athol Gardens business will be significant and catastrophic.

The proximity of the two (2) sites is shown below. Figure 3 shows a typical ceremony in the garden. Figure 4 shows the location in proximity to Newbridge Road.

Figure 3: Typical ceremony within Athol Gardens

Figure 4: Proximity of ceremony gardens to Newbridge Road. B-doubles and semi-trailers will be travelling 24/7 within 45m of the gardens (Source: Google Maps)

The essential element for the success of the business is the outdoor setting and surrounding rural landscape. The outdoor setting will be significantly impacted with a 24/7 abattoir opposite and livestock transported only 45m from the location of outdoor ceremonies. There will be inevitable and unavoidable noise, odour and visual impacts all incompatible with the operation of the ceremony gardens and function centre. This highlights the inherent incompatibility and conflict between the existing and proposed land uses.

As detailed in section 3.1, Athol Gardens is a significant local business with a multiplier effect within the local and regional economy. Athol Gardens provides considerable trade for other businesses.

We reiterate that the application is deficient in not properly considering the likely economic impacts on Athol Gardens and the flow-on negative economic impacts (multiplier impacts) on interrelated businesses in Blayney and the region. The Socio-Economic Impact Assessment supporting the application assumes no physical or amenity impacts on the one sensitive land use immediately adjacent to the abattoir, which in our opinion is simplistic and unrealistic, and then considers the possible economic impacts only associated with the development, rather than a holistic and balanced assessment.

7.0 Non-compliance with Blayney Local Environmental Plan 2012

We have mentioned in Section 5 that the proposal does not meet the land use definition of a *livestock processing industry* under BLEP and that the turkey nest dam is prohibited in the RU2 Rural Landscape zone.

Other deficiencies with the regard to the principal local statutory controls for the site are included below.

7.1 Waste Water Management

The application ignores the *groundwater vulnerability* provisions of BLEP. The development site is identified on the *Natural Resource—Groundwater Vulnerability Map* as shown below in Figure 5.

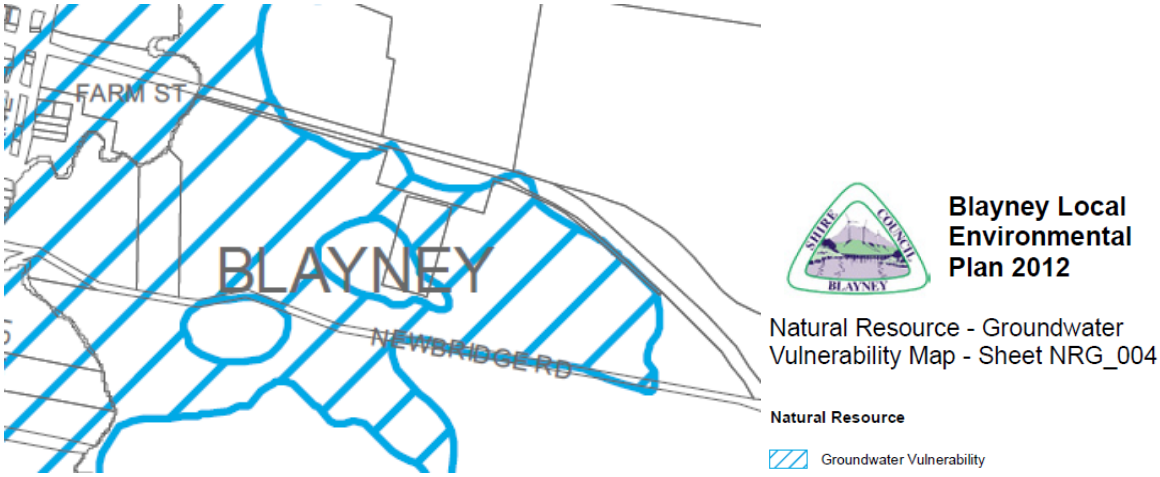


Figure 5: BLEP Natural Resource—Groundwater Vulnerability Map

Clause 6.4 of BLEP includes the following provisions:

> *6.4 Groundwater vulnerability*
>
> *(1) The objectives of this clause are as follows:*
> *(a) to maintain the hydrological functions of key groundwater systems,*
>
> *(b) to protect vulnerable groundwater resources from depletion and contamination as a result of development.*
>
> *(2) This clause applies to land identified as "Groundwater Vulnerability" on the Natural Resource—Groundwater Vulnerability Map.*
>
> *(3) Before determining a development application for development on land to which this clause applies, the consent authority must consider the following:*
> *(a) the likelihood of groundwater contamination from the development (including from any on-site storage or disposal of solid or liquid waste and chemicals),*
>
> *(b) any adverse impacts the development may have on groundwater dependent ecosystems,*
>
> *(c) the cumulative impact the development may have on groundwater (including impacts on nearby groundwater extraction for a potable water supply or stock water supply),*
>
> *(d) any appropriate measures proposed to avoid, minimise or mitigate the impacts of the development.*
>
> *(4) Development consent must not be granted to development on land to which this clause applies unless the consent authority is satisfied that:*
> *(a) the development is designed, sited and will be managed to avoid any significant adverse environmental impact, or*
>
> *(b) if that impact cannot be reasonably avoided—the development is designed, sited and will be managed to minimise that impact, or*
>
> *(c) if that impact cannot be minimised—the development will be managed to mitigate that impact.*

As stated above, the EIS ignores the BLEP provisions. The DA specifically includes a turkey nest dam with the capacity to hold 22 days volume of treated waste water. This is the equivalent of the waste water generated from the slaughter and processing of100,000 feral goats.

There is no assessment of potential contamination of vulnerable natural groundwater.

The application is clearly deficient in information and could not be approved given the non-compliance with Clause 6.4 of BLEP.

7.2 Flood Liable Land

Clause 6.1 of BLEP deals with flood planning and applies to:

(a) land identified as "Flood planning area" on the Flood Planning Map, and
(b) other land that is flood liable land.

The provisions of Clause 6.1 (3) are:

> *(3) Development consent must not be granted to development on land to which this clause applies unless the consent authority is satisfied that the development:*
> *(a) is compatible with the flood hazard of the land, and*
>
> *(b) will not significantly adversely affect flood behaviour resulting in detrimental increases in the potential flood affectation of other development or properties, and*
>
> *(c) incorporates appropriate measures to manage risk to life from flood, and*
>
> *(d) will not significantly adversely affect the environment or cause avoidable erosion, siltation, destruction of riparian vegetation or a reduction in the stability of river banks or watercourses, and*
>
> *(e) is not likely to result in unsustainable social and economic costs to the community as a consequence of flooding.*

Blayney Shire Council has undertaken a Flood Study that identifies the development site as being flood liable (Blayney Flood Study Report (Jacobs, 30/01/2015)). The Flood Study commissioned by Blayney Shire Council and undertaken by SKM/Jacobs Group Australia Pty Ltd (available on Council's website) for the first time identifies the area that is "flood prone land". The map in appendix D (Map D005) shows PMF flood depth and levels. The whole abattoir site (not just the area in the NW corner) is shown as flood prone land. Even at flooding levels far lower than the PMF level, the waste water dam in the SW of the site is severely impacted.

The statement in the EIS that the land is not flood prone is therefore wrong and the conclusions drawn from it are therefore not supported.

The provisions of Clause 6.1 of BLEP have not been met and under the provisions of 6.1(3) development must not be granted.

8.0 Further Comments

8.1 Reliance on the Adjoining Dewatering Facility

The disposal of treated waste water relies entirely on approved but as yet unbuilt infrastructure on adjoining land. We make the following comments:

- It would not be appropriate to issue a development consent for a use (the abattoir) that is entirely reliant upon infrastructure being built by others and associated with an unrelated activity (the dewatering facility) when that infrastructure does not exist and there is no certainty as to its future.
- We would assume that, in order to accommodate the proposed new pipeline from the abattoir to the CVO dewatering facility, then the approval for that infrastructure would require modification. There is no acknowledgement of this with the subject application, and again no certainty as to the approval of such a modification.

8.2 Alternative Locations

The consideration of alternative locations occupies less than one page of the EIS, dealt with towards the bottom of Page 164 and top of page 165.

There are no details of any of the alternative locations said to have been considered. Based on the information provided with the EIS, no person could be confident that any alternatives were in fact considered.

The discussion in the EIS makes it very clear that the preferred location is driven by one thing only – the proximity to the cold storage facilities and the CVO dewatering facility.

The de-watering facility, together with the freezer storage facilities at SeaLink, has resulted in the subsequent effort to squeeze a feral goat abattoir on to a site that we submit is unsuitable for the use.

The unsuitability is borne out by the information supporting this submission. The abattoir is in a location where it will have unacceptable visual, heritage, noise and amenity impacts, create an unnecessary and totally avoidable major public health risk and a catastrophic economic impact on Athol Gardens, as detailed in this submission.

8.3 Non-compliance with the Secretary's Environmental Assessment Requirements (SEARs)

We have made earlier comments regarding the EIS documentation not meeting the SEARs. In particular we note that:

- There are no proper plans of any proposed (or existing) buildings or infrastructure;
- There is no boundary or levels survey;
- There is no proper consideration of the principal local environmental planning instrument – Blayney Local Environmental Plan 2012;
- There is no proper assessment under State Environmental Planning Policy No 55;
- There is no proper assessment of groundwater impacts;
- There is no proper assessment of flooding impacts;
- There are no details of any road upgrades (despite the EIS traffic report acknowledging need for such); and
- There are no detailed plans of the proposed parking areas.

9.0 Conclusion and Recommendation

For the reasons stated in this submission, we are of the opinion that SSD 6594 is a fundamentally flawed DA. There is a substantial lack of information necessary to allow an objective and professional merit assessment of the application and this deficiency is, of itself, reason for refusal. This is with regard to both the proposed consolidation of existing development consents and the feral goat abattoir. The DA documentation does not meet the Secretary's Environmental Assessment Requirements.

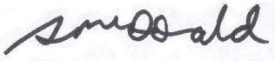
The application seeks to consolidate the existing development consents for the site. The application documentation does not include any information regarding the approved drawings, details of compliance with conditions of consents, modifications to consents etc.

With regard to both the existing operations and the proposed feral goat abattoir, this submission assesses the likely impacts of the development. The expert review of visual, heritage, health risk, odour and noise impacts that accompanies this submission provides an overwhelming weight of professional opinion that both points to the deficiency of DA information, and also the unacceptability of the feral goat abattoir in this location.

We are of the opinion that the development is of a scale, intensity and impact that warrants refusal and we recommend this course.

Should you require any further information in regards to the above, please do not hesitate to contact me on (02) 9380 9911 or by email at smcdonald@sjb.com.au.

Yours sincerely



Stuart McDonald
Director

Attachments

Attachment 1: Visual and heritage assessment report prepared by Richard Lamb of Richard Lamb and Associates

richard lamb & associates

SSD 6594, Metziya Pty Ltd

Proposed Abattoir and Continued Operation of Blayney SeaLink

Peer review of visual and historic heritage assessments

Prepared for: David Somervaille

Authors: Dr. Richard Lamb

20 May, 2015

1/134 Military Road, Neutral Bay, NSW 2089 PO Box 1727 Neutral Bay NSW 2089
T 02 99530922 F 02 99538911 E info@richardlamb.com.au W www.richardlamb.com.au

20 May 2015

Mr David Somervaille
Athol
84 Newbridge Road
Blayney NSW 2799

Dear David,

SSD 6594, Metziya Pty Ltd
Proposed Abattoir and Continued Operation of Blayney SeaLink
Critique of Visual and Heritage Impact Assessments

Thank you for your commission requesting that I provide an independent review of the sections of the EIS that are relevant to my expertise, being:

- Appendix G the Visual Impact Assessment, prepared by Green Bean Design; and
- Appendix H, the Statement of Heritage Impact, prepared by Ozark,

in relation to their assessment of the impacts of the proposed abattoir on your property, Athol and the Athol Gardens wedding ceremony and reception business

As you are aware, I am a professional consultant specialising in visual impacts and landscape heritage based on 40 years of teaching and research in landscape architecture, architecture, heritage conservation and urban planning and 20 years of experience as a consultant and expert witness in matters concerning visual impacts and landscape heritage. My CV current to approximately the end of 2012 can be viewed or downloaded from my website at www.richardlamb.com.au and is accessed from the tab on the People page. A summary in relation to recent experience in visual impacts and landscape heritage is attached to this submission at Appendix 2.

I have perused the EIS documents on the Department of Planning and Environment website, the SEARs for the project and I visited your property and the surrounding area on April 29, 2015 when I was made aware of your interests in this matter before I made independent assessment and analyses of the likely visual and aesthetic heritage impacts of the proposed goat abattoir on your property, Athol.

My review of the assumptions and findings of the two Appendices to the EIS follows.

PART A VISUAL IMPACT ASSESSMENT

A1 Methodology used

The Visual Impact Assessment (VIA) was prepared by Green Bean Design (GBD), a firm experienced in preparing visual impact assessments for government and private clients in regard to infrastructure and other projects, in particular wind farms. This review accepts that there is no industry standard of best practice that determines how VIAs should be conducted and that a wide range of approaches are possible. I have my own methodologies for assessment of the visual impacts of infrastructure and other forms of development which differ from those of GBD. I make no comment on the overall validity of the method of assessment used in itself. This review concentrates on the assumptions made, the logic of the process of assessment and the evident relationship between these and the findings, focussing specifically on the likely perceived visual impacts on Athol. I accept the conclusions of GBD in relation to impacts on views from the township of Blayney generally and on the more distant view places assessed, that the visual impacts would not be significant.

A2 Observations

When I undertook my assessment in Blayney on the basis of an initial desktop survey similar to that carried out by GBD, I visited a range of locations similarly distributed to those assessed by GBD and also made observations from a number of the view places analysed by GBD.

With regard to distant views and views in Newbridge Road, I noted similar overall visibility of the subject site and existing SeaLink facilities to GBD. In relation to closer viewing places, I took a number of representative photographs and in particular from the garden of Athol. In relation to the use of the place as a wedding and reception venue, I took a number of photographs showing the view that would be available to a guest or a bride and groom during a wedding, from the rose arbour in the ceremonial garden north of the house. The view is partly screened by vegetation in the garden and this effect would be seasonal, the visibility of the surrounding landscape decreasing to some extent when deciduous tree species are in leaf. I compared those representations of the view to the panoramic images in the VIA. My photographs were taken with a Canon EOS 5D professional quality DSLR camera at 50mm focal length. They do not take in the whole potential view, deliberately. They take in the focus of outward view from the garden, with the vegetation as frame to the view over the rural landscape beyond.

The photographs show that from many view perspectives, the proposed facility will dominate the window of view that is framed by the foreground provided by the landscape inside the subject site. The view to the rural landscape so framed includes what appear to be two bunds on the site, the closest of which, adjacent to Newbridge Road, is sparsely vegetated by small trees. The bund or mounding beyond is bare of vegetation.

The view affected is in the orientation of the house to the north, within the composition of views from the garden, within the focus of views from places used for ceremonial purposes in the adaptive reuse of the house and garden as a wedding and reception venue, of a scenic rural landscape.

The value and scenic quality of the view will be decreased by the proposed development. No amount of vegetation screening will return the view to the scenic character or quality that is currently demonstrates. It is already significantly and negatively affected by visibility of the existing SeaLink facility. The proposed development in concert with that facility will have a significant cumulative impact on the scenic value and quality of the landscape.

Other parts of the gardens are not so substantially affected. For example, the formal front of the dwelling is toward the west north west, where there is a lawn, possibly an early one that was originally encircled by the original carriage drive. Original trees remain from the early and more symmetrical garden plantings, interspersed with new plantings.

The fact that there are views that are not so substantially affected does not diminish the importance of the effect of the proposed development. Likewise, the fact that there are distant views from Blayney that are not significantly affected does not add merit to the application. The question to be answered is how to respond to the views that are significantly affected and determine whether the proposal is reasonable.

In my opinion there would be a significant impact on the view from Athol, the importance of which is increased by the use to which Athol is put as a tourism and commercial enterprise, which is compatible with and assists in the conservation of its heritage values.

A3 Assumptions and Limitations

The Executive Summary notes that the proposal inter alia seeks to consolidate multiple development approvals into a new single development consent and that:

> *This consolidation will not result in any visual impacts relating to existing infrastructure, therefore this VIA involves an evaluation of the visual significance with regard to the proposed development of the small stock abattoir and associated infrastructure (the Project).*

While on the face of this, this seems a reasonable approach, if one leaves aside cumulative impact for the moment, I am informed that each of the earlier and existing approvals which are sought to be consolidated by the application into one over-arching approval, were subject to conditions requiring work to mitigate the visual impacts on both Newbridge Road and Athol. Given the time that has elapsed, the implementation of these conditions of consent would have led to a reduction in impacts on views of the development on the site. My observations, supported by the photographic plates in this report and those in the GBD VIA, including commentary on the inadequacy of existing mitigation works along the Newbridge Road frontage of the site to mitigate visual impacts satisfactorily made by GBD, are that there is little evidence of any work or landscape planting that has been carried out by the current owners (the Applicants) which has resulted in the intended mitigation of the existing visual impacts.

I am also informed that the landscaped bund parallel to Newbridge Road and potentially of benefit to mitigation of impacts on the views from Athol, was planted with pine and other tree vegetation, not by the owners of the subject site, but by Blayney Council. I am not aware of the circumstances by which the Council would have felt compelled to plant the bund, which evidently is on private land, however it would appear that Council did not find the treatment of the site to be satisfactory in some respects.

I therefore disagree with GBD's claim that the new proposed consent will not result in any visual impacts of the existing infrastructure. This assumption is only correct if the existing situation is accepted as the desired character of the environment that arose out of the approval of earlier individual applications. However, the evidence appears to be that earlier conditions of consent did not approve or envisage the bare and unrelieved appearance of the existing infrastructure as the desired character for the site, but in fact required sequential and what would have been cumulative additions of landscape plantings, the effect of which would have been to significantly reduce the visual impacts.

Whatever the circumstances, the result of construction of the existing facilities and lack of landscape mitigation works has resulted in the existing infrastructure having a significant visual impact on Newbridge Road views and on views from Athol. The effect of a new approval may ignore the need for remedial mitigation of the impacts of the existing infrastructure. This seems to be what is shown in GBD's VIA, in which there is a concept landscape plan which is apparently intended primarily to provide screening of views of the goat abattoir only, on views from Athol. The consolidated consent sought will be to accept the bare and unrelieved appearance of the remaining existing infrastructure as the desired future character of the site. In my opinion that would be an inappropriate outcome for views in the public domain of Newbridge Road and for Athol and an outcome not envisaged by Council, which was the consent authority for the earlier applications for the site over the history of existing consents.

I consider the GBD conceptual landscape plan later in this submission. I note however that there is no design detail for any of the proposed works which would provide the consent authority with the evidence or proof that the work would be effective and ought to be approved as part of the consent sought.

A4 Limitations of Panoramic Images

I accept the general assumptions made in determining the visibility of the project from its visual catchment. The assessment in that regard is sufficiently comprehensive and representative of the kinds of views which ought to be considered.

The documentation of views is however primarily illustrated by way of panoramic images. Two features of these make their value to an objective assessment of visual impacts problematic.

a) The first is that in most cases the direction given on the photo captions is incorrect, meaning that a viewer using Figure 3, which shows the locations from which the original images were taken and which appears to give the view direction by way of an arrow head in each case, cannot reconcile the image in the panorama with what is visible in reality.

   For example Photo Location A1 (Figure 4 Photo Sheet 1) shows the view in panorama from the Church Hill Lookout in north Blayney, looking east to south-east. The corresponding figure caption states to the contrary that the direction covered by the panoramic image is west to south west. Photo Locations A2-A9 all have incorrect viewing directions indicated.

   Photo Location A10 (Figure 7 Photo Sheet 4) is claimed to have a north-east orientation, however the centre of the panorama is north. Photo Location A11, from adjacent to the existing administration building is centred on a direction to the south east or south, not south west as stated in the caption to the photo. To add to that confusion, the

direction arrow shown near Photo Location A11 on Figure 3 is pointing south east. Photo Location A13 (Figure 8 Photo Sheet 5) shows the left side of the image that is in A12 above it on Photo Sheet 5. Relative to Photo Location A13, the direction of the centre of the image is approximately south west, not south west to north west as stated in the caption.

b) A second feature of the panoramic images, which are incorrectly described throughout as photos, is that they vary in horizontal extent. In addition, there is no indication as to how many images have been stitched together to make each image, or of the focal length of the lens used to take them, even though it is obvious that both vary considerably. As an example, Plate 1 on Page 6 shows a single image taken from Church Hill and Photo Location A1 shows a panorama from the same location. The image on Plate 1 appears to be one of the images used to prepare the panoramic images. It would take up less than 15% of the horizontal field of view, suggesting that up to 10 images were stitched together to make the panorama depending on the degree of overlap between individual images. In other panoramic images there are clearly lesser numbers of images stitched together, even when the photos were originally taken from similar locations (eg. Photo Locations A6 and A7 at Athol).

While I do not fundamentally object to the use of panoramic images, if the intention is to simply indicate the potential extent of view of an item from a given viewpoint (such as the Church Hill view), I do have concerns about their use as the primary analytical tool for visual impact assessment. This is because they distort the view by stitching together images which have individual centres of perspective, into a single image. The effect of this is to show totally artificial relationships between parts of the view. An example is in Photo Location A8, which shows a section of Newbridge Road in the foreground as though it was curved, when in fact it is straight. Another example is Photo Location A10, showing a straight section of Newbridge Road looking north into the SeaLink site. The road to the right in the panorama appears straight while in the foreground the road is distorted into a curve and appears to then run away from the view point on an obtuse angle to the left. The stitching together of the panorama from separate images with the camera pointed in different directions produces this effect. Distortions like this occur across the whole image and are not confined to the edges where they are more often more obvious. In addition, stitching the images together minimises the apparent visual size of items in the view, as can be seen in this case in the very large existing cold storage facility appearing to be a relatively small feature of view even when seen from directly in front on Newbridge Road (eg. Photo Location A10 on Figure 7, Photo Sheet 4).

If panoramic images are used in analysis of visual effects of proposed developments, the reason for using them should be explained and the limitations acknowledged. One critical limitation of panoramic images is that they do not represent the objective visual effects on specific viewing places with realism and accuracy, for reasons explained above.

In the case of views from closer locations, for example Newbridge Road or Athol, single images should be used, taken at conventional focal lengths appropriate to the format of the camera used to take them (eg. 50mm with a full-frame 35mm format film or DSLR camera). I observed in the VIA that there are no single images showing the views from Athol and only two from the site with a view toward Athol (Plates 8 and 9). Both of the latter appear to be showing locations inside the site from the most advantageous position possible with regard

to the potential for vegetation to screen the view. Were they also panoramic, they would show the poor relationship between the intended screen planting and the views from Athol.

Taking all the limitations on the representation of visual exposure of the proposed development together, it is my opinion that the likely effects of the proposal on the views has been reduced, compared to the experience of the views in reality. Notwithstanding, I agree with GBD's conclusion in regard to the more distant views and those from within Blayney itself, that the impacts would of negligible to low visual significance. Having said that, it is not clear what GBD mean by visual impact or visual significance, since both terms are used in different contexts in more than one part of the methodology.

A5 Assessment Criteria: Confusion of Visual Effects and Impacts

Other than for the determination of visibility of the proposal on which I have commented above, the overall method of assessment is described in Section 2.6 of the VIA; Assessment of Visual Significance. GBD use the term visual significance instead on visual impact as the ultimate result of the assessment process. In Summarising the method in the VIA, it is stated in Section 2.6 that:

> *The potential degree of visibility and the resultant visual significance will be partly determined by a combination of factors……..*

The factors are listed in a series of five dot points summarised below:

- Distance between view location and the Project.
- Duration of view from receptor locations.
- Predicted impact of the Project on existing visual amenity.
- Nature of the predicted impacts, and:
- Visual sensitivity of locations from which the views toward the Project exist.

Following the list, is the following quote;

> *The determination of visual significance is also subject to a number of other factors which are considered in more detail in this VIA.*

The greater detail is, however, lacking in the remainder of the VIA.

The confusion between visual effects and impacts can be seen in Section 5.1, Visual Effects, which describes the first steps of analysis of the actual views to be assessed. Visual effects is a well understood concept in visual impact assessment. It is one of the analytical parts of visual assessment that should be relatively objective. It is the analysis of the facts of the effects of a proposal on the views. Visual impacts occur as a result of visual effects. Visual effects are not impacts. However, in this methodology they are conflated.

In explaining how visual effects are assessed in Section 5.1, the first dot point (changes in character of the available views resulting from the Project) is agreed to be a visual effect. The second dot point under Section 5.1 (changes in visual amenity of visual receptors) is not a visual effect, it is an assessment of impact on the viewer of change in the amenity of the viewing place, caused by the proposal. It is a subjective assessment made by the assessor, which may pre-empt the rest of the assessment, if made before other visual effects are analysed, as appears to be the case.

The confusion of effects and impacts continues when it is stated that:

> *The magnitude and significance of visual impacts resulting from the construction of the Project will primarily result from the combination of the following factors:*

The same five dot points discussed in Section 2.6 are then repeated in Section 5.1. Each is a criterion of assessment. However one (predicted impact of the Project on existing visual amenity) is a repeat of the second dot point under Visual Effects, suggesting either that it is double counted, or that it appears in two different parts of the methodology as two different independent variables.

The next criterion (Nature of predicted impact) seems to be a temporal visual effect criterion (how long the impact will last) and is possibly a visual effect, rather than an impact assessment criterion. How the project could be assessed for its visual impacts on this criterion on the basis that it is reversible, however, (ie, that it is possible that it could be decommissioned and removed in the future) escapes me. The theoretical possibility that the project could be demolished sometime in the future and therefore that the visual impacts would then become less is irrelevant to predicting the visual impacts of the proposal in the present, which is what the SEARs for the project require. For the purposes of the assessment of the proposed industrial complex with an intended long life of use and no decommissioning plan in the EIS, the rating given should be based on the development being permanent and irreversible. On that basis, no less weight should be given to the visual impacts that it will cause.

One would expect that the list of factors in dot points in Section 5.1 is the list that is shown as the criteria of determination of visual significance on Table 1 at Pages 16-18. The table appears to show the criteria of assessment that are to be applied to any given viewing place assessed. However, the list in Table 1 contains a further criterion of assessment (Magnitude), the meaning of which is not explained anywhere in the methodology section. Magnitude appears to be a subjective professional assessment of the extent to which the proposed change to the environment is compatible with the existing landscape's features. The Visual Significance Matrix on Table 2 shows the criteria of assessment as applied to each viewing place assessed, including the magnitude criterion.

Finally, with regard to apparently confused criteria of assessment, Table 1 contains both Magnitude and Visual Significance as criteria for assessment of each View Location. Each has four nominal levels on a subjective scale from least to most. It is not clear to me what the difference is between magnitude and visual significance. The descriptions of what qualifies at each level, despite using different words, appear to be essentially the same. The only difference is that in Visual Significance, mitigation measures are considered capable of changing the assessment from one level to a lower level of significance. Given that there is section in the report that independently assesses mitigation measures, it is not clear why assessment of potential for mitigation occurs as independent assessment in the Significance criterion in Table 1.

Overall I find the methodology to be very difficult to follow, as it confuses visual effects analysis with various different subjective assessments of visual impacts. It does not contain simple explanations of the process of analysis and assessment of impacts or how or why differential weights are given to the various criteria of assessment to arrive at the final assessment of visual significance.

A6 Assessing significance of view impacts on Athol

In relation to the views from Athol therefore, it is not clear how the overall assessment has been determined in the light of the explanation of how the criteria are applied in Table 1. As each of the criteria appears to be an independent variable, as they are applied as individual criteria for each viewing place, it would be expected that each contributes to an overall assessment of impact significance in a straightforward and logical way.

Specifically in relation to views from Athol:

a) the view distance between Athol and the closest parts of the proposed facility is in the short range category (highest visual effect);

b) the view duration is long (highest effect);

c) the predicted impact is adverse (higher end of the scale);

d) the impact is permanent, in my opinion, although for some reason it is stated to be reversible by GBD; and

e) the receptor sensitivity is high, as a residential location (highest value on that criterion); and

f) the sensitivity is also high, in my view, in relation to the effect of the heritage value of Athol and the use to which it is put, which complements those values and exposes users of the site to close range views of the Project.

It would appear inevitable, applying the criteria rationally and in a logical fashion, that the level of visual significance of the Project, which is the overall assessment value, would be rated as high. However, this is not the case. The visual significance is rated as MS, or Moderate Significance. It appears that other criteria must have down-weighted the final visual significance rating. The two criteria that may have caused the down-weighting are the rating for the predicted impact as Neutral and the nature of the impact as being Reversible. As there is no guidance in the methodology as to how the ratings on individual criteria combine or guide the overall assessment of visual significance, it is left to speculation as to how the apparent down-weighting occurred.

That there is no overall logic to the application of the criteria is confirmed below Table 1 at Page 18:

> *The visual significance criteria outlined in Table 1 is used as **a guide** to determine significance of visual impacts. The significance of visual impact for each view location is also considered against other factors, which include the overall visibility of the Project from surrounding view locations. The general relationship between view category and its potential level of sensitivity is outlined in **Table 1**.*

Thus there is no explanation as to how the criteria have been assessed and what relative weight has been given to each to arrive at an overall level of Visual Significance. In addition, as I have noted above, the methodology is confusing, because it mixes use of the terms visual impact and visual significance, without an explanation. Why it refers back to overall visibility, when this has already been assessed as a baseline factor as described in Section 2.6, is obscure.

A7 Assessment of Cumulative Impact

Leaving aside the methodology's confusion of visual impacts with visual significance for a moment, It would appear inevitable for example in some views from Newbridge Road or the Athol property, that the horizontal extent of industrial development form that is visible will substantially increase if the project is approved. That is a visual effect that is objective and it is one which will lead to cumulative impact (see Section 6.1 at Page 23 for the analysis of cumulative impact). In the view from the ceremonial garden area of Athol for example, where there is currently little view of the existing buildings and in which the proposal will dominate the view, or from the lower part of the garden looking across Newbridge Road, the proposal will double the horizontal extent of view occupied by industrial buildings. The objective fact that the proposed development will substantially increase the apparent built form on the site in some views is glossed over in the VIA however, on the basis that:

> *Constructed elements associated with the Project will be similar in scale, line and form to existing infrastructure within the existing Blayney SeaLink Cold Store Complex. The potential for and associated cumulative impact between the Project and existing infrastructure will be minimised by the visual relationship between the proposed and existing works, with the Project forming an extension to existing infrastructure rather than being viewed and recognised as a standalone development.*

The objective visual effects of the proposal to the contrary are that the proposed abattoir is virtually standalone, with minimal connection to the existing SeaLink complex. It is not an extension to the form of the existing infrastructure and it has totally separate access and egress, traffic circulation system, car parks, hardstand area, buildings, administration and ancillary facilities. That it is a separate entity will be obvious.

The fact that the proposal is adjacent to the existing facility does not decrease the potential for cumulative impact, which must be squarely addressed. It may increase the compatibility of the proposal with the existing setting and lead to a decrease in the level of change if considered in isolation, but these visual effects are or should be determined by other criteria in the assessment. However, the conclusion is as follows:

> *The project is considered to have limited potential to increase the significance of cumulative visual impact with regard to existing industrial projects beyond the Blayney SeaLInk site. This is largely due to visual screening surrounding the Project for the majority of view locations and the location of the proposed constructed elements relative to existing infrastructure.*

I agree that the project does not visually interact with existing industrial projects in the Blayney industrial area, which is well separated from the site and from which it is largely screened, to the extent that cumulative visual impact with that area is of concern. However, that observation does not add any merit to the application.

The fact that the proposal is not within the existing Blayney industrial area is not a community benefit, visually. This is because it is proposed to be adjacent to the existing SeaLink site, which is isolated from the remainder of industrial Blayney and is highly prominent, with a significant visual impact on the adjacent scenic rural landscape and which has minimal and ineffective visual impact mitigation. It is also within the setting of the heritage listed Athol property, the visual impacts on which have been ineffectively screened in the past.

In that context, the cumulative impact of the proposal has to be considered with a great deal more rigor than being dismissed in the way found in Section 6.1 of the VIA. In that regard, the cumulative impact of the proposal is exacerbated by the lack of effective impact mitigation strategies and works in the past. It is obvious that GBD are aware of the poor performance of the visual impacts mitigation intended to be achieved by hard and soft landscape works and plantings in the past. If this was not the case, there would be no reason for the proposed bunds and landscape proposed, albeit with minimal detail.

In my opinion, there will be significant cumulative impact of the proposal if approved, and the landscape proposed in the consolidated consent has little likelihood of performing an adequate level of mitigation of those impacts.

A8 Proposed mitigation of visual impacts

The VIA concedes that the existing impacts of the SeaLink development have been ineffectively mitigated. In the context of the proposed consolidated consent for the entire site, it proposes a Concept Landscape Plan (Figure 10).

The plan however, appears to be intended only to mitigate impacts of the proposed goat abattoir part of the application. It indicates in green shading a part of the existing bund inside the site with the notation that it is proposed to have:

Supplementary planting as necessary to replace failed and/or missing pine trees.

There is no planting plan for the bund that shows were pine trees were intended to exist on the basis of which whether they have failed or are missing can be determined. In addition, given that the VIA conceded that the bunding and planting is ineffective in mitigation of the impacts of the existing facility, replacement of missing or failed trees will clearly not achieve a satisfactory mitigation outcome. Indeed one of the reasons for this is that the bund in insufficient in height. A new planting plan is required as a minimum, based on an objective assessment of what is required to achieve a satisfactory visual outcome, including specification of how the planting will be established, maintained, monitored and ensured to thrive, as well as binding commitments to ensure its maintenance in perpetuity.

The remainder of the site, with its failed and missing plantings, ineffective bunds and landscape, is not proposed for any new, supplementary or remedial landscape works in the consolidated consent sought.

The Concept Landscape Plan also shows a new bund parallel to part of the proposed access road to the goat abattoir facility, which also wraps around the proposed car park on its south west side. There is an annotation on the figure in relation to the bund to this effect:

Proposed earth bund to around 3m high with evergreen pine tree planting

There is no design for the bund such as its shape in profile, gradients, composition etc. and no design for the planting or a planting schedule describing what species of plants would be used. A rectangular area is shown as included in the proposed car park area, with the notation:

Proposed grass with non-indigenous deciduous tree planting.

The reason for this planting of eight notional trees is not stated. Even when in leaf, the effect of the planting would be minimal as regards softening the appearance of the proposed new building in views from Athol.

No visualisations of the likely effect of the bunds and plantings on views from Newbridge Road or Athol are provided in the VIA or the EIS (eg. photomontages), which would assist in giving the consent authority some impression of the likely visual effects of the bund and planting on views such that it could determine whether the concept could or would be effective in satisfactorily mitigating visual impacts.

Given the past lack of attention to establishment and maintenance of landscape intended to mitigate impacts of the existing facilities, it would be reasonable, if the consent authority is of a mind to approve the proposal, to require a consolidated Landscape Management Plan for the entire site, including the goat abattoir component and the features shown in colour on the Concept Landscape Plan. This plan should include the consolidation of existing landscape and visual impact mitigation plans to which consent has been given in the past, to bring the whole consent now sought up to date and in line with the findings of the VIA in Section 7.1, where it is stated:

> *The mitigation measures generally involve reducing the extent of visual contrast between the visible portions of the Project structures and the surrounding landscape, and/or screening direct views toward the Project where possible.*

I agree with the need for this strategy to be implemented. The existing standard of mitigation of impacts has not satisfactorily reduced the extent of visual contrast between the visible portions of the Project and the surrounding landscape both with regard to the landscape design and the colour palette used for buildings. A consolidated consent should in my opinion include a consolidated Landscape Management Plan for all existing and proposed works, including design of any new or supplementary works including bunds, plantings specification of how the planting will be established, maintained, monitored and ensured to thrive, as well as binding commitments to landscape maintenance in perpetuity.

A9 Summary with regard to VIA

I accept the conclusions of GBD in relation to impacts on views from the township of Blayney generally and on the more distant view places assessed, that the visual impacts would not be significant.

I have concerns about the panoramic images used as the fundamental analytical tool for assessing visual effects of the proposal. I consider that the representations of the views tend to minimise the likely effects of the proposal on views.

The presentation of visual material is not assisted by errors in the viewing directions indicated for most of the photographs, making interpretation of the narrative difficult.

I find the VIA confusing, as it mixes analysis of visual effects with assessments of visual impacts and the means by which the conclusions have been reached has not been adequately explained. There also seems to be double counting of some factors, such as impact magnitude and visual significance.

With regard to impacts on views of and from Athol, the finding of Moderate visual significance does not appear to logically arise out of the application of the criteria in Table 1.

I also consider that the assessment of cumulative impact on views from Athol is incorrect and should be considered more rigorously. The cumulative impact of the proposal is exacerbated by the lack of effective impact mitigation strategies and works in the past.

In my opinion, there will be significant cumulative impact of the proposal if approved, and the landscaping proposed in the consolidated consent has little likelihood of performing an adequate level of mitigation of those impacts.

PART B STATEMENT OF HERITAGE IMPACT

The Statement of Heritage Impact (SHI) was prepared by Ozark Environmental and Heritage Management Pty Ltd (Ozark), and authored by Jennifer Bertolani, Archaeologist. It is stated that the consultant visited the Project site, however I understand that this did not include visiting the Athol Homestead or its heritage listed gardens and mill/stable. The statements made in the assessment with regard to impacts on the views from or the aesthetic significance of the views or the gardens are therefore made without any foundation.

I note that the SHI does not include any independent visual analysis and relies on images taken by GBD for the VIA. As described in the review of the VIA above, the images are all panoramic and do not portray the visual quality and character of the subject site accurately.

B1 Methodology

The methodology adopted for preparation of the SHI is conventional and follows the guidance of the NSW Heritage Manual. However it does not include a survey of the item on which the potential impacts are to be assessed (Athol). No comment is offered as to why there was no assessment undertaken, why no independent observations were made or why reliance was placed on the images prepared for the VIA by GBD. The GBD report is not concerned with heritage matters and I would have expected independent assessment and observations to be made with regard to the views of and from and the nature and character of the curtilage of Athol, since these are the subject of the questions to be answered in an SHI.

It is agreed that the project site does not contain any physical items of heritage significance that are listed or on an inventory or items and therefore is not subject to the Heritage Act (Section 1.4.2) in that regard. Athol is Item 179 in the Schedule of items of cultural heritage in the Blayney Shire Council LEP and listed on the State Heritage Inventory (No. 1160092) and as noted in the SHI is afforded protection under the Heritage Act.

A theme repeated in the SHI (Section 1.3 and Section 3.1.1) is that:

> *The land surrounding the homestead has been heavily impacted by farming, industrial growth and pastoralism.*

It is not clear what the point being made here is, but perhaps the implication is that the landscape of the site is somehow degenerate and therefore more capable of supporting an industrial development. An alternative and more relevant interpretation of this with regard to non-indigenous heritage is that the landscape demonstrates historical themes of farming, industrial growth and pastoralism in the pattern of occupation, settlement and land use now reflected in the scenic rural cultural landscape of which Athol is a part.

B2 Curtilage and views

It is correct to say that the assessment of Athol in the Blayney Heritage Inventory entry on the State Heritage Inventory does not specifically cite views from the Homestead as an important component of the site's heritage values (SHI at 0.2 of Page 17 in discussion of impacts on curtilage). However inventory entries are based on summary statements of significance and often do not contain a close analysis of the significance of the items using the seven criteria for historic heritage values, as well as consideration of inclusion and exclusion criteria, that are now required to be addressed in the NSW Heritage System. The SHI does not contain a n independent statement of heritage significance of the item to be affected, as is also required. It is no accident that Athol is situated on a knoll overlooking the Belubula River. The listing also notes the prominence of the item and the presence of windbreak perimeter plantings and a mature garden.

With regard to views, in my opinion, Athol would be considered to be of significance for aesthetic heritage values under Criterion (c), as an item important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in the local area. It would satisfy inclusion criteria as being aesthetically distinctive and a local landmark, exemplifying the tastes of colonial design and siting. A partly screened outlook to the pastoral landscape beyond is typical and characteristic of properties of the provenance of Athol.

All of this is recognised in the Blayney LEP, which states that one of the objectives of a heritage listing is to conserve the heritage significance of heritage items, including associated fabric, settings and views (LEP 2012, clause 5.10(1)(b)).

The relationship between Athol and the cultural landscape over which it presides including the subject site is therefore such that heritage values are not confined to the site occupied by Athol, as is stated in the SHI. While the physical curtilage of the item does not include the subject site, the setting of the item as viewed from the cultural landscape to which it is inextricably bound by the historical heritage processes outlined in the SHI (Part 3) does include the site and is a significant consideration with regard to impacts on heritage values. The SHI is dismissive of this relationship.

B3 Specific questions to be answered in a SHI

Section 4 of the SHI contains the actual Statement of Heritage Impact in two pages. A SHI is not expected to be a long document and no objection is raised to the brevity per se. However, there appears to be little in the way of original content in it, as it virtually reproduces the findings of the VIA. Little specific consideration has been given to impacts on heritage values despite the fact that the VIA rightly did not address this issue.

For example, in answering the first question;

> *How is the impact of the new development on the heritage significance of the item or area to be minimised?*

There is no acknowledgment made that there may be heritage values affected. I would have expected consideration of whether the location of the proposal was within the view shed of the heritage item, or in its setting, as viewed from the surrounding landscape. The proposal is both in the view shed of the item and in its setting and therefore the question of how

the impact on heritage values are addressed is different from general visual impacts issues. However the discussion on this first question is framed purely in the terms of the VIA and thereby misses the point. It does not answer the question.

The absence of close consideration of the siting issue is also found in the answer to the second question;

Why is the development required to be adjacent to the heritage item?

The answer given does not address heritage impacts. It answers the question by stating that it is a convenience to locate the facility where it is proposed, because of the zoning and the proximity of existing facilities. It goes on to mention totally irrelevant issues to heritage values, such as the benefits of the proposal in terms of energy consumption.

A reasonable assessment on this matter would conclude that the proposal is simply in the wrong location or at the least a sub-optimal location as regards heritage impacts. There are other locations on the same site on which the impacts of the proposed development would be less, or zero (for example east of the existing SeaLink facililty instead of west of it as proposed). Again, in my opinion the VIA does not answer the question in heritage terms.

The next question to be addressed is:

How does the curtilage allowed around the heritage item contribute to the retention of is heritage significance?

I have considered this matter to some extent above. There is no identified or mapped curtilage for the item Athol. The listing includes the house, gardens and mill, but also refers to the windbreak plantings. I consider that a full curtilage study would be likely to extend a formal curtilage beyond the setting of those items, given the landmark quality of Athol and its orientation to views is at least two major directions (west and north). However there may be reason to extend it to encompass historically significant views as well (eg. in the direction of the Athol siding).

As stated above, in my opinion although I would not use the term visual curtilage to describe it, the aesthetic values of Athol do include views of and from the subject site. The values are not confined to the physical location of the house and garden as stated in the SHI. The impact of the proposal on the perception of the setting of Athol is as important as the view from Athol to the site of the proposal.

THe SHI does not provide an answer for this question either. It makes statements about views based on the observations of others, which do not appear to lead anywhere and ultimately dismisses the issue by stating that view are not cited in the heritage assessment as being an important component of the site's heritage values.

The next question to address is:

How does the new development affect views to, and from, the heritage item? What has been done to minimise negative effect?

The answer is minimal and not in heritage terms. The answer acknowledges that there is a view from the item and ignores the views to the item. It does not acknowledge that there could be impacts on heritage values or that alternative locations for the development would mitigate the impacts far better than the solutions to visual impacts in the VIA . Again, the question is not answered adequately.

The next question is:

> *Is the new development sympathetic to the heritage item? In what way (eg. form, siting, proportions, design)?*

The answer given is that certain aspects of the activity will not be visible. Whether the overall project is sympathetic to the views from Athol is not addressed. The remainder of the discussion does not answer any of the questions relating to the form, siting, proportions or design of the proposal.

In my opinion this question would be answered in the negative in heritage terms. The siting for example is totally inappropriate, such that the form and proportions of the buildings could be accepted, if they were located east instead of west of the existing facilities. There is no merit in things that are not visible as cited in the SHI, as long as the facility is in the sub-optimal location proposed.

Again, in my opinion, the SHI has not answered the required question.

The next question is:

> *Will the additions visual dominate the heritage item? How has this been minimised?*

Again, the SHI relies on the findings of the VIA to answer the question. In this case, although I do not agree with the justification, I agree with the conclusion. The proposal will not dominate the heritage item. It will on the other hand dominate the remaining view of the scenic rural landscape from the rose arbour in the ceremonial garden, to the detriment of the extended heritage setting that includes the site in that view. The impact on that view has not been minimised, as the location of the proposal is inappropriate in that regard. I do not disagree that if designed appropriately and proven capable of doing so, the proposed landscape including bunds and vegetation could assist in mitigation of impacts after some years of growth. However I see that as a Band-Aid solution to an avoidable problem caused by the disregard of the proposal for impacts on views.

In this case, I consider that in a limited way, the question has been answered.

The final question is:

> *Will the public, and users of the item, still be able to view and appreciate its significance?*

The answer given is dismissive. While I agree that the Homestead, and its gardens will not be physically impacted by the proposed works, I do not agree that the public and users of the item will be able to view and appreciate its significant, unchanged, as stated in the SHI. The value of the place will be diminished by the loss of the remaining prospect of a northerly view from the garden and its replacement by a view of large industrial buildings. The scenic value and quality of the view formerly part of the setting of the garden will be diminished.

B4 Management and mitigation

In Section 4.2 the SHI again summarises aspects of management and mitigation which it claims are specifically designed for the benefit of views form Athol. In my opinion, with the exception of the first dot point which concerns the Concept Landscape Plan in the VIA, the remainder of the management and mitigation measures are general controls over environment impacts

that would be in place even if the facility was placed elsewhere and outside the view shed of Athol. It is also not clear to me why there is a section on management and mitigation at all, given that the SHI is totally about mitigating impacts on the heritage item.

B5 Summary in relation to SHI

In my opinion the SHI is inadequate. It is not based on an analysis of the heritage item, it setting, curtilage or views and it does not answer the questions posed in the Heritage Manual for preparing a Statement of Heritage Impact.

We are left to apply article 8 of the Burra Charter, which states:

> "Conservation requires the maintenance of an appropriate setting. This includes retention of the visual and sensory setting... New constructions…which would adversely affect the setting or relationships are not appropriate".

Please do not hesitate to contact us with any queries.

Yours sincerely

Dr Richard Lamb
Richard Lamb & Associates

Appendix A: Photographic Plates

Plate 1: View north from centre of ceremonial garden north of Athol homestead, to subject site

Plate 2: View of subject site from location where bride and groom would stand in a wedding ceremony and the backdrop of view for the guests

Plate 3: View of wedding reception facilities and part of ceremonial garden looking south east from the location of Plate 1 above.

Plate 4: West entrance of Athol and secondary formal garden area

Plate 5: View of subject site from edge of Athol Garden north east of ceremonial garden area showing the ineffective visual bund and landscape in the foreground within the site

Plate 6: View of ceremonial garden north of Athol homestead from foot of steps, showing amphitheatre like setting focussed toward the subject site (see Plates 1 and 2 above)

Plate 7: View toward the subject site from the reception area east of Athol homestead. The view is screened by deciduous oak trees which when not in leaf provide greater access to views

Plate 8: View of subject site in the context of Athol homestead, visible on the left in its garden setting. The proposal would fill in the remaining separation between the homestead and SeaLink facility on the right, significantly diminishing the composition of the view

Plate 9: View of two heritage properties on the mid-slopes south west of Athol,on land that was formerly part of the Athol holding, showing the typical open settings of homesteads surrounded by formal gardens

Plate 10: View of the subject site in the context of existing industrial development in Blayney in the foreground, the open contryside setting of the existing SeaLink facilities and the setting of Athol on the right, seen from the Church Hill Lookout

Appendix B: Curriculum Vitae

Company Profile and Curriculum Vitae: Dr Richard Lamb

Summary

I am a professional consultant specialising in landscape heritage and visual impacts assessment and the principal of Richard Lamb and Associates (RLA). I was a senior lecturer in Architecture and Heritage Conservation in the Faculty of Architecture, Design and Planning at the University of Sydney for 28 years and Director of the Master of Heritage Conservation program. I have taught and specialised in environmental impact assessment and visual perception studies for 30 years.

As the principal of RLA I provide professional services, expert advice and landscape heritage and aesthetic assessments in many different contexts. I carry out strategic planning studies to protect and enhance scenic quality and heritage values, conduct scenic and aesthetic assessments in contexts from rural to urban, provide advice on view loss and view sharing and conduct landscape heritage studies. I act for various client groups on an independent basis, including local councils, government departments and private clients to whom I provide impartial advice. I provide expert advice, testimony and evidence to the Land and Environment Court of NSW and the Planning and Environment Court of Queensland in various classes of litigation. I have appeared in over 200 cases and made submissions to several Commissions of Inquiry. I have been the principal consultant for over 500 consultancies concerning the visual impacts and landscape heritage area of expertise during the last ten years.

At the University of Sydney I had the responsibility for teaching and research in my areas of expertise, which are visual perception and cognition, aesthetic assessment, landscape assessment and conservation of heritage items and places. I taught postgraduate students in these areas and also gave specialised elective courses in aesthetic heritage assessment. I supervise postgraduate research students undertaking PhD and Masters degree academic research in the area of heritage conservation and Environment Behaviour Studies (EBS). The latter field is based around empirical research into human aspects of the built environment, in particular, in my area of expertise, aspects of visual perception, landscape preference and environmental cognition.

I have a number of academic research publications in local and international journals that publish research in EBS, environmental psychology and cultural heritage management. I have developed my own methods for visual impacts and landscape heritage assessment, based on my education, knowledge from research and practical experience.

Qualifications

- Bachelor of Science, First Class Honours, University of New England (Botany and ecology double major).
- Doctor of Philosophy, University of New England in 1975.
- Visiting lecturer, University of New South Wales, School of The Built Environment
- Principal of Richard Lamb and Associates and Director of Lambcon Associates Pty Ltd.

Employment History

- Tutor, Botany and Ecology, School of Botany, UNE (1968-1974)
- Lecturer in Resource Management, School of Life Sciences, UTS (1975-1980)
- Lecturer, Foundation Program in Landscape Architecture, Faculty of Architecture, University of Sydney (1980-1989)
- Lecturer and Senior Lecturer, Architecture and Heritage Conservation, University of Sydney (1989-2011)

Since 1975 I pursued research related to my teaching responsibilities and professional practice. My research works are in:

- Plant ecology
- Landscape heritage assessment
- Visual perception
- Social and aesthetic values of the natural and built environment

Publications and presentations relevant to visual perception and assessment of landscapes are listed at the end of this CV.

Affiliations

Professional

Chartered Biologist, Institute of Biology (UK)

International Journals for which papers have been refereed

- Landscape & Urban Planning
- Journal of Architectural & Planning Research
- Architectural Science Review
- Journal of the Australian & New Zealand Association for Person Environment Studies
- Journal of Environmental Psychology
- Australasian Journal of Environmental Management
- Ecological Management & Restoration
- Urban Design Review International

Recent experience in Categories listed on:

Richard Lamb and Associates website (www.richardlamb.com.au)

Landscape Planning

Assessment and Advice

Private Clients

- Advice on merits of proposal for SEPP HSPD development, Pokolbin.
- Advice on visual impacts of alternative building footprint locations, Foxground Road, Foxground.
- Advice on visual impacts of proposed residential development at Cambewarra. Report on strategic planning issues related to Scenic Preservation hatching and Draft LEP specific to visual quality protection, Cambewarra Village.
- Advice on visual impacts of proposed subdivision and draft submission to Gosford Council, The Scenic Road, MacMasters Beach.
- Aesthetic assessment and evaluation of REF for proposed wind farm by Pacific Power and Partners, Crookwell.
- Assessment of visual impacts of proposed development and submisson to Shoalhaven City Council, Bendeela Road, Kangaroo Valley.
- Heritage and visual impacts assessment as part of statement of environmental effects, proposed monastery at Mangrove Mountain, City of Gosford
- Independent assessment and advice concerning identification of viewing places and presentation of visual impact scenarios, Harrington Park Stage II, Camden.
- Initial advice concerning visual resources of site and potential to accommodate large scale institutional development, Campbelltown Road, Denham Court.
- Landscape assessment and evaluation of alternative building sites, Saddleback Mountain, Kiama.
- Landscape character analysis and visual assessment in relation to "Gateway" concept, The Northern Road, Glenmore Park.
- Landscape constraints and development capability assessment for potential residential development, Governors Way, Macquarie Links.
- Landscape planning strategy and visual impacts assessment, proposed cemetery and crematorium, Elizabeth Drive, Luddenham.
- Landscape visual constraints and capability assessment for potential for residential development, Shellharbour Road, Dunmore.
- Landscape visual constraints and capability assessment for potential residential development, Old Princes Highway, Dunmore.
- Landscape visual constraints and capability assessment of a land proposed fo be rezoned for residential development, Cooby Road, Albion Park

- Landscape visual constraints and capability assessment of a parcel of land proposed for rezoning, Ashburton Drive, Albion Park
- Landscape visual constraints and capability assessment of parcels of land proposed for rezoning to residential use within the urban fringe area, Albion Park.
- Pre DA advice and statement of visual exposure, seniors living proposal, Cobbitty, Camden municipality.
- Pre DA advice on constraints and development envelopes, strategy and advice, Windang, Lake Illawarra.
- Pre-DA advice and visual impact assessment of proposed rezoning of rural land for potential residential development, Corner Kirkham Lane and Macquarie Grove Road, Kirkham.
- Pre-DA advice on design, visual and streetscape impacts assessment, proposed Islamic school, Burragorang and Cawdor Roads, Camden
- Pre-DA advice on visual impacts of proposed SEPP 5 development at Cambewarra.
- Report on visual impacts and effects on adjoining zones of a proposed subdivision, Glenhaven Road, Glenhaven.
- Pre DA advice and advocacy on proposed rural residential subdivision, The Northern Road, Glenmore Park.
- Statement of visual impact to accompany rezoning application, Old Northern Road, Castle Hill.
- Strategic planning advice concerning development potential, Fernhill, Mulgoa.
- Strategic planning and 3D modelling study to establish visibility constraints on zone boundaries, East Leppington Urban Release Area.
- Submission of feasibility study for re-zoning of land and subdivision for rural residential uses, Macquarie Grove Road, Kirkham.
- Submission to NSW Department of Planning against proposed extension of Catherine Hill Bay, Mooney Village and Gwandalan for residential development by Asquith & Dewitt Pty Ltd for Rosecorp Ltd.
- Visual and environmental impact assessment, proposed new dwelling, Dora Creek.
- Visual and heritage landscape assessment of impacts of proposed additions on the locality and Landscape Conservation Area, Benedictine Abbey, Jamberoo Pass.
- Visual and scenic impacts advice both pre- and post-DA, SEPP 5 Development, Old Northern Road, Castle Hill.
- Visual and scenic resources management study and visual impact assessment of a Concept Plan for Mixed Use Development, Tallawarra Lands, Tallawarra.
- Visual assessment and development strategy for proposed re-zoning of land partly for cemetery purposes, Varroville, Campbelltown.
- Visual assessment and development strategy for proposed re-zoning of land partly for residential purposes, Grange Hills, Campbelltown.
- Visual assessment and statement of environmental effects, proposed rezoning and

subdivision, Cooranbong, Lake Macquarie.

- Visual assessment of proposed Town Centre land, Nambucca Drive, Scotts Head.

- Visual impact advice and report regarding location of dwellings on subdivided lots, Princes Highway, Kiama.

- Visual impact advice for proposed location of new dwelling, Weir Street, Kiama.

- Visual impact assessment and scenic amenity statement, proposed rural residential development, Dido Street, Kiama.

- Visual impact assessment for Jack Nicklaus Golf Resort, Rothbury, Hunter Valley

- Visual impact assessment for proposed Seniors Living Development, Pokolbin, Hunter Valley.

- Visual impact assessment of potentially unsightly landscape features vis-à-vis the Local Government Act definition in the vicinity of Vacy Downs Estate subdivision, Vacy.

- Visual impact assessment of proposed new dwelling, Pheasant Point Drive, Kiama.

- Visual impact assessment of proposed rezoning of land for urban residential use, Blue Seas Parade, Lennox Head.

- Visual impact assessment of proposed subdivision, Hillcrest Road, Mirrabooka, Lake Macquarie.

- Visual impact assessment, assessment against the provisions of Wingecarribee DCP 53 and advice concerning merits of proposed new dwelling location and design, Bibbys Lane, Werai Junction, Southern Highlands.

- Visual impact assessment, residential subdivision and development application, Scotts Head.

- Visual impact assessment, strategic planning analysis and peer review of proposed Forde Masterplan, Canberra.

- Visual impacts assessment of the proposed residential subdivision, Old Northern Road, Castle Hill.

- Visual resources and visual constraints study to accompany DA for establishment of new necropolis, Berrima district, Southern Highlands of NSW.

- Visual resources and visual constraints study, design advice and advocacy for potential DA, proposed resort and seniors living development, Glossodia.

Government Clients

- *Camden Council*

Camden Scenic and Cultural Landscape Study, Local Government Area of Camden.
Report on strategic planning for landscape protection based on the Camden Scenic and Cultural Landscape Study, for the Camden Rural Lands Study.

- *Dungog Council*

Assessment of visual and heritage impacts, scenic protection controls and heritage impact performance standards, proposed rezoning and rural residential development, Paterson, Upper Hunter Valley.

- *Shellharbour City Council*

Strategic planning study for identification, protection and conservation of landscapes of natural and cultural heritage significance, Shellharbour Local Government Area.

- *The Joint Old Growth Forest Project*

Empirical study to assess the feasibility of including cultural and aesthetic values in the evaluation of old growth forest.

- *The Resources and Conservation Council of New South Wales (RaCAC)*

Aesthetic values audit of the Upper North East region of NSW.

Expert workshop on integrating heritage values into the CRA/RFA process for evaluation of Australian forests.

- *Wingecarribee Shire Council*

Preparation of Development Control Plan No.53 for sighting of dwellings in rural zones.

Land and Environment Court Proceedings

Australian Native Landscapes v Warringah Council: s82A Review of conditions of consent, retail nursery, Mona Vale Road, Terrey Hills.

Baevski v Wingecarribbee Shire Council: proposed covered dressage arena, Myra Vale Road, Robertson.

Baulkham Hills Council ats Gelle: proposed extension to existing caravan park, KoVeda Caravan Park, Wisemans Ferry.

Broken Bay Pty Ltd v The National Parks and Wildlife Service of NSW: valuation matter concerning acquisition of land, Hawke Head Road, Killcare.

CD Barker Pty Ltd for Eodo Pty Ltd v Council of the City of Blue Mountains: proposed subdivision and detached residential development, Heather Road, Winmalee.

Design Collaborative Pty Ltd v Wingecarribee Shire Council: proposed spring water extraction facility, Governors Street, Bundanoon.

Erolmore Park Pty Ltd v Maitland City Council: proposed industrial development, New England Highway, Thornton.

Flower and Samios v Shoalhaven Council: proposed Seniors Living Development, Main Road, Cambewarra.

Heathcote Gospel Trust v Sutherland City Council: proposed place of worship, Forum Drive, Heathcote.

Hornsby Shire Council

- *ats Haoushar*, proposed attached dual occupancy dwellings, Crosslands Road, Galston.
- *ats Momentum Architects*, proposed SEPP5 development, Old Northern Road, Kenthurst.
- *ats M&R Civil*, proposed SEPP5 development, Old Northern Road, Kenthurst.

Kiama Council ats Moss: proposed new residence in rural land, Alne Bank Road, Gerringong.

Liverpool City Council ats Kira Holdings Pty Ltd: proposed subdivision and low density residential development, Hoxton Park.

Luke Tappouras v Lake Macquarie City Council: proposed Heritage College, Ironbark Road, Morisset.

Marsim (Queensland) Pty Ltd and Gold Coast City Council ats Hoffman & Ors: proposed neo-traditional settlement development, Killowill Avenue, Paradise Point, Gold Coast.

Molusso J v Gosford Council: proposed apartment building, Grosvenor Road, Terrigal.

Penrith City Council

- *ats Pacific Waste Management Pty Ltd*, proposed waste facility, Elizabeth Drive, Badgery's Creek.
- *ats Penrith Waste Services Pty Ltd*, prosecution for alleged breaches of conditions of consent, Mulgoa Quarry.
- *ats Sydney Anglican Schools Corporation*, proposed rural school construction, Homestead Road, Orchard Hills.

Pope Shenouda Coptic Christian Centre v Campbelltown City Council: proposed redevelopment of religious and community facilities, Wills Road, Long Point.

RTA ats Scollard: valuation matter concerning compulsory acquisition of land, Olympic Way, Gerogery.

Sangha Holdings Pty Ltd v Kiama Council: proposed subdivision, Cooby Road, Albion Park.

Save Hawkesbury's Unique River Environment (SHURE) ats Consensus Developments: proposed tourist accommodation facility, Kangaroo Point, Brooklyn.

Seaview Gardens Pty Ltd v Port Stephens Shire Council:proposed medium density residential development, One Mile Close, Boat Harbour, Port Stephens.

Sherringhams v Baulkham Hills Council: proposed retail nursery, Old Northern Road, Dural.

Sutherland Shire Council: primary submission to Commission of Inquiry into land use, Helensburgh.

The Coffs Harbour Environment Centre v the Minister for Planning: proposed rezoning of Look at Me Now Headland for the purpose of sewage treatment plant and outfall, Coffs Harbour.

*The Jehovah's Witnesses Congregations v Penrith Counci*l: proposed place of worship, Homestead Road, Orchard Hills.

Tony Fidler as Trustee for Howship Holdings v Port Stephens Shire Council: valuation matter concerning acquisition of land, Lily Hill, Nelson Bay.

Townsend W & D v Lake Macquarie City Council: proposed rural dwelling, Chelston Street, Warners Bay.

Warringah Council ats Vigor Master: proposed dwelling construction, Brooker Avenue, Beacon Hill

Wingecarribee Shire Council

- *ats Knox*, prosecution for illegal construction of earth bank, Range Road, Kangaloon.
- *ats Webb*, proposed rural dwelling, Silver Springs Hill, Burrawang.
- *ats Allen*, proposed rural dwelling Greenhills Road, Berrima.

Visual Impacts

Assessment and Advice

Private Clients

- Advices and visual impact assessment of a proposed aged care facility, McLaren Street, North Sydney.

- Advices and visual impact assessment of the proposed concept plan for a medium density residential development, Belmore Street, Ryde.

- Advices and visual impact assessment of the proposed new dwelling and swimming pool, Mountain Road, Austinmer.

- Advices and visual impact assessment of the proposed retirement resort, Oakey Creek Road and Marrowbone Road, Pokolbin.

- Advices on potential visual impacts of the proposed driveway and basement car park, Musgrave Street, Mosman.

Advice on potential visual impacts of proposed amendments to existing consent, Minamurra Road, Northbridge.

- Assessment and advice on visual effects of lighting from adjacent parking garage, Ocean Street, Woollahra

- Assessment of visual impacts of additions and alterations to existing retirement village, Jersey Road, Paddington.

- Assessment of visual impacts of proposed subdivision, Bantry Bay Road, Frenchs Forest.

- Landscape assessment, curtilage study and heritage impact assessment as part of a Local Environmental Study, curtilage of Duckenfield House, Duckenfield, Hunter Valley.

- Local environmental study, proposed subdivision and residential development, Berkeley Vale, Wyong Shire.

- Report on strategic planning issues and submission to Shoalhaven City Council related to Scenic Preservation hatching being proposed over the locality of Cambewarra Village, North Nowra.

- Scenic resources and visual constraints study, proposed seniors living proposal involving concurrent rezoning, Milton, South Coast.

- Strategic planning and visual impact assessment for proposed rezoning and master plan application, Riverlands Golf Course, Milperra.

- Strategic planning study for Stage 1 Master Plan, visual impact assessment for rezoning applications, principles for siting of buildings and mitigation of potential impacts, Boydtown, Eden region.

- Submission to Council against a proposed industrial development on Burley Road, Horsley Park on the visual amenity, Capitol Hill Drive, Mt Vernon.
- Submission to Council against a proposed industrial development on Burley Road, Horsley Park on the visual amenity, Greenway Place, Horsley Park.
- Submission to Waverley Council concerning visual impacts of proposed amended DA, Birrell Street, Tamarama.
- Urban design and visual impact study, Beach Street, Coogee.
- Urban design and visual impacts assessment, proposed Trinity Point Marina and tourism development Concept Plan, Lake Macquarie.
- Visual and landscape strategic planning assessment of proposed draft amendment to Wingecarribee LEP 1989, Burradoo, Moss Vale
- Visual constraints and residential development strategy advice, Lennox Head. Advocacy concerning strategic planning process and proposed rezoning of land, Lennox Head.
- Visual impact and view loss assessment for proposed seniors living development, former Loreto site, Bronte Road, Bronte
- Visual impact assessment and advice on building height controls for Greystanes Estate, Southern Employment Land, Greystanes.
- Visual Impact Assessment and advices on rural subdivision, The Northern Road, Glenmore Park.
- Visual impact assessment and strategic planning for proposed rezoning and subdivision of land at Menangle Road, Menangle
- Visual impact assessment as part of the Review of Environmental Factors for Shellharbour Waste Water Treatment Works.
- Visual impact assessment for subdivision application, The Northern Road, Glenmore Park.
- Visual impact assessment of land proposed for rezoing to support a proposed clay target shooting facility, Bong Bong Road, Huntley.
- Visual impact assessment of new school house, Kingswood Road, Orchard Hills.
- Visual impact assessment of proposed amendments to existing consent, Tulloch Avenue, Concord
- Visual impact assessment of proposed residential development, Bray Street, Mosman.
- Visual impact assessment of proposed residential subdivision, mitigation measures and advice on conditions for site specific DCP, Scarborough Gardens, Bonnells Bay
- Visual impact assessment of proposed seniors living development, St Albans Street, Abbotsford.
- Visual impact assessment of the proposed mixed use development, Columbia Precinct, Parramatta Road and Columbia Lane, Homebush.
- Visual impact assessment of the proposed residential townhouses development including preparation and certification of photomontages, Johnston Street, Annandale.

- Visual Impact Assessment Part 3A Concept Plan application. Old Canterbury Road, Lewisham.

- Visual impact evaluation of a series of possible locations for dwelling sites, Menai.

- Visual impacts assessment of proposed residential developments, Thomas and Dumbarton Streets, McMahons Point.

Government Clients

- *Ashfield City Council*

Ashfield Town Centre, Study of Building Heights to be incorporated into the Town Centre Development Control Plan.
Review of DA for Abacus Ashfield Mall Redevelopment, against the performance standards of Building Heights Study.

- *Brisbane City Council*

Cultural Mapping exercise, for Quality Urban Corridors Program, Logan Road, Lutwyche/ Gympie Roads, in association with Archimix Brisbane.

- *Brisbane City Council and the Department of Natural Resources, Queensland*

Protection of Scenic Landscapes Study; Regional landscape study to develop a methodology for the documentation of scenic values of the South East Region of Queensland.
South East Queensland Regional Organisation of Councils
advice on Scenic Amenity Study

- *Council of the City of Gosford*

City Wide Visual Quality Study in association with David Kettle Consulting Services.
Development Control Plan-Scenic Quality.
Local Environmental Study, The Scenic Highway, Terrigal.

- *Department of Infrastructure, Planning and Natural Resources and The Uniting Church of Australia*

Visual impact assessment for subdivision of land at Ingleside Road, Ingleside.

- *Hastings Shire Council*

Review and redrafting of DCPs 9 and 20 relating to scenic and heritage resource protection, Port Macquarie.
Visual resources and scenic conservation study as part of Camden Haven River Estuary Processes Study, in association with Patterson Britton and Partners.

- *Ku ring gai Council*

Brief development for municipality wide neighbourhood visual and streetscape study.
Local Environmental Study: scenic quality of South Turramurra.

- *Landcom*

Strategic planning advice and visual impact assessment for proposed NSW Police Facilities on former Sydney Water land, Potts Hill.

- *Manly Council*

advice on and provision of certified photomontages of proposed Major Projects developments in Manly Town Centre.

- *Pittwater Council*

Scenic qualities, landscape resources and visual constraints study, potential rezoning and

land swap exercise, Council Works Depot site, Ingleside.

- *Sydney Water*

Review of visual environmental effects for Wongawilli Reservoir proposal, West Dapto, Illawarra.

- *Road Transit Authority*

Review of visual environmental effects for Oak Flats Highway Interchange proposal, Oak Flats to Dunmore section, Princes Highway, Illawarra.

- *Office of Marine Administration and Department of Environment and Planning*

Methodology for assessment of visual issues and design guidelines for the DCP to accompany SREP 22 and 23, Sydney and Middle Harbours and Parramatta River: and Part 5 checklist.

- *Rockdale City Council*

Development control strategy and advice for Draft DCP, Rocky Point Road, Ramsgate.

- *Singleton City Council*

Visual impact assessment of proposed temporary accommodation village, Putty Road, Singleton.

- *Shoalhaven City Council*

East Nowra Local Environmental Study.
Old Erowal Bay visual quality study.
Brief for Mollymook Local Environmental Study: Visual Impacts.
- Visual impacts assessment relating to land swap and rezoning proposals, Milton and Narrawallee.

- Sutherland Shire Council, jointly with Wollongong City Council.

Commission of Inquiry into rezoning, primary submission on visual impacts, Helensburgh.

- *Wingecarribee Shire Council*

Preparation of Development Control Plan No 53 for the siting of buildings in rural zones.

Attachment 2: Critique of Health Risk Assessment prepared by Dr John Shepherd

[redacted]

Proposed Small Stock Abattoir &
Continued Operation of the Blayney
SeaLink Cold Store Complex SSD 6594

Critique of EIS Health Risk Assessment

Dr J W Shepherd
MBBS Adel.; FRCS Edin.; Adv Dip Obst.; RACOG; FACRRM

Dr J W Shepherd AM
MBBS Adel.; FRCS Edin.; Adv Dip Obst.; RACOG; FACRRM

CRITIQUE OF ENVIRONMENTAL IMPACT STATEMENT HEALTH RISK ASSESSMENT SLR 2015 (APPENDIX N)

Credentials & Experience

Dr Shepherd holds degrees of Bachelor of Medicine and Bachelor of Surgery from Adelaide University. He is a fellow of the Royal College of Surgeons of Edinburgh and holds an Advanced Diploma of the Royal Australian College of Obstetrics & Gynaecology. He was founding president of the Australian College of Rural and Remote Medicine. In 2003 he was awarded an Order of Australia (AM) for services to Rural Medicine.

The author's post graduate training to become a rural GP included 15 months as a registrar at Broken Hill hospital, then 4½ years training in the United Kingdom in Obstetrics & Gynaecology, Anaesthetics, Orthopaedics and General Surgery. He was then in Rural General Practice from 1976 to February 2012 in rural NSW and South Australia. He spent many years as the medical officer advising the Peterborough Abattoir after treating the majority of their workers compensation and workplace injuries for 20 years.

After growing up on a dairy and poultry farm he commenced mixed sheep and cropping hobby farming on 200 acres in the Mid North of SA, 10km from Jamestown where he was in practice from 1978 to 2006. He was .a Cashmere goat farmer, a registered Q-fever vaccinator and was overseas when the Jamestown Council constructed a large open-air truck wash 200m north of the Jamestown sale yards, which in turn were 1 km north of the town centre. In December 2004 he was heavily involved in a large outbreak of Q fever from those saleyards. In 2006 he moved to Moree. He retired to Millthorpe in 2012.

Declaration of Interest and truthfulness

The author has no family relationship or commercial interest in the management or operations of Athol Gardens. His interest in the proposed Blayney Small Animal Abattoir was instigated by questions by concerned members of the Blayney Rotary Club as to whether he had ever had any past experience of Q fever. He did not previously know of the existence of Athol Gardens; nor had he ever met the owners.

The author has received no consideration, financial or otherwise, for providing this report. He does so solely out of professional responsibility having regard to his many years of relevant experience in medical practice in regional areas.

The author declares that to the best of his knowledge he has correctly quoted personal communications of information, copied extracts of emails, abstracts from academic papers and CSL publications, Australian Construction Standards and Guidelines, and DPI information and guidelines, and thereby not made any false or intentionally misleading statements in this paper.

CONTENTS

References: relevant short extracts will be provided where possible OR the internet address given to assist the reader.

Attachment: letter of support from Professor A Lloyd.

Abbreviations: those not used in the EIS will be explained by the full title before the abbreviation.

Note: Because the Health Risk Assessment (HRA) is an integral part of the EIS, but has some important contradictions and variations in compliance with both construction and health regulations which also occur in other chapters within the EIS, please accept that multiple errors on the same topic in several chapters have to be considered and discussed.

Acknowledgements: The author wishes to gratefully acknowledge the support given to him in appropriate research and the compilation of this critique by:

- **Associate Professor Anthony Brown**, Public Health & Occupational/Environmental Physician, School of Rural Health, University of Sydney Dubbo.
- **Professor Rodney Givney**, Pathology North, Infection Prevention & Control, Hunter Hew England Health.
- **Professor Andrew Lloyd**, Department of Infectious Diseases, Prince of Wales Hospital, Sydney

ABSTRACT

The author is a medical practitioner with over 35 years' experience in rural general practice with a particular understanding of Q fever gained through years of experience working with abattoirs and sale yards. During the course of his career he has dealt with one large scale outbreak of Q fever in Jamestown in 2004. He was used many times to assist and advise the Peterborough Abattoir.

He has received no consideration, financial or otherwise, for providing this report. He provides this report solely out of professional responsibility and as a concerned citizen. He is passionate about the topic which is apparent from this critique.

The spread of Q fever is a serious issue to be taken into consideration in determining whether to grant development consent to application SSD6594. Q fever is debilitating, has a high level of infectivity and can be acute in humans, with a 2% death rate in hospital cases.

The author has considered the health risk assessment (**HRA**) which accompanies application SSD6594. He concludes that the HRA is simply wrong, and in places is misleading, and is not backed by a single relevant research article. The fact that the authors of the HRA are insufficiently qualified to provide the opinions contained within that document is of particular concern. The HRA contains a number of misstatements and systematically underplays the risks arising from the proposed development. In his view, the EIS and HRA should be rejected.

The matters of concern which are raised in the critique/submission that follows cannot, in the author's opinion, be sufficiently dealt with by way of condition, nor are the mitigation strategies identified in the HRA sufficient. In his opinion, the site is not suitable for a feral goat abattoir, and the transport route is similarly unsuitable, particularly because it passes a number of sensitive receptors including schools, the hospital and attached nursing home, and finally the retirement village.

In the last 2 years a mass of epidemiological evidence has been accumulated concerning the risks of placing a new abattoir for any Q fever host animal within 5 km of a population centre, subject to wind conditions. The author sincerely believes that any further consideration of this proposal, or granting of permission to proceed, would be an abrogation of the social duty of the relevant planning authority.

1. GENERAL COMMENTS ON THE ASPIRATIONS OF SEALINK

It seems clear that SeaLink is underutilising its freezing and cold storage facility and in conjunction with Metziya is seeking to combine the strong need for another major goat handling abattoir in South and Mid-Western NSW with a freezing and storage facility with a nearby town large enough to provide and house the labour force required. The argument over whether it is better to collect, slaughter, process and then transport frozen products by freezer van, or transport live stock for distances varying from 200 to 800 kms, will only be considered in this critique from the point of view of the health risk. It is very unlikely that the need for increased utilisation of the SeaLink facility on the one hand, and the conclusions in the EIS which downplay and, in my view, misrepresent the health risks associated with both the transport of feral goats and implantation of an abattoir too close to an existing community, are a coincidence.

There is little doubt that a sustainable abattoir is best located at the convergence of environmentally safe transport routes from the widespread feral goat ranges, to allow sustainability with shifting goat availability. Apart from the cold storage unit, there is a potential advantage in being close to the Cadia Mine's proposed return waste water pipeline, but is the location of a goat abattoir so close to Blayney township and adjacent residences an environmentally safe site? Metziya have been instructed by the Department of Planning to reconsider their EIS and to properly assess the health risk of Q fever in their proposal, after concerns were expressed by the Western NSW Local Health District.

2. WHAT IS Q FEVER, AND WHY IS IT A HEALTH RISK?

A brief accurate summary is necessary.

Q fever (Q-F) was first described in Queensland in 1935. Bacteria were isolated from infected guinea pigs in 1937 and named *Coxiella burnetii* after their discoverers, Cox in the USA and Burnet in Victoria.

Q-F is an infectious disease in certain animals that can be passed onto humans (a zoonotic disease). It occurs worldwide and is caused by a common very small intra-cellular bacteria, once thought to belong to the Rickettsia group. The disease occurs largely in animals and they are the reservoir for infection in humans. A wide range of animals both wild and domesticated can carry Q-F including sheep, cattle, goats, (and their associated pests of, ticks, flies and mites), poultry, birds, feral rodents, feral cats, feral dogs, feral pigs, kangaroos, rabbits and bandicoots, usually without any obvious ill effects to the host animal, except for an increase in abortion in ruminants. It can cause expensive acute or chronic disease in humans, with up to a 2% death rate in hospitalised cases. It can be more serious in those with chronic illness or heart valve disease. Q fever usually affects rural and farming workers and communities, but can affect urban communities close to rural areas or people who may consume contaminated raw meat or unpasteurised milk products.

It is much commoner in agricultural areas and communities than metropolitan areas, but rare outbreaks can occur in a metropolitan area downwind from infected birthing animals; the source of a major outbreak in 1998 in Birmingham, in the UK Midlands, was tracked to aerosol spread from lambing sheep up to 18 km away (**Ref 1**).

Traditionally Q-F was considered an occupational disease of animal handlers and abattoir workers. It occurs in all those working with or in proximity to its carriers, including vets, abattoir workers, farmers, shearers, and their families and those who work or live along transit routes, caused by ingestion or inhalation of spores of the Q-F bacteria.

Since 1991 the widespread use of vaccination has reduced the incidence of the disease in abattoir workers and other occupational groups. As a result we have seen a relative increase in the proportion of cases where animal contact is less direct.

Q-F is highly infective. It has long been recognised that the infections dose required to cause Q-F is very low. Brooke *et al.* report that this information largely comes from studies by the US military in the 1950s and 1960s, (**Ref 1A**). In the wake of the Netherlands outbreaks they considered the original experimental studies and some more recent work in animals to devise a model of infectivity for Q fever. From their model they concluded that the minimum dose to cause infection in 50% of humans (InfD50) is 1.18 bacteria (95% credible interval (CI) 0.76-40.2). The dose to cause illness in 50% of challenged humans (IllD50) is 5.58 (95%CI 0.89-89.0) bacteria. These are very small numbers. The probability of a single viable *C. burnetii* causing infection in humans is 0.44 (95%CI 0.044-0.59) and for illness 0.12 (95%CI 0.0006-0.55). This means that breathing in a single organism has a 12% chance of resulting in illness. For comparison the infections dose for influenza is of the order of 100 to 1,000 infectious particles.

3. Q FEVER IN FERAL GOATS

The fundamental problem with this HRA is that the authors have not understood the nature of Q fever and its proclivity for feral goats. They have assumed that the risk of Q fever from feral goats is the same or at least similar to that from other domesticated animals such as sheep, cattle or domesticated goats. This is **NOT** the case.

Because of their lack of domesticated care feral goats have become riddled with *Coxiella burnetii*, and infested with ticks which are completely unaffected carriers of this virulent organism. Waste products from these feral goats eclipse all other native, feral and domesticated animals, and shed millions a day of specially adapted reproductive forms of bacteria called spores, and it only takes a few to give debilitating human disease.

This means that the representations repeated several times in the HRA are not correct. A typical example is the statement in the HRA pg. 27, para 8: "To put this *(Q fever*) transport risk in perspective, millions of sheep and goats are transported each year to and from saleyards, abattoirs and between properties. Therefore the proposed transportation of livestock to the (*proposed*) abattoir is likely to have no greater risk than any other domestic transport of livestock". The transportation of *domesticated* animals is likely to have a low Q-F risk simply because the prevalence of Q-F in these animals is low. However the prevalence of Q-F in *feral* goats is much higher and the transportation risk is therefore correspondingly higher.

Similarly, the HRA pg. 3, para 7 says "People can be infected from trucks carrying livestock such as cattle, sheep goats etc. However the risk from the transport of livestock is present for all livestock, transported across the state." This assumes that the infection rate both in and from all animals is similar, and this is not the case.

The reasons why the risk of Q-F from feral goats is much higher is explained in paragraphs 3.1 to 3.4 below.

3.1 Highest Infection Rates of all Animals

The real risk of increased Q-F infection from feral goats begins with the much higher nationwide incidence of Q-F infection in feral goats than any other feral, native or domesticated animal in Australia. Feral goats in NSW serology tests for Q-F are 52% +ve (**Ref 2**): kangaroos 20-30% (**Ref 3**); sheep and cattle together in WA 11% (**Ref 4**); cattle in Queensland 16.8% (**Ref 5**).

There are a number of reasons for increased Q-F risk with feral goats. Unlike domesticated goats, sheep and cattle; feral goats are rarely treated for *Coxiella burnetii* carrying parasitic

pests. Further females are more fecund and QF infects the pregnant uterus and contaminates gestation products and fluids in particular, because of the following very distinct differences between feral goats and other livestock.

3.2 Uncontrolled Mating Seasons

The days of true open range stocking for cattle and sheep are over. Rams and bulls no longer run freely (while feral billy goats still do) and domesticated ruminants are only joined when the seasons, export dates and adequate feed permit. The days of paid shooters of feral "scrub" bulls to allow gradual stock improvement on open range, unfenced country are gone, but not for wild goats, or they wouldn't be "feral" goats. While many graziers have introduced Boer billy goats, to gradually improve their feral goats' dressed weight, they cannot keep out feral billies by any customary fencing so the old rules still apply, with control attempted, by mustering, trapping, or shooting (see DPI guidelines (**Ref 6**)). Experience has shown that no feral doe older than 3 months can be assumed to be non-pregnant. All feral goats need strong fencing like 8 strand cyclone with 2 separate barbs, with outrigged electric wire to deter burrowers and high jumpers. However, determined billies can over-come even this strong fence by repeated charging and hurtling through sideways, with a cunning airborne twist of the head to get their horns through and stretch the cyclone links apart, and the only thing that will stop them is a bullet or hooked Ram yoke. This type of fencing, used with a team from a group of properties, has been shown to be a critical tool for the pest control and harvesting of feral goats in NSW. Such investment on a more widespread basis will require much government encouragement and assistance to bring the large mobs under control.

3.3 Better Animal Husbandry Practice for Sheep, Cattle and Domestic Goats in Australia

Very few pregnant cows and ewes are sent off on highly stressful trips to abattoirs except in unanticipated forced sale or drought conditions, or culled ewes sold shortly after lambing. When this happens as is suspected in the Jamestown SA saleyards in 2004 (**Ref 7**), outbreaks can occur. In that outbreak, freshly lambed or aborted ewes (we will never know), with no lambs (possibly from NSW), were noted at the sale on a windy day on 21 October 2004. Some 25 human cases of Q-F were recorded in December, with at least 22 attending the sale. This outbreak led to extension of the government funding phase 2 of a vaccination program for anybody connected with agriculture for 2 years until 2006. Despite public outcry to close the saleyards it remained open. This was later proven to be courting disaster as *Coxiella* spores remain in the ground for years after infected animals are no longer present at the site (**Ref 8a pg.5 para 5**).

Numerous DPI Guidelines for the husbandry of **domesticated goats** in Australia explain in detail the precautions to be taken in preparation, transport of goats, and subsequent need to quarantine for 2 weeks after transport, BUT these do not apply to **feral goats**. Almost every feral doe is pregnant three times in two years, (**Ref 11**), i.e., for 62% of her adult life, and lactating for most. The greatest risk of aerosol production, (= fine Q-F spore laden particles of dust or tiny droplets), spread and subsequent risk of infection of humans comes from the **stress** of their capture, forced "emptying" by starvation and withholding of water for 48 hrs prior to transport **inducing abortions in transit, with a massive dissemination of spores from birthing products.**

3.4 Uncontrolled Tick Infestation in Feral Goats

Feral goats are not shorn and usually not given treatment for ticks which carry Q-F in their blood and faeces, hence feral goats are much greater transmitters of Q-F than sheep and cattle, and kangaroos (which at least can look for their own and each other's ticks). Now sheep and cattle have strictly controlled dipping or striping, and this appertains to control of many zoonotic diseases affecting both animals and humans, especially a different cattle tick in Queensland which NSW has been trying to eradicate for 90 years. Fortunately for

NSW the line for transport control demarcation is within Queensland, and above this line, no feral goats can be shifted anywhere without certified prior tagging, dipping and isolation for 2 weeks prior to transportation to allow the dipping to cleanse them of possible cattle ticks. This is specifically to decrease the risk of spreading Cattle Tick Fever. There are no such regulations for feral goats in NSW.

The EIS on pg. 42 para 1, (**Ref 20**), says that, "goats will be sourced from the tick free areas of western NSW and south western Queensland, eliminating another potential avenue for Q fever transmission." This is completely impossible: firstly because ticks abound across these areas, and secondly feral goats would not stay forever in a defined tick free zone, if one was ever declared, and you can't tie kangaroos down! If Metziya believed their own sales pitch about ticks, then a strict inspection of all goats at source, would not be necessary. The following points demonstrate this to be a pointless exercise:

(a) Barker & Walker describe 16 ticks involved in zoonotic infection in humans, (**Ref 21**). Of those 4 or 5 carrying Q-F, we can leave out paralysis tick which also carries Q-F, as it is on the extreme eastern fringe of NSW. The best known of these to be involved in the chain of transmission to infect humans with Q-F is the Kangaroo Tick, with 30% of red kangaroos and 24% of eastern grey showing +ve serology. They spread their Coxiella laden tick faeces or kangaroo dung onto sheep and goat feed, and also by direct spread of ticks off foliage. These ticks are found on goats and sheep, and live predominantly in NW NSW and SW Queensland, Northern SA and WA (QUITE THE OPPOSITE OF THE CLAIM OF EIS). Then comes Brown Dog tick, producing up to 16% +ve Q-F serology in sheep dogs and dingoes, followed by the wallaby and common marsupial tick. I could not find out which ticks are carried by feral pigs, which roam from the western side of NSW eastern ranges along all water courses in western NSW to the SA border, but pigs eat goats (raw of course), and then get infected. The overlap of all these areas of tick carrier distribution covers all of NSW, with seasonal variation in tick numbers.

(b) One gram of tick faeces can carry up to 1 billion *Coxiella burnetii* spores, and you only need 1-10 spores ingested to catch Q fever so wash your hands after inspecting your cattle, sheep or pig dog for ticks!

(c) Bush ticks are not confined to the eastern strip of NSW, as clearly shown by "Heavy bush tick infestation found at a Young shearing shed", (**Ref 22**.Dr G Bailey), but I could not find in the time available, if bush ticks can carry Q-F on pigs, as is asserted by Moree locals, although bush ticks do carry other zoonotic diseases, and exist well inland from their mapped distribution (**Ref 23**).

The EIS is confused about ticks, especially about the areas which are free of CATTLE TICK, and state quite clearly that western NSW is free of goat tick infestation and thereby Q-F. The truth in NSW is that there is little or no record kept of feral goat pest control, the great majority are untagged, the present state of trapping, fencing and holding feral goats, means that dipped animals would quickly get mixed up with undipped ones. If Metziya then promise to get goats dipped at goat depots, this will be impossible, as they must be fed, tagged, quarantined and withheld from slaughtering for 2 weeks, and that is not yet common practice in NSW.

Q-F spores will survive in tick faeces for 18 months, so that long haired goat hides full of ticks or tick faeces represent a greater risk than any other skin, and don't lose all their ticks and tick faeces by careful preparation, making them a higher risk at a Skin Depot or tannery.

3.5 Conclusion on Heightened Risk and Ineffective Risk Mitigation with Feral Goats

The HRA continually repeats the view that cattle, sheep and goats can all carry Q-F, and that consequently the risk of transporting feral goats and handling in an abattoir is the same as for all other animals. To an environmental health expert, this is propagation of a

dangerous fallacy. The fundamental facts of NO TAGGING, NO REGULATED BREEDING, NO PEST CONTROL AND NO CONTROL OF MOVEMENT for feral goats mean that Q-F is uncontrolled in feral goats. It will be many years before feral goats reach the careful husbandry, breeding and safety status of other livestock, and hence safer transport, as 90% of goats are still feral. This is so well known in the more relevant regions that many articles on Q-F outbreaks only explain the mode of transmission, but not the reasons why goats are so dangerous, in particular, 6 out of 15 references used by the HRA assessors contained no references to the WHY at all. The risk of not emphasising this now is that eventually a whole cohort of non-farming town communities, small inner district hobby farmers, even abattoir managers, are lulled into a false sense of bio-security, about the inherent dangers of transporting and killing feral goats, in an ill-advised rush for employment with feral goats which until recently cost more than a million dollars per year in Work Cover claims for Q-F, despite vaccination programs.

The reassuring mitigation strategy that there will be "strict inspections … at source" of the feral goats to "provide significant protection against disease entering the operation" in the EIS pg.41, para 1, (**Ref 13**), is simply not feasible because no matter what they promise, the capture, holding and inspection points before transport are not under the control of the company. Do they mean animal welfare inspectors armed with combs, microscopes and ultrasounds? Who will provide the off-road mobile homes, cookhouses, ablution blocks, and mobile laboratory, and pay for them? The important advice actually given by the Rickettsia Reference Laboratory Senior Scientist, Dr John Stenos to Mr Ray Hornery by telephone or email, in the EIS pg. 41, para 6, (**Ref 14**), and relayed verbally to me on 22nd April 2015, was that the "transport of feral goats was only safe if they travelled in a properly sealed container, otherwise the risk of feral goat faeces, urine and other goat products escaping onto the transit route population and passers-by WAS increased". He was correct. The advice of senior Veterinary officer Dr Greg Curran at Broken Hill in the EIS pg. 41 (**Ref 15**), was also misinterpreted by Mr Hornery because Dr Curran only advised on the "emptying out period" prior to travel; advice on excluding feral does from transport and resolving the risk for birth products and tick faeces aerosol spread was not asked for (**Ref 24**).

These statements in the HRA which omit or use out of context important information from genuine Environmental Health Experts (EHEs) concerning the equivalent safety of feral goat transport, is regrettable and gives a false impression to the reader about safety when the opposite is the case. I find it deceitful that the authors of the HRA can make the extraordinary statement on pg. 8 para 5, "However prior to the current report the extent of any potential risk was unclear." The RISKS WERE ABUNDANTLY CLEAR, so perhaps they were hoping to imply a subliminal message that their report was breaking new ground and clarifying the risk.

4. OUTBREAKS OF Q FEVER

The HRA does not acknowledge that outbreaks of Q-F traced to goats have occurred both in general farming communities and in association with the slaughtering of feral goats.

4.1 Farming Communities

The high infectivity of Q fever is dramatically demonstrated by the first recorded outbreak of human Q-F in the Netherlands in 2007 (**Ref 9**), 2 years after it was first discovered to have arrived in goats. In the Netherlands, goats abound on small farms for meat, milk and cheese. There were no restrictions on travel. Goats were mated all year round, and lived and birthed and were killed in close proximity to their handlers. By 2011 there were **over 4,000** cases before the Dutch slowly brought the disease under control with mass culls of pregnant does, human and animal vaccination of dairy goats, and dairy sheep, strict hygiene, quarantine restrictions on travel, and transport of goats and by-products. Approximately 15% of the local population exhibited clinical Q-F infection, with 20% of these requiring hospitalisation. Eventually it was found that the persisting reservoir was rats. (**Ref 8b, pg. 5 para 3**). A further illustration of the high and rapid infectivity is seen

in an as yet unpublished paper in Australia, (**Ref 10**). This describes the application of a unique One Health approach by a multidisciplinary team, of lessons learned to date in Q-F control, to suppress an outbreak in 2013 in Victoria at a goat and sheep dairy which infected 18 out of 100 people associated with the dairy, and 1 case not directly connected.

In the continuing Netherlands outbreak, by 2009 there were 2,357 cases of Q fever reported, with new satellite out breaks signalled by waves of abortion in dairy goats, (**Ref 18A, 18B**). The extensive investigations of the Netherlands outbreaks have resulted in many publications and added extensively to our understanding of the spread of Q-F in the environment, and defined groups at risk, and their level of risk, in %-age terms.

The Netherlands is not the only country to have reported farming community outbreaks. Boden *et al.* have described an outbreak in Jena Germany in 2005 in which there were 331 cases. In a community survey they found a clear association with proximity to the affected grazing lands (**Ref 18C**)

4.2 Abattoir Outbreaks, Slaughtering Feral Goats

In 2007, a licensed emu and ostrich abattoir in Waikerie SA decided it could switch to feral goats from the Flinders Ranges with no added precautions or requisite authority notification or licence, with the nearest houses only 200 to 300 m away (**Ref 16, 17**). At least 7 cases of Q-F resulted inside a 1km radius, with one death in a previous open heart surgery case, who lived less than 400m away, and the abattoir then stoutly protested its innocence through multiple court hearings, and pleaded hardship on its work force to stay open for another 6 months. The Department of Environmental Resources in SA had the determination to keep prosecuting and remove the Waikerie abattoir's licence as they clearly broke their licence restriction to kill only emus and ostriches, and implanted a goat abattoir in a town less than the required 500m exclusion zone. There seems little doubt that the introduction of feral goats was associated with this outbreak of Q-F in the community.

Similarly a massive outbreak occurred in 1980 in Victoria of 70 cases of Q-F when a small country town abattoir decided to swap from sheep to feral goats, (**Ref 18**), 110 people "associated" with the abattoir developed high fevers, 70 with proven Q-F and 3 with leptospirosis and 2 with bovine TB.

There are many anecdotes about diesel pump operators in small rural service stations catching Q-F when trucks transporting feral goats to abattoirs stopped for fuel.

5. Q FEVER IN THE ENVIRONMENT

The common aspect of all these outbreaks is that Q-F spores can easily contaminate the environment and dust laden with spores can be spread from multiple sources. *Coxiella* remains alive in dust from tick and goat faeces for years **(Ref 8 (a))**. Manure and straw from goat stables spread on paddocks was proven to be one of the catalytic factors sustaining the Netherlands outbreaks once they had started **(Ref 18 E)**

In the 1950s it was shown that Q fever organisms could be found in the environment. DeLay *et al.* reported on their experiments in recovering Q fever organisms from air-borne dust (**Ref 18 F**). Conception productions and fluids are a very rich source of QF spores and can contain 1 billion spores per gm of placental fluids ready to convert into aerosol droplets, and can travel a long way.

In the investigation of the 2007-2012 outbreak in the Netherlands, Hackert *et al.* identified significant risk in the densely settled community (**Ref 18D**). The risk was greatest closer to the source, but they reported significant risk at greater than 5 km from the affected farm. They showed the ratio of infected goat farms to sheep farms to be 113:4. In 2005 in Jena, Germany, 331 cases occurred in a densely populated urban town alongside grazing lands

with lambing ewes, in 22% of the population. Critical factors were: residences <500m, number of open house windows, and time spent outside (**Ref 18 G**).

In the Birmingham URBAN outbreak analysed by Hawker *et al.,* the cases were clustered in a rectangle 18km by 6 km, like a parachute drop zone, which did not include the likely source so some cases were up to 18km from the source (**Ref 1**). There was a reduction in incidence with distance from the likely source. Extremely strong winds were thought to be important in this distribution.

It is hard to maintain a sense of perspective on the rural vs urban risk of Q-F outbreaks in the face of 30 years of television capitalising on "The Good Life" and ABC programmes featuring retirement to idyllic hobby farms in Tasmania, culminating in the current "Costa"/ABC promotion of bringing the BUSH to the CITY by establishing a model farm complete with goats in a city park this week. It is hoped that their proponents had a more astute HRA than Metziya and know of the well-publicised outbreak of 299 Q-F cases from visitors looking at ONE newborn lamb at a farmers market in Soest in Germany in 2003, representing 20% of adults and 3% of children from a 10 minute exposure (**Ref 18 G**), with subsequent strong recommendations that have not been forgotten, (i.e that all display animals since then have undergone Q-F serology testing.)

These carefully researched examples of *Coxiella* contamination of the environment have been easily found on the Internet, and highlight the lack of diligent research by the authors of the HRA into the true dangers of goats compared to sheep, especially to transport route dwellers. The dangers are unlikely to be overcome by one of Metziya's Placatory Implausible Promises (or PIPs), as a risk mitigation strategy possibly derived from the undeclared EHE advice of Dr Stenos. The "waste control systems in place on the contractor vehicles" as on pg. 157 para 1, of the EIS (**Ref 34**), will only be an ineffective token effort to allay concerns unless they really make fully enclosed air conditioned trucks fitted with mesh floors over sloping stainless steel under-floors, draining via a central gutter into a bilge tank, and equipped with a waste air bio-filter system capable of trapping the billions of minute Q-F spores emanating from birthing products. This type of space-age technology has yet to be implemented in practice. Are these PIPs credible?

6. TRANSPORT ROUTES AND TOWN BYPASSES

It is my belief that this should be the second most important deciding factor in a final site of a new goat abattoir for the SeaLink proposal. Unfortunately despite being directed to give this serious consideration in its brief, the HRA has misunderstood the real dangers of transport corridors and adopted an unacceptable attitude to social responsibility explained in the last 2 sections, choosing to concoct misleading evidence and ignore historical lessons instead.

As one example of the poor analysis of the writers of the report, the Queensland Health Guidelines (**Ref 45)**, which the report references, show "Windborne spread is well recognised and the organism can travel several km. People can be infected from trucks carrying cattle, sheep or contaminated straw." There is no mention of these issues in the report.

Many NSW towns have grown so fast that they have engulfed the old droving stock-routes around towns, e.g. Moree, and it can be hard for drovers to sneak past. West Wyalong, Orange, Moree and "Goondi" have responded with excellent stock truck bypasses. Every consideration should have been given for timely involvement in this aspect of environment health risk planning, by every council and Department of Environment, Health and DPI along any envisaged stock route; they should have been advised of the EIS by Internet transmission of the EIS by SLR, and asked to provide a response by SLR, to demonstrate SLR's concern for public health, but Bathurst Department of Health only received theirs on 28th April. It is shameful that the advice "that Q fever had been shown to have occurred on transit routes", also contained in an email by Dr Stenos to Mr Hornery, was withheld, and not passed on to make the danger less unclear.

There are other easier transport convergence points from goat lands along the north-south axis of, Nyngan, Condobolin, Parkes and Forbes, and by shortening the distance travelled by feral goats to an abattoir, both the Q-F transport risk and need for expensive bypasses is reduced. The presence of a large cold storage facility in Blayney could still be of enormous benefit in maintaining a steady flow of frozen meat rather than chilled apples to the wharves. It is clear that where ever the Abattoir ends up, that DPI and feral goat transporters should start to consider the introduction of feral goat transport guidelines similar to Queensland. The first step possible could be by compulsory tagging, dipping, quarantine and feeding at DPI-run goat depots while the goats wait out their WHP.

All does might have to be initially banned. The later demand to keep supply numbers up, and difficulty in feeding does and 3/12 old females culled every month and isolated until proven non-pregnant before being transported segregated from billies, (a theory rather than current practice), will mean that necessity will rule, and female goats will be a constant problem. This however should be a breeze for Mr Hornery's team of PIP strict goat inspection specialists, if the specially equipped waste control trucks are not yet available.

7. RISK ASSESSMENT

7.1 Risk Categorisation

With the massive Q-F infection rate of 52% for SA & NSW feral goats, being 4.5 times greater than in a combined test of sheep and cattle in WA, it is obvious that they provide a HIGHER RISK rate of infection transmission by the breathing in of aerosols by those people living along the feral goat transport route **rather** than sheep and cattle. The aborted foetuses are then trampled, pulverised and desiccated into aerosols which can be blown out of the truck; the spores can travel up to 20 km (**Ref 12**), with a greater chance of spread to inhabitants of the transport route (let alone a cyclist or open sports car), than from a stationary farm goat. The potential risk of Q-F with feral goat transport is therefore FAR GREATER than occurs with BEST PRACTICE transport of sheep and cattle, which is more strictly licensed and regulated. It is a totally unsupportable statement on pg. 4, para 3 of the HRA, to say "therefore the risk of zoonoses transmission to the transport route communities and the Blayney community are likely to be negligible," because there has usually been no prior "separation" and much rarer pregnancy testing, so the major risk factor for all feral does applies, as well as the added risk factor of aerosol production from urine and faeces from both sexes, and from tick infestation. The actual risk factor for INFECTION is at least 20% if pausing for 10 mins within 6 m of a birthing goat or sheep, and 22% for living within 500m of grazing land, affected by having windows open etc., then dropping off from this to an unstated low at 5 km.

It is likewise, therefore, erroneous, unsourced and unproven extrapolation to deduce that the transport route risks to the Athol Homestead, the Tetlaw residence and Blayney town will be negligible and the same as any other residence on a livestock route in NSW, see HRA pg.4 para 3,5&7. The risk of abortion and aerosol production increases with stress inducing time travelled; these two residences and a section of Blayney are at double the risk of any other town on the transport corridor, because Blayney lies astride the final convergence of at least 2 transit routes. If SeaLink add rail transport from the north as postulated, it gets worse, but does this really make sense? There is already a large goat abattoir at Dubbo.

If any child in the Blayney Schools, or a patient in the Blayney Hospital or Nursing home situated right beside the only transport routes through Blayney were to contract Q-F as a result of this unprovable deduction of the report, then there is reason to believe the EPA, SLR and Metziya could be liable to prosecution for defying the precautions recommended in many Q-F Public Health publications from many countries now available. These all clearly say to beware of the dangers associated in transporting feral goats past schools and hospitals, etc. Despite the futuristic content of their proposed mitigation controls and concocted safety of feral goat transport, the risks of infection to the Athol and Tetlaw residences from birthing products can actually be measured with some objectivity using the

massive amount of data obtained from research into the Netherland's outbreaks. For example, distance from sources, wind patterns and exposure times have been studied extensively, and a much more accurate idea of risk was obtainable in 2014. Likewise data is now available for risk assessment from exposure to Q-F infected goat manure.

7.2 Failure to Heed Historical Lessons

Waikerie is remembered amongst many Environmental Health Experts (EHEs), for its Well Publicised and Documented (WP&D) Ostrich to Goat abattoir associated Q-F outbreak.

Jamestown is remembered by SA EHEs for probably the biggest single day WP&D outbreak of Q-F in Australia, caused by the transport of recently birthed ewes via good bypass routes to its stockyards.

Blayney is interestingly remembered by all WW2 personnel as the coldest railway transit camp in Australia, AND by many EHEs as the town which in 2000 closed its abattoir, still sitting forlornly by the railway yards, less than 500m from the schools and town centre. At least one elderly citizen remembers getting severe, very nearly fatal, Q-F when feral goats arrived at the abattoir. Does the State want to foist on the residents of Blayney the reliving of that memory for short-term employment gain from an abattoir TOO CLOSE to town? Why make environmental guidelines and then allow them to be broken?

Old public health lessons learned in the early 1800s are forgotten in the new age of vaccines and antibiotics. Most early towns in NSW & Queensland were established on an *adhoc* basis along viable transport routes, near a water supply, with no systematic planning of the town or boundaries, and abattoir close to or just behind the butcher shop preferably on a rise to catch the evening breeze and chill the fresh kill. In SA, by contrast, there was organised settlement from the 1850s with few exceptions, and while Q-F was unknown, it was recognised that abattoirs were associated with many diseases, so they were planned well outside town boundaries, as the town was laid out, before they even found their butcher (or goats). After a frenzied burst of organised settlement, these towns often shrank long before WW1. In SA you can often tell you are approaching a town by the lonely tin spire over an old abattoir cattle hoist on the top of a rise, before you see the town, and this simple town planning has contributed to the fact that there have historically been far fewer Q-F cases in SA than in NSW and Queensland, (about 10 times less), but SA settlers and railway workers took goats everywhere, and they are now feral, and heavily infected with Q-F +ve serology at 51.5%. Rural SA towns have not kept growing like rural NSW and Queensland. In metropolitan Adelaide there have been steady encroachments of town boundaries, suburbs, etc., onto previously isolated abattoirs and tanneries, and efforts to close or relocate these premises have taken place with some interesting results.

Peterborough (PBoro) in SA, is remembered by SA EHEs as a target town to help cater for these metropolitan encroachment land demands because when the "Adelaide Gepps Cross Abattoir had to go", it first decided to switch their company owned PBoro Abattoir to goats, in the late 1970's, as they were recognised as untenable to safely offload and slaughter less than 1 km north of Adelaide. PBoro abattoir was over 1km from the town outskirts, surrounded by hobby farmers with their own Q fever risks so they thought there would be no great risk, but the goats thought otherwise; the first 2 truckloads of 800 goats were delivered to PBoro, and they all escaped that night. So it was decided that PBoro would switch to horses, but when the domestic supply dipped, they tried brumbies. In 1980 these escaped onto the adjacent airfield at 2am as the RFDS plane was trying to land to pick up 3 desperately injured car accident victims out of a total of 7. The resulting shambles resulted in neighbouring Jamestown building its own all weather night strip. Despite this shaky start, PBoro abattoir has continued to safely kill the steady supply of domesticated horses, with no Q-F outbreaks in the town, due to a fanatical steam cleaning risk mitigation and vaccination program, combined with a 1 km distance for a much lower risk animal. Gepps Cross eventually built a new goat abattoir near Murray Bridge.

Neighbours of the Blayney stock yards don't need convincing that feral goats are great escapologists, as they showed when unloaded there recently. Perhaps the known dangers need to be explained again to the stockyard operators along with the fact that the incidence of Q-F in NSW non-farming and non-abattoir workers has grown not only as a percentage of all cases diagnosed, but in absolute numbers as well, indicating mixed success in the vaccination program of farmers, and the difficulty in controlling the risk of aerosol spread. At 177 Q-F cases in NSW last year (**Ref 25**), and fewer abattoir workers in western NSW being infected because of their better vaccination rate (**Ref 26**), something is amiss. IT IS CLEAR THAT BUFFER ZONES WITH PARTICULAR REFERENCE TO NEW FERAL GOAT ABATTOIRS NEED TO BE REVIEWED BY ALL EPAs AND AHAs. We should try to avoid the mistakes of the past, and not repeat them.

7.3 False Relativities with other Risks

The HRA devotes 4.5 pages from pg 27 to 31 to aerosol transmissible zoonoses infection rates and risks. It contains an accurate chart of Q-F notifications, a totally irrelevant every day Relative Mortality risk chart from accidents, including shark attack, without bothering to explain how this relates to Q-F, and then proceeds to give us a grading of risk factors for zoonotic spread with no references or epidemiological evidence. The use of the table of different risks is patronising and the community is unlikely to be impressed. The community does not view risk like this. For more than 20 years Peter Sandman has been explaining community risk perception as Risk = Hazard + Outrage. (http://www.psandman.com). This is a powerful explanatory model which has its place in a risk assessment such as this where the community are the ones exposed to unacceptable risks.

Once again they try to use a clever association illusion to imply validity to their report by starting with a quote from a very short information paper on ALL diseases of animal origin (i.e. zoonoses), produced for the Victorian Department of Environment & Primary Industries, by B M Attwood in 2007 (**Ref 27**), from which the HRA deduces **Q fever to be UNCOMMON**. As Q-F represents 80% of all notifications of zoonotic disease, and no specific reference to its incidence, risk or prevention was made in the quoted article, the HRA's use of the "evidence" statement that, "the occurrence of zoonoses is uncommon and contact with zoonoses disease agents is preventable (*by taking … precautions including ….. vaccinating pets and livestock"),* is out of context with the rest of the well-meaning sentence, and quite useless in determining relative risk. In fact the occurrence of Q-F is COMMON in a community which is exposed to both the farming and slaughter of goats, sheep and cattle and to feral goats and known carrier native animals. Professor Marmion, Australia's greatest Q Fever expert until his passing in 2014, who was the producer for many years of the advisory Guide for Q-F and Q-F Vaccination produced by the Commonwealth Serum Laboratory (CSL), has also refuted the advice in italics which the rest of the quoted sentence by Ms BM Attwood actually contains, which suggest we can prevent zoonotic infection by immunising all pets and livestock, (unfortunately Q fever vaccination for any animal was never available in Australia), and even if it was you cannot vaccinate kangaroos, which were the most likely cause of the March 2015 Q-F outbreak in Lightning Ridge (**Ref 24**). Prof Marmion states on page 7 of the CSL 2009 Q-F Handbook, "Vaccine prophylaxis is the only feasible protection against airborne Q fever", clearly concerning humans.

In the investigation of the continuing endemic Dubbo Q-F problem **(Ref 19)**, in a rural city and its 200km radius environs with a population of 104,000 on the eastern fringe of the feral goat ranges, an analysis of incidence was done at one stage, showing 10 per 100,000, per annum (email from Professor Lloyd 11/5/2015), not 2.5 per 100,000 as in the HRA chart on page 27. This 4:1 ratio of rural to urban incidence corresponds roughly to the ratio of rural to urban Q-F incidence in recent Queensland and Hunter Region studies **(Ref 29)**. However if the authors of this HRA had read the words of Professor Marmion in the easily available CSL hand book, on page 13 **(Ref 30)**, they would have learnt that before the introduction of Q-F vaccination programs in the late 1970s, "there were around 500-800 Q fever cases annually across the country, and probably at least 5 times more unrecognised

cases of clinical or sub clinical infection"; that puts the maximal risk of infection, including un-notified and notified cases for the exposed community who are not immunised, at a HIGHER figure again in rural areas. Professor Gurtlers paper **(Ref 8)**, postulated that in the Netherlands outbreak that only 40% of cases were recognised within a population of 27,000 inside the 5 km zone of infected goat dairies, where they had the staggering number of 4,000 Q-F cases in 4 years. As of 2013, there do not appear to be any papers from Holland suggesting a wider general population incidence than that immediately around the outbreak.

This shows us that relative risk must be defined and qualified for the Relevant Group. Having made a prophetic type statement to this effect on HRA pg 9, para 3,"Risk assessments should only be applied on a probabilistic basis to a population of exposed persons" the SLR report did not bother to avail itself of the REAL RISKS to the population exposed to its nearest operating feral goat abattoir at Dubbo, demonstrating EVASION rather than sham due diligence by getting advice from Victoria! The SLR HRA has then ignored its own fanfare, and tried to misrepresent the risk by applying the incidence in the general population of 24 million to the rural population which is about 2.5 million depending on definition of rural zones. The rural population figures should have been sought from the Australian Bureau of Statistics, in Canberra, to give some scientific basis to the SLRs conclusions. There are at least 3 groups which will have to be considered by any responsible body looking at Q-F risks in the Metziya proposal:

(a) the risk for the population along the transport route, subdivided into towns, highways and truck service centres;

(b) the risk for the nearest population centre and adjacent properties to the abattoir; and

(c) the risk for the abattoir work force, any contractors of the abattoir handling feral goats, their raw waste, etc., and their families.

A further subdivision has become apparent to Q-F public health workers in western NSW; they have learnt to differentiate between the incidence occurring in those "at risk" workers who are exposed and supposed to be immunised, and those who are deemed to be unexposed and not immunised. The more "at risk" people in the above group (c) who are immunised, the lower the incidence for everyone should be, and not just in this group, but the overall incidence has been steady, or rising slightly since an initial drop after the two phases of the vaccination program **(Ref 26)**. This could indicate poor determination of safe buffer zones and rising risk for the sparse population along the transport route with concomitant rise in their infection rate. Copyright Laws prevent me from doing more than paraphrase an important report from the NCIRS, as in Ref 26. A Phase 3 transit route vaccination program cannot be envisaged or instigated until all transport routes are mapped out, and transport controlled as for Queensland, AND further epidemiological research into the suspected rising incidence in the group (a) and (b) above has been organised. It is impossible to call the transport route risk negligible until then.

Another MAGNIFICATION OF THE RISK. On page 41 of the EIS **(Ref 31)**, SLR quotes Meat and Livestock Australia's figures of 1.99 million goats transported to abattoirs in Australia in 2012. The proposed abattoir's throughput of 4,500 per day, operating 24/7, is 1.64 million per annum. This is an increase of over 80% in the number of goats transported in Australia each year, all funnelled through Cowra or Millthorpe to Blayney destined for a single facility, and all bringing with them the enhanced risks explained above.

8. PROXIMITY TO VULNERABLE GROUPS: BUFFER ZONES

Prof Marmion also advised me in 2004 that any new goat abattoir should be at least 5 kms, or more from the nearest population centre, depending on prevailing winds, due to the risk of aerosol borne transmission, with spores (Q-F) capable of travelling up to 20kms, and he included truck washes as an infection source **(Ref 32)**. This was 8 years before the useful

findings from the Netherlands studies, which showed in 2012 that the most important risk factor is living close (<5km), to an infected goat dairy farm, (producing an infection rate of up to 15% of the area population) **(Ref 9)**. In their slow awakening to their massive problem, the Dutch statistically derived, then removed ALL stored blood donated from that area, and the donors themselves from their lists, if they lived within 5km of the infected farms, **(Ref 8d).** This will be necessary for all of Blayney and environs population and visitors if these proponents are allowed to implant this abattoir adjacent to residences and the town, i.e. within 1 km of a population centre, with 46% of winds blowing over the town!

This is the only true indication of what the proposed Metziya abattoir could inflict on Blayney, given the infection rate of Q fever in feral goats in NSW. Any proper Environmental Health Risk analyst would dismiss the SLR argument that Blayney is protected by their strict inspections and special trucks (a DREAM), the prevailing wind (FALSE), and their aerosol emission control (also FALSE). The only way around it would be to protect all people within 5 km by vaccination which only has to be stated, to demonstrate how absurd a location it is. Will Metziya guarantee the safety of cyclists in the famous B2B bicycle ride from getting Q-F, or the 8,000 visitors to each of the semi-annual Millthorpe Markets, alongside the transport route? Or the 100 guests at a wedding at Athol Gardens? The town council would have to consider advising all through town traffic to not stop, shut car windows, and turn on recycled air for 5 km each side of Blayney.

Two further careful studies, in Birmingham **(Ref 1)**, and a further one on the same Holland outbreak **(Ref 12)**, have shown that the maximum distance of Q-F risk extended to 18 and 20km respectively, the latter applying to the safe distance to ride a bike past an infected goat dairy farm. Both these examples apply to birthing infected sheep and goats, thereby applying to feral goat abattoirs. Every EHE expert but one whom I have spoken to in the last 2 months has urged that the minimum distance of any new goat abattoir from a population centre should be 5 kms, or more depending on prevailing winds, due to the risk of aerosol borne transmission of Q-F. The one exception, Dr James Branley **(Ref 33)**, of the Nepean Hospital, argued that the buffer distance should really depend upon the Risk Mitigation Plan for precautions to prevent Aerosol Production and Emissions, which he indicated could be found in the DPI construction standards. While technically correct, this concept is hardly discussed in 2 out of 3 important areas in the abattoir in the EIS, i.e., the unloading/truck washing bay and holding pen areas (see later).

Determination of a safe distance for an abattoir from a town can at long last be based on firm epidemiological evidence rather than conjecture based on the truism of, "the further the better". The other pursued truism is the one offered above by Dr Branley. Now this is a very theoretical academic conjecture, relying on both physical and procedural walls, of which the latter can be broken at any time by human weakness or ignorance. It does not really have any epidemiological evidence that I have found to support the conjecture that it can replace the 500m buffer zone, as is presumably being put forward by Metziya in this proposal. It is not hard to look for examples of how breaches of this theoretical procedural wall could happen at Blayney, e.g. their proposed handling of manure and paunch contents (see 3.3). It has been impossible to find a specific set of guidelines for The Mitigation and Control of Aerosol Emissions in the DPI Construction Standards for New Meat Export Abattoirs **(Ref 35)**, or the Australian standard for the hygienic production and transportation of meat and meat products for human consumption **(Ref 36)**, or the EPA regulations, but while scattered everywhere, they can be worked out.

I am not suggesting that these are not extremely important; they should be a major goal in the design and planned methodology of every new abattoir, to help reduce the risk of wide dissemination of Q-F spores in any freak wind conditions or break down of an air filter system. They are the only means of reducing infection from abattoirs which have slid inside safe distances by urban encroachment, and probably contributed to endemic Q fever as in Grafton NSW. This does in no way indicate that they are to be preferred over epidemiologically based safe buffer zones. With only an apology of a procedural Aerosol Mitigation procedural wall (laced with PIPs), being proposed in the EIS, coupled with

multiple attempts to evade the very clear physical guidelines laid down in EPA & Construction Standards, this author believes it is tantamount to assisting a Q fever epidemic if this Blayney abattoir is approved and entrusted to the care of its proponents. Unfortunately none of the many relevant EHEs opinions and recent evidence based advice on buffer zones appear in the NSW EPA 2013 guidelines, which are used effortlessly by SLR in the HRA on pg. 28, to pretend that they only have to worry about odour problems, depending on wind, because they have taken care of everything else. Their throw away assertion that wind directions do not matter does their supposed environment experts no credit.

THERE ARE CLEAR GROUNDS FOR THE URGENT REVIEW OF TRANSPORT ROUTE AND ABATTOIR BUFFER ZONES.

9. OTHER FLAWS IN MEETING CONSTRUCTION STANDARDS FOR NEW ABATTOIRS PROPOSED FOR EXPORT OF MEAT

These flaws IGNORE the above three sets of Guidelines, Standards and regulations which affect the production and containment of polluted aerosols, as in:

9.1 Unsafe Truck Unloading and Washing Area without Emission Control

We are told the trucks will be washed by a truck wash installed in the unloading bay, and how the washed off manure would be separated from the waste water in the Waste Water Treatment Plant (WWTP). The 2008 Export Meat Construction standards recommend settling ponds;. Will the proposed waste handling plant be able to handle sudden bursts of large amounts of sludge as would occur with ordinary stock-truck washing or will it go to the same manure collection pit as stated for the weekly washing in the EIS, on pg. 42, para 2 **(Ref 37)**, which may need to be used as a short-term equivalent of a settling pond? This would then allow a more gradual influx of sludge on the proposed screens for the Bio filter in the WWTP.

Truck washing inside an OPEN Bay, will also produce a massive emission of contaminated aerosol within 400m of Athol Homestead. Where are the catwalks to facilitate the washing down, of the 2 or 3 decks, notwithstanding the difficulty in cleaning inside the specially equipped effluent control trucks and their bilge tanks, or were these a dream? If trucks are kept waiting because of unexpected delays in wash-down, there will be a cacophony of bellowing billies smelling water for the first time in over 48 hrs and squealing reversing warning alarms as tired truck drivers try to get their cargo ready to unload ASAP.

There has been little thought as to how to control the escape of the aerosols into the environment from the unloading bay, nor any explanation of how they propose to prevent high pressure aerosols from the truck washing "area" (presumably meaning the same area as the unloading), escaping to pollute the air all the way through to Blayney. The segment required on this aspect in the HRA is just conveniently missing. You turn backwards from the killing and processing section, then to the holding pen section looking for the Unload/Truck wash… It doesn't exist, except for a tiny mention of "unloaded animals", HRA pg. 26, para 8, and on pg. 157 dot point 5 **(Ref 34)**. They provide the only faint clue to control of emissions from the unloading bay, by the use of a neat PIP invoking "onsite procedures to restrict escape of aerosols". What does this mean? We are left to speculate again. Will they wash the trucks with yet to be invented giant dentist drills, which scour every nook and cranny with spinning brush and simultaneous irrigation and suction? It is obvious that they have not worked out what to do, so time for another PIP! On HRA pg. 18 they have got "Truck Wash Facility" placed in the Design Control column as if it is a TO DO reminder notice and then they forget about it.

The managers of an open air wedding venue at Athol Gardens cannot make-up their own PIPs, or guarantee their guests that aerosol pollution will not happen. Escape of aerosols will inevitably be followed by escape of goats through the open entrance of the truck

unloading bay; goats will attempt to climb on billies in front, so as to jump over the ramp sides as they egress. To build this so close to Athol is very dangerous and in its own right should be excluded by being inside the present 500m exclusion zone regulations.

9.2 Flawed Holding Pen Cleaning & Risk Mitigation of Aerosol & Dust Production and Emissions

The presence of a positive pressure ventilation (PPV) system from the killing and clean rooms into the holding pens is necessary, but the escaping air produced by the PPV is then mixed with all aerosols produced from the holding pens and vented through a 3m high stack. So the protection from flies and aerosols entering a clean area, has not in any way been turned into an emission strategy, but been converted into an emission pump.

The HRA report and its parent EIS give contradictory explanations of the lower holding pen design, cleaning method and regimes. The HRA states on pg. 13, that the lower holding pen will be dry, and goats will be on a concrete floor, but earlier it states that goats will be watered in the lower holding yard, and in the absence of food, they will drink more, and the concrete floor will soon be very wet, and it therefore would need a daily wash out to reduce odour, and remove any birthing products produced after unloading. Later on pg. 53 of the EIS **(Ref 38)**, the floors of both holding pens are postulated or described as "hard stand" with elevated platforms to allow excrement to fall through to the hard stand floor below". Were they trying to describe what they saw at the emission testing shed, or were they under the influence like the Jamestown stock agent who spent the day of the sale at the Railway Pub, but still got Q fever? Elsewhere the EIS describes the upper floor as perforated steel. Meanwhile the Revision 3 of noise and vibration, of the EIS Appendices pg.16 **(Ref 39)**, states that the concrete floor will be level. This is contravening the Export Construction Standards which clearly state that "the goats should all be on mesh, and the drainage floor beneath the mesh should be of a minimum slope to facilitate washing and drainage and avoid large stagnant pools collecting on a flat concrete surface". It is impossible to accept that the abattoir designers had a real grasp of the construction standards, and they appear to be still dithering on choices in the EIS, and this cannot be regarded as appropriate conscientious health planning. Perhaps growing up on a dairy is educational after all.

The only "mitigation" of air quality mentioned for these areas is the single extraction fan with its stack 3m above the roof line, on HRA pg. 16, dot point 4. Rather than reduce the risk to Athol House, this will blast Q-F spores into the atmosphere; allow them to recycle through the PPV inlet on low lying morning fog days, before spreading in the direction of the prevailing wind over Athol and Blayney as the fog lifts. This inadequate attempt at risk mitigation, being clearly capable of enhancing the risk, suggests they are not up to the job of designing or running an abattoir based on a theoretical conjecture so close to a population centre. If there is NO risk, why does the report mention on HRA pg. 16 dor point 6, that "the regular wind direction is away from Athol Homestead. ….. does highlight that the risk of dust borne diseases will be further minimised in normal conditions", with Nelson's blind eye to the telescope looking at the signal of the wind vane; as will be shown in Section 4, this is a misleading FALSE claim.

Despite the very inadequate description of a clearly headed "Air Quality Mitigation and Management" section on pg.16 of the HRA, which will have the opposite effect, there is no actual PLAN apart from stating that it was a key consideration, and they are not having wastewater treatment ponds. There is a summary table of "Abattoir Mitigation Controls of Off Site Emission" on pg. 19 of the HRA, which under Operational Controls states that they will "identify work areas where employees may be at risk of inhaling dust, aerosols, or come into contact with disease causing organisms. Then design area to reduce risk of exposure." This is a strange statement for two reasons. Firstly they are meant to be looking at OFF Site emissions which are not supposed to be affecting the already immunised inside workers, unless they make them have lunch sitting on the roof or don't they know what emission means? Secondly, this statement actually admits that they have not done this plan yet, but are going to fix it with another futuristic PIP. This statement must have been

marked as a good point by someone, because it is also used, but in a different context in the column for operational controls of occupational exposure on pg. 156 of the EIS **(Ref 34)**, but remains a PIP, of a commendable unachievable future intent.

The statement on pg. 157 of the EIS **(Ref 34)**, "Blayney Community unlikely to come into direct contact with aerosols from infected livestock or animal tissues", is then followed by a clear statement that they have done something which is totally absent, i.e. "Onsite procedures to restrict escape of aerosols from abattoir building including animals unloaded inside building and held in enclosed holding pens prior to slaughter." This placement of an unproven conclusion, above a severely deficient PIP type plan to provide the means for the conclusion, set out in repetitious tables are a major feature of this EIS. Did the authors of the EIS have any appreciation of the severity and catastrophic effects that infection by Q fever can cause to a victim? The production of these mumbo jumbo tables and charts containing reminder notices (HRA pg 18), and PIPs demonstrate that they were not up to the task. At the risk of following SLR's repetitive style, they have ignored the unloading procedure itself, and arranged to continuously pump out all aerosols and dust produced after only a weekly cleaning, via a single unfiltered stack.

It is extremely difficult to ascertain what defining characteristics of this mitigation plan makes this proposed abattoir so safe that it can operate within less than the minimum, but proven inadequate regulation, 500m buffer exclusion zone in EPA 2013 regulations under the auspices of an unproven theoretical truism? Does not the massive outbreak in The Netherlands, uncontrolled for 4 years, obviously due to the proximity of close husbandry of infected goats to population centres, demonstrate the real difficulties faced in controlling aerosol spread of Q-F and suggest that: IT MIGHT BE TIME FOR THE EPA TO RECONSIDER BUFFER ZONES AND PROPERLY ENFORCE THEM.

9.3 Flawed Transport and Cleansing of Waste Bins or Skips

Apart from treated effluent pumping, it is proposed that all other goat products, i.e. skins, manure, rejected carcasses, offal, blood, bone trimmings, etc., be collected in open bins or skips, (with the noted exceptions of damp cake, which is lidded, and blood in a tanker), to be transported away by licensed contractors, see HRA pgs. 13 & 14. This decision to "pass on" highly contaminated material which is usually treated on site by all abattoirs that I have ever visited is very questionable. It has the potential to further expose the Blayney community to infective waste under the guise of keeping odours down by not rendering down onsite the fat, blood, bone, rejected carcasses and dry heating the product to sterile blood and bone powder, or sterilising the WWTP by-product of damp-cake, or paunch contents, and saves Metziya the trouble of building appropriate furnaces.

In the Holland outbreak, investigators were puzzled by the high number of satellite outbreaks in a geometrical pattern which were not related to wind patterns, and were greater than 20km from the infected farms, and seemed to occur 3 months after birthing. The cause of 40% of cases, ie 1,600 over 4 years was contractors taking the deep litter stall bedding of manure and straw from the stalls, 8-10 weeks after birthing, and spreading it on large farms before being ploughed in. It will mean passing high occupational hazards onto unskilled contractors who will have no idea of the public health dangers they could cause by unsafe handling and transport of this material, especially if they are briefed by Metziya; or will they pass this task onto TAFE? There are strict standards for construction, including bin lids, materials used, and sterilising methods in Australian Standards for Abattoir construction, too numerous to detail, and they are not mentioned in this EIS except for one mention of rendering at 125 deg C at another site. Any disease outbreak will be declared as nothing to do with Metziya, and the DEPARTMENTS OF AGRICULTURE AND PUBLIC HEALTH will be buying a major headache.

It is stated on pg. 18 section 3 of the HRA that the waste will be removed in open bins inside enclosed semitrailers suggesting they will be on rollers or lifted by forklifts onto the tray via roll up sides. It is only presumed that the skips can be loaded easily and safely

into them, and it can only be presumed that they are safely secured and no spillage can occur, No specifications are given, and it is of concern that all but damp-cake bins and skips are going to be specifically UNCOVERED, against both the abattoir construction and EPA 2013 regulations, allowing multiple opportunities for spillage, and floor (and footwear) contamination no longer protected by footwear walk-thru troughs at the abattoir site, which are hopefully located inside the abattoir offal loading bays.

These concerns apply to:

(a) Skips or bins used for DOA animals, and Raw Meat Waste;

(b) Skips or bins used for skins, elsewhere described as rigid trucks;

(c) Skips or bins used for paunch material by manure contractor;

(d) The proposed blood tanker (to where?);

(e) Skips or Bins used by the manure handling contractor; and

(f) Damp cake from the WWTP, by contractor to Landfill (where and how filled?).

There are at least 3 or 4 separate possible destinations. There are no stated plans for ongoing supervision of safe handling of these materials until sterilised. The mixing of paunch material, manure and damp cake with other compostable materials without sterilisation first will be a health hazard, shown in many papers worldwide too numerous to detail in the time allowed by the Planning Authority. Dry product Q-F spores are very resistant to heat, and need to be autoclaved for 15 mins at 131 deg C **(Ref 8c)**. Handling feral goat manure with the same reasonable precautions for local sheep manure (e.g. Baa Baa Brew), is fraught with hazard, and spreading of goat manure has caused outbreaks of Q-F. The dangers of using damp cake for landfill are horrendous, see EIS pg. 35, Table 8 **(Ref 40)**, and EIS pg. 42, para 2 **(Ref 37)**, even if transported and stored in covered containers. Prospects of mixing paunch products and inevitable weekly manure solids from the manure collection pits with other materials to enrich ANL compost at the large ANL plant near Blayney are appalling. One does wonder if SLR bothered to read the regularly updated CSL handbook on Q fever and assimilate all the possible ways that Q fever can be spread by disrespecting the danger of materials originating from tick infested animals or birthing sheep or goats. Who will clean the emptied skips, and where will this be done? If it is done on return to Metziya, then a separate emission extraction fan would be needed for that area. There is no plan for the site or control of emissions produced by this process in the EIS.

It is irksome for the objective reviewer that concepts mentioned in the EIS, and specific terms used, differ from those in the HRA; e.g. damp cake, and the holding yard wash down "manure collection pit", are not mentioned in the HRA. The latter sounds very like it will turn into a settling pond before separated supernatant fluid is pumped off to waste management, (in which case there would need to be two, so that one can be cleaned out when full of more solid sludge), to avoid a substantial weekly over load of the WWTP, which the proposed weekly wash down (being a clear breach of guidelines) will render even more necessary. Do the assessors want to have a foot in both camps? It is hoped that obfuscation and confusion were not the aim, but they are definitely the result.

Statements that they will keep hay and feed the goats inside the holding pens if there is a temporary shutdown, are a fine example of a PIP to reassure animal welfare officers. After the first feed of hay they will discover that they have a major problem because at least half the hay will be torn out of hay containers and trampled in the feeding frenzy; goats will not eat hay contaminated with urine or faeces, and the more powerful billies will always try to get on top of any round or square bale rack feeder to urinate and drive off others. The contaminated straw will produce a whole new category of waste which will block drains and

pipes in the WWTP system, and cause further stoppage, necessitating the immediate use of a proper settling system, and a management problem of wet hay mulch heavily infected by Q-F spores, which will need drying then sterilising or burning.

10. THE PREVAILING WIND AND AIR QUALITY REPORTS

It is thankful that the SLR wind direction assessors were not on the Endeavour, or we could all be French. The report on pg. 21 of the HRA utilises the Orange airport CalMet Wind Rose (HRA Appendix A) to make an incorrect and misleading deduction of the predominant annual wind direction when it starts by saying "for much of the time winds are likely to be blowing from the abattoir away from…..Blayney." But the Airport is 25 km from the abattoir, and situated on a plateau and although it shows 30% of the wind would be from the NE—SE quadrants blowing straight over Blayney (and very dangerous), it is not really applicable to Blayney which is closer to a large range of hills. However they left this time/space-wasting irrelevant review in the HRA, and moved on to see if they would have more luck using the abattoir site wind rose report, and they tried hard with success!

The site wind rose shows that some 46% of the annual wind from the site blows over Blayney. This point is totally obscured and directly contradicted in the report. The following paragraphs provide the details.

Using this abattoir site wind rose, see pg. 49 of revision 1 of the air quality assessment, in the EIS **(Ref 41)**, they make an even greater mistake than with the transit route advice from the EHEs. Unless you suspected them, you would assume via their clever use of "Illusion by Association", that these reports were all based on a CalMet report, and not subsequently misrepresented. They state "the predominant predicted winds at the site on annual basis are IN the ENE quadrant" (actually 15%), but the wind rose shows they are FROM it. The report **(Ref 42)** is then more accurately copied describing winds FROM the ENE, E and SE for summer and autumn with winter winds FROM W and SW. However it is unequivocally wrong for spring, with the wind rose showing 33% from NE-E vs 16% from W-SW, hardly the 50/50 "dominant" from each direction that they purport. The upshot is that FROM the same relevant quadrant of NE-SE, 46% of annual wind blows over Blayney, and is by far the most dominant, with ENE predominating at 15%. It should be simple, but they actually chose to omit this last fact from their conclusion on pg. 69 of the EIS **(Ref 43)** via an amazingly obtuse statement about dust effect during the construction period, and produced a table of receptor sensitivity for Athol that said:

(a) "The low (receptor) sensitivity has been deduced from…. The frequency of NE winds was low at 7%", choosing to not mention the adjacent ENE wind which was 15%, and blowing straight down the road in front of Athol's gate, straight over the antique wedding cars. The relevant winds that blow towards Athol are from the N, NNE and NE. Summing the wind rose values for these wind directions gives a value of 20%, not 7% as in the report (NNE was 6.5%, NE 8.5% and N 5%). This is a clear breach of the "not materially misleading" certificate by Nicole Armit appertaining to the fact that at least 20% of annual winds from the N--NE semi-quadrant blow straight over Athol House and its wedding reception gardens. Local topography causing wind mixing, and lateral horizontal spread of emissions under any inversion layer could make this higher. Three more breaches then follow:

(b) "The receptor property is located within 350m of the site boundary"; it is less than 100m!

(c) "The receptor is located more than 50m from the road used by construction vehicles"; the beautiful outside betrothal area is 38m away.

(d) They forgot about major earthworks to remodel the TURKEY nest dam just 50 m on the other side of the road, let's say 100m and not 350m away.

This false assessment is later used to show how safe Athol really is "because of regular wind directions". It is a case of who do they think they are kidding, when on HRA pg21, para 1, they say "for much of the time, winds are likely to be blowing from the abattoir away from .. Blayney, situated to the west..", a totally FALSE statement. MUCH means in a great quantity or to a great extent (Chambers 20th Cent Dict.), and Blayney is spread along a N-S line far wider than due W of the site, justifying inclusion of wind from NE—SE. It is the fault of the proponents that they place the abattoir so close to Blayney that the PREDOMINANT WINDS FROM THE NE--SE quadrant will affect some section of the town, for a **minimum of 46% of the time**. These DO NOT blow away from Athol, but across its front.

Furthermore how can we seriously subsequently believe anything in their air quality assessment modelling, for odour emitted from the proposed abattoir if it is based on false emission testing from a different type of OPEN VENTILATION sorting pen, with a lifted roof which they have not got in their plans?

Later in the HRA on pg. 16 dot point 6 of 3.1.9 Air Quality M&M, they turn to dust emission and really nail their careful deception to the flagpole by stating:

> "In addition the regular wind direction is away from Athol Homestead. While it is not a mitigating control factor in managing potential health risks from dust, it does highlight that the risk of dust borne diseases will be further minimised in normal conditions."

This statement is unambiguously false.

This is another example of the clear breach of the "not materially misleading" certificate shown earlier. It starts with a blatant lie, and is followed by illogical pretentious nonsense because:

- The most regular of all precise wind direction is towards Blayney followed by Athol Homestead;
- Why carry out wind planning if not to try and estimate both aerosol and odour dispersion?;
- How come prevailing wind is NOT a mitigating control factor in health risk from aerosols? This is errant nonsense; wind direction is a potent factor in aerosol emission, as clearly demonstrated in numerous papers, but none more so than the UK Midlands epidemic;
- If it is not a mitigating controlling factor, why then say that the FALSELY stated wind direction will further minimise potential health risks from dust?;
- What other valid steps have they taken before they presume to use the wind direction to do "further" minimisation of the risk of emission of dust borne diseases to Athol and the Tetlaw residences, other than empty out goats for 2 days before they are driven past them.

There are indeed dust minimisation steps within the plant that are designed to protect the workers (BUT NOT EMISSIONS) by daily washing of the mesh floor in the upper holding pens. However, daily scraping of the concrete floor is probably neutral in effect, and the planned extraction fan of aerosols to a chimney stack to protect the workers will greatly increase the risk of these emissions for nearby residences and Blayney.

These concocted contradictory wind and dust emission statements in the EIS show how right Professor Marmion was in stating "Vaccine prophylaxis is the only feasible protection against Q fever and its daunting acute and chronic outcomes". It warrants repetition as the Risk Mitigation procedures and precautions to prevent aerosol spread of the disease have been demonstrated to be unfeasible and completely beyond an honest assessment by the

SLR assessors as well as the grasp of the proponents of this proposed abattoir. This leaves only vaccination as the protecting mantle for Athol, followed by the Tetlaw residence and the whole of Blayney, but somehow I don't think the wedding guests and bridal parties at Athol Gardens will take kindly to the suggestions that they need to have 3 visits to the doctor and a useful good prophylactic vaccination, to be regarded as a warmup for the hoped for baby vaccinations to follow fruitful nuptials.

11. WASTE WATER MANAGEMENT

11.1 CVO Pipeline

Reliability on the proposed Cadia Chemical waste extraction plant effluent pipeline back to the mine is questionable. If the pipe line is already in place, its proposed construction must have surely had a full Environmental Health Impact Assessment justifying the safety of building it so close to a water catchment area, and begs the question of why wasn't it planned closer to the mine, if it was not an unacceptable hazard there? The EPA 2013 Abattoir regulations state on pg.7, that "EFFLUENT MUST NOT LEAVE THE SITE", so someone has ignored another EPA regulation. To further suggest that a pipeline from other possible sites cannot be added to the CVO pipeline, (if the EPA intends to allow this breach to continue), at the site of another pumping station along the course of its flow is very strange, though it might have to be a larger diameter, or require a booster pump. I suggest it is an argument of convenience, to try and produce every reason that the only place for an abattoir is opposite Athol and adjacent to their cold storage unit. Besides if we can't trust them to not try to cook an EHE report, and the CalMet Wind Rose report, how can we be expected to trust an unquoted and unreferenced engineering report.

11.2 The Turkey Nest Dam

The HRA pg.14 describing the development of this dam to be an emergency treated waste water collection pond, is the final example of a HIGH RISK and irresponsible health risk plan. If a breakdown in the WWTP purification process should occur while the pipeline pumps are being serviced or repaired, then the damn could be contaminated with Q fever spores. The 100m proximity of this potential open air sewer to the Athol and Tetlaw residences is unacceptable, and the true result is that in effect, the total complex of the proposed Blayney Abattoir is within 100m of Athol Homestead.

12. CONCLUSIONS

12.1 Lack of Due Diligence

Having been a part of the rural health and agricultural industry for over 30 years, I have little sympathy for Metziya and Sea Link for paying so much for a repetitive, inaccurate, ignorant, illogical, uninformed, irresponsible, deceptive and untruthful, and both poorly edited and presented EIS. Their production of sketchy PIPs and dodgy WIND flow data to circumvent important defects in their EIS is deplorable. In short it lacks due diligence.

12.2 Complexity & Paucity of Responsible Government Departments' Due Processes

I am stunned at the lack of knowledge of both onsite construction requirements and the deliberate evasion of well-known facts about the feral goat industry by Metziya and SLR. How can a proposal have run so far without some responsible government departments stepping in and pointing out the impossibility of the proposal, rather than giving them false hope and sending them back to the drawing board? Some form of pre-screening or gateway stage would surely have been better. The almost slavish addiction to "fair due processes for the proponents", has rendered difficult timely responses to the EIS from concerned residents, local Departments of Public Health, Departments of Environmental Health and Primary Industry who are rich with information and are vital to lowering the incidence of Q fever.

While the Western NSW Rangelands Catchment Authority has rightly bemoaned the growth of the Feral Goat Problem and commissioned large reports to try and find a way to solve the problem, the lack of a coordinated response to try and stop an ill-advised proposal from proceeding to create a large health problem is alarming. The very arguments of the proponents concerning the need caused by the demise of other rural abattoirs (which are known to be due to many reasons, e.g., Blayney, Orange and Broken Hill), should have raised alarms as to the need for the widest possible input for a new proposal, rather than restricting this input by the short time allowed for responses.

12.3 **Alternate Sites**

There appear to be too many and too difficult provisos obstructing the establishment of another better sited local abattoir in this area, which can still utilise the unique entrepreneurial prospects already established by SeaLink:

- Metziya/Sea Link claim that they cannot use another site for an abattoir because of Dept of Export requirements of minimal time between killing and slaughtering of goats and the need to start chilling, and there is no other capable power supply **(Ref 44)**. This is a fallacious argument because there is a capable power supply elsewhere, such as at the stock sale yard site. They cannot possibly use the same amount of power to freeze one day of killing as the whole Sea Link facility uses on one day, before transporting that product a short distance, (e.g., 10km from the CTLX saleyard), to the main freezing rooms. The potential for adequate power from the power supply point for the stock sale yard's massive well-lit complex should be independently assessed before the EIS denial of viability can be trusted.

(a) Wherever the site is, the abattoir must be prepared to do all the necessary tasks, AND not try and fob it off and spread the risk to other small unsuspecting local contractors over a much wider area. It is not essential to utilise the ability of Cadia mine to get rid of industrially safe but unpotable treated water; are these a prerequisite for Dubbo and Nyngan? But you will need an evaporation pond for treated effluent with far more room on the site than available at SeaLink, and ideally locate the abattoir in the vicinity of the stock sale yard complex, trying to manage 2 environmentally hazardous projects of stock yards and abattoir in the same area, already likely contaminated by feral goats, but 5 km from a town. However, given the multiple faults displayed in the EIS, it might be far better for government assistance to be directed to enlarge a goat abattoir already established at Nyngan, with MUCH shorter transport routes and obvious fewer town bypasses, than entrust this major project to Metziya. Didn't SLR ever consider the literature references to the potential use of Q fever as a biological warfare weapon as being indicative of the risks involved in the likely doubling of feral goat transport time on the roads?

(b) Wherever the abattoir for feral goats is established, it cannot occur or be viable for many years without considerable government assistance in the form of NSW Roads grants for towns on the transit routes to have adequate bypasses, with vaccination programs, and goat transport routes clearly marked with appropriate warnings for other traffic, (e.g. no bicycles or open cars), until enough degree of domestication and control of the feral goat industry is in force, to bring the relative danger of feral goat transport and commercial slaughter more in line with sheep. Having a major abattoir which is accessible to multiple stock transit routes is fundamental, but so is DPI and DPH assistance and advice based on a diligent appreciation of the difficulty of managing the trapping, taming and transport of one of the most intelligent of feral animals, endowed with the ability to follow the rainfall, and both seriously degrade and live off degraded lands.

13. SUMMING UP

I consider that the validity of the arguments that this is a worthwhile project to assist the effective use and control of NSW feral goats from their rangelands are irrefutable, but they must abide within equally valid health concerns and regulations, which this critique has demonstrated they do not meet. The absence of any evidence of study of properly researched articles into the aetiology and relevant risks of Q fever from feral goats by the HRA authors, seriously impedes any value being placed on their report. This proposal appears to be seriously hampered by the constraints rather than advantages of the proposed site; there are drainage problems, proximity issues, (odour and aerosols), wind flow problems and severe space restrictions. These prevent construction of appropriate unloading and sorting yards, feeding yards, and ring route truck washing, which they have tried to mitigate by a theoretical emission control model, protecting only themselves, relying heavily on PIPs to protect others, which are very unconvincing. In attempting to mitigate the odour problems inherent in onsite handling of all waste, so close to residences, Metziya has proposed spreading the danger of Q fever in multiple directions. The myriad maze of mistakes, questionable ethics and poor attitude to public health responsibility displayed in the EIS and its HRA raise serious doubts as to whether Metziya and its proponent team should ever be regarded as suitable candidates for this major venture. This should not preclude the SeaLink facility from being used in the same way, as it has been in the past, for cold storage, and also becoming a major transit route cold storage depot for goat and sheep meat products.

Dr J W Shepherd
20th May 2015

TABLE OF REFERENCES

1. Hawker JI, *et al.* National Centre for Biotechnology Information: "A Large Outbreak of Q fever in the WEST Midlands: Windborne spread into a metropolitan area", Birmingham 1989

   ABSTRACT

   A large outbreak of Q fever in the West Midlands: windborne spread into metropolitan area?

   Hawker JI, Ayres JG, Blair I, Evans Mr, Smith DL, Smith EG, Burge PS, Carpenter MJ, Caul EO, Coupland B, Desselberger U, Farrell ID, Saunders PJ, Wood MJ.

   The largest outbreak of the zoonotic disease fever recorded in the United Kingdom (UK) occurred in Birmingham in 1989. One hundred and forty-seven cases were identified, 125 of whom were males, and 130 of whom were between 16 and 64 years of age. Fewer cases of Asian ethnic origin were observed than expected ($p<0.01$), and more smokers ($p<0.005$). A case control study (26 cases and 52 matched controls) produced no evidence that direct contact with animals or animal products had caused the outbreak. The epidemic curve suggested a point source exposure in the week beginning 10 April. The home addresses of cases were clustered in a rectangle 11 miles (18.3km) north/south by 4 miles (6.7km) east/west, and attach rates became lower towards the north. Directly south of this area were farms engaged in outdoor lambing and calving, a potent source of coxiella spores. A retrospective computerised analysis showed that the geographical distribution of cases was associated with a source in this area ($p<0.00001$). On 11 April, unusual southerly gales of up to 78 mph (130 km/h) were recorded. The probable cause of the outbreak was windborne spread of coxiella spores from farmland to the conurbation.

1A Brooke RJ, Kretzschmar MEE, Mutters NT, Teunis PF. Human dose response relation for airborne exposure to *Coxiella burnetii*. *BMC Infectious Diseases* 2013, 13:488

2. Feral Goat Ecology and Management in the Western NSW Rangelands: A Review (pg. 33)

   Of significant concern to human health is the Q fever-causing bacterium *Coxiella burnetti*, which is widespread among unmanaged goats (seroprevalance of 52% in one study (Parkes et al. 1996a).

3. Q fever in Australian Wildlife Fact Sheet (pg. 2)

   A recent study conducted in south-west and central Western Australia found sera from 115 of 343 western grey kangaroos (*Macropus fuliginousu*), that were tested by ELISA to be positive for Q fever antibodies (Banazis et al 2010). A second study confirmed the role of western greyu kangaroos in Q fever epidemiology with 24.1% of 1017 serum samples testing positive by ELISA and 4.1% of 990 kangaroo faecal samples testing positive for *Coexilla burnetti* DNA by PCR (Potter et al 2011).

   A third study found a seroprevalence of 13% of 200 macropods sampled from southern Queensland, 30.4% of 92 macropods from northern Queensland, 3 of 180 macropods from Western Australia. When separated by species the greatest number of positive results were found in eastern grey kangaroos (*Macropus giganteus*), western grey kangaroos, common wallaroos (*Macropus robustus*) and black-striped wallabies (*Macropus dorsalis*) (Cooper et al 2012).

4. Banazis MJ, Bestall, AS, Reid SA, Fewwick SG. A survey of Western Australia sheep, cattle and kangaroos to determine the prevalence of *Coxiella burnetti.* Vet Microbiol. 2010 Jul 14;143(2-4):337-45

http://www.ncbi.nlm.nih.gov/pubmed/20036083

Abstract

The first qPCR assay, targeting the IS1111a element, identified 41 of 379 ruminant and 42 of 343 kangaroo DNA samples as positive for C. Burnetti DNA. The second qPCR, targeting the JB153-3 gene, identified nine C. Burnetti DNA-positive ruminant samples and six positive kangaroo samples. Sequence comparisons showed high degrees of identity with C. Burnetti.

5. Cooper A, Hedlefs R, McGowan M, Ketheesan N, Govan, B. Serological evidence of *Coxiella burnetti* infection in beef cattle in Queensland *Australian Veterinary Journal* – Volume 89, No 7, July 2011

Background Queensland has the highest incidence of Q fever in Australia. The aim of this study was to undertake a cross-sectional seroprevalence survey of *Coxiella burnetti*, the causative agent of Q fever, in beef cattle in Queensland.

Methods Serum samples were tested by ELISA for both phase II and phase I antigens of the organism using an Australian isolate. Blood samples were collected at an abattoir that processes beef cattle originating from northern and north-western Queensland, in addition to blood samples taken from beef cattle across Queensland as part of a second survey.

Results Seropositivity was 16.8% (95% confidence interval 16.7-16.8%)

Conclusion Evidence of *C. Burnetti* infection in beef cattle has public health implications for occupational exposure of primary producers and veterinarians and for the proximity of beef cattle properties to residential areas in regional Queensland. This study is the first known investigation of *C. burnetti* seroprevalence in beef cattle in Queensland and the first known use of an Australian *C. burnetti* isolate for screening using both phase II and phase I antigens.

6. GOA003 Mustering of Feral Goats Date of Issue 01/10/2004
Prepared by Trudy Sharp & Glen Saunders
NSW Department of Primary Industries

7. O'Connor BA[1], Tribe IG[2], Givney R A windy day in a sheep saleyard: an outbreak of Q fever in rural South Australia. Epidemiol Infect. 2015 Jan;143(2):391-8.

http://www.ncbi.nlm.nih.gov/pubmed/24814266

Summary: In December 2004, the Department of Human Services investigated an outbreak of Q fever in South Australia. A case-control study tested an association between attending a local saleyard and human illness. A case was defined as a person with clinical illness and evidence of seroconversion or high phase II IgM. Controls were selected from a database of community controls matched on sex, age group and postcode. Matched analysis of the first 15 cases with 45 controls indicated that contracting Q fever was associated with attending the saleyard on one particular day (adjusted odds ratio 15.3, 95% confidence interval 1.7-undefined, P=-0.014). Saleyard conditions were windy and conducive for airborne dispersal of contaminated particles. In total 25 cases were detected. Of these, 22 cases had attended a local saleyard on the same day. This outbreak suggests cases were probably infected by a single exposure at a saleyard from infected sheep and dust. The investigation resulted in an increase in the local uptake of Q fever vaccination and extension of the Australian national vaccination programme.

8. Gurtler L, *et al.* Coxiella *burnetti* Pathogenic agent of Q (Query) fever. *Transfus Med Hemother.* 2014 Feb; 41(1): 60–72. http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3949614/

   8(a) *Contact*: Human to human, animal to human, tick feces to human; direct and indirect contact with contaminated tissue, such as sheep placenta or goat manure. Tick feces can be highly infectious, since one gram of tick feces contains around 10(to the 9) Coxiella. After lamming, infectious Coxiella can be detected in the soil for up to 150 days. *C. burnetti* can be transmitted by exposure to contaminated straw, enclosures, or dust, but also by contact with contaminated laundry.

   8(b) The reservoir for renewed infestation of endemic areas after culling potentially infected livestock (goats and cattle) and sterilization of contaminated manure in the Netherlands was most probably rates of the *Rattus norvegicus* and *Rattus rattus* species, in which a prevalence of Coxiella DNA in the spleen of 3-5% and an antibody prevalence in the serum of 14-50% was found.

   8(c) 1.1.3 **Susceptibility to Inactivation and Stability under Environmental Conditions** *C. burnetti* SCV is very stable to environmental conditions and can remain infectious for many months (cf. Section 1.1.1.). Phase I and II forms are destroyed by 2% formaldehyde, however, infection-competent *C. burnetti* could be extracted after 4-5 months from formalin-fixed tissue. Additionally, replication-competent *C. burnetti* was clamied to be isolated from paraffin-treated tissue. Likewise, the sterilization process can be inefficient using gaseous formaldehyde. Effective inactivation of Coxiella is achieved by 1% phenol, 5% hydrogen peroxide, 5% chloroform, 0.5% hypochlorite, and exposure to heat at 65C and above for 1 h. Irradiation with 10kGy gamma rays inactivates Coxiella completely, while its antigenicity is preserved. Disinfection is possible using 70% ethanol for 20 min. Autoclaving at 131C for 15 mins inactivates *C. burnetti*; as well treatment using 5% formaldehyde for 5 min. The bacterium survives as spore stage (SLP) on wool of sheep for 7-10 months at 15-20C, for more than 1 month at 4C on fresh meat, and for more than 40 months in dry milk powder at room temperature.

   8(d) Dangers involved with blood collection and donors detailed on page 789.

9. van der Hoek W, Morroy G, Renders NH, Wever PC, Hermans MH, Leenders AC, Schneeberger PM. Epidemic Q fever in humans in the Netherlands *Adv Exp Med Biol.* 2012;984:329-64. http://www.ncbi.nlm.nih.gov/pubmed/22711640

   Abstract

   In 2005, Q fever was diagnosed on two dairy goat farms and 2 years later it emerged in the human population in the south of the Netherlands. From 2007 to 2010, more than 4,000 human cases were notified with an annual seasonal peak. The outbreaks in humans were mainly restricted to the south of the country in an area with intensive dairy goat farming. In the most affected areas, up to 15% of the population may have been infected. The epidemic resulted in a serious burden of disease, with a hospitalisation rate of 20% of notified cases and is expected to result in more cases of chronic Q fever among risk groups in the coming years. The most important risk factor for human Q fever is living close (<5 kms) to an infected dairy goat farm. Occupational exposure plays as much smaller role. In 2009 several veterinary control measures were implemented including mandatory vaccination of dairy goats and dairy sheep, improved hygiene measures, and culling of pregnant animals on infected farms. The introduction of these drastic veterinary measures has probably ended the Q fever outbreak, for which the Netherlands was ill-prepared.

10. One health approach to controlling a Q fever outbreak – relevant extracts

    In February 2013, an outbreak of Q fever was linked to an intensive goat and sheep dairy farm in Victoria. The farm employed approximately 100 staff plus contractors. There are ~5000 goats kept in three main herds of which ~3000 are milking at any one time. The

dairy sheep herd consists of ~2500 animals (~800 milkers). Goats are housed in open-sided sheds with deep straw bedding rather than at pasture; kidding occurs four times per year; kids are removed from their mothers soon after birth ('snatch reared') and hand fed. The owner reported that the number of abortions in the herd began to0 increase from 2004 to approximately double the usual rate (detailed records not kept).

A multi-disciplinary outbreak investigation and management team was formed with representation from public health, environment and animal health agencies; laboratory and university research sectors. We describe the findings of this One Health investigation.

Seventeen employees and one family member were confirmed with Q fever over a 28-month period. The most recent case had no direct contact with the farm suggesting transmission on fomites.

11. Feral Goat Ecology and Management in the Western NSW Rangelands: A Review

    Feral goats have an average of three pregnancies in a two-year period, with an average of 1.59 embryos per pregnancy (Parkes et al. 1996a) Offspring have an average birth weight of 2.6 kilograms. The gestation period is 150 days (Henzell 1993), and while the first birth is likely to be a single kid, twins and triplets are common thereafter.

12. http://gmrawiki.canr.msu.edu/index.php?title=Case_Study%3A_Q-Fever_in_Air

    Case Study: Q-Fever in Air

    Abstract

    Quantitative Microbial Risk Assessment was used to assess the risk of getting infected with the bacteria Coxiella burnetti when passing an infected farm by bicycle during the tourist season May-August in the Netherlands. The risk was estimated by calculating the exposure in the affected areas and using two different beta Poisson models for the healthy and the susceptible population. A safe distance of 20 km is recommended when passing infected farms by bicycle. Recommendations should be targeted towards the immunocompromised people since they are at much higher risk of contracting the disease.

13. Environmental Impact Statement
    Proposed Abattoir & Continued Operation of Blayney SeaLink - Page 41

    Biosecurity and Disease Management

    Disease Management

    There is a major economic incentive for Metziya to ensure small stock are kept disease free. As well as affecting animal health and welfare, disease can significantly reduce production efficiency. Metziya will place a high importance on maintaining health through operational hygiene and biosecurity measures such as strict inspections regimes both at source when harvested and upon arrival at the Project Site. These biosecurity measures, along with the high standards set by the NSW Food Authority and the Commonwealth DoA, will provide significant protection against disease entering the operation. All stock trucks will also be required to be washed down prior to leaving the site.

14. Environmental Impact Statement
    Proposed Abattoir & Continued Operation of Blayney SeaLink - Page 41

    Biosecurity and Disease Management

    Q fever

    Both the Australian Rickettsial Reference Laboratory and the NSW DPI Senior Veterinarian Office in Broken Hill were consulted in this regard as noted in **Table 13** (refer **Section 5.1**),

and both confirmed there is no increased risk of the spread of Q fever in transporting animals.

15. Environmental Impact Statement
Proposed Abattoir & Continued Operation of Blayney SeaLink - Page 41

Biosecurity and Disease Management

Q Fever

Both the Australian Rickettsial Reference Laboratory and the NSW DPI Senior Veterinarian Office in Broken Hill were consulted in this regard as noted in **Table 13** (refer **Section 5.1**), and both confirmed there is no increased risk of the spread of Q fever in transporting animals.

16. Pedler A. Goat abattoir blamed for Q fever cases. *North Queensland Register*, 27 June, 2007 http://www.northqueenslandregister.com.au/news/agriculture/cattle/general-news/goat-abbattoir-blamed-for-q-fever-cases/64036.aspx

Goat abattoir blamed for Q fever cases

A small cluster of Q fever cases has been reported in the Riverland town of Waikerie, prompting livestock handlers and abattoir workers to ensure they are vaccinated against the disease.

But, in a unique finding, four confirmed cases have been detected in a 1-kilometre radius of a goat abattoir, not related to meat or livestock workers as is generally the case.

Another three cases of the bacterial infection are still under investigation.

The SA Health Department says it is likely the infection is a result of inhalation of contaminated dust from the abattoir.

The department has been working jointly with the District Council of Loxton Waikerie, the Environmental Protection Authority, Primary Industries & Resources SA, and abattoir owner, Kerridale International Trading, to institute control measures, most importantly dust control and containment of livestock.

District Council of Loxton Waikerie director of environmental services, Neil Martinson, said there was some concern for others in the community, particularly those with contact with the abattoir, such as delivery persons.

Abattoir workers are vaccinated against the disease themselves, so they are generally immune to infection, which is carried by wild and domestic animals.

SOURCE: Extract from report in the *Stock Journal*, SA, April 26.

17. Austin, N. Pressure on abattoir to close The Advertiser July 30, 2007 http://www.adelaidenow.com.au/news/south-australia/pressure-on-abattoir-to-close/story-e6frea83-1111114073540

THE Riverland Q fever outbreak has claimed the life of a woman who lived near an abattoir accused of illegally slaughtering feral goats.

Pat Neideck, 76, of Waikerie, caught Q fever in June and the SA Health Department yesterday confirmed that her death was related to the airborne disease, which is associated with livestock.

The news came as pressure increased for the Waikerie abattoir operated by Kerridale International Trading to be closed.

Loxton Waikerie District Council said the abattoir had resumed processing goats illegally yesterday.

Mrs Neideck's son, Terry Neideck, said he contracted Q fever at the same time as his mother, but he had recovered.

"She had a heart bypass three years ago and this finished her liver off," he said.

The Neidecks lived about 300-400m from where the abattoir housed its goats before they were slaughtered, he said.

"The community wants the abattoir shut because of the risk," Mr Neideck said. "A couple of pregnant ladies live down the road and they're worried they will get it."

The bacterial disease is believed to have infected six people in the Waikerie community this year.

Council chief executive Peter Ackland said the abattoir was operating outside the development approval issued in 1997.

It had been given approval to slaughter a set amount of emus or ostriches, but was slaughtering goats instead.

About 60 abattoir workers were "stood down indefinitely" on June 29 over a council-issued ban on slaughtering goats.

Abattoir management did not respond to The Advertiser yesterday, but has told the ABC it does not accept responsibility.

18. Buckley B, Q fever epidemic in Victoria general practice. *Med J Aust.* 14, 1(12):593-5 http://www.ncbi.nlm.nih.gov/pubmed/7402155

Abstract

In 1979, 110 people associated with a local rural abattoir presented with an acute febrile illness thought to be Q fever. Of these, 70 were shown by serotesting to have had Q fever, and one was shown to have had leptospirosis alone. Four individuals had mixed infections of Q fever with another zoonotic infection, two with leptospirosis, and two with brucellosis. Only 44% of suspected cases of Q fever were shown to have complement-fixing antibodies to Q fever four weeks after the infection, but 74% had anti-bodies 12 weeks after infection. This epidemic of Q fever occurred soon after the abattoir began to slaughter feral goats for the first time; there is reason to believe that the epidemic may have been related to the introduction of this practice.

18A van der Hoek W, Hunink J, Vellema P, Droogers P. Q fever in The Netherlands: the role of local environmental conditions. *Int J Environ Health Res*. 2011 Dec; 21(6):441-51.

18B Schimmer B; Ter Schegget R; Wegdam M; Zuchner L; de Bruin A; Schneeberger PM; Veenstra T; Vellema P; van der Hoek W. The use of a geographic information system to identify a dairy goat farm as the most likely source of an urban Q-fever outbreak. *BMC Infectious Diseases*. 2010; 10:69.

18C Boden K, Brasche S, Straube E, Bischof W Specific risk factors for contracting Q fever: Lessons from the outbreak in Jena. *Int J Hygeine and Env Health* 2014:; 217: 110-115.

18D Hackert VH; van der Hoek W; Dukers-Muijrers N; de Bruin A; Al Dahouk S; Neubauer H; Bruggeman CA; Hoebe CJ. Q fever: single-point source outbreak with high attack rates and massive numbers of undetected infections across an entire region. *Clinical Infectious Diseases*. 2012; 55(12):1591-9.

18E Hermans T, et-al Land-Applied Goat Manure as a Source of Human Q-Fever in the Netherlands, 2006-2010. *PLoS ONE* 9(5): e96607. doi: 10.1371/journal.pone.0096607 Published May 2 2014 DOI: 10.1037/journal.pne.0096607 18F DeLay textbook on Biological warfare weapons, USA Chapter 10.

18G Specific risk factors for contracting Q-Fever: lessons from the outbreak Jena. Boden K, *et al. Int J Hyg Environ Health* 2014 Jan;217(1):110-5. Doi:1016/j.ijheh.2013.04.04. Epub 2015Apr

18H Porten, K, *et al.* A Super-spreading ewe infects hundreds with Q-Feverat a farmers market in Germany *BMC Infect Dis.* 2006 Oct 6;6:147 Porten k et-al

19. Hickey, I, *et al.* Post-infective and chronic fatigue syndromes precipitated by viral and non-viral pathogens: prospective cohort study *British Medical Journal*, doi:10.1136/bmj.38933.585764.AE (published 1 September 2006)

20. Environmental Impact Statement
Proposed Abattoir & Continued Operation of Blayney SeaLink pg. 42, Proposed Development

    Ticks may also deposit *C. burnetti* via faeces on the hair of goats. Goats infested by ticks are found north of Emerald in Queensland. The goats for the Project will be sourced from the tick free areas of western NSW and south western Queensland, eliminating another potential avenue for Q fever transmission. Further, also in relation to possible transmission through goat hair and dust, the holding yards at the proposed abattoir will be fully enclosed, reducing the risk of uncontrolled dust containing Q fever to be blown from the facility.

21. Barker SC, Walker, AR. Ticks of Australia. The species that infest domestic animals and humans *Zootaxa.* 2014 Jun 18;(3816):1-144. doi: 10.11646/zootaxa.3816.1.1

    Abstract

    The book *Australian Ticks* by F.H.S. Roberts (1970) is a land-mark in Australian tick biology. But it is time for a new and improved book on the ticks of Australia. The present book has identification guides and accounts of the biology and diseases associated with the 16 species of ticks that may feed on domestic animals and humans in Australia. These comprise five argasid (soft) ticks: *Argas persicus* (poultry tick), *Argas robertsi* (Robert's bird tick), *Ornithodoros capensis* (seabird soft tick), *O. gurneyi* (kangaroo soft tick), *Otobius megnini* (spinose ear tick); and 11 ixodid (hard) ticks, *Amblyomma triguttatum* (ornate kangaroo tick), *Bothriocroton auruginans* (wombat tick), *B. hydrosauri* (southern reptile tick), *Haemaphysalis bancrofti* (wallaby tick), *H. longicornis* (bush tick), *Ixodes cornuatus* (southern paralysis tick), *I. hirsti* (Hirst's marsupial tick), *I. holocyclus* (paralysis tick), *I. tasmani* (common marsupial tick), *Rhipicephalus* (*Boophilus*) *australis* (Australian cattle tick) and *R. sanguineus* (brown dog tick).

22. Phone call Dr G. Bailey – DPI Biosecurity Orange as quoted "Heavy Bush Tick infestations were found a few years ago in a shearing shed at Young".

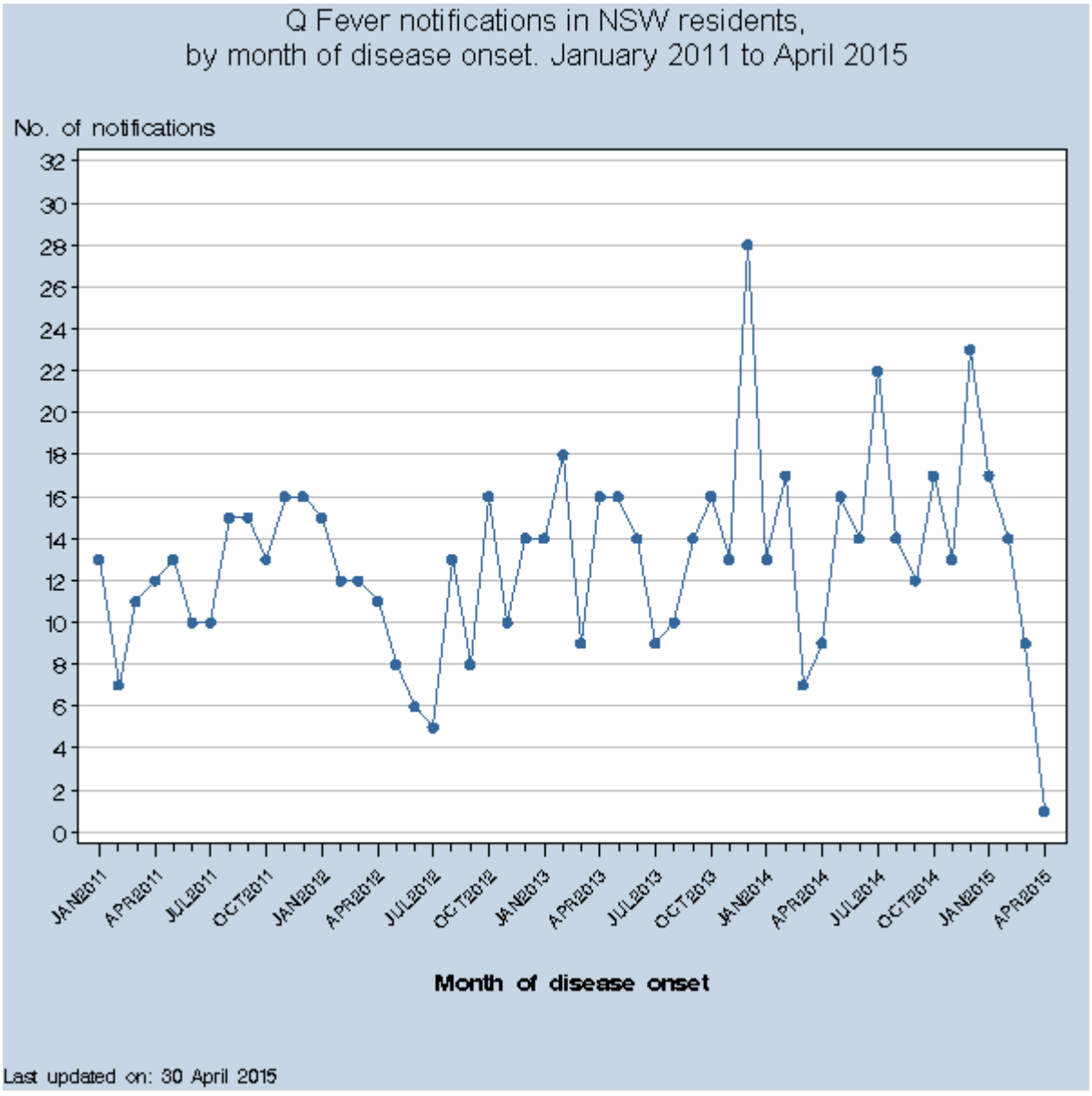
23. http://www.google.com.au/search?q=tick+distribution+australia+images

24. Dr Greg Curran – He informed that in his conversation with Ray Hornery he spoke only about reducing the risk by drying out, and not about risk from feral does. He was very specific that NO mention was made of ticks, and he would dispute what was said in the EIS. He wouldn't support any statement attributed to him in the EIS concerning tick transmission of

Q fever and gave as an example his recent advice to Dubbo DPH concerning the Q fever outbreak at Lightning Ridge possibly being caused by kangaroos coming into town contaminating pet dogs. The tick faeces from dogs being the cause of transmission to humans.

Full transcript during conversation per phone.

25.



Q fever notifications in NSW residents,
by month of disease onset. January 2011 to April 2015

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
2011	13	7	11	12	13	10	10	15	15	13	16	16	151
2012	15	12	12	11	8	6	5	13	8	16	10	14	130
2013	14	18	9	16	16	14	9	10	14	16	13	28	177

2014	13	17	7	9	16	14	22	14	12	17	13	23	177
2015	17	14	9	1	.	.	.	.	.	.	.	.	41

Last updated on: 30 April 2015.

26. Phone conversation: In western NSW, C. Hallinan, the Public Health Q fever Nurse advised there was a slow increase in Q fever notifications in Western NSW and she sees not many abattoir workers.

27. Victorian Department of Environment and Primary Industries. Zoonoses - Animal diseases that may also affect humans http://www.depi.vic.gov.au/agriculture-and-food/pests-diseases-and-weeds/animal-diseases/zoonoses/...

    Note Number: AG1032
    Bronwyn Murdoch, Attwood
    Updated: January 2007

    Fortunately the occurrence of zoonotic disease is uncommon and contact with zoonotic disease agents is preventable by taking a number of precautions including:

    - practising good personal hygiene;
    - providing prompt and effective first aid treatment to cuts and scratches;
    - using personal protective equipment eg overalls, gloves, boots, goggles, aprons;
    - cleaning and disinfecting work spaces and equipment;
    - vaccinating pets and livestock;
    - worming pets;
    - controlling rodents;
    - isolating and treating sick animals.

    It is important to realise that zoonoses may be contracted from both ill and apparently healthy animals.

28. CSL – A guide to Q fever and Q fever vaccination 2009

    Vaccine prophylaxis is the only feasible protection against airborne Q fever and its daunting acute and chronic outcomes.

29. Morrissey,H, Cotton,J and Ball,P 2014, Q-fever and Australian farmers: is the health system paying enough attention? A literature review, *Australian journal of pharmacy*, vol. 95, no. 1130, pp. 64-67.

    Q-fever and Australian farmers: is the health system paying enough attention?

    A literature review

    A comparative study undertaken by Princess Alexandra hospital, Queensland, investigated all Q-fever notifications from January 2000 to September 2006 (191 cases, including 12 older than 70 years of age mostly males), and found that 56% of cases were occupation-related versus 36% in the general community (8% were difficult to determine causality). Out of the 36% community cases, only 6.3% were in urban Brisbane.

    Massey *et al*, reported that of 75 notifications received in 2007 (January to December) in the Hunter, NSW: 61 were confirmed with acute Q-fever; 56 were interviewed by the study investigators and 42 out of the 56 were living on-farm or in a rural area; 36 were farmers,

farm managers or farm workers; and 31 had contact with new livestock, with 21 lost working days. Thirty eight had direct contact with animals (cattle, sheep and wild native animals) and animal tissues, and for had contact with contaminated dust.

30. CSL – A guide to Q fever and Q fever vaccination 2009

    Impact of Q fever

    Before the introduction of vaccination programmes, (first in the abattoirs in 1994 and later more widely in the rural community in 2001-2006) – there were around 500-800 Q fever cases annually across the country (Fig 1) and probably at least five times more unrecognised cases of clinical or subclinical infections.

31. Environmental Impact Statement, Main Report

    Proposed Abattoir & Continued Operation of Blayney SeaLink – Page 41

    With regards to transport, Meat and Livestock Australia state that 6.1 million sheep and 1.99 million goats were transported in 2012 to an abattoir in Australia for slaughter.

32. Personal communication with Professor Marmion December 2004.

33. Personal communication with Dr James Branley, Infectious Disease Specialist, Nepean Hospital - February 2015

34. Environment Impact Statement

    Proposed Abattoir & Continued Operation of Blayney SeaLink

    Impacts, Mitigation and Management – pg. 156 and pg. 157

    Table 53 Summary of Abattoir Mitigation Controls of Off Site Emissions and On Site Occupational Zoonotic Infections

    Factor - Occupational Zoonotic Infections –

    - Identify work areas where employees may be at risk of inhaling dust, aerosols, or come into contact with disease causing organisms. Then design are to reduce risk of exposure.

    Table 54 Zoonoses Agent of Transmission and Controls

    Abattoir – Blayney Community – Aerosols from infected livestock, urine, faeces or animal tissue

    - Onsite procedures to restrict escape of aerosols from abattoir building. Including animals unloaded inside building and held in enclosed holding pens prior to slaughter. Waste handling procedures.

35. Department of Primary Industries and Energy

    Australian Quarantine and Inspection Service
    Construction and Equipment Guidelines for Export Meat - Second Edition 1988

36. Australian Standard for the hygienic production and transportation of meat and meat products for human consumption. FRSC Technical Report No. 3, AS 4696:2007

37. Environment Impact Statement
Proposed Abattoir & Continued Operation of SeaLink Page 42, Proposed Development

The careful management of waste products generated by the abattoir at Blayney SeaLink is also an important aspect of minimising the risk of Q fever transmission. Bulk waste manure in a damp form from the holding yards floor is collected and stored in bins for disposal to a licensed facility. The surplus waste manure from the enclosed holding yards will be washed to a collection pit where material will be pumped to the wastewater treatment plant for processing. Waste solids in the form of a damp "cake" from the wastewater treatment process will be transported for burial to a licensed landfill site in a covered container. In addition, paunch material will be extracted and disposed of at a licensed facility.

38. Metziya Pty Limited

Air Quality Assessment

Proposed Small Stock Abattoir Development & Continual Operation of the Blayney SeaLink Cold Store Complex

Report Number 610.13744.00100-R1R1, 17 February 2015, Revision 1, Page 53

7.5.1. Holding Pens

The holding pens are all hardstand areas with platforms to elevate stock and allow excrement to fall to the hardstand area below.

39. Environmental Impact Statement

Metziya Pty Ltd

Proposed Small Stock Abattoir Development & Continued Operation of the Blayney SeaLink Cold Store Complex

Report Number 610.13744.00200-R1

16 February 2015 Revision 3, Page 16

3.4 Stock Holding Area

Animals will be mustered into a series of level undercover holding pens split over two levels of the abattoir building.

40. Environmental Impact Statement
Proposed Small Stock Abattoir Development & Continued Operation of the Blayney SeaLink

Page 35, Proposed Development

Bi product	**Classification**	**Destination**	**Approx. Annual quantity**	**Description**
Wastewater solids	General solid waste (putrescibles)	Landfill (offsite)	560 tonnes	

41.

Figure 12 CALMET Generated Wind Roses at the Project Site

Blayney Abattoir
(CALMET)
01/01/2010 - 31/12/2010
610.13744

42. Metziya Pty Ltd
Air Quality Assessment

Proposed Small Stock Abattoir Development & Continued Operation of the Blayney SeaLink Cold Store Complex
Report Number 610.13744.00100-R1R1
17 February 2015, Revision 1, Page 48

7.4 Meteorological Model Verification

7.4.1 Wind Speed and Direction

Figure 12 shows the annual and seasonal wind roses extracted (from the CALMET generated data) for the area. The predominant predicted wind directions at the Project Site on an annual basis are in the east north-east quadrant. East north-easterly winds dominate in summer and tend easterly to south-easterly in the autumn. The cooler months show a significant percentage of winds from the west and south-west. Dominant spring winds were predicted to originate from the east north-east and west south-west. The CALMET generated data showed an annual average wind speed of 3.0 m/s and calm conditions occurring approximately 3.0% of the time. These wind directions will be mainly influenced by the local topography.

43. Environmental Impact Statement
Proposed Abattoir & Continued Operation of the Blayney SeaLink
Impacts, Mitigation and Management Pages 68 and 69

Table 18 Nearest Receptor Sensitivities to Construction related Air Quality Impacts

Receptor	Land Use Sensitivity	Residual Sensitivity of the Receptor	Justification for Residual Sensitivity
Residential (R3 – Athol)	**High**	**Low**	The low sensitivity has been deduced from the following information: • The frequency of north-easterly winds occurring in the local area is low (7%). • The receptor property is located within 350 m of the site boundary but approximately 350 m from the potential construction activities. • The receptor is located more than 50 m from the route used by construction vehicles but is less than 500 m away from the site entrance. (Trackout activities should be considered negligible if receptor is located > 50 m from the road). • There is a row of poorly-established trees (natural shelters) along the border of the property and the abattoir. This row of trees will be fortified with additional plantings.

			• The potential impact will occur over the ten month construction period however not all activities will take place at the same time.

44. Environmental Impact Statement pg. 165
Proposed Abattoir & Continued Operation of Blayney SeaLink

An alternative location further remote from Blayney would also require major upgrades to the electricity network, unlike the Project Site at Blayney SeaLink which has a recently constructed dedicated 11 kv powerline, part funded by the NSW Government.

Therefore, the need to construct a chiller facility, undertake major electricity network upgrades, the need to find an alternative wastewater disposal option, and duplication of administration means that construction of the abattoir at a location other than that proposed at Blayney SeaLink would render the project unviable.

45. Queensland Health. Q fever Queensland Health guidelines for public health units. 2010. http://www.health.qld.gov.au/cdcg/index/qfever.asp

Attachment overleaf: Letter dated 11 May 2015 from Professor Andrew Lloyd, written to support Dr J Shepherd in his address to the Blayney Shire Council.

Andrew Lloyd *AM*
MD FRACP
Professor of Medicine
Consultant Infectious Diseases Physician
Provider No: 217602L

All Correspondence to Private Consulting Rooms:
Professorial Suite, Level 2, Campus Centre
Prince of Wales Hospital, Barker Street, Randwick, 2031
Appointments:
Tel: (02) 9382 2403
Fax: (02) 9382 2400

Department of Infectious Diseases
Prince of Wales Hospital *and*
Inflammation and Infection Research Centre
School of Medical Sciences
University of NSW, 2052

11 May 2015

Blayney Council

C/o Dr JW Shepherd
12 Mitchell Close
Millthorpe, 2798

Dear Councillors,

Re: Proposed establishment of a goat abattoir in close proximity to the town of Blayney

I am writing in support of the Critique on the Environment Health Risk Assessment SLR 2015 regarding the proposed establishment of an abattoir within one kilometre of the township of Blayney and its residents.

Please note in relation to this correspondence that I am an infectious diseases physician with more than 30 years experience in clinical practice. I am an academic in the Faculty of Medicine at the University of NSW where I teach medical undergraduates on infectious diseases topics. I am a member of the Department of Infectious Diseases at the Prince of Wales Hospital in Sydney. My clinical practice, which is based at Prince of Wales Hospital in Sydney includes the spectrum of infectious diseases. I have particular clinical expertise and research interest in relation to post-infective fatigue states. I led a research program which was funded by the Centers for Disease control, USA and National Health and Medical Research Council Australia investigating the biological basis of this condition, including following from Q fever in the large prospective cohort study known as the Dubbo Infection Outcomes Study. I was awarded the Australia Medal (AM) in 2002 for clinical services and research in the field of infectious diseases.

I have reviewed the Critique prepared by Dr Shepherd and would recommend it to you as both comprehensive and accurate. In brief, I would suggest that it would be foolhardy to allow placement of an abattoir within one kilometre of the township (I would suggest five kilometres also has residual risk if the prevailing winds are towards the town or any nearby residents; 20 kilometres is the so-called 'downwind attack' distance when Q fever is considered for its potentially utility as a biological weapon). Please note also, as outlined in the critique the risk pertains not only to the abattoir and its immediate environs, but also to the roads leading to/from the facility, and water sources near to the facility which themselves also confer discernible risk of spread of aerosolised pathogens.

Yours sincerely

Professor Andrew Lloyd

Andrew Lloyd AM

MD FRACP

Professor of Medicine
Consultant Infectious Diseases Physician
Provider No: 217602L

All Correspondence to Private Consulting Rooms:
Professorial Suite, Level 2, Campus Centre
Prince of Wales Hospital, Barker Street, Randwick, 2031
Appointments:
Tel: (02) 9382 2403
Fax: (02) 9382 2400

Department of Infectious Diseases
Prince of Wales Hospital *and*
Inflammation and Infection Research Centre
School of Medical Sciences
University of NSW, 2052

11 May 2015

Blayney Council

C/o Dr JW Shepherd
12 Mitchell Close
Millthorpe, 2798

Dear Councillors,

Re: Proposed establishment of a goat abattoir in close proximity to the town of Blayney

I am writing in support of the Critique on the Environment Health Risk Assessment SLR 2015 regarding the proposed establishment of an abattoir within one kilometre of the township of Blayney and its residents.

Please note in relation to this correspondence that I am an infectious diseases physician with more than 30 years experience in clinical practice. I am an academic in the Faculty of Medicine at the University of NSW where I teach medical undergraduates on infectious diseases topics. I am a member of the Department of Infectious Diseases at the Prince of Wales Hospital in Sydney. My clinical practice, which is based at Prince of Wales Hospital in Sydney includes the spectrum of infectious diseases. I have particular clinical expertise and research interest in relation to post-infective fatigue states. I led a research program which was funded by the Centers for Disease control, USA and National Health and Medical Research Council Australia investigating the biological basis of this condition, including following from Q fever in the large prospective cohort study known as the Dubbo Infection Outcomes Study. I was awarded the Australia Medal (AM) in 2002 for clinical services and research in the field of infectious diseases.

I have reviewed the Critique prepared by Dr Shepherd and would recommend it to you as both comprehensive and accurate. In brief, I would suggest that it would be foolhardy to allow placement of an abattoir within one kilometre of the township (I would suggest five kilometres also has residual risk if the prevailing winds are towards the town or any nearby residents; 20 kilometres is the so-called 'downwind attack' distance when Q fever is considered for its potentially utility as a biological weapon). Please note also, as outlined in the critique the risk pertains not only to the abattoir and its immediate environs, but also to the roads leading to/from the facility, and water sources near to the facility which themselves also confer discernible risk of spread of aerosolised pathogens.

Yours sincerely

Professor Andrew Lloyd

Attachment 3: Acoustic assessment review prepared by Renzo Tonin of Renzo Tonin and Associates

21 May 2015
TH388-01F02 Review of Noise Impact Assessment (r0)

Athol Gardens
Mr David Somervaille
athol1875@bigpond.com

From: Renzo Tonin [RTonin@renzotonin.com.au]

Proposed Small Stock Abattoir Development & Continued Operation of Cold Store Complex, Newbridge Road, Blayney NSW - Review of Noise Impact Assessment

1 Introduction

Renzo Tonin & Associates was engaged to undertake a review of the report "Proposed Small Stock Abattoir Development & Continued Operation of the Blayney SeaLink Cold Store Complex Newbridge Road, Blayney NSW Noise & Vibration Impact Assessment" revision 3, prepared by SLR Consulting Australia Pty Ltd (**SLR**) dated 16 February 2015 (**report**). The report is included as Appendix E of the Environmental Impact Statement prepared by SLR dated 10 March 2015.

2 Project description

Metziya Pty Limited is seeking project approval for the construction and operation of a small stock abattoir within the Blayney SeaLink Cold Store Complex, approximately one kilometre east of the township of Blayney in the Central West region of New South Wales. The abattoir will have the capacity to process up to 4,500 head per day for export, comprising primarily rangeland goats.

The proposed development is to be integrated with the current operations at the Blayney SeaLink Cold Store Complex which comprises six single room freezers, packing room, loading docks, a dry goods warehouse and an administration building.

The combined operation will generate 58 truck trips per day on Newbridge Road and through the township of Blayney comprising B-double, semi-trailer and rigid truck types. In addition there will be 362 motor vehicle trips per day.

The nearest sensitive receptor to the project site is our client's property, Athol Gardens which comprises a function centre and accommodation facilities. One of our client's concerns is in respect of noise, particularly noise impacts from the site and noise from trucks on Newbridge Road, especially at night.

3 Review of noise and vibration impact assessment report

This section details our findings and comments.

Section 2: Statutory Requirements states the EPA guidelines that are applicable.

Section 3: Project Description describes the project.

Section 4: Sensitive Receivers addresses the sensitive receptor locations.

Section 5: Assessment Procedures interprets the EPA guidelines as applied to the project.

Section 6: Existing Acoustical and Meteorological environment quantifies the existing noise levels.

Section 7: Effects of Meteorology reports the requirement for wind and temperature inversion influences on noise levels in accordance with the EPA's INP.

Section 8: Project Specific Noise Criteria sets out the appropriate noise criteria for INP assessment, sleep disturbance, road traffic and construction noise. It is noted that the "suburban receiver" category has been used. In our opinion the site would probably better classified as in between "suburban receiver" (because it is adjacent an industrial zoned area) and "rural receiver" (because of the low ambient noise levels). We would therefore adopt an average of the respective amenity levels for day/evening/night. However, this would not affect the conclusions of the report because the evening and night levels would remain unaltered and the day-time amenity level would be 2.5dB lower. This is of little consequence provided the predicted amenity noise levels from the project as reported are accurate.

Section 9: Operational Noise Impact Assessment describes the prediction of noise levels using an acoustic model and documents the sound power levels of plant, trucks and equipment on site.

The assumption that 5% of goats bleat is unsubstantiated. Noise measurements at other comparably sized holding pens should be provided to support this claim.

In Figure 4 Detail F, the building containing the pens appears to be closed on all sides except for the truck entry dock. The report states in section 3.4 that the holding pens are enclosed to the south and east but that the north and west sides are open for ventilation purposes. If the building façade incorporates openings or louvres, this is not depicted in Detail F. This may create a false sense of security to the reader. There is no detail provided of the anticipated sound level inside the building nor whether there will be acoustically absorbing material on the internal surfaces to control reverberation. The west opening obliquely faces the Athol Gardens property and therefore this noise source should be quantified in more detail.

Section 10: Road Traffic Noise Assessment. The traffic assessment is in error.

First, Newbridge Road is classified as a local road in Table 22, but then it is treated as a sub-arterial in Table 33. The noise criteria applicable to Newbridge Road should be LAeq1hr 55 day 50 night.

Secondly, the predicted noise level in Table 33 for the 80kph section of Newbridge road (opposite Athol Gardens property) is **47.8LAeq at 10m** for Scenario 1 in the daytime which is the existing situation. However, in Table 12 the measured LAeq is 59 at the side of the road (presumably at the fence which is about 6m from the nearest kerb line at the location marked as M2 in Figure 6). This is consistent with the graphs in Appendix B which show a similar level of 60 LAeq for the day at presumably the same location. This would translate to a façade level of approximately **60 LAeq at 10m** which can be then be compared with Table 33. The level of 60 and 47.8 are significantly different. Therefore **the model must be incorrect**.

It is stated in section 9.1.1 that all heavy vehicle activities (with the exception of livestock delivery) should occur between 6:30am and 7pm. It is important that the approval conditions reflect this commitment.

In respect of the hour 6-7am, this would be treated as a transition period between night-time and day-time for which the applicable noise criterion would be midway between day and night i.e. 52.5LAeq1hr. This is the applicable transition goal that would apply at Athol Gardens.

Our calculations show that at the Athol Gardens building, the existing LAeq1hr is 52.5dB for the period 6-7am which equals the transition criterion.

From this must be subtracted the vehicular traffic generated by the existing development in order to arrive at the appropriate base line without any operations at the site (including the existing).

Next, the total contribution from the site needs to be calculated (existing + future) and compared with the transition goal. It is not clear from Table 25, what is existing traffic and what is future traffic. Therefore, we are unable to calculate the existing traffic noise level at Athol Gardens without the site operating.

As a consequence, it is not possible to assess the increase in noise level produced by the existing + future traffic in order to compare it with the transition goal at Athol Gardens determined above.

It is therefore recommended that noise impacts from existing and future traffic at Athol (and at the other noise sensitive locations R2 and R4) should be investigated in more detail.

In respect of night-time truck noise on Newbridge Road and sleep disturbance, calculations should be provided to show the predicted noise levels at the Athol Gardens building.

There should also be a condition in the consent requiring drivers to not apply exhaust brakes when approaching the site. A plan of management should relate to instruct drivers accordingly.

Section 11: Construction Noise. According to Table 35, the construction noise level at Athol 49LAeq(15min) will exceed the noise criterion of 41dB(A) by 8dB. The SLR report states that nonetheless the Highly Noise Affected level of 75dB(A) is complied with. However, quoting a level of 75dB(A) as being appropriate for Athol Gardens is ridiculous. The background noise level at Athol Gardens is 31dB(A) during the day. A level of 75dB(A) exceeds the background noise level by 44dB(A) which is overwhelming by any standard. A level of 75dB(A) might be appropriate in a city setting where background noise levels are much higher than at Athol Gardens. Therefore, the 75dB(A) "Highly Noise Affected" goal in the EPA's guideline is inappropriate in this instance. This leaves the exceedance of 8dB which needs to be addressed by reasonable and feasible noise mitigation controls. This is not addressed in the SLR report.

We believe Table 40 has a typographical error. The 46 and 49 should be transposed.

Section 12: Vibration assessment. The project is over 300m from Athol and it is concluded that vibration is not an issue.

Section 13: Cumulative Impacts. This section of the report addresses cumulative impacts from the proposed Cadia Valley Operations Dewatering Facility.

Section 14: Noise Mitigation Recommendations. It is recommended that the EPA's Environmental Protection License or Council's conditions of consent incorporate appropriate clauses to ensure that a) there is a requirement for a comprehensive noise monitoring regime during construction and operation, b) there is a requirement that any identified noise exceedences shall be rectified, c) there is a control on the numbers of night-time truck movements and d) there is an appropriate noise complaint resolution mechanism.

4 Conclusion

It is concluded that there are serious issues which must be addressed by the proponent in respect of traffic noise and construction noise. If the development is approved, pertinent recommendations are made in this report in relation to compliance measures to be adopted in any conditions of consent.

Document control

Date	Revision history	Non-issued revision	Issued revision	Prepared	Instructed	Authorised
21/05/2015	Issued to client		0	RT	RT	RT

Important Disclaimer:

The work presented in this document was carried out in accordance with the Renzo Tonin & Associates Quality Assurance System, which is based on Australian Standard / NZS ISO 9001.

This document is issued subject to review and authorisation by the Team Leader noted by the initials printed in the last column above. If no initials appear, this document shall be considered as preliminary or draft only and no reliance shall be placed upon it other than for information to be verified later.

We have prepared this report in accordance with the usual care and thoroughness of the consulting profession, for the sole purpose described above and by reference to applicable standards, guidelines, procedures and practices at the date of issue of this report. For the reasons outlined above, however, no other warranty or guarantee, whether expressed or implied, is made as to the data, observations and findings expressed in this report, to the extent permitted by law.

The information contained herein is for the purpose of acoustics only. No claims are made and no liability is accepted in respect of design and construction issues falling outside of the specialist field of acoustics engineering including and not limited to structural integrity, fire rating, architectural buildability and fit-for-purpose, waterproofing and the like. Supplementary professional advice should be sought in respect of these issues.

Attachment 4: Odour assessment review prepared by Steve Hayes of the Odour Unit

THE ODOUR UNIT PTY LTD

Australian Technology Park
Locomotive Workshop
Suite 16012,
2 Locomotive St
Eveleigh NSW 2015

Phone: +61 2 9209 4420
Fax: +61 2 9209 4421
E: info@odourunit.com.au

ACN 091 165 061
ABN 53 091 165 061

22 May 2015

Mr. David Somervaille,
Athol Gardens,
84 Newbridge Road,
BLAYNEY, NSW 2799.

By email: athol1875@bigpond.com

Dear David,

Thank you for inviting The Odour Unit Pty. Ltd. (TOU) to perform a review of the odour components of the report prepared by SLR Consulting Australia Pty. Ltd. (SLR) entitled *Air Quality Assessment Proposed Small Stock Abattoir Development & Continued Operation of the Blayney SeaLink Cold Store Complex* (Radford, 2015). The objectives of our review are to provide our assessment of the report and give an overall opinion on the appropriateness of the buffer distance between the abattoir and your property.

Summary of this Review

The review focused on five main aspects of the investigation carried out by SLR and documented in the above referred report. These were:

- Buffer Distance Considerations;
- The Odour Impact Assessment Criterion used in the modelling component;
- The Odour Emission Inventory used in the modelling;
- The Odour Dispersion Modelling; and
- The Odour Management and Mitigation Practices.

Each of these important aspects is discussed below. Further supporting information can be provided, if required.

Buffer Distance

Regarding an appropriate buffer distance for the proposed abattoir, the SLR study refers to EPA Vic and NSW EPA recommended buffer distances, which both specify a distance of 500m. It should be noted that the core purpose of a buffer distance is to provide protection against unexpected odour releases not normally considered in dispersion modelling studies, which typically look at worst-case scenarios expected under normal operational conditions over the course of a modelled year.

The SLR study acknowledges that the buffer distance to the Athol Gardens dwelling is only 380m. This review has taken into account that the 'sensitive use area' for the property is the garden function area outside the building and closer

to the abattoir site, to the extent that the buffer distance will be 330m at best. I consider that the 500m buffer distance criterion should be preserved unless a strong and convincing case is presented for a reduction in this distance, and protection of nearby sensitive land uses is maintained through best available odour management practices. Based on the information provided in the SLR report this case has not been made.

It is noted that the Conclusions of the SLR Report fail to mention that the 500m buffer distance requirement was not met by the proposed development.

Figures 1, 2 and 3 are attached to this letter showing Athol Gardens activity areas and separation distances from the proposed site.

Odour Assessment Criterion

The SLR modelling has used a calculated 3.85 ou criterion in its modelling, based on a potential affected population of 154 people. This population would correspond to a small village or a semi-rural development. In adopting a 'one-size-fits all' benchmark for every receptor the assessment has failed to take into account that people attending a wedding or other organised functions at Athol Gardens would have an expectation for the highest air and amenity. The risk of negative impact to the business from an abattoir next door is therefore very high as a result. For this reason I consider that the most stringent NSW EPA 2 ou criterion should apply to the Athol Gardens property.

Odour Emissions Inventory

The SLR modelling is based on limited odour emission data collected from a simulated goat pen, supported by other data from cattle holding pens. Given the failure of the proposal to meet the buffer distance criterion it is my view that the odour emission data lacks the required level of rigor and relevance.

The main emission data was collected from a sample pen of 300 goats that had been there for only one hour, using sampling and airflow techniques that are highly questionable and somewhat academic in approach. Corrections to the resulting data made to allow for longer stocking times and lower airflows require justification. The resultant results show unrealistically low odour concentrations at 'goat level' in the pen (16 to 29 ou), and extremely low cross-flow air velocities through the pen (0.1 m/s). This has resulted in measured specific animal emission rates (0.78 $ou.m^3/s/goat$) only marginally higher than that accepted for use in the poultry industry. I consider that actual odour emission rates from the proposed holding pens could be 5-10 times greater than that used in the modelling. I recommend that any future odour emission data should be collected in a more realistic way, using an integrated cross-flow airflow measurement and odour sampling method, on a goat holding pen where the animals have been held for time periods similar to that proposed.

Odour Dispersion Modelling

This review has not examined in detail the modelling methods but has no reason to doubt its efficacy, other than the above concerns about the odour emissions input data.

There is however one comment in the report that requires correction. Section 7.7.3 Odour states that:
Maximum concentrations of odour generally tend to occur when meteorological conditions are least favourable for dispersion. These times of day are usually characterised by low winds speeds (i.e. calm conditions) and a stable atmosphere, which typically occur during the evenings and overnight. These times are likely to coincide with the least amount of outdoor activity at the reception venue.

This statement is inaccurate as typical wedding events start with a ceremony in the gardens at 4pm, drinks and canapés in the garden to 6.30pm and dinner reception in an open garden terrace room to midnight.

Odour Management and Mitigation

The proposed ventilation rate for the enclosed Holding Pens is one complete air exchange every four hours. Based on the experience of The Odour Unit, this air exchange rate will not result in negative pressure conditions inside the enclosed pen area, resulting in the distinct possibility of ground level fugitive odour emissions from the building. At this low ventilation rate there may also be elevated temperatures inside the pen area and unpleasant conditions for workers and goats. Under such conditions there is always a tendency for doors to be opened and kept open, again releasing fugitive odours at near ground level. These fugitive emissions are common and often problematical, and have not been factored into the modelling projections.

Other odour management and mitigation measures require more detailed explanation, in view of the proximity to the Athol Gardens site. These include the frequency and method of pen cleaning, paunch removal and other odorous waste handling, and the ultimate fate of these waste materials on the site.

Conclusions

Based on my review of the SLR Odour Impact Assessment component of the Air Quality Assessment report it is my opinion that the proposed development fails, by a considerable distance, to meet the basic requirements for a buffer/separation distance of 500m between the abattoir and the adjacent Athol Gardens facility.

On this basis alone any subsequent technical assessment of likely odour impacts from the development should have been carried out with due rigor and technical robustness. I have major concerns about the accuracy and relevance of the odour emission input data to the odour dispersion model used in the assessment, to the extent that I consider the projections of ambient odour level at the Athol Gardens site to be unrealistically low. I also suggest that the Odour Assessment

Criterion used in the study (3.85 ou) should be lowered to 2 ou for the site, to allow for the highly sensitive nature of the weddings and events that take place.

Finally additional information on proposed odour management and mitigation measures should be provided by the Applicant, given the highly sensitive use at Athol Gardens.

Please contact me if you need to discuss this matter further.

Yours sincerely
The Odour Unit Pty Ltd

Terry Schulz
Managing Director.

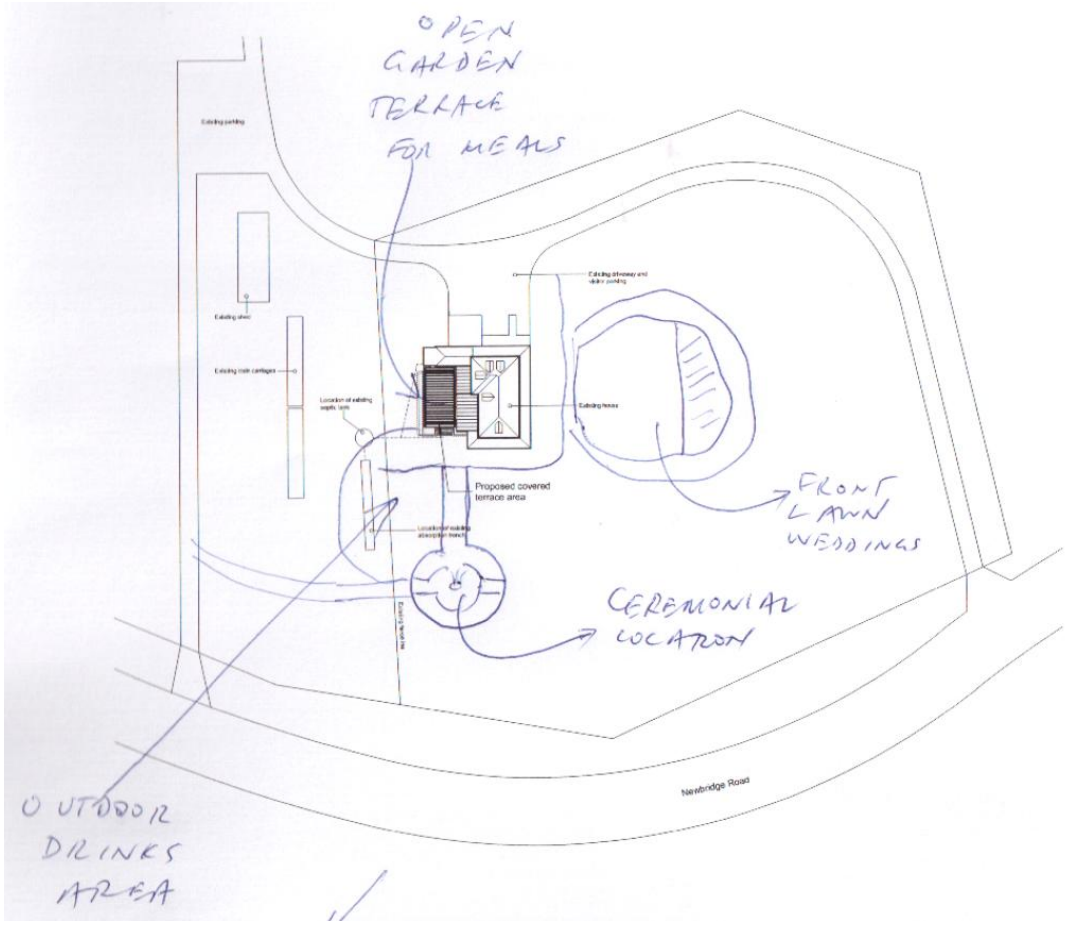


Figure 1 – Athol Gardens Activity Areas

Figure 2 - Athol Gardens activity (sensitive land use) boundary

Figure 3 – Separation distance