Planning Proposal to amend Great Lakes Local Environmental Plan 2014 to:

Amend the Great Lakes Local Environmental Plan 2014 over a site at Bulahdelah to facilitate development of a Highway Service Centre: The proposed amendments will involve the following changes to the Local Environmental Plan:

- Amend Schedule 1 of the LEP to permit a highway service centre on suitable areas of the land, and excision of the highway service centre by subdivision.
- Update the Additional Uses Map to identify the site.

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Version	Purpose of Document	Author	Date
1	Submission to Council	GMS	16 October 2017
2	Update following Council Review and revised EIA	GMS	31 July 2018
3	Update following Council resolution on 31/10/18	GMS	5 November 2018
4	Review of version 3 by Council	RP	27 November 2018

INTRODUCTION

The planning proposal has been prepared in accordance with Section 55 of the *Environmental Planning and Assessment Act 1979* and the relevant Department of Planning and Environment (Department) Guidelines, including *A Guide to Preparing Local Environmental Plans* and *A Guide to Preparing Planning Proposals.*

The planning proposal seeks to amend Great Lakes Local Environmental Plan (LEP) 2014 to:

1. Amend Schedule 1 to include a highway service centre on the land, and excision of the highway service centre by subdivision;
2. Amend the Additional Permitted Uses map to identify the site consistent with Schedule 1.

The planning proposal has been prepared to facilitate development of land for the purposes of a highway service centre on the subject land. The highway service centre is one component of an overall development for the land, which includes residential land release and tourism accommodation.

The proposed development will allow for the capture of passing highway trade, creating jobs and economic benefits to the Bulahdelah township. The bypass of the highway in 2013 removed a significant volume of traffic which previously passed through the town and was extensively serviced by businesses within the town. The proposal seeks to recapture some of this trade, with economic benefits to the local area.

Careful consideration has also been given to the impacts of such a proposal to existing business in Bulahdelah which provides services to passing trade, albeit on a reduced basis as a result of the highway bypass of the town.

This planning proposal outlines the intended effect of, and justification for, the proposed amendments to Great Lakes LEP 2014.

The proclamation of 12 May 2016 ratified the merger of the local government areas of Gloucester Shire, Greater Taree and Great Lakes into MidCoast Council. Great Lakes LEP 2014 still stands as a separate environmental planning instrument.

Author

This draft Planning Proposal has been prepared by Gavin Maberly-Smith. Gavin is the Town Planning Director for Coastplan Group Pty Ltd. Gavin is a qualified Town Planner holding a Bachelor of Applied Science (Environmental Health) and a Graduate Diploma of Urban and Regional Planning. Gavin has over 20 years experience as a Town Planner within local government and private enterprise.

The Proposal

The proposed development has not been developed in any significant manner. It is stressed that the final development form and function has not been finalised and is subject to a significant design process. The highway service centre will include:

- Car fuelling forecourt
- Truck fuelling forecourt

- Service station building
- Truckers' dining room
- Fast food restaurants (x3)
- Children's play area
- Car parking area
- Truck parking area
- Access from Recovery Road

It should be noted that the concept will be further developed to include a local tourist information/promotions area where local events/festivals, etc., can be promoted and where truck parking availability will be maximised.

Access to the site is provided from Recovery Road which will be able to serve both northbound and southbound traffic. Northbound traffic will enter at either the southern interchange with Bulahdelah, or at the off ramp just before the northern interchange. Vehicles then drive through to the northern interchange before entering the site from the interchange and Recovery Road. Access for southbound traffic is a much simpler affair with access from the highway via the off ramp to the interchange, and onto Recovery Road and into the site.

The highway service centre will be the first stage of development of the land, with the other residential and tourist components occurring in the near future after completion of the first stage.

Site History

The subject site, along with the adjoining Lot 3 DP 1120817, is part of a site which is the subject of several consents in the past as follows:

- DA 427/2007 – consent for a commercial brewery and associated restaurant/bar, etc. Granted on 11 October 2007.
- DA 779/2007 – consent for a 3 lot subdivision creating the subject lots and golf course land. Granted on 24 September 2007.
- DA 799/2014 – consent for a Tourist Facility and Community Title Subdivision of Serviced Apartments. Granted on 13 March 2008 and declared operative on 28 August 2008. The Council acknowledged that the development was physically commenced on 28 August 2013 by correspondence dated 4 November 2013.
- DA 17/2009 – consent for strata/stratum subdivision of the Tourist Facility. Granted on 31 October 2008.
- DA 485/2010 – Consent for McDonald's fast food restaurant on the subject land. Granted on 12 April 2011.

The land was also recently the subject of a planning proposal which created the current residential and environmental conservation zones over the subject lands. The LEP amendment resulting from the planning proposal was published on 17 August 2012 and provided for residential village growth in conjunction with the other uses approved on the land. The planning proposal included environmental investigations for the land which identified areas of high environmental significance and resulted in the placement of those areas in a conservation zoning.

The Subject Site

The subject site is located at the northern end of the Bulahdelah township, adjacent to the northern interchange for the Bulahdelah township with The Pacific Highway and the Bulahdelah Golf Course.

The location of the proposed Highway Service Centre is located in a small (approximately 2.6 hectares) area at the northern end of the site, adjacent to the frontage to the road off the interchange, known as Recovery Road. The area is generally cleared grassland adjacent to the existing dwelling on the land.

The following details of the site are provided:

Title Description	Lot 100 DP 1139447
Property Address	9844 The Pacific Highway, Bulahdelah
Site Area	59.7 hectares
Zoning – Great Lakes LEP 2014	R2 Low Density Residential RU2 Rural Landscape E2 Environmental Conservation
Site Ownership	Lindfield Property Nominee Pty Limited & NGP Investments (No 2) Pty Limited

The location of Bulahdelah in a regional context is shown below in Figure 1.

Figure 1 – Location of Site (Regional) **[Source:** LPMA SIX Maps**]**

The site and surrounding area is depicted in Figures 2, 3 and 4 on the following pages.

Land Use

The subject land currently contains a dwelling (vacant) and rural infrastructure from previous hobby farming activities on the land. The current use of the land is best described as rural living.

As discussed, parts of the land have been zoned R2 – Low Density Residential and there is a current consent for a tourist facility on the land. Residential subdivision will occur and the tourist facility will be developed as part of the overall masterplan for the land, which will provide a new residential area for Bulahdelah as well as further employment-generating activity. There are also E2 – Environmental Conservation areas over the site which will be retained and managed for conservation purposes as part of the future site development. An area of the land near the highway interchange is zoned RU2 where there has been a previous consent for a McDonalds Restaurant.

The adjoining land to the south and east is comprised of Bulahdelah State Forest. Land to the north contains the Bulahdelah Golf Course, whilst land to the east contains the Pacific Highway Bulahdelah Bypass and interchange. The village area of Bulahdelah exists on the opposite side of the highway bypass corridor.

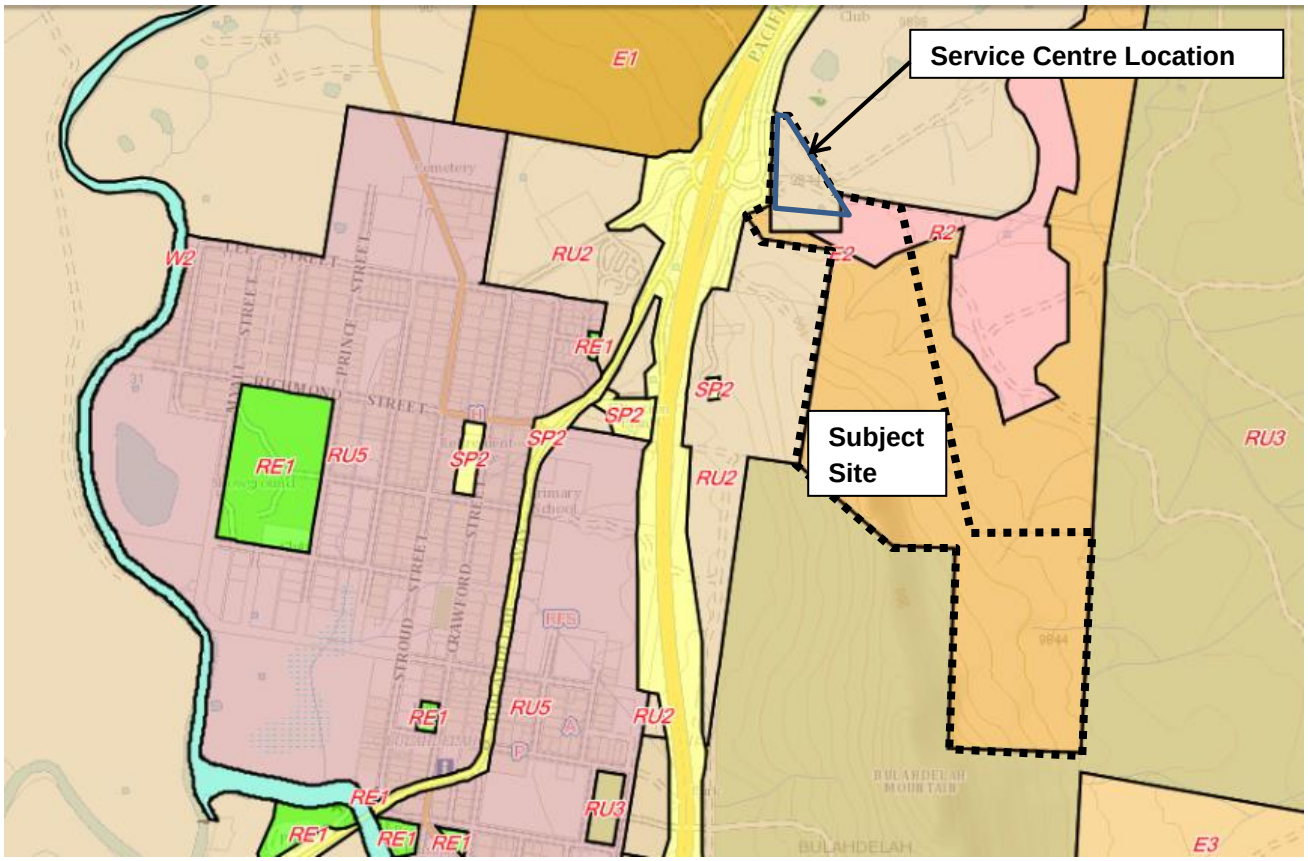


Figure 2 - Site Locality Plan (Zoning) **[Source: MCC Exponare]**

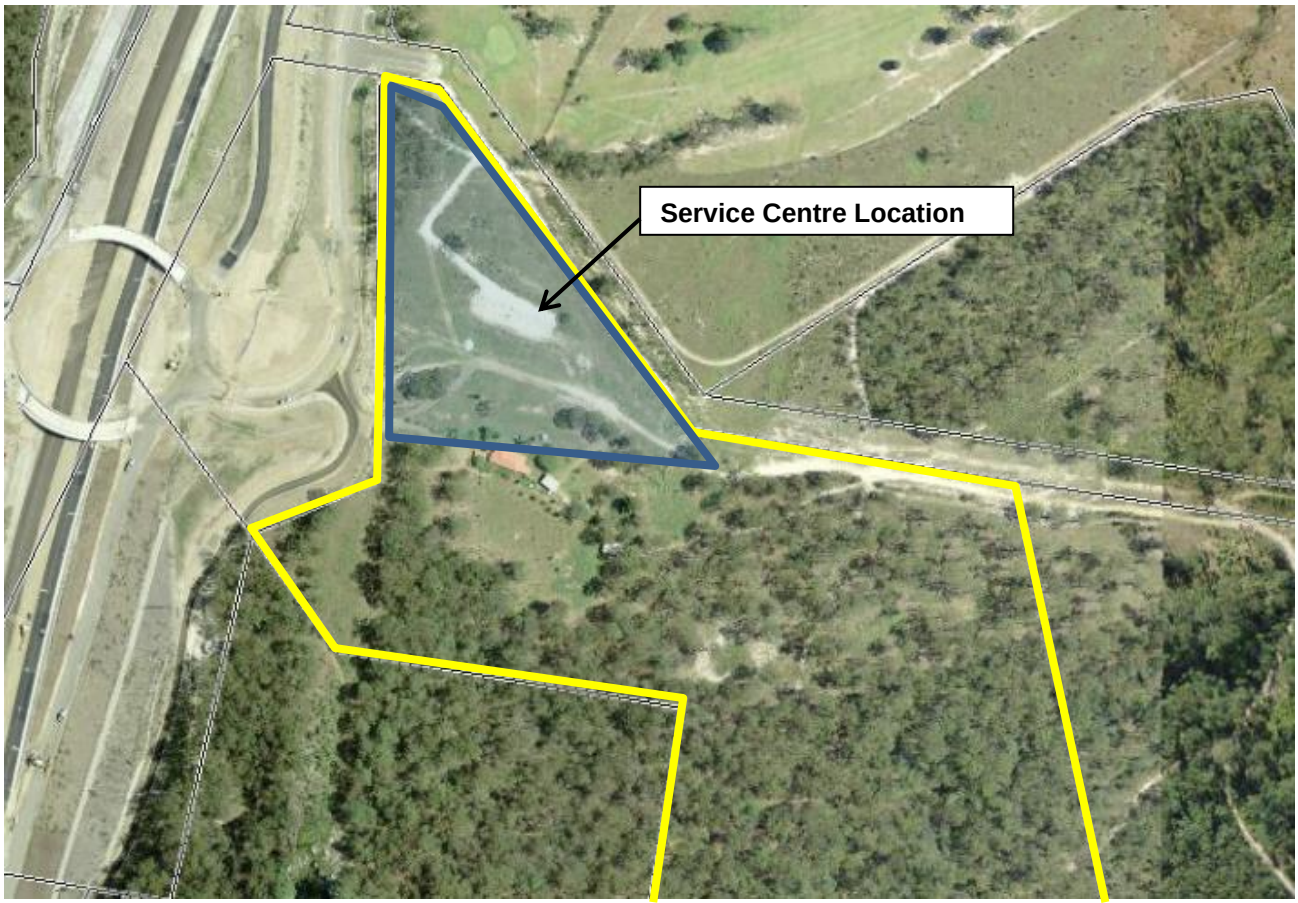


Figure 3 - Site Locality Plan (Satellite) **[Source: LPMA SIX Maps]**

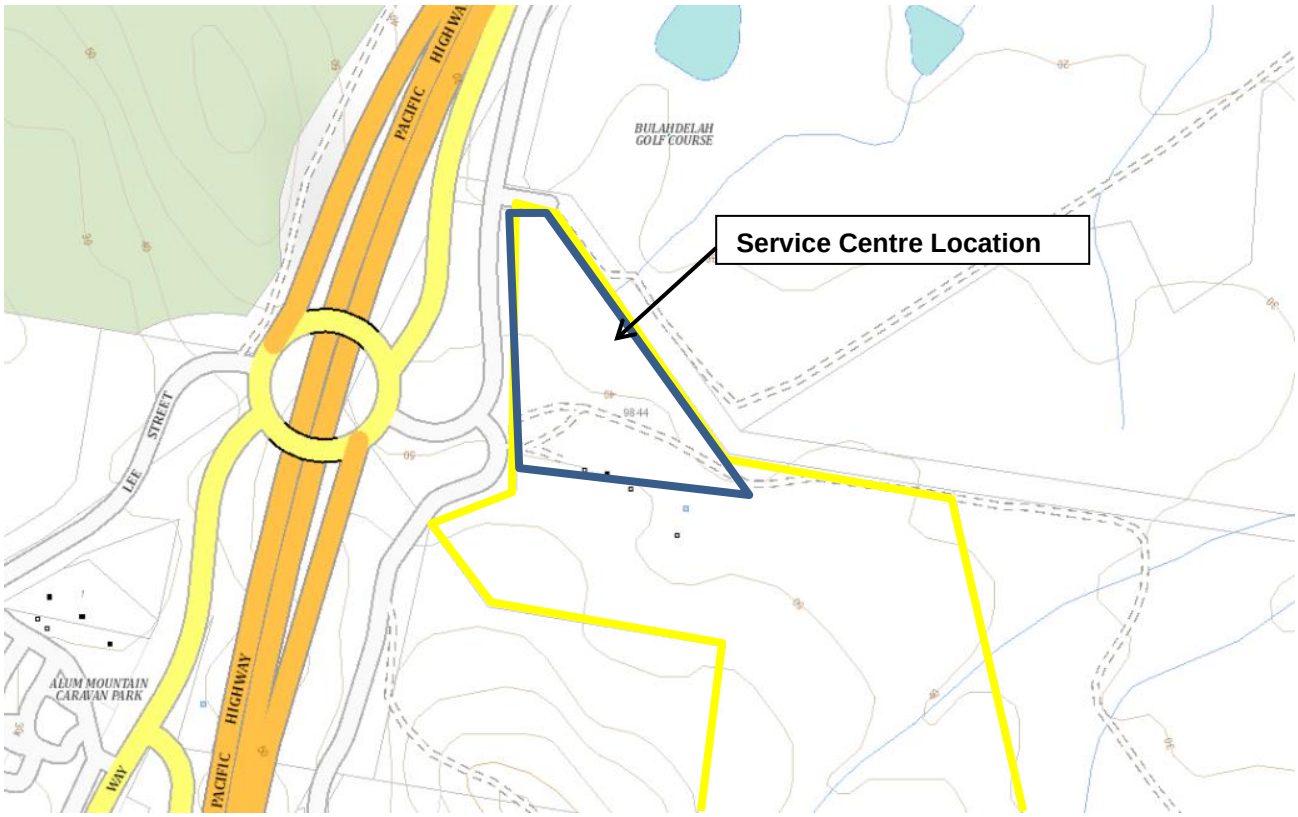


Figure 4 - Site Locality Plan (Topographic) **[Source: LPMA SIX Maps]**

Site Analysis

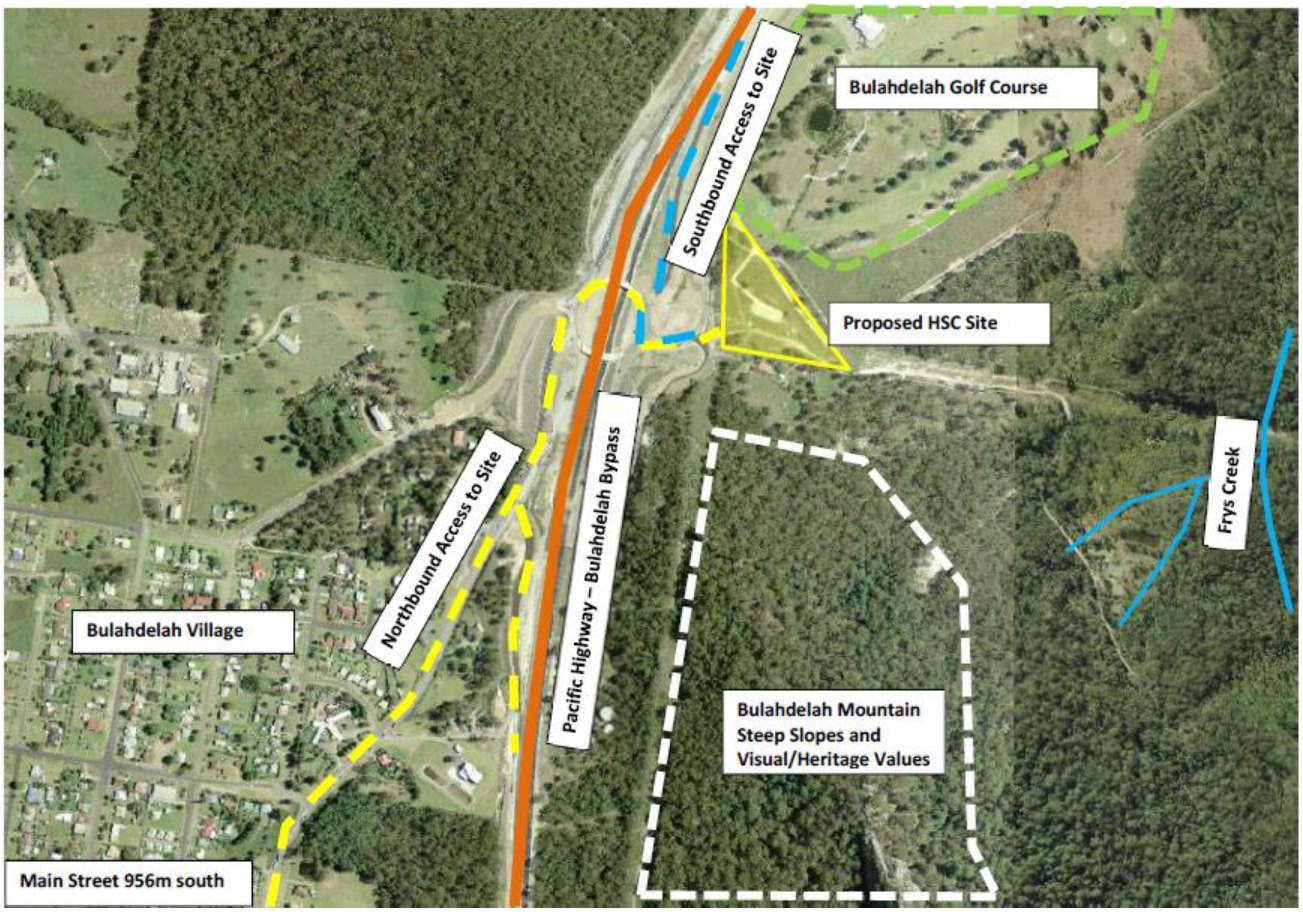


Figure 5 – Site Analysis Plan

Topography

The proposed site of the highway service centre has medium grades of 5-10^0 sloping down from south to north towards the golf course. There are natural watercourses located within the site, and the site currently drains via overland flow and a series of constructed drains within the adjoining golf course. Frys Creek is the main watercourse in the area and exists approximately 700 metres east of the proposed site.

Bulahdelah Mountain is the most significant topographic feature in the area and is comprised of a large rock outcrop and steep slopes of 30-45°. The site is located at the northern foot slopes of the mountain, approximately 700 metres from the main peaks and approximately 200 metres below the top of the mountain.

Geology

Geotechnical investigation for the Bulahdelah Bypass identified that the subject site was located over areas of Koolanock Sandstone over sedimentary slopes and would be suitable for such development. Contamination investigations were undertaken over the land as part of the planning proposal to rezone the land for residential purposes. This assessment did not reveal any significant contamination over the subject site, with contamination limited to a small area near an existing machinery shed that could be easily remediated.

Vegetation

Vegetation over the land has been the subject of significant investigation, including vegetation mapping undertaken as part of the previous planning proposal for the land. The vegetation assessments did not reveal any native vegetation communities over the land where the service centre is proposed and identified the lands as cleared land. The current condition of vegetation on the land is shown in the following photos.

Heritage

The subject site is located within the Bulahdelah Mountain Heritage Conservation Area. A cultural heritage assessment was carried out examining both European and Aboriginal cultural heritage. The assessment determined that there were no items of European heritage identified over the subject

land, and only identified one item of Aboriginal heritage significance, being a scar tree located near the banks of Frys Creek which is approximately 700 metres east of the proposed site.

Access

Access to the site is available from the roadway known as Recovery Road. There are two access points constructed off Recovery Road. The site is adjacent to the northern interchange of the Bulahdelah bypass, which is comprised of a large roundabout connecting highway slip lanes with local roads. Access to and from the site is available via this interchange to The Pacific Highway (both north and south), as well as to the adjacent Bulahdelah village. Resource Road also provides access to the Bulahdelah Golf Course, Bulahdelah Waste Management Centre, Bulahdelah Sewage Treatment Plant and Bulahdelah Water Treatment Plant (south of interchange and site).

Services

There are currently high voltage electricity transmission lines passing through the site, as well as underground telecommunication services. The existing dwelling on the land is connected to electricity and telecommunication supply.

There is a 250 mm water main passing the property, which supplies the Bulahdelah Golf Club. This service would need to be augmented (at the reservoir) for this supply to service future development of the land.

The dwelling on the land is not currently connected to sewer. Future development on the land would need to be provided with a new pump station and rising main to collect sewage wastes.

PART 1 - OBJECTIVES OR INTENDED OUTCOMES

(s.55(2)(a) A statement of the objectives or intended outcomes of the proposed instrument)

The objective of the planning proposal is to amend the Great Lakes Local Environmental Plan 2014 to facilitate the development of land over part of Lot 100 DP 1139447, 9844 The Pacific Highway, Bulahdelah to allow the development of a highway service centre on the land which is adjacent to the northern interchange with the Bulahdelah township.

The objective of the highway service centre is to support economic activity in Bulahdelah and allow Bulahdelah to function more effectively as a highway service town. The highway service centre's purpose would be to provide services and facilities to people travelling on The Pacific Highway.

The area of the site on which the service centre is proposed is zoned RU2 – Rural Landscape, with a small area of R2 – Low Density Residential also affected. The use of land as a highway service centre is not permissible in either zone.

A highway service centre is defined in Great Lakes Local Environmental Plan 2014 as follows

> ***highway service centre*** *means a building or place used to provide refreshments and vehicle services to highway users. It may include any one or more of the following:*
> *(a) a restaurant or cafe,*
>
> *(b) take away food and drink premises,*

(c) service stations and facilities for emergency vehicle towing and repairs,

(d) parking for vehicles,

(e) rest areas and public amenities.

The planning proposal involves identifying a highway service centre as an additional use over parts of the land within the Local Environmental Plan. The allowance for the additional use will also allow subdivision of the land to excise the highway service centre from the remainder of the land once it has been carried out on the land.

PART 2 - EXPLANATION OF PROVISIONS

(s.55(2)(b) An explanation of the provisions that are to be included in the proposed instrument)

The planning proposal seeks to amend the Great Lakes Local Environmental Plan 2014 as it affects Lot 100 DP 1139447, 9844 The Pacific Highway, Bulahdelah in the following manner:

- Amend Schedule 1 of the LEP to identify a highway service centre as permissible on the subject land. The amendment will be undertaken with the insertion of the following at the end of the existing schedule:

  8 Use of certain land at 9844 Pacific Highway Bulahdelah
  (1) This clause applies to land identified as "8" on the Additional Permitted Uses Map.

  (2) Development for the purpose of a highway service centre is permitted with development consent.

  (3) Regardless of other provisions of this plan, the land identified may be subdivided to excise the highway service centre from the parent lot once development for the service centre has been carried out on the land.

- Update the Additional Permitted Uses Map within the Great Lakes LEP 2014 (introducing Tile 8A) to identify part of the site (Lot 100 DP 1139447) as land to which Schedule 1 applies. The following sketch indicates the manner in which it is proposed to amend the map.

Figure 6 – Proposed amendment to Additional Uses Map

It is apparent, from review of the concept against the development standards applying to the land, that the proposal could generally be undertaken in a manner complying with the current development standards applying to the land, including floor space ratio and building height. There may be some minor variation of building height required for signage at the site frontage; however this may be able to be resolved using the provisions of clause 4.6 of the LEP where appropriate.

PART 3 - JUSTIFICATION

(s.55(2)(c) Justification for the objectives or intended outcomes and the process for their implementation)

Section A – Need for the Planning Proposal

3.A.1 Is the Planning Proposal a result of any strategic study or report?

The planning proposal does not result from any strategic study or report by Council.

A key issue for the proposal and the justification of the planning proposal is the economic benefits and impacts of a highway service centre at this location. The objective of the proposal is to capture trade from traffic on the bypass which does not otherwise enter the township for such services. The Council has a policy to recognise Bulahdelah as a highway service town to maintain jobs and economic growth from servicing highway traffic. Since the construction of the bypass, however, there has been a significant decline in highway-related trade for the town.

The proponent undertook a public consultation program with the Bulahdelah community and received a strong indication of support for a highway service centre at the site. The creation of a highway service centre will enable the recapture of some of the passing trade; however there is a concern as to the impact of the centre on the current trade into Bulahdelah.

To examine this issue, the proponent commissioned an Economic Impact Assessment (EIA) of the proposal, along with traffic counts and surveys, to examine potential impacts of the service centre to the local economy and to other businesses in Bulahdelah.

A copy of the EIA is provided in Appendix A. The assessment has concluded that:

> *The proposed highway service centre at 9844 Pacific Highway, Bulahdelah would be expected to contribute a number of economic benefits in the immediate Bulahdelah locality, and for the wider local government area. Economic impacts, both positive and negative, which are likely to be brought about by the development are summarised as follows:*
>
> 1. *Total capital investment associated with the proposed development is estimated to be in the order of $6 million*
> 2. *Construction on site would provide 14 direct job years and 24 indirect (or flow-on) job years in the wider Australian economy*
> 3. *A further 60 jobs would be provided in retail operations*
> 4. *Total indirect or flow-on jobs in the wider economy (in supplies, transport, retail, etc) following the development of the Subject Site would amount to a further 48 jobs*
> 5. *Development will contribute $2.2 million per annum to Gross Regional Product every year following full development*
> 6. *Any negative impacts which have been felt by Bulahdelah's fuel retailers and other businesses have been primarily a direct result of the opening of the Bulahdelah Bypass*
> 7. *These impacts will diminish over time as traffic along the Pacific Highway is forecast to increase by 34% over the period 2016 to 2028*

8. *Now that the bypass is sunk the opportunity exists for Bulahdelah to capture a share of highway expenditure that would otherwise bypass the town, moving on*

The EIA also references the survey of visitors and residents in the main street of Bulahdelah to examine the likely effects of a highway service centre on trade in those areas. The discussion in regard to this matter in the EIA is as follows:

> *Measuring the impact on main-street businesses (Stroud Street) is vexed. Whilst there may be some competition between the fast food restaurants on the HSC and main-street, the offer is quite different. The HSC will have national franchised fast food stores such as McDonalds, KFC, Sub-way, etc whereas the café restaurants and the hotel on Stroud Street are local run businesses offering alternative menus and in some cases with alcoholic beverages and/or BYO. The majority of competition to the proposed HSC will be from competing HSCs to the north and south along the Highway.*
>
> *To better inform the likely impacts KJA Engaging Solutions completed a survey of 132 shoppers (45% local residents and 55% visitors) in Stroud Street over 2 days (Sunday and Monday) in June 2017[3]. The survey results suggest the impacts are likely to be mixed. 78% believed the HSC would not have had an impact on their decision to stop on the main street, 4% were unsure and 18% said they would have stopped at the HSC instead. A majority of respondents stated that they prefer the country town and main street ambience, restaurants and retail services. This suggests the impacts on the main street would be low. There may even be some beneficial impact on Stroud Street businesses by travellers making spontaneous decisions to visit the main-street after exiting the highway at the service centre. Interestingly visitors overwhelmingly stated that they would still visit the main street even though they were pessimistic about the impacts of the HSC on the main street. Residents were much more likely to indicate the HSC would have a positive impact on the town as it would provide more local jobs.*
>
> *To gain a better appreciation of possible impacts during the holiday period the intercept survey by KJA Engaging Solutions was repeated over 30 to 31 March 2018 being the Easter Weekend. A total of 131 surveys were completed. Of those surveyed 87% (114) indicated that they were visiting Bulahdelah. This was a much higher proportion of respondents than the June 2017 survey (54% visitors) due to a much higher level of tourism over the Easter weekend. 18% (20) of visitors were staying overnight in Bulahdelah.*
>
> *The results of this second survey suggest similar findings to the initial visitor survey undertaken in July 2017, with 70.23% of respondents indicating that the proposed HSC would not have impacted their decision to visit the Bulahdelah township on the day of the survey, had it been operational already. Further, 52.67% of respondents indicated that they would be either 'unlikely' or 'very unlikely' to visit the proposed HSC instead of the Bulahdelah township more generally.*

The results of the EIA and survey show that the provision of the highway service centre will have positive economic impacts for Bulahdelah and minimal negative effects upon trade in the main street.

3.A.2 Is the Planning Proposal the best means of achieving the objectives or intended outcomes, or is there a better way?

The planning proposal seeks to add an additional permitted use in Schedule 1 of Great Lakes LEP 2014.

Consistent with the provisions in the Section 9.1 Direction 6.3 (Site Specific Provisions), alternative approaches to allow the development on the land would involve:

- Altering the zone applying to the land so that the use becomes permissible in that zone. This would involve altering the development control table within the RU2 zone to allow *highway service centre*s with consent.
- Rezoning the land to a zone which allows *highway service centres* to be developed with consent.

It is not considered that either of these options would be suitable. Allowing highway service centres in all RU2 zones would permit the uncontrolled development of centres in numerous locations where Council seeks to discourage a multitude of such developments.

The only zone within Great Lakes LEP 2014 which would permit a *highway service centre* with consent is the RU5 - Village zone. Whilst it has not been examined in detail, the subject land, which is primarily residential given its proximity to the highway, may not be suitable for a Village zoning. The planning proposal for the land is targeted to achieving a specific form of development which has been identified as having economic benefits, and development should be limited to that use. A Village zoning over the land would allow a vast range of residential, commercial and industrial uses, and is not considered suitable in this instance.

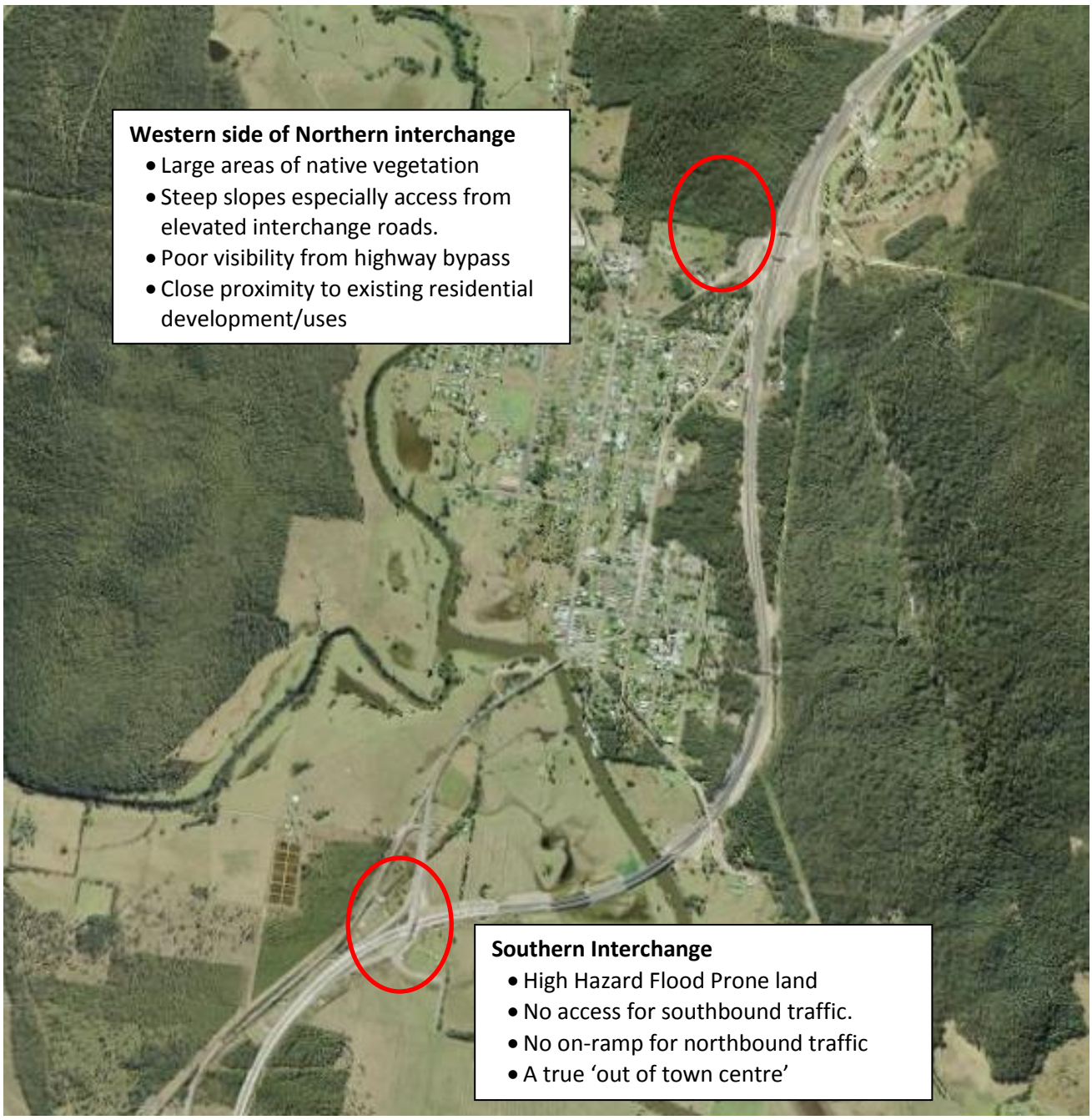
After consideration of all relevant issues, it is considered that the identification of an additional permitted use on the land is the most appropriate way to achieve the objective of the planning proposal.

It is proposed that subdivision for excision of the land is undertaken by being identified in Schedule to ensure that the excision of land only occurs when a highway service centre is developed on the land.

The alternative method would be to create a different lot size control over the land, such as a one hectare development standard. This has not been the preferred approach, however, as it would allow subdivision to occur regardless of whether a highway service centre existed on the land. The excision of the land should not be permitted to occur unless the highway service centre is carried out on the land, and the inclusion of subdivision in Schedule 1 is the preferred approach.

There are no alternate sites which are considered suitable for a highway service centre in the area. Alternate sites would need to be close to an interchange and have suitable physical characteristics. Other locations are not suitable for the following reasons:

- Areas near the southern interchange are subject to flood impacts, making them unsuitable sites.
- Other locations at the northern interchange and closer to town are not suitable sites due to:
    - Limited site area availability.
    - Native vegetation coverage.
    - Suitability and ease of access.
    - Proximity to existing residential development.



Alternate HSC Locations for Bulahdelah

Section B – Relationship to Strategic Planning Framework

3.B.1 Is the Planning Proposal consistent with the objectives and actions contained within the applicable regional or sub-regional strategy (including the Sydney Metropolitan Strategy and exhibited draft strategies)?

Hunter Regional Plan

The planning proposal is considered to be consistent with the Hunter Regional Plan which recognises the need for encouraging compact settlements, revitalisation of communities, support for tourism, and improving housing choice and sustainability. The directions and actions of the Plan are discussed in greater detail within Appendix G. The following goals and directions are relevant to the proposal:

Goal 1 – The leading regional economy in Australia

Direction 4 – Enhance inter-regional linkages to support economic growth
A highway service centre at the site will service both passenger and heavy vehicle transport on The Pacific Highway, enhancing this inter-regional linkage between Sydney, The Hunter and the North Coast.

Direction 6 – Grow the economy of MidCoast and Port Stephens
The proposal provides for economic growth of the township of Bulahdelah in the MidCoast local government area by capturing passing highway trade on The Pacific Highway and creating jobs and capital growth for the town.

Direction 9 – Grow tourism in the region
The Pacific Highway is the major transport link between Sydney, the Hunter and the tourism regions in the MidCoast local government area. The site is located in a very strategic location, being three hours drive from Sydney, and is in a supreme location for a *Stop, Revive, Survive* during busy tourist seasons. The facility will also promote local tourism and events with a local promotions area dedicated within the facility for local events and activities to be promoted.

Goal 3 – Thriving communities

Direction 19 – Identify and protect the region's heritage
The site is located within the Bulahdelah Mountain heritage conservation area. As discussed in this planning proposal, previous investigations of the land have not revealed any items of European or Aboriginal heritage over the area of the land proposed for the highway service centre. The proposal is also located well away from the Bulahdelah Mountain heritage conservation area and would not impact on the identified heritage values for the area.

Direction 20 – Revitalise existing communities
Bulahdelah traditionally has a long history of highway service functions and was well known for this function before the bypass occurred. The proposal will assist in restoring this traditional function for the township and will return jobs and economic activity to the community which were lost when the bypass occurred. The Economic Impact Assessment provided in Appendix A has shown the positive impacts the proposal would have for the township.

Roads and Maritime Services Highway Service Centres along The Pacific Highway – Policy Review

This policy review was prepared by the RMS in May 2014 and was the basis for the new Section 9.1 direction. The policy reviews the function of and need for highway service centres along The Pacific Highway.

The policy review provides detailed discussion of the need for highway service centres as follows:

> *Traditionally, the Pacific Highway has passed through many north coast towns and villages which have provided services such as fuel and food to travellers. As each centre is bypassed by the new highway, travellers need to either leave the highway to obtain services in the bypassed centres, or make use of highway service centres. Provision of highway service centres encourages drivers to "stop, revive, survive" and take breaks when they recognise the warning signs of fatigue, which contributes significantly to travel safety and efficiency. It is therefore very important that highway service centres are provided at conveniently spaced centres along the route.*
>
> *The sites selected for highway service centres are all close to bypassed towns so the economic benefits can remain with those centres.*

The policy review identifies proposed locations for highway service centres, and has provided a map showing preferred locations. A copy of the map is provided in Figure 7.

A comparison of the distances between service centres indicates that there is generally a gap in travelling time of approximately 25-50 minutes between highway service centres; whereas the map shows the travel time between the Tomago and Taree service centres as one hour and 10 minutes, which is an evident large gap between service centres. A highway service centre at Bulahdelah would be consistent with the regular intervals along the highway. The location of Bulahdelah is recognised as a key stopping location for highway traffic, being located 2.5 - 3 hours from Sydney and an excellent location for travellers to *stop, revive, survive*.

The location of the proposed centre would meet the expressed need within the policy review for highway service centres along the highway.

The policy review was subject to a consultation process which included discussion of Bulahdelah and its potential for the location of a service centre. Consistent with the Great Lakes Strategy, the document states that it seeks to reinforce Bulahdelah as a highway service town. The experience for Bulahdelah, however, has been a significant loss of highway trade as a result of the bypass and the community has now expressed a desire for a highway service centre for the town to recapture highway trade. The Economic Impact Assessment for the proposal shows that the impact of the proposed service centre on the existing main street businesses would be only minor, but that it would deliver significant jobs and economic benefits to the town.

The treatment for the area between Taree and Tomago within the policy review has been significantly influenced by the policy/strategy of the former Great Lakes Council in regard to highway service centres. As discussed, that local policy was prepared before the Bulahdelah bypass occurred and the RMS Policy was finalised only a short time after its completion. Given the information available now following completion of the bypass, and the impacts of the highway bypass on Bulahdelah, there is merit in reviewing if the policy approach remains suitable, especially given that the bypass has resulted in significant loss of highway trade for the town.

Figure 7 – RMS HSC Policy Review [Stopping Locations – planned)

3.B.2 Is the Planning Proposal consistent with the local council's Community Strategic Plan, or other local strategic plan?

MidCoast Community Strategic Plan 2030

The planning proposal is linked with the values of the strategy as follows:

We Value … Our Unique, Diverse and Culturally Rich Communities

- *Strengthen the capacity of our young people to participate and thrive in community life.*
- *Empower our towns and villages to retain and celebrate their unique identity, while working towards a shared community vision.*
- *Support communities to identify priorities for ensuring they are sustainable into the future.*

We Value … Our Thriving and Growing Economy

- *Provide an environment to grow and strengthen local businesses, and attract new business.*
- *Advocate and identify opportunities for increased workforce participation.*
- *Ensure strategies and processes recognise, maintain and support sustainable economic growth.*

In particular, the planning proposal facilitates the creation of employment and economic opportunities for the Bulahdelah township to combat the losses which have occurred as a result of the highway bypass of the town. The proposed use will also assist to facilitate further growth of residential and tourist development in the area as a part of the masterplan for development of the land. The outcomes have been developed in consultation with the local community.

Great Lakes Highway Service Centre Strategy

In 2004, Great Lakes Council, in association with the Roads and Traffic Authority, prepared a Highway Service Centre Strategy for the Great Lakes local government area. This strategy was prepared in response to the proposed bypasses at Bulahdelah and Karuah and a proposal for a highway service centre near the Karuah Bypass. The strategy involved a review of highway servicing options, including Highway Service Centres and Highway Service Towns, and consultation with stakeholders.

In relation to Bulahdelah, the strategy document provides that the town is identified as a Highway Service Town and that 'out-of-town' highway service centres not be permitted in the Great Lakes local government area. The strategy does not provide a definition for an 'out-of-town' highway service centre. The Section 9.1 direction does provide the following in relation to defining an 'out-of-town' highway service centre:

> *"out-of-town" means areas which, prior to the draft local environmental plan, do not have an urban zone (eg: "village", "residential", "tourist", "commercial", "industrial", etc) or are in areas where the Pacific Highway speed limit is 80km/hour or greater*

Whilst the area of the proposed highway service centre is not zoned urban, the land includes areas zoned residential and the area is located between this residential zone and the main Bulahdelah village on the opposite side of the highway. The site does not have direct frontage to the highway, but instead fronts Recovery Road which has a speed limit of 60 km/hour. It is considered that the site is still connected to the Bulahdelah township.

The purposes of the strategy in relation to Bulahdelah seek to protect the economic function of the town in servicing passing traffic on the highway in terms of fuel/food and other services.

As discussed in the Economic Impact Assessment, the bypass of the highway has had a significant detrimental economic impact to highway service businesses in Bulahdelah. There is still a proportion of trade from the highway to businesses within the town from highway travellers; however this is primarily from persons who wish to visit the township for a different experience from typical highway service facilities.

To better inform the likely impacts, KJA Engaging Solutions completed a survey of 132 shoppers (45% local residents and 55% visitors) in Stroud Street over two days (Sunday and Monday) in June 2017. A copy of the survey results is at Appendix B. The survey results suggest that the impacts are likely to be mixed. 78% of respondents believed that the highway service centre would not have had an impact on their decision to stop in the main street, 4% were unsure, and 18% said they would have stopped at the highway service centre instead. A majority of respondents stated that they prefer the country town and main street ambience, restaurants and retail services. This suggests the impacts on the main street would be low. There may even be some beneficial impact on Stroud Street businesses by travellers making spontaneous decisions to visit the main street after exiting the highway to reach the service centre.

Only a small percentage of persons who currently visit the town would alter their visit in the event a highway service centre was available on the highway. It is apparent that there is a significant amount of otherwise passing trade that could be captured by a highway service centre at the site, which would return economic benefits for the Bulahdelah township.

Whilst the Council has sought to reinforce the function of Bulahdelah as a highway service town, the actual functioning of the remaining businesses in town only offer limited highway service functions. In this regard, it is noted that:

- The majority of food businesses only offer a limited trade period for highway service functions. Main street cafes generally close after 3pm and there are very little evening services available.
- There are very limited services on offer within the town, especially for night time trade. One service station with a cafe is open for later trade, along with the hotel.
- There are no areas for parking of trucks in town, other than on public roads, which is discouraged.
- Truck fuelling facilities within the two service stations in town are very limited, with the Coles Express (which has limited truck fuelling facilities) only open until 10pm.
- There is a disconnect between the various food options and fuelling areas, with signage only directing travellers to the main street and avoiding the service stations.

Bulahdelah main street area has evolved to provide a more boutique offering in terms of food, coffee and other services, in comparison to a typical highway service centre involving the provision of fuel and food on a quick stopover. As such, the township is currently attracting a certain component of the market which seeks this service as opposed to the typical highway service centre market. The results of the KJA survey support this position and confirm that the majority of these visitors would still utilise the services on offer within the town regardless of another option in the form of a highway service centre. As such, the highway service centre would allow the typical highway service function to be provided by the town, without impacting on the trade which the town has evolved to service.

The provision of a highway service centre at this location would still meet the intention of the strategy in providing local jobs and economic growth through servicing of passing trade. In addition, the following is noted:

- Whilst the land is zoned rural, it is adjoining an urban zone and connected to the town.
- The proposal will capture highway trade which would otherwise bypass the town to other service centres, whilst having minimal effect on existing trade into the Bulahdelah main street area.
- The proposal would result in the generation of 60 local jobs at the site, as well as an additional 24 indirect jobs.
- The centre will provide an opportunity for the promotion of Bulahdelah to a larger market than currently occurs.
- The centre would not provide vehicle repair services, etc., but may generate trade for such services in Bulahdelah.

It is considered that the proposed highway service centre will still meet the intent of the policy to maintain highway service functions, but allow Bulahdelah to serve different markets from what it is currently able to with its limited main street offerings and restricted service station facilities.

The policy was prepared in 2004, almost nine years before the Bulahdelah bypass occurred. Given that four years have elapsed since the Bulahdelah bypass was completed, it is considered that the policy is due for review now that the impacts of the bypass have occurred. The assumptions within the policy and the actual outcomes can be compared to determine if the policy is still appropriate. The proponent's community consultation suggests that there is strong support for the proposed highway service centre and for change to the policy approach.

Following preliminary consideration of this proposal at a Strategic Committee Meeting of MidCoast Council on 13 June 2018, the Council resolved to review this strategy following representations at the meeting by the proponent and representatives of the Bulahdelah community.

Great Lakes Rural Living Strategy 2004

In 2004, Great Lakes Council prepared a rural living strategy to *provide a future direction for the settlements and land within the rural areas of the LGA*. This strategy identifies growth areas for rural towns and villages, including Bulahdelah. The strategy identifies residential growth areas in an area known as the Lee Street Precinct, but does not identify any village growth east of the highway.

Since the strategy was prepared, Council resolved to rezone parts of the subject land for village growth and identified residential land as part of the future town expansion. As such, there has been a critical change within the strategies for Bulahdelah with the town now extending across the highway bypass, rather than being contained to the areas west of the highway. This is a key consideration as the site of the proposed highway service centre will now be located within the township of Bulahdelah (as expanded).

Great Lakes Heritage Study 2007

In 2007 Great Lakes prepared a heritage study of the LGA. The heritage study included assessment of the Bulahdelah area and identified the Bulahdelah Mountain precinct as an item and potential conservation area. The subject land is not identified as part of the heritage item, but has been included in the heritage conservation area for Bulahdelah Mountain. The proposed development is not located in proximity to the heritage sites located in the conservation area and previous investigation of heritage outcomes for the land did not identify heritage constraints to the development of this land. The proposal would maintain the heritage conservation area of the land and the service centre provides an opportunity to present and promote the area's heritage to the travelling public as part of the proposals to highlight the Bulahdelah township and region.

Great Lakes Local Environmental Plan 2014

The *Great Lakes Local Environmental Plan 2014* is a planning instrument rather than a strategic document and the proposal involves changes to the controls within the instrument to facilitate the proposal. The broad aims of the instrument have been examined below to show consistency with the broad land use outcomes the LEP attempts to achieve.

The proposal is consistent with the following aims of the Great Lakes Local Environmental Plan 2014:

(a) to facilitate the orderly and sustainable economic development of land,

(b) to promote the health and well being of the population,

(e) to promote the equitable provision of services and facilities for the community,

The planning proposal will enable the orderly and sustainable economic development of the land for a Highway Service Centre (HSC), to provide services to the travelling public on the Pacific Highway. As discussed in the economic assessment for the proposal, the proposal will promote economic well-being for the Bulahdelah community, providing jobs and capital investment for the community. The proposal will also promote the health and well being of the travelling public by providing another opportunity along the Pacific Highway for people to 'stop revive survive'. The proposed development would enable the extension of water and sewer reticulation to the eastern side of the highway, enabling connection to the adjoining residential zone, thereby providing land for additional housing growth in Bulahdelah. The HSC will also provide for additional choice for the local community in regard to fast food outlets. These outcomes are consistent with the above aims of the Great Lakes LEP 2014.

The proposal involves an additional permitted use on the land which is primarily zoned RU2, with a small area of R2 zoned land. The objectives of the zones are:

Zone RU2 Rural Landscape
1 Objectives of zone
• To encourage sustainable primary industry production by maintaining and enhancing the natural resource base.
• To maintain the rural landscape character of the land.
• To provide for a range of compatible land uses, including extensive agriculture.
• To provide for rural tourism in association with the primary industry capability of the land which is based on the rural attributes of the land.
• To secure a future for agriculture in the area by minimising the fragmentation of rural land and loss of potential agricultural productivity.

Zone R2 Low Density Residential
1 Objectives of zone
• To provide for the housing needs of the community within a low density residential environment.
• To enable other land uses that provide facilities or services to meet the day to day needs of residents.

Relevant to the Rural Zone objectives, it is noted that:

- The proposal will not utilise any productive agricultural land and does not impact on any areas utilised for agriculture or other primary production.
- The proposal makes some change to the rural landscape, but such impact is relatively benign due to being adjacent to a residential zone and being well below the dominant landscape features of the area (Bulahdelah Mountain).
- The proposal will promote tourism for the area, including rural based tourist offerings in the local area.

Relevant to the Residential Zone objectives, it is noted that:

- The proposal does not result in any significant loss of area that can be utilised for housing.
- The proposal will assist in delivery of housing in the area through promotion of local employment opportunities.

- The facilities provided can also serve local residents as well as the travelling public.

3.B.3 Is the Planning Proposal consistent with applicable state environmental planning policies?

The Planning Proposal is considered to be generally consistent with applicable State Environmental Planning Policies.

A summary of the planning proposal's consistency with applicable State Environmental Planning Policies (SEPP) is provided in Appendix D of this planning proposal. The following discussion of key SEPPs is provided below:

SEPP 33 – Hazardous and Offensive Development
The purpose of SEPP 33 is to understand the extent to which a development may be hazardous or offensive and to ensure that appropriate mitigation measures are in place to reduce the potential impact of such development.

A highway service centre will include the storage of hazardous materials in the form of fuel. The SEPP would seek to initially undertake risk screening based upon the volume of fuel stored and the distance from sensitive receptors (dwellings, etc).

The extent of fuel and gas storage on site has not yet been determined. Based on similar proposals, however, separation distances of 50 metres from fill and disposal points for underground tanks would be sufficient for a development of this type to be non-hazardous. Further assessment of this issue would be undertaken following a Gateway determination to determine a suitable buffer between the HSC and future residential development.

SEPP 44 – Koala Habitat Assessment
The purpose of SEPP 44 is to ensure the proper conservation and management of areas that contain natural vegetation and provide habitat for koalas through plans of management, identification of core habitat areas, and the inclusion of such areas in environmental protection zones.

Assessments previously undertaken in relation to koala habitat indicated that there is some potential koala habitat on the site, but that core koala habitat was not observed. An extract from the previous assessments is included in Appendix H.

The location of the highway service centre is well outside areas identified as potential koala habitat and would not require further assessment under the provisions of the SEPP.

SEPP 55 – Remediation of Land
SEPP No. 55 requires a planning authority, in preparing an environmental planning instrument, to consider whether the subject land is contaminated and, if contaminated, to consider if the land is suitable in its contaminated state, or otherwise if it is required to be remediated to make it suitable for the intended purpose.

A preliminary contamination assessment was undertaken when the land was recently rezoned to residential. The assessment identified some localised contamination around the existing shed; however no larger areas were identified as being impacted by contamination. Such contamination can be easily remediated and would not make the land unsuitable for use as a highway service centre. A copy of the previous preliminary assessment is included in Appendix I and will be reviewed by Council post Gateway for adequacy.

Should remediation be required, this will require development consent as part of a future development application due to the land being located in a heritage conservation area.

SEPP (Infrastructure) 2007

Clause 45 of the Infrastructure SEPP deals with development applications relating to development that is likely to affect an electricity network. While applying only to development applications, this is relevant due to the existing electricity easement passing through the site. The proposal will see works undertaken both within and immediately adjacent to an electricity easement, along with works requiring the placement of underground power lines.

It is assumed that the Council will refer the application to the electricity network owner following Gateway determination due to the electricity easement passing through the site.

In addition to the above, the application also requires consideration under Schedule 3 which addresses traffic generating development. The proposal is identified as traffic generating development under Schedule 3. As such, consultation with Roads and Maritime Services would occur.

SEPP (Rural Lands) 2008

The aim of this policy is to facilitate the orderly and economic use of rural lands. Section 9.1 Direction 1.5 requires consideration of the Rural Planning Principles contained within the SEPP. The Rural Planning Principles provided in the SEPP are discussed below.

Clause 7 Principles	Comment
(a) the promotion and protection of opportunities for current and potential productive and sustainable economic activities in rural areas	The site contains minimal agricultural activity and is not considered highly productive agricultural land. The change of these lands from agricultural use will not result in significant loss of productive agricultural land or the opportunity for sustainable rural activities.
(b) recognition of the importance of rural lands and agriculture and the changing nature of agriculture and of trends, demands and issues in agriculture in the area, region or State	The site is not highly productive agricultural land and is not important for agricultural production in the locality.
(c) recognition of the significance of rural land uses to the State and rural communities, including the social and economic benefits of rural land use and development	The planning proposal does not result in the loss of significant rural land uses (important for the social and economic benefits of rural communities). The planning proposal supports the local economy of Bulahdelah through better servicing of highway trade.
(d) in planning for rural lands, to balance the social, economic and environmental interests of the community	The proposal is balanced and provides social and economic benefits for the community.
(e) the identification and protection of natural resources, having regard to maintaining biodiversity, the protection of native vegetation, the importance of water resources and avoiding constrained land	The site has been modified and does not contain significant environmental features, and the proposal is unlikely to impact on water resources.

Clause 7 Principles	Comment
(f) the provision of opportunities for rural lifestyle, settlement and housing that contribute to the social and economic welfare of rural communities	The proposal provides economic development for Bulahdelah, which adds to the social and economic welfare of the community.
(g) the consideration of impacts on services and infrastructure and appropriate location when providing for rural housing	Relevant service providers will be consulted. The site can access water, sewer, power and telecommunications which may need to be augmented to support the proposed development.
(h) ensuring consistency with any applicable regional strategy of the Department of Planning or any applicable local strategy endorsed by the Director-General	The relationship of the proposal with the Hunter Regional Strategy and local strategy documents has been discussed.

The Planning Proposal will also facilitate subdivision to excise the land from the existing parcel. In this regard, the SEPP includes Rural Subdivision Principles which are addressed in the table below:

Clause 9 Principles	Comment
(a) the minimisation of rural land fragmentation,	The Proposal involves a very small area of remnant rural zoned land surrounded by highway, golf course, residential land conservation and land approved for tourist uses. The site is already fragmented, and the proposal would not result in any fragmentation of primary production land.
(b) the minimisation of rural land use conflicts, particularly between residential land uses and other rural land uses,	The site does not adjoin areas used for primary production and there would be no conflict with rural land uses. Measures are to be incorporated to minimise land use conflict between the Highway Service Centre and future residential uses.
(c) the consideration of the nature of existing agricultural holdings and the existing and planned future supply of rural residential land when considering lot sizes for rural lands,	The planning proposal does not affect any existing agricultural land holding or areas planned for future rural residential areas.
(d) the consideration of the natural and physical constraints and opportunities of land,	The natural and physical constraints have been examined in relation to the proposed use of the land.
(e) ensuring that planning for dwelling opportunities takes account of those constraints.	The planning proposal does not propose or facilitate any dwelling opportunities.

Post Gateway actions –

- That an assessment be undertaken to Council's satisfaction regarding establishing an appropriate buffer distance between the proposed development and potential future housing in this location. A means of establishing this buffer also needs ot be implemented at this time.
- That the previous contamination assessment be review by Council staff to determine its' adequacy.

3.B.4 Is the Planning Proposal consistent with applicable Ministerial Directions (s.9.1 directions)?

A summary of the planning proposal's consistency with relevant s.9.1 Ministerial Directions is provided in Appendix E of this planning proposal.

Direction 1.2 – Rural Zones
This direction applies to the land as it affects parts of the site in the rural zone and includes land in the MidCoast Council area (former Great Lakes).

The Planning Proposal seeks an additional use over the land under Schedule 1 of the LEP. Clause 4(a) of the LEP provides that Council must not rezone land in a rural zone to a residential, business, industrial, village or tourist zone. The proposal does not rezone the land and is consistent with the direction.

The objective of the direction is *to protect the agricultural production value of rural land*. The proposal does not impact on any land suitable for agricultural production and is consistent with the objective of the direction.

Direction 1.5 – Rural Lands
This direction applies to the land as it affects parts of the site in the rural zone.

Clauses 3(a) and (4) of the direction provide that where a planning proposal affects a rural zone, it must be consistent with the rural planning principles contained in *State Environmental Planning Policy (Rural Lands) 2008*. As discussed previously, the proposal is consistent with the rural planning principles in the SEPP.

Clauses 3(b) and (5) of the direction provide that, where a planning proposal changes the existing minimum lot size on the land, it must be consistent with the Rural Subdivision Principles contained in *State Environmental Planning Policy (Rural Lands) 2008*. The proposal does not alter the minimum lot size control but does allow subdivision to occur for a HSC, including where the lot will be less than the minimum lot size control. As discussed previously, the proposal is consistent with the Rural Subdivision Principles in the SEPP.

Direction 2.3 – Heritage Conservation
This direction applies to the land and the site is located within a heritage conservation area. The direction would require any items of heritage on the land to be identified and appropriately treated through the planning proposal.

The land has been subject to previous reporting on European and Aboriginal cultural heritage matters, in 2010, with reporting undertaken by RPS. A copy of this report is provided in Appendix J.

The assessment included consultation in accordance with OEH guidelines at the time. The assessment found:

- An Aboriginal heritage information management system (AHIMS) search was undertaken on a 10 kilometre radius. While there were 52 sites found within the search area, no sites were recorded in the immediate study area.
- Studies were also undertaken as part of the Pacific Highway upgrade, which is the point closest to the land to be used under this planning proposal.

The only item to be affected within the subject land is a Scar Tree site, located in the Riparian zone adjacent to the northern banks of Frys Creek, and would not be impacted by the proposed service

centre. No items of European cultural heritage were identified in the study area and there were no heritage listed items or built structures contained in the immediate study area.

The Alunite Mountain Mine lies on the south west side of the mountain and is therefore not part of the rezoning application for the study area. None of the Commonwealth and Heritage listed items were incorporated in the proposed rezoning application area. All listed items are located some distance from the study area and four of the items that are listed are located approximately half a kilometre or more away.

Given the previous investigations that have been undertaken, it is not considered that additional investigation is warranted. If further investigation is deemed necessary, it may be undertaken as a condition of a Gateway determination and/or following consultation with OEH.

Direction 4.4 – Planning for Bushfire Protection
This direction applies as the land is mapped as bushfire prone land.

The direction requires consultation with the NSW Rural Fire Service and consideration of compliance of the proposal with the document *Planning for Bush Fire Protection 2006*.

Consultation with the NSW Rural Fire Service will occur following a Gateway determination being received. The proposal does not involve residential uses or special fire protection purposes. The proposal will have large setbacks from bushfire prone vegetation and would be capable of meeting the relevant provisions of the Rural Fire Service Guideline.

Direction 5.4 – Commercial and Retail Development along the Pacific Highway, North Coast
This is a key direction in relation to the proposed highway service centre. The direction applies to any planning proposal for land in the vicinity of The Pacific Highway along the North Coast, between Port Stephens and Tweed Shire Council areas.

The objectives of the direction are:

> *(1) The objectives for managing commercial and retail development along the Pacific Highway are:*
>
> *(a) to protect the Pacific Highway's function, that is to operate as the North Coast's primary inter- and intra-regional road traffic route;*
>
> *(b) to prevent inappropriate development fronting the highway;*
>
> *(c) to protect public expenditure invested in the Pacific Highway;*
>
> *(d) to protect and improve highway safety and highway efficiency;*
>
> *(e) to provide for the food, vehicle service and rest needs of travellers on the highway; and*
>
> *(f) to reinforce the role of retail and commercial development in town centres, where they can best serve the populations of the towns.*

The planning proposal is considered to be consistent with these objectives as follows:

a) The highway service centre will provide areas for servicing of highway traffic, including heavy vehicles, and will support and enhance the function of the highway as the North Coast's primary inter- and intra-regional road traffic route.
b) The site of the proposed highway service centre does not have frontage to the highway and is accessed from the existing interchange and service roads at the northern end of the Bulahdelah township.

c) The proposal will not impact on the function or use of The Pacific Highway and will protect public infrastructure invested along the highway.
d) The highway service centre is located at a key location for drivers (including heavy vehicles) to stop and revive, improving highway safety and efficiency.
e) The proposal will provide a location for food, vehicle servicing and rest at a key location along the highway.
f) The Highway Service Centre's primary purpose is to capture passing trade on the highway that may otherwise bypass the town [this is its' target market]. There is some potential for the highway service centre to capture trade that would otherwise utilise in town services for fuel and food. To address this, the Economic Impact Assessment (see Appendix A) was prepared to examine both the positive impacts of the highway service centre, as well as the impacts to the town centre. The economic impact assessment identifies that the impacts to Bulahdelah's main street would be low. The proposal includes the development of a planning agreement with Council (on behalf of the Bulahdelah community) to provide works/assistance to offset this low impact and assist the role of the main street to be strengthened and reinforced.

A key concept within the direction is the concept of 'within town' and 'out-of-town' segments of The Pacific Highway. The definition of each is discussed below:

> *"within town" means areas which, prior to the draft local environmental plan, have an urban zone (eg: "village", "residential", "tourist", "commercial", "industrial", etc) and where the Pacific Highway speed limit is less than 80km/hour.*
>
> *"out-of-town" means areas which, prior to the draft local environmental plan, do not have an urban zone (eg: "village", "residential", "tourist", "commercial", "industrial", etc.) or are in areas where the Pacific Highway speed limit is 80km/hour or greater.*

Parts of the subject land are mapped with an urban zone (R2 - Low Density Residential); however the site of the proposed highway service centre is zoned RU2 - Rural Landscape. The site fronts the local access road known as Recovery Road which has a speed limit of 60 km/h. Given the underlying zoning of the land, being non-urban, the site would be identified as "out-of-town".

Subclause (5) of the direction provides the key provisions for "out-of-town" locations and states:

> *(5) A planning proposal that applies to land located on "out-of-town" segments of the Pacific Highway must provide that:*
>
> > *(a) new commercial or retail development must not be established near the Pacific Highway if this proximity would be inconsistent with the objectives of this Direction;*
> >
> > *(b) development with frontage to the Pacific Highway must consider the impact the development has on the safety and efficiency of the highway; and*
> >
> > *(c) for the purposes of this paragraph, "out-of-town" means areas which, prior to the draft local environmental plan, do not have an urban zone (eg: "village", "residential", "tourist", "commercial", "industrial", etc.) or are in areas where the Pacific Highway speed limit is 80km/hour or greater.*

As discussed, the proposed development is considered consistent with the objectives of the direction. The subject site and proposed highway service centre is accessed from an existing local access road (Recovery Road) near the existing highway interchange and would not impact negatively on the safety or efficiency of the highway. The provision of efficient highway servicing at a key location such as this is likely to enhance the safety and efficiency of the highway.

Subclause (6) of the direction details locations where highway service centres may be established notwithstanding the provisions of (4) and (5). The subject site is not listed in subclause (6); however, as discussed, the proposal is considered to be consistent with the provisions of (5) and therefore consistent with the provisions of the direction. As discussed, the location was not identified as a location in the RMS policy review; however the Bulahdelah community has identified a significant loss in economic activity as a result of the bypass and there is support for a service centre at this location to support the highway service functions of the town. The basis of the list is from the RMS policy. The approach and the treatment of Bulahdelah are clearly influenced by the Local strategy. As discussed, this policy was prepared prior to the bypass occurring and is in need of review now that the bypass has occurred and the impacts to the town have been experienced.

Direction 5.10 – Implementation of Regional Plans

The direction requires planning proposals to be consistent with Regional Plans released by the Minister for Planning. As discussed, the proposal is considered to be consistent with the Hunter Regional Strategy. Refer to Appendix F for further detail.

Direction 6.3 – Site Specific Provisions

The planning proposal seeks to create a site specific provision over the subject land and the provisions of this direction apply.

The operative parts of the direction provide:

> *(4) A planning proposal that will amend another environmental planning instrument in order to allow a particular development proposal to be carried out must either:*
>
> *(a) allow that land use to be carried out in the zone the land is situated on, or*
>
> *(b) rezone the site to an existing zone already applying in the environmental planning instrument that allows that land use without imposing any development standards or requirements in addition to those already contained in that zone, or*
>
> *(c) allow that land use on the relevant land without imposing any development standards or requirements in addition to those already contained in the principal environmental planning instrument being amended.*
>
> *(5) A planning proposal must not contain or refer to drawings that show details of the development proposal.*

The planning proposal seeks to permit the proposed development in a manner consistent with point c) and is consistent with the direction.

Strategic Merit Test

Whilst the proposal is not a rezoning review, the question of strategic merit is worth examining as provided in the *Rezoning Review Final Review Report* (Department of Planning and Environment, 2016). The report notes:

> *There will be a presumption against a Rezoning Review request that seeks to amend LEP controls that are less than 5 years old, unless the proposal can clearly justify that it meets the Strategic Merit Test.*

The report suggests that there are three tests which may result in strategic merit:

Is the proposal:

1. *Consistent with the relevant regional plan outside of the Greater Sydney Region, the relevant district plan within the Greater Sydney Region, or corridor/precinct plans applying to the site, including any draft regional, district or corridor/precinct plans released for public comment;*

   or

2. *Consistent with a relevant local council strategy that has been endorsed by the Department;*

   Or

3. *Responding to a change in circumstances, such as the investment in new infrastructure or changing demographic trends that have not been recognised by existing planning controls;*

The proposal is considered consistent with the goals and objectives of the Hunter Regional Plan, noting that the development is not specifically identified in the plan.

It has been noted that there are some inconsistencies with the Council's Highway Service Centre Strategy.

It is considered, however, that there is merit to the planning proposal on the basis of the third reason and the circumstances currently affecting Bulahdelah as a result of the highway bypass of Bulahdelah. As discussed, the Council's strategy (which informs the RMS Strategy) in regard to this issue was prepared in 2004, well before the bypass occurred. Since the bypass has occurred, there has been a significant reduction in highway trade for the town and the economic benefits of being identified as a Highway Service Town have not been recognised. The planning proposal responds to this change of circumstances by enabling a service centre to be located at the northern edge of the town to recapture this otherwise lost trade.

Whilst LEP 2014 is less than five years old, the strategy and previous controls under Great Lakes LEP 1996 were based on the policy which was derived over 13 years ago and cannot be considered representative of current issues or circumstances.

As such, there is considered to be strategic merit to the planning proposal in response to circumstances not adequately dealt with in the controls for the land.

Section C – Environmental, Social and Economic Impact

3.C.1 Is there any likelihood that critical habitat or threatened species, populations or ecological communities, or their habitats, will be adversely affected as a result of the proposal?

The subject land has been the subject of significant study and investigation of ecological values on the land. The area of the site identified for the proposed highway service centre is a cleared area with minimal ecological values. Previous assessments of the land did not identify any significant ecological values on the land which would be affected by such a proposal. Key areas of the land which contained significant ecological values have been zoned E2 – Environmental Conservation under the previous planning proposal for the land.

Previous ecological studies over the site are:

- *Ecological Assessment and Species Impact Statement (November 2004)* Technical Paper 7 of Bulahdelah Bypass Environmental Impact Statement
- *Ecological Assessments – Local Environment Study (May 2011*) Volumes 1, 2 and 3 – Vegetation, Fauna and Habitats Corridors - Clarke Dowdle and Associates
- *Threatened Species Assessment* (*Feb. 2011)* – Forest Fauna Surveys
- *Supplementary Special Bat Assessment (April 2011)* – Ecotone Environmental Consultants

None of the reports identify any constraints to development over the land proposed to contain the highway service centre. The following is noted from the reports:

- The land is mapped as cleared land not containing native vegetation communities.
- No threatened flora or other important plant species were identified over the subject land.
- No threatened fauna was identified over the subject land.
- No significant habitat values or corridors were identified over the subject land.
- Key ecological values of the land have been placed in the E2 zoned areas of the site.

Given the previous investigations of the land and the current condition of the land, it is not considered that additional ecological investigation of the land is warranted. Extracts from previous ecological assessments are included in Appendix H.

3.C.2 Are there any other likely environmental effects as a result of the Planning Proposal and how are they proposed to be managed?

The planning proposal will create a commercial development over previously cleared disturbed land. Likely environmental effects as a result of the change are discussed below:

Water and Sewer Generation

The proposed use will be connected to reticulated water supply and will require connection to reticulated sewer. This will require the construction of additional public instrastructure to serve the development, which will be funded by the proponent. A water and sewer servicing strategy will be prepared as part of the stage 2 investigations (post Gateway) to the satisfaction of Council's Water Services Division.

Post Gateway action - A water and sewer servicing strategy will be prepared to the satisfaction of Council's Water Services Division.

Stormwater Generation and Treatment

Stormwater generation from the site has potential to impact on local water quality and will need to be managed to ensure that any stormwater pollutant generating area is minimised, collected and appropriately treated.

Stormwater from forecourt areas will be treated in accordance with EPA Criteria. Stormwater from other areas will be treated in accordance with Council's requirements. Stormwater management designs will be included with development applications for development of the land.

Contamination and Remediation

As discussed, previous investigations did not reveal significant contamination over the site. A copy of the previous contamination assessment is included in Appendix I. The proposal will involve the storage and distribution of petrol and diesel, which can potentially contaminate land and groundwater. To ensure this is avoided and actively managed, installations will comply with the *Protection of the Environment Operations (Underground Petroleum Storage Systems) Regulation 2014,* providing for containment and monitoring of any potential leaks.

Post Gateway action – Council to review adequacy of previous contamination assessment.

Access

The site has excellent access from the existing local access road (Recovery Road) which connects with the highway interchange. The future design for the site will provide access in accordance with RMS requiremetns and will provide access for light and heavy vehicles.

The existing highway interchange was designed to cater for all kinds of traffic, including heavy vehicles, and is provided with long deceleration and acceleration lanes to provide for safe and efficient access between local roads and the Pacific Highway motorway.

Vehicles accessing the highway sevice centre would utilise this interchange. Northbound vehicles may leave the highway at either the southern interchange or the slip lane just before the northern interchange; they would then proceed along Bulahdelah Way to the northern interchange. Southbound vehicles would leave the highway via the off ramp to the interchange and turn left to the site and Recovery Road. All access to the site is via the highway infrastructure and local main roads. The access would not require people to drive through other local streets.

The highway infrastucture is clearly suitable to cater for access to and from the bypass to the site. Traffic impact assessment will need to be undertaken for the access design and internal traffic arrangements to ensure that vehicles can access within the site in an efficient manner and not impact on highway infrastructure through queuing of vehicles, etc.

PostGateway action – agency regerral to RMS to confirm access suitability and whether any intersection upgrades are required.

Visual and Heritage

The subject site is located within the Bulahdelah Mountain heritage conservation area. The key heritage values in this area are:

- Geological values – significant rock outcrop
- Commercial history – previous Alunite mining of the site
- Vegetation and flora
- Scenic significance

- Aboriginal significance

The site is located in a cleared and disturbed area, well below the main mountain and outcrops. As discussed, the previous Cultural Heritage Surveys did not identify any items of cultural heritage significance at or near the site of the proposed service centre. The proposed site is located on a low slope at the northern end of the mountain. Development of the subject land would not impact the scenic landscape quality of the area, with the mountain remaining the dominant feature. The site is not highly visible from the surrounding area. The previous Heritage investigations are provided in Appendix J.

Post Gateway action – Council's Heritage Adviser to ensure that the European heritage assessment adequately addresses the Heritage Conservation Area. Agency referral to OEH to confirm adequacy of Aboriginal cultural heritage assessment.

3.C.3 Has the Planning Proposal adequately addressed any social and economic effects?

Social

The potential social impacts of the proposal are generally related to the economic effects as a result of the proposal. As discussed below, the proposal is likely to have overall positive economic impacts which also result in the following positive social impacts:

- Local employment will be created to provide various employment types, including for youth, and higher levels of part time employment.
- Greater levels of employment will be available close to home, increasing the opportunity for greater time spent with families and reduced travel time. This has positive health outcomes.
- Less time pressures associated with commuting to and from employment with highway trade jobs in more remote locations such as Coolongolook and The Rock road house.
- Increasing exposure to tourists of the locality through an increased number of stopping options in Bulahdelah and establishing what it offers.
- For people who are travelling along the highway together but in different vehicles, providing a meeting place and a diverse rest stop that encourages people to enjoy the site and the broader context of Bulahdelah.

The potential detrimental social impacts that may be felt are:

- Job losses as a result of business closure from competition – the service stations may be affected in this manner; however the impacts are largely due to the highway bypass and the new service centre will offer greater employment opportunities.
- Increased traffic through town and at the site may affect nearby residents.

The issue of job losses is relatively short term and is made good by the proposal which would provide greater employment opportunity than the current service stations offer. The issue of impacts from increased traffic is largely addressed by the proposed location at the interchange, away from existing residences.

Economic

The Economic Impact Assessment (EIA) provided in Attachment A has examined the economic effects of the proposal in detail. This analysis has been supplemented by the survey of visitors and residents undertaken by KJA Engaging Solutions.

With regard to the impact of the proposal on the main street of Bulahdelah, the assessment has found:

Measuring the impact on main-street businesses (Stroud Street) is vexed. Whilst there may be some competition between the fast food restaurants on the HSC and main-street, the offer is quite different. The HSC will have national franchised fast food stores such as McDonalds, KFC, Sub-way, etc whereas the café restaurants and the hotel on Stroud Street are local run businesses offering alternative menus and in some cases with alcoholic beverages and/or BYO. The majority of competition to the proposed HSC will be from competing HSCs to the north and south along the Highway.

To better inform the likely impacts KJA Engaging Solutions completed a survey of 132 shoppers (45% local residents and 55% visitors) in Stroud Street over 2 days (Sunday and Monday) in June 20173. The survey results suggest the impacts are likely to be mixed. 78% believed the HSC would not have had an impact on their decision to stop on the main street, 4% were unsure and 18% said they would have stopped at the HSC instead. A majority of respondents stated that they prefer the country town and main street ambience, restaurants and retail services. This suggests the impacts on the main street would be low. There may even be some beneficial impact on Stroud Street businesses by travellers making spontaneous decisions to visit the main-street after exiting the highway at the service centre.

Interestingly visitors overwhelmingly stated that they would still visit the main street even though they were pessimistic about the impacts of the HSC on the main street. Residents were much more likely to indicate the HSC would have a positive impact on the town as it would provide more local jobs.

To gain a better appreciation of possible impacts during the holiday period the intercept survey by KJA Engaging Solutions was repeated over 30 to 31 March 2018 being the Easter Weekend. A total of 131 surveys were completed. Of those surveyed 87% (114) indicated that they were visiting Bulahdelah. This was a much higher proportion of respondents than the June 2017 survey (54% visitors) due to a much higher level of tourism over the Easter weekend. 18% (20) of visitors were staying overnight in Bulahdelah.

The results of this second survey suggest similar findings to the initial visitor survey undertaken in July 2017, with 70.23% of respondents indicating that the proposed HSC would not have impacted their decision to visit the Bulahdelah township on the day of the survey, had it been operational already. Further, 52.67% of respondents indicated that they would be either 'unlikely' or 'very unlikely' to visit the proposed HSC instead of the Bulahdelah township more generally.

The EIA included examination of potential impacts to other service centres and towns on the highway and found:

The above table shows that the strongest impact will be on the Bulahdelah service stations. All other impacts will be below moderate level. Over time the impacts will diminish due to strong growth in demand over the next 12 years (34% growth in traffic) so all service stations will trade more than 10% above their current levels by 2028. The highway based centres will trade more than 20% above the current levels. On this basis it should be recognised that the proposed service centre is responding to growth over time.

In a worst case scenario one of the existing centres in Bulahdelah could close. Assigning a probability to that outcome is vexed. Importantly, it is not the proposed centre that would be the cause of any closure as much as the sunk impact of the bypass itself. Now that the bypass is sunk the opportunity exists for Bulahdelah to capture a share of highway expenditure that would otherwise bypass the town.

In conclusion, the EIA found:

The proposed highway service centre at 9844 Pacific Highway, Bulahdelah would be expected to contribute a number of economic benefits in the immediate Bulahdelah locality, and for the wider local government area. Economic impacts, both positive and negative, which are likely to be brought about by the development are summarised as follows:

1. *Total capital investment associated with the proposed development is estimated to be in the order of $6 million*

2. *Construction on site would provide 14 direct job years and 24 indirect (or flow-on) job years in the wider Australian economy*

3. *A further 60 jobs would be provided in retail operations*

4. *Total indirect or flow-on jobs in the wider economy (in supplies, transport, retail, etc) following the development of the Subject Site would amount to a further 48 jobs*

5. *Development will contribute $2.2 million per annum to Gross Regional Product every year following full development*

6. *Any negative impacts which have been felt by Bulahdelah's fuel retailers and other businesses have been primarily a direct result of the opening of the Bulahdelah Bypass*

7. *These impacts will diminish over time as traffic along the Pacific Highway is forecast to increase by 34% over the period 2016 to 2028*

8. *Now that the bypass is sunk the opportunity exists for Bulahdelah to capture a share of highway expenditure that would otherwise bypass the town, moving on to other locations and other towns, as opposed to supporting the economic base of Bulahdelah.*

The proposed development will have positive social and economic effects on the Bulahdelah community and will provide for some recovery for the town from the impact of the highway bypass in 2013.

The assessment notes that the proposed service centre has an immediate impact of 4 - 8% on the trade of other 'service centres' along the highway, but that there will still be a strong increase in trade of all centres over time. The immediate impact to these centres is likely as a result of the loss of trade that Bulahdelah experienced when the bypass occurred. The Planning Proposal and proposed highway service centre will assist Bulahdelah in regaining its advantage of location at a key stopping location.

The provision of facilities at this location is also considered to have a broader economic effect by supporting the movement of freight along the highway, which is important from a state and regional growth perspective.

Voluntary Planning Agreement

The proposal also expresses an interest in developing a voluntary planning agreement (VPA) in relation to the proposal to assist the local community in its coping with the structural change associated with the bypass.

Through discussions with the local community and businesses, it is apparent that Bulahdelah has been developing a niche market, rather than a general highway service function. The town has seen an increase in short stays by Caravans and RVs which are generating a trade for local businesses. This trade has resulted from the quieter environmental and local promotion as an RV friendly town. Whilst the EIA for the proposal predicts positive impacts for the local economy, it recognises the potential for some localised impact to main street towns. Whilst visitor surveys suggest this will not result in major losses of trade, the developer proposes to undertake public works to assist the local

community leverage its role for short caravan and RV stays through beautification of the main street and parks to encourage this type of short stay, as well as existing highway trade which prefers the town street offerings or picnic stopover, rather than the highway service centre fuel and food stop. Such items will be included in a Planning Agreement to be prepared in unison with the Planning Proposal following a Gateway determination.

The voluntary planning agreement (VPA) will be negotiated with the Council and representatives of the Bulahdelah community and may include matters such as:

- Main Street, park improvements including landscaping, townscape improvements.
- Provision of additional amenities/infrastructure to support the Council's RV friendly town approach, such as better street parking and enhanced or additional amenities.
- Business Assistance package, such as main street approaches and funding of a business advisor to assist local business.
- Local promotions area within the highway service centre itself.

Section D – State and Commonwealth Interests

3.D.1 Is there adequate public infrastructure for the Planning Proposal?

The subject site is not currently connected to reticulated water and sewer. MidCoast Council's Water Services Division has advised that strategies have been devised which would provide for servicing of the land, subject to augmentation. Such augmentation would be developer funded and serve the proposed use, as well as future residential and tourist development at the site.

There is existing electricity infrastructure passing through the site which can provide services for the proposed use. The overhead lines passing through the site may be retained over vehicle manoeuvring and parking areas, subject to design for clearances, etc. This will only be possible to determine at DA design stage and will be addressed in greater detail at that stage.

Telecommunications to the site is available and NBN optic fibre cable passes the site and connections for the site are existing.

The site has excellent access to road infrastructure. The proposed use is traffic generating development and will be subject to consultation with Roads and Maritime Services.

Post Gateway actions –

- Preparation of a water and sewer servicing strategy to Council's Water Services Division satisfaction.
- Agency referrals to Transgrid/Essential Energy and NBN to confirm connection to services permitted.

3.D.2 What are the views of State and Commonwealth public authorities consulted in accordance with the Gateway Determination?

Consultation will be subject to the recommendations of the Gateway determination; however it is likely that consultation with the following authorities will be required:

- Roads and Maritime Services – in relation to access issues and highway service centre location.
- Transgrid and Essential Energy - in terms of confirming access to electricity infrastructure at the site.
- NSW Office of Environment and Heritage – in terms of adequacy of Aboriginal cultural heritage assessment
- NSW Rural Fire Service – to confirm assessment criteria for this type of development to comply with the guideline *Planning for Bushfire Protection 2006*
- NBN – in terms of confirming that the site can be serviced for telecommunications

Pre-Gateway consultation has been undertaken with Roads and Maritime Services in relation to the proposal and another Highway Service Centre location near Tea Gardens. A copy of the response has been provided in Appendix K of the Planning Proposal.

The response discussed the following in relation to this site:

- There is a ministerial direction 5.4 in relation to Highway Service Centres along The Pacific Highway which includes a list of highway service centres that can proceed. The site is not

included in this list.

- RMS undertook a Policy review on 2014 which included a review of sites where highway service centres can proceed and did not include a centre near Bulahdelah to reinforce its function as a highway service town. Council was consulted at this time and supported the policy position.

Whilst the correspondence raised issues in relation to access for the other site, it did not raise any access issues in relation to the proposed site.

With regard to the matters raised the following is noted:

- The Section 9.1 direction does not prohibit highway service centres in locations other than those listed.
- This planning proposal identifies a need for such a highway service centre at Bulahdelah in consideration of the ministerial direction.
- The Council has resolved to review its Highway Service Centre Strategy and supports the proposed highway service centre at Bulahdelah.

Post Gateway action – update PP based on agency referrals.

PART 4 - MAPPING

(s.55(2)(d) Maps to be adopted by the proposed instrument)

The planning proposal will require amendments to the existing Additional Permitted Uses maps (Tile 8A) of Greater Lakes Local Environmental Plan 2014.

The proposed amendments to the map are shown in Figure 6.

Council will prepare mapping associated with this amendment in accordance with the Standard Technical Requirements for LEP Maps for the amended LEP document.

PART 5 - COMMUNITY CONSULTATION

The proponent has undertaken initial consultation with the Bulahdelah community as follows:

- Two meetings with the Bulahdelah Chamber of Commerce, held at the Visitor Information Centre in March and October 2016 (approximately 35 attendees on both occasions).
- Public meeting organised by the Bulahdelah community, held on 10 October 2016 (approximately 115 attendees).
- Individual discussions by the proponent with various business owners and community people on different occasions, including by telephone and email.

As a result of these consultations, the following was observed:

- Chamber of Commerce Meeting No. 1: - the purpose of this meeting was to advise that the planning proposal had been lodged with Council, including what the planning proposal consists of. The proposal was well received by some, while others were concerned about the potential impact on businesses within the existing township, in terms of their potential decline as a result of the proposed use as a highway service centre.

- Chamber of Commerce Meeting No. 2: - the purpose of this meeting was to advise on the additional information that had been prepared in response to the economic concerns raised by Council with respect to the application. The outcomes were similar to the first meeting, with impact on existing businesses remaining a key concern, as well as the ability of the proponent to complete the development.

- The public meeting was to brief the community on the planning proposal including the masterplan components and take on board their comments, both positive and negative. Many spoke of the need for growth within the township, with new opportunities required to stimulate this growth. Others remained concerned about the impact on local businesses, as well as how the highway service centre development would form part of the broader masterplan concept, including whether the master plan would ever be implemented or simply that the service station would be undertaken. To assure the community that this would not be the case, the proponent provided an undertaking that this would not occur.
- Discussion was also held around the provision of a voluntary planning agreement to support and stimulate economic growth within the township itself, to be provided by the proponent.
- Concern was also raised about how development of the site would encourage people to enter the township. Methods such as signposting the first entrance to Bulahdelah as the location into the highway service centre so that people had to drive through the town was suggested, and the proponent is agreeable to this. This ensures that people would not simply be visiting the highway service centre, but traversing the town to see what Bulahdelah has to offer prior to visiting the site.
- The level of support for the application was voted upon in the public forum, with 90% of those in attendance supporting the proposal.

Recent correspondence supporting the planning proposal has been received from the Chamber of Commerce and a copy of this correspondence is provided in Appendix C.

In accordance with Sections 56(2)(c) and 57 of the *Environmental Planning and Assessment Act* 1979, Council would require this planning proposal to be made publicly available for a minimum of 28 days.

In accordance with Council's adopted consultation protocols, the following will also be undertaken:

- Notices in the local newspaper;
- Direct mail notification to potentially affected land owners;
- Exhibition material and all relevant documents made available at Council's Taree, Forster and Tea Gardens offices, as well as at the Bulahdelah Library; and
- Exhibition material and all relevant documents made available on Council's website.

Any further consultation required by the Gateway determination will also be undertaken.

The Planning Agreement will be developed in consultation with the Bulahdelah Chamber of Commerce and the community following a Gateway determination. This will involve consultation involving direct meeting with the Chamber of Commerce, as well as a community meeting to be arranged by the Chamber of Commerce.

Post Gateway action – update consultation following undertaking engagement activities.

PART 6 - PROJECT TIMELINE

In accordance with the Department of Planning and Environment guidelines, the following timeline is provided, which includes the tasks deemed necessary for the making of this local environmental plan.

Task	Responsibility	Timeframe	Date (approximate)
Council resolution to support the Planning Proposal	Council	Completed	October 2018
Lodgement of Planning Proposal for Gateway Determination	Council	4 weeks	November 2018
Gateway Determination Issued	Department of Planning and Environment	8 weeks	February 2019
Undertake additional studies as necessary to comply with Gateway Determination	Council/Proponent	12 weeks	May 2019
Public exhibition of Planning Proposal	Council	Minimum 28 days	June 2019
Report to Council to finalise Planning Proposal and adopt LEP changes	Council	4 weeks	August 2019
Making of Local Environmental Plan amendments	Minister for Planning	6 – 8 weeks	October 2019

Post Gateway action – update table, as appropriate.

PART 7 - CONCLUSION

This planning proposal has been prepared to facilitate the development of a new highway service centre at Bulahdelah. The proposed highway service centre will seek to capture highway trade and economic activity for the town which was lost when the highway bypass of the town occurred.

Under the current zoning of the land under *Great Lakes LEP 2014*, the development of a highway service centre is prohibited on the land. The planning proposal seeks to amend the LEP to provide the use of the land for this purpose as an additional use under the provisions of clause 2.5 of the LEP with the use listed in Schedule 1 as follows:

> ***8 Use of certain land at 9844 Pacific Highway Bulahdelah***
> *(1) This clause applies to land identified as "8" on the Additional Permitted Uses Map.*
>
> *(2) Development for the purpose of a highway service centre is permitted with development consent.*
>
> *(3) Regardless of other provisions of this plan, the land identified may be subdivided to excise the highway service centre from the parent lot once development for the service centre has been carried out on the land.*

The current restrictions to development of the land for this purpose are primarily as a result of a Council strategy prepared in 2004, before the bypass of the township had occurred. The local strategy has then informed the RMS policy for highway service centres which has resulted in the current Section 9.1 direction applying to the land. Given the age of the policy and the significant changes that have occurred as a result of the bypass, the strategy and policy position need review with regard to current issues affecting Bulahdelah.

The planning proposal is a response to the change of circumstances to the changes that have occurred in Bulahdelah as a result of the bypass. The role of Bulahdelah as a highway service town has not involved a full response to the highway trade previously experienced. The town primarily only caters for a small sector of the potential market who prefer the quieter, more boutique services on offer in the township (as compared to highway service centres). The proposal represents an opportunity for the town to provide greater highway trade services to those parts of the market that do not stop in town and seeks to restore jobs and economic activities in the town which were lost/relocated as a result of the bypass.

There are no significant environmental constraints identified for the land which would limit the use of the land as proposed.

Economic analysis of the proposal has shown that there would be significant economic benefits for Bulahdelah. Impacts to existing fuel retailers in town are identified, but are as a result of the bypass and would be ongoing regardless of the proposal. The survey of patrons undertaken in the main street of Bulahdelah shows that there would be only minor impacts to those businesses, with the majority of people attracted to these businesses unlikely to be attracted by a highway service centre. The positive economic impacts and job creation in the local area would have positive social impacts for residents of the town.

Post Gateway action – amend the Conclusion and Appendices as required following additional investigations and consultation.

Appendix A – *Economic Impact Assessment (Hill PDA)*

HillPDA CONSULTING

BULAHDELAH HIGHWAY SERVICE CENTRE

Economic Impact Assessment

Prepared for SG Haddad Advisory

July 2018

Contents

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Quality Assurance

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Quality Control

This document is for discussion purposes only unless signed and dated by a Principal of HillPDA.

Reviewer

Signature	L:\Administration\Staff\Electronic Signatures	Dated	Click here to enter a date.

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INTRODUCTION

1.0 INTRODUCTION

Background

The following Study has been commissioned by SG Haddad Advisory regarding a site at 9844 Pacific Highway, Bulahdelah (referred to the Subject Site thereafter).

Earlier reports by HillPDA in June 2016 and August 2017 reviewed the economic impacts of a proposed Highway Service Centre (HSC), tourist accommodation, brewery and residential uses in Bulahdelah and the surrounding locality and concluded that the site is an ideal location for a highway service centre.

The HSC would include fuel retailing with associated quick service restaurant facilities.

In its review of the 2016 report Council was critical that the report included all proposed land uses and that only the HSC should have been assessed as this was the only proposed land use that was non-conforming under the current zoning.

The report was updated in 2017 and considered the impacts only from the proposed HSC.

This review is a further update in response to a number of Council comments and includes the findings from further research undertaken of shoppers and visitors in the Bulahdelah township.

Purpose of Report

The purpose of this report is to provide the findings of an economic impact assessment of the planning proposal for a Bulahdelah HSC. This includes the economic impacts in the locality including the beneficial impacts to Bulahdelah in terms of investment and jobs as well as any potential negative impacts on competing businesses, both in Bulahdelah and along the highway (if relevant under the EPA Act).

SUBJECT SITE AND PROPOSAL

2.0 SUBJECT SITE AND PROPOSAL

This Chapter provides a description of the Subject Site, including location and regional context, as well as the specific site characteristics relevant to development of a highway service centre.

2.1 Location and Regional Context

The town of Bulahdelah is located on the Pacific Highway, approximately 250 kilometres north of Sydney, 44 kilometres north of Karuah and 75 kilometres south of Taree. Bulahdelah is in MidCoast LGA and the former Great Lakes Shire which has been historically aided by the tourism and sandmining industries as well as and by road and bridge construction. In more recent times the area has emerged as a popular 'lifestyle region', with increasing numbers of retirees, people seeking an alternative or coastal lifestyle, and holiday makers.

The appeal of the Great Lakes area is a reflection of the natural attractiveness of the area – its natural attributes include large expanses of National Park and State Forest, a triple lake system (Myall Lake, Bombah Broadwater and Wallace Lake), numerous rivers and beaches – while the climate and the significant amount of residential housing opportunities close to the coast also boost the attraction. The towns of Forster, Tuncurry and Taree are the employment, retail and service provider centres of the MidCoast LGA.

Traditionally, towns within the 'rural based' Great Lakes area primarily provided an important service role to the rural hinterland. Bulahdelah is one such important service centre, providing for the needs of the region which immediately surround the town, including the small villages of Rosenthal, Markwell, Upper Myall and Wootton to the north, and Nerong, Bombah Point and Booral to the south-east and south-west.

In addition to serving as a rural service centre for residents of the surrounding rural hinterland, Bulahdelah is also regarded as the gateway to the shallow saltwater lakes of the Myall Lakes National Park. As such, the town plays some role from a tourism perspective, though the main tourism generated by the town is brought about by the proximity to the Pacific Highway – the major transport route along the central east coast of Australia. This means that Bulahdelah is a popular stopping point for travellers seeking a brief rest stop during their journey.

In June 2013, an 8.6km bypass of Bulahdelah opened after three years of construction. The bypass stretches between Bulahdelah and the edge of Alum Mountain, and spans the Myall River. The bypass allows two access points to Bulahdelah, one at the northern end and one at the southern end of the town, which ensures good connections for road users and a safe place to stop with facilities. Economics aside, the bypass is a major safety and environmental improvement to the town with concerns previously caused by a dual-carriage highway narrowing to a single-lane bridge over the river.

Figure 1: Bulahdelah Bypass (south Bulahdelah access bridge)

Source: Roads and Maritime Services (RMS)

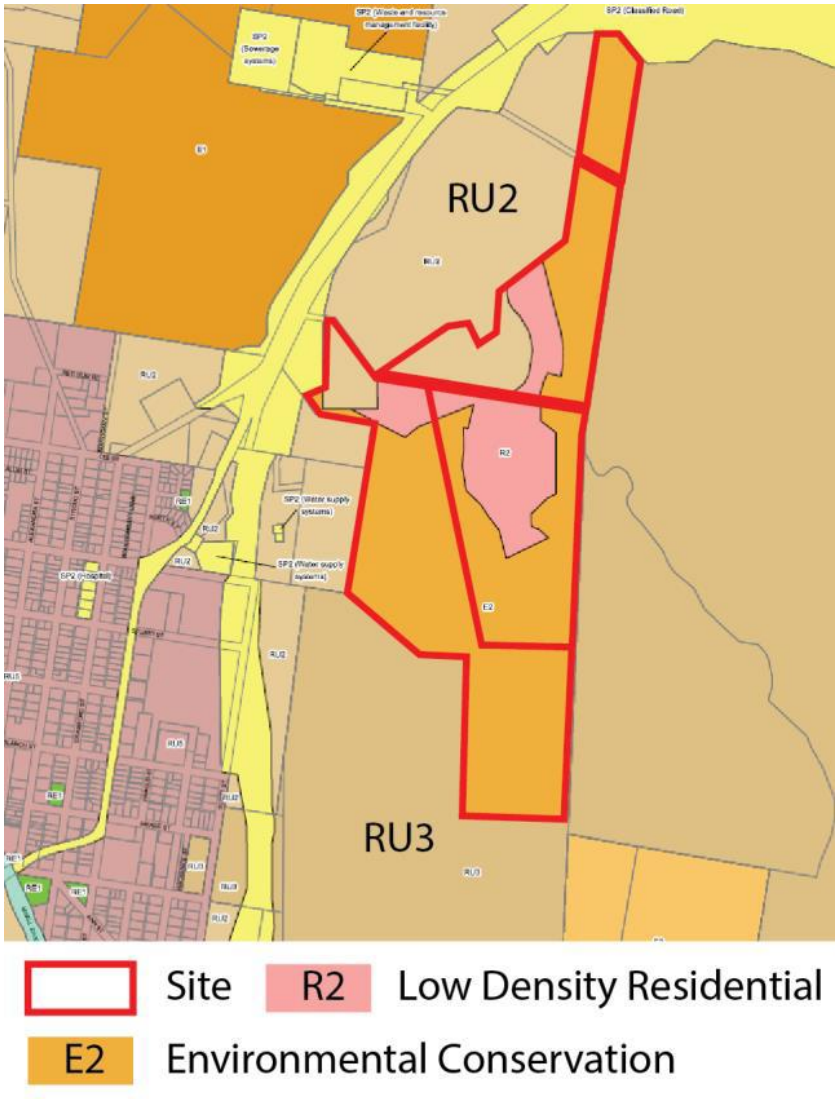
The town of Bulahdelah currently features two service stations: Shell and BP (formerly Mobil). Both of these fuel retailers are located on Boolambayte Street which was the main thoroughfare through the town prior to the bypass opening. Service centres typically rely on very high exposure to passing trade and therefore the location of these existing sites is now sub-optimal. A reduction in traffic along Boolambayte Street, brought about by the bypass, will negatively impact visitation to these outlets. It is noted that these negative trading impacts will continue to occur irrespective of the proposed highway service centre development, simply because of their sub-optimal location.

2.2 Subject Site

The Subject Site is located on the north-eastern side of Bulahdelah Township adjoining the RMS Bulahdelah Eastern bypass and roundabout at 9844 Pacific Highway, Bulahdelah.

The majority of the Subject Site is zoned RU2 Rural Landscape and a small part is zoned R2 under the Great Lakes Local Environmental Plan (LEP) 2014 as shown in the figure below.

Figure 2: Subject site land zoning



Source: Great Lakes LEP 2014

The Subject Site is approximately 2 hours and 45 minutes' drive (240km) north of the Sydney Central Business District (CBD) and 1 hour drive north of Newcastle (96km). Myall Lakes (22 minutes or 25km from the Subject Site) and Newcastle Airport (40 minutes or 75km from the Subject Site) are also within relative proximity.

2.3 Proposed Development

There is a current DA approval for a tourist facility at the Subject Site. In the past there have been DA approvals for other commercial uses including McDonalds and a commercial brewery, which have since lapsed. In addition, previous approval for the residential subdivision of Lot 2 at the Subject Site has also been obtained from Council.

The Subject Site has been identified as a suitable location for a HSC on land for both cars and trucks and would include an offering of fast food restaurants. The land is currently zoned RU2 and R2 and the proposal would require a rezoning of the land via Schedule 1 of the LEP. An area of approximately 6 hectares adjacent to the roundabout is available for this purpose, albeit the size of the service centre with truck stops would likely be in the order of only one or two hectares.

STRATEGIC POLICY CONTEXT

3.0 STRATEGIC POLICY CONTECT

This chapter provides a summary overview of relevant strategies that relate to the Bulahdelah locality and in particular the proposed HSC at the Subject Site.

3.1 Hunter Regional Plan

The NSW Government has prepared the Hunter Regional Plan to establish the guiding principles for how the future growth of the region will be planned and managed. Mid Coast LGA is the northern most LGA within the region. Mid Coast LGA is a recent amalgamation of Greater Taree, Gloucester and Great Lakes LGA. Bulahdelah is in the former Great Lakes.

Over the past 20 years (1991-2011), the former Great Lakes LGA experienced a 33% population increase, reflecting a considerable amount of growth and change.

3.2 Great Lakes Local Environmental Plan 2014

The land is affected by the Great Lakes Local Environmental Plan (LEP) 2014. The LEP has several aims one of which is *"to facilitate the orderly and sustainable economic development of land"* which the proposal is consistent with.

The majority of the Subject Site is zoned RU2 Rural Landscape and a small part is zoned R2 under the LEP (refer to Figure 3 above). The objectives of the RU2 zone include:

- *To encourage sustainable primary industry production by maintaining and enhancing the natural resource base*
- *To maintain the rural landscape character of the land*
- *To provide for a range of compatible land uses, including extensive agriculture*
- *To provide for rural tourism in association with the primary industry capability of the land which is based on the rural attributes of the land*
- *To secure a future for agriculture in the area by minimising the fragmentation of rural land and loss of potential agricultural productivity.*

The proposal is not consistent with the zoning objectives. However the land is vacant and being adjacent to the entry/exit of the motorway is not suitable for any productive agricultural purposes.

The LEP lists a wide range of permissible uses. HSC is not included in the list meaning that it is not permissible. Notwithstanding the site provides an ideal opportunity for an HSC being on the Pacific Highway at the northern entrance to the township. Rezoning of the land is therefore required to permit the HSC.

A HSC under the LEP is defined as *"a building or place used to provide refreshments and vehicle services to highway users. It may include any one or more of the following:*

- *a restaurant or cafe*
- *take away food and drink premises*
- *service stations and facilities for emergency vehicle towing and repairs*
- *parking for vehicles*
- *rest areas and public amenities.*

3.3 Pacific Highway Services Centre Policy

The Pacific Highway Services Centre Policy was prepared by NSW Roads and Maritime Services, May 2014. The policy has the same definition of a HSC as the LEP (see above).

There are several requirements for a HSC under the policy including the provision of parking for heavy vehicles, public toilets, tourist information, children's play area, 24 hour trading and prohibition of alcohol.

This definition and the requirements do, however, go beyond the Standard LEP definition for a highway service centre. Direction by Council has advised that it is the LEP definition which is that to be abided by, despite the Policy direction.

The locations for existing and future service centres are defined, however Bulahdelah is not included. This however does not preclude a service centre in Bulahdelah if demand can be justified.

DEMOGRAPHIC TRENDS

4.0 DEMOGRAPHIC TRENDS

This Chapter provides an overview of key demographic trends which are of relevance to development of the Subject Site.

4.1 Population Levels and Trends

The resident population of the former Mid-Coast LGA is forecast to increase from its current level of 93,408 persons in 2018, to approximately 113,147 people in 2036. This represents an increase of around +19,740 persons, showing an average growth of almost 1,097 persons per annum and an average growth rate of +1.2% per annum. While the overall population growth in the former Shire is expected to be substantial, the distribution of that growth will differ significantly.

Historically, the non-coastal rural towns in Mid-Coast LGA (including Bulahdelah) tend to attract families and lose some young adults as they seek employment and educational opportunities in the larger centres. Retirees are more attracted to the coastal parts of the LGA.

The population and dwelling projections shown in Table 1 have been sourced from Forecast id and show that, while population growth over the past five years has been modest, an additional 372 (net) new residents are expected to move into the Bulahdelah region over the next 18 years. This represents a forecast increase from its current level of 1,875 persons in 2018 to approximately 2,247people in 2036.

Table 1: Population and dwelling trends, Bulahdelah-Central Rural, 2016-2036

	2016	2021	2026	2031	2036
Total population					
Bulahdelah – Central Rural	1,852	1,910	2,010	2,117	2,247
Mid –Coast LGA	91,958	95,583	100,323	106,449	113,147
Annual growth (no.)					
Bulahdelah – Central Rural		58	100	107	129
Mid –Coast LGA		3,625	4,740	6,126	6,699
Annual growth (%)					
Bulahdelah – Central Rural		0.61	1.03	1.04	1.19
Mid –Coast LGA		0.78	0.97	1.19	1.23
Total dwellings					
Bulahdelah – Central Rural	971	990	1,028	1,078	1,139
Mid –Coast LGA	47,981	50,276	53,199	56,665	60,270

Source: Population id December 2017 forecasts

Note: Bulahdelah - Central Rural includes the township of Bulahdelah, several small villages and the mostly rural localities of Bombah Point, Boolambayte, Crawford River, Markwell, Mayers Flat, Mungo Brush, Myall Lake, Topi Topi, Upper Myall, Violet Hill, Warranulla and Yagon.

4.2 Unemployment Trends

Unemployment in Mid-Coast LGA fell from 11.8% in 2001 to 9.0% in 2016. However, it is understood that Mid-Coast Council still regards unemployment in the area as a key issue noting that the level is considerably higher than the Regional NSW average (6.6% in 2016).

In 2001, Bulahdelah had a relatively low unemployment rate of 7.1% compared to 11.8% in the Mid-Coast LGA. By 2016, the Bulahdelah figure decreased to 6% which was lower than that recorded for the wider LGA and Regional NSW.

Of particular interest is the profile of those residents who are unemployed and actively seeking work. Of the 48 unemployed persons in the Bulahdelah in 2001, a total of 48 persons indicated that they were seeking full-time employment, while only 5 persons or 10% were seeking part-time employment.

15 years later in 2016 and the demand for part-time employment is now much stronger, with 33% of unemployed residents showing a preference for a part-time position. Part-time and casual positions, such as those which would be created by the development of the Subject Site, would suit the employment preferences of the local labour force, having regard to the later figures.

Table 2: Employment status, Bulahdelah - Central Rural, 2001-2011

Employment status	Bulahdelah - Central Rural				Former Great Lakes Shire	
	2001		2016		2001	2016
	No.	Share	No.	Share	Share	Share
Employed	629	92.9%	665	94.0%	88.2%	91.0%
Employed full-time	339	50.1%	352	49.7%	50.7%	47.3%
Employed part-time	257	38.0%	298	42.2%	34.7%	41.5%
Hours worked not stated	32	4.9%	15	2.1%	2.8%	2.2%
Unemployed (Unemployment rate)	48	7.1%	42	6.0%	11.8%	9.0%
Looking for full-time work	42	6.3%	28	4.1%	9.1%	5.7%
Looking for part-time work	5	0.9%	14	2.0%	2.6%	3.4%
Total Labour Force	677	100.0%	708	100.0%	100.0%	100.0%

Source: Community id

4.3 Labour Force Trends

The traditional economic base for the region surrounding Bulahdelah has been dairy farming, beef cattle production and forestry. However, it is noted in Table 3 that the levels of employment in these key industries has been decreasing in recent decades. This trend is observed across the entire LGA, though Bulahdelah has witnessed a slight increase between the 2011 and 2016 census (+6 jobs). Industries relating to the region's tourism appeal are growing at a LGA level, though the relative distance of Bulahdelah from the popular NSW coastline presents challenges in making tourism a major contributor to the economy.

The main industries of employment for Bulahdelah residents are the following:

- Health care and social assistance, with 13.8% compared to 17.3% for the Mid-Coast LGA
- Agriculture, Forestry and Fishing, with 12.2% of the labour force, compared to 5.3%
- Retail trade, with 10.9% of the labour force, compared to 112.6%
- Accommodation and food services, with 10.7% compared to 9.2%.

This information is summarised below.

Table 3: Industry sector of employment, Bulahdelah - Central Rural, 2006-2011

Industry sector	Bulahdelah - Central Rural				Great Lakes Council	
	2006		2016		2006	2016
	No.	Share	No.	Share	Share	Share
Agriculture, Forestry and Fishing	74	11.2%	80	12.2%	6.2%	5.3%
Mining	6	1.0%	0	0%	0.7%	1.1%
Manufacturing	62	9.3%	65	9.9%	9.2%	5.5%
Electricity, Gas, Water and Waste Services	19	2.9%	12	1.8%	1.3%	1.6%
Construction	59	8.8%	46	7.0%	10.1%	9.5%
Wholesale trade	78	11.8%	72	10.9%	14.0%	12.6%
Retail Trade	10	1.6%	3	0.6%	2.7%	1.5%
Accommodation and Food Services	88	13.3%	70	10.7%	8.5%	9.2%
Transport, Postal and Warehousing	40	6.0%	35	5.4%	4.0%	3.8%
Information Media and Telecommunications	10	1.5%	9	1.4%	0.9%	0.8%
Financial and Insurance Services	12	1.8%	3	0.5%	1.6%	1.4%
Rental, Hiring and Real Estate Services	14	2.1%	5	0.9%	2.0%	1.8%
Professional, Scientific and Technical Services	14	2.2%	14	2.1%	3.6%	3.6%
Administrative and Support Services	13	2.1%	27	4.2%	2.7%	3.6%
Public Administration and Safety	25	3.9%	25	3.8%	4.5%	4.3%
Education and Training	36	5.4%	37	5.7%	7.4%	8.1%
Health Care and Social Assistance	69	10.4%	91	13.8%	13.0%	17.3%
Arts and Recreation Services	4	0.6%	6	0.9%	1.5%	1.2%
Other Services	18	2.8%	24	3.6%	3.8%	3.9%
Inadequately described or not stated	8	1.2%	29	4.5%	2.2%	3.9%
Total employed persons aged 15+	667	100%	660	100%	100%	100%

Source: Community id

TRAFFIC

5.0 TRAFFIC

5.1 Traffic Volumes

Traffic volumes along Pacific Highway increased significantly between 2007 and 2010, according to Roads and Maritime Services data. Approximately 1,650 more vehicles per day have been using the stretch of Pacific Highway near Bulahdelah in 2010 compared with the numbers recorded for 2007. This trend represents a substantial 4.6% average annual increase in traffic flows. While heavy vehicle volumes have increased only moderately during this time, approximately 1,600 more light vehicles (ie, those with a gross vehicle mass of 4.5 tonnes or less) have been using the Pacific Highway per day in 2010 compared with 2007, representing a significant 5.5% average annual growth rate.

This information is shown in Table 4.

Table 4: Pacific Highway traffic volumes, Bulahdelah, 2007-2010

Vehicle type	2007	2010	AAGR
Light vehicles	9,083	10,680	+5.5%
Heavy vehicles	2,330	2,379	+0.7%
All vehicles	11,413	13,059	+4.6%

Source: Traffic Volume Viewer, NSW Roads and Maritime Services

Note: Date refers to RMS Station Id: 09909, located 1.98km North of Myall River Road, Bulahdelah

AAGR = Average Annual Growth Rate

Figure 2 - Unfortunately RMS has not undertaken updated traffic surveys since 2010 which would establish the more recent traffic patterns in proximity to the town of Bulahdelah and the Subject Site.

Growth along the Pacific Highway has been very strong based on counts in other locations as shown in the table below.

Table 5: Growth in traffic along the Pacific Highway 2015-2018

Location	2015	2016	2017	2018	AAGR
2km north of Nabiac (both directions)	16,355	17,295	17,638	19,872	6.7%
Twelve Mile Creek (southbound only)	9,750	10,197	10,364	12,069	7.4%
Kiwarrak, 5km south of Taree (both directions)		21,276	21,582	23,710	5.6%

Source: Traffic Volume Viewer, NSW Roads and Maritime Services

Southbound traffic at Twelve Mile Creek, 50km south of Bulahdelah has been 21% over two years from 2015 to 2017. The number of heavy vehicles increased 48% from 5.6% of all vehicles to 6.8%.

The number of combined north and southbound vehicles through Nabiac, 46km to the North, increased by 16% over two years from 2015 to 2017.

5.2 Growth of Pacific Highway Traffic

While updated surveys have not been undertaken in Bulahdelah since 2010, the then Roads and Traffic Authority (RTA), now Roads and Maritime Services, published an Environmental Impact Statement[1] technical paper in 2004 which forecast that traffic flows along the Pacific Highway would increase by an average annual growth rate of 2.45% from 2007 onwards.

Noting that the actual increase in traffic flows has been higher than first predicted by RTA – 4.6% as shown in Table 4 – we have applied an estimated growth rate of 4.6% between 2010-2016 and the more moderate RTA estimate of 2.45% thereafter.

The application of these growth rates to the 2010 survey data provides the forecast traffic flows shown in Table 5. An additional 5,760 vehicles per annum are anticipated to pass along the Pacific Highway near Bulahdelah in 2028 compared with 2016 figures.

Approximately 16,270 (or 71%) of the 22,860 total vehicles in 2028 are anticipated to be light vehicles, based on trends observed between 2007 and 2010. This figure compares with 10,680 light vehicles recorded on the Pacific Highway in 2010 (refer Table 4).

Table 6: Forecast Pacific Highway traffic volumes, Bulahdelah, 2010-2028

Year	Traffic Volume (average vehicles per day)
2010	13,059
2013	14,942
2016	17,097
2020	18,836
2024	20,750
2028	22,860
Total change, 2016-2028	**+5,762**
Total change, 2016-2028 (%)	**+34%**

5.3 Trips Diverting from Pacific Highway into Bulahdelah

Current Situation

Traffic surveys were undertaken by Northern Transport Planning and Engineering Pty Ltd of vehicle movements into and out of Bulahdelah on Friday 6th November 2015 from 9am to 4pm. These surveys identified existing patterns relating to through trips and have quantified the number of vehicles that are diverting into Bulahdelah.

It is of relevance that these surveys were taken on an average day and not in any holiday period, which may otherwise inflate these figures.

A summary of these results is presented below:

- Between 6.5% and 11.9% of passing traffic diverted into Bulahdelah during the survey period, with an overall diverting share of 9.1%
- Approximately 40% of these diverted trips spent less than 15 minutes in Bulahdelah
- Approximately 54% of these diverted trips spent from 15-60 minutes in Bulahdelah
- Approximately 6% of these diverted trips spent more than 60 minutes in Bulahdelah.

[1] Bulahdelah – Upgrading the Pacific Highway (Technical Paper 6)

The higher share of northbound traffic diverting into Bulahdelah reflects the strategic location of Bulahdelah for a rest or refuelling stop, noting that the locations of Newcastle, Gosford and Sydney are to the south of Bulahdelah.

Note that the surveys were undertaken for only a portion of one day and therefore discrepancies exist between the figures reported in Table 4 and the recorded findings in Table 7.

Table 7: Traffic passing or diverting into Bulahdelah, November 2015

	Northbound	Southbound	Total
Total vehicles passing	2,391	2,810	5,201
Total vehicles diverting	323	196	519
Share diverting into Bulahdelah	11.9%	6.5%	9.1%

Source: Northern Transport Planning and Engineering Pty Ltd

Forecast Situation

The trends in traffic coming into the Bulahdelah town centre have been estimated based on the traffic volume trends in Table 5 and findings of Table 7. As shown in the Table below, the opening of the Bulahdelah Bypass has had a dramatic effect on the number of vehicles which pass through the town centre on a daily basis.

Immediately prior to the opening of the bypass in June 2013, approximately 15,000 vehicles per day travelled along the Old Pacific Highway and through the town of Bulahdelah. Based on a diverting share of 9.1% from the Bypass (refer Table 6), it is estimated that vehicle numbers per day decreased to approximately 1,360 vehicles in Bulahdelah immediately following the opening of Bypass.

The local economy of Bulahdelah has been in decline for a number of years. However the additional effect of a significant reduction of more than 90% of vehicles passing through the town centre is impacting businesses which rely on passing traffic for a large share of their trade. In this regard, the most significant negative impact for highway-related (or passing trade reliant) business in the town of Bulahdelah – such as the two existing fuel retailers on Boolambayte Street – has been the opening of the Bypass itself, rather than any other external influences.

However, the figures indicate that the total number of motorists likely to stop at Bulahdelah will increase by 523 vehicles per day as a result of the increasing volume of traffic predicted to use the highway over the next 12 years. Naturally, this will have a positive impact on the site itself, but also for the community of Bulahdelah.

Table 8: Trends in traffic diverting into Bulahdelah, 2007-2028

Year	Total traffic volumes	Share of vehicles diverting into Bulahdelah	Total vehicles diverting into Bulahdelah per day
2007	11,413[(1)]	100%	11,413
2010	13,059[(1)]	100%	13,059
2013	14,942[(2)]	100% (pre-Bypass) / 9.1% (post-Bypass)	14,942 (pre-Bypass) / 1,356 (post-Bypass)
2016	17,097[(2)]	9.1%[(3)]	1,551
2020	18,836[(2)]	9.1%	1,709
2024	20,750[(2)]	9.1%	1,883
2028	22,860[(2)]	9.1%	2,074
Total change in Bypass opening year (2013)			**-13,586**
Total change, 2016-2028			**+523**

Source: Roads and Maritime Services [(1)]; HillPDA [(2)]; Northern Transport Planning and Engineering Pty Ltd [(3)]

COMPETITIVE CONTEXT

6.0 COMPETITIVE CONTEXT

This Chapter provides a summary of the competitive context in which the proposed HSC on the Subject Site.

6.1 Highway Service Stations

There is currently a limited supply of Highway Service Stations with only two medium sized service stations in Bulahdelah each with 4 pumps. All nearby fuel stations are identified in the table below.

Table 9: Service Stations in the locality

Facility Name	Address	Distance from Subject Site	Distance from Sydney	Truck stop-over parking
Coles Express, Bulahdelah	22 Booloombay St, Bulahdelah*	1.8km South	237km	No
BP, Bulahdelah	59 Booloombay St, Bulahdelah*	1.8km South	237km	No
Caltex Coolongolook	Cnr Midge St & Pacific Hwy, Coolongolook	28km North	267km	Yes
BP Coolongolook	Pacific Highway, Coolongolook	30km North	267km	No
Caltex Nabiac	Pacific Highway, Nabiac	45km North	282km	No
Caltex, Glenthorne (South Taree)	Old Bar Road, Glenthorne	66km North	307km	Yes
Caltex, Raymond Terrace	40 Richardson Rd, Raymond Terrace*	73km South	170km	Possible
Shell, Heatherbrae	290 Pacific Hwy	80km South	165km	Yes
BP Connect, Heatherbrae	2398 Pacific Hwy	77km South	165km	Yes
7-11, Heatherbrae	Pacific Hwy, Cnr Hank	79km South	165km	No
United Petroleum "The Rock"	Viney Creek	32km South	205km	Possible

The stations at Coolongolook at around 30km to the north and Heatherbrae to the south of the Subject Site are relatively convenient and have direct frontage to the highway. However both centres at Coolongolook are on the east side of the Pacific Highway. Other stations such as Glenthorne (South Taree) and Richardson Road, Raymond Terrace do not directly front the highway and are also not visible from the highway but are nonetheless reasonably convenient and signposted.

Bulahdelah has one strong advantage over the other above locations – namely the distance from Sydney being around two and half to three hours, around the time that a break is required from driving.

There are two service centres in Bulahdelah but the Subject Site at 9844 Pacific Highway has a few significant competitive advantages in comparison:

- The Subject Site is on the bypass rather than in the town centre
- Potential exists to provide truck stops at the Subject Site, which the other two smaller centres do not provide, as well as parking for caravans and boat trailers
- The Subject Site has the potential to provide a wider offer of food choices than the existing centres.

These three key advantages make the Subject Site an appealing location for a highway service centre.

6.2 Bulahdelah township

Bulahdelah has a main street shopping centre along Stroud Street between the old highway (Bulahdelah Way) and Meade Street. Businesses include the Plough Inn Hotel which serves meals. It also has around 5 or 6 rooms but their availability is unknown. The IGA supermarket provides food and groceries mainly for local residents. Specialty retailers include a butcher, bakery, a clothing store, two take-away stores, three café/restaurants, newsagency, chemist, butcher and a hardware store. Retail services include 2 real estate agents, hair dresser and post office. Bulahdelah is a small centre with a total shop front space of 1,800sqm.

Of note, in particular, there are no national franchised fast food restaurants that are generally located in highway service centres such as McDonalds, Hungry Jacks, Sub-way and KFC to name a few. The closest competitor to is the Mobile service station on Bulahdelah Way which includes a fast food restaurant. The hotel and the three café/restaurants on the main street (Stroud Street) provide a different local business offering.

ECONOMIC IMPACT ASSESSMENT

7.0 ECONOMIC IMPACT ASSESSMENT

The indicative development scenario of a highway service centre can be expected to generate a number of economic benefits for the locality and for the LGA as a whole, as described in this Chapter.

These benefits are likely to be in the form of the creation of new employment opportunities.

7.1 Development Investment

Total construction cost is estimated to be in the order of approximately $6m excluding shop fitouts, any external works and soft costs such as consultants, developer contributions, application fees, finance and holding costs.

Project cost figures used in this analysis are an indicative estimate only, and have been adopted by the consultant based on broad information provided by the client. Detailed cost estimations would be required to confirm these high level preliminary estimates.

7.2 Construction Employment

Construction employment generation involves:

- Direct jobs, which are on-site
- Indirect (or flow-on) jobs, which are created elsewhere in the economy through the employment multiplier (eg, in design, finance, transport, etc) – this multiplier is derived from ABS Input Output tables 2012-13.

The capital outlay on the new building and construction work associated with the development of the highway service centre represents a significant project for the LGA economy which would generate direct and indirect construction-related employment.

Direct Jobs

For the purposes of this economic impact assessment, 1 FTE (Full Time Equivalent) construction job year is supported for every $420,000 of building construction spending. This is based on Australian Bureau of Statistics (ABS) input-output tables and National Accounts data 2012-13.

Allowing for the estimated construction cost of $6 million approximately 14 job years would be directly generated by construction.

Indirect Jobs

In addition to direct (or site-related) employment, the operation of the employment multiplier – which is derived from ABS Input/Output data – allows the calculation of indirect (or flow-on) jobs created elsewhere in the economy. From the ABS Input/Output tables, HillPDA has estimated the production induced and consumption induced multipliers in the construction industry to be 1.34 and 1.28 respectively.

Using these multipliers HillPDA has assessed total indirect job years generated by construction to be 24.

7.4 Operational Employment

Direct jobs

The retail component of the highway service centre – comprising approximately 750sqm of retail floorspace – would generate employment for an estimated 60 workers on the basis of 1 job per 12.5sqm of retail floorspace[2]. This includes part-time and casual staff as well as full-time staff. Many of these jobs would be sourced from Bulahdelah and the surrounding rural area, noting the experience that most workers in the retail industry live locally.

Having regard for the regional labour force (ie 793 people of which 60 or 7.6% were unemployed, refer Table 2), the creation of approximately 60 direct jobs represents a significant employment opportunity for Bulahdelah.

Indirect Jobs

The multiplier effect would lead to indirect (or flow-on) employment, associated with providing inputs into the day-to-day operation of the highway service centre (eg, food and beverage supplies, fuel supplies, contractors, maintenance, etc) and the expenditure of wages by permanent employees which support a range of businesses in the wider economy.

HillPDA estimates from the 2012-13 ABS Input/Output tables a multiplier of 1.8 applies to employment in "accommodation and food services" industry. That is, for every 10 direct jobs in the overall development a further 8 indirect or flow-on jobs are created.

When the employment multiplier effect is taken into account, the HSC would be likely to generate an additional 48 jobs elsewhere in the Australian economy.

The employment associated with both direct and indirect jobs generated through the operation of the highway service centre will provide new opportunities for those seeking employment in the overall hospitality industry and associated industries, including the wide range of supplier industries.

7.5 Contribution to Gross Regional Product

IBIS World estimates that each worker in fast foods produces directly around $26,800 per annum in industry value added (contribution to wealth or Gross Regional Product (GRP)). Each worker in fuel retailing creates around $86,800 per annum in wealth. GRP is the value of all final goods and services produced by all firms in the economy (as opposed to goods still in processing or production) less the costs of production. It includes salaries, company profits and taxes. Based on expected new jobs, approximately $15.5m revenue and $2.2 million industry value added would be generated on an annual basis (as measured in constant 2016 dollars).

7.6 Potential Impact on Bulahdelah

The negative impacts which have been felt by Bulahdelah's current fuel retailers since 2013 have been primarily a direct result of the opening of the Bulahdelah Bypass. Where 15,000 vehicles per day formerly passed by the two outlets on Boolambayte Street prior to the construction of the Bypass, the average number of vehicles per day is now just 1,550 vehicles. While the total number of vehicles along the Pacific Highway is forecast to increase by 34% over the period 2016 to 2028, the sustainability of two non-highway based fuel

[2] Employment density for restaurants and take-away food stores across Australia is 6.54 workers per 100sqm of floor area (15.3 sqm per worker) (ABS Retail Surveys 1991 and 1999). For the subject site the employment density was increased to 8 workers per 100sqm (12.5sqm per worker) to account for extended trading hours.

retailers in Bulahdelah is questionable, irrespective of whether a highway service centre is developed on the Subject Site.

In this respect, negative impacts on these fuel retailers as a result of the Bypass can be viewed as a 'sunk impact' and the opportunity now exists to capture a share of the new market which has been created through the opening of the town bypass. Given this negative circumstance that has occurred, the outcome for a highway-based service centre, will have a positive economic outcome for Bulahdelah.

Particularly if these existing fuel retailers were to close, this would make Bulahdelah, as a location to stop at, even less attractive, with the absence of any fuel offering. This would result in people continuing to travel past Bulahdelah and to the next available stop which provides a greater cross-section of services.

Measuring the impact on main-street businesses (Stroud Street) is vexed. Whilst there may be some competition between the fast food restaurants on the HSC and main-street, the offer is quite different. The HSC will have national franchised fast food stores such as McDonalds, KFC, Sub-way, etc whereas the café restaurants and the hotel on Stroud Street are local run businesses offering alternative menus and in some cases with alcoholic beverages and/or BYO. The majority of competition to the proposed HSC will be from competing HSCs to the north and south along the Highway.

7.7 Shopper Survey in June 2017

To better inform the likely impacts KJA Engaging Solutions completed a survey of 132 shoppers (45% local residents and 55% visitors) in Stroud Street over 2 days (Sunday and Monday) in June 2017[3]. The survey results suggest the impacts are likely to be mixed. 78% believed the HSC would not have had an impact on their decision to stop on the main street, 4% were unsure and 18% said they would have stopped at the HSC instead. A majority of respondents stated that they prefer the country town and main street ambience, restaurants and retail services. This suggests the impacts on the main street would be low. There may even be some beneficial impact on Stroud Street businesses by travellers making spontaneous decisions to visit the main-street after exiting the highway at the service centre.

Interestingly visitors overwhelmingly stated that they would still visit the main street even though they were pessimistic about the impacts of the HSC on the main street. Residents were much more likely to indicate the HSC would have a positive impact on the town as it would provide more local jobs.

7.8 Shopper Survey in Easter 2018

To gain a better appreciation of possible impacts during the holiday period the intercept survey by KJA Engaging Solutions was repeated over 30 to 31 March 2018 being the Easter Weekend. A total of 131 surveys were completed. Of those surveyed 87% (114) indicated that they were visiting Bulahdelah. This was a much higher proportion of respondents than the June 2017 survey (54% visitors) due to a much higher level of tourism over the Easter weekend. 18% (20) of visitors were staying overnight in Bulahdelah.

The results of this second survey suggest similar findings to the initial visitor survey undertaken in July 2017, with 70.23% of respondents indicating that the proposed HSC would not have impacted their decision to visit the Bulahdelah township on the day of the survey, had it been operational already. Further, 52.67% of respondents indicated that they would be either 'unlikely' or 'very unlikely' to visit the proposed HSC instead of the Bulahdelah township more generally.

[3] Bulahdelah Highway Service Centre Survey Report by KJA Engaging Solutions, July 2017

7.9 Impact on Existing Service Centres

To estimate the impact on existing service centres we used a type of gravity model which assumes that centres closer to the subject site will be impacted the most. The results are shown in the table below.

Table 10: Likely impact on the existing Service Centres

Facility Name	Address	Distance from Subject Site	Truck stop-over parking	Immediate Impact*	Shift in Trade 2016-28**
Coles Express, Bulahdelah	22 Booloombay St, Bulahdelah***	1.8km South	No	-13%	17%
BP Roadhouse, Bulahdelah	59 Booloombay St, Bulahdelah***	1.8km South	No	-13%	16%
Caltex Coolongolook	Cnr Midge St & Pacific Hwy, Coolongolook	28km North	Yes	-8%	24%
BP Coolongolook	Pacific Highway, Coolongolook	30km North	No	-7%	24%
Caltex Nabiac	Pacific Highway, Nabiac	45km North	No	-7%	25%
Caltex, Glenthorne	Old Bar Road, Glenthorne	66km North	Yes	-6%	27%
Caltex, Raymond Terrace	40 Richardson Rd, Raymond Terrace***	73km South	Possible	-5%	28%
Shell, Heatherbrae	290 Pacific Hwy	80km South	Yes	-5%	28%
BP Connect, Heatherbrae	2398 Pacific Hwy	77km South	Yes	-5%	27%
7-11, Heatherbrae	Pacific Hwy, Cnr Hank	79km South	No	-4%	29%
United Petroleum, Viney Creek	"The Rock"	33km South	Possible	-7%	24%

* Immediate impact refers to the difference in trading levels with and without the proposed service centre on the Bulahdelah bypass

** Refers to the shift in trade from 2016 to 2028 following the opening of the proposed service on the Bulahdelah bypass

*** Town rather than highway based service centres

The above table shows that the strongest impact will be on the Bulahdelah service stations. All other impacts will be below moderate level. Over time the impacts will diminish due to strong growth in demand over the next 12 years (34% growth in traffic) so all service stations will trade more than 10% above their current levels by 2028. The highway based centres will trade more than 20% above the current levels. On this basis it should be recognised that the proposed service centre is responding to growth over time.

In a worst case scenario one of the existing centres in Bulahdelah could close. Assigning a probability to that outcome is vexed. Importantly, it is not the proposed centre that would be the cause of any closure as much as the sunk impact of the bypass itself. Now that the bypass is sunk the opportunity exists for Bulahdelah to capture a share of highway expenditure that would otherwise bypass the town.

7.10 Proposed Service Centres

There are several proposed highway service stations along the Pacific Highway including two approved stations at Nabiac and Heatherbrae. According to Council there are two other proposed stations being considered or assessed including Coolongolook and Pacific Highway / Myall Way (turnoff to Tea Gardens). It is unknown if all these proposals will proceed over the next 10 years. Nabiac is already well serviced with two stations on the Highway and is only 23km from Glenthorne (South Taree). Coolongolook is also well serviced with 2 stations

directly on the highway. Heatherbrae already has 3 or 4 stations but will also be bypassed as part of the highway upgrade.

There are numerous uncertainties with the proposed centres making it difficult to assess the impacts. Also assessing the cumulative impacts of two or more proposed stations on the existing ones is vexed. What we can quantify however is the number of additional stations required to keep up with demand. Given that there are 9 stations on the Highway between South Taree and Heatherbrae (excluding stations off the highway such as Bulahdelah) and given that traffic will increase 34% from 2016 to 2028 we can conclude that an additional 3 stations will be required to keep up with demand over that period. The subject site is well positioned to respond to some of that growth. Simply put a new service station will be required every four years. This is not to say that existing stations cannot meet future demand but that if supply is not increased to match growth in demand then this would be at a cost to consumers. It would result in more queueing at stations, longer delays, reduced convenience for consumers and reduced price competition.

7.11 Other Considerations

The development of the Subject Site would be expected to provide other benefits at the community level, including the following:

- Enhanced retail and service facilities for local residents and visitors
- Provision of greater employment self-sufficiency in the Bulahdelah region, and provision of important opportunities for young people to enter the local workforce through the important role of the hospitality sector as an employment 'gateway'.

It is acknowledged that construction activities undertaken as part of any development has the potential to detrimentally affect the environment and community health if not managed well. Air emissions, noise, site contamination, stormwater, and waste would need to be managed at the Subject Site in accordance with relevant guidelines in order to prevent impacts on the natural environment and nearby land uses.

CONCLUSION

8.0 CONCLUSION

The proposed highway service centre at 9844 Pacific Highway, Bulahdelah would be expected to contribute a number of economic benefits in the immediate Bulahdelah locality, and for the wider local government area. Economic impacts, both positive and negative, which are likely to be brought about by the development are summarised as follows:

1. Total capital investment associated with the proposed development is estimated to be in the order of $6 million
2. Construction on site would provide 14 direct job years and 24 indirect (or flow-on) job years in the wider Australian economy
3. A further 60 jobs would be provided in retail operations
4. Total indirect or flow-on jobs in the wider economy (in supplies, transport, retail, etc) following the development of the Subject Site would amount to a further 48 jobs
5. Development will contribute $2.2 million per annum to Gross Regional Product every year following full development
6. Any negative impacts which have been felt by Bulahdelah's fuel retailers and other businesses have been primarily a direct result of the opening of the Bulahdelah Bypass
7. These impacts will diminish over time as traffic along the Pacific Highway is forecast to increase by 34% over the period 2016 to 2028
8. Now that the bypass is sunk the opportunity exists for Bulahdelah to capture a share of highway expenditure that would otherwise bypass the town, moving on to other locations and other towns, as opposed to supporting the economic base of Bulahdelah.

Disclaimer

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6. This report does not constitute a valuation of any property or interest in property. In preparing this report HillPDA has relied upon information concerning the subject property and/or proposed development provided by the Client and HillPDA has not independently verified this information except where noted in this report.
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Appendix B – *Bulahdelah Highway Centre Survey Report (KJA Engaging Solutions)*

26 February 2018 Proposal No. 18/065

Peter Spira
Abacus Property Group
Level 34, Australia Square
264 - 278 George Street
Sydney NSW 2000

Email: peter.spira11@gmail.com

Dear Peter,

Re: Survey 2 for Bulahdelah Highway Service Centre

Thank you for the opportunity to provide a proposal to design and conduct a survey of visitors to Bulahdelah town centre during the 2018 Easter long weekend.

KJA understands that the objective of this Visitor Survey is to gather information on why pedestrians have visited the town centre, and whether a Highway Service Centre out of town would affect their decision to visit.

KJA's Scope

We understand the scope of engagement for KJA's services includes the following activities:

- Undertake an intercept survey of between 5 and 10 questions, focusing on responders' reasons for visiting the town, and whether a highway service station would have changed their decision. The survey will be undertaken in person in Bulahdelah township, across 2 days during the Easter Long Weekend (2 staff members for efficacy and security);
- Provide a summary report of the survey results (approx 4-5 pages).

As per client instructions, the survey questions will be the same as the previous Bulahdelah HSC Survey (Appendix A), which will allow continuity of data analysis and reporting.

To capture a broad range of survey responses, the survey periods will be at different times of day in an attempt to capture different audiences.

- Day 1 – 11.00 am to 6.00 pm
- Day 2 – 7.30 am to 2.30 pm

KJA Team

Project Manager Marc Snape has experience in Government and community engagement, and will undertake manager the project including survey design, and delivery of the project on time and to budget. Marc will be your direct point of contact and KJA's nominated lead on this project. Marc will also be assisted by a Project Coordinator while undertaking the survey in Bulahdelah to optimise

survey response numbers. KJA Executive Director Darryl Watkins will provide strategic advice to the project.

Brief CVs of the team and Terms and Conditions are attached for your reference.

On behalf of KJA, I look forward to the opportunity to work with you on this project. Should you have any queries or require any further information please contact me at your convenience.

Fee proposal

Activity	Fee (exc. GST)
• **Prepare and Undertake Survey – targeting 100 surveys;** Desktop review, including previous survey results, staff briefing etc; Travel time, car hire and accommodation; 2 x 7 hour survey sessions; • **Collate survey results and create a 10-page report**	$9,525 $4,175
Total fee excluding GST	**$13,700**

This proposal is subject to KJA's standard Terms and Conditions. Any additional services requested by the client and not outlined above will be charged at hourly rates. Brief biographies outlining the team's experience are attached.

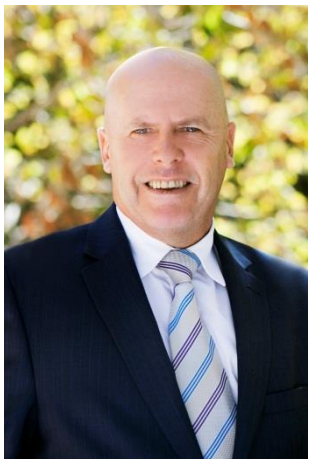
Please call me on (02) 9955 5040 if you would like to discuss any aspect of this proposal.

Yours sincerely

Darryl Watkins
Executive Director

Personnel

Darryl Watkins $300 per hour
Executive Director & Strategic Advice



Darryl Watkins has extensive experience as a senior advisor for state and Commonwealth Ministers, including the Office of the Premier of NSW and the Federal Minister for the Environment and Minister for the Arts. With a background in high profile, politically sensitive environments, Darryl's strengths include team leadership, negotiation, policy and strategy development, issues management, stakeholder consultation and written and verbal communication skills. From his government experience, Darryl has an in-depth understanding of complex and sensitive environmental issues and the importance of balancing commercial considerations, community impacts and regulatory requirements. Darryl also brings a wealth of expert knowledge in government, budgetary and public policy processes from experience in advisory and strategic roles in tourism, industrial relations, ageing and disability, planning, resources, arts and regional development.

Marc Snape $200 per hour
Project Manager

Marc Snape is a communications professional with over ten years of experience in a range of government and private sector roles. He has experience working with local community groups, government and business stakeholders to deliver positive outcomes. Marc has a strong understanding of both public and private sector processes. He is versatile and solution focused, with excellent facilitation skills. As a former Media Adviser for a Federal Minister, Marc also has extensive experience in providing media, communications and political advice. He understands the importance of stakeholder management and engagement to ensure that projects are successfully delivered while maximising community support.

Alex Crozier $125 per hour
Project Coordinator

Alex uses skills developed through her studies and experiences to assist co-workers while building her professional capabilities. While working at KJA Alex has coordinated communications activities for high-interest projects including the Northern Beaches B-Line and the Bondi Pavilion Redevelopment. In past projects Alex has supported the facilitation of a range of workshops, conducted detailed stakeholder research and consulted directly with the community on a range of issues. Alex works efficiently under pressure, communicates well with team members and helps deliver the best possible outcomes for clients.

Terms & Conditions

- KJA employees are covered by Workers Compensation, Professional Indemnity and Public Liability insurance.
- KJA daily rates are based on an eight hour day including a half hour for lunch. Any additional hours worked will be charged at the agreed hourly rate for that consultant.
- Charge out rates for consultants across the business may change over time. KJA will notify you in writing if and when that occurs.
- Consultants may be replaced on projects from time to time to accommodate internal leave or staff movements. KJA will replace the nominated consultant with a consultant of similar experience and the client will be notified in advance.
- Agreed expenses such as printing and distribution are charged at cost plus 10%. Overnight accommodation and other travel related disbursements are charged at cost.
- Travel over one hour will be charged at the hourly rate of the nominated consultant.
- All documents produced by KJA at preliminary, draft and final stages are for the use of the client. The arrangements of this contract and the information required to be shared is confidential between both parties.
- All documentation will be made available in electronic and printed form to the client for use across the life of the project, both during the period of the contract and after the completion of the contract.
- Claims for fees, including agreed expenses as outlined above, will be made to the nominated client manager on a monthly basis and reported on the basis of the items outlined for each stage of the project.
- Payments should be made within 14 days.
- Prices quoted are exclusive of GST.
- Either party may terminate the contract with one (1) months' notice in writing.
- We do not carry on the business of lobbying government officials (within the meaning of the *Lobbying of Government Officials Act 2011 (NSW)*) on behalf of our clients. We will only communicate with such officials on your behalf if the communication is ancillary to the provision of communications services that are directed towards

Appendix A – Visitor Survey

Bulahdelah Township Visitor Survey
Stroud Street, Bulahdelah
11-12 July 2017

We are conducting a Community Survey to assess the reasons visitors come to the Bulahdelah Township.

1. Are you a local resident or visitor?

   ☐ Resident ☐ Visitor

2. If a resident, on average how often do you visit Stroud Street, Bulahdelah?

1	2	3	4	5
☐	☐	☐	☐	☐
Daily	Multiple times a week	Weekly	Fortnightly	Less Often

3. If visiting, are you staying in Bulahdelah/nearby (at least 1 night) or visiting for the day?

   ☐ Staying ☐ Visiting for the day

4. What is the main purpose of your visit to Bulahdelah?

   ☐ Food/meal
   ☐ Groceries
   ☐ Petrol
   ☐ Tourism/Information
   ☐ Social (e.g. Pub)
   ☐ Recreation
   ☐ Other _____

5. Consideration is currently underway for a Highway Service Centre located on the Pacific Highway to the North-East of Bulahdelah Township (see map). The site would include a fuel retailer with associated quick service restaurant facilities.

   a. Would a Highway Service Centre impact your decision to visit the town today?

   ☐ Yes ☐ No ☐ Unsure

   b. On a scale of 1 to 5, how likely would you be to visit a Highway Service Centre on Pacific Highway instead of Bulahdelah?

1	2	3	4	5	
☐	☐	☐	☐	☐	☐
Very Unlikely		Neutral		Very Likely	Unsure

   c. What impact do you think a Highway Service Centre will have on the local area?

1	2	3	4	5	
☐	☐	☐	☐	☐	☐
Negative		Neutral		Positive	Unsure

Sydney office
Level 9, 2 Elizabeth Plaza, North Sydney NSW 2060
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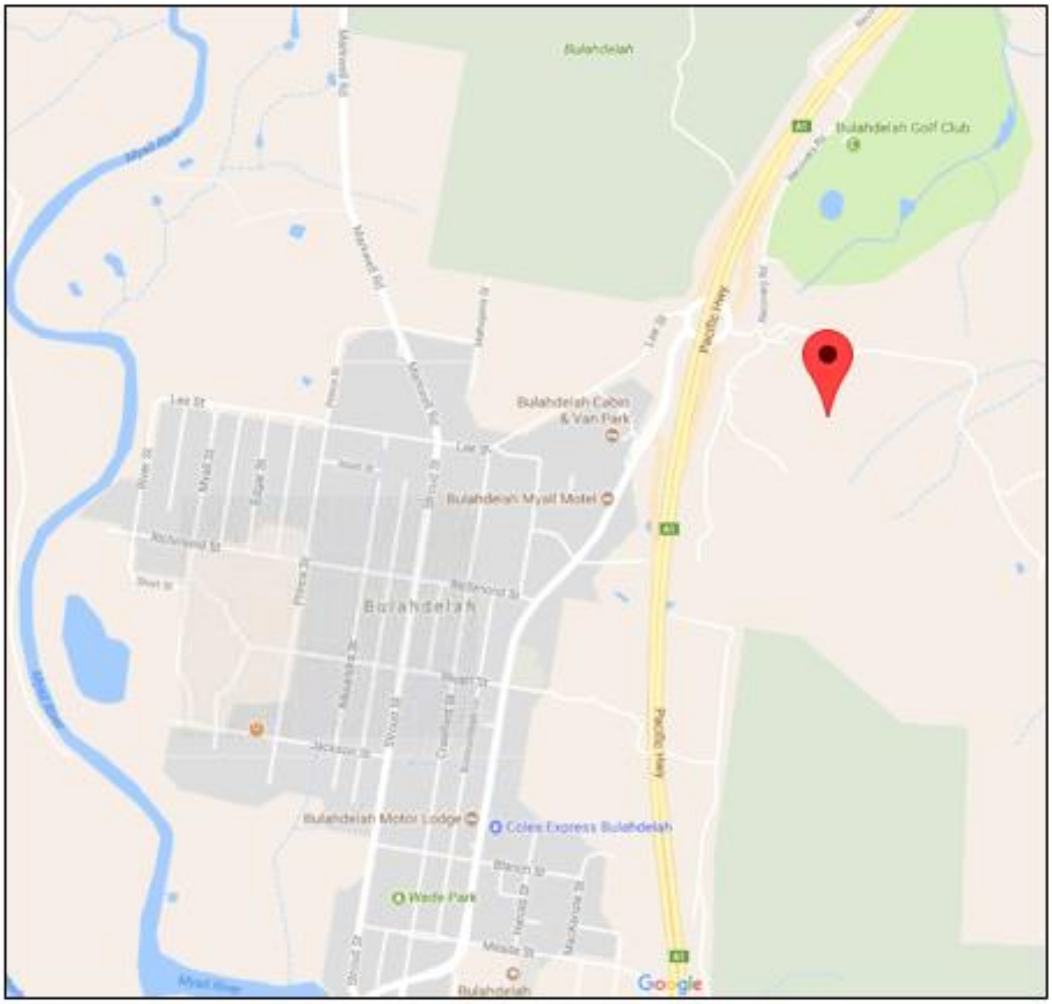

Proposed Bulahdelah Highway Service Centre location (Lot 3 DP 1120817 & Lot 100 in DP 1139447)

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Level 9, 2 Elizabeth Plaza, North Sydney NSW 2060
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KJA
engaging solutions

Bulahdelah Highway Service Centre
Survey Report

Report
19 July 2017

Table of Contents

1. Executive Summary

The town of Bulahdelah is located on the Pacific Highway, approximately 250 kilometres north of Sydney, New South Wales. As of the 2011 census, the town had a population of 1,519.

A visitor survey was developed to assess the impact on visitation numbers of the proposed construction of a Highway Service Centre (HSC) along the Pacific Highway, north-east to the Bulahdelah Township at 9844 Pacific Highway, Bulahdelah.

The key findings of the survey show that 78% of respondents indicated that the proposed HSC would not have impacted on their decision to visit the Bulahdelah township on the day of the survey, had it been operational already.

Further, 62.88% of respondents indicated that they would be either 'unlikely' or 'very unlikely' to visit the proposed HSC instead of the Bulahdelah township more generally. A significant number of local residents indicated that they saw no reason to visit the HSC at all, with others indicating it would be dependent on the HSC's fuel prices, and would be unlikely to impact their decision to visit Stroud Street.

132

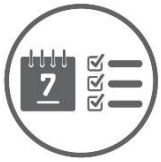
SURVEYS TAKEN

103

SAID HSC WOULD NOT HAVE AN IMPACT ON DECISION TO VISIT THE TOWN TODAY

60

RESIDENT PARTICIPANTS



77%

OF RESIDENTS VISIT STROUD STREET NUMEROUS TIMES A WEEK

72

VISITOR PARTICIPANTS

75%

OF VISITORS WERE VISITING FOR THE DAY OR PASSING THROUGH

SG Haddad Advisory engaged KJA to conduct the survey to capture the views of visitors and the community in regards to the proposal for the HSC. The Visitor Survey gathered information on why pedestrians visited the town centre, and whether an HSC out of town would affect their decision to visit for their specific trip, and more generally.

The intercept survey was conducted over two days on 11-12 July 2017, with a total of 132 surveys completed. Of those surveyed, 45.45% (60) indicated that they live locally and 54.55% (72) indicated that they were visiting Bulahdelah.

Among respondents who were visiting, only 24.39% (20) indicated that they were staying for at least one night, with the rest either visiting for the day or passing through the town briefly. Residents were likely to visit the town at least weekly, with 77% indicating they visited Stroud Street multiple times a week or more. Food or groceries were the most common reasons provided to visit the town.

2. Methodology

The survey was designed to take less than 2 minutes to complete and included seven multiple choice questions. A copy of the survey can be found in Appendix 1.

The survey focused on participants' reasons for visiting Stroud Street, whether an HSC would have changed their decision to visit, and whether the presence of an HSC would have a positive or a negative impact on Bulahdelah, in their opinion.

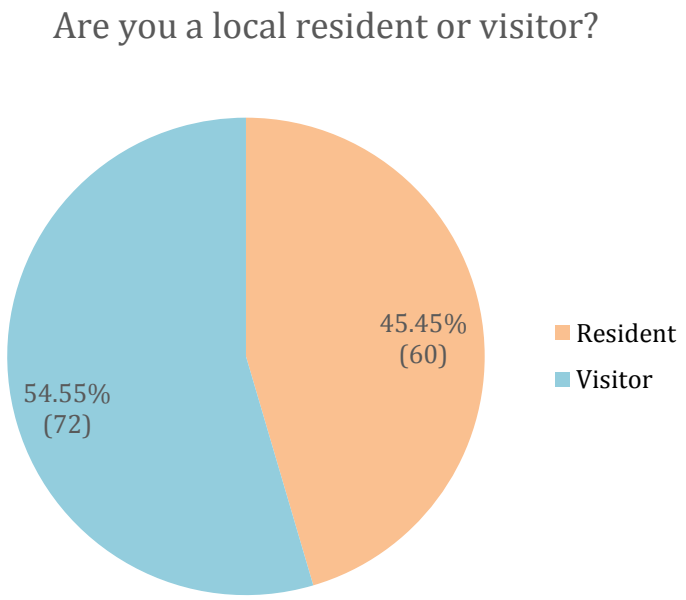
Two KJA staff members conducted intercept surveys in Bulahdelah over June 11 and 12. The surveys were conducted at different times each day to capture different audiences:

- 11 am to 6 pm on Day 1
- 8 am to 3 pm on Day 2

Two survey stations were set up on Stroud Street, one outside the IGA and the other near the pharmacy to capture foot traffic on both sides of the street. These locations are marked on the map below.

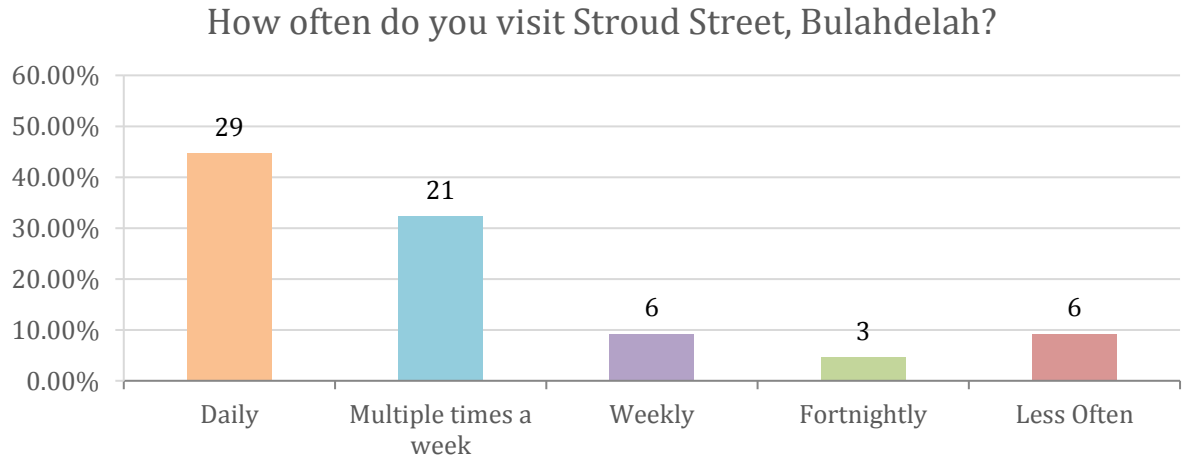
3. Survey Findings

Q1. Are you a local resident or visitor?



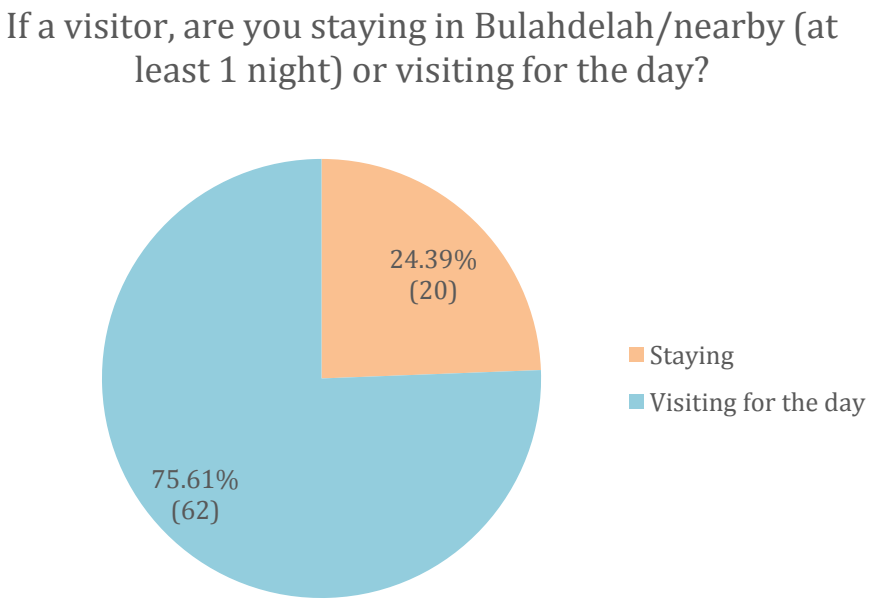
Q2. If a resident, on average how often do you visit Stroud Street, Bulahdelah?

Residents were asked how frequently they visited Stroud Street. The majority of residents visited multiple times a week or more, with a small number (15) indicating that they visited weekly or less frequently.



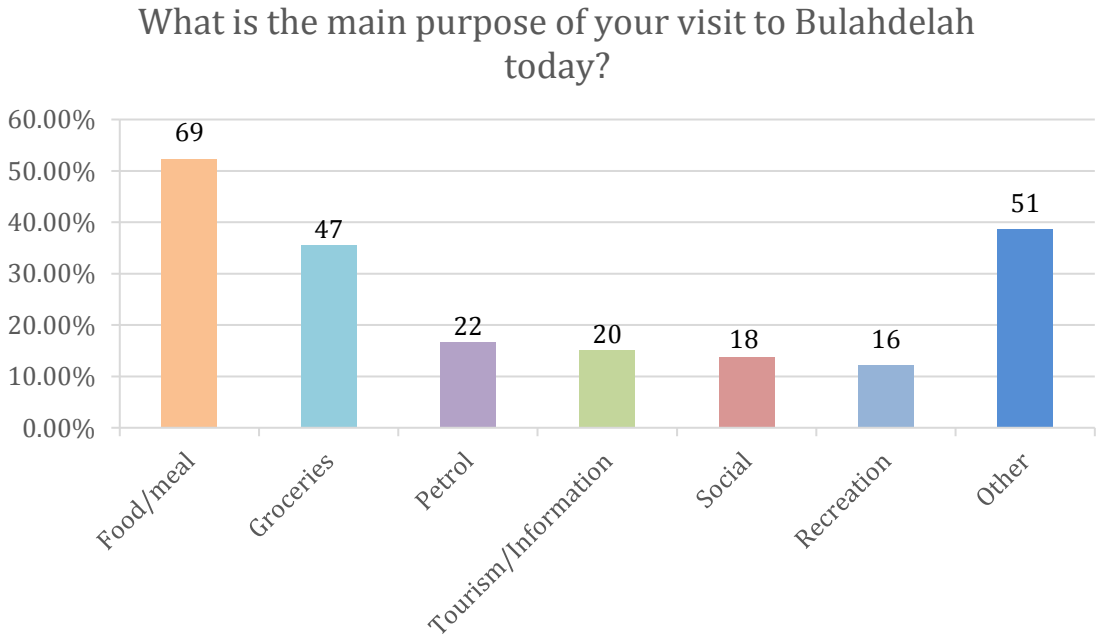
Q3. If a visitor, are you staying in Bulahdelah/nearby (at least 1 night) or visiting for the day?

Visitors were asked whether they were staying in Bulahdelah for at least a night or whether they were visiting for the day. Visitors passing through or using Bulahdelah for a driver's rest were encouraged to indicate 'visiting for the day'.

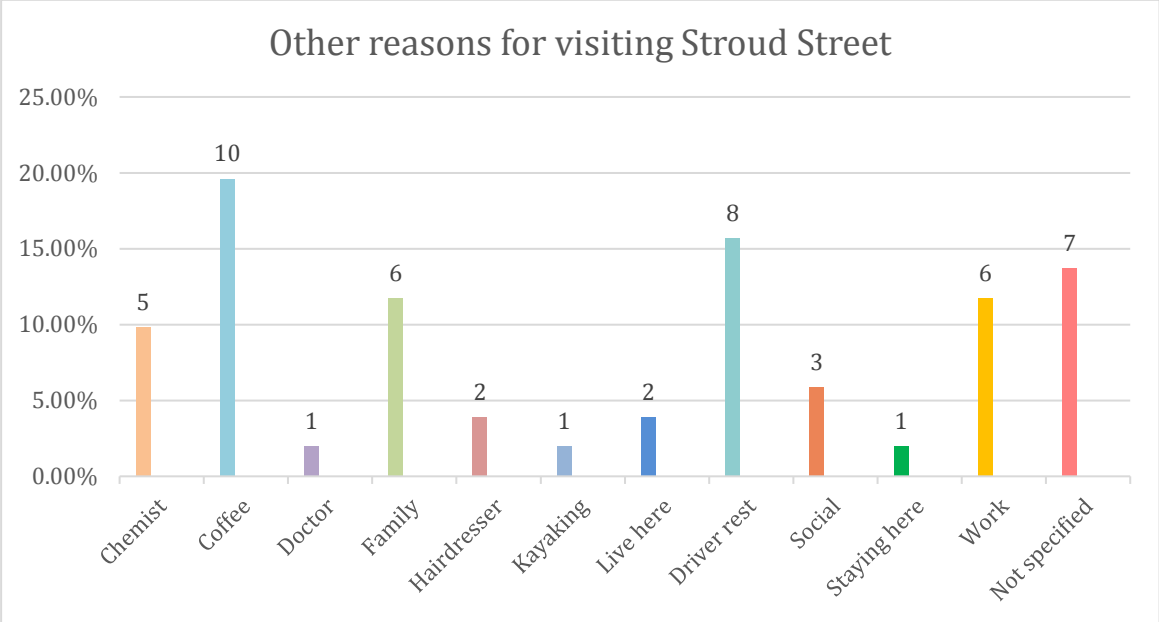


Q4. What is the main purpose of your visit to Bulahdelah today?

All participants were asked to indicate the main purpose of their visit to Stroud Street. Participants were given the options of: food/meal, groceries, petrol, tourism/information, social and recreation. Respondents were also given the option to specify any other reason for visiting Stroud Street. It was possible for participants to answer with more than one response.

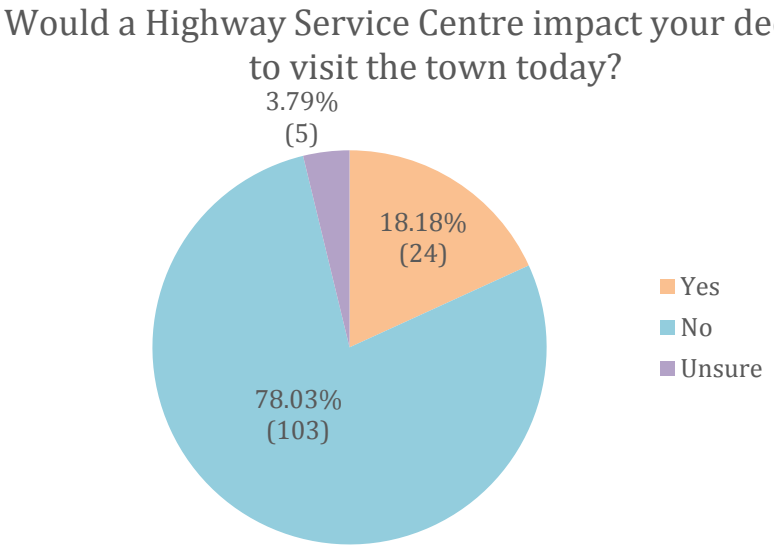


Out of 132 respondents, 51 selected the option for other. There were a range of responses that can be categorised into 12 categorises listed in the table below:



Q5 a. Would a Highway Service Centre impact your decision to visit the town today?

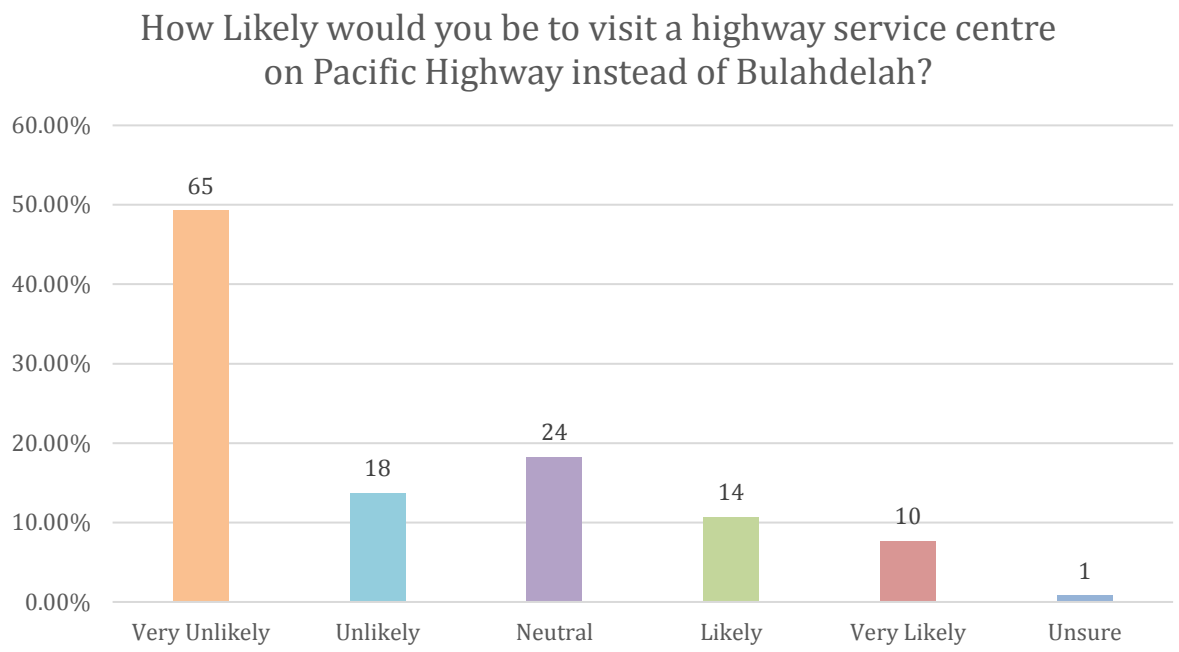
Participants were told "Consideration is currently underway for an HSC located on the Pacific Highway to the North-East of Bulahdelah Township. The site would include a fuel retailer with associated quick service restaurant facilities". A map was provided for reference. Participants were then asked whether an HSC, had it been in operation on the day of the survey, would have had an impact on respondents' decision to visit Stroud Street.



The overwhelming majority of participants (78.03%) said that their decision to visit the town would not have been impacted by an HSC. 18.18% of participants indicated that their decision would have been impacted, and 3.79% were unsure. Of participants that listed unsure, most suggested that their decision would depend on what facilities would be included in the HSC.

Q5 b. On a scale of 1 to 5, how likely would you be to visit a Highway Service Centre on Pacific Highway instead of Bulahdelah?

Participants were asked whether, in general, they would be likely to visit an HSC instead of Bulahdelah.



Most participants showed very little inclination to visit an HSC on the Pacific Highway instead of Bulahdelah. Among visitors, most explained that they visited Bulahdelah for specific reasons, including a desire to avoid service centres; enjoying wandering around and looking at a small town; and road trip traditions. A small number of visiting families could not find services to suit their needs and suggested that they would prefer to use an HSC in future.

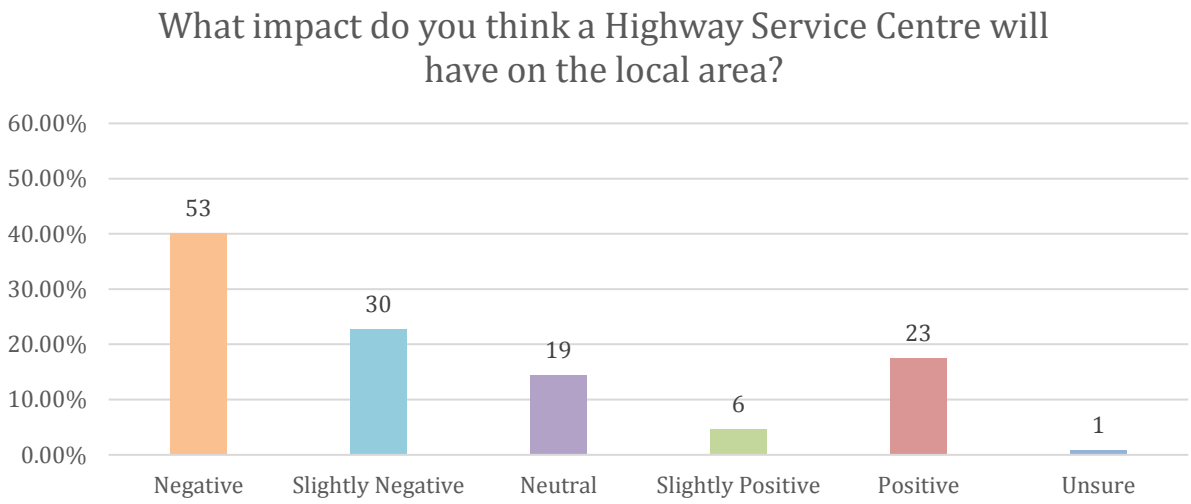
Among residents, some expressed confusion over this question as they did not see the point of visiting the service centre at all. Others explained that it would be inconvenient to travel to the HSC in lieu of Stroud Street, and unless there was significantly cheaper fuel it would be unlikely to impact their choice.

The participants that selected 'neutral' mostly indicated that they would need more information about the specific services on offer before deciding, with a small number suggesting that they would be likely to visit the service centre if the services were either different or better to what is currently on offer in Stroud Street.

The respondents who indicated either 'likely' or 'very likely' often gave specific reasons. Some were residents enthusiastic about having a fast food outlet nearby. Others indicated that if petrol prices were competitive to what is currently on offer in town, they would be inclined to use the HSC instead.

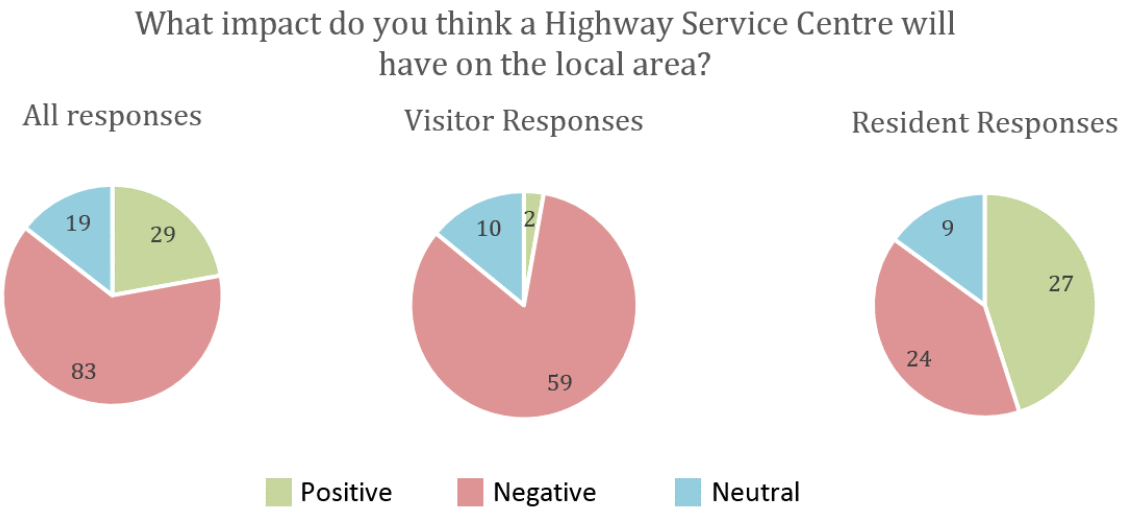
Q5 c. What impact do you think a Highway Service Centre will have on the local area?

Participants were asked what sort of impact they thought an HSC would have on Bulahdelah. The responses were generally negative.



Responses to this question differed drastically between residents and visitors. While residents were more likely to indicate that the HSC would have a positive impact on the town (45% positive), the majority of visitors thought an HSC would have a negative impact (approx. 81% indicated it would be either slightly negative or negative).

Residents were much more likely to see a potential positive to revitalise the town, and see an opportunity for local jobs. A common concern expressed by residents was the job shortage in the town, with numerous respondents stating that very few of the 2016 school leavers had been able to find local work.



Participants who indicated that the service centre would have a negative impact generally reasoned that a service centre out of town would reduce the number of visitors to Bulahdelah. Some cited examples of other towns in which HSCs had been built nearby, such as Taree and Goulburn, to demonstrate their point.

Those that were positive about the HSC viewed it as an opportunity to revitalise the town. Some respondents expressed a desire to see change in Bulahdelah, acknowledging that the HSC could possibly be risk to the town, but that it was worth the risk.

19 respondents, both residents and visitors, indicated that the service centre would have a neutral impact on Bulahdelah. Many of these respondents acknowledged that there would likely be some positives and some negatives. They pointed out that there may be a loss of custom to the town centre and that shops could be at risk of closure, but the increased demand for jobs from the HSC would possibly make up for this. The result, some indicated, may simply be a shift in the location of businesses in the area.

4. Conclusion

Over the course of the survey collection, a large number of pedestrians in Stroud Street were willing to provide their time to complete the survey. This has lead to a significant data set being collected that captures a range of views and opinions towards the proposed Highway Service Centre.

Of the 132 responses received, 60 were from local residents and 72 were visitors to the Bulahdelah. 77% of the residents visit Bulahdelah Township multiple times a week, and 75.6% of visitors were visiting for the day (not staying nearby).

87.9% of responses identified food or groceries as one of the reasons for their trip to Stroud Street when completing the survey.

78% of responses indicated that the presence of an HSC would not have impacted their decision to visit the Township that day, with 62.9% of responses indicating they would be unlikely to choose to visit an HSC over the Township more generally.

Residents were much more likely to indicate the HSC would have a positive impact on the town than visitors, with a focus on job opportunities for local residents.

While visitors were more likely to indicate they believed the HSC would have a negative impact, this would appear to contradict earlier responses in the survey (Q5a and Q5b) that indicated the majority of respondents would not have changed their decision to visit the town if the HSC was operational.

Appendix A – Visitor Survey

Bulahdelah Township Visitor Survey
Stroud Street, Bulahdelah
11-12 July 2017

We are conducting a Community Survey to assess the reasons visitors come to the Bulahdelah Township.

1. Are you a local resident or visitor?

   ☐ Resident ☐ Visitor

2. If a resident, on average how often do you visit Stroud Street, Bulahdelah?

1	2	3	4	5
☐	☐	☐	☐	☐
Daily	Multiple times a week	Weekly	Fortnightly	Less Often

3. If visiting, are you staying in Bulahdelah/nearby (at least 1 night) or visiting for the day?

   ☐ Staying ☐ Visiting for the day

4. What is the main purpose of your visit to Bulahdelah?

   ☐ Food/meal
   ☐ Groceries
   ☐ Petrol
   ☐ Tourism/Information
   ☐ Social (e.g. Pub)
   ☐ Recreation
   ☐ Other _____

5. Consideration is currently underway for a Highway Service Centre located on the Pacific Highway to the North-East of Bulahdelah Township (see map). The site would include a fuel retailer with associated quick service restaurant facilities.

   a. Would a Highway Service Centre impact your decision to visit the town today?

   ☐ Yes ☐ No ☐ Unsure

   b. On a scale of 1 to 5, how likely would you be to visit a Highway Service Centre on Pacific Highway instead of Bulahdelah?

1	2	3	4	5	
☐	☐	☐	☐	☐	☐
Very Unlikely		Neutral		Very Likely	Unsure

   c. What impact do you think a Highway Service Centre will have on the local area?

1	2	3	4	5	
☐	☐	☐	☐	☐	☐
Negative		Neutral		Positive	Unsure

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Level 9, 2 Elizabeth Plaza, North Sydney NSW 2060
PO Box 302, North Sydney NSW 2059
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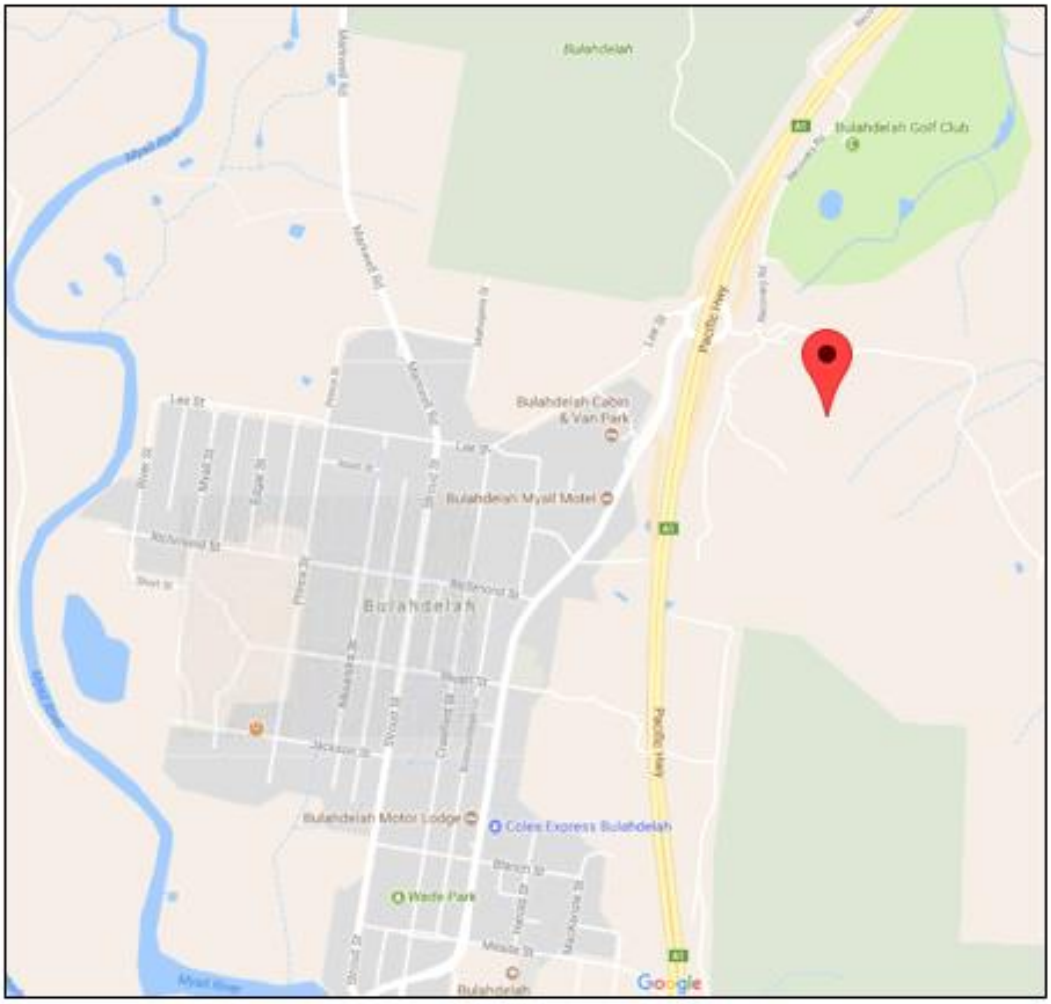

Proposed Bulahdelah Highway Service Centre location (Lot 3 DP 1120817 & Lot 100 in DP 1139447)

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Appendix B – Survey Data (Visitors & Residents breakdown)

Q4. What is the main purpose of your visit to Bulahdelah today?

	Food/Meal	Groceries	Petrol	Tourism/ Information	Social	Recreation	Other
Residents	24	42	18	6	16	11	25
Visitors	45	5	4	14	2	5	26

NB. 'Other' responses included chemist, coffee, family, driver rest and work

Q5 a. Would a Highway Service Centre impact your decision to visit the town today?

	Yes	No	Unsure
Residents	8	49	3
Visitors	16	54	2

Q5 b. On a scale of 1 to 5, how likely would you be to visit a Highway Service Centre on Pacific Highway instead of Bulahdelah?

	Very Unlikely	Unlikely	Neutral	Likely	Very Likely	Unsure
Residents	28	4	15	5	7	1
Visitors	37	14	9	9	3	0

Q5 c. What impact do you think a Highway Service Centre will have on the local area?

	Very Negative	Negative	Neutral	Positive	Very Positive	Unsure
Residents	18	6	9	4	23	0
Visitors	35	24	10	2	0	1

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Appendix C – *Correspondence from Bulahdelah Chamber of Commerce*

BULAHDELAH
Chamber of Commerce and Tourism Inc.

ABN 86 510 739 193

PO Box 30 Bulahdelah NSW 2423

Ph: 4997 4764 bulahdelahrtc@bigpond.com

Attention: Gavin, Coastplan

Re *proposed development with special reference to the proposed service centre, Pacific Highway Bulahdelah*

The Chamber supports the development of a service centre as this is integral to the development of the whole project. The service centre would assist in branding Bulahdelah as a destination and provide economic benefits to our town by "funnelling" traffic into Bulahdelah, therefore improving the economic viability and long term sustainability of our town.

The Chamber engaged in a public consolation process with two meetings held mid 2016 to gauge support for this project, including the service centre. One meeting was held for businesses and the second was a public meeting. Both meetings and the discussions since indicate an overwhelming support for this project including the service centre.

I would be pleased to supply any further information you may require.

Regards,

John Sahyoun

President, Bulahdelah Chamber of Commerce & Tourism Inc.
Vice President, MidCoast Business Chamber

19.05.2017

Appendix D – *Consistency with State Environmental Planning Policies*

State Environmental Planning Policy (SEPP)	Consistency with SEPP
SEPP No 14—Coastal Wetlands	This SEPP is not applicable as the site does not contain any areas mapped as wetland under SEPP 14.
SEPP No 19—Bushland in Urban Areas	This SEPP does not apply in the MidCoast Local Government Area.
SEPP No 21—Caravan Parks	The provisions of SEPP 21 apply to the land and caravan parks are permissible on the land. The proposal does not involve a caravan park and the provisions of the SEPP are not relevant to this proposal.
SEPP No 26—Littoral Rainforests	This SEPP is not applicable as the site does not contain any areas mapped as littoral rainforest under SEPP 26.
SEPP No 30—Intensive Agriculture	The provisions of SEPP 30 apply to the land. The proposal does not involve a cattle feedlot or piggery and the provisions of this SEPP are not relevant to the proposal.
SEPP No 33—Hazardous and Offensive Development	The proposal will involve the storage of fuel and future development will need to comply with the provisions of the SEPP. The provisions of the SEPP are discussed in greater detail within the planning proposal.
SEPP No 36—Manufactured Home Estates	The provisions of SEPP 36 apply to the land. The proposal does not involve a manufactured home estate and the provisions of the SEPP are not relevant to this proposal.
SEPP No 44—Koala Habitat Protection	Previous assessments of the land have identified that parts of the subject land contained potential koala habitat. The planning proposal affects land which is not identified as potential koala habitat. The provisions of the SEPP are discussed in greater detail within the planning proposal.
SEPP No 47—Moore Park Showground	Not applicable
SEPP No 50—Canal Estate Development	Not applicable
SEPP No 52—Farm Dams and Other Works in Land and Water Management Plan Areas	Not applicable
SEPP No 55—Remediation of Land	Previous investigation of the land did not reveal any significant contamination. The proposed use will include underground storage of fuel and measures are required to avoid contaminations. The provisions of the SEPP are discussed in greater detail within the planning proposal.
SEPP No 62—Sustainable Aquaculture	The proposal does not involve aquaculture. The proposed development is unlikely to impact on Oyster Aquaculture.
SEPP No 64—Advertising and Signage	The proposed use as a highway service centre will require advertising and signage and the provisions of the SEPP will apply. This SEPP will be considered in detail when a development application involving signage is lodged.
SEPP No 65—Design Quality of Residential Apartment Development	The proposal does not provide for residential flat buildings and the provisions of this SEPP do not apply.

State Environmental Planning Policy (SEPP)	Consistency with SEPP
SEPP No 70—Affordable Housing (Revised Schemes)	The proposal does not provide for any housing and the provisions of this SEPP do not apply.
SEPP No 71—Coastal Protection	The subject land is located outside the coastal zone and the provisions of the SEPP are not applicable to the proposal.
SEPP (Affordable Rental Housing) 2009	The proposal does not involve any residential development and the provisions of this SEPP are not applicable.
SEPP (Building Sustainability Index: BASIX) 2004	The proposal does not include any residential development to which the provisions of BASIX would apply.
SEPP (Exempt and Complying Development Codes) 2008	The proposed additional permissible use on the land would not introduce any additional exempt or complying uses under the SEPP.
SEPP (Housing for Seniors or People with a Disability) 2004	The proposal would not include or create any additional allowance for Housing for Seniors or persons with a disability and the provisions of the SEPP would not apply.
SEPP (Infrastructure) 2007	The application of the SEPP (Infrastructure) 2007 will not be affected by this planning proposal. Future development of the land will be identified as Traffic Generating Development under Clause 104 of the SEPP and referral to Roads and Maritime Services will apply.
SEPP (Integration and Repeals) 2016	Not applicable
SEPP (Kosciuszko National Park—Alpine Resorts) 2007	Not applicable
SEPP (Kurnell Peninsula) 1989	Not applicable
SEPP (Mining, Petroleum Production and Extractive Industries) 2007	The planning proposal does not provide for mining, etc., and would not impact on the ability to undertake such uses.
SEPP (Miscellaneous Consent Provisions) 2007	Not applicable
SEPP (Penrith Lakes Scheme) 1989	Not applicable
SEPP (Rural Lands) 2008	The proposal is located on land zoned rural and the provisions of the SEPP apply to the land. The provisions of the SEPP are discussed in greater detail within the planning proposal.
SEPP (State and Regional Development) 2011	It is unlikely that the proposed use would fall into the criteria for state significant or regional development and the provisions of the SEPP would not apply.
SEPP (State Significant Precincts) 2005	Not applicable
SEPP (Sydney Drinking Water Catchment) 2011	Not applicable
SEPP (Sydney Region Growth Centres) 2006	Not applicable
SEPP (Three Ports) 2013	Not applicable
SEPP (Urban Renewal) 2010	Not applicable
SEPP (Western Sydney Employment Area) 2009	Not applicable

State Environmental Planning Policy (SEPP)	Consistency with SEPP
SEPP (Western Sydney Parklands) 2009	Not applicable

Appendix E – *Consistency with S9.1 Ministerial Directions*

S9.1 Ministerial Direction	Consistency with S9.1 Direction
1. Employment and Resources	
1.1 Business and Industrial Zones	This direction only applies where a planning proposal affects land within a business or industrial zone and does not apply to this proposal.
1.2 Rural Zones Aims to protect the agricultural production value of rural lands.	The planning proposal affects land that is zoned rural and the provisions of the direction apply. The provisions of the direction are discussed in greater detail within the planning proposal.
1.3 Mining, Petroleum Production and Extractive Industries	The planning proposal is consistent with this direction and does not affect the permissibility of mining or extractive industries on land.
1.4 Oyster Aquaculture	The proposed change of land use is unlikely to significantly impact on identified priority oyster aquaculture areas.
1.5 Rural Lands	The planning proposal affects land that is zoned rural and the provisions of the direction apply. The provisions of the direction are discussed in greater detail within the planning proposal.
2. Environment and Heritage	
2.1 Environmental Protection Zones	The proposal does not involve any change to the Environmental Conservation zonings over parts of the land. The land was subject to a recent planning proposal which identified environmentally significant and sensitive areas, and created appropriate Environmental Conservation zones over those areas.
2.2 Coastal Protection	This direction does not apply to the land as it is not located in the coastal zone.
2.3 Heritage Conservation	The subject land is located in the Bulahdelah Mountain heritage conservation area and adjoins the Bulahdelah Mountain local heritage item. The site of the proposed highway service centre is away from this item. The provisions of the direction are discussed in greater detail within the planning proposal.
2.4 Recreation Vehicle Areas Aims to protect sensitive lands with significant vegetation value from the adverse impacts of recreational vehicles.	The planning proposal does not allow sensitive land to be utilised for a recreational vehicle area and is consistent with the provisions of the direction.
3. Housing, Infrastructure and Urban Development	
3.1 Residential Zones Aims to encourage a range of housing that makes efficient use of existing infrastructure and service that does not impact on the environment or resource lands.	Whilst the additional use affects a small area of R1 zoned land, the effect of the proposal will not alter the permissible density, housing choice and other controls, and will be consistent with the provisions of the direction.
3.2 Caravan Parks and Manufactured Home Estates Aims to provide a variety of housing types including opportunities for	The planning proposal does not provide additional opportunity or restriction for caravan parks and manufactured home estates and the direction is not applicable.

S9.1 Ministerial Direction	Consistency with S9.1 Direction
caravan parks and manufactured home estates.	
3.3 Home Occupations Aims to encourage low impact businesses in dwelling houses.	The planning proposal does not provide additional opportunity or restriction for home occupations and the direction is not applicable.
3.4 Integrating Land Use & Transport Aims to improve access by walking, public transport and other means that reduce private car travel dependencies.	This direction is not applicable as the proposal does not affect land in an urban zone.
3.5 Development Near Licensed Aerodromes Aims to ensure that aerodromes operate safely and effectively and that development within the vicinity of aerodromes is suitable for occupation and does not compromise aerodrome operations.	This direction is not applicable as the proposal does not affect land in the vicinity of a licensed aerodrome.
3.6 Shooting Ranges	This direction is not applicable as the proposal does not affect land on or adjacent to a shooting range.
4. Hazard & Risk	
4.1 Acid Sulfate Soils	The land is not mapped as potentially containing Acid Sulfate Soils on the Acid Sulfate Soils Planning map and the direction is not applicable to this proposal.
4.2 Mine Subsidence and Unstable Land	The site is not located within a mine subsidence district and the direction does not apply to this proposal.
4.3 Flood Prone Land	The site is not located in the flood planning areas and is elevated above any likely flood prone areas.
4.4 Planning for Bushfire Protection	The subject land is mapped as bushfire prone land. As required by the direction, consultation will occur with the NSW Rural Fire Service following issue of a Gateway determination.
5. Regional Planning	
5.1 Implementation of Regional Strategies	The planning proposal is consistent with the Hunter Regional Plan as discussed in Part B.
5.2 Sydney Drinking Water Catchments	Not applicable
5.3 Farmland of State and Regional Significance on the NSW Far North Coast	Not applicable
5.4 Commercial and Retail Development along the Pacific Highway, North Coast	This direction is applicable to the proposal as it is in the vicinity of The Pacific Highway and seeks to facilitate development of a highway service centre. The provisions of the direction are discussed in greater detail within the planning proposal.
5.5 Revoked	Not applicable
5.6 Revoked	Not applicable

S9.1 Ministerial Direction	Consistency with S9.1 Direction
5.7 Revoked	Not applicable
5.8 Second Sydney Airport: Badgerys Creek	Not applicable
6. Local Plan Making	
6.1 Approval and Referral Requirements	The proposal does not seek to introduce any referral or concurrence provisions and is consistent with the provisions of the direction.
6.2 Reserving Land for Public Purposes	The proposal does not propose to reserve any land for public purposes and the provisions of this direction are not applicable.
6.3 Site Specific Provisions	This direction provides certain controls in relation to applying specific controls to a site for certain development. The proposal involves the creation of a site specific provision and is consistent with the direction. The provisions of the direction are discussed in greater detail within the planning proposal.
7. Metropolitan Planning	
7.1 Implementation of the Metropolitan Plan for Sydney 2036	Not applicable

Appendix F – *Consistency with Hunter Regional Plan Goals*

Goal 1 – the leading regional economy in Australia	
Direction 4 – Enhance inter-regional linkages to support economic growth	
Action 4.1 Enhance inter-regional transport connections to support economic growth.	The planning proposal provides a highway service centre along the Pacific Highway which will support and enhance transport along this national transport link. The proposal is consistent with this action and goal.
Action 4.2 Work with stakeholders to upgrade transport network capacity in line with changing demands.	Consultation with RMS has occurred and will continue to occur to ensure the infrastructure in place at the highway interchange is sufficient or any upgrades are identified.
Action 4.3 Strengthen and leverage opportunities from the interconnections with other regions, particularly the Pacific Highway, the Golden Highway and the New England Highway.	The proposed highway service centre will strengthen the use and function of the Pacific Highway.
Action 4.4 Promote freight facilities that leverage the Port of Newcastle and its associated freight transport network.	The Highway Service Centre will include facilities to service heavy vehicle transport used in the freight industry and support the freight transport network.
Action 4.5 Plan for multimodal freight facilities that support economic development of the region and respond to the location of the proposed Freight Rail Bypass.	Not Applicable
Action 4.6 Investigate opportunities for logistics and freight growth and other complementary land uses around airports, leveraging investments at Taree and Newcastle airports.	Not Applicable
Action 4.7 Enhance the efficiency of existing nationally significant transport corridors and protect their intended use from inappropriate surrounding land uses.	The proposed highway service centre will enhance the efficiency of the Pacific Highway National Transport Corridor.
Action 4.9 Balance competing interests and deliver conservation, transport and land use planning objectives in the national pinch point area by: • Identifying preferred habitat corridors and priorities for investment in conservation to sustain habitat connectivity; and • Developing an integrated management plan for the area.	Not Applicable
Direction 6 – Grow the economy of MidCoast and Port Stephens	
Action 6.1 Enhance tourism infrastructure and connectivity, recognising the importance of: • regional and inter-regional connections via the Pacific Highway and the Newcastle and Taree airports and cruise ship gateways; and	The proposed Highway Service Centre provides services to the travelling public along the Pacific Highway including tourists travelling to areas within the Hunter Region.

• local routes such as The Lakes Way and Nelson Bay Road.	
Action 6.2 Enhance links to regional services in Greater Newcastle.	The highway service centre provides services along the Pacific Highway which is the main road transport link to the Greater Newcastle area from the north.
Action 6.3 Enable economic diversity and new tourism opportunities that focus on reducing the impacts of the seasonal nature of tourism and its effect on local economies.	Not Applicable
Action 6.4 Promote growth of industries that can leverage accessibility provided by the Pacific Highway.	The proposed highway service centre will leverage accessibility and proximity to the Pacific Highway to capture passing trade which was lost to the Bulahdelah township when the Bypass of the town occurred.
Action 6.5 Plan for and provide infrastructure and facilities that support the ageing population.	Not Applicable
Direction 7: Develop advanced manufacturing, defence and aerospace hubs	
Action 7.2 Grow and diversify the manufacturing sector through local planning and appropriate planning controls.	Not Applicable
Action 7.3 Promote manufacturing business export opportunities and become part of global supply chains.	Not Applicable
Action 7.4 Facilitate research partnerships between tertiary education providers and businesses.	Not Applicable
Direction 8 – Promote innovative small business and growth in the service sectors	
Action 8.1 Implement initiatives to promote small business growth and innovation, particularly in Newcastle City centre and other strategic centres.	Not Applicable
Action 8.2 Facilitate opportunities for incubator spaces for technology and non-technology early stage businesses, and ensure opportunities for new and emerging enterprises are encouraged.	Not Applicable
Action 8.3 Improve connectivity to the region's major health and education precincts and strategic centres.	Not Applicable
Action 8.5 Establish a health precinct around Metford and other hospitals in the region, including Manning Base Hospital at Taree.	Not Applicable
Direction 9 – Grow tourism in the region	

Action 9.1 Enable investment in infrastructure to expand the tourism industry, including connections to tourism gateways and attractions.	Not Applicable
Action 9.2 Encourage tourism development in natural areas that support conservation outcomes.	Not Applicable
Action 9.5 Develop capacity for growth in food-based tourism in the region.	Not Applicable
Direction 10 – Protect and enhance agricultural productivity	
Action 10.1 Protect locations that can accommodate agricultural enterprises from incompatible development, and facilitate the supply chain, including infrastructure, distribution areas, processing facilities and research and development in local plans.	Whilst the land is zoned rural, it is not suitable for agricultural enterprises.
Action 10.2 Address sector-specific considerations for agricultural industries through local plans.	Not Applicable
Action 10.3 Protect the region's well-being and prosperity through increased biosecurity measures.	Not Applicable
Action 10.4 Encourage niche commercial, tourist and recreation activities that complement and promote a stronger agricultural sector, and build the sector's capacity to adapt to changing circumstances.	Not Applicable
Action 10.6 Manage Biophysical Strategic Agricultural Land and other important agricultural land as locations for agricultural activities and complementary uses.	Not Applicable
Direction 11 – Manage the ongoing use of natural resources	
Action 11.1 Manage the ongoing use of mineral resources and provide access to up-to-date information about these resources through the Department of Industry's Common Ground website and its Geoscientific Data Warehouse.	Not Applicable
Action 11.2 Work with relevant stakeholders including councils, communities and industry, to prepare land use plans that respond to the lifecycle of resource activity for active and emerging mining areas.	Not Applicable
Action 11.3 Implement the cumulative impact assessment methodology when planning for important agricultural land and water resources.	Not Applicable
Action 11.4 Review the Synoptic Plan: Integrated Landscapes for Coal Mine Rehabilitation in the	Not Applicable

Hunter Valley (1999) in conjunction with the development of the Upper Hunter Strategic Biodiversity Assessment to ensure best-practice rehabilitation and visual impact management for closed mines.	
Direction 12: Diversify and grow the energy sector	
Action 12.1 Diversify and grow the energy sector by working with stakeholders, including councils, communities and industry, to identify and support opportunities for smaller-scale renewable energy initiatives such as those using bioenergy or waste coalmine methane.	Not Applicable
Action 12.2 Enable new opportunities for renewable energy industries by reviewing local planning controls.	Not Applicable
Action 12.3 Promote new opportunities arising from the closure of coalfired power stations that enable long term sustainable economic and employment growth in the region.	Not Applicable
Direction 13 – Plan for greater land use compatibility	
Action 13.1 Identify and protect important agricultural land, including intensive agriculture clusters, in local plans to avoid land use conflicts, particularly associated with residential expansion.	Not Applicable
Action 13.2 Limit urban and rural housing encroachment into identified agricultural and extractive resource areas, industrial areas, and transport infrastructure when preparing local strategies.	Not Applicable
Action 13.3 Amend planning controls to deliver greater certainty of land use.	Not Applicable
Action 13.4 Provide non-statutory guidance on the types of land uses that would be considered most appropriate, suitable or sympathetic with existing land uses in the Upper Hunter and other areas where land use conflicts occur.	Not Applicable
Goal 2 – A biodiversity-rich natural environment	
Direction 14 – Protect and connect natural areas	
Action 14.1 Identify terrestrial and aquatic biodiversity values and protect areas of high environmental value to sustain the lifestyle,	The highway service centre is located over existing disturbed land and does not affect any areas of high environmental value.

economic success and environmental health of the region.	
Action 14.2 Identify and strengthen biodiversity corridors as places for priority biodiversity offsets.	Not Applicable
Action 14.3 Improve the quality of, and access to, information relating to high environmental values.	Not Applicable
Action 14.4 Protect biodiversity by maintaining and, where possible, enhancing existing protection of high environmental value areas; implementing appropriate measures to conserve validated high environmental value areas; developing local strategies to avoid and minimise the impacts of development on areas of high environmental value and biodiversity corridors; and identifying offsets or other mitigation measures for unavoidable impacts.	Not Applicable
Action 14.5 Secure the long term protection of regionally significant biodiversity corridors.	Not Applicable
Direction 15: Sustain water quality and security	
Action 15.1 Protect water catchments to sustain high quality and dependable water supplies across the region.	Not Applicable
Action 15.2 Effectively manage surface and groundwater use in agricultural areas to support ecosystem function, food production, and to cater for the increasing demand of urban communities and industry.	Not Applicable
Action 15.3 Plan for the security of the region's town water supply.	Not Applicable
Action 15.4 Implement catchment-based plans for the ongoing sustainable management and health of estuaries.	Not Applicable
Action 15.5 Apply the neutral or beneficial water quality objectives to land use planning in surface and groundwater drinking water catchment areas to minimise the effects of development on waterways, including watercourses, wetlands, groundwater dependent ecosystems, riparian lands, estuaries, lakes, beaches and marine waters.	The proposal will meet stormwater quality requirements for the development site as enshrined in the Great Lakes DCP 2014.
Action 15.6 Reduce the risk of introduction or spread of aquatic pests and diseases from new development that may affect fisheries and aquaculture industry practices.	Not Applicable

Action 15.7 Incorporate water-sensitive design into development that is likely to have an adverse impact on coastal water catchments, water quality and flows.	The proposal will meet stormwater quality requirements for the development site as enshrined in the Great Lakes DCP 2014.
Direction 16: Increase resilience to hazards and climate change	
Action 16.1 Manage the risks of climate change and improve the region's resilience to flooding, sea level rise, bushfire, mine subsidence and land contamination.	Not Applicable
Action 16.2 Review and consistently update floodplain risk and coastal zone management plans, particularly where urban growth is being investigated.	Not Applicable
Action 16.3 Incorporate new knowledge on regional climate projections and related cumulative impacts in local plans for new urban development.	Not Applicable
Action 16.4 Review and update the Newcastle Mines Grouting Fund and investigate its relevance to other areas.	Not Applicable
Goal 3 – Thriving communities	
Direction 17: Create healthy built environments through good design	
Action 17.1 Develop best-practice guidelines for planning, designing and developing healthy built environments.	Not Applicable
Action 17.2 Enhance access to fresh food by promoting initiatives that increase urban food production and access to produce from local farmers.	Not Applicable
Action 17.3 Enhance the quality of neighbourhoods by integrating recreational walking and cycling networks into the design of new communities to encourage physical activity.	Not Applicable
Direction 18: Enhance access to recreational facilities and connect open space	
Action 18.1 Facilitate more recreational walking and cycling paths including planning for the Richmond Vale Rail Trail and expanded inter-regional and intra-regional walking and cycling links, including the NSW Coastal Cycleway.	Not Applicable
Action 18.2 Deliver connected biodiversity-rich corridors and open space areas for community enjoyment.	Not Applicable

Action 18.3 Enhance public access to natural areas, including coastal and lake foreshores.	Not Applicable
Action 18.4 Assist councils to develop open space and recreation strategies that identify a range of accessible open space and recreation opportunities; integrate open space, active transport and recreation networks; and improve public foreshore access.	Not Applicable
Action 18.5 Implement actions and invest in boating infrastructure priorities identified in regional boating plans to improve boating safety, boat storage and waterway access.	Not Applicable
Direction 19 – Identify and protect the region's heritage	
Action 19.1 Consult with the local Aboriginal communities to identify and protect heritage values to minimise the impact of urban growth and development, and to recognise their contribution to the character and landscape of the region.	The development of the land and area has been subject to previous heritage assessment, including consultation with the Local Aboriginal Land Council.
Action 19.2 Assist the preparation of appropriate heritage studies to inform the development of strategic plans, including regional Aboriginal cultural heritage studies.	The development of the land and area has been subject to previous heritage assessment, including consultation with the Local Aboriginal Land Council.
Direction 20: Revitalise existing communities	
Action 20.1 Accelerate urban revitalisation by directing social infrastructure where there is growth.	Not Applicable
Action 20.2 Undertake planning and place-making for main streets and centres.	The Planning Agreement to be developed will consider additional works to Bulahdelah main street to enhance the centre.
Action 20.3 Enhance the amenity and attractiveness of existing places.	The Planning Agreement to be developed will consider additional works to Bulahdelah main street to enhance the centre.
Goal 4 – Greater housing choice and jobs	
Direction 21: Create a compact settlement	
Action 21.1 Promote development that respects the landscape attributes and the character of the metropolitan area, towns and villages.	Not Applicable
Action 21.2 Focus development to create compact settlements in locations with established services and infrastructure, including the Maitland Corridor growth area; Newcastle–Lake Macquarie Western Corridor growth area; the emerging growth area around Cooranbong, Morisset and Wyee; and in	Not Applicable

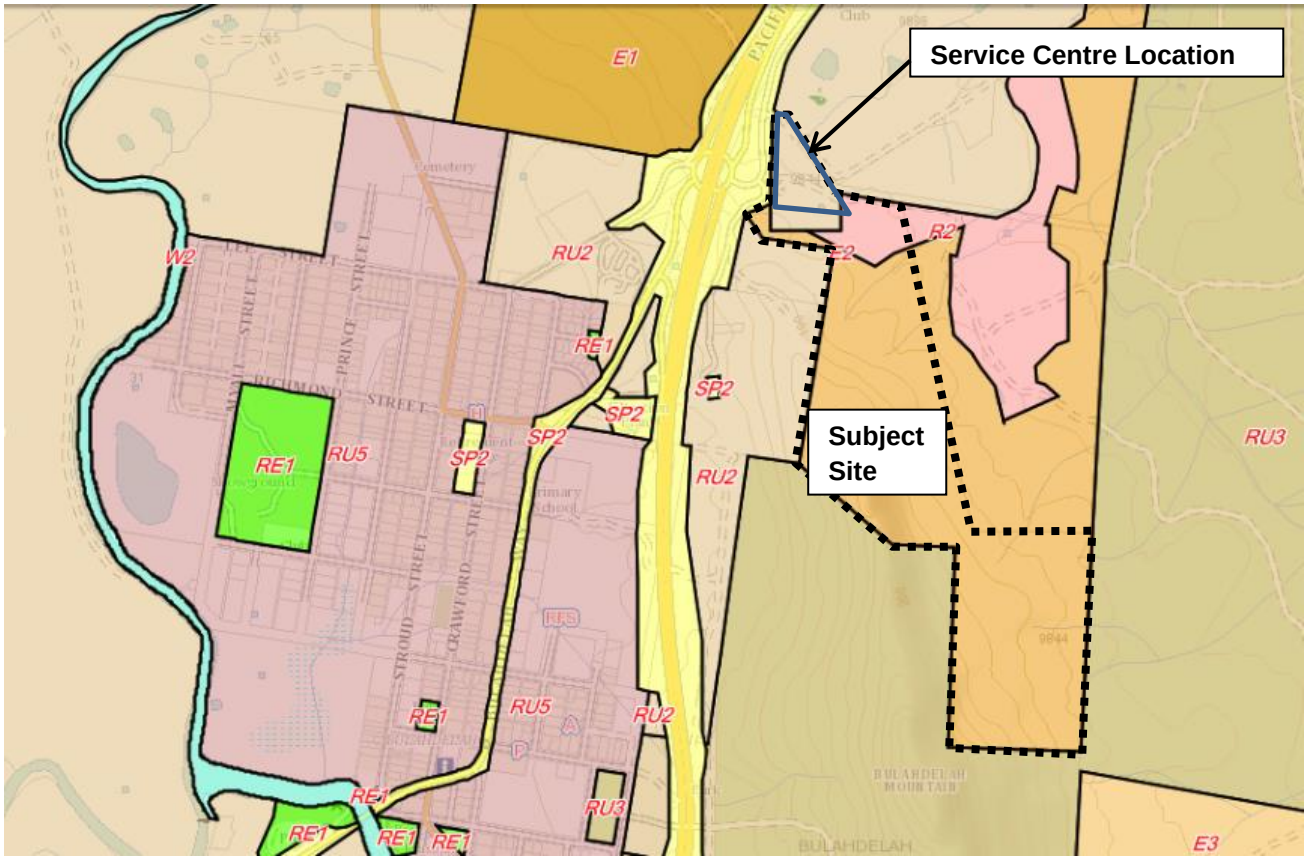
existing towns and villages, and sites identified in an endorsed regional or local strategy.	
Action 21.4 Create a well-planned, functional and compact settlement pattern that responds to settlement planning principles and does not encroach on sensitive land uses, including land subject to hazards, on drinking water catchments or on areas with high environmental values.	Not Applicable
Action 21.5 Promote small-scale renewal in existing urban areas, in consultation with the community and industry to ensure that this occurs in the right locations.	Not Applicable
Action 21.6 Provide greater housing choice by delivering diverse housing, lot types and sizes, including small-lot housing in infill and greenfield housing locations.	Not Applicable
Action 21.7 Promote new housing opportunities in urban areas to maximise the use of existing infrastructure	Not Applicable
Direction 22: Promote housing diversity	
Action 22.1 Respond to the demand for housing and services for weekend visitors, students, seasonal workers, the ageing community and resource industry personnel.	Not Applicable
Action 22.2 Encourage housing diversity including studio and one and two-bedroom dwellings, to match forecast changes in household sizes.	Not Applicable
Action 22.3 Develop local housing strategies to respond to housing needs, including social and affordable housing, and support initiatives to increase the supply of affordable housing.	Not Applicable
Action 22.4 Develop Settlement Planning Principles and a local planning toolkit to assist councils in implementing the Plan.	Not Applicable
Action 22.5 Include guidance in local land use strategies for expanding rural villages and rural-residential development so that future rural residential development will: • not impact on strategic or important agricultural land, energy, mineral or extractive resource viability or biodiversity values; • not impact on drinking water catchments; • not result in greater natural hazard risk; • occur on land that is unlikely to be needed for urban development;	Not Applicable

• contribute to the conservation of important biodiversity values or the establishment of important corridor linkages; and • facilitate expansion of existing and new tourism development activities in agricultural or resource lands and related industries across the region.	
Direction 23 – Grow centres and renewal corridors	
Action 23.1 Concentrate growth in strategic centres, local centres and urban renewal corridors to support economic and population growth and a mix of uses.	Not Applicable
Action 23.2 Develop precinct plans for centres to take an integrated approach to transport, open space, urban form and liveable neighbourhoods, and investigate the capacity of centres to accommodate additional housing and diversity, without compromising employment growth.	Not Applicable
Action 23.3.Consider improvements to the public transport network when planning new renewal corridors and precincts.	Not Applicable
Action 23.4 Investigate locations for new and expanded centres, including within the Newcastle – Lake Macquarie Western Corridor and Maitland Corridor growth areas, and in the established urban areas that are projected to have high demand for housing growth.	Not Applicable
Action 23.5 Focus commercial and retail development within existing centres and transport hubs and ensure that locations for new centres are integrated with existing or planned residential development; do not undermine existing centres; encompass high quality urban design; and consider transport and access requirements.	Not Applicable
Direction 24 – Protect the economic functions of employment land	
Action 24.1 Locate new employment land so that it does not conflict with surrounding residential uses.	The planning proposal will include measures to prevent conflict with adjoining residential lands.
Action 24.2 Protect the economic functions of employment land by not permitting non-industrial uses unless: • opportunities for urban renewal arise through the relocation of industry and in locations well serviced by public transport; and • contaminated land can be remediated.	Not Applicable
Action 24.3 Provide for mixed use opportunities and themed employment precincts in local plans.	Not Applicable

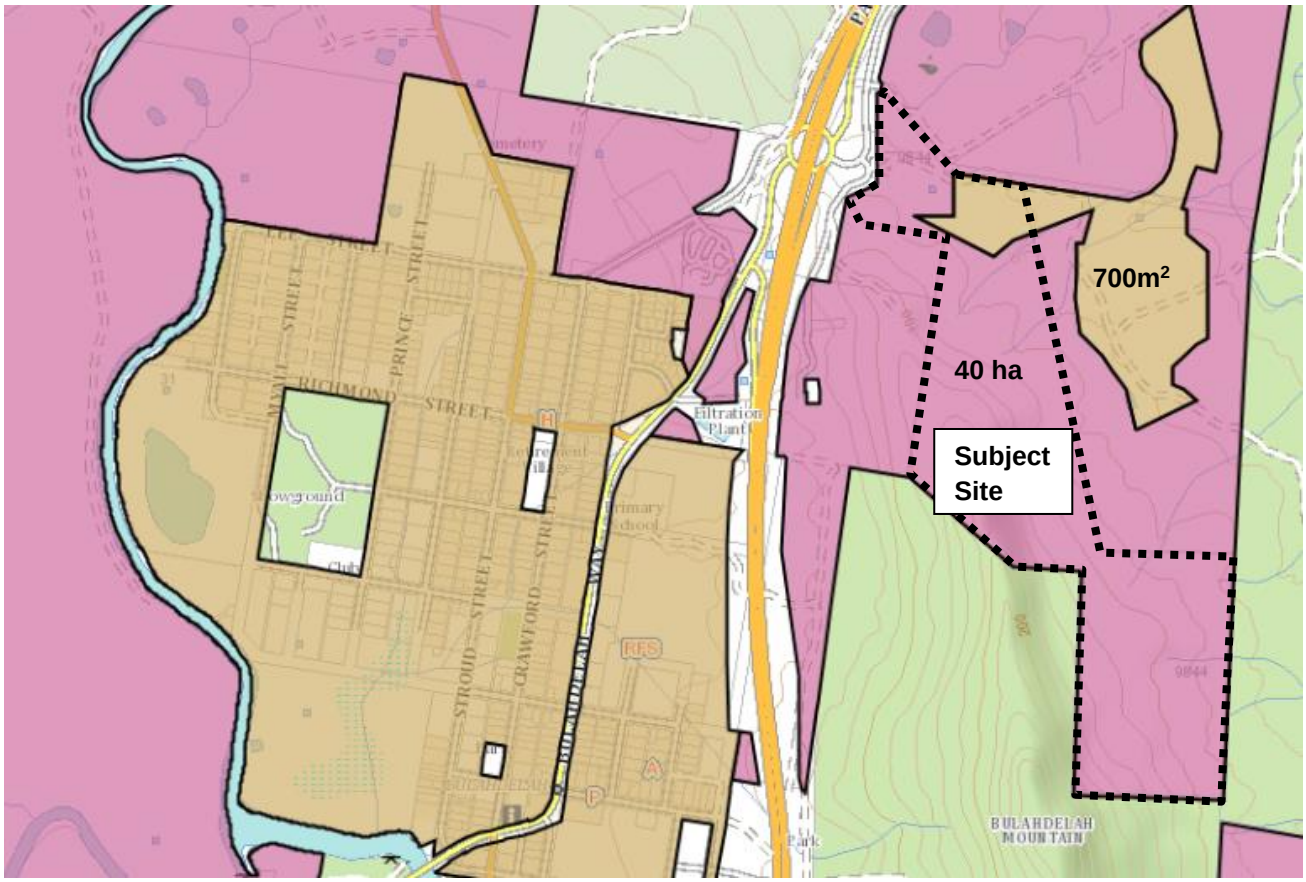
Direction 25 – Monitor housing and employment supply and demand	
Action 25.1 Establish and implement an Urban Development Program to develop data on existing zoned land supply and its servicing status, monitor dwelling production and take-up rates, and coordinate the staged release and rezoning of land.	Not Applicable
Action 25.2 Establish and implement an Employment Lands Development Program to develop data on existing and future planned stocks of employment land.	Not Applicable
Action 25.3 Sequence new greenfield urban development that makes efficient use of infrastructure networks and capacity.	Not Applicable
Action 25.4 Maintain an adequate supply of employment land that is appropriately serviced and to respond to changing industry demands for land use, location and floor space.	Not Applicable
Direction 26 – Deliver infrastructure to support growth and communities	
Action 26.1 Align land use and infrastructure planning to maximise the use and capacity of existing infrastructure and the efficiency of new infrastructure.	Not Applicable
Action 26.2 Enable the delivery of health facilities, education, emergency services, energy production and supply, water and waste water, waste disposal areas, cemeteries and crematoria, in partnership with the infrastructure providers.	Not Applicable
Action 26.3 Protect existing and planned major infrastructure corridors and sites, including inter-regional transport routes like the M1 Pacific Motorway and the railway, port and airport, to support their intended functions.	Not Applicable
Action 26.4 Coordinate the delivery of infrastructure to support the timely and efficient release of land for development, including working with councils and service providers on inter-regional infrastructure and service delivery issues between growing areas.	Not Applicable
Action 26.5 Ensure growth is serviced by enabling and supporting infrastructure.	Not Applicable
Action 26.6 Review and finalise the Hunter Special Infrastructure Contributions Plan.	Not Applicable

Direction 27: Strengthen the economic self-determination of Aboriginal communities	
Action 27.1 Work with the Purfleet–Taree, Forster, Karuah, Worimi, Mindaribba, Awabakal, Bahtabah, Biraban and Wanaruah Local Aboriginal Land Councils to identify priority sites that can create a pipeline of potential Initiatives.	Not Applicable
Action 27.2 Identify landholdings and map the level of constraint at a strategic scale for each site to develop options for the potential commercial use of the land.	Not Applicable

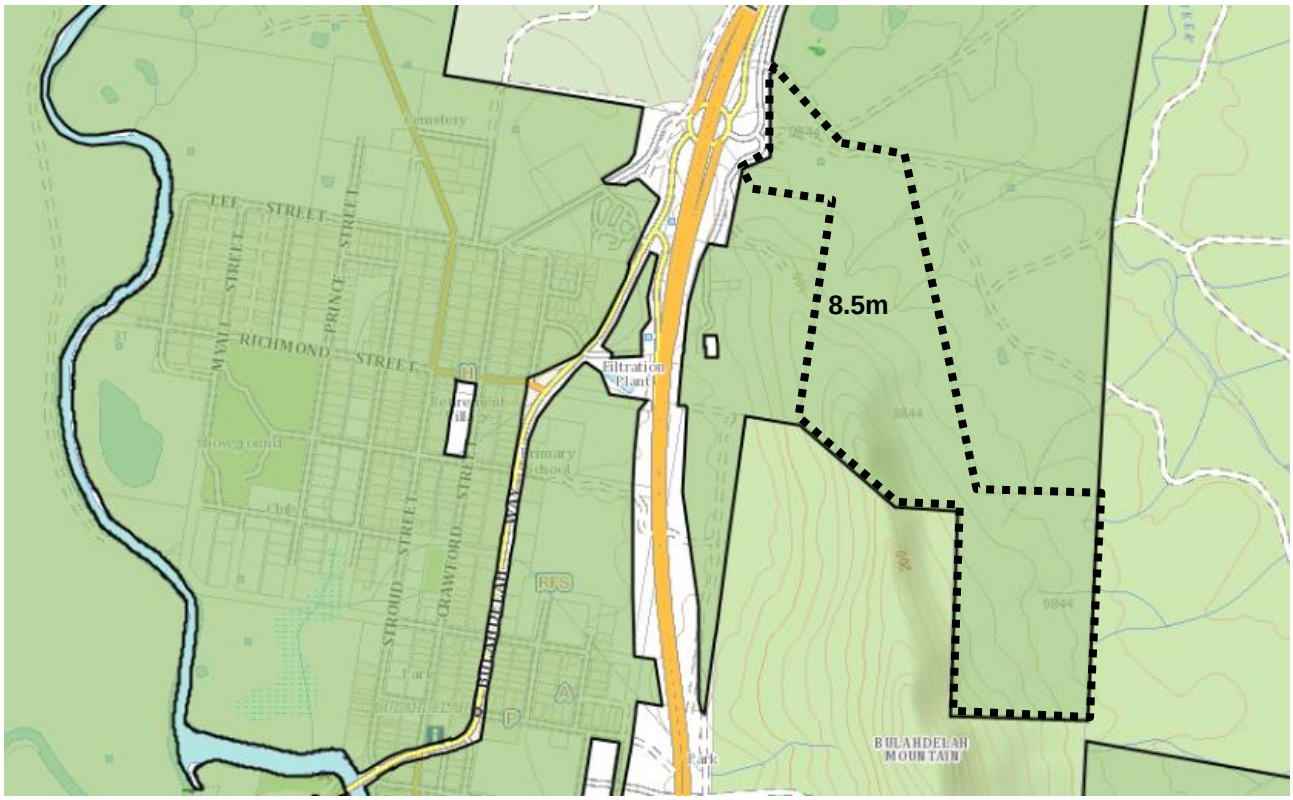
Appendix G – *Site Maps*



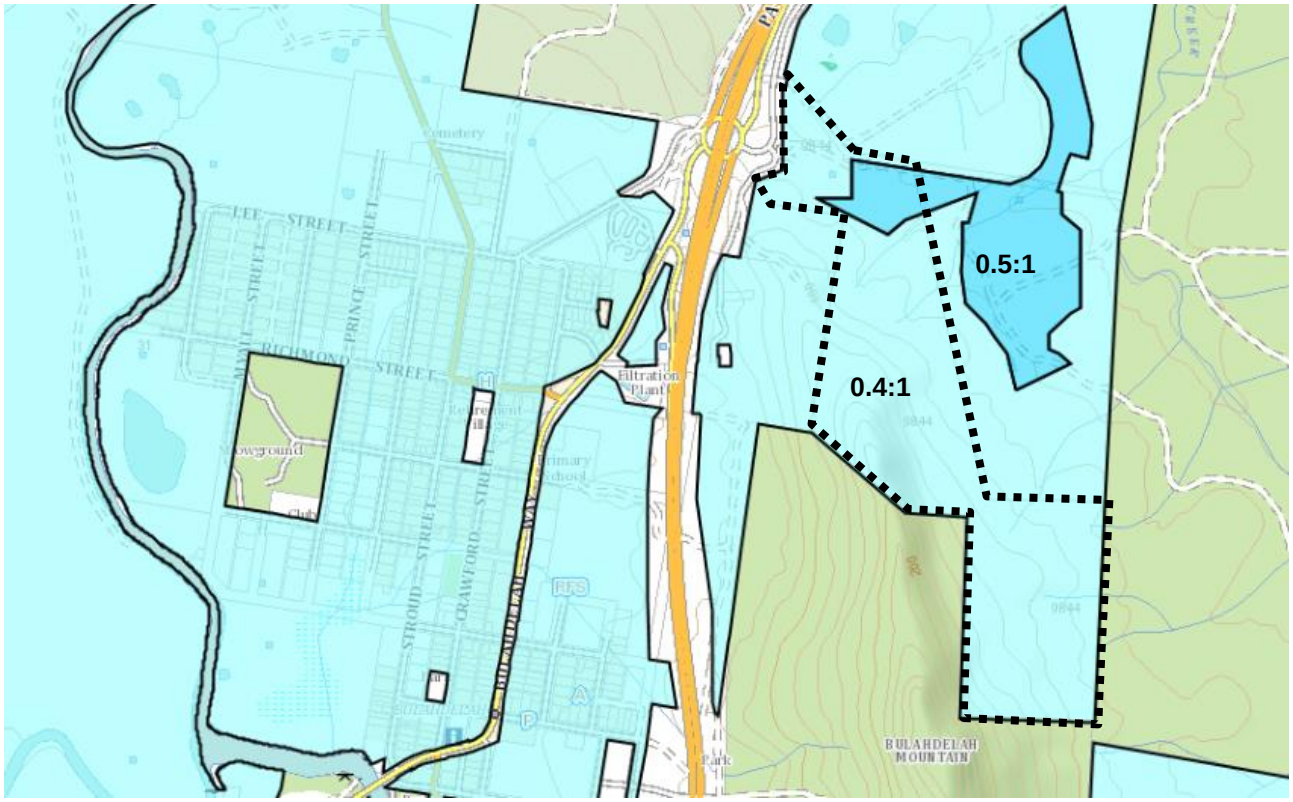
Site Zoning Map



Lot Size Map



Height of Buildings Map



Floor Space Ratio Map

Appendix H – *Previous Ecological Report Extracts*

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LOCAL ENVIRONMENT STUDY

At

PACIFIC HIGHWAY, BULADELAH, NSW (LOT 3 IN DP 1120817 AND LOT 100 IN DP 1139447)

PART 1 – VEGETATION COMPONENT

MAP 2011

EXECUTIVE SUMMARY

Brewery Australia Developments Pty. Ltd. commissioned *Clarke, Dowdle & Associates* to prepare an ecological survey as part of a Local Environmental Study (LES) on a large parcel of land at Bulahdelah. The objective of this ecological survey is to describe the flora characteristics of the subject site and to identify significant species, populations and ecological communities, and their habitats that occur. The report is presented in four separate components and this component deals with the vegetation.

The proposal is subject to New South Wales (NSW) and Commonwealth environmental statutes, notably the *Threatened Species Conservation Act* 1995 (TSC Act) and the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) respectively. Given the interaction between Commonwealth and State environment legislation, there is an obligation on all authorities to protect and conserve environmental attributes.

Flora surveys on the site were conducted over a four-year period by *Clarke Dowdle & Associates* and *Robert Payne-Ecological Surveys & Management.* The results from these surveys were collated and used in the production of this report component.

Flora surveys conducted so far by *Clarke Dowdle & Associates* and *Robert Payne-Ecological Surveys & Management* identified one threatened species, *Tetratheca juncea* the Black-eyed Susan to occur on Alum Mountain outside of the property. Previous records indicate this species was also present onsite on the Coastal Plain but the area has since been modified. In addition it was determined that the site also contained the habitat for other threatened orchid and plant species including *Coybas dowlingii, Cryptostylis hunteriana, Rhizanthella slateri, Asperula asthenes* and *Syzygium paniculatum.* However these species were not identified in the surveys conducted to date. Two ROTAP species, *Callistemon acuminatus and Eucalyptus fergusonii subsp fergusonii*, were found on the summit of Alum Mountain and the lower slopes respectively.

The vegetation mapping conducted by *Clarke Dowdle & Associates* and *Robert Payne-Ecological Surveys & Management* identified and mapped six map units using accurate DGPS and aerial photography survey techniques. The results, however, at this stage of the analysis are only temporary because they have been determined at a local scale. More preliminary regional scale data is now presented.

One endangered ecological community (EEC) was identified within two distinct areas on the site. These locations are back swamps associated with Frys Creek. This community qualifies as the Swamp Sclerophyll Forest EEC (*Melaleuca Forest with emergents in areas of impeded drainage*) listed on the Threatened Species Conservation Act, 1995. In addition, most vegetation on the property is significant at a regional scale and in particular the vegetation on the cliff faces and summit of Alum Mountain and that of the hanging swamp is unique. The upper slopes would appear to be more common than originally determined, in the northern part of the region, based upon the results of the latest regional surveys

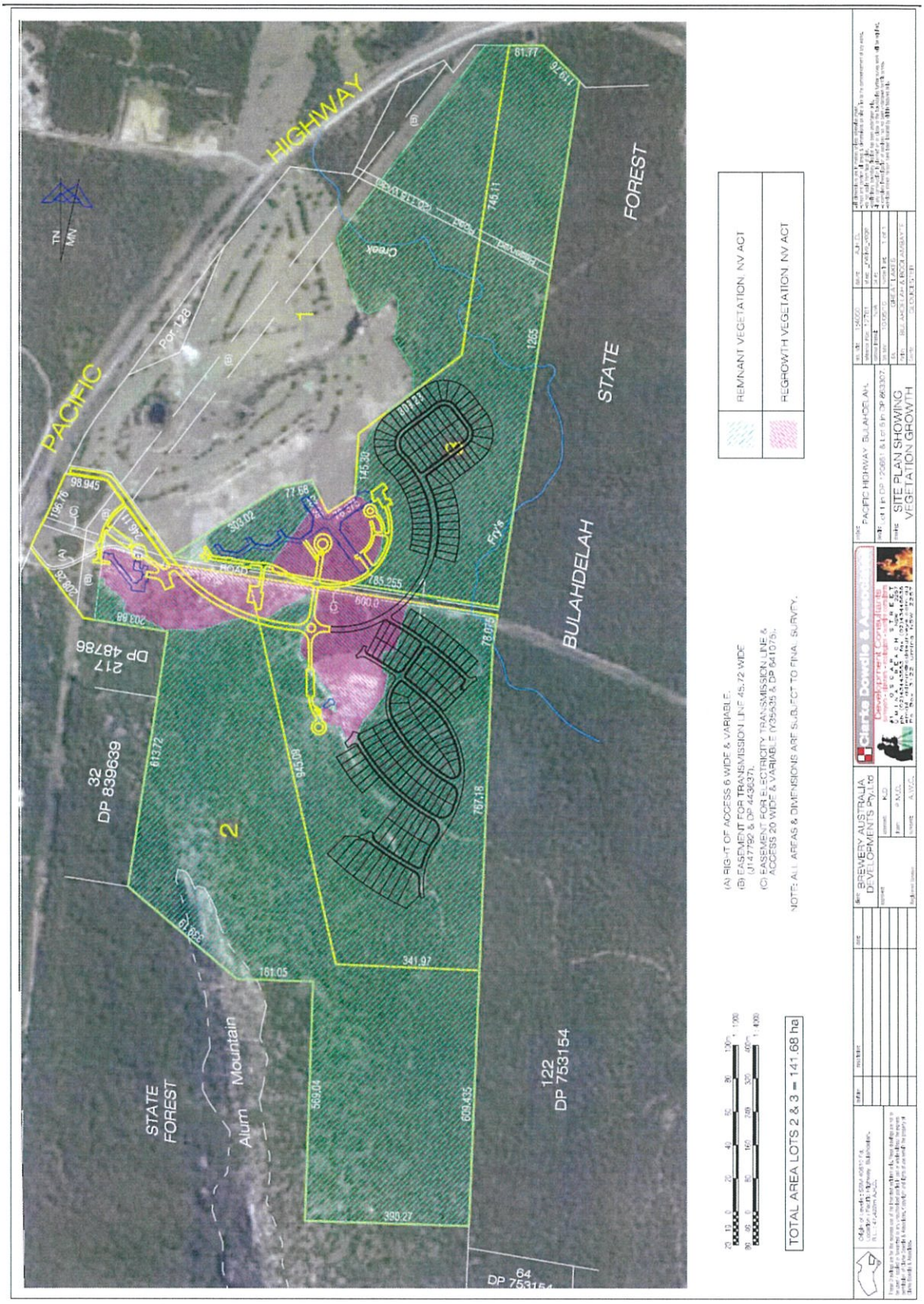

Figure 27 – Classification of vegetation on the subject site under the Native Vegetation Act, 2003 along with the proposed development layout.

6.0 DISCUSSION

The local environmental vegetation study of Alum Mountain and surrounds utilized an adequate number of survey plots to determine map units and/or vegetation communities. Additional transects were undertaken along the cliff faces of Alum Mountain, the dry northern gullies and Frys Creek to comply with NSW DECCW requirements for adequate survey. A further minor number of transect surveys would still be required through Group 3 and Group 4 vegetation to comply with NSW DECC requirements. Additional targeted surveys were undertaken to establish the presence of threatened species and orchids.

However, the site is large and to-date the only rare plant species recorded was *Tetratheca juncea* Black-eyed Susan on the coastal plain by Geoff Winning (HWR Ecological) and on the Alum Mountain rock face by Peter Hind (Royal Botanic Gardens) and Robert Payne. Although no further plants of *T. juncea* were found, it is likely to be present but the area would not be regarded as an "important area" for the species in terms of large population numbers. The species is, however, at its known northern limit of distribution at Alum Mountain which makes the population important. Currently on public exhibition by the Commonwealth Department of Arts, Heritage & Environment is the revision of *T. juncea* and any further information on this population status must wait for the findings of that investigation.

Nevertheless, even though searches for other rare plant species were not found, *Asperula asthenes* and *Syzygium paniculatum* could occur along Fry's Creek and *Corybas dowlingii* could also be present in the same habitat, as well as in the drier gullies and slopes. *Lindernia alsinoides* could also be present in the Melaleuca wetlands north of Frys Creek and *Cryptistylis hunteriana* could be present anywhere throughout the property.

At this stage, surveys for the rare orchid species have been completed but surveys for *Lindernia alsiniodes* were not undertaken because its preferred habitat is Melaleuca wetland, which is present north of Frys Creek but is anticipated to be protected under this proposal. Between August and February is the correct timing for targeting *Cryptostylis hunteriana* and it is noted from the NSW Department of Climate Change website that *C. dowlingii, Cryptostylis hunteriana* and *Rhizanthella slateri* were all located on the same western slope of Alum Mountain but this project does not involve slopes that are west facing. However, the site does support dry northern facing gullies with *Gahnia clarkei* sedgelands which are present at the known location for the Eastern Underground Orchid. Given all these circumstances the property was randomly searched from June to February for rare orchids and plants, without any success. Nevertheless, further searches are still required for the Eastern Underground Orchid and perhaps the Small-snake Orchid.

Given that the PATN analysis merged together, at a local scale, the hanging swamp (group 2 sub-community1) and the Swamp Sclerophyll Forest EEC (group 2 sub-community 2) they are, in reality, two distinctly different map units. Both sites merged into the one group because of similar dominant canopy tree and sub-canopy tree species. However, understorey vegetation, soil type and position in the landscape (the latter being an important determinant for an EEC) are distinctly different with the former being permanently waterlogged and the latter being subject to inundation in times of heavy rain. As the Swamp Sclerophyll Forest is within a backswamp of Fry's Creek these areas are to be regarded as the Swamp Sclerophyll Forest on coastal floodplains EEC under the Threatened Species Conservation Act, 1995. The hanging swamp escapes this classification because of its non association with a floodplain drainage line. It occurs at this higher elevation because of seepage from Alum Mountain over an impervious rock stratum.

Others could argue that group 2 sub-community 1 is not Swamp Sclerophyll Forest because the substrate is not waterlogged permanently. *Melaleuca spp.* also quite often occur as a dominant sub-canopy tree elsewhere in the region e.g. in the Wyong Spotted Gum - Red Mahogany-White Stringybark Forests on flats as well as slopes. Within these forests at Wyong there is a sandy clay layer of high plasticity at about 0.6m depth, which retains runoff within the shallow surface layer and which causes runoff to flow along and sit just below the surface on top of the clay layer. This soil type is conducive to the establishment of an understorey of *Melaleuca spp*. but this is not the case at Bulahdelah for the Swamp Sclerophyll Forest soils are largely sands with only minor clay content. Thus runoff within the Bulahdelah Swamp Sclerophyll Forest has the capability of draining more quickly through the soil profile and is not retained at or near the surface, except for the short post rainfall period.

Nevertheless, it can be shown by the contour shapes that overflow drainage from Frys Creek would enter the SSF area indicating that the vegetation is a backswamp from the main stream.

The boundaries of this EEC maybe somewhat exaggerated at this stage (Figure 25). Subsequent investigation shows some areas are dominated in the understorey *by Entolasia marginata?, Gahnia radula, Banksia spinulosa, B. oblongifolia* and *Leptospermum polygalifolium subsp. polygalifolium.* A larger number of canopy trees are also present. Whilst these species are components listed in the NSW Scientific Committee's determination further quadrats are required to more precisely define the EEC area for any further regional analysis. The boundary line of the EEC has included, at this stage, the *Melaleuca spp*. sedge and grass species listed in the determination where the community occurs on the 'associated" lithic substrate soils, which is how the EEC was determined at Raymond Terrace (Motorplex vs. Port Stephens Council, 2007).

The vegetation mapping for this project is based upon specially flown recent aerial photography to cover the site which was not otherwise available. Through a process of aerial triangulation, accurate measurement of field survey ground control and three dimensional transformations, the survey team produced an accurate base map for vegetation mapping purposes. The vegetation mapping is also based on precision, with the use of high-powered DGPS and as a result the polygons of the smaller map units reflect this. They would differ, perhaps significantly, from the broader modelling approach to be adopted by Hunter Councils for the regional mapping, but nevertheless this mapping is more than suitable for incorporation into the regional mapping program (M. Somerville pers. com., June 2010).

The map units derived for this project are at a finer scale than what has been determined in the regional mapping process. The lower north coast has a number of vegetation communities that have been poorly sampled previously. For example, during this process the vegetation of the Alum Mountain volcanics has now been sampled and the regional map units have been able to be determined and if equivalents exist.(see section 7.4).

Conservation attributes for vegetation are all high for all of the vegetation identified using the earlier criteria developed by the various authorities (Table 10). Further updated analysis of the regional vegetation map units shows that at least the conservation status of the upper slope vegetation can be moderated based on an update of its distribution. All of the other map units are still rated at a fairly high status.

Somerville (2009) does not record the coastal plain vegetation in the most recent regional update. Group 3 vegetation, being dominated by Red Mahogany, according to the conservation documents (e.g. Hager & Benson, 1994), is recognized as being regionally rare or severely depleted and Somerville (2009) does not include such a map unit in the most recent regional analysis, which includes the Great Lakes LGA. Tables 11 & 12 summarises the earlier vegetation significance criteria and Table 14 provides the update based on regional criteria.

7.0 SURVEY LIMITATIONS AND ADEQUACY

There are some limitations to this survey and this was caused by the disjunct nature of the project. Initially a mammal and tree hollow survey was completed by HWR Ecological but no detailed report was prepared. Due to unforeseen circumstances only limited field notes and maps survive covering the results of this fieldwork, which at that time, was prepared for a flora and fauna survey of only part the property. The flora survey, in particular, was still outstanding. Following discussions with *Great Lakes Shire Council* and having regard to the original proposal prepared by HWR Ecological (2006) several flora and fauna issues remained to be completed over the subject site and the adjoining land.

Surveys that followed to compile the flora and fauna data are disjunct. Initially, surveys were begun by HWR Ecological in 2005 and due to unforeseen circumstances were not able to be continued. Clarke, Dowdle & Associates took over responsibility of the surveys in 2006 and the project was temporarily stopped by the client in April 2007. The project re-commenced some months later but ceased for a further 12 month period between 2009 and 2010. Further re-commencement began in early 2010 but the project was terminated in August 2010 during the orchid searches.

This report is version 5 of the documentation for the LES which is a final draft. This version of the LES includes references to the Hager & Benson (1994) conservation status document. In relation to the Forest Ecosystem document, the necessary information required and highlighted in the review, was adopted from those comments made by Great Lakes Council.

The project could be improved if extra transect surveys were undertaken through the EEC area to determine a more complete species composition. However due to any future land use not utilising this area, further transects are not deemed necessary.

The following lists what was achieved and what is still outstanding;

QUADRATS:

- **Alluvium** – 2.339 ha; Two quadrats surveyed and two required.
- **Floodplain** – 8.554 ha; One quadrat surveyed but two required. However this part of the property was only included in the project during the very late stages.
- **Summit** – approximately 5 ha; Four quadrats surveyed but only two required.
- **Upper slope/midslope** - 51.57 ha; Eleven quadrats surveyed but only three required.
- **Coastal plain** – 94.20 ha; Seven quadrats surveyed but only three required.

TRANSECTS:

- **Alluvium** – 2.339 ha; One transect undertaken along full length of creek. Two 100m transects required. Probably adequate
- **Floodplain** – 8.554 ha; No transects surveyed but two required. However this part of the property was only included in the project during the very late stages.
- **Summit** – approximately 5 ha; Two transects surveyed and two required. Adequate.
- **Upper slope/midslope** - 51.57 ha; Two transects surveyed but three required. Inadequate.
- **Coastal plain** – 94.20 ha; Two transects surveyed at this stage and three required. Inadequate.

8.0 CONCLUSIONS

The flora study of Lot 3 in DP 1120817 and Lot 100 in DP 113447 was carried out over a period of four years by HWR Ecological, Robert Payne (Ecological Surveys & Management) and Kristan Dowdle (Clarke, Dowdle & Associates). Although the study has not been finalised the following has been found in relation to flora;

- Two areas, one which is larger and located north of Frys Creek and the other smaller area at the southern end of Frys Creek are examples of the endangered ecological community "Swamp Sclerophyll Forest on coastal floodplains".
- Two areas below Alum Mountain at a higher elevation are an example of "hanging swamp" vegetation which appears to be unique in the Lower North Coast Region and should be retained and/or included in the planning design and/or wildlife corridor for any future development
- *Tetratheca juncea,* a threatened species, was recorded by HWR Ecological in the initial stages of the project on the Coastal Plain and a small population is still present on Alum Mountain outside of the site boundaries. No other threatened plant species were recorded.
- *Callistemon acuminatus* and *Eucalyptus fergusonii subsp fergusonii*, listed ROTAP species, were collected from the summit of Alum Mountain and from the lower slopes near the dwelling respectively.
- Two other species, *Leptospermum polyanthum* and *Pleurosorus rutifolius* were found confined to Alum Mountain and are regarded as being uncommon at a local scale.
- Most of the identified vegetation map units, as set out in the conservation documents, are considered to be significant at a regional scale, although that map unit (Tallowwood forests) occurring on the upper slopes appears to be well represented in the region.
- The property subject, to this study, also supports potential habitat for other rare or threatened plants and orchids, known to occur in the Great Lakes LGA.
- Relatively precise mapping showing the vegetation map units was compiled using specially flown aerial photography and the combination of field traversing and a high powered differential GPS and has been provided to Great Lakes Council in digital format.
- Further investigation is required on the impact on the vegetation from goats and abseiling activities on the cliff faces and summit of Alum Mountain.

There may be still some outstanding issues relating to the flora. Further orchid surveys for *Rhizanthella slateri* Eastern Underground Orchid and *Diuris pedunculata* the Small-snake Orchid may be required. NSW DECCW, if they are involved in the process may require further targeted surveys for *Galium australe* and *Phaius australis*.

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THREATENED SPECIES ASSESSMENT

Local Environmental Study

At

PACIFIC HIGHWAY, BULADELAH, NSW (LOT 3 IN DP 1120817 AND LOT 100 IN DP 1139447)

PART 2 – FAUNA COMPONENT

MAY 2011

EXECUTIVE SUMMARY

Fauna surveys on the subject site were conducted over a four-year period by *HWR Ecological* together with *Clarke Dowdle & Associates* and *Robert Payne-Ecological Surveys & Management*. The results from these surveys were collated and used in the production of this fauna report, towards a Local Environmental Study. Several surveys were carried out in different seasons to target particular threatened species. This included three winter and spring summer surveys although no autumn survey was involved.

From the fauna surveys conducted thirteen 'threatened' fauna species were recorded onsite, being the Common Bent-wing Bat, the Little Bent-wing Bat, possibly the Large-eared Pied Bat, the Yellow-bellied Sheath-tailed Bat, the Eastern Cave Bat, the Large-footed Myotis and the Eastern Free-tail Bat. The Parma Wallaby, the Glossy Black Cockatoo, the Varied Sittella, the Squirrel Glider, the Grey-headed Flying Fox and the Powerful Owl were also seen either on one or several occasions. The subject site is highly significant for Squirrel Glider habitat based on winter flowering resources and the numbers captured over a relatively small area. A number cave dwelling species that could possibly roost on Alum Mountain were also detected. Alum Mountain has caves which are potential roosting sites for the cave dwelling bats.

Threatened species foraging habitat for the Parma Wallaby and the Large-footed Myotis appears to include the yabbie ponds and the surrounding grassland in association with the lower slopes whilst roosting and feeding habitat for the Glossy Black Cockatoo appears to be the mid slopes where there is a large population of *Allocasuarina littoralis*.

Surveys for the Squirrel Glider revealed they were only captured in pipe traps and the capture rates reveal a density of one Squirrel Glider/7.8ha or 0.1 animals/ha. This figure falls within the density range identified in Smith (2002). A squirrel Glider habitat assessment based on randomly selected quadrats revealed that the data collected for critical winter flowering resources was adequate to determine habitat quality but tree hollow counts were not. Based on the former Red Mahogany/Paperbark Swamp Sclerophyll Forest, Swamp Mahogany Wet Heath Low Swamp Sclerophyll Forest and Woodland and Red Mahogany/Sydney Peppermint/Red Bloodwood Dry Sclerophyll Forest and Woodland all support adequate winter food resources but the other communities do not. Tree hollow data in the assessment needs to be revised because it did not provide adequate results, when matched against the trapping data, which indicates that the majority of Squirrel Gliders were captured in the coastal plain vegetation in Red Mahogany/Sydney Peppermint/Red Bloodwood Dry Sclerophyll Forest. This vegetation type returns a low number of tree hollows when quadrats are randomly selected.

The koala assessment, under SEPP 44, revealed that Swamp Mahogany Wet Heath Low Swamp Sclerophyll Forest and Woodland, Tallowwood/Blackbutt/Sydney Peppermint Riparian Tall Forest & Smooth-barked Apple/Turpentine/Sydney Peppermint Riparian Tall Forest all constitute potential koala habitat but no core koala habitat was revealed. Under the NSW Koala Recovery Plan, using two revised methods, Swamp Mahogany Wet Heath Low Swamp Sclerophyll Forest and Woodland vegetation qualifies as primary koala habitat whilst Tallowwood/Blackbutt/Sydney Peppermint Riparian Tall Forest and Smooth-barked Apple/Turpentine/Sydney Peppermint Riparian Tall Forest vegetation qualify as secondary koala habitat class A and secondary habitat class B respectively. Using the Callaghan method Swamp Mahogany Wet Heath Low Swamp Sclerophyll Forest and Woodland Sclerophyll Forest, Tallowwood/Blackbutt/Sydney Peppermint Riparian Tall Forest and Smooth-barked Apple/Turpentine/Sydney Peppermint Riparian Tall Forest vegetation all qualify as secondary habitat class A.

At a finer scale, higher densities of preferred foraging tree species occur on the mid to upper slopes and the tree species in question are Sydney Blue Gum *Eucalyptus saligna,* Tallowwood *E. microcorys,* Grey Gum *E. punctata* and Brushbox *Lophostemon confertus* although only isolated trees of Sydney Blue Gum and Brushbox are present. The area of Swamp Mahogany in the Group 2 Sub-community 2; Upland Open Scrub with Emergents of Swamp Mahogany in Areas of Permanent High Water Tables vegetation community also provides preferred forage trees for the Koala. With the exception of this Swamp Mahogany forest, the remainder of higher quality foraging habitat for the Koala occurs outside of the footprint of the proposed Master Plan for the subject site.

sized hollows in all vegetation communities so the methodology for trees hollow counts should be revised. It is suggested that tree hollow counts be determined from parallel transects, spaced 20m apart, in each vegetation community.

7.2 Further habitat assessment

Further field assessment, as mentioned above, was undertaken by Forest Fauna Surveys (2011). This work involved recording the presence and densities of known foraging resources essential to the Squirrel Glider. A habitat matrix was then generated. Given the similar floristic composition that has been recorded on the Bulahdelah site, with that of the Central Coast of NSW, the vegetation may enable a direct comparison of habitat quality. Despite the absence of adequate Squirrel Glider trapping data in this study to assist in identification of preferred vegetation types on the subject site, the habitat assessment matrix was conducted specifically to determine distribution and abundance of preferred foraging resources for the Squirrel Glider. The habitat assessment determined presence and abundance of key food plants such as *Banksia sp.* in the understorey and occurrence of winter flowering eucalypt trees (such as Swamp Mahogany *Eucalyptus robusta*).

The findings of Forest Fauna Surveys (2011) within the subject site showed that the occurrence of bipinnate *Acacia sp.* and Red Bloodwood was very low, with only a small number of the habitat assessment plots scoring presence (refer to Figure 9 below). Only one *Corymbia gummifera* Red Bloodwood was found within the subject site containing sap incisions by small gliders. This tree was found in proximity to the yabbie dams in the central section of the subject site. Hairpin Banksia *Banksia spinulosa* and *Banksia oblongifolia* were restricted to dense concentrations on the low lying parts of the subject site within Red Mahogany/Sydney Peppermint/Red Bloodwood Dry Sclerophyll Forest and Woodland (see also Figure 4 regarding vegetation communities). High quality habitat was also found to occur in Swamp Mahogany Wet Heath Low Swamp Sclerophyll Forest. These findings equate to the initial random quadrat surveys (see Section 7.1).

Overlaying the previous subject site Squirrel Glider records (trapped in 2006 by HWR) with the habitat matrix for the species, there is a strong correlation between the distribution of foraging resources and Squirrel Glider occurrence. There is also a high correlation between the distribution of habitat trees suitable for gliders and higher quality habitat and the previous presence of Squirrel Gliders. Based on the habitat matrix for the Squirrel Glider, the highest quality habitat is restricted to the central low lying portion of the subject site in Red Mahogany/Sydney Peppermint/Red Bloodwood Dry Sclerophyll Forest and Woodland. In contrast, the slopes and summit of Alum Mountain provide marginal habitat for the Squirrel Glider, due to absence of suitable foraging resources.

8.0 KOALA HABITAT ASSESSMENT

8.1 Initial assessment

Potential koala habitat is defined as "areas of native vegetation where the trees of types listed in Schedule 2 of the SEPP 44 Policy and constitute at least 15% of the total number of trees in the upper or lower strata of the tree component". Schedule 2 of SEPP 44 lists eucalypt species which are primary koala food trees for the state of NSW. The relevant tree species that are found on the study site are:

- *Eucalyptus robusta* Swamp Mahogany
- *Eucalyptus microcorys* Tallowwood
- *Lophostemon confertus* Brush Box (does not constitute a dominant; see flora report)

Searches for scats and a SEPP 44 assessment were conducted by HWR on the 27 June 2006. Details of the location of each of these surveys can be seen in Figure 9. Further searches and an assessment were conducted by Kristan Dowdle and Robert Payne. This involved searches for scats within each of the botanical vegetation quadrats (n = 25 x

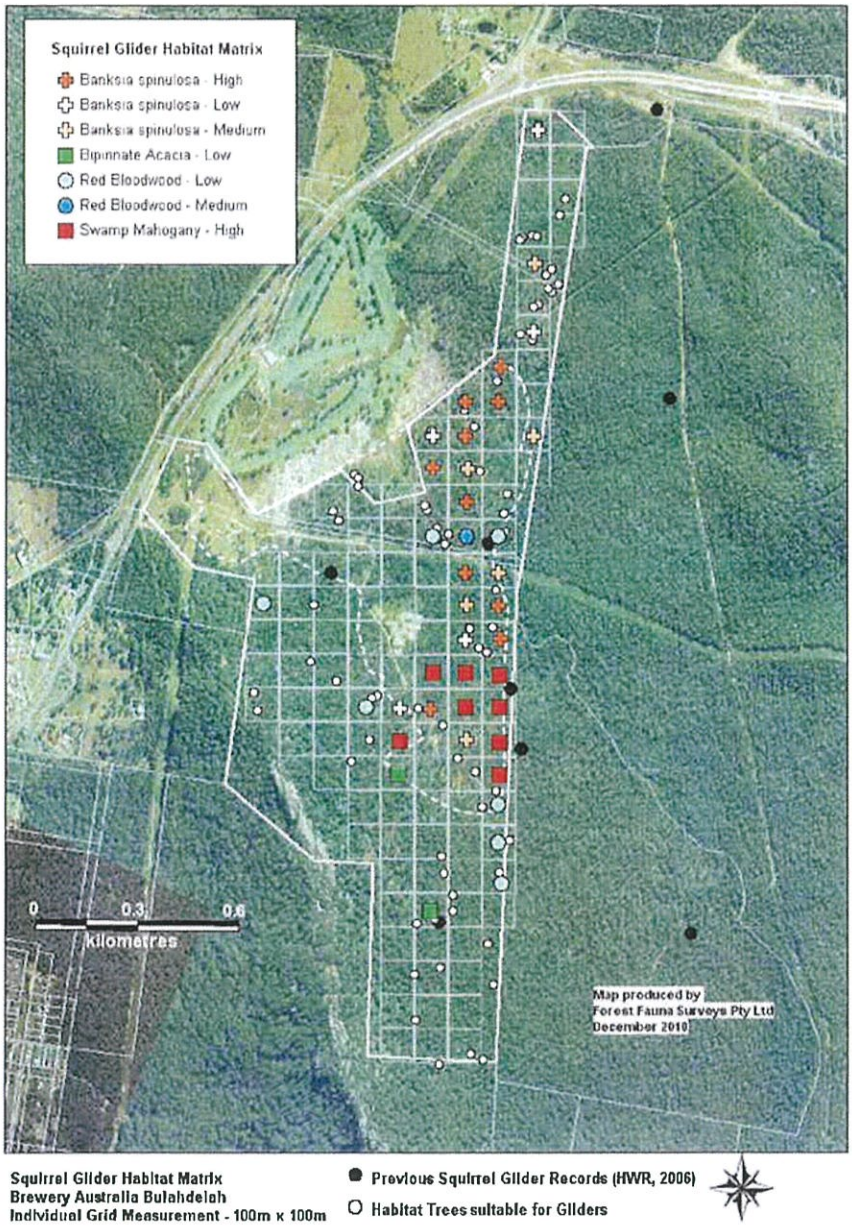

Figure 10 – Squirrel Glider Habitat matrix. Highest quality habitat occurs in Red Mahogany/Sydney Peppermint/Red Bloodwood Dry Sclerophyll Forest and Woodland and Swamp Mahogany Wet Heath Low Swamp Sclerophyll Forest (see also Figure 3 for the location of vegetation types)

400m^2) initially, further searches as part of other surveys and a specific koala habitat assessment, involving further scat searches (n = 26 x 400m^2). The surveys involved the

spot assessment technique (Phillips and Callaghan, 2000) and recording DBH measurements and tree species counts in 26 quadrats of 400m^2 each over the site where primary koala tree species according to the SEPP 44 Policy and primary and secondary tree species according to the NSW Koala Recovery Plan were present (Figure 9). From these measurements stand importance values (SIV) based on relative density were calculated for each vegetation group to determine if potential koala habitat, under SEPP 44 is present.

Of the vegetation communities identified upon the site Swamp Mahogany Wet Heath Low Swamp Sclerophyll Forest and Woodland, Tallowwood/Blackbutt/Sydney Peppermint Riparian Tall Forest & Smooth-barked Apple/Turpentine/Sydney Peppermint Riparian Tall Forest vegetation all qualify as potential koala habitat under the SEPP 44 policy (Appendix 13). From the NSW Recovery Plan (NSW DECC, 2008) and using the method of Phillips (2000), Swamp Mahogany Wet Heath Low Swamp Sclerophyll Forest and Woodland vegetation qualifies as primary koala habitat whilst *Tallowwood/Blackbutt/Sydney Peppermint Riparian Tall Forest* and *Smooth-barked Apple/Turpentine/Sydney Peppermint Riparian Tall Forest* vegetation qualify as secondary koala habitat class A and secondary habitat class B respectively. Using the Callaghan method Swamp Mahogany Wet Heath Low Swamp Sclerophyll Forest and Woodland vegetation also qualifies as primary habitat whilst *Red Mahogany/Paperbark Swamp Sclerophyll Forest, Tallowwood/Blackbutt/Sydney Peppermint Riparian Tall Forest* and *Smooth-barked Apple/Turpentine/Sydney Peppermint Riparian Tall Forest* vegetation all qualify as secondary habitat class A.

Core koala habitat was assessed through a combination of examination of historical records, targeted scat and scratch mark searches and spotlighting. Historical records of koalas exist to the north and west of the site, with only one record within or in close proximity to the site. Some scratch marks on gums were recorded which could have been koala; however, the only scats found beneath some trees were Common Brush-tailed Possum. No koala scats were found throughout the study area; spotlighting also failed to detect the presence of koalas. Discussions with the previous land owner did not identify the Koala as being present in the area, nor was the koala's presence found within the study conducted for the Bulahdelah Road bypass (Parsons Brinkerhoff, 2004).

Forest Fauna Surveys (2011) also found no evidence of Koalas during a subsequent site visit and during two previous surveys of the subject site. However, similar results were obtained from the previous surveys that suitable foraging habitat exists within the subject site to suggest its likely presence. Furthermore, several residents on the western side of Alum Mountain have occasionally heard male Koala's calling. Scats of Koala were found beneath Tallowwood trees near the new sewer treatment works near the subject site in 2008 (M. Murray, personal records), and there are several records of the species in close proximity to the subject site (DECCW Atlas records, November 2010). Habitat for Koala on the subject site was identified by presence of preferred food trees (*Eucalyptus robusta, E. saligna, E. microcorys, E. punctata* and *Lophostemon confertus* (Figure 9). However, the habitat characteristics given by (Forest Fauna Surveys, 2011) will need to be revised given that Koalas have been found to utilize other key eucalypt and other species. Such species relating to the subject site are *Eucalyptus resinifera, E. propinqua, Callistemon salignus* and *Melaleuca quinquenervia* (Callaghan et. al., 2011 and the Callaghan assessment table in Appendix 13).

Figure 11- Locations of owl survey stations, nocturnal transects and koala transects and quadrats carried out by the various surveys.

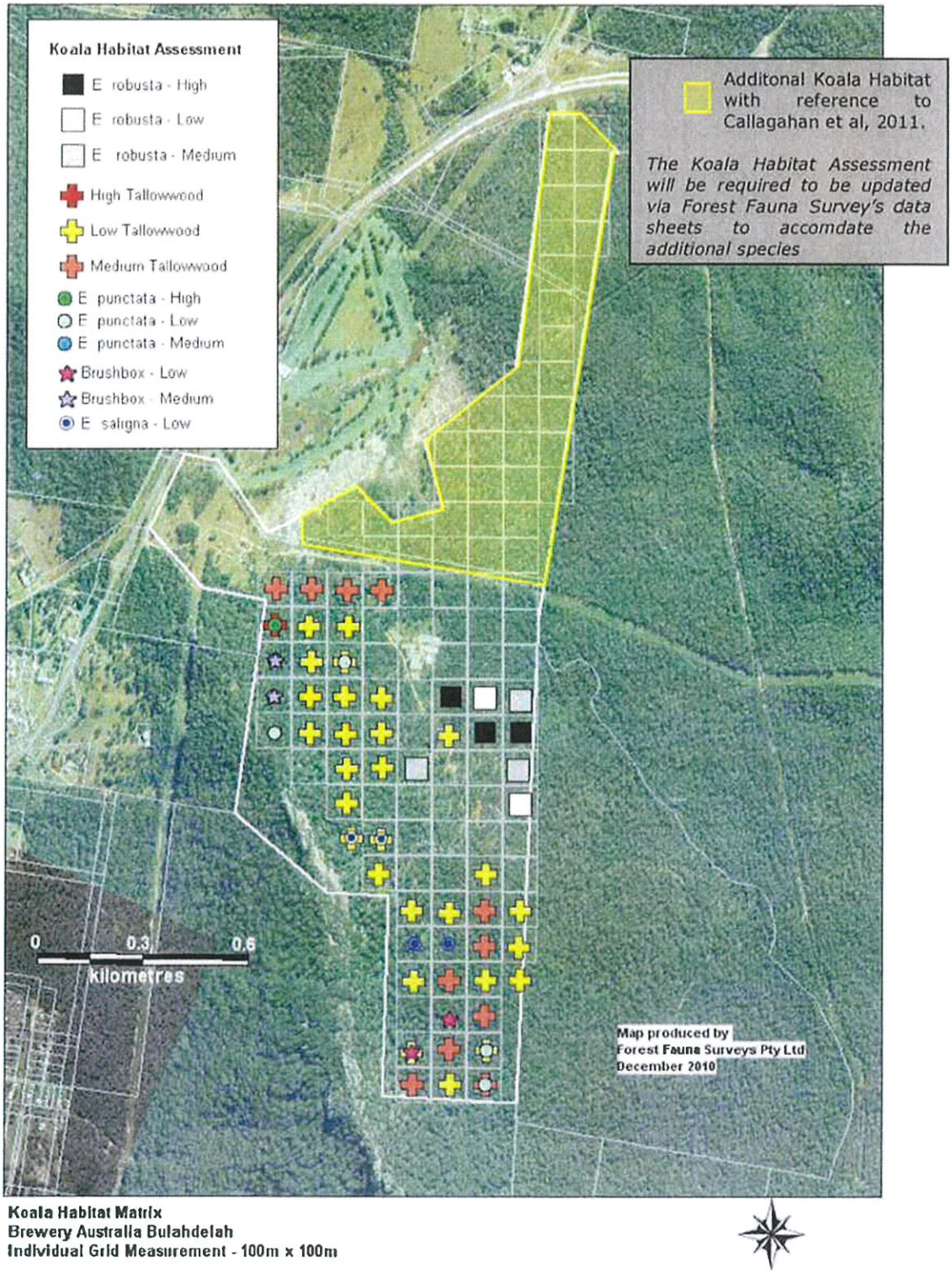

Figure 12-Koala habitat matrix for the subject site (Forest Fauna Surveys).

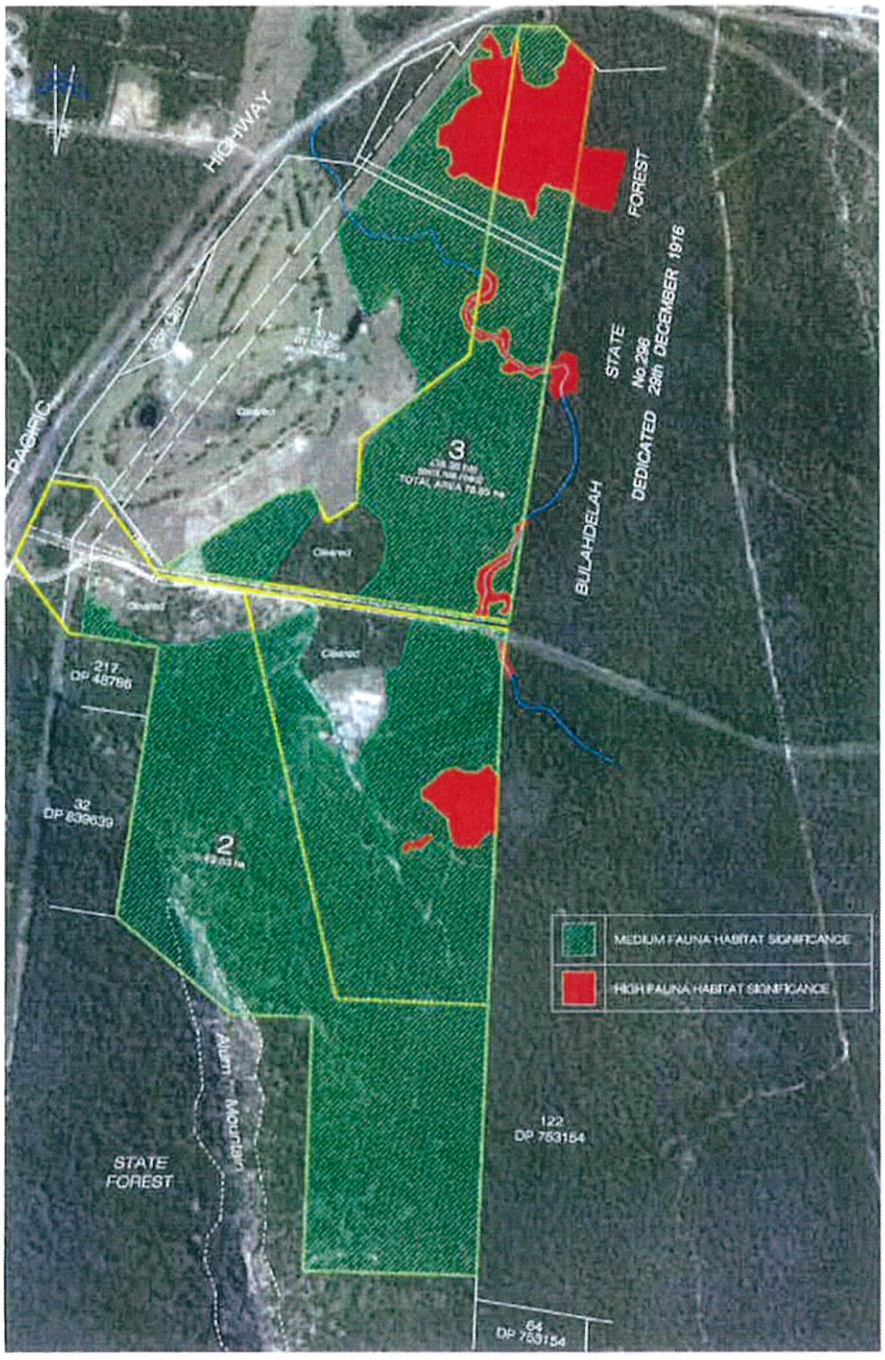

Figure 69 - Site Plan showing fauna habitat significance within each identified vegetation community

15.0 DISCUSSION

Twelve threatened and listed fauna species were recorded or potentially recorded during the fauna surveys but the management of the main suite of threatened species is discussed hereunder. Initially the target species approach (Kavanagh, 1991) using the Grey-headed Flying Fox was considered for the fauna management detail but given the low number of threatened species recorded (microbats excluded), it was decided to adopt a species approach.

The threatened species most commonly seen on the property is the Glossy Black-Cockatoo which appear to be present in the same area every time the site was visited. However, it was noted that several areas are used for feeding, based on the evidence of discarded cones, mainly on the mid and higher slopes where *Allocasuarina littoralis* is prominent (Table 19, Figure 33). The Glossy Black Cockatoo was found as a small group of birds and mostly foraging on the mid slopes within this extensive Black Sheoak area. This pocket of vegetation may also be the roosting area for this group because each time this area was visited they were present and there are old trees with hollows in the vicinity. That suggestion would need to be confirmed by further survey in the breeding season. Given that Forest Fauna Surveys (2011) has made a recommendation to protect habitat attributes for the species further finer detail with regards to the roosting and breeding tree locations is warranted (see Figure 70) to ensure the security of the birds on Alum Mountain. Figure 70 is presented as a guide to determine at least part of their range over the subject site and nearby and it may turn out that the important trees are present in state forest.

However, the nominal approach would be to capture their necessary habitat attributes within a proposed wildlife corridor associated with the state forest.

The Powerful Owl, also a threatened species, whilst it was recorded near the site and as a dead bird along Frys Creek, probably forages throughout the site but is not permanently present. Brush-tailed Possums, a main food source for the Powerful Owl appear to be in low numbers but the Squirrel Glider, also a food source, whilst it appeared to be in moderate numbers previously, now appears to be absent. This may explain the absence of the Powerful Owl because other habitat attributes, such as suitable tree hollows and roosting areas, are present for the species. There is no management action for the Powerful Owl provided part of the wildlife corridor is implemented to sustain possums and gliders.

The microbats are considered to be the most important fauna component on the subject site due to the presence of Alum Mountain and thus more focus is placed upon these species. This is because the northern end of Alum Mountain provides potential roost and breeding habitat for threatened cave roosting bat species such as the Eastern Cave Bat and the Large-eared Pied Bat. Known roost sites for the cave dwelling protected Eastern Horseshoe Bat were found during the survey (Ecotone Ecological Consultants (2010). The large caves on the eastern side of Alum Mountain (Photo 7) appear to be too exposed to be utilized for roosting purposes by the bent-wing bat species although they could not be accessed during the survey to confirm this fact. The Little and Eastern Bent-wing Bats are not known to breed in Alum Mountain and only one disused mine adit at the southern end of the mountain appears to be used by these species on an irregular basis (Kevin Carter, Brad Law and Glenn Hoye pers. comm.). The entrance to this adit was gated some years ago in an effort to protect the bats however the gate was repeatedly vandalised and the entrance is now left open (Kevin Carter, pers. comm.). Observed populations appear to be small (<20 individuals), although a group of about 1000 little bent-wing bats was observed in 2001 (Glenn Hoye, pers. comm.).

However, given the information collected at this point in time and the more recent habitat assessment, Alum Mountain may be an important rest area for southerly populations of bent-wing bats that are travelling to and from their maternity caves at Willi Willi near Kempsey. Pregnant female Little and Eastern Bent-wing Bats are known to leave a roost near Raymond Terrace some 45km south-west of Alum Mountain in early December and return in late February. Juveniles arrive a month later (Ecotone Ecological Consultants, 2000). Whether these bats are flying to the Willi Willi Caves to breed is unknown but the finding of two Little Bent-wing Bats banded at Willi Willi at Alum Mountain in 2001 (Glenn Hoye, pers. comm.) suggests that this may be the case.

All of the habitats surrounding Alum Mountain provide suitable foraging areas for most of the local cave-roosting species, although the Eastern Horseshoe Bat is likely to avoid open areas. It is also likely that all of the cave roosting species would forage well beyond the limits of the subject lands as they are known to travel several kilometres in one night. For example, the tall moist forest, located below Alum Mountain provides an important buffer to the rocky escarpments and in particular provides initial foraging habitat after dusk close to the roost sites. The forest also provides protection from wind to any roost site located lower down on the escarpment and within the subject land provides ample opportunity for tree hollow roosting bat species, particularly north of the transmission line on the coastal plain where hollow bearing trees, suitable for microbats, are plentiful.

Past logging, wildfire and clearing has significantly reduced the number of hollow bearing trees for microbats across the remainder of the site but only scattered large trees still occur.

Although potential roost sites are largely restricted to scattered large mature trees with many dead stags within the tall moist forest habitat, the recorded species diversity (17 species) is higher than that found in other habitats. Furthermore, the removal of habitat for the Pacific Highway upgrade close by to the west and the recent extensive logging in the adjoining Bulahdelah State Forest to the east has increased the importance of the forests within the study area and the existing adjacent State Forest for microbats. The remaining vegetation also provides a foraging corridor to extensive areas of intact forest in the locality for many of the bat species known to occur (e.g. Bulahdelah State Forest, Myall River State Forest and Myall Lakes National Park).

The development of the subject lands has the potential to impact on insectivorous bats by causing the loss of roost sites for tree roosting species, the loss and modification of foraging habitat, a reduction in the species diversity utilising the subject lands, a reduction in the population sizes and most significant of all a potential increase of disturbance of cave roost sites by increased human activity and domestic predators, particularly cats (Ecotone Ecological Consultants, 2010).

As a guide for microbat management to assist in the planning for the proposal, it should be noted firstly that microbats are highly mobile species and most species are known to travel great distances. Given this fact, which was established partly by the Anabat surveys, it would be reasonable to expect that most of the recorded species could forage in all of the available habitats in the study area.

The clearing of the coastal plain forest north of the transmission line would result in the loss of a number of potential roost sites for at least twelve tree roosting bat species known to occur in the locality. This includes three threatened species such as the East-coast Freetail Bat, the Yellow-bellied Sheathtail Bat and the Greater Broad-nosed Bat. Based on the tree hollow matrix produced by Forest Fauna Surveys (2011) hollow bearing trees are not spread evenly across the area with numbers ranging between 0-2 to 8-14 hollow trees per hectare. The highest count recorded was 2-5 in eleven hectare squares followed by 5-8 in seven hectare squares. If a corridor is proposed as part of this development it should aim to capture these hollows.

The loss of any tall forest on the mid to upper slopes would reduce foraging and/or roosting habitat for all of the species recorded in the study area and lessens the protective buffer to Alum Mountain. Figure 8 shows that tree hollow availability is at the lower end of the scale with most of the hectare squares numbering 0-2 hollow bearing trees per hectare and the remaining ten squares recording 2-5 hollow bearing trees per hectare. Large hollow bearing trees (often dead stags) are scattered on the mid to upper slopes providing ideal potential bat roost sites. The open nature of this forest also provides ideal foraging for a range of species including the fast direct flying species. These species would include the threatened bent-wing bats and Greater Broad-nosed Bat, which can fly below the canopy. The corridor should aim to capture therefore the buffer area and then link the lower slopes and coastal plain.

The lower slopes have been subjected to higher levels of disturbance (mainly logging) resulting in smaller trees with few hollows. Any development of this area and the cleared land would have least impact on the bat populations as few hollow bearing trees would be lost. Although the survey results show a reasonable species diversity (8) in these areas, most of the species recorded (see Table 2) regularly forage in open environments including within or on the edge of urban areas. The loss of the yabbie ponds would remove a focal

drinking and foraging point for most of the recorded species and could be particularly important for the threatened large-footed myotis which primarily feeds over open water.

In order to maintain conservation of microbat habitat the ecological team recommends a buffer zone for the protection of Fry's Creek, which would then comply with the Water Management Act 2000. This should be included in the corridor and therefore would afford some protection to large hollow bearing trees noted to occur along some parts of the creek banks and retain some hollow bearing trees in the adjoining forest. Such action would preserve potential roosting and foraging habitat for a number of bat species, including threatened species and also provide a corridor and buffer to the adjoining Bulahdelah State Forest.

Most of the tall moist forest should be retained as a buffer to Alum Mountain within this corridor and this action would also protect important bat roosting and foraging habitat. Any loss of open water ponds could be replaced by the construction of sedimentation and drainage control ponds, even in a landscape theme.

The recommendation that is of significant importance is the control of increased human and domestic animal activity on Alum Mountain and its surrounding habitat. It is our view that this would be difficult to directly control. Bans on the keeping of household pets such as cats and dogs in other sensitive developments have proven to be generally ineffective. The best course of action may be an education program, reminding new residents to the area of their obligation to control their pets and activities with regards to fauna and Alum Mountain generally.

The Parma Wallaby was observed on all occasions in close proximity to the yabbie ponds located on the site, where a moist *Entolasia stricta* Wiry Panic grassland community (see section 10.7) has developed after previous clearing many years ago. This indicates that this habitat may provide an important feeding resource for this species with its dense grass cover. Grassy areas south east of the existing dwelling may also be important but it would appear from the sightings that the group of animals is only small (2-3 animals) and that they are always restricted to the vegetated slope to the south of the existing dwelling. It was also concluded from the survey that the vegetation above where these animals were seen is very dense and would provide an appropriate refuge but nearby clearing of the vegetation is taking place. A follow up survey by Forest Fauna Surveys (2011), using remote cameras, failed to re-produce any evidence of the Parma Wallaby over a period of two months but it is always difficult to prove a species has disappeared from a formerly occupied site. Whether the nearby clearing or the grassland becoming overgrown is responsible for their disappearance may never be known. However the area shown on Figure 23 and based on the precautionary principle should be set aside for habitat of the Parma Wallaby unless it can be shown they have disappeared.

There was a substantial population of the Squirrel Glider present in 2006 but no evidence of the Squirrel Glider was recorded during the repeated surveys in late 2010 (Forest Fauna Surveys, 2011). Part of the population was also recorded off-site in the adjoining Bulahdelah State Forest. The absence of Squirrel Glider records in 2010 indicates the population has declined since 2006, possibly due to impacts such as fire, but also a natural variation in preferred foraging resources may have occurred. The areas of preferred habitat for the Squirrel Glider include the following mapped vegetation communities (Figure 3) which are *Group 2 Sub-community 2; Upland Open Scrub with Emergents of Swamp*

Mahogany in Areas of Permanent High Water Tables and *Group 3 Woodland / Forest on Alum Mountain Volcanics over Lower Coastal Slopes and Plains.*

Any future development of the subject site will need to ensure that sufficient areas of the Group 3 Woodland / Forest, and that the entire Group 2 Sub-community 2 are preserved to ensure persistence of the local Squirrel Glider population in a corridor proposal. Given that the distribution of habitat trees with hollows, which are potentially suitable for the Squirrel Glider, are widespread across the subject site such trees within, and also in close proximity to these two vegetation communities are likely to be more significant to the Squirrel Glider than habitat trees more distant. The low density of preferred sap trees for the Squirrel Glider, namely Red Bloodwood *Corymbia gummifera* is either a natural reflection of the vegetation communities on the subject site, or possibly their selective removal during past logging. Plantings of this tree species around the periphery of any proposed development (adjacent to retained remnant vegetation) may increase the abundance of this foraging resource for the Squirrel Glider.

The koala was not observed on the site and in lieu of no evidence of koalas being found a koala habitat assessment was prepared. From an analysis of the canopy tree vegetation only the Red Mahogany/Sydney Peppermint/Red Bloodwood Dry Sclerophyll Forest and Woodland vegetation lacks any habitat significance for potential koala habitat according to SEPP 44. However, it should be noted whilst no koalas occur on the property and only one sighting has ever been recorded the precautionary approach should be applied. The literature is showing that additional tree species over and above what is listed on SEPP 44 are being utilized by the Koala. Callaghan et al (2011) in their latest findings have identified *Eucalyptus propinqua* Small-fruited Grey Gum, *Eucalyptus resinifera* Red Mahogany and *Lophostemon confertus* Brush Box as resource trees (refer to Appendix 13). In their updated results the authors show that *Eucalyptus tereticornis* Forest Red Gum, *E. microcorys* Tallowwood and *E. robusta* Swamp Mahogany ranked the highest for koala usage whilst *E. resinifera* Red Mahogany, *E. siderophloia* Grey Ironbark and *E. propinqua* Small-fruited Grey Gum all ranked as being key eucalypt species for the koala for southern Queensland data.

However it is much more difficult to manage the koala because they do not necessarily utilize corridors because their movements are more random and a koala's movements are influenced by other koalas (Faulks, 1990). The Tallowwoods, Brush Box, Sydney Bluegum and Small-fruited Grey Gum are found the upper slopes near Alum Mountain and may be able to be retained and included in the buffer area recommended for inclusion as microbat habitat. This vegetation buffer should circumvent the western edges of the property and capture the Swamp Mahogany trees.

Photo 7 – Large caves and fissures are present in the eastern face of Alum Mountain which may serve as overwintering and breeding sites.

Forest Fauna Surveys (2011) also states that the majority of higher quality foraging habitat for the Koala occurs on the mid and upper slopes of Alum Mountain where higher densities of preferred foraging tree species occur. With the exception of the Swamp Mahogany forest, the remainder of higher quality foraging habitat for the Koala occurs outside of the footprint of the current proposed Master Plan for the subject site.

Of the structural characteristics, the main factor responsible for the skewed distribution of smaller diameter trees is due to past intensive logging of the majority of the subject site (Forest Fauna Surveys, 2011). In particular, the central section of the subject site in proximity to the yabby dams, has been extensively thinned in the recent past. The majority of plots which recorded higher scores of trees >60 cm were located in the central portion of the subject site.

The subject site also supports a low abundance of habitat trees, with the highest number of assessment plots scoring habitat tree abundance of less than 5 per hectare. Based on the assessment, the higher densities of habitat trees are situated in the lower elevation parts of the subject site, particularly the low lying swamp forest in proximity to Fry's Creek. In contrast, the upper slopes of Alum Mountain have been extensively logged with only low distribution of habitat trees.

A total of 192 habitat trees were recorded for an average abundance of 1.34 habitat trees per hectare, which is considered very low. However, the distribution of potential habitat trees for possums, glider and microchiropteran bats varies widely across the subject site. In

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Local Environmental Study

At

PACIFIC HIGHWAY, BULADELAH, NSW (LOT 3 IN DP 1120817 AND LOT 100 IN DP 1139447)

PART 3 - KEY HABITATS AND CORRIDORS ASSESSMENT

FEBRUARY 2011

EXECUTIVE SUMMARY

The key habitats derived from this study and wildlife corridors map prepared by the NSW State Government agencies was investigated as a further part of the proposal. Management recommendations pertaining to land usage within and external to the site have been made. The main recommendations relate to habitat protection for threatened species and part of this can be achieved by manoevering the corridor to capture cave dwelling bat species roosting habitat on Alum Mountain. Future planning for the site will need to include conservation of part of all habitats that were identified during this study.

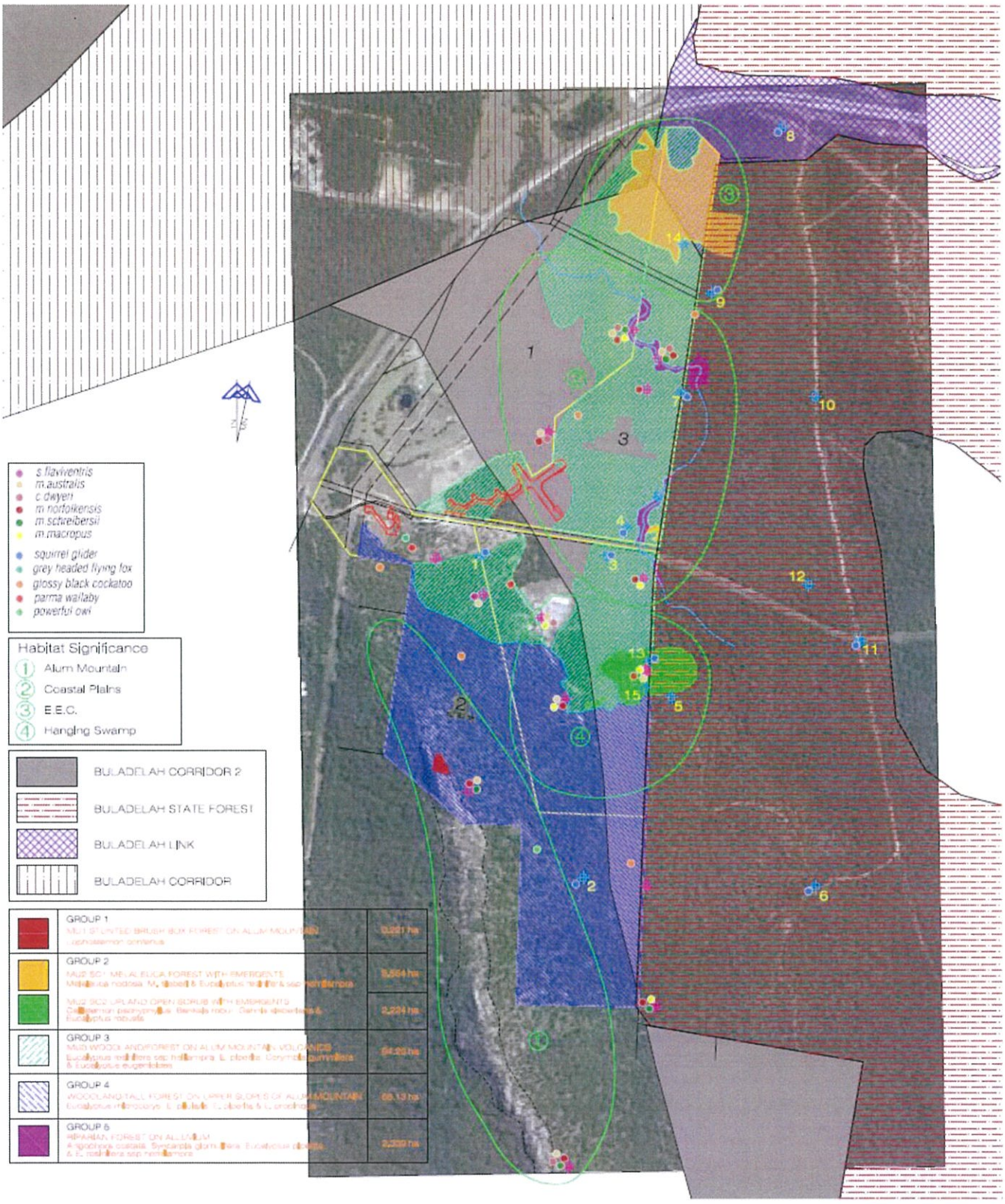

Figure 2- Map showing zones with priority numbers according to flora and fauna attributes.

8.0 CONCLUSIONS AND RECOMMENDATIONS

Following an investigation of the flora and fauna in part of the Alum Mountain sub-catchment, a further investigation was undertaken of the propsed key habitats on the property and corridors proposed by the State Government as it relates to this proposal. The investigation considered all the threatened flora and fauna species found and concluded that future planning for any development must recognize certain findings. For the purposes of identifying areas to allow Great Lakes Council to pursue the LES Proposal zones based on flora and fauna attributes in order of priority, have been identified (Figure 2). These zones are as follows.

Zone 1, whilst it lies outside the study area, has a link to the property because of the presence of habitat for cave dwelling bat species. This zone has been allocated the highest quality habitat. Not only does this area have unusual plant species, but it is likely to be the roost/breeding site of several microbat species, some of which are 'threatened'. Further to this, the many cracks, crevices and intercises would provide refuges for different species of reptiles, which is otherwise not present over other areas of the property.

Zone 3 has been given Priority 2 due to the fact that part of the vegetation qualifies as an 'Endangered Ecological Community' under State Legislation. This habitat, from discussions at the meeting with Great Lakes Council would be utilised for offset purposes. A significant area of large trees with hollows occurs in this zone, which are likely to support microbats and part of the Squirrel Glider population. Part of the area (the "endangered ecological community") is subject to inundation and whilst not totally surveyed as part of this project, may have attributes suitable for other amphibians.

Zone 2, is given Priority 3 because of the presence of a Squirrel Glider population and a type of vegetation that may well turn out to be a restricted type of vegetation at the regional level. This zone also supports the highest density of winter flowering nectar resources which would be used by Honeyeaters and Gliders. Large trees with hollows are also common and this zone is foraging habitat for threatened bat species.

Zone 4 is the area of the hanging swamp which is also dominated by winter flowering resources and which may help to support part of the Squirrel Glider population and the Grey-headed Flying Fox. It supports a specialised vegetation type, but does not qualify as an 'Endangered Ecological Community' under State Legislation. However, it is a fragile habitat and should not be disturbed from future impacts.

Zone 5 is the remaining slopes dominated by the Tallowwood/Blackbutt Small Fruited Grey Gum Forest. These forests do support small populations of the Glossy Black Cockatoo and the Parma Wallaby, as well as the Squirrel Glider, but the habitat is far more widespread in the area, forming much of the vegetation along the range in the State Forest. Even so, the habitat is potential Koala habitat, although there are minimal records for Koalas in this habitat within this zone. The Parma Wallaby is also found within this zone.

The following recommendations are also issued for future management throughout the property;

Foraging habitat for the threatened microbat species and not just their roosting habitat on Alum Mountain must be taken into account for conservation purposes.
Squirrel Glider, Glossy Black Cockatoo habitat, including the yabbie pond and dam foraging areas for the Large-footed Myotis, must be contained in a conservation zone. The Parma Wallaby habitat should be considered within this conservation zone.
Consideration of manoevering the wildlife corridor should be given a priority to capture additional threatened species habitat, particularly the Alum Mountain roosting caves.

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Appendix I –*Preliminary Site Contamination Assessment*

RPS Newcastle

Bulahdelah Rezoning Project

Pacific Highway, Bulahdelah

Preliminary Site Contamination Assessment

Report No. RGS00022.1-AB

9 June 2010

REGIONAL
GEOTECHNICAL SOLUTIONS

REGIONAL
GEOTECHNICAL SOLUTIONS

9 June 2010

Great Lakes Council
c/o RPS Newcastle
PO Box 428
HAMILTON NSW 2303

Attention: Mr Rob Dwyer

Dear Rob

RE: Bulahdelah Rezoning Project

Preliminary Site Contamination Assessment

As requested, Regional Geotechnical Solutions Pty Ltd (RGS) has undertaken an assessment of site contamination at the site of the proposed residential rezoning at Lot 3 DP1120817, Pacific Highway, Bulahdelah. Proposed future development of the site involves a mixture of commercial, tourist, and residential development. The current zoning of the site allows the commercial and tourist development but rezoning is required for the residential components of the development. The purpose of the work described herein therefore was to undertake a preliminary assessment of the potential for the site to be impacted by contamination from past or current land use activities and assess the significance of such contamination on the proposed residential land usage.

The findings of this assessment indicate some minor isolated soil contamination associated with a shed near the southern boundary of the site, for which some localised further investigation and possible remediation may be required. No widespread contamination or high concentrations of contamination were encountered on the site and therefore the site is deemed suitable for residential development pending further investigation and possible minor, isolated cleanup of soils impacted by spilt fuels and oils near the southern boundary as outlined above.

Regional Geotechnical Solutions Pty Ltd ABN 51141848820
5 / 97 Isabella Street Wingham NSW 2429
Ph. (02) 6553 5641 Email steve.m@regionalgeotech.com.au
www.regionalgeotech.com.au

If you have any questions regarding this project, or require any additional consultations, please contact the undersigned.

For and on behalf of

Regional Geotechnical Solutions Pty Ltd

Steven Morton

Principal

CONTENTS

1 INTRODUCTION

Regional Geotechnical Solutions Pty Ltd (RGS) has undertaken an assessment of site contamination at the site of the proposed residential rezoning of a parcel of land identified as Lot 3 DP1120817, located on the eastern side of the Pacific Highway, Bulahdelah (See Figure 1).

The site is part of a larger parcel of land proposed for development involving a mixture of commercial, tourist, and residential development. The current zoning of the site allows the commercial and tourist development but rezoning is required for the residential components of the development. The purpose of the work described herein therefore was to undertake a preliminary assessment of the presence of contamination from past or current land use activities and assess the significance of such contamination on the proposed residential land usage.

The work was commissioned by RPS Newcastle Pty Ltd on behalf of Great Lakes Council.

2 SITE LOCATION AND LANDUSE

The site is located on the eastern side of the Pacific Highway, on the northern side of the township of Bulahdelah and is identified as Lot 3 DP1120817

The larger development site, formerly identified as Lot 1 DP120651 and Lot 5 DP863307, is shown on Figure 2. The site is predominantly vacant, with only by a single existing residence and some associated sheds to the south of the rezoning area, some areas of cleared land, a golf course to the northwest, and minor earthworks associated with borrowing fill materials for unsealed roadworks that were underway on the site at the time of the fieldwork.

The current assessment applies only to the sections of the site proposed for residential development, the extent of which, based on a concept plan provided by the client, is reproduced in Figures 2 and 3.

3 SITE HISTORY

3.1 History of land usage

A brief historical search of land titles (Appendix A), revealed no former land uses of concern. The site is largely undeveloped. In the vicinity of the site the dominant industrial landuses have been mining and forestry.

Alunite mining, associated with the Alum Mountain Volcanics, has a historic presence in the Bulahdelah area. All mining activity to date, including surface facilities and processing, is believed to have been located well to the south of the proposed residential development site. According to correspondence from NSW Department of Primary Industries some gold exploration drilling was undertaken in the vicinity of the site but revealed no anomalous gold. Although weakly anomalous arsenic, zinc, and copper were encountered, it is unlikely that these would become economic deposits in the future.

Forestry activities occur in the land to the north and east of the site and there is some evidence of former land clearing, since largely regrown, within the development area.

There was no visible evidence on site of forestry facilities or activities other than forest access roads.

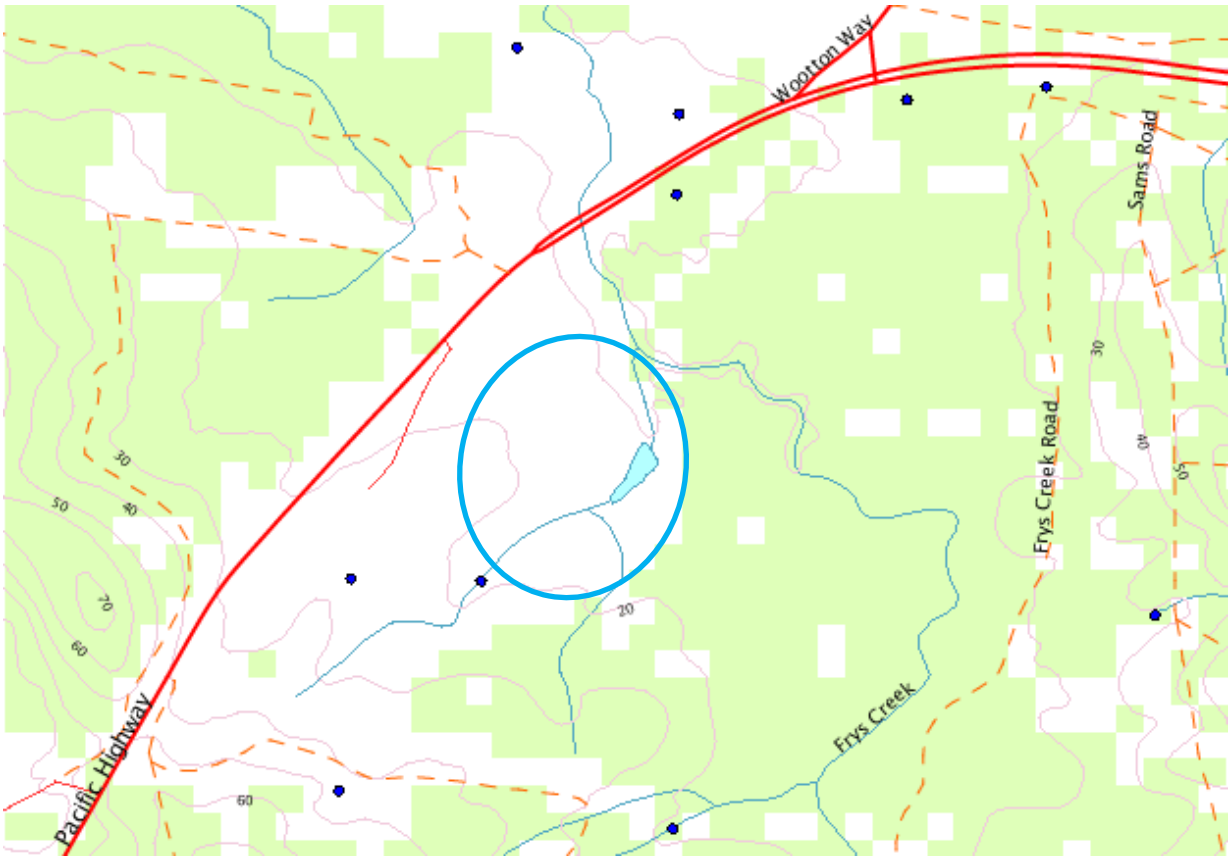
On the basis of the above, no specific areas of environmental concern were identified within the study area on the basis of historic industrial land use.

3.2 NSW EPA Notices

A review of the NSW EPA website database on 22 May 2010 revealed that no notices had been issued for the site or its previous Lot and DP numbers under the *Environmentally Hazardous Chemicals Act (1985)* or the *Contaminated Land Management Act (1997)*.

3.3 Groundwater Usage

A search of the NSW DWE groundwater bore records database indicated numerous groundwater bores in the vicinity of the site. There are no bores within the proposed residential development area. Two bores are located to the south of the site and would be expected to be up-gradient of the site. Bores to the north are beyond Frys Creek and therefore not expected to receive groundwater from the subject site.



Locations of registered water bores (dark blue dots) relative to approximate location of proposed development site (Blue circle)

4 SITE OBSERVATIONS

The site is situated on the northern footslopes of the Alum Mountain ridge and has an overall moderate to gentle slope towards the north and northwest. The area proposed for residential development is predominantly vegetated by open bushland, with some areas of re-growth timber having been cleared in the past. The northwestern margins of the area have been cleared, possibly for extension of the adjacent golf course, but were undeveloped and vegetated by long grass at the time of this assessment.

Drainage appears to occur by minor infiltration, but predominantly by surface runoff into a series of ephemeral drainage courses that flow generally toward the north. There were some man-made unlined surface drains visible at the time of the site visit, associated with access tracks.

The site is bounded to the northwest by a golf course, which is downslope of the development site. The land to the northwest and west is occupied by bushland. To the south the land is predominantly bushland, but an area disturbed by shallow quarrying for bulk rock for access road construction was observed. Also on the southern boundary of the proposed residential area is an existing residence and some associated sheds.

	
Localised excavation for extraction of access track materials within proposed residential development area	*Machinery shed near southern boundary of development area.*

In an access track near the centre of the site, a polyethylene pipe was noted daylighting from the ground upslope of the track and discharging onto the edge of the track. The extent, source, and use of the pipe were not able to be determined from site observations

	*Polyethylene pipe of unknown origin or use, discharging onto edge of track.*

5 AREAS OF ENVIRONMENTAL CONCERN

The site is largely undeveloped and no obvious contaminating activities or areas of notable environmental concern were identified during the assessment. Where there was deemed to be some potential for contamination based on site activities or site observations, samples were obtained as outlined in Table 1.

Table 1. Areas of Environmental Concern and samples obtained

AREA OF CONCERN	SAMPLE & NUMBER
Area of recent quarrying activity – possibility of spilt or leaking fuels or oils from machinery	Sample No. 1 obtained from sediments at low point of quarry
Outlet of pipe of unknown origin and use	Sample 2 obtained from outlet
Machinery shed near southern boundary – possible leakage, spillage or dumping of fuels and oils. Use of pesticide sprays	Sample 3 obtained from base of open drain below shed, on southern boundary of property
Shed/garage associated with house. Possible leakage or spillage of fuels or spraying of pesticides	Sample 4 obtained from southern site boundary, downslope of shed
Golf course – spraying of pesticides and herbicides	Samples 5, 6 and 7 obtained from western area adjacent to golf course.
Access road – spills or leaks of fuels and oils, possible spraying of herbicides on track.	Sample 8 obtained from edge of track

On the basis of site usage and the potential modes of contamination identified, the following broad suite of chemical analytes was adopted for the assessment:

- Total Recoverable Hydrocarbons (TRH) – from the leakage of fuels and oils;
- Polycyclic Aromatic Hydrocarbons (PAH) – from oils, greases, tar or bitumen products;
- Benzene, Toluene, Ethyl-Benzene, Xylene (BTEX) – From fuels, solvents, paint stripper;
- Heavy Metals - Copper, lead, zinc, cadmium, chromium, nickel, arsenic, mercury from a range of common industrial contaminant sources;
- Organochlorine and organophorphorus pesticides (OCP & OPP) – from spraying of pesticide and weedicide.

6 GUIDELINES AND ASSESSMENT CRITERIA

To assess the results of the laboratory testing, the following industry accepted soil investigation guidelines were referred to:

- NSW DEC (2006), Guidelines for the NSW Site Auditor Scheme;
- NSW EPA (1994), Guidelines for Assessing Service Station Sites.

The NSW DEC (2006) *Guidelines for the NSW Site Auditor Scheme* present health based investigation levels for different land uses including industrial/commercial, residential, and recreational. The guidelines reference the National Environmental Health Forum (NEHF) investigation levels to derive guideline levels for protection of human health for these different land uses.

As the site is proposed for residential development the guidelines for residential land use were adopted for this investigation.

NSW DEC (2006) does not provide levels for volatile petroleum hydrocarbon compounds (TRH and BTEX). The *Guidelines for Assessing Service Station Sites* (NSW EPA, 1994) provide threshold levels for sensitive land use for petroleum hydrocarbon compounds. The NSW DECCW has advised that these guidelines should also be used for less sensitive land uses.

Based on the above discussion of industry accepted guidelines, the guidelines presented in Table 2 were adopted for this assessment.

Table 2. Adopted Soil Investigation Criteria (mg/kg)

Analyte	Adopted Soil Investigation Criteria	Analyte	Adopted Soil Investigation Criteria
Benzene	1	Copper	1,000
Toluene	1.4	Lead	300

Analyte	Adopted Soil Investigation Criteria	Analyte	Adopted Soil Investigation Criteria
Ethyl-benzene	3.1	Zinc	7,000
Xylene	14	Cadmium	20
TRH $C_6 – C_9$	65	Chromium (III)	12%
TRH $C_{10} – C_{35}$	1000	Arsenic	100
Total PAH	20	Nickel	600
Benzo-a-pyrene	1	Mercury	10
Aldrin + Dieldrin	10	DDT + DDD + DDE	200
Chlordane	50	Heptachlor	10

7 RESULTS OF FIELD INVESTIGATIONS

Samples were obtained from each of the areas of environmental concern identified in Table 1. Samples were placed in laboratory supplied and pre-treated glass sampling jars and were placed on ice on site and maintained on ice during transit to the laboratory.

During the sampling no visible or olfactory evidence of contamination was encountered at any of the sample locations.

8 LABORATORY TESTING

Samples were transported under chain-of-custody conditions to ALS Laboratory Group, a NATA accredited specialist chemical testing laboratory, to be tested for the broad suite of common contaminants outlined in Section 5.

The results of the laboratory analyses are presented in Appendix A.

9 QUALITY CONTROL

Samples were obtained using industry accepted protocols for sample treatment, preservation, and equipment decontamination. Duplicate samples were submitted to the laboratory for analysis. Comparison of the results of testing on primary and duplicate samples is presented in Table 3.

Table 3. Comparison of Primary and Duplicate Samples (mg/kg)

Analyte	BH1 and BH9	
	Primary	Duplicate
TRH: C_6-C_9	<LOR	<LOR
TRH: C_{10}-C_{36}	<LOR	<LOR
PAH	<LOR	<LOR
Benzo - pyrene	<LOR	<LOR
OC Pesticides	<LOR	<LOR
OP Pesticides	<LOR	<LOR
Copper	<5	<5
Lead	16	14
Zinc	7	7
Cadmium	<1	<1
Chromium	2	<2
Nickel	<2	<2
Mercury	<0.1	<0.1

Note: LOR = Limit of reporting

The results show good correlation between testing on primary and duplicate samples.

In addition to the field QC procedures, the laboratory conducted internal quality control testing including surrogates, blanks, and laboratory duplicate samples. The results are presented with the laboratory test results in Appendix B.

All laboratory quality control data is within acceptable limits for the tests carried out. Therefore on the basis of the results of the field and laboratory quality control procedures and testing the data is considered to reasonably represent the concentrations of contaminants in the soils at the sample locations at the time of sampling and the results can be adopted for this assessment.

10 RESULTS

Laboratory test results are presented in Appendix A. An appraisal of the laboratory test results is provided below:

- Comparison of the limits of laboratory detection against the adopted soil assessment criteria presented in Table 2 of this report indicates that the detection limits for all laboratory analyses are well below the adopted soil investigation criteria. Therefore test results indicating concentrations of below the quantifiable limits can be reasonably assumed to indicate that the contaminant is either not present at that sample location, or is present at trace concentrations well below the adopted soil investigation criteria;
- Results of BTEX analysis in all samples revealed concentrations below the laboratory detection limits and therefore well below the adopted assessment criteria for all BTEX compounds analysed;
- Results of TRH C_6-C_9 analysis in all samples revealed concentrations below the laboratory detection limits and therefore well below the adopted assessment criteria for all TRH C_6-C_9 compounds analysed;
- Results of TRH C_{10}-C_{36} analysis in sample 4, on the southern site boundary downslope of the shed associated with the existing residence, revealed concentrations of 2480mg/kg, which exceeds the guideline value of 1000mg/kg. The highest concentrations were in the longer chain hydrocarbon compounds, indicating the source of the contamination to be heavy oils, such as motor oil, or grease;
- Results of TRH C_{10}-C_{36} analysis in all other samples revealed concentrations below the laboratory detection limits and therefore well below the adopted assessment criteria for all TRH C_{10}-C_{36} compounds analysed;
- Results of Organochlorine and organophosphorus pesticide analysis in all samples revealed concentrations below the laboratory detection limits and therefore well below the adopted assessment criteria for all pesticide compounds analysed;
- All heavy metals concentrations were at typical background levels in the samples analysed, and therefore well below the adopted soil investigation guideline values.

11 ASSESSMENT AND CONCLUSIONS REGARDING SITE CONTAMINATION

On the basis of the above, the only exceedance of the adopted guideline values was the concentration of long chain hydrocarbons in Sample 4 on the southern site boundary. This was directly downslope of a nearby shed and is likely to be a result of isolated spillage or leakage of oil.

Prior to residential development, it is recommended that some additional sampling be conducted around this area to delineate the extent of the affected soil. Once delineated, the soil should be removed to an appropriate off-site facility.

The remainder of the samples revealed no contamination at levels of concern for residential development. Based on the results of this assessment the site is considered suitable for residential development with regard to site contamination.

12 LIMITATIONS

The findings of this assessment are the result of sampling and analysis at specific locations using methodologies adopted in accordance with accepted industry practices and standards. It is considered that the results represent a reasonable interpretation of the conditions at the site in relation to contamination resulting from past site activities. Under no circumstances, however, can it be considered that these findings represent the actual state of the site at all points.

Should conditions that differ from those described in this report be encountered during future site usage, further advice should be sought.

For and on behalf of

Regional Geotechnical Solutions Pty Ltd

Steven Morton

Principal

Figures

Appendix A
Land Titles Information

Appendix B
Laboratory Test Results

Appendix J – *Previous Heritage Assessments*

Bulahdelah Cultural Heritage Assessment

Bulahdelah Residential Rezoning

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Disclaimers

Executive Summary

RPS has been commissioned by Great Lakes Shire Council (GLC) to assess the potential Aboriginal and European cultural heritage of an area of land adjacent to the Bulahdelah Golf Course in the Great Lakes Council Local Government Area (LGA) to support a Local Environmental Study (LES). This report will form part of a strategic and statutory assessment to determine the suitability of the site for residential rezoning and land use.

This CHA has been prepared in accordance with guidelines and conditions set out by the Department of Conservation, Climate Change and Water (DECCW) pursuant to Section 62 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). The report has been prepared to meet the heritage assessment requirements for the proposed rezoning of Part of Lot 1, Part of Lot 2 and Lot 3 in DP 1120817 Pacific Highway, Bulahdelah, New South Wales (Refer Figure 1-1). The study area is currently zoned 1(a) Rural and is located to the northeast of the town of Bulahdelah. This rezoning application seeks to determine whether residential zonings and land uses are suitable on the site.

A Development Application (DA 799/2007) was approved for a brewery and tourist resort on the site under the existing zoning 1(a) Rural. It is proposed that any future residential subdivision of the site be developed in association with a previously approved submission for a brewery and resort development permissible under the existing zoning 1(a) Rural.

A search of the Department of Environment, Climate Change and Water (DECCW), Aboriginal Heritage Information Management System (AHIMS), which covered a radius of 10km surrounding the study area, was conducted on 23rd of April 2010. The search revealed 52 sites in the regional area, but, no sites had been previously recorded in the immediate study area.

Extensive surveys have previously been undertaken in the regional and local area in association with various development works. These included a number of archaeological surveys relating to the upgrade of the Pacific Highway through the Bulahdelah area, and a comprehensive Aboriginal Cultural Heritage Assessment by Navin Officer as part of an Environmental Impact Statement in 2004 (Navin Officer 2004:13).

Bulahdelah Mountain was identified as a heritage item in the Great Lakes Local Environmental Plan 1996 (GLLEP 1996). The Great Lakes Council Draft Heritage Study (2003) adopted in May 2007 proposed that a part of Bulahdelah (Alum) Mountain be designated a Heritage Conservation Area but no determination has yet been made. Also pending is a nomination for an Aboriginal Place encompassing the upper slopes of Alum Mountain bounded by the Bulahdelah State Forest Boundary, to the south and east of the immediate study area.

The archaeological pedestrian survey was conducted by Gillian Goode, Senior Archaeologist for RPS and Colleen Perry and Benjamin Feeney, Sites Officers representing Karuah Local Aboriginal Land Council (KLALC) on Thursday 20th and Friday

21st May 2010. The possible impacts of the proposed development on Aboriginal cultural heritage were considered and articulated at that time.

One Scar Tree Site (RPS BD ST1) was identified during the course of the pedestrian survey. RPS BD ST1 was located in the Riparian Zone on the northern bank of Frys Creek and would therefore not be impacted upon by any development works. However, a buffer zone of 10m should be placed around the scar tree to ensure that the tree is protected from any impact.

At the end of the survey the Aboriginal Community Stakeholders present on the survey, (Colleen Perry and Ben Feeney of KLALC), in discussions with the archaeologist concluded that there were several Aboriginal cultural heritage sites located in the broader region. They indicated that there was no impediment due to cultural heritage values to the proposed rezoning in the immediate study area. As the Scar Tree site (RPS BD ST1) was located in the riparian zone of Frys Creek it would not be impacted on. However they stated that there were areas that were considered to have cultural heritage value on the top of Alum Mountain outside of the study area.

The management recommendations that are formulated from this archaeological assessment are based upon the legislation designed to address the impact of development on sites of cultural significance.

It is recommended that works may proceed with regard to the following:

Recommendation 1
The scar tree site RPS BD ST1 identified in the study area should not be impacted upon. A minimum buffer zone of 10 metres should be imposed around the tree in the event of any works being undertaken in its vicinity. However, as the site is located in the riparian zone of a major creek line it is unlikely to be impacted upon by future proposed works. If potential impact to the site occurs or is likely to occur at any time in the future then the local Aboriginal Community Stakeholders, the DECCW and a suitably qualified archaeologist should be contacted.

In general during the course of proposed construction work:

Recommendation 2
During the course of proposed construction work, if suspected Aboriginal cultural heritage material is encountered, work should cease in that vicinity immediately, the area cordoned off and contact made with the DECCW Enviroline 131555, a suitably qualified archaeologist and the relevant Aboriginal Community Stakeholders (including the KLALC), so that it can be adequately assessed and managed.

Recommendation 3
In the event that skeletal remains are uncovered whilst operations are underway, work must cease immediately in the vicinity and a 20m buffer zone be placed around the site. The area should be fenced and the NSW Police Coroner should be contacted to

determine if the remains are deemed to be of Aboriginal origin. If determined to be Aboriginal then contact should be made with the DECCW Enviroline 131555 and representatives of the local Aboriginal community stakeholders to determine an action plan for the management of the skeletal remains, formulate management recommendations and to ascertain when work can recommence.

European History:

No European cultural heritage sites were located during the survey of the Study Area. During the course of any construction work the following recommendation should be considered:

Recommendation 4

If, during the course of clearing works, significant European cultural heritage material is uncovered, work should cease in that area immediately. The NSW Heritage Branch should be notified and works only recommence when an appropriate and approved management strategy instigated.

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FIGURES

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APPENDICES

1 Introduction

RPS has been commissioned by Great Lakes Shire Council (GLC) to assess the potential Aboriginal and European cultural heritage of an area of land adjacent to the Bulahdelah Golf Course in the Great Lakes Council Local Government Area (LGA) to support a Local Environmental Study (LES). This report will form part of a strategic and statutory assessment to determine the suitability of the site for residential rezoning and land use. The study area is currently zoned 1(a) Rural and residential development is not permissible under the current zone.

This CHA has been prepared in accordance with guidelines and conditions set out by the Department of Conservation, Climate Change and Water (DECCW) in response to consultation undertaken pursuant to Section 62 of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

1.1 The Study Area

The study area is located within the Great Lakes LGA, in the Parish of Boolambayte, County of Gloucester. The study area comprises Part of Lots 1 and 2 and the whole of Lot 3 DP 1120817 (formerly Lot 1 DP 120651 and Pt 5 DP 863307) and is located to the northeast of the town of Bulahdelah on the eastern side of the Pacific Highway (Figure 1.1). The western limit of the study area is bounded by the Bulahdelah Golf Course and the Pacific Highway Road Reserve, the eastern boundary is defined by DP 753154 and the Bulahdelah State Forest, the northern limit of the study area by the Pacific Highway Road Reserve, and the southern and south western boundaries are defined by the break in slope between the mid slope and upper slope area of Alum Mountain.

1.2 Background

Extensive archaeological and cultural heritage surveys have previously been undertaken in the regional and local area in association with various development works including a Bulahdelah Aboriginal Place Nomination Assessment Report prepared for the NSW National Parks and Wildlife Service (Umwelt 2003) encompassing the upper slopes of Alum Mountain and parts of the Bulahdelah State Forest Area which are adjacent to, but, outside of the immediate study area.

A comprehensive Aboriginal Cultural Heritage Assessment was undertaken in 2004 for an Environmental Impact Statement (Navin Officer 2004) which addressed the Cultural Heritage Resources along and adjacent to the proposed Upgrade Route of the Pacific Highway and incorporated an extensive regional and local assessment of Aboriginal and non-indigenous cultural heritage in the Bulahdelah area and the area encompassing Alum Mountain. Extensive

Aboriginal Community Consultation was undertaken during the course of the survey and assessment works by both Umwelt (2003) and Navin Officer (2004).

Part of Bulahdelah (Alum) Mountain was identified as a heritage item in the Great Lakes Local Environmental Plan 1996 (Smith 2007). This heritage listing relates to the former Alunite Mine Site Complex with the first mining leases over the Bulahdelah deposit being established in 1888 by the Australian Alum Company. The Great Lakes Council Draft Heritage Study (Smith 2007) adopted in May 2007 proposed that certain lands around Bulahdelah Mountain, which is also known as Alum Mountain, be designated a Heritage Conservation Area, but no determination has been made on the proposal.

This report will form part of a strategic and statutory assessment to determine the suitability of the site for residential rezoning and land use. The study area is currently zoned 1(a) Rural and residential development is not permissible under the current zone. It is proposed that any future residential subdivision of the site be developed in association with a previously approved submission for a brewery and resort development permissible under the existing zoning 1(a) Rural. Both the brewery and tourist development have DA approval – Refer DA 799/2007.

1.3 Legislative Context

Aboriginal heritage (places, sites and objects) within NSW are protected by *National Parks and Wildlife Act (1974, as amended).* In some cases, Aboriginal heritage may also be protected under the *Heritage Act (1977)*. The *Environmental Planning and Assessment Act (1979)*, along with other environmental planning instruments, trigger the requirement for investigation and assessment of Aboriginal heritage as part of the development approval process. For crown land, provisions under the Native Title Act (1993) may also apply.

1.3.1 National Parks and Wildlife Act (1974, as amended)

The primary state legislation relating to Aboriginal cultural heritage in NSW is the 1974 *National Parks and Wildlife Act*, as amended (NPW Act 1974). The legislation is overseen by the Department of Environment, Climate Change and Water (DECCW), and specifically the Director-General of the DECCW.

Protection for Aboriginal sites is provided under Part 6 of the NPW Act (1974). It is an offence for a person or company to:

- knowingly destroy, deface, damage, cause or allow the destruction/ defacement to an Aboriginal object or Aboriginal place (Section 90);
- disturb, move, excavate for the purposes of finding Aboriginal objects, or take possession of Aboriginal objects (Section 86) unless a valid Permit under Section 87 of the Act has been issued by the Director General of the DECCW; and

- be aware of the location of an Aboriginal object and fail to report it to the DECCW (Director-General) within a reasonable timeframe (Section 91).

1.3.2 Heritage Act 1977

Historical archaeological relics, buildings, structures, archaeological deposits and features are protected under the Heritage Act 1977 (as amended 1999) and may be identified on the State Heritage Register (SHR) or subject to an active Interim Heritage Order; in such cases they would be protected under the Heritage Act 1977 and may require approvals or excavation permits from the NSW Heritage Branch.

1.3.3 Environmental Planning & Assessment Act 1979 (EP&A ACT)

This Act regulates a system of environmental planning and assessment for NSW. Land use planning requires that environmental impacts are considered, including the impact on cultural heritage and specifically Aboriginal Heritage. Assessment documents prepared to meet the requirements of the EP&A Act (1979) including: Review of Environmental Factors (REF), Environmental Impact Statements (EIS) and Environmental Impact Assessments (EIA), should address Aboriginal Heritage, and planning documents such as Local Environment Plans (LEP) and Regional Environmental Plans (REP) and typically contain provisions for Aboriginal heritage where relevant.

Further details on the relevant legislative Acts are provided in Appendix 1.

1.4 Great Lakes Shire Council & DECCW Project Requirements

The Great Lakes Shire Council is required to comply and to adhere to legislative requirements associated with Aboriginal Cultural Heritage in NSW. The Department of Environment, Climate Change and Water (DECCW), is the governing body with the responsibility for managing and administering all facets of Aboriginal cultural heritage in New South Wales. For this reason, DECCW was consulted under Section 34A and Section 62 of the EP&A Act to determine their requirements with respect to Aboriginal Cultural Heritage assessment to enable residential development within the subject site. DECCW (previously known as DECC) provided their advice in a letter dated 5th February 2009. A copy of the letter is provided in Appendix 1.

The DECCW Project Requirements specified in the above mentioned letter are considered to have been appropriately addressed within this CHA. The requirements that related specifically to Aboriginal cultural heritage values in their letter were:

- To address Aboriginal community consultation in accordance with the draft "Guidelines for Aboriginal Cultural Heritage Impact Assessment and

Community Consultation" (DEC 2005) – refer Section 1.7 and Appendices 3 and 7 of this report;

- Archaeological field survey was to be conducted by a suitably qualified archaeologist in consultation with traditional Aboriginal custodians – refer Appendix 7;
- To identify the areas for proposed impact on Aboriginal cultural heritage in the study area and adopt strategies to avoid/ minimise impacts – refer Section 12;
- To assess the archaeological and Aboriginal cultural significance of the study area with consideration of the Aboriginal cultural heritage values of the area – refer Section 8;
- To outline effective and reliable mitigation measures designed to avoid/ minimise any impact upon Aboriginal cultural heritage – refer Section 12; and
- To demonstrate effective communication with the Aboriginal community has been undertaken in assessing the impacts, developing options and formulating final recommendations – refer Appendices 3 and 7.

1.5 Scope of Assessment

This assessment has been prepared to meet the heritage requirements for a rezoning application for a residential development in the Bulahdelah area. It draws on the environmental and archaeological context of the study area, including known sites to inform the archaeological predictive model against which survey results are compared. This report provides an archaeological AHIMS map and assesses the significance of heritage sites/items within the study area. The proposed impacts of the development are assessed with consideration to the survey results, the AHIMS map data and assessment of significance. This assessment report includes:

The following methodology was adopted in the assessment process and preparation of this CHA report:

- Identification and review of the relevant statutory requirements in respect to cultural heritage;
- Ongoing consultation with the Aboriginal Community and ascertaining, where possible, the Aboriginal cultural heritage values for the local area including summary and appraisal of previously documented information in order to ensure a cultural heritage perspective was maintained;
- Search and review of the DECCW Aboriginal Heritage Management System (AHIMS database) to identify previously recorded/ known Aboriginal Sites and review of associated documenting evidence (Appendix 2);
- Review of archaeological heritage items for Aboriginal and non-Indigenous heritage sites on the Great Lakes Shire Council LGA Local Environmental Plan (LEP), State Heritage Register and Register of the National Estate;

- A review of the relevant environmental and archaeological background information to develop a predictive model of archaeological site patterning in the study area;
- A pedestrian survey aimed to gain a maximum cover of the study area in thick ground cover including coverage of all landforms, areas of exposure and vegetated areas with members of the local Aboriginal Community;
- Identification of heritage sites and archaeological sensitivity in the study area;
- Develop recommendations for the management for Aboriginal and non-Indigenous archaeological items identified in the study area during field survey.

This Cultural Heritage Assessment has been prepared accordance with:

- The *National Parks and Wildlife Act* (1974);
- *The Heritage Act* (1977); and
- The National Parks and Wildlife Service *Guidelines for Archaeological Survey and Reporting* (1997).

1.6 Limitations

The desktop background review of the study area was limited to all available documents with regard to the project. The field survey covered all landform types occurring in the study area with inspection wherever possible of existing ground exposures. Visibility was poor in some of the treed areas due to dense undergrowth and ground cover. There were several dirt access tracks and various easements which did provide access to much of the survey area.

1.7 Aboriginal Community Consultation

The purpose of Aboriginal Community consultation is to provide an opportunity for the relevant Aboriginal people to have input into the heritage management process.

The Aboriginal field survey and accompanying report does not trigger a requirement to conduct the full Aboriginal consultative process under *Aboriginal cultural heritage consultation requirements for proponents 2010*. As such there is no need to apply for an Aboriginal Heritage Impact Permit (AHIP) from DECCW as the development at this stage has no potential to harm Aboriginal objects or places.

The ACHR (2010):

- Apply to all activities throughout New South Wales that have the potential to harm Aboriginal objects or places and that require an AHIP.

- Replace the Interim Community Consultation Requirements for Applicants, December 2004; and support other DECCW policies and procedures that provide direction and guidance for AHIP proponents in determining Aboriginal cultural heritage impacts.

Relevant consultation with the local Aboriginal Community Stakeholders was undertaken for the project and a Consultation Log documenting correspondence and all other relevant material associated with the consultation process can be found in Appendix 3.

1.8 Authorship

Survey was undertaken by Gillian Goode, Senior Archaeologist with RPS. This report was written by Gillian Goode and Philippa Sokol, and reviewed by Darrell Rigby Archaeology Manager, all of RPS Newcastle.

1.9 Acknowledgements

RPS Newcastle would like to acknowledge the following people who assisted in this Aboriginal Cultural Heritage Assessment and to express their appreciation for the assistance given by the Aboriginal Community Stakeholders.

Name	Company
Colleen Perry	Sites Officer, Karuah Local Aboriginal Land Council
Benjamin Feeney	Sites Officer, Karuah Local Aboriginal Land Council

1.10 Terms and Abbreviations

Abbreviation	Description
ACH Consultation Requirements	Aboriginal Cultural Heritage Consultation Requirements for Proponents (2010), were released by DECCW on the 12th of April, 2010. These consultation requirements are triggered if an AHIP is needed.
ACS	Aboriginal Community Stakeholders
AHIMS	Aboriginal Heritage Information Management System
AHIP	Aboriginal Heritage Impact Permit
BP	Before present (as in years before present)
cal. years BP	Calibrated years before present, indicates a radiocarbon date has been calibrated using the dendochronology curves, making the date more accurate than an uncalibrated date
CHA	Cultural Heritage Assessment

DECCW	Department of Environment, Climate Change and Water, formerly Department of Environment (DEC)
GIS	Geographical Information System
GLC	Great Lakes Council
ICCR	Interim Community Consultation Requirements for Applicants were released as guidelines for Aboriginal consultation by DEC in 2005
KLALC	Karuah Aboriginal Local Aboriginal Land Council
LEP	Local Environment Plan
LES	Local Environmental Study
LGA	Local Government Authority
PAD	Potential Archaeological Deposit
REP	Regional Environment Plan
REF	Review of Environmental Factors
RPS	Rural Planning Services

Figure 1-1: Location of Study Area

2 Environmental Context

An understanding of environmental context is important for the predictive modelling of Aboriginal sites, as well as, for their interpretation. The local environment provided natural resources for Aboriginal people, such as, stone (for manufacturing stone tools), food and medicines, wood and bark (for implements such as shields, spears, canoes, bowls, shelters, amongst others), as well as, areas for camping and other activities. The nature of Aboriginal occupation and resource procurement is related to the local environment and it therefore needs to be considered as part of the cultural heritage assessment process. The reporting of environmental context is also required by DECCW as specified in the NPW Standards and Guidelines Kit (1997).

2.1 Geology and Soils

The geology of the study area comprises the Bulahdelah formation as the overlying unit and the Bulahdelah Mountain Volcanics as the underlying unit. The study area lies within the Myall River Syncline in an area dominated by Carboniferous and Permian rocks (Great Lakes Council 1996).

The Bulahdelah Formation dominates the geology and soils in the region of the study area with a portion of the Alum Mountain Volcanics incorporating the mid sloped area in the southern part of the study area. The Bulahdelah Mountain formation is comprised of grey to brown, massive to thickly bedded lithic sandstone, occasional pebble layers and poorly exposed siltstone and clay stone (DECCW 2008). The underlying bedrock in this region includes sandstone, conglomerate and mudstone. Fine-grained, light grey homogenous clays were noted in the soil substrates in this region and these may be the result of alluvial sorting of weathered sediments from the acid volcanic rocks of the Bulahdelah Mountains (Great Lakes Council 1996).

The study area lies at the north western, upstream extent of the Myall River coastal plain, and is defined by the dominance of valley floor Quaternary alluvium. The ridgelines immediately surrounding the study area consist of Permian aged sandstones and shales belonging to the Bulahdelah Mountain Formation. These rocks support low-lying, broad spur lines and low gradient basal slopes adjacent to the valley floor (DECCW 2008).

The area has a shallow A horizon overlying extensive B horizon clay deposits. Soils in alluvial contexts are generally comprised of silts and sand and have considerable depth. Soil deposits on crests tend to be shallow and stony (DECCW 2008).

2.2 Topography and Hydrology

The study area is located within a terrain of hillcrests and ridges which run in a north-west to south-east orientation.

Frys Creek, a tributary of the Myall River, flows across the study area at the base of the north east facing slopes of Alum Mountain which comprises the south west portion of the study area. The basal slopes of the Alum Mountain Ridge are relatively flat, (Great Lakes Council 1996). Frys Creek is a 3rd order stream which flows into the Myall River. The Frys Creek valley floor is relatively flat, with numerous small drainage depressions which drain water to Frys Creek. There are low and ill-defined spurs and slopes in the mid and upper slope areas.

2.3 Climate

Approximately 18,000 years ago, climatic conditions began to alter which affected the movement and behaviour of past populations within their environs. During this time, notably at the start of the Holocene (more than 11,000 years ago), the melting of the ice sheets in the Northern Hemisphere and Antarctica caused the sea levels to rise, with a corresponding increase in rainfall and temperature. The change in climatic conditions reached its peak about 6,000 years ago (Short 2000:19-21). Up until 1,500 years ago, temperatures decreased slightly and then stabilised about 1,000 years ago, which is similar to the temperatures currently experienced. Consequently, the climate of the study area for the past 1,000 years would probably have been much the same as present day, providing a year round habitable environment.

The annual average maximum and minimum temperatures experienced at Bulahdelah are 23.6°C and 11.9°C respectively. The average annual rainfall is 1,178 millimetres, with an average of 111 rain days (Bureau of Meteorology 2010).

2.4 Flora and Fauna

The flora in the study area and immediate surrounds is predominantly comprised of forested vegetation characterised by a tall tree canopy dominated by eucalypt species. Generally, the canopy allows sunlight to penetrate supporting growth of a variety of shrub and grass species. The riparian zone along Frys Creek comprises tall forest on alluvium (Great Lakes Council 2005).

Flora is dominated in the canopied areas by Eucalyptus species such as Red Mahogany, Sydney Peppermint, Red Bloodwood, Thin-leaved Stringybark and Sydney Red Gum (DECCW 2008). Occasionally Eucalyptus Swamp Mahogany occurs (DECCW 2008). This type of vegetation would be regarded as a Mixed Hardwood Forest and is dominated by several distinct hardwood and gum species. Understory growth comprises various Callistemon, Banksia, Melaleuca

and Acacia species together with common native grasses and grass trees (*Xanthorrhoea malacophylla*) (DECCW 2008).

A number of faunal species may occur in the study area. These include an abundance of bird species attracted to local floral communities, arboreal mammals such as gliders and other marsupials in the tall canopy, together with various species of reptiles and amphibians, a number of bat species and the common bush rat (DECCW 2008).

2.5 Discussion

The regional and local landscape, environment and climate of the study area would have been suitable for maintaining Aboriginal occupation prior to the arrival of non-indigenous communities.

The study area and wider region offers a range of resources including shelter, fresh water, fauna and flora. Raw material for stone tool manufacture was available in the local area including fine grained siliceous material, volcanics and sedimentary and metamorphic rocks.

3 Aboriginal Prehistory

3.1 Historical Records of Aboriginal Occupation

The ethnographic information used to interpret the archaeological record is often biased and may be deeply prejudiced particularly in relation to lifestyle, social practices, community interactions, religion and other facets of Aboriginal life (L'Oste Brown 1998). It is important to recognise this possible bias when using early European accounts regarding the lifestyles of Aboriginal people, particularly in the interpretation of their daily life and beliefs.

Nonetheless, some of these ethnographic records can provide important information and insight on local Aboriginal customs and cultural materials evidenced during the early years of European settlement. A large number of journals, diaries and general reports of the first European settlement in the area and ethnohistoric data was recorded by Ebsworth (1826), Dawson (1830), Caswell (1841), Backhouse (1843) and Threlkeld (Threlkeld in Threlkeld in Gunson 1974).

3.2 The Traditional Owners

According to the tribal boundary information compiled by Tindale (1974), the tribal territory falls in the location of the Worimi people. Their territory was from Forster southwards to Raymond Terrace in the south, and west to Maitland and Martins Creek. However, Brayshaw (1987) suggests that the area may have been part of the Biripai tribe's territory which included the Barrington Tops, Gloucester and Forster areas.

3.2.1 Aboriginal Implements

The bark of the cabbage tree and kurrajong were used to make cord for the manufacture of fishing lines and nets and also for canoes (Ebsworth 1826). Some shields were produced from the bark of the nettle tree or mangrove wood. Brayshaw (Brayshaw 1987) noted that there were two types of shields manufactured along the coast. The type commonly found and a wide shield of hard wood was made to be used against the threat of opponents clubs. Boomerangs, clubs spear throwers and hatchets were also created from hard wood. Spears were comprised of both grass tree and hard wood (Dawson 1830). Caswell (1841) noted that there were three types of spears which were generally used in the coastal area, including the fishing spear, the hunting spear and the war spear. Tools such as chisels and small fishhook files, bone awls and sharpened shell knives and scrapers were also among the implements found in the Worimi tool kit.

3.2.2 Food and Useful Plants

According to Backhouse (Backhouse 1843) the Aborigines of the study area had an abundance of food resources. Their diet included marine and freshwater shell fish including mud oysters and rock oysters and fish caught with spears, lines and hooks, fish weirs or traps. Their environment was also rich in reptiles and mammals including snakes, lizards, kangaroo, wallabies and possums. Birds such as parrots, pigeons, emus and young mutton birds and eggs (Bennett 1929) were also part of the diet. Plant species such as the Bungall fern, bracken and Giant Lily and the fruit of the tree fern, apple – berry, lance leaf, geebung and lillipilli were also used as a food resource (Threlkeld in Threlkeld in Gunson 1974).

3.2.3 Clothing

In the summer, the weather would have permitted the Aborigines to wear minimal clothing. In winter the skin of both the kangaroo and possum was used as rugs and coats and fur cord was also used for clothing.

3.2.4 Campsites and Shelters

Tree bark was used for the construction of huts along with suitable timber lengths. Information regarding specific campsite locations is lacking although in the Karuah Valley to the south of the study region, Aboriginal camps were observed at the foot of a hill “at the margin of a brook” and also on the top of a “small rise” (Dawson 1830).

3.3 Aboriginal History before European Contact

The Worimi people were bordered on the north by the Birpai, the northwest by the Dungutti, the west by the Gringai and the Wonaruah, and the south by the Awabakal. Enright (1900) considered that the Worimi were divided into groups. Narelle Marr (nd) refers to these groups as ‘nurras’ and Enright (1900) identified ten nurras. Sokoloff (1973) identified eight nurras who occupied the Great Lakes area. Each of the nurras occupied a definite locality within the tribal territory but the exact boundaries are not known because of the extensive dispersal that occurred after European settlement. Coastal lakes, beaches and estuaries backed by wooded country of various kinds provided a rich food source and supported a high population. The Worimi and Birpai clan groups both spoke dialects of the Kattang language (Enright 1900).

3.4 Aboriginal History after European Contact

The earliest European contact with Aborigines in the wider region area probably occurred at Port Stephens in 1790 when five escaped convicts were rescued by Aborigines and taken into their community (Brayshaw 1987). Contact with cedar

cutters began in the Port Stephens area after 1816 (Brayshaw 1987). Aboriginal population numbers decreased rapidly after European settlement.

One important aspect which has shaped Aboriginal lifestyle and the lives of families for more than a century is the establishment of Aboriginal missions and the mission schools. Aboriginal Stations or Missions were established regionally at Purfleet, Forster and Karuah during the late nineteenth and early twentieth century's (Bennett 1929). Mission schools operated at Forster from 1891 to 1952, Purfleet from 1903 to 1953 and Karuah from 1916 to 1954 (Brayshaw 1987).

4 European History

4.1 General

The Bulahdelah (Alum) Mountain was first recorded by John Oxley, a Crown Surveyor, in 1818 (Carrall 1999a:10). It was known in those early times as Bulladella Mountain, and was used as a prominent landmark that marked the most northern boundary for convicts and bonded persons.

In the early 1800's, a settlement was founded around the point formed by the Myall Lake and Boolambayte Creek which then became known as Boolambayte (Carrall 1999a:33). The settlement was established due to the local timber resource suitable for boat building, barges and droghers (paddle-wheeled vessels). The settlement progressed rapidly, with small dwellings springing up along the lake shores and creeks, and the bush north and west of the lake at Boolambayte. On September 20th, 1836, John Edward Stacy applied for a timber grant and in 1837; the coastal area reverted to Crown land, which aimed to encourage settlement of the area (Carrall 1999a:34) but with little response Advertisements in 1838 in Sydney calling for settlers for the region received no applications (Carrall 1999a:34).

In 1876 John Cassidy submitted a sample of powdered and heat affected rock extracted from the mountain for testing which proved to be a high grade of Alum (Carrall 1999a:40). Alunite was first quarried in the Bulahdelah area in 1878 by the Run Corn Alunite Co until 1884 (Carrall 1999a:41). The first mining leases over the Bulahdelah deposit were taken up in 1888 by the Australian Alum Company. The company commenced quarrying at the northern end of the Bulahdelah (Alum) Mountain, now known as 'The Big Quarry'. In 1897 Bulahdelah (Alum) Mountain was dedicated to Crown Land Reserve for mining purposes and was administered by the Department of Mines (Carrall 1999a:44). An Anglo – French Syndicate, owned by an English company, took out a prospecting lease in 1906 (Carrall 1999a:44). The syndicate went out of operation when the ore recovered was found to contain insufficient grading to export overseas. In 1910 the mine was sold to the 'Australian Alunite Company' which faced mining operating difficulties due to insufficient ore to maintain output demand. The company ceased extractions in 1927. In 1933 the 'Australian Alunite Company' was brought out by the Australian Alunite Syndicate who ceased its operations in 1952 as a result of low grade ore deposits (Carrall 1999a:45).

4.2 Heritage Register listed items

At the national level those items that are accorded National Significance status are under the control of the Commonwealth Government. These items are

recorded and protected under the National Heritage List and the Commonwealth Heritage List. The extensive Register of the National Estate lists those items considered of value for future generations.

The State Heritage database is maintained by the NSW Heritage Branch and lists all items that have been identified as of heritage value on Regional Environment Plans (REP) and Local Environment Plans (LEP) throughout NSW. The State Heritage Register lists those places which are of State Significance.

4.3 Commonwealth Heritage List

The Commonwealth Heritage List controls the Australian Heritage Database and maintains a record of all items that have been identified as of heritage value.

The search of the Commonwealth Heritage List identified no Commonwealth Significant items for the Bulahdelah area.

NSW Commonwealth Heritage List

4.4 New South Wales Heritage Branch Register

The State Heritage database is maintained by the NSW Heritage Branch (Refer Appendix 5) and lists all items that have been identified as of heritage value on Regional Environment Plans and Local Environment Plans throughout NSW.

The State Heritage Register lists those places which are of State Significance. Listed for the Bulahdelah area are:

Alunite Mine (former), Bulahdelah Mountain, Bulahdelah, NSW 2423
The above listed item is located approximately 1 kilometre south west of the Bulahdelah Study Area and comprises the majority of the upper slopes of Bulahdelah Mountain. The proposed rezoning application for the Study Area does not pose a threat to the State Listed item.
Alunite Mine (former)

Courthouse (former), Crawford Street, Bulahdelah, NSW 2423
The above listed item is located approximately 1.5 kilometres south west of the Bulahdelah study area and as such the proposed rezoning application does not pose a threat to the State Listed item.
Courthouse (former)

General Cemetery, Markwell Road, Bulahdelah, NSW 2423
The above listed item is located west of the Pacific Highway approximately 750 metres south west of the Bulahdelah study area and as such the proposed rezoning application does not pose a threat to the State Listed item.

General Cemetery

Kauri & Co's Railway, Bulahdelah, NSW 2423

The above listed item is located within the region of Bulahdelah but is not located in the immediate surrounds to the study area. Consequently, the proposed rezoning application does not pose a threat to the State Listed item.

Kauri & Co's Railway

Tramline Trestle Bridge, Horses Creek, Bulahdelah, NSW 2423

The above listed item is located within the region of Bulahdelah and is not located in the immediate surrounds to the study area. Consequently, the proposed rezoning application does not pose a threat to the State Listed item.

Tramline Trestle Bridge

Four of the listed items do not share a common boundary with the study area and they are located approximately half a kilometre or more away. The former Alunite Mountain Mine is located on the southern side of Alum Mountain. The above mentioned Commonwealth and Heritage listed items will not be incorporated in the proposed rezoning application for the study area and as such will not be impacted upon by it.

4.5 Great Lakes Council Local Environmental Plan (LEP)

The Great Lakes Council LEP (1996) contains a listing of Heritage listed items for the Bulahdelah region (Schedule 2) – The Great Lakes Council Local Environmental Plan 1996 (LEP).

4.6 Listed Historic Items in the Immediate Study Area

There are no heritage listed items or built structures contained in the immediate study area comprising Part of Lot 1, Part of Lot 2 and Lot 3 in DP 1120817, Pacific Highway, Bulahdelah. The Aluminium Mountain Mine lies on the south west side of the mountain and is not part of the rezoning application for the study area which lies on the north east foot slopes of Alum Mountain.

4.7 Discussion

Research of listed Heritage Items has provided evidence into the type and approximate distance of the listed State Heritage items from the proposed study area. A detailed desktop investigation for the location of these listed items has shown that they are positioned in such a way that they will not be affected by the proposed rezoning application, particularly the former Alunite Mine which is located on the opposite side of Bulahdelah Mountain in the south west.

It should be noted that the Alunite Mine (former) is recorded on the NSW Heritage Branch Register as “Aluminium Mine (Former)”. European historic records for the area show that the “Aluminium Mine (Former)” description is incorrect (Section 4.1), and should be listed as the Alunite Mine Site Complex which was mined for what was the biggest deposit of alunite in the world at the time in 1888 (Carrall 1999b:13).

4.8 Conclusion

It is considered that the proposed rezoning application area is well removed from any listed Heritage Items including the former Alunite Mine, and therefore the proposed development will have no impact upon them.

5 Aboriginal Archaeological Context

5.1 Aboriginal Heritage Information Management System

Previous archaeological studies have been conducted in the region of the study area. A search of the DECCW Aboriginal Heritage Information Management System (AHIMS) was conducted on 23rd of April 2010 comprising an area of ten square kilometres around the study area. A list of all Aboriginal cultural heritage sites identified on the AHIMS database search for the study area totalled 52 and is detailed in Table 5-1. A detailed list of the AHIMS search can be found in Appendix 2 and a glossary of Aboriginal site types can be found in Appendix 4.

A study of the AHIMS database revealed that there were several registered sites located in close proximity to the study area. However there were no registered Aboriginal archaeological sites in the Study Area.

The AHIMS results detailed in Table 5-1 show that the regional area features rock outcrops suitable for manufacturing stone tools. Stone artefact sites predominate comprising artefact scatters and isolated finds (n=22). In addition to these sites several artefacts (numbers unspecified) were also recorded. Also recorded in the regional area were potential archaeological deposits (n=8), and scarred trees (n=4). These results indicate that the regional area has a predisposition for stone artefact sites especially in relation to reliable water sources and good quality rock outcrop. Several other site types were also recorded in the regional area including Aboriginal ceremony and dreaming site (n=1), bora ceremonial with midden site (n=1) and stone arrangement (n=1). The bora ceremonial site with midden and the stone arrangement are located 5 to 10 kilometres to the south of the immediate study area.

The AHIMS data exhibits a high frequency of stone artefact sites. These sites generally occur in specific geological and topographical areas providing there is access to raw material for artefact procurement and the availability of water sources and associated fauna species capable of supporting local Aboriginal communities. Permanent water sources servicing the area include the Myall River and Frys Creek and corresponding tributaries which drain the study area from the south east to north west.

The results of the AHIMS search shows that it is unlikely that shelter sites will occur in the lower slopes of the study area. Conversely, much of the Bulahdelah State Forest is positioned to the south and east of the study area and has the potential for shelters because of the mountainous topography and potential availability of suitable outcropping rock. There are a number of sites located alongside the flood plain to the south east and west of the study area including a midden site. A midden site has been identified on the AHIMS database and

there is potential for more sites to be uncovered as long as there are fresh water shell fish accessible in local rivers and creek systems. Exposed sandstone outcrops along these river and creek systems and other tributary drainage lines are potential areas for grinding groove sites in the locality. Scar trees in the area that may have been utilised for making canoes are likely to be in close proximity to water, whereas trees that were used for making shields may have been some distance from water across a variety of landforms (DEC, 2005).

Figure 5-1 provides the location of the AHIMS sites in association to the Regional Study Area and Figure 5-2 in the Local Study Area.

Table 5-1: Summary of AHIMS Results Ordered by Sites Types and Frequency (Easting 417065 to 437065 and Northing 6405380 to 6425380)

Site Type	Frequency in Search Area
Artefact(s) Unspecified	15
Isolated Find	12
Artefact Scatter	10
Potential Archaeological Deposit	8
Scarred Tree	4
Aboriginal Ceremony and Dreaming	1
Bora/ Ceremonial; Midden	1
Stone Arrangement	1
Total	**52**

An analysis of the sites encompassing Alum Mountain and in close proximity to the immediate study area showed that artefact scatters, isolated finds and PADs predominate in the alluvial creek banks of Frys Creek and along the Myall River valley floor. Scarred trees (n=2) were found along the lower and mid slope areas (Refer figure 5-2).

Figure 5-1: AHIMS Sites - Regional

Figure 5-2: AHIMS Sites - Local

5.2 Regional Archaeological Context

Several cultural heritage assessments and archaeological test excavations have been undertaken in the Great Lakes region relating to transport and communication infrastructure installation, land and property development and environmental assessments. Based on the information available, a number of trends in site location and patterning are evident. The archaeological investigations incorporated the wider region in order to provide a comprehensive assessment of the archaeological resources of the Bulahdelah region and local significance. These reports were reviewed in light of current knowledge of the study area.

Regionally, the study area is close to the Myall River and valley floor area which incorporates an underlying geological syncline that defines the north west alignment of the coastal hinterland. The valley floor area comprises a series of alluvial terraces, large wetland basins, small lagoons situated on lower terrace levels, and levee deposits adjacent to the river banks.

5.3 Local Archaeological Context

This section details the most relevant investigations to the study area. The following information will assist with predictive modelling to help identify potential archaeological sites and allows for planning and management recommendations to be made with confidence.

To ensure a holistic approach to the study area assessment, all previous Aboriginal cultural heritage information provided by the ACS that was not restricted was included in this report in order to ascertain cultural stories, connections and the degree of significance of the study area. This was compiled with the assistance of the KLALC who were asked to comment on any Cultural Heritage Values of the area – Refer Appendix 7.

Various Aboriginal oral histories have suggested the presence of 'Guardian Tree' and a 'Healing Stream' at Alum Mountain with differing interpretations within the Aboriginal community on both the 'Guardian Tree' and the 'Healing Stream'.

5.3.1 Cultural Heritage Value/s

The 'Guardian Tree'

A non-Aboriginal Bulahdelah resident discovered an old growth Eucalyptus tree in August 2002 (Umwelt 2003). The tree had a burl that resembled a face and it was conveyed to consultants that the tree may have Aboriginal significance due to the resemblance to a face. A report by Umwelt Environmental Consultants referred to the tree as a 'Guardian Tree'. This report cited an oral reference from one Aboriginal source stating that the 'Guardian Tree' was sacred and that "the face of an old Aboriginal woman can be seen on the trunk of the tree" (Umwelt

2003). It also stated that "A lady (Aboriginal teacher) who had arthritis has been coming and leaning on the tree – she says it has helped her" (Umwelt 2003). The 'Guardian Tree' was then inspected by Navin Officer in April 2004 in the presence of two Sites Officers of the Kaurah Aboriginal Land Council.

The tree was an old growth Eucalypt approximately 35 metres high. It was located on a small tributary drainage line, in a minor gully on the west facing basal slopes of Bulahdelah Mountain. The tree trunk was 3 metres to the south of the creek bed and the tree was located approximately 60 metres west of a cleared 132 kilovolt power line easement and 21 metres to the northeast of a dirt track which links the power line easement with the northern end of Mackenzie Street.

The tree had a circumference at breast height of 4.5 metres with a number of hollows. Navin Officer (Navin Officer 2004:30) described the 'Guardian Tree' as having good to fair health and, based on its form, circumference and the presence of trunk hollows that it was likely to be over 100 years old. The burl with a reported resemblance to a face was on the north eastern side of the trunk, approximately 2.5 to 3 metres above ground level. The burl was approximately 65 centimetres wide and 35 centimetres thick. Due to the low relief of the burl feature which composed the facial similarity, Navin Officer (Navin Officer 2004:30) considered the age of the burl to be between 30 – 50 years old and was therefore a modern phenomenon.

Moreover, the burl and its surface features did not appear to have been modified by people and as such could not be considered an artefact or an archaeological site. Two scars had been identified by Navin Officer (Navin Officer 2004:31) on the 'Guardian Tree'. These occurred on the lower trunk; one was a triangular scar on the north eastern side, and a large scar and re-growth complex with two separate areas of scar surface on the northern side. Navin Officer (Navin Officer 2004:31) also assumed that the burl and the tree would be unlikely to be considered an Aboriginal object by the DECCW. Navin Officer (2004:31) stated that the cultural heritage value and significance of the tree should be determined by the Aboriginal community. It was determined that the tree could not be considered to be an archaeological site due to the age of the burl being of natural origin around 30 to 50 years old (Navin Officer 200:40).

The 'Healing Stream'

In 2001 Navin Officer was contacted by a National Parks and Wildlife Service Aboriginal employee who notified them of the presence of a 'stream that runs off the Bulahdelah Mountain with healing powers' (Navin Officer 2004:37). However no specific location for the stream was provided.

Leila McAdam of Umwelt Environmental Consultants was shown a 'healing stream' by another individual in 2003. This person provided the following information on the 'healing stream': "The Aboriginal women used to go there to

have the babies then the babies were placed into the stream for purification of the babies and then the women used to sit in the stream" (Umwelt 2003:8).

The stream is a small tributary which drains a narrow catchment on the western slope of the Bulahdelah Mountain. The creek flows along the northern boundary of Mountain Park at Bulahdelah and passes through an urban catchment in the Bulahdelah township. The creek line was vegetated with mature Eucalyptus forest and the sloped areas were substantially re-growth. There were cleared areas along the power line easements. The streamline had been previously impacted by the vegetation clearance and landfill associated with 'Mountain House'. In addition to this disturbance, earthworks and landfill associated with the construction and demolition of the adjacent nineteenth century alunite processing works and installation of metal water pipes along the valley floor had also disturbed the streamline.

Navin Officer did not determine if the identification of the 'healing stream' was based on traditional information or if the identification was widely accepted in the Aboriginal community. The historical cultural value of the 'healing stream' remained subject to confirmation by the local and custodial Aboriginal community. There was no recorded information as to the current status of the cultural values of the 'Healing Stream' at the time this report was concluded.

5.4 Local Archaeological studies in the Area

The following archaeological reports are summarised in ascending chronological order.

Rich, E. 1990. Proposed New Road Bulahdelah to Coolongolook. Archaeological Survey for Aboriginal Sites.
Rich (1990) conducted a number of archaeological assessments relating to the proposed Bulahdelah to Collongolook Pacific Highway project. The survey area was 9km along the proposed highway route which began south of the township of Bulahdelah and extended to the Pacific Highway at Coolongolook. The survey results revealed ten open artefact scatters and one isolated find.

Rich (1990) also identified a number of locations that were considered likely to contain archaeological material. Aboriginal sites were predominantly situated on spur, saddle and ridge tops with only two artefacts located on a rise adjacent to a creek. It was recommended that test excavations be carried out in these potential areas for archaeological material (Rich 1990).

Davies, S.J. 1991. An Archaeological Assessment of the Proposed Telecom Optic Fibre Cable Route between Squires Hill Road and Tritton Regenerator Stations, New South Wales.
University of Queensland Archaeological Services Unit (UQASU) was commissioned by Telecom Australia to undertake an archaeological assessment

of the proposed Optic Fibre Cable route between Squires Hill near Bulahdelah and Tritton Regenerator Stations on the Central Coast.

The total length of the area surveyed was 48km which included a 6m wide corridor which extended from Squire Hill Road to east of the Pacific Highway. This six metre wide corridor ran for 1.5km through grazing paddocks of relatively low relief to Stony Creek Road in the Bulahdelah State Forest.

The archaeological survey identified two localities of artefacts. One isolated find of an unmodified silcrete flake was observed at Boolambayte Creek. The second isolated mudstone core was found at School House Creek (Davies 1991).

Haglund, L. 1992. Bulahdelah to Coolongolook Deviation: Archaeological Survey 2 and Test Excavations.

Haglund (1992) investigated previously uninspected sections of the 21.5km Bulahdelah to Coolongolook Pacific Highway route. This comprised a 5km proposed link with the Lakes Way. The archaeological survey was commissioned by the NSW Roads and Traffic Authority (RTA). Test excavations of two sites were conducted; the first at BC5 and BC9 that were identified during the initial survey of the area, and; test pits at three potential sites, Areas A, B and C, that were identified in the second survey. Artefacts were found at each location.

The archaeological survey conducted by Haglund (1992) identified sparse scatters of stone artefacts along the proposed Pacific Highway route. Three sites were recorded; two of these were first identified by Rich in 1990. The third side was found on the side of a long flat topped spur and Haglund (1992) interpreted this site as remains of a stone knapping event with four of the six artefacts found in the erosion scour being considered to be of the same raw material, a distinctive grey fined siliceous rock with a silvery lustre (Haglund, 1992: 20). Haglund (1992) also interpreted these as debris associated with a traditional campsite rather than pieces lost or discarded en route between such camp sites.

Haglund, L. 1996. Pacific Highway (State Highway No. 10) Bulahdelah to Coolongolook Deviation: Third Archaeological Survey.

Haglund (1996) undertook an archaeological investigation along a proposed deviation of the Pacific Highway between Bulahdelah to Coolongolook. The report covered the results of an inspection of minor changes to the proposed route and formed an addendum to the previous reports (Rich 1990, Haglund 1992). The survey was conducted on foot and was divided into ten sections.

No additional Aboriginal sites were located during the survey and some of the isolated finds found in previous surveys were not relocated. The recommendations were made to remove the materials along the forestry tracks

and the application to obtain consent to destroy be processed by the RTA on behalf of the respective owners (Haglund 1996).

Ford Archaeological Services, 1999. Karuah to Bulahdelah - Archaeological Test Excavation Report to the NSW Roads and Traffic Authority.

NSW Roads and Traffic Authority commissioned Ford Archaeological Services to perform test excavations of three landscapes zones. There were 15 test trenches dug and one track was surveyed. Ten trenches were dug on the eastern and western sides of Bundabah Creek near to the Pacific Highway crossing, two were excavated on a ridge opposite The Tea Gardens intersection and three trenches were dug on the ridge overlooking Burdekin's Gaps, south of the township of Bulahdelah.

11 stone artefacts were found in the trenches and a further 29 were recorded on a track that was surveyed near Bundabah Creek. The artefacts comprised of mudstone and silcrete and were identified as either flakes and flake pieces. The artefacts were found in low densities and only on the east – west ridge lines which crossed the area. It was suggested that it was unlikely that similar sites would be spotted during earth moving excavations and that the majority of the easement was disturbed.

Navin Officer, 2000. Proposed Highway Bulahdelah Upgrade Route Selection Study.

Navin Officer (2000) was employed by the NSW Roads and Traffic Authority (RTA) to undertake an Aboriginal Cultural Heritage report to identify and assess Aboriginal sites and places of significance. A pedestrian survey was carried out over three days to cover the 7.7km length of the Pacific Highway study area, which ran from the south of Bulahdelah to the north of the Bulahdelah Golf Course.

The survey revealed 12 Aboriginal archaeological. Seven of the sites were artefact scatters; three were isolated finds and two were possible Aboriginal scarred trees. Based on surface evidence and assessment of the area, Navin Officer (2000) concluded that there were no known Aboriginal sites in their study area which would pose a permanent constraint on the proposed development (Navin Officer 2000).

Umwelt, 2003. Bulahdelah Aboriginal Place Nomination Assessment.

Umwelt (2003) was commissioned by the National Parks and Wildlife Service to investigate an Aboriginal Place nomination for Bulahdelah (Alum) Mountain. The aim of the study was to provide sufficient information and to formulate a decision on whether a declaration was justified. The area of study consisted of a portion of the Bulahdelah State Forest located east of the township of Bulahdelah. The report documented sources and oral testimony from 11 identified Aboriginal people and community representatives. The report did not provide boundaries of the area other than the State Forest boundary, however, it did present two

specific places within the area of the proposed Pacific Highway upgrade; an old growth tree referred to as a 'Guardian Tree', and a 'Healing Stream' (Umwelt 2003:8).

The report provided an assessment of the evidence and found that the oral testimony, documentary and archaeological evidence provided general support stating that the Bulahdelah (Alum) Mountain was and continues to be a place of significance to Aboriginal culture. It was consequently recommended that the area of study be nominated as an Aboriginal Place and a Cultural Heritage Management Plan be developed in consultation with all Aboriginal stakeholders (Umwelt 2003:18).

Navin Officer, 2004. Bulahdelah – Upgrading the Pacific Highway.
The Roads and Traffic Authority commissioned Navin Officer (2004) to provide a technical paper to address the heritage impacts of the Pacific Highway upgrade in an area stretching 2km west of Bulahdelah. Navin Officer (2000) also conducted a field survey of the ancillary work sites and areas identified for a sediment basin and water quality basins further to the west of the proposed highway upgrade.

Nine Aboriginal sites were identified in the study area. The sites included five scatters of stone artefacts, two scarred trees and two isolated finds. Eight areas of Potential Archaeological Deposit were also identified in the study area. (Navin Officer 2004).

5.5 Literature Review Discussion

The archaeological reports detailed in the local archaeological context (Section 5.4) together with results of the AHIMS search found that the most commonly occurring site type associated with the Bulahdelah study area were stone artefact sites followed by potential archaeological deposits and scarred trees. The large number of stone artefact sites supports the ethnographic evidence (Section 3) that the Aboriginal people readily exploited and relied on the natural landscape as a consistent and plentiful resource.

Oral histories were obtained by Navin Officer (2000) regarding the 'Guardian Tree' and 'Healing Stream'. The historical cultural value of the 'healing stream' remained subject to confirmation by the local and custodial Aboriginal community. There was no recorded information as to the current status of the cultural values of the 'Healing Stream' at the time this report was concluded. It was determined that the tree could not be considered to be an archaeological site due to the age of the burl being of natural origin around 30 to 50 years old (Navin Officer 200:40).

Recorded information contained in various archaeological reports support the premise of the exploitation of the area by Aboriginal people for extensive periods. Further archaeological investigation into the region may uncover supplementary information of pertaining to Aboriginal land use, cultural practices and occupation.

6 Predictive Model

A predictive model is created to provide an indication of Aboriginal sites likely to occur within the study area. It draws on the review of the existing information from the regional and local archaeological context, as well as, the environmental context. The predictive model is necessary to formulate appropriate field methodologies, as well as, providing information for the assessment of archaeological significance.

6.1 Predictive Model for Aboriginal Archaeology in the Study Area

The following is a predictive model designed for the broader area, but specifically focuses on the immediate study area. This model seeks to incorporate behavioural patterns associated with factors that affect the location of sites and the potential for preservation of material evidence. Generally, people exploit places to obtain resources and are therefore likely to utilise areas where resources are abundant. Resources considered essential for Aboriginal occupation of an area include a permanent water supply, flora and fauna species, stone raw material and shelter from environmental conditions. The social practices of the community and the link to the local environment are equally important in the choice of occupation areas, however, the evidence of these are not always present in a material form such as stone artefacts. The environmental relationship influencing occupation choice also includes (but is not limited to) ceremonial practices (e.g. corroborees), religious beliefs (e.g. mythological places) and social practices (e.g. collection of medicines) which are important for understanding how areas were utilised by past populations. The landscape of the study area would have provided little shelter from heavy rains, cool winter nights and strong winds. Forested areas of the state forest would provide for temporary shelter in warmer weather.

6.2 Site Predictions

The climatic information indicates that the area was suitable for habitation by the Aborigines for a majority of the year; colder months could have been spent in nearby mountainous areas where shelter may have been available to reduce exposure to cool winds. Shelter would also be desirable in the warmer months. Shelter sites have not been recorded on the AHIMS database; this may indicate that the surrounding high land does not contain appropriate outcropping or pagoda formations capable for temporary residence or archaeological investigations in the region have not fully investigated the elevated areas.

6.2.1 Aspect

The ridge line of Bulahdelah State Forest is aligned in a north west to south east direction. The landforms comprising the study area consist of the north east facing mid slope area and lower slopes in association with the nearby creek line (Frys Creek).

6.2.2 Slope

The study area was predominantly a gentle to moderate sloping landform which was bisected by Frys Creek.

6.2.3 Distance from Water

The study area is located in close proximity to several available water sources. Archaeological investigations in the vicinity of the study area have identified the preference for sites to be located along the creek banks of the high order streams that form the lower reaches of the Myall River and its tributaries. These waterways generally flow along the flat, broad valleys to the west of the study area. Frys Creek drains the area from the south east to the north west and would probably comprise fresh water runoff from the ridges of Bulahdelah Mountains after extended rain periods. Fresh water may have been available on a seasonal basis from the associated drainage lines and tributaries.

6.2.4 Resources

The Myall River and its tributaries would have provided for ample supplies of fresh water and local resources such as fish, gliders along with various species of reptiles and amphibians, a number of bat species and the common bush rat. These flora and fauna resources in both terrestrial and freshwater locations would have been available in the region for the majority of the year.

6.2.5 Summary

The area presents a diverse environment with a sufficient supply of resources for exploitation by Aboriginal peoples. The AHIMS results demonstrate regular use of local rock outcrops and the permanent creek lines such as the Myall River, Wild Cattle Creek and Crawford River about five kilometres to the south west. This is evidenced by the number of stone artefact sites and potential archaeological deposits identified in the regional area. The proximity of freshwater and terrestrial forested environments would have made the study area a potentially desirable location for habitation and as a base for targeting a multitude of flora and fauna species.

7 Field Survey

The archaeological pedestrian survey of the Bulahdelah study area was conducted on the 20th and 21st May 2010 in overcast weather. The survey was undertaken by Gillian Goode, Senior Archaeologist for RPS, in participation with Colleen Perry and Benjamin Feeney, both Sites Officers for Karuah Local Aboriginal Land Council (KLALC) who had been involved in all previous Aboriginal Cultural Heritage Assessments undertaken in the local area. There had been heavy rain and some areas with exposed clayey B horizon soils were fairly slippery which restricted 4WD access. The creek lines and low lying areas were also waterlogged.

The study area was located to the north east of the township of Bulahdelah on the eastern side of the Pacific Highway on the north east facing slopes of Alum Mountain, which form part of the Bulahdelah Mountain Range (Figure 7-1). The study area was predominantly a gentle to moderate sloping landform which was bisected by Frys Creek. The survey focused on landform units (SU1-SU6; Figure 7-2). State Forest lay to the south and east of the immediate study area (Figure 7-3). Landform types have been used for comparative purposes and predictive modelling.

7.1 Land Uses

The area had been heavily modified by land clearing and had been used for aquaculture, timber getting, cattle grazing, dam and fencing works, quarrying for road base material and easements for both water pipes and power lines. The study area was predominantly comprised of open and closed forest, with open woodland on the fringes of areas that had been previously cleared for the power line easements, the Bulahdelah Golf Course, the aquaculture ponds (yabby farming) and access roads.

7.2 Survey Strategy

The strategy for the survey was to gain maximum coverage of the study area in thick ground cover, including coverage of all landforms, areas of exposure and vegetated areas.

7.3 Survey Methodology

The survey was conducted on foot by three people walking abreast and spaced approximately 5 metres apart in order to maximise survey coverage and to increase the potential for identifying cultural heritage items and other archaeological material. The ground surface was inspected in order to identify Aboriginal cultural heritage material or objects. As visibility was low all

opportunistic exposures were examined. These included; vehicle tracks and access roads, erosion scalds and cleared areas resulting from previous land use.

7.1 Documentation of Results

The documentation of Aboriginal cultural heritage sites and areas of archaeological sensitivity was undertaken using the following methods:

- Digital Photography;
- Differential GPS recording; and
- Field notes.

The Aboriginal cultural heritage survey was conducted in accordance with DECCW guidelines for survey reporting as outlined in the Aboriginal Cultural Heritage Standards and Guidelines Kit (NSW National Parks and Wildlife Service 1997). Photographic recording of landforms, Aboriginal cultural material, areas of archaeological or cultural sensitivity, exposures and disturbed areas and other items of interest was undertaken during the course of the survey. Photographs were scaled, as appropriate.

Differential GPS units were used to record the location of Aboriginal heritage sites and areas of sensitivity. GPS tracking logs were also used for recording and identifying the location of each of the survey units.

Field notes incorporated the size, location, contents and condition of Aboriginal heritage in the area. Size was recorded, either by GPS or tape measure. Contents of sites included the listing of site type and raw material as well as other site features. The condition of Aboriginal sites/ areas of sensitivity were recorded so as to include a description of the level of disturbances such as, erosion, land clearing and similar factors.

7.2 Documentation of Aboriginal significance

Aboriginal Community Stakeholders participating in the survey were asked about the cultural significance of the survey area and where applicable and/or appropriate, about the significance of Aboriginal sites and areas of archaeological sensitivity. An opportunity to comment on cultural significance was also provided in the survey preparation documentation and post survey reporting.

7.3 Survey Coverage

The study area was divided into six survey units which comprised: SU1 treed mid slope areas; SU2 aquaculture farming (yabbies) on mid to lower sloped areas including ponds, dams, access roads and associated infrastructure; SU3 power line and pipeline easements; SU4 treed lower slopes; SU5 dense Melaleuca

Forest; and SU6 Riparian Forest (predominantly Eucalypt species) along Frys Creek - Refer Figure 7-1.

The survey focused on visibility and exposure. A map showing identified Aboriginal archaeological sites from the field survey are detailed in Figure 7-2.

Survey units were described for each section surveyed. Exposure and ground surface visibility were reported to ensure comparability of survey results between different areas of the local landscape and to contextualise survey results. Areas with high visibility, ground surface disturbance and extensive exposure can expose high quantities of archaeological material (particularly stone artefacts). Conversely, areas with low visibility, few exposures and intact native vegetation coverage, generally retain more undisturbed landscapes. Whilst the identification of sites (particularly artefact scatters) in such areas is generally low, there is the potential for intact archaeological deposits which have been protected by overlying vegetation.

The survey was undertaken on foot by three people generally walking 5-7 metres apart or as dictated by the terrain, density of vegetation and ease of access.

Figure 7-1: Survey Units.

Figure 7-2: Sites Identified During Field Survey.

Figure 7-3: State Forest Boundary to south and east of Study Area.

7.3.1 Survey Unit 1 – Mid Slope Area

Survey Unit 1 (SU1) marked the southern boundary of the study area and comprised the north east facing mid slope area of Alum Mountain.

The area was accessed by an existing dirt road on the eastern side of the Pacific Highway between the township of Bulahdelah and the Bulahdelah Golf Course. There was significant surface disturbance in the sloped area directly below the dwelling and along the southern boundary of the Golf Course with some surface erosion from water runoff (Plate 1). There were several dirt roads traversing the study area and there were excavated drainage channels and soil windrows formed along the road edges (Plate 2). In the eastern part of SU1 a dirt access track led to a stone quarry which was probably used for extracting road base material (Plate 3).

SU1 was comprised predominantly of open forest and many of the trees in this area showed damage from previous bush fires. The gradient was moderately to gently sloping and there were numerous cobbles and pebbles on the surface of the clayey soil. Native grasses, shrubs and trees covered the slope. The trees in this part of the study area were predominantly regrowth with few mature trees (Plate 4). The fairly dense leaf litter hindered visibility in some of these areas particularly along the ephemeral creek lines (Plate 5). Three ephemeral 1st order creek lines were located in SU1. They were tributaries of Frys Creek, which is a 3rd order creek line. All the tributaries flowed in a north easterly direction and joined Frys Creek in the lower slopes of Alum Mountain.

No items of Aboriginal cultural heritage or significance were identified in Survey Unit 1.

7.3.2 Survey Unit 2 – Aquaculture Ponding and Associated Infrastructure

Survey Unit 2 covered the area that had previously been used for aquaculture (Australian Crayfish/ yabby) farming (Plate 6). There was an old shed adjacent to the dirt access track (Plate 7) and a number of ponds filled with layers of tyres which had been used as breeding ponds for the yabbies (Plate 8). The area was highly disturbed due to mounding of the earth to form the individual ponds. These areas had not regenerated and the banks were investigated for any artefacts that may have been exposed in this area, but none were found. The clayey B horizon soils had generally been exposed in this part of the study area and there were some erosion scalds covered with pebble and cobble laterite (Refer 9). Visibility was fair and as the area was highly disturbed it was considered unlikely that any artefacts would be located in subsurface soils.

No items of Aboriginal cultural heritage or significance were identified in Survey Unit 2.

7.3.3 Survey Unit 3 – Power line and Pipe line works and Easements

Areas on either side of electricity easements had been cleared of trees (Plate 10). These open woodland areas were severely disturbed due to the emplacement of the power lines. The grass in the area had been slashed and access tracks ran along the length of the power line easement (Plate 11). There were a number of erosion scalds in SU3 but no artefacts were found (Plate 12). Visibility in the lower sloped areas was fair particularly in the open grassed zones that had areas of exposure. However, visibility was poor where had been some vegetation regrowth (Plate 13). Water pipes also crossed the study area (Plate 14). As the ground surface along the easements was highly disturbed it was considered unlikely that any artefacts would be located in subsurface soils.

No items of Aboriginal cultural heritage or significance were identified in Survey Unit 3.

7.3.4 Survey Unit 4 – Lower Slopes

This survey unit comprised the lower sloped part of the study area. SU4 was located in the south eastern part of the survey area. A dirt access track divided SU1 from SU4 (Plate 15). The area was moderately treed with extensive regrowth and very thick ground cover in some parts and it was extremely difficult to traverse the eastern extent of SU4 (Plate 16). Ground surface visibility was generally very low hindering the ability to identify the presence or absence of surface artefacts in this area (Plate 17). In the northern and western part of SU4 there were a number of large erosion scalds and active erosion was evident at the break in slope to the south of Frys Creek (Plate 18).

No items of Aboriginal cultural heritage or significance were identified in Survey Unit 4.

7.3.5 Survey Unit 5 – Melaleuca Forest

The area was densely treed with very thick ground cover in some parts and was extremely difficult to cross (Plate 19). Much of the lower slope area was waterlogged. There were a number of mature trees in the mid slope area but no scar trees were identified.

Ground surface visibility was very low hindering the ability to identify the presence or absence of surface artefacts and no sites were located in this area.

No items of Aboriginal cultural heritage or significance were identified in Survey Unit 5.

7.3.6 Survey Unit 6 – Riparian Forest

This survey unit was located along both banks of Frys Creek in the riparian zone of this 3rd order stream. There was abundant water in the creek with a creek

crossing restricted to a formed crossing from the golf course side on the west (Plate 20) and to a formed track east of the study area (Plate 21). There was a large stand of mature trees on southern bank of Frys Creek but the majority of the trees showed evidence of bush fire damage and lightening strike (Plate 22). On the northern side of the creek there were a number of mature Eucalypt species and they were examined for evidence of scars. One tree was found to have been scarred and was considered to have been modified by Aboriginal people in the past (Plates 23 & 24).

No other sites were located in this area but visibility of the ground surface was severely hindered due to the dense vegetation in the area to the north of Frys Creek. The banks of Frys Creek showed evidence of repeated flooding events and extensive damage to a number of mature trees. Several trees had been struck by lightning and there were fallen trees and branches along the creek bank to the south of Frys Creek. There were no artefacts along either creek bank but it was noted that flood

An Aboriginal Scarred Tree was identified in Survey Unit 6 on the northern bank of Frys Creek within the Riparian Zone – AHIMS Sites Card RPS BD ST1 (Refer Appendix 6).

7.4 Effective Coverage

The amount of ground surface observed varies depending on factors such as soil type, vegetation cover and ground surface visibility (Refer Table 7-1).

Table 7-1: Ground Surface Visibility Rating.

GSV Rating	Description
0 – 9%	Heavy vegetation with scrub foliage, debris cover and/or dense tree cover. Ground surface not clearly visible.
10 – 29%	Moderate level of vegetation, scrub or tree cover. Small patches of soil surface visible resulting from animal tracks, erosion or blowouts. Patches of ground surface visible.
30 – 49%	Moderate levels of vegetation, scrub and/or tree cover. Moderate sized patches of soil surface visible possibly associated with animal tracks, walking tracks and erosion surfaces. Moderate to small patches across a larger section of the study area.
50 – 59%	Moderate to low level of vegetation, tree and/or scrub. Greater amounts of areas of ground surface visible in the form of erosion scalds, recent ploughing, grading or clearing.
60 – 79%	Low levels of vegetation and scrub cover. High incidence of ground surface visible due to recent or past land–use practices such as ploughing, grading and mining. Moderate level of ground surface visibility due to sheet wash erosion, erosion scalds and erosion scours.
80 – 100%	Very low to nonexistent levels of vegetation and scrub cover. High incidence of ground surface visible due to past or recent land use practices, such as ploughing, grading and mining. Extensive erosion such as rill erosion, gilgai, sheet wash, erosion scours and scalds.

The visibility rating and effective coverage (Refer Table 7-2) for the study area shows that vegetation cover was extensive in the densely treed areas on the lower sloped area at the eastern boundary close to Frys Creek (part of SU4), and thick undergrowth of the Melaleuca Forest (SU5) in the northern part of the study area. Conversely visibility was generally good in the areas of the easements (SU3), the aquaculture ponds and associated infrastructure (SU2), the access tracks and roads (SU1), and the open areas in SU4 resulting in higher levels of effective coverage in these areas. Exposures were predominantly the result of extensive active erosion in the previously disturbed areas which aided visibility. Pebbles and gravels were visible on the surface of the B horizon due to sheet wash erosion.

Table 7-2: Effective Coverage Table for Area Surveyed

Survey Unit	Survey Unit Area (Square metres)	Area Surveyed (Square metres)	Exposure (%)	Visibility (%)	Sample Fraction (percent)
1	369849.24	585000	60	49	46.5027
2	177712.74	116160	80	65	33.9892
3	83005.82	55410	90	79	47.4623
4	445811.68	297990	60	60	24.0632
5	72411.17	10350	20	9	0.2573
6	104105.11	43800	30	49	6.1847

7.5 Survey Results – Aboriginal Archaeology

Although visibility in these areas was good, no artefacts were found on any of the exposed areas during the survey. Visibility along the banks of Frys Creek was generally good with moderate levels of vegetation, but no artefacts were identified in this area. There was however evidence of previous flooding events that may have washed away any artefacts that may have been exposed on the surface of the disturbed soils along the creek banks.

All accessible mature trees were examined for scars. Only one scar tree was identified. There was evidence that the study area had undergone one or more bush fires in the recent past and many of the older trees had suffered extensive damage. Some of the new re-growth trees also showed damage from bush fire. Lightening damage was also high in a number of mature trees and some of them had damaged bark caused by lightning strikes. There were several fallen trees and some of the standing trees were severely damaged.

The results of the field survey identified only one Aboriginal archaeological site. The site was a scarred tree and a site card has been generated for RPS BD ST1 for submission to the DECCW for registration on the AHIMS Register (Appendix 6).

The scarred tree site was located in the riparian zone on the northern bank of Frys Creek, a 3rd order stream which flows into the Myall River to the north west of the study area.

The Aboriginal Community Stakeholders indicated that there was no impediment to cultural heritage values by the proposed rezoning in the immediate study area. However they stated that there were areas that were considered to have cultural heritage value on the top of Alum Mountain outside of the study area.

7.6 Survey Results – European Historic

No items of significant European heritage were identified in the study area and the proposed rezoning application area is well removed from any listed Heritage items including the former Alunite Mine. Therefore the proposed development will have no impact upon any significant Heritage items.

8 Aboriginal Significance Assessment

In order to develop appropriate heritage management outcomes, it is necessary for the significance of Aboriginal sites or areas of archaeological sensitivity to be assessed. Aboriginal heritage can be significant for cultural and/or scientific reasons. Aboriginal people are the best placed to assess cultural significance and are therefore consulted in the Aboriginal heritage management process. Scientific significance is assessed according to scientific criteria outlined in DECCW heritage guidelines.

8.1 Cultural Significance Criteria and Assessment

An assessment of cultural significance incorporates a range of values which may vary for different individual groups and may relate to both the natural and cultural characteristics of places or sites. Cultural significance and Aboriginal cultural views can only be determined by the Aboriginal community using their own knowledge of the sites and their own value system.

As part of this CHA cultural significance was discussed with KLALC Aboriginal representatives present during the survey and their response and comment on the study area was invited during the course of the current survey works. Further details are included in the Aboriginal consultation log – Refer Appendix 7.

8.2 Archaeological Significance Criteria

Archaeological significance, also referred to as scientific significance, is determined by assessing an Aboriginal Heritage Site or area according to archaeological criteria. The assessment of archaeological significance is used to develop appropriate heritage management and impact mitigation strategies. Criteria for archaeological significance has been developed in accordance with the principals of the ICOMOS Burra Charter (1999) and the DECC Aboriginal Cultural Heritage Standards and Guidelines Kit (1997). The archaeological significance criteria are usually assessed on two scales: local and regional; in exceptional circumstances, however, state significance may also be identified. Significance is assessed in three levels to which scores are assigned; low (score=1), moderate (score=2) and high (score=3). These scores are used to provide an overall assessment of significance:

- Low significance score 6-10
- Moderate significance 11-14
- High significance 15-18

Table 8-1 Archaeological Significance Criteria

Criterion	Description
Rarity	This criterion examines the frequency of the identified site types with others previously recorded in the local or regional landscape
Representativeness	All sites are representative of a site type, however, some sites may be in better condition, or demonstrate more clearly a particular site type. Representativeness is based on the understanding of extant sites in the local or regional landscape and the purpose of this criteria is to ensure a representative sample of sites area conserved for future generations
Integrity	This refers to site intactness. A site with contextual integrity can provide information relating to chronology, social systems, tool technology, site formation processes, habitation, frequency of use as well as other occupation indicators. Moderate to high levels of disturbance will generally result in low integrity.
Connectedness	Relates to inter-site relationships - that is whether a site can be linked to an archaeological complex, or where sequence of activities can be discerned. For example, a quarry (stone extractions site), may be linked to an adjacent heat treatment pit and knapping floor, these site thus could be linked as part of a stone tool production sequence.
Complexity	Refers to the contents of the site, such as, the variety and nature of features and/or of artefacts present. For example, rockart sites with many motifs may be ranked highly in terms of complexity, or artefact scatters with a wide variety of raw materials and/or or tool types may be more complex than surrounding sites.
Research Potential	This criteria is used to identify whether a site has the potential to contribute new information which to the interpretation of Aboriginal occupation in the area.

8.3 RPS BD ST1

A site card was generated for RPS BD ST1 for submission to the DECCW for registration on the AHIMS Register (Appendix 6). The scarred tree site was located in the riparian zone on the northern bank of Frys Creek, a 3rd order stream which flows into the Myall River to the north west of the study area and therefore will not be subject to impact from any development proposal. However, a buffer zone of 10m should be placed around the scar tree to ensure that the tree is protected from any future impact.

8.4 Assessment of Archaeological Significance

8.4.1 RPS BD ST1

The scar tree, RPS BD ST1 identified during the course of the field survey was located on the northern bank of Frys Creek in the north eastern part of the study area. The scar was located on a large, mature aged eucalypt and faced east. The girth of the tree was around 1 metre in diameter and the height of the tree was estimated to be around 30 metres. There were a number of trees of a similar size along both sides of Frys Creek, but most of them had suffered from severe bush fire and lightning strikes. It is considered that the scar tree RPS BD ST1 was likely to have been used for some type of implement due to its size and shape; the scar was oval in shape and was approximately 800mm long, 280mm wide and 200mm deep. The scar tree was in excellent condition and the scar was also in good condition (Refer Appendix 6 and Plates 23 & 24). As a result the tree was assessed as being moderately significant both on a local and a regional level.

Table 8-2: Assessed Levels of Significance for Aboriginal Sites

Site	Significance scale	Rarity	Represent-ativeness	Integrity	Connect-edness	Complexity	Research Potential	Overall Significance
RPS BD ST1	Local	2	2	3	2	1	1	11
	Regional	2	2	3	2	1	1	11

Table 8-3: Assessment of Scientific Significance.

Site	Significance scale	Rarity	Represent-ativeness	Integrity	Connect-edness	Complexity	Research Potential	Overall Significance
RPS BD ST1	Local	Moderate	Moderate	High	Moderate	Low	Low	Moderate
	Regional	Moderate	Moderate	High	Moderate	Low	Low	Moderate

A study of the AHIMS database revealed that there were four registered scar tree sites located in the regional area and two in close proximity to the study area. These results indicate that the regional area has a predisposition for scar tree sites especially in relation to reliable water sources. Scar trees for making canoes are likely to be found in close proximity to water, whereas trees for making shields may be some distance from water on a variety of landforms (DEC, 2005). Scar trees may also be utilised for making implements for carrying food and water. It is considered that the scar tree RPS BD ST1 was likely to have been used for some type of implement due to its size and shape (Refer Appendix 6).

9 European Historic Significance Assessment

No items of European cultural historical significance were recorded during the survey.

10 Discussion

Aboriginal Cultural Heritage

One scar tree (RPS BD ST1) was identified during the course of the field survey. It was located on the northern bank of Frys Creek in the north eastern part of the study area. The scar tree site was gently sloping in open forest with moderately thick understorey. The condition of both the tree and the scar were good and the site was therefore rated as being moderately significant, both at a regional and at a local level. The site was in the riparian zone north of Frys Creek and would therefore not be impacted upon by any proposed development.

The results of the AHIMS search showed that it was unlikely that shelter sites would occur in the lower slopes of the study area and that the potential for these site types were in the Bulahdelah State Forest to the south and east and in the more mountainous upper sloped areas of Alum Mountain due to the potential availability of suitable outcropping rock. There were no sandstone or rock outcrops observed that would have been suitable for rock shelters and none that could have been used for grinding stone tools along any of the creek lines.

The survey of the study area included transects along all creek and drainage lines. The shallow ephemeral drainage lines on the mid slope areas were not likely to be preferred occupation areas as they were not sheltered and water supply would have been irregular. As such ephemeral drainage lines were not considered to be archaeologically sensitive.

Conversely valleys with permanent water were often a preferred habitation area for the Aboriginal people with fresh water creeks and sheltered locations having a high potential for occupation sites and grinding grooves and artefact scatters are often located in or around creek lines. Artefact scatters and isolated finds were considered likely to occur along the permanently flowing creek and drainage lines. No artefacts were identified in these areas, but it is possible that the dense understorey particularly in the riparian corridors of Frys Creek, hindered visibility and prevented the detection of artefacts during the survey. It is considered that the permanently flowing Frys Creek, which was located in the lower sloped part of the survey area was archaeologically sensitive. However, as there was evidence of recent flooding events it is possible that any potential artefacts had been affected by water runoff. It is also possible that the wider, broader, more accessible areas along the banks of the nearby Myall River and lower reaches of Frys Creek may have been preferred occupation sites as evidenced by the AHIMS search which showed a predominance of these site types to the north west of the immediate study area.

The majority of the of the lower slope and mid slope areas in the south eastern part of the study area had suffered from a range of disturbances which included quarrying, aquaculture (including ponding and associated infrastructure, power and pipe line easements, erosion scalds, sheet wash, fencing and access roads). These areas had been significantly impacted upon and were considered to have nil to low potential archaeological sensitivity. The degree of slope in the mid slope areas would indicate that this would not be a preferred occupation area. Although the lower slope areas may have been considered more likely to have been suitable for occupation, the nearby broad valley area of the Myall River was close by and as such would be more likely to provide abundant and easily accessible flora and fauna resources more suitable for permanent occupation.

The field survey directed attention to all portions of the study area incorporating drainage lines, lower and mid slope areas. Soils in the study area were predominantly B horizon soils probably as a result of sheet wash erosion evident in the areas of high disturbance and from previous land clearing practices evident by the extensive areas of regrowth. The soils were not visible in the more densely vegetated areas particularly in the Melaleuca Forest in the northern part of the study area which was covered with leaf litter and fallen branches. Severe bush fire had affected the areas containing mature age trees on the southern bank of Frys Creek and visibility of the creek banks was fair in these areas due to the effects of recent flood events washing away the topsoil. However, vegetation on the northern bank of Frys Creek was less disturbed and there were a number of mature trees in good condition. RPS BD ST1 was located in this part of the study area. No artefacts were identified during the course of the survey.

European Cultural Heritage

No items of European cultural heritage were identified in the study area and there were no heritage listed items or built structures contained in the immediate study area. The Alunite Mountain Mine lies on the south west side of the mountain and is therefore not part of the rezoning application for the study area. None of the Commonwealth and Heritage listed items were incorporated in the proposed rezoning application area. All listed items are located some distance from the study area and four of the items that are listed are located approximately half a kilometre or more away. As such they will not be impacted upon by the proposed development.

11 Conclusion

This cultural heritage assessment report has considered the environmental and archaeological context of the study area, has developed a predictive model and reported on the results of the field survey.

The Bulahdelah area was well resourced with a variety of fauna and flora, with ample water and shelter. The Alum Mountain would have provided a good vantage point, and the rocky outcrops on the upper slopes of Alum Mountain (outside of the study area) would have provided potential shelter and raw material for manufacturing artefacts. However there were no rock outcrops suitable for the manufacture of artefacts, or areas suitable for rock shelters or grinding grooves in the proposed rezoning area.

One Aboriginal scar tree site was identified during the course of the survey in a lower sloped area close to a 3rd order creek. There were no other scar trees identified along the creek bank to the north of Frys Creek, although dense vegetation in this area hindered visibility. Severe bush fire had damaged a number of mature trees along the southern bank of Frys Creek. There were no scarred trees in this area and none were identified in any of the remaining treed areas which were predominantly regrowth forest and therefore lacked the potential for trees of a size and age suitable for making canoes, shields or implements.

Although there were a number of artefact scatters and isolated finds located along the nearby Myall River valley and in the State Forest area to the east, no artefact sites were observed in the survey area. This may have been due in part to visibility in areas of dense vegetation. However, no artefacts were identified in the remainder of the study area which had been highly disturbed by erosion which had exposed the B horizon. These areas were considered to have low archaeological potential.

The representatives of KLALC who participated in the survey indicated, (during the course of the survey), that the proposed rezoning would not impact on any cultural heritage values in the immediate study area, although there were areas they considered to have high cultural heritage value outside of the study area such as the rocky outcrops on the top of Alum Mountain.

No items of European cultural heritage were identified in the study area.

It is considered that the proposed rezoning application area is well removed from any listed historic Heritage Items including the former Alunite Mine, and therefore the proposed development will have no impact upon them.

12 Recommendations

12.1 Recommendations for the management of the study area

The management recommendations that are formulated from this archaeological assessment are based upon the legislation designed to address the impact of development on sites of cultural significance.

12.1.1 Aboriginal Cultural Heritage

It is recommended that works may proceed with regard to the following:

Recommendations specific to identified Aboriginal site:

Recommendation 1

The scar tree site RPS BD ST1 identified in the study area should not be impacted upon. A minimum buffer zone of 10 metres should be imposed around the tree in the event of any works being undertaken in its vicinity. However, as the site is located in the riparian zone of a major creek line it is unlikely to be impacted upon by future proposed works. If potential impact to the site occurs or is likely at any time in the future then the local Aboriginal Community Stakeholders, the DECCW and a suitably qualified archaeologist should be contacted.

In general during the course of proposed construction work:

Recommendation 2

During the course of proposed construction work, if suspected Aboriginal cultural heritage material is encountered, work should cease in that vicinity immediately, the area cordoned off and contact made with the DECCW Enviroline 131555, a suitably qualified archaeologist and the relevant Aboriginal Community Stakeholders (including the KLALC), so that it can be adequately assessed and managed.

Recommendation 3

In the event that skeletal remains are uncovered whilst operations are underway, work must cease immediately in the vicinity and a 20m buffer zone be placed around the site. The area should be fenced and the NSW Police Coroner should be contacted to determine if the remains are deemed to be of Aboriginal origin. If determined to be Aboriginal then contact should be made with the DECCW Enviroline 131555 and representatives of the local Aboriginal community stakeholders to determine an action plan for the management of the skeletal

remains, formulate management recommendations and to ascertain when work can recommence.

12.1.2 European History

No items of European cultural historical significance were found during the survey of the Study Area.

However, during the course of any construction work the following recommendation should be considered:

Recommendation 4

If, during the course of clearing works, significant European cultural heritage material is uncovered, work should cease in that area immediately. The NSW Heritage Branch should be notified and works only recommence when an appropriate and approved management strategy instigated.

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14 Plates

Plate 1: SU1 showing surface erosion from water runoff at the southern boundary of the study area – view to west.

Plate 2: SU1 showing excavated drainage channels along existing dirt tracks – view to north.

Plate 3: SU1 showing access track to stone quarry probably for use as road base - view to south east.

Plate 4: SU1 showing regrowth of treed areas and previously cleared area adjacent to an access road for the power line (foreground) and revegetated slope (background) - view to south west.

Plate 5: SU1 showing leaf litter in ephemeral creek line in treed areas – view to north east.

Plate 6: SU2 showing aquaculture ponds for yabbies - view to north west.

Plate 7: SU2 farm shed on access track associated with aquaculture farm complex - view to south east.

Plate 8: SU2 showing ponds filled with tyres for yabby farming - view to north west.

Plate 9: SU2 showing B horizon soils exposed across sloped area disturbed by aquaculture farming - view to south east.

Plate 10: SU3 showing cleared areas along path of power line easements - view to north.

Plate 11: SU3 showing dirt access track along east trending power line easement - view to east

Plate 12: SU3 showing slashed area along north trending power line easement with dirt access track and erosion scalds along - view to north.

Plate 13: SU3 showing open cleared areas along easement with some vegetation regrowth – view to north.

Plate 14: SU3 showing water pipe line trending in a south easterly direction - view to north west.

Plate 15: SU4 showing access track in eastern portion of lower sloped area – view to north

Plate 16: SU4 showing thick ground cover in treed area in the eastern portion of the lower slopes - view to north west

Plate 17: SU4 showing low ground surface visibility in treed area – view to north west.

Plate 18: SU4 showing erosion scald at break of slope to south of Frys Creek.

Plate 19: SU5 showing dense vegetation and poor ground surface visibility.

Plate 20: SU6 showing track on north western bank of Frys Creek.

Plate 21: SU6 showing creek crossing at north eastern part of Frys Creek

Plate 22: SU6 stand of mature trees on southern bank of Frys Creek.

Plate 23: SU6 treed area on northern bank of Frys Creek.

Plate 24: SU6 Site RPS BD ST1 - scarred tree on northern bank of Frys Creek in the riparian zone.

Appendix 1

Legislation & Departmental Advice

SUMMARY OF STATUTORY CONTROLS

The following overview of the legal framework is provided solely for information purposes for the client, it should not be interpreted as legal advice. RPS Harper Somers O'Sullivan will not be liable for any actions taken by any person, body or group as a result of this general overview, and recommend that specific legal advice be obtained from a qualified legal practitioner prior to any action being taken as a result of the summary below.

COMMONWEALTH

Aboriginal and Torres Strait Islander Heritage Protection Act 1984 (ATSIHP Act), Amendment 2006

The purpose of this Act is to preserve and protect all heritage places of particular significance to Aboriginal and Torres Strait Islander people. This Act applies to all sites and objects across Australia and in Australian waters (s4).

It would appear that the intention of this Act is to provide national baseline protection for Aboriginal places and objects where State legislation is absent. It is not to exclude or limit State laws (s7(1)). Should State legislation cover a matter already covered in the Commonwealth legislation, and a person contravenes that matter, that person may be prosecuted under either Act, but not both (s7(3)).

The Act provides for the preservation and protection of all Aboriginal objects and places from injury and/or desecration. A place is construed to be injured or desecrated if it is not treated consistently with the manner of Aboriginal tradition or is or likely to be adversely affected (s3).

THE AUSTRALIAN HERITAGE COMMISSION ACT 1975

The Australian Heritage Commission Act 1975 established the Australian Heritage Commission which assesses places to be included in the National Estate and maintains a register of those places. Places maintained in the register are those which are significant in terms of their association with particular community or social groups and they may be included for social, cultural or spiritual reasons. The Act does not include specific protective clauses.

The Australian Heritage Council Act 2003 together with The Environment Protection and Biodiversity Conservation Act 1999 (Amended) includes a National Heritage List of places of National heritage significance, maintains a Commonwealth Heritage List of heritage places owned or managed by the Commonwealth and ongoing management of the Register of the National Estate.

STATE

It is incumbent on any land manager to adhere to legislative requirements that protect indigenous culture heritage in NSW. The relevant legislation includes but is not limited to:

National Parks & Wildlife Act 1974 (NPW Act), Amended 2001.

The DECC issued their Interim Community Consultation Requirements in January 2005 to replace all previous consultation guidelines that related to Part 6 of the NPW Act 1974. The requirement of the guidelines is for the proponent, or consultant for the proponent, to contact the Local Aboriginal Land Council(s), Registrar of Aboriginal Owners, Native Title Services, local councils and the DECC, to request contact information for any/all potential Aboriginal people/groups with an ancestral interest in the cultural heritage of the project area.

The NPW Act provides statutory protection for all Aboriginal relics (not being a handicraft made for sale), with penalties levied for breaches of the Act. Part 6 of this Act is the relevant part concerned Aboriginal objects and places, with the Section 86 and Section 90 being the most pertinent:

Section 91: Under Section 91 of the Act it stipulates that a person who is aware of unregistered Aboriginal sites must report these to the DECC, regardless of the land status (Freehold, leasehold, Crown land).

Section 90: "A person who, without first obtaining the consent of the Director-General, knowingly destroys, defaces or damages, or knowingly causes or permits the destruction or defacement of or damage to, an Aboriginal object or Aboriginal place is guilty of an offence against this Act." Under s.5 of the Act "object" means any deposit, object or material evidence (not being a handicraft made for sale) relating to indigenous habitation of the area. This applies to habitation both prior to and concurrent with the occupation of that area by persons of non Aboriginal extraction, and includes Aboriginal remains.

Section 87: Preliminary Research Permits issued under Section 87 of the Act, allow the permit holder to conduct investigations of areas considered to be potential sites for the purpose of research, and also for conservation work associated with known sites.

Impact Permits issued under Section 90 of the Act are for salvaging sites prior to ground disturbance works associated with construction. Any disturbance, damage or destruction of Aboriginal sites, known or unknown, is considered to contravene the NPW Act (1974) and the DECC will pursue the person/company responsible.

Penalties under these two sections are currently 50 penalty units, or 6 months in gaol, or both for an individual and 200 penalty units for a corporation. The DECC record all S.87 and S.90 permits issued in order to manage Aboriginal sites and ensure representative samples of sites are left in situ for future generations. In order to achieve this, the DECC need to be made aware of all Aboriginal sites located in NSW.

Section 86: This section of the Act states that "A person, other than the Director-General or a person authorised by the Director-General in that behalf, who:

(a) disturbs or excavates any land, or causes any land to be disturbed or excavated, for the purpose of discovering an Aboriginal object,

(b) disturbs or moves on any land an Aboriginal object that is the property of the Crown, other than an Aboriginal object that is in the custody or under the control of the Australian Museum Trust,

(c) takes possession of an Aboriginal object that is in a national park, historic site, state conservation area, regional park, nature reserve, karst conservation reserve or Aboriginal area,

(d) removes an Aboriginal object from a national park, historic site, state conservation area, regional park, nature reserve, karst conservation reserve or Aboriginal area, or

(e) erects or maintains, in a national park, historic site, state conservation area, regional park, nature reserve, karst conservation reserve or Aboriginal area, a building or structure for the safe custody, storage or exhibition of any Aboriginal object,

except in accordance with the terms and conditions of an unrevoked permit issued to the person under section 87, being terms and conditions having force and effect at the time the act or thing to which the permit relates is done, is guilty of an offence against this Act."

Section 84: Aboriginal places of traditional significance (that may or may not contain archaeological material) are given protection under Section 84 of the NPW Act. To be an Aboriginal place for the purposes of this Act, this is a place that, in the opinion of the Minister, is or was of special significance with respect to Aboriginal culture.

ENVIRONMENTAL PLANNING & ASSESSMENT ACT 1979 (EP&A ACT)

This Act regulates a system of environmental planning and assessment for New South Wales. Land use planning requires that environmental impacts are considered, including the impact on cultural heritage and specifically Aboriginal heritage. Within the EP&A Acts, Parts 3, 4, and 5 relate to Aboriginal heritage.

Part III regulates the preparation of planning policies and plans. Part 4 governs the manner in which consent authorities determine development applications and outlines those that require an environmental impact statement. Part 5 regulates government agencies that act as determining authorities for activities conducted by that agency or by authority from the agency. The National Parks & Wildlife Service is a Part V authority under the EP&A Act.

In brief, the NPW Act provides protection for Aboriginal objects or places, while the EP&A Act ensures that Aboriginal cultural heritage is properly assessed in land use planning and development.

Part 3A of the EPA relates to major projects, and if applicable, obviates the need to conform to other specific legislation. In particular, s75U of the EPA Act explicitly removes the need to apply for s87 or s90 permits under the NPW Act. This means that although Aboriginal cultural heritage is considered during the planning process, a permit is not required to disturb or destroy an Aboriginal object or place. However, the Director-General of Planning must nonetheless consult with other government agencies, including DECC and National Parks & Wildlife, prior to any decision being made.

THE HERITAGE ACT 1977

This Act protects the natural and cultural history of NSW with emphasis on non-indigenous cultural heritage through protection provisions and the establishment of a Heritage Council. Although Aboriginal heritage sites and objects are primarily protected by the National Parks & Wildlife Act 1974 (NPW Act), Amended 2001, if an Aboriginal site, object or place is of great significance, it may be protected by a heritage order issued by the Minister subject to advice by the Heritage Council.

Other legislation of relevance to Aboriginal cultural heritage in NSW includes the NSW Local Government Act (1993). Local planning instruments also contain provisions relating to indigenous heritage and development conditions of consent.

Appendix 2

AHIMS Registered Sites

Appendix 3

Aboriginal Consultation Log

Appendix 4

Glossary of Site Types

GLOSSARY OF SITE TYPES

The following is a brief description of most Aboriginal site types.

Artefact Scatters

Artefact scatters are defined by the presence of two or more stone artefacts in close association (i.e. within fifty metres of each other). An artefact scatter may consist solely of surface material exposed by erosion, or may contain sub-surface deposit of varying depth. Associated features may include hearths or stone-lined fireplaces, and heat treatment pits.

Artefact scatters may represent:

- Camp sites: involving short or long-term habitation, manufacture and maintenance of stone or wooden tools, raw material management, tool storage and food preparation and consumption;
- Hunting or gathering activities;
- Activities spatially separated from camp sites (e.g. tool manufacture or maintenance); or
- Transient movement through the landscape.

The detection of artefact scatters depends upon conditions of surface visibility, including vegetation cover, ground disturbance and recent sediment deposition. Unfavourable conditions obscure artefact scatters and prevent their detection during surface surveys.

Bora Grounds

Bora grounds are a ceremonial site associated with initiations. They are usually comprise two circular depressions in the earth, and may be edged with stone. Bora grounds generally occur on soft sediments in river valleys, although they may also be located on high, rocky ground in association with stone arrangements.

Burials

Human remains were often placed in hollow trees, caves or sand deposits and may have been marked by carved or scarred trees. Burials have been identified eroding out of sand deposits or creek banks, or when disturbed by development. The probability of detecting burials during archaeological fieldwork is extremely low.

Culturally Modified Trees

Culturally modified trees include scarred and carved trees. Scarred trees are caused by the removal of bark for use in manufacturing canoes, containers, shields or shelters. Notches were also carved in trees to permit easier climbing. Scarred trees are only likely to be present on mature trees remaining from original vegetation. Carved trees, the easiest to identify, are caused by the removal of bark to create a working surface on which

engravings are incised. Carved trees were used as markers for ceremonial and symbolic purposes, including burials. Although, carved trees were relatively common in NSW in the early 20th century, vegetation removal has rendered this site type extremely rare. Modified trees, where bark was removed for often domestic use are less easily identified. Criteria for identifying modified trees include: the age of the tree; type of tree (the bark of many trees is not suitable, also introduced species would be unlikely subjects); axe marks (with the need to determine the type of axe - stone or steel – though Aborigines after settlement did use steel); shape of the scar (natural or humanly scarred); height of the scar above the ground (reasonable working height with consideration given to subsequent growth).

Fish Traps

Fish traps comprised arrangements of stone, branches and/or wickerwork placed in watercourses, estuaries and along coasts to trap or permit the easier capture of sea-life.

Grinding Grooves

Grinding grooves are elongated narrow depressions in soft rocks (particularly sedimentary), generally associated with watercourses, that are created by the shaping and sharpening of ground-edge implements. To produce a sharp edge the axe blank (or re-worked axe) was honed on a natural stone surface near a source of water. The water was required for lubricating the grinding process. Axe grinding grooves can be identified by features such as a narrow short groove, with greatest depth near the groove centre. The grooves also display a patina developed through friction between stone surfaces. Generally a series of grooves are found as a result of the repetitive process.

Isolated Finds

Isolated finds occur where only one artefact is visible in a survey area. These finds are not found in apparent association with other evidence for prehistoric activity or occupation. Isolated finds occur anywhere and may represent loss, deliberate discard or abandonment of an artefact, or may be the remains of a dispersed artefact scatter. Numerous isolated finds have been recorded within the study area. An isolated find may flag the occurrence of other less visible artefacts in the vicinity or may indicate disturbance or relocation after the original discard.

Middens

Shell middens comprise deposits of shell remaining from consumption and are common in coastal regions and along watercourses. Middens vary in size, preservation and content, although they often contain artefacts made from stone, bone or shell, charcoal, and the remains of terrestrial or aquatic fauna that formed an additional component of Aboriginal diet. Middens can provide significant information on land-use patterns, diet, chronology of occupation and environmental conditions.

Mythological / Traditional Sites

Mythological and traditional sites of significance to Aboriginal people may occur in any location, although they are often associated with natural landscape features. They include sites associated with dreaming stories, massacre sites, traditional camp sites and contact sites. Consultation with the local Aboriginal community is essential for identifying these sites.

Rock Shelters with Art and / or Occupation Deposit

Rock shelters occur where geological formations suitable for habitation or use are present, such as rock overhangs, shelters or caves. Rock shelter sites generally contain artefacts, food remains and/or rock art and may include sites with areas of potential archaeological deposit, where evidence of rock-art or human occupation is expected but not visible. The geological composition of the study area greatly increases the likelihood for rock shelters to occur.

Stone Arrangements

Stone arrangements include lines, circles, mounds, or other patterns of stone arranged by Aboriginal people. These may be associated with bora grounds, ceremonial sites, mythological or sacred sites. Stone arrangements are more likely to occur on hill tops and ridge crests that contain stone outcrops or surface stone, where impact from recent land use practices has been minimal.

Stone Quarries

A stone quarry is a place at which stone resource exploitation has occurred. Quarry sites are only located where the exposed stone material is suitable for use either for ceremonial purposes (e.g. ochre) or for artefact manufacture.

Appendix 5

NSW Heritage Branch Significance Criteria

Heritage Council of New South Wales

Heritage Act 1977

CRITERIA FOR LISTING ON THE STATE HERITAGE REGISTER

The State Heritage Register is established under Part 3A of the Heritage Act (as amended in 1998) for listing of items of environmental heritage[1] which are of state heritage significance[2].

To be assessed for listing on the State Heritage Register an item will, in the opinion of the Heritage Council of NSW, meet one or more of the following criteria[3]:

a) an item is important in the course, or pattern, of NSW's cultural or natural history;

b) an item has strong or special association with the life or works of a person, or group of persons, of importance in NSW's cultural or natural history;

c) an item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in NSW;

d) an item has strong or special association with a particular community or cultural group in NSW for social, cultural or spiritual reasons;

e) an item has potential to yield information that will contribute to an understanding of NSW's cultural or natural history;

f) an item possesses uncommon, rare or endangered aspects of NSW's cultural or natural history;

g) an item is important in demonstrating the principal characteristics of a class of NSW's
   - cultural or natural places; or
   - cultural or natural environments.

An item is not to be excluded from the Register on the ground that items with similar characteristics have already been listed on the Register.

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[1] ***environmental heritage*** means those places, buildings, works, relics, moveable objects, and precincts, of state or local heritage significance (section 4, *Heritage Act, 1977*).

[2] ***state heritage significance***, in relation to a place, building, work, relic, moveable object or precinct, means significance to the State in relation to the historical, scientific cultural, social, archaeological, architectural, natural or aesthetic value of the item (section 4A(1), *Heritage Act, 1977*).

[3] Guidelines for the application of these criteria may be published by the NSW Heritage Office.

Appendix 6

Site Card

Appendix 7

Aboriginal Community Response

Appendix K – *Letter from Roads and Maritime Services*

Transport
Roads & Maritime
Services

CR2017/004781
SF2017/071669
KAP

11 April 2018

General Manager
Mid Coast Council
PO Box 482
TAREE NSW 2430

Attention: Richard Pamplin / David Crofts,

PACIFIC HIGHWAY (HW10): PLANNING PROPOSALS TO AMEND SCHEDULE 1 OF THE GREAT LAKES LOCAL ENVIRONMENTAL PLAN 2014 ('LEP') TO INCLUDE ADDITIONAL USES TO PERMIT DEVELOPMENT OF HIGHWAY SERVICE CENTRES AT PT LOT: 22 DP: 1019544, 6783 PACIFIC HIGHWAY, TEA GARDENS AND PT LOT: 100 DP: 1139447, 9844 PACIFIC HIGHWAY, BULAHDELAH

Reference is made to Council's letters dated 19 December 2017 and 19 March 2018 seeking comment in relation to two planning proposals both which seek to amend Schedule 1 *Additional Permitted Uses* within the LEP to permit with consent the development of a highway service centre at Tea Gardens and Bulahdelah respectively.

As discussed in a meeting held at Roads and Maritime's offices on 4 December 2018, Section 117 Direction, *5.4 – Commercial and Retail Development along the Pacific Highway, North Coast* (August 2015) applies to the planning proposals. The direction provides that the establishment of highway service centres may be permitted, subject to Roads and Maritime satisfaction, in locations listed in Table 1 *Highway service centre that can proceed*. Neither the Tea Gardens nor Bulahdelah site is listed under Table 1 as a suitable site.

The most recent policy review was carried out in 2014, resulting in the adoption of current Direction on 21 August 2015 with the inclusion of an additional site at Nambucca Heads. The 2014 Policy Review identified that traditionally, the Pacific Highway has passed through many north coast towns and villages which have provided services such as fuel and food to travellers. As upgrade works to the Pacific Highway bypassed these traditional rest stops, travellers need to either leave the highway to obtain services in the bypassed centres, or make use of highway service centres. Provision of highway service centres encourages drivers to "stop, revive, survive" and take breaks when they recognise the warning signs of fatigue, which contributes significantly to travel safety and efficiency. It is therefore very important that highway service centres are provided at conveniently spaced centres along the route.

The highway service centre sites identified under Table 1 of the Direction are generally in the vicinity of bypassed towns so the economic benefits can remain with those centres (e.g. job creation). Some bypassed towns have been intentionally excluded from the list in order to encourage travellers to stop within the town centre to protect the commercial viability of local business. This includes Bulahdelah, which is identified as a highway service town within the *Great Lakes Highway Service Centre Strategy*. Roads and Maritime note that Great Lakes Council supported the revised Direction 5.4 at its Strategic Committee

meeting on 10 June 2014 following consideration of the 2014 Policy Review (see attached correspondence). Council's letter highlights that support is granted to the review as it reinforces Bulahdelah as a highway service town.

The site at Tea Gardens is neither identified within the list of locations for a highway service centre under Table 1 of the Direction nor located within a highway service town.

The rural residential site at Tea Gardens has access via a battle-axe handle driveway leading to Viney Creek Road, a local road. The boundary between the subject lot and the Pacific Highway is subject to a Controlled Access Road restriction declared by notification of Gazette 45 dated 6 May 1966. Despite the Controlled Access restriction, a license approving a 5m wide access via fire trail was granted on 15 May 1992. The granting of the licence does not apply to an access for the purposes of a Highway Service Centre.

Notwithstanding that the Tea Gardens location is excluded from Table 1, a highway service centre at this location would substantially increase traffic generation at the access and the existing consented access point should not be considered a legal form of access if any change in land use is proposed. As provided within the existing restriction-on-use burdening to the subject Lot, Roads and Maritime reserve the right to revoke, rescind, modify and/or vary any direct consented access point/s to a State Road network.

In summary, Roads and Maritime does not support the planning proposal(s) which seek to facilitate Highway service centres in locations contrary to Section 117 Direction, *5.4 – Commercial and Retail Development along the Pacific Highway, North Coast* (August 2015).

Should you require further information please contact Hunter Land Use on 4908 7688 or by email at development.hunter@rms.nsw.gov.au.

Yours sincerely

Peter Marler
Manager Land Use Assessment