

Riverside at Tea Gardens
Concept Plan and Project Application

Environmental Assessment Report
Volume 3C

for Crighton Properties Pty Ltd

January 2009

0043707 - Final

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Principal Consultant:	*Steve O'Connor*
Date:	*January 2009*

Environmental Resources Management Australia Pty Ltd Quality System

This report has been prepared in accordance with the scope of services described in the contract or agreement between Environmental Resources Management Australia Pty Ltd ABN 12 002 773 248 (ERM) and the Client. The report relies upon data, surveys, measurements and results taken at or under the particular times and conditions specified herein. Any findings, conclusions or recommendations only apply to the aforementioned circumstances and no greater reliance should be assumed or drawn by the Client. Furthermore, the report has been prepared solely for use by the Client and ERM accepts no responsibility for its use by other parties.

Volume 3C:

Recreation Study

Architectural And Landscape Design Guidelines

Landscape Design Report And Detailed Design Manual

Retail Study

Economic Impact Statement

Statement Of Social Impacts

An Assessment Of Housing Issues

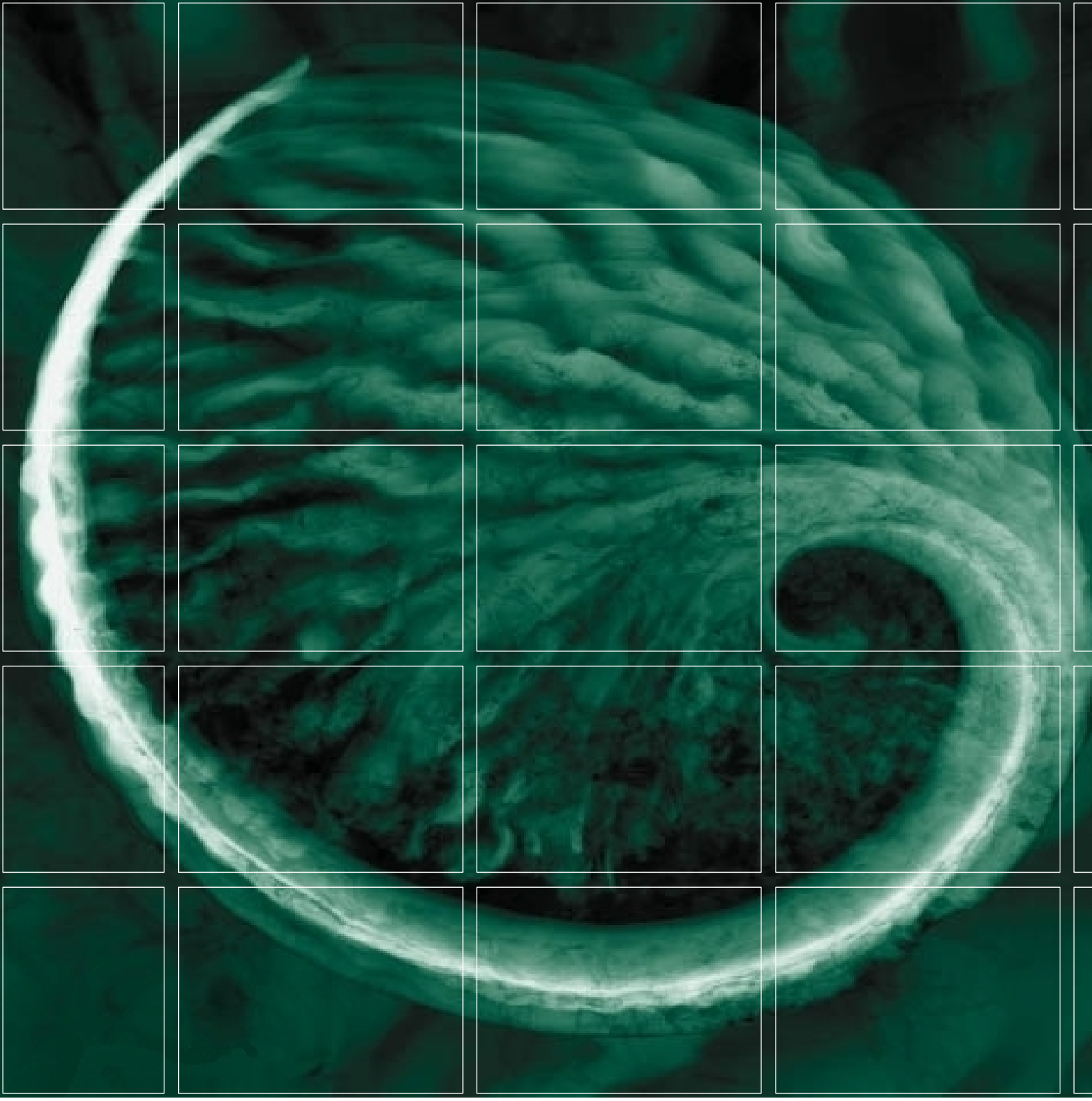
Riverside Design Report

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Phase 1 Environmental Site Assessment

Construction Noise Assessment

Volume 3C: Recreation Study



Hawks Nest / Tea Gardens

Recreation Study

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Hawks Nest / Tea Gardens

Recreation Study

Crighton Properties Pty Ltd

Approved by:	*Steve O'Connor*
Position:	*Principal In Charge*
Signed:	
Date:	*16 April 2008*

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1 INTRODUCTION

1.1 BACKGROUND

Environmental Resources Management Australia Pty Ltd (ERM) has been commissioned by Crighton Properties Pty Ltd to provide advice in relation to the existing provision of, and future demand for, active recreational facilities within the Tea Gardens/Hawks Nest area.

1.2 REPORT STRUCTURE

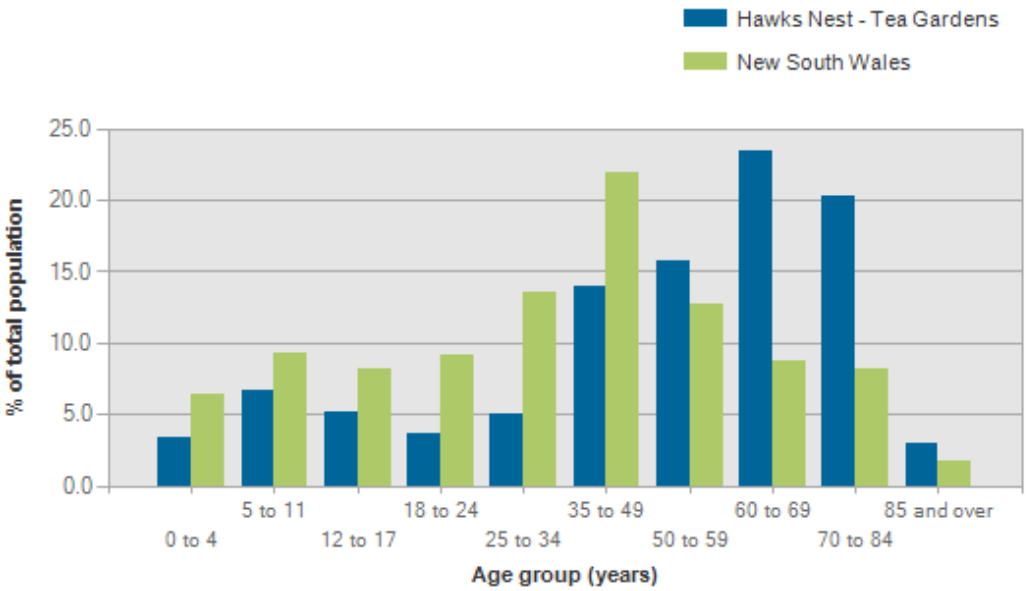
Chapter 2 of this report highlights relevant key characteristics of the Tea Gardens/Hawks Nest community profile and provides details of likely future residential development in the area. *Chapter 3* describes the existing recreational and community facilities within the area and summarises the requirements of Council's Section 94 Contributions Plan. The final chapter, *Chapter 4*, identifies the need and possible location for additional recreational facilities in the Tea Gardens/Hawks Nest area.

2 COMMUNITY DEMAND

2.1 CURRENT DEMOGRAPHIC PROFILE

The total population of the Tea Gardens/Hawks Nest area at the last census in 2006 was 3092 (usual residence data). This represents an 18.4% increase from the 2001 Census. Great Lakes Council records indicate that there are 1,479 land owners in the locality (Great Lakes Council, 2006). The age structure of Tea Gardens / Hawks Nest in 2006 in comparison to the NSW average indicates that Tea Gardens / Hawks Nest has a higher proportion of the older age groups (over 50) compared to the state average and a smaller proportion of the younger age groups (0 - 17 years) as demonstrated in *Table 2.1*. Nearly 50% of the population in Tea Gardens / Hawks Nest were over the age of 50 at the time of the 2006 Census, whereas the average throughout NSW was 31.3%. It has been recognised that Tea Gardens / Hawks Nest are likely to continue to be attractive to retirement aged people over the next 25 years (Great Lakes Council 2003c).

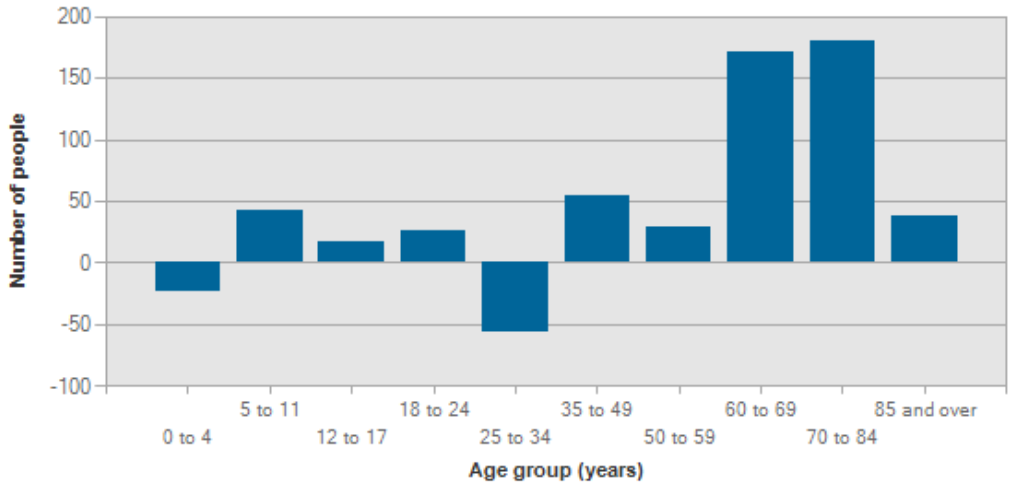
Table 2.1: Age Structure of Tea Gardens / Hawks Nest and NSW, 2006



Source: ABS 2006 Census data, detailed in Great Lakes Council (2006)

The change in age structure between the 2001 and 2006 census is indicative of the aging population within the Tea Gardens / Hawks Nest area, as demonstrated in *Table 2.2*. The 2006 census data also indicates that there was a growth within the 35 – 49 year age group, which indicates a trend of working families moving into the Tea Gardens / Hawks Nest area.

Table 2.2: Change in Age Structure, Tea Gardens / Hawks Nest 2001 - 2006



Source: ABS 2006 Census data, detailed in Great Lakes Council (2006)

The most significant trends evident in the age structure of Tea Gardens / Hawks Nest since the mid 1980s are noted in the *Myall River Downs Local Environmental Study* (Great Lakes Council, 2003) as including:

- *increasing number of working age families with young children in Tea Gardens;*
- *increasing number of people in the 55-64 and 65 and over age cohorts residing in Hawks Nest; and*
- *the loss of youth and young adults aged 15-24 years from both Tea Gardens and Hawks Nest.*

2.2 THE CURRENT 2006 POPULATION HAS BEEN ESTIMATED BY A NUMBER OF STUDIES. PREDICTED FUTURE POPULATION

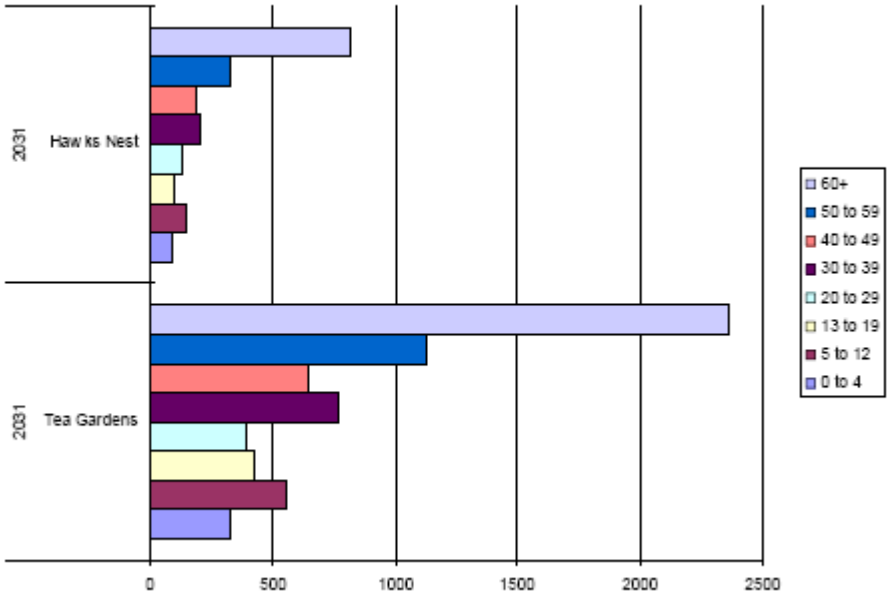
In addition to the *Myall River Downs Local Environmental Study*, a number of other studies have reviewed the population growth anticipated within the Tea Gardens / Hawks Nest area, including the revised draft *Tea Gardens / Hawks Nest Housing Strategy* (2006) adopted by Council in 2006, the *Tea Gardens / Hawks Nest Conservation and Development Strategy* (2003) and *Population Growth Projections: Tea Gardens/Hawks Nest 2005* (prepared by Planning Workshop Australia, 2005 and quoted in the Housing Strategy).

The *Tea Gardens Hawks Nest Conservation and Development Strategy* (2003) uses population projections based on development and building approvals (rather than on growth rate trends). The Strategy states that the reason for this is that population projections based on development approval data will more accurately reflect migration-led population increases in the area. Based on development and building approvals, low, medium and high estimates of population for between 2001 and 2031 were calculated. The anticipated total

(Tea Gardens and Hawks Nest) permanent (winter) population in 2031 ranges from 7,451 to 9,756. The anticipated total peak (holiday) population in 2031 ranges from 9,258 to 11,834.

Assuming that the future permanent population is similar in age structure to the existing population, the anticipated population by age group is shown in *Table 2.3.*

Table 2.3: Anticipated Permanent Population by Age Group 2031



Source: Tea Gardens / Hawks Nest Conservation and Development Strategy (2003)

These figures illustrate the aging of the population, with the proportion of people aged over 60 being higher in Hawks Nest (41.8%) than in Tea Gardens (36.3%). The draft Housing Strategy concluded that this indicates the greater opportunities for new housing in Tea Gardens, which is likely to be more affordable and attractive to families.

The *Population Growth Projections: Tea Gardens/Hawks Nest 2005* (quoted in the Housing Strategy) reviewed the Conservation and Development Strategy estimates (as well as a range of other documents) and concluded that Tea Gardens and Hawks Nest will maintain rapid and sustained growth. It projects a population of at least 14,000 in the area by 2031.

The Housing Strategy calculated that based on housing approvals in the area from 2000 to 2004 and occupancy rates of 2.3 for single dwellings and 1.8 for units and aged care housing, the estimated population at 2006 would be 3,695. This compares with the *Population Growth Projections: Tea Gardens/Hawks Nest 2005* projection of 3,970 and the Conservation and Development Strategy high growth scenario of 3,530. Given the 2006 Census has confirmed that the permanent population was 3092, these projections clearly failed to take into

account the downturn in the real estate markets since the last boom ended in late 2003.

In summary, it is agreed by all strategies that the population will continue to increase and therefore, growth in housing will need to be sustained. The population is likely to age and the impact of "Baby Boomer" generation moving into retirement will be significant.

The estimated population of the proposed developments of the Riverside at Tea Gardens and Myall River Downs sites, the Hermitage and Tea Gardens Grange is shown in *Table 2.4*.

Table 2.4 Estimated Population after Development of Crighton Properties' Land

Location	Dwellings	Rate	Persons
Riverside at Tea Gardens			
Residential (medium density)	157	1.3	204
Residential (standard residential)	823	2.2	1811
Tourist Precinct – lodges	50	2.2	110
Tourist Precinct – houses	15	2.2	33
Sub Total	**1045**		**2,158**
Myall River Downs (Proposed Rezoning)			
Residential (medium density)	63	1.3	82
Residential (low density)	1204	2.2	2649
Residential north west (medium density)	6	1.3	8
Residential north west (low density)	108	2.2	238
Transition – west (units)	75	1.3	98
Transition – west (lodges)	104	1.3	135
8 lot residential subdivision	8	2.2	18
Sub Total	**1,568**		**3,228**
The Hermitage	281	1.3	365
Tea Gardens Grange (Balance to complete D.A.)	36	1.3	47
TOTAL	**2,930**		**5,798**

Approximately 300 residential allotments have been created in the Myall Quays Estate (now referred to as "Riverside at Tea Gardens") and an estimated 1045 additional dwellings (2,158 residents) could be accommodated on that site based on the concept plan prepared by Crighton Properties.

There are 80 existing homes in the Myall River Downs Estate, however a further 1,568 dwellings (3,228 residents) are likely to be accommodated on site when the proposed rezoning is gazetted (based on the concept plan prepared by Crighton Properties for this and the Riverside at Tea Gardens Estate).

In addition, the Hermitage retirement village currently under construction within the Myall River Downs Estate has approval for 281 dwellings, which has potential to add a further 365 people to this Estate.

It is also noted that there are an additional 36 homes approved for construction in the Tea Gardens Grange Retirement Village.

In addition to the proposed development of the Crighton Properties' land, growth will also occur in Tea Gardens within the North Shearwater Estate (to the north of the Riverside at Tea Gardens site) and as infill development within existing residential estates. *Table 2.5* indicates the likely growth within these areas.

Table 2.5 Estimated Additional Tea Gardens Population

Location	Dwellings	Rate	Persons	Total
North Shearwater	300	2.2	660	**660**
Infill Tea Gardens				
Houses	100	2.2	220	
Units	140	1.3	182	**402**
TOTAL ADDITIONAL SUNDRY				**1,062**

Note: These figures do not include proposed "Myall Way" Precinct.

3 EXISTING RECREATIONAL FACILITIES

3.1 FACILITIES IN TEA GARDENS/HAWKS NEST

Both Tea Gardens and Hawks Nest have extensive areas of public open space and have local and/or district level facilities (Great Lakes Council, 2003d). The location of the existing recreational and community facilities in the Tea Gardens/Hawks Nest area is illustrated in *Figure 1*.

Structured facilities consist of courts and fields and include the Memorial Park Public Reserve (Lot 6) in Tea Gardens and the Myall Sports Reserve (R86322) at Hawks Nest. The Tea Gardens reserve is classed as a large district field comprising four small multi-use fields, toilets and storage facilities, and is 1.2 hectares in area. The reserve in Hawks Nest is classified as large district courts and field, which is comprised of a large multi-use field, two tennis courts, one croquet court, swings, toilet facilities and a park, and is four hectares in area (Great Lakes Council, 2003d).

Open space in the area has typically been provided in the following ratios:

- small parks at about 25%
- large parks without structured facilities at about 30%;
- courts at about 15%; and
- playing fields at about 30%.

Council has provided three community facilities in the Tea Gardens/Hawks Nest area, which are:

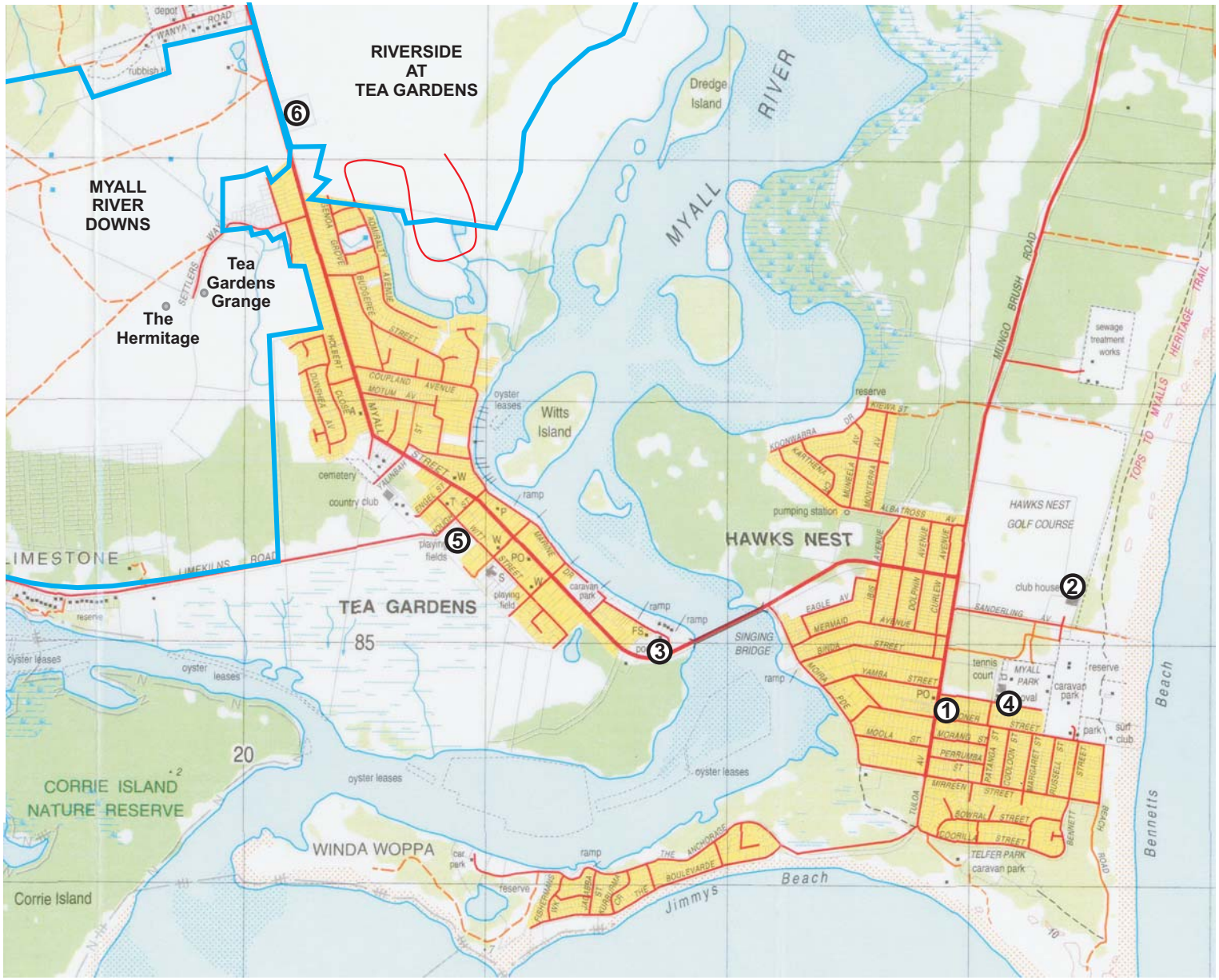
- the Hawks Nest/Tea Gardens Community Centre in Hawks Nest;
- the Hawks Nest/Tea Gardens Preschool in Hawks Nest; and
- the Hawks Nest Branch Library.

The Hawks Nest Community Centre at 71 Booner Street (site area 1,012 square metres) has a capacity to accommodate 200 people sitting and 300 people standing and provides bathroom and parking facilities (Great Lakes Council, 2003a), however it is inadequate to provide an acceptable level of community service (Great Lakes Council, 2003d). It is Council's strategy to construct a new consolidated community facility in Tea Gardens and adapt the existing centre for other as yet determined uses.

There an 18-hole golf course in Hawks Nest and a community swimming pool and parking area located in Tea Gardens adjacent to the Singing Bridge.

Legend

1. Library/Community Centre
2. Golf Course
3. Pool
4. Myall Sports Reserve
5. Memorial Park Public Reserve
6. Pony Club Site



Source: 1:25,000 Topographic Series, Port Stephens Sheet

ERM

0 500m

Approximate only

Figure 1

Existing Active Open Space

Myall River Downs & Riverside at Tea Gardens - Crighton Properties Pty Ltd

3.2 *TEA GARDENS AND HAWKS NEST SECTION 94 CONTRIBUTIONS PLAN*

The Tea Gardens and Hawks Nest Section 94 Contributions Plan (Great Lakes Council, 2003d) levies residential development for six types of public facilities that provide community benefit in the area, including open space, such as parks, playing fields and courts and community facilities such as libraries and community centres.

The Section 94 Plan used Council's estimates of new lot or dwelling creation in the then *draft Tea Gardens/Hawks Nest Conservation and Development Strategy 2001*(the Strategy was adopted by Council in 2003). The Plan, therefore, has been based on anticipated population growth and development for a ten year period from 1999 and an expected population of 4123 in 2011 (Great Lakes Council, 2003d).

With respect to open space provision, Council's plan requires dedication of land, or payment of contributions, at a rate of 28.3 square metres per person. Council has, in the past accepted dedication of open space areas in the Myall Quays and Banksia Gardens Estate developments along with cash contributions.

Council considers that there is currently sufficient space in the large parks, courts and fields to expand facilities and that additional land would not need to be acquired until the future population reached 4123. As a consequence, Council has resolved that it will acquire land only for the provision of small parks within Myall Quays, Myall River Downs and Banksia Garden Estate, at a rate of 7.1 square metres per person (25% of Council's open space provision of 28.3 square metres per person).

The Section 94 Plan states that Council will not levy contributions to acquire land for new large parks, playing fields and courts, including those proposed in future stages of Myall Quays, because:

- existing large parks can be augmented to provide additional fields and courts for the public as the need arises;
- Council does not wish to increase its recurrent costs to maintain separate, dispersed facilities; and
- there is little reason to acquire and maintain additional land given the current high provision of open space and opportunities to use it more efficiently.

Council will levy contributions from development in new urban areas for embellishment of existing large parks, courts and playing fields, as well as the acquisition and embellishment of small parks at the rate of $826.32 per person (2006-2007 rate). Council will not accept dedication of any large park, playing fields or courts in lieu of payment of contributions for open space under the Section 94 Plan for the reasons given above.

3.3 ADDITIONAL FACILITIES

In addition to the above, the Tea Gardens Grange Retirement Village provides a range of community facilities built to accommodate the needs of its 285 estimated (self care) residents. These facilities include a swimming pool, a library, a croquet lawn, a billiard table, a large lounge and covered deck plus a meeting hall/and dance floor/indoor bowling area.

3.4 PROPOSED FUTURE ADDITIONAL FACILITIES

In addition to the existing facilities in the area, the proposed Hermitage Retirement Village development situated on land to the south of the Myall River Downs site, has commenced construction and is expected to be completed by 2011. This development will include an indoor swimming pool, a four link bowling green, two tennis courts and several community buildings, for the use of its residents.

4 ADDITIONAL RECREATIONAL FACILITIES

Council acknowledged that to accommodate an expected population growth of the magnitude it predicted over the next 25 years, existing public services and facilities would need to be extended and other facilities may need to be provided (Great Lakes Council, 2003c). Council estimated that by 2011, all community facilities (such as community halls, centres and libraries) would likely be used to capacity (Great Lakes Council, 2003d).

It is noted that there are few social facilities for teenagers within the Tea Gardens/Hawks Nest area, while the proportion of younger age groups in the future population would be expected to increase (Great Lakes Council, 2003c).

Migration of the aged sector is expected to remain strong in the foreseeable future and will influence the mix of facilities required in open space and community facilities (Great Lakes Council, 2003d).

4.1 STRUCTURED OPEN SPACE

Council's Section 94 Contributions Plan (2003) is based on the population predictions within the then *draft Tea Gardens/Hawks Nest Conservation and Development Strategy 2001*. Additional residential development has since been proposed and/or approved including the Myall River Downs and North Shearwater sites as well as further medium density dwellings within the Riverside at Tea Gardens development site. This will require the provision of additional recreational facilities in the future to accommodate further population growth. *Table 4.1* indicates the projected population of Tea Gardens and Hawks Nest that will require the provision of structured open space (based on Crighton Properties research and analysis of sales, Council records and the revised draft Housing Strategy).

Table 4.1 Summary of Projected Population for Tea Gardens and Hawks Nest

Location	Total
2006 population (Tea Gardens & Hawks Nest usual residence data from 2006 census)	3,092
Increase Riverside at Tea Gardens	2,015
Increase Myall River Downs	2,995
Increase Riverside at Tea Gardens Tourist Precinct	143
Increase Myall River Downs Transition units/lodges	233
Increase Tea Gardens Grange	47
Increase The Hermitage	365
Increase North Shearwater	660
Increase Infill (Tea Gardens)	402
Increase Hawks Nest	2325
TOTAL	**12, 277**
NOTE: *Playing Fields and Courts not required for Retirement Villages and Tourist Developments. Therefore deduct 47 + 365 (proposed Grange and Hermitage residents) + 200 (existing retirement village residents) and 143 + 233 (tourist precinct & transition units/lodges)*	**(988)**
Nett Population requiring Playing Fields	**11,289**

The population of Tea Gardens and Hawks Nest was only predicted to increase to about 9,756 by 2031 (based on the high growth scenario for the permanent [winter] population in the *Tea Gardens / Hawks Nest Conservation and Development Strategy*). As can be seen by the more recent calculations in *Table 4.1* the predicted population after the development of the Crighton Properties, North Shearwater, infill development in Tea Gardens and growth at Hawks Nest (the latter taken from the revised draft Housing Strategy) the population will significantly exceed that predicted by the *Tea Gardens / Hawks Nest Conservation and Development Strategy*.

The Section 94 Plan for Tea Gardens & Hawks Nest makes it clear that Council considers that the existing open space areas (within both Tea Gardens and Hawks Nest) are local and/or district level facilities and that, *'a distinction between local and district open space is not critical in the Plan Area as the two villages are contiguous and travel between them is relatively easy'*. Therefore, development at Hawks Nest and Tea Gardens (excluding the future Myall Way Precinct) has been considered in its totality rather than viewing Hawks Nest separately to Tea Gardens.

Council's Section 94 Contributions Plan requires the provision of 28.3 square metres of open space per person within the Tea Gardens/Hawks Nest area. The open space requirements for the predicted future population of 11,289 (excluding retirement village residents and tourists) in the area therefore equates to 32 hectares of open space, of which 45% or 14.4 hectares is likely to be required for structured open space (15% courts and 30% playing fields). The required amount of structured open space for the anticipated population of the new urban areas of Tea Gardens and Hawks Nest is shown in *Table 4.2*.

Table 4.2 Calculation of Area Required for Playing Fields and Courts - Ultimate Population

Courts & playing fields are required under Great Lakes Tea Gardens/Hawks Nest Section 94 Plan at the rate of 12.73 m² per person (i.e. 28.3 m² x 45%)

Total Requirement @ 12.73 m² per person (11,289 x 12.73)		**14.4 ha**
Courts and fields already provided		**5.20 ha (see Table 4.3)**
New Urban Areas:	**Persons**	**Required Area (ha)**
Myall River Downs / Riverside at Tea Gardens	5,010	6.4
North Shearwater	660	0.8
Infill Tea Gardens	402	0.5
Hawks Nest	2,325	3.0
TOTAL	**8,397**	**10.7**

The existing and required amount of playing courts and fields for the Tea Gardens/Hawks Nest area is outlined in *Table 4.3*. The Table indicates that approximately 3.6 hectares of court space and 7.1 hectares of playing fields are

required by the Section 94 Plan to accommodate future population growth in the area (not allowing for the Myall Way Precinct). As shown, the existing land area for recreational facilities within Tea Gardens/Hawks Nest totals approximately 5.2 hectares, however when the land area required for future growth is added (10.7 hectares) it results in a requirement for 15.9 hectares. This represents a significant oversupply as only 14.4 hectares is required by the Section 94 Plan (refer to *Table 4.2*). This is explained by the fact that there is an existing surplus of approximately 1.5 hectares which is carried forward if all future developments provide their full complement of open space.

Table 4.3 ***Existing and Required Structured Open Space***

Category	Existing (ha)	Required for Future Growth (ha)	Total (ha)
Courts			
Hawks Nest	2.0	1.0	
Tea Gardens	0.0	2.6	
Sub Total	**2.0**	**3.6**	**5.6**
Playing Fields			
Hawks Nest	2.0	2.0	
Tea Gardens	1.2	5.1	
Sub Total	**3.2**	**7.1**	**10.3**
Total	**5.2**	**10.7**	**15.9**

It is not considered appropriate or necessary to continue to provide such an oversupply. To do so would have serious financial implications for Council in terms of maintenance costs and result in inequalities and underutilisation of resources (given the demographic predictions). In addition, having regard to the predicted age profile of Tea Gardens / Hawks Nest (with the majority of residents being aged over 60) it is considered appropriate that the requirement for the provision of playing courts and fields be reviewed. It would be inappropriate to provide playing fields which are unlikely to be used by an ageing population.

It is recommended that Crighton Properties provide their full required allocation, i.e. 6.4 hectares (*Table 4.2*), as the proposed Myall River Downs Sporting Complex site is ideally located to serve the needs of the majority of the future population. However, it is considered inappropriate for North Shearwater, Tea Gardens Infill and Hawks Nest to provide their full allocation on site as this would result in scattering of recreation facilities that would be more costly and inefficient to use and maintain. Cash in lieu of land dedication is therefore recommended for these sites with the funds generated being used to embellish existing and proposed open space areas.

4.2 *DEVELOPMENT OPTIONS*

Two options have been considered for the potential location of the additional 6.4 hectares of structured open space to be provided for the future population of the Tea Gardens/Hawks Nest area.

The first option (and potentially most straightforward) would involve the dedication of 6.4 hectares of structured open space within the Myall River Downs site to the west of Myall Street. This option would establish a transition area between adjoining residential areas and industrial land to the north of the site at the same time as increasing the scenic amenity of the area. The construction of facilities totally within Myall River Downs could enable the development of the Council owned 'Pony Club' site to the east for residential purposes.

This development option could be enhanced by the financial contribution of other development (see *Table 4.4*). North Shearwater, Tea Gardens Infill and Hawks Nest could contribute to the embellishment of existing courts and playing fields and the proposed Myall River Downs Sporting Complex in lieu of providing the required land dedication.

Table 4.4 Potential Section 94 Contributions

Location	Area (ha)
North Shearwater	0.8 equivalent
Tea Gardens Infill	0.5 equivalent
Hawks Nest	3.0 equivalent
TOTAL	**4.3**

At a rate of $800,000 per hectare, this would represent a cash contribution of $3,440,000 while a rate of $1,000,000 per hectare would represent a cash contribution of $4,300,000. If these funds were invested in the existing and proposed open space areas, much could be achieved in terms of upgrading these facilities.

A second option would be to provide a smaller sized sporting complex within the Riverside at Tea Gardens site, utilising the land Council owns which was originally allocated for use by the Pony Club. An area of approximately 3.15 hectares (including the 1.6 hectare Pony Club site) could be developed in this location for sporting purposes. This would mean that a further sporting complex would need to be developed in the proposed future "Myall Way" precinct or some other location at some future date in order to meet the medium to long term requirements of the township. Duplication of recreation facilities should be avoided for a number of reasons, including the on going increased burden of maintenance and repair.

4.3 PREFERRED DEVELOPMENT OPTION

The Myall River Downs option discussed in *Section 4.2* is favoured as it provides a larger, consolidated sporting complex of 6.4 hectares in proximity to what will become the centre of population for the Tea Gardens area as opposed to the smaller 3.15 hectare sporting complex that could be

accommodated on land adjacent to the Pony Club site. The Myall River Downs site is capable of accommodating two football fields suitable for rugby league, soccer and hockey, six netball courts, 4 tennis courts, skateboarding facilities and community facilities as shown in *Figure 2*. The sketch plan at *Figure 2* illustrates that an area this size can accommodate a large range of sporting activities as well as all the associated support infrastructure including amenities buildings, clubhouses, car parking, community buildings and storage facilities.

In addition, this site has the capacity to accommodate other facilities that could provide Council with a financial windfall. Additionally, the use of this site for a sporting complex is appropriate in a planning sense given that it will act as a transition between existing and future industrial areas and proposed and existing residential areas to the south.

4.4 CONCLUSIONS

Council's Tea Gardens and Hawks Nest Section 94 Contributions Plan states that there is currently sufficient recreational facilities for a future population of 4123 in 2011 and that additional land would only need to be acquired for provision of small parks within new development areas. It is clear from more recent calculations, that the anticipated residential development and associated population growth of the Tea Gardens and Hawks Nest area in the longer term will be considerably greater than envisaged by the current Section 94 Contributions Plan.

There is currently an over supply of open space per head of population. It is considered inappropriate and unnecessary to maintain this over supply in future as this would have serious financial consequences for Council in terms of maintenance costs and result in inequalities and the underutilisation of resources (given the demographic predictions). In further contrast, the current requirement of 12.73m^2/p for the provision of playing courts and fields should be reviewed in light of the current and future expected older age profile of the area. Thus reducing significantly likely net demand.

The recommendations of the Section 94 Contributions Plan therefore need to be reconsidered to address the long term needs of the community and enable the provision of a centrally located sporting complex to serve the future population of the Tea Gardens area with appropriate facilities on an appropriate scale.

It is recommended that Crighton Properties provide 6.4 hectares of land for structured open space, as the proposed Myall River Downs Sporting Complex site is ideally located to serve the needs of a significant proportion of the future population. However, it is considered inappropriate for North Shearwater, Tea Gardens Infill and Hawks Nest to provide further allocation of courts and playing fields on those sites as this would result in an over supply of recreation facilities that would be more costly and inefficient to use

Jobs/2006/0043707/Recreational Study - Fg2 MRD Sporting Complex Sketch.cdr 18 08 2006 JD Environmental Resources Management Australia Pty Ltd



Source: Crighton Properties

ERM

Figure 2 **Myall River Downs Sporting Complex Sketch**

Myall River Downs & Riverside at Tea Gardens - Crighton Properties Pty Ltd

and maintain. Cash in lieu of land dedication is therefore recommended for these sites. These monies could be used for embellishment of existing facilities and the proposed Sporting Complex on the Myall River Downs site.

In accordance with the Voluntary Planning Agreement between Crighton Properties and Great Lakes Council, the dedication of 2.5 hectares of land within the Myall River Downs site will occur before 300 lots are registered or contingent with a land swap occurring with a further portion of the Myall River Downs site for the Pony Club site (which ever is the sooner). The monetary contribution of $750,000, being 45% of embellishments required, will be made before 300 lots are registered.

It should be noted that this Study does not take into consideration the additional playing fields and courts that would be needed if the "Myall Way" precinct proceeds. However, it is unlikely that the proposal will proceed in the near future as there is no capacity within MidCoast Water's Hawks Nest Sewage Treatment Plant for such a large development (another 4,000 to 10,000 people).

If this development does proceed, it is likely that a new Sewage Treatment Plant will need to be built and a site will need to be chosen within this development for a new High School. In larger master planned communities, school sporting facilities are commonly being shared with the surrounding community resulting in substantial financial benefits. As an example, refer to the Delfin/Lend Lease's Varsity Lakes Development on the Gold Coast in Queensland (www.varsitylakes.com.au). As a consequence, it is not considered appropriate to provide for the future needs of this precinct within Tea Gardens.

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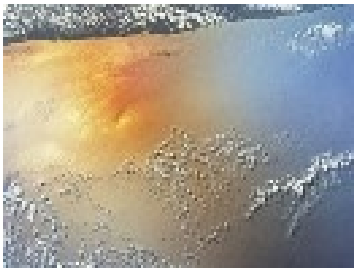
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Volume 3C: Architectural and landscape Design Guildelines

MYALL QUAYS

MYALL QUAYS ESTATE

ARCHITECTURAL & LANDSCAPE DESIGN GUIDELINES

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1. PREVIEW

1.1 INTRODUCTION

The Myall Quays is located on land adjacent to the Myall River and abutting the Tea Gardens township. The majority of the site was originally a pine forest which was destroyed by fire in the late 1970's. Parts of the site have since revegetated with low lying scrub and some stands of attractive native trees which will be maintained where possible.

The site includes a significant area of wetlands (classified S.E.P.P. 14 Designated Wetlands) which requires specific protection from development. This wetland area is intended to be protected by the addition of an artificial wetland conservation area located along the western edge of the protected wetlands.

Myall Quays will be developed to project an image of an elegant and casual coastal lifestyle. It is thus anticipated that each home will be carefully planned to enhance the site and to preserve the character of the estate. To this end a Review Committee is to be established to assist proprietors determine the best solution for their block, given the constraints of their budget and their interest in enhancing their privacy and minimising the cost of energy.

1.2 REVIEW COMMITTEE

The Review Committee consisting of two Design Consultants nominated by the Original Developer and a Director of Crighton Properties Pty Limited (The Original Developer) has been established as a sub Committee to the Executive Committee of the Community Association. The Review Committee's role is to ensure that the development preserves and protects the estate in a natural environment and maintains the concept, image and aesthetic quality of the development.

To that end no building, dwelling, accessory building, fence or other structure shall be erected, placed, demolished or altered on any Lot within the community parcel until the proposed design and documentation including site plan, floor plans, elevations, together with details, specifications, external finishes and a construction programme has been approved in writing by the Review Committee. The Review Committee has created these guidelines for assistance to those contemplating construction and to provide maintenance and repair guidelines for the Community Association.

1.3 DESIGN GUIDELINES

The development of Myall Quays provides a unique opportunity to formulate architectural and landscape design guidelines that will assist property owners to construct homes which are both distinctive and innovative and will provide the occupiers with enhanced privacy and comfort.

The primary reasons for wanting to effect more control over building activities in Myall Quays are:

(a) to encourage the care of the environment within the estate and to foster ecologically sustainable design to alleviate escalating Local Government costs, and to reduce the cost of energy; and

(b) to preserve the design integrity and architectural quality of homes in the estate to add value to all property in the precinct; and

(c) to preserve and enhance the existing landscape and the quality of the streetscape to provide the residents in the community with an environment they can enjoy and take pride in; and

(d) to maintain the highest possible aesthetic standards to assist in establishing Myall Quays as the most attractive and desirable place to live on the Mid-North Coast; and

(e) to prevent any owner building a home in the estate which, because of its inappropriate design relative to the block on which it is proposed to be built, devalues the surrounding properties, causing financial damage to the neighbours.

1.4 BENEFITS OF THE DESIGN GUIDELINES

These guidelines have been developed to enhance the overall quality and character in Myall Quays and to provide residents with a quality of life significantly better than they might otherwise enjoy in homes where less care is given to the design.

An important feature of these guidelines is a requirement seeking owners' co-operation in selecting a design for their block which provides solar access to the main family and living areas in order to save energy.

The Guidelines elaborate on the restrictions in the Community Association By-Laws and the Management Statement. Creativity is encouraged within bounds of appropriateness, but the Review Committee has established basic standards for Myall Quays with a view to promoting and retaining an harmonious community image and ensuring environmental compatibility.

1.5 THE THEME OF THE ESTATE

Myall Quays is conceived as a leisure oriented residential resort in which it is proposed to include a commercial centre with outdoor restaurants and sidewalk cafes overlooking a large lake known as Myall Cove. A golf course interspersed with large freshwater lakes together with parks and gardens and tree lined streets are features which will encourage an idyllic, tranquil lifestyle.

The architectural style of each of the homes within the estate will be encouraged to reflect the theme that has been evolved to achieve a consistent architectural image, one that reflects the casual urbane character of the Myall Quays.

The treatment of the "theme" as a whole should reinforce the feeling that:

* Myall Quays is a well planned and well managed Estate.

* A strong Community atmosphere and identity has been fostered.

    * The residential and commercial development has been designed to blend into the natural environment.

    * The waterways and parklands throughout the estate give residents a unique sense of freedom and space.

* The individual homes within the development exhibit an elegant and gracious character.

2. APPLICATIONS TO THE COMMUNITY ASSOCIATION

2.1 Preparation & Lodgement of Plans

All applications for the approval of building plans for each new dwelling or other building to be erected, or for any retaining walls above 1.00m in height, must be lodged with and approved by the Review Committee, before any Building Application is made to Great Lakes Council.

All building plans must be prepared by a qualified Architect or an Architectural Draftsperson and must include sample chips or cards or brochures indicating the proposed colours of the bricks, roof and other accessories intended to be used on the dwelling or building. All documentation will be reviewed by the Review Committee for the owner within fourteen (14) days. The maintenance of this Committee and the prompt and professional discharge of its duties shall be the responsibility of the Original Developer.

The Review Committee must consider all plans and specifications submitted to it for approval, including but not limited to, all plans and specifications for any new home or landscaping which involves the erection of any retaining wall in excess of 1.00m in height.

No fee is applicable for the submission to, or the obtaining of Review Committee approval. All applications must be posted by prepaid certified post to Myall Quays Review Committee, PO Box 38, Tea Gardens 2324 or delivered personally to the Original Developer's office in Tea Gardens. The proof of such delivery shall be the responsibility of the applicant.

2.2 Approval Subject to Conditions

The Review Committee may impose conditions on its approval of plans and specifications, and/or any colours of any materials proposed to be used on any dwelling or building.

The Review Committee may require an Applicant to deposit with the community Association a bond to be held by the Community Association on account of any damage that may be caused to Association Property or Common Property as a result of Building Modifications, Landscape Modifications or New Construction.

On completion of the Building Modification, Landscape Modification or New Construction the Community Association must account to the Applicant within 60 days, for the bond, after deduction (if any) for damage to the Association Property or Common Property.

2.3 Decision of Review Committee.

The Review Committee must, within 21 days after it has received all information required by it to make a decision, deliver to the Applicant its written approval or reasons for rejection. Approval will be in the form of an interim approval subject to Great Lakes Council's approval of identical plans.

Plans and specifications submitted under By-Law 1.3 will be deemed to be approved by the Review Committee, unless:

a) a written disapproval; or
b) a request for further information

has been delivered to the Applicant within 21 days after the Review Committee has received the plans and specifications, or where a request has been made, within 21 days of the Review Committee receiving the additional information.

A decision made by the Review Committee is binding on the Applicant.

2.4 Required Documents

Prior to lodging any Building Application with Great Lakes Council, the Applicant must submit two (2) sets of the following documents to the Review Committee for review. (The information required by the Review Committee is essentially the same information as the information required by Great Lakes Council for a Building Application).

Schematic Drawings

1:200 Site Plan

1. north arrow
2 property lines with dimensions and bearings
3. existing and proposed contours by registered surveyor
4. location of existing trees. Trees to be removed shall be noted ("removed")
5. setback limits shown
6. building accurately located from property line
7. driveways and paths shown
8. principal views shown
9. adjacent structures located
10. shadow projections at 21 June at 9.00 am, 12 noon and 2.00 pm.

1:100 Floor Plans. These should include each floor, mezzanine and ground floor level plan.

1. room use labelled
2. all walls shown
3. all windows and doors with swing shown
4. all overhangs of floors or roof of above shown as dashed lines
5. all fixtures, cabinets and appliances shown
6. dimensions overall limits of plans
7. ground level plan to indicate foundations, enclosure, driveway location (if applicable), stairway, garbage and any air conditioning or solar heating units.

1:100 Elevations. One for each major exposure

1. show how building relates to existing natural ground level
2. show screening type and location
3. indicate overall height from natural ground to ridge of roof

Note: At the time of preliminary submission, the corners of the house should be staked on the lot in the proposed location. Trees to be removed should be flagged with red surveyors tape.

All applications must include estimated completion dates. The Community Association may not approve a request whose time frame it considers unreasonable.

2.5 BUILDING APPLICATION TO COUNCIL

Immediately an owner lodges a Building Application with Great Lakes Council, the Applicant must submit an identical copy of all B.A. drawings, construction documents and specifications for the Review Committee's records in order that the Review Committee might be satisfied that the final plans are in accordance with the preliminary application.

The conformance to all applicable building regulations is the responsibility of the Owner. After the applicant has secured Council B.A. approval, the Review

Committee will upon request, issue a letter of confirmation that the plans have been approved by the Review Committee.

No fee is applicable for the submission to, or the obtaining of Community Association approval.

Owners are encouraged to discuss their proposals at the earliest opportunity with the Review Committee prior to preparing final documentation. Considerations addressed early in the design process to take into account the overall planning intent theme, community objectives and other issues such as solar access, views and privacy can increase property value as well as accelerating the approval process.

Owners should also be aware of the fact that approval by the Review Committee will place Great Lakes Council under no obligation to approve the plans subsequently submitted and Great Lakes Council may, at its absolute discretion, reject, amend or place conditions on the approval as it sees fit. The conformance to all applicable building regulations is the responsibility of the Owner.

The review Committee's role is to consider the layouts, scale and aesthetics of all dwellings, while Council will be concerned with a wider range of considerations including aspects of construction, engineering and geotechnical impact.

3 COMMUNITY PROPERTY

3.1 Residential Streetscape

To assist in achieving the image of a consistent well maintained frontage to each residential lot, all footpaths fronting lots which entitle the owners to be included in the Community Association will be set aside as Community Property and these footpaths will be referred to as the Residential Streetscape.

The Residential Streetscape will be maintained by the Community Association. No buildings, structures or the like shall be constructed on this land and no landscaping can be disturbed without the consent of the Executive Committee.

Much attention has been paid in the site planning at Myall Quays and to the retention, where possible, of existing vegetation and/or the replanting of a wide range of native trees and shrubs to encourage native birds and animals to recolonise the neighbourhood.

Therefore, it is of utmost importance to the Estate that this philosophy is understood and carried through to the individual residences so that a unified aesthetic environment will result.

The Residential Streetscape will set the standard and character for the entire subdivision. It has been designed:

* To provide a considerably maintained streetscape which will ensure the entrance to each individual home-site will enhance any dwelling built on any lot.

* To evoke the feelings of living in a residential "resort", emphasised by the careful selection of hard elements and plant materials.

* To provide a living streetscape which will attract native birds and animals the whole community can enjoy and interact with.

* To enhance and protect the capital appreciation of all proprietors in the development.

The profile of the residential streetscape consists of a footpath which has a minimum width of 4 metres, part of which may be paved for pedestrian and bicycle use. This area will be landscaped with street trees, ornamental trees and shrubs and specially selected street furniture. These various landscaping elements will be maintained by the Community Association.

3.2 Residential Roads

All roads within the estate will remain the property of Great Lakes Council. It is Great Lakes Council's responsibility to repair, maintain and reconstruct (when required) the road surface and kerbs in accordance with the standards provided in the initial construction.

3.3 Lighting

Street lighting selected to enhance and reinforce the theme of the estate will be installed by Orion Energy and maintained by Great Lakes Council. This lighting is intended to be a feature at night and an embellishment to the streetscape.

4. THE ARCHITECTURAL THEME

The masterplan of the Myall Quays Estates has resulted in the residential development being sited to ensure that each lot in each stage of the development will have the benefit of a specific aesthetic backdrop or view, with the majority of homes having either lakefront, or golf course frontage or golf course or lake, or reserve views.

The architectural style that will be developed for Myall Quays will distinguish the Estate from other developments in Tea Gardens and Hawks Nest. The style envisaged will be different from the usual contemporary mass housing, whether spec built or project built.

The architectural theme, the 'signature' of the Myall Quays Estate will be encouraged to reflect an elegant, casual, friendly and relaxed lifestyle, as distinct from one that is detached, or conspicuously opulent.

The architectural language that has been selected to achieve this image is based on coastal seaside buildings that reflect the Australian individuality. The plan and overall success of the development means that the architecture should particularly reflect and originate from the indigenous qualities of the Australian culture and this theme should be further carried through to the landscaping around each individual dwelling.

Each design needs to reflect certain primary requirements, therefore the Review Committee encourages the following:

(i) Massing

* That residential building form does not consist of a large block of mass but rather a collection of forms - a combination of 2 storey and single storey forms is thus encouraged.

* That the interest of the architecture should be derived from the form or collection of forms rather than from excessive decoration.

(ii) Materials

* External walls of either white-washed, lime-washed, bagged or rendered brickwork of earthen or ochre hues are particularly encouraged or full brick

or brick veneer of a conservative character with stone or glass or timber (or a combination of these materials) as long as at least 70% of the total area of the external walls are constructed of rendered concrete or brick or brick veneer. Walls with a northerly aspect or a view should feature a larger area of glass while walls with a southerly aspect should be predominantly solid.

* Roofs of corrugated colourbonded metal are encouraged, however, either cement or terracotta tiles or slates or shingles or non-reflective, non-flat metal materials of a colour approved by the Review Committee will be considered. Preferably, the pitch of the roof shall be set to a minimum pitch of 30 degrees and a maximum pitch of 35 degrees.

(iii) Style

Homes should portray an Australian "Coastal" character without any need to resort to the usual cliches such as bullnosed corrugated iron verandahs, trellised gables, dominant porticoes or decorations that allude to periods of architecture (e.g. Victorian, Federation, Palladium, Georgian etc.).

* Eaves and verandahs are encouraged to be used to cast shade where necessary to enhance thermal efficiency and/or to provide outdoor areas of private open space for relaxation and entertaining.

* Large canvas awnings and pergolas of a white or plain colour may be approved and used successfully to create a friendly, casual atmosphere as well as assisting in lowering large building masses.

The Committee does not encourage the following:

* Spanish style arched windows, although shallow arched colonnades in conjunction with thick walls would be considered .

* Multi-paned windows.

* Bulky precast concrete balustrades.

* Pediments, cornices and decoration which seek to establish a predominantly Victorian or Federation character.

- Non-functional louvre shutters fixed to walls on either side of the window.

4.1 SITING CONSIDERATIONS

The siting of each home should be such that it should enhance the general streetscape. Each residential development including garages, should be sited with a view to enhancing and/or preserving the privacy and solar orientation of an adequate area of private open space for the added comfort of its occupants.

4.2 MINIMUM SETBACKS

In streets of a width of no more than 7.5 metres the minimum setback from the front boundary is 4.5 metres including garages which have their door perpendicular to the street. Garages which face the street must have a minimum setback of 6 metres from the street to accord with Great Lakes Council regulations.

The rear setback for any lot with absolute frontage to any waterbody or golf course is 5 metres from the rear boundary of the lot in accordance with the Community Association Guidelines.

Residential floor levels of any dwelling are not to be lower than R.L. 2.55 to comply with Great Lakes Council's minimum floor height measured against Australian Height Datum.

Certain lots feature a zero side boundary set back for dwellings, and lots adjoining a zero boundary lot require a 1.5 metre set back from that boundary. The Community Management Statement and/or Neighbourhood Management Statement contain details of all lots burdened or benefited by these innovations.

4.3 DRIVEWAYS

Access to each property off the street shall be via a single driveway of maximum width 4m and minimum width 3m and sited no less than 0.5m from either side boundaries.

Single driveways may widen into double driveways once the property boundary has been transversed.

Driveways are to be constructed from either gravel with brick edging or from a selection of clay or brick pavers or stamped concrete or concrete capped with coloured oxide or any other material acceptable to the Review Committee.

4.4 GARAGES

In order to maintain the concept of a collection of forms, the Review Committee encourages garages to be designed and sited as a single form attached to and built of the same materials as the main residence although consideration will be given to an independent (separate) form where the architectural style is complemented.

If more than two garages are required they should be sited so that no more than 2 garages are constructed in one line. Where garage entry doors face the street the garage must be positioned at least 6.0 metres back from the street frontage to accord with Great Lakes Council's planning code.

Maximum Garage Size

1 car garage - 3.5m x 6.5m
2 car garage - 6.5m x 6.5m

4.5 CARPORTS

Carport designs must be sympathetic to the design of the residence, and attached to the main residence or garage and constructed of similar materials, to the materials used on the main residence.

Carports are only to be only utilised for the garaging of cars. The Community Association will not permit carports to shelter boats, caravans, trailers or the like, or to be used for any other storage purposes.

Carport structures should be designed as an integral part of the residence. Trellis walls and pergola roof structures will be allowed at the discretion of the Review Committee as long as the structure is seen to complement the forms of the residence.

4.6 BOATS, CARAVANS, TRAILERS

Boats, caravans, trailers or the like are only to be housed in garages or totally screened from the streetscape.

4.7 ANCILLARY STRUCTURES

Ancillary structures like garden structures, gazebos or the like are to be sited and designed in accordance with the Landscaping Considerations. All garden structures are subject to the approval of the Review Committee.

Independent garden sheds are not permitted, the Review Committee will require storage facilities for garden tools and accessories to be included in the overall design of the residence and/or garage.

4.8 FLOOR AREA

The gross floor area (square metres) for residences including garages but excluding any other ancillary structures shall be as follows:-

For lots less than 550 square metres in area the minimum floor area will be 130 square metres.

For lots greater than 550 square metres in area but less than 801 square metres in area, the minimum floor area will be 155 square metres.

For lots greater than 801 square metres in area but less than 1000 square metres in area, the minimum floor area will be 180 square metres.

For lots greater than 1000 square metres in area, the minimum floor area will be 250 square metres.

The maximum site coverage should not exceed 60% of the total site.

Lots measuring 14 metres wide (or less) and other specific lots specified in the Community Management Statement and/or Neighbourhood Management Statement will generally be limited to single level dwellings, however, approval may be given to residences on smaller lots where additional living space is substantially incorporated into the roof form of the residence and/or the design of the dwelling is considered to be in keeping with other residences in the precinct. All residential lots are limited to dwellings of no more than two levels in height.

4.9 DUPLEXES

No strata titled or separate titled duplex or dual occupancy residences will be permitted other than on lots specifically designated for same, (refer Community Management Statement and/or Neighbourhood Management Statement) but approval may be given to a residence which incorporates a flat or flatette for use of the family members.

4.10 AWNINGS

Large canvas awnings that blend in and complement the architectural style of a home are permissible provided they are of a conservative colour such as white, or bone, or any other sympathetic plain colour as may be approved by the Review Committee at their absolute discretion.

4.11 BALCONIES

Balconies adjacent to the upper floor of a two storey residence should extend for the width of the adjacent room, and should be of a proportion strictly in keeping with the scale of the building.

Generally it is preferable that balconies be sited on the elevation with the best view (e.g. over a golf course, reserve, or waterbody). However if the orientation is such that a balcony is required on the street side, it would be preferable if it was integrated into the roof form and did not have transparent balustrades.

Balustrades generally should be of timber or steel construction of a simple design. Balustrades featuring elaborate cast iron lace work, fret work, precast concrete posts or other ostentatious decoration would not generally be considered appropriate.

4.12 AIR CONDITIONING UNITS

Air conditioning equipment must be located behind the building alignment and located in such a position that it is not visible or audible from any neighbouring property. All air conditioning units must be located below the roof line and be painted to match the surrounding construction.

When making an application to the Community Association for the installation of an air conditioning unit with or separately to the original building application, the applicant must include details of the precise location of the equipment with respect to the dwelling, property boundaries, adjacent dwellings and the adjacent property's windows and doors. Noise pollution is of particular concern and air conditioning contractors must be able to guarantee the performance of the unit proposed within certain predetermined noise limits.

4.13 CHIMNEYS AND FLUES

Chimneys or flues must be generally of brick or metal and where appropriate include the relevant additional fittings such as spark arrestors and wind vanes.

All chimneys should be unadorned, non-ornamental and painted a colour to accord with the rest of the structure and be built no higher than the minimum requirement necessary for operational efficiency.

Chimneys should be of the same or similar height to other existing chimneys or flues in neighbouring dwellings or throughout the Myall Quays Estate generally; and of such design that no external visible means of bracing or support is required.

4.14 SOLAR COLLECTORS AND HOT WATER UNITS

Hot water units should be architecturally integrated with the dwelling.

An application for the installation of solar collectors whilst encouraged, will only be considered against the following criteria:

* solar collectors on pitched roofs must lie flat on the roof such that the top edge of the panel is parallel with the roof ridge line;

* no part of the installation should project above the line of the roof ridge;

* support brackets, frames and any exposed pipework should be painted to match the roof colour; and

* all major pipe runs, storage tanks, wiring and control devices should be concealed and should not be visible from the street.

* solar hot water systems should be of the remote tank type, non-integrated, with only the solar panels located on the roof.

4.15 SKYLIGHTS AND VENTILATORS

Roof mounted skylights and ventilators should, where possible, be placed on the roof plane least visible from the road and adjoining dwellings and should not project at any point above the roof ridge line.

Skylights (with the exception of light transmitting sections) and Ventilators should

be painted to match the roof colour and be unobtrusive and appropriate in size for the use and location.

Generally, the wind powered variety of ventilators will not be approved due to their relatively large size, difficulty in painting and the height at which they are required to be installed to operate efficiently.

4.16 SECURITY ALARMS

Security devices are permitted on the basis that they do not detract from the design intent or integrity of the dwelling or neighbourhood.

Security devices such as sirens, strobe or flashing lights should be the minimum size necessary and located as unobtrusively as feasible and programmed so as not to cause undue adverse affect to neighbouring property owners.

4.17 SECURITY DOORS AND WINDOWS

Approval for the installation of any security doors or windows, must be obtained from the Review Committee. In considering your application the Review Committee will have regard to the following guidelines:

(a) security doors must be finished in a colour complimentary to the dwelling;

(b) sliding security doors must match the full size of the existing glass door they secure and must not detract from or dominate the existing door;

(c) security bars on windows should be installed on the inside of and for the full size of the window and painted a colour to blend with the background.

(d) under no circumstances will metal "block out" shutters be considered.

4.18 EXTERNAL SCREENS

The construction of external light framed screening such as trellises and simple pergolas for visual privacy is generally permitted and encouraged, according to the following guidelines:

* the screen should harmonise and integrate with the architectural style and treatment of the residence;

* the screen should be appropriate to the design and scale of the residence; and

* the screen must be physically and visually attached to the residence.

4.19 SIGNAGE

No signs are permitted to be erected in the Estate without the express written permission of the Original Developer while ever the Original Developer is the proprietor of any lots in the Estates. Signs, hoardings and advertising (whether for product, services or businesses) will not be permitted on any residential allotment, after the last lot in the Estate has been sold by the Original Developer, without the permission of the Review Committee with the exception of signage connected with any exhibition homes erected in any precinct.

Signage advertising the resale of vacant land, or house and land packages, sale or lease of community facilities or property, may not be erected on any allotments without the prior written consent of the Original Developer for so long as the Original Developer is engaged in developing any land in Myall Quays.

Temporary signage advertising the sale or rental of a dwelling may be approved by the Original Developer provided that the application is for no more than one sign and the sign measures no larger than 900mm x 600mm. This sign must be removed immediately upon the transaction being completed.

4.20 COLOURS

Approval to re-apply existing colours, utilising the same or similar specification paint, is not required.

Approval to vary the colour or type of paint previously approved will be required to be granted by the Community Association, such approval not to be unreasonably withheld. However, each proposal will be considered on its merits and will take account of the fact that the proposed colours and materials must be within the colour palette appropriate to the neighbourhood.

Any application to vary the existing or approved schemes should include:

* Sample chips or cards indicating the proposed new colours, and those to be retained.

* A clear and concise schedule of the repainting proposal.

* Colour photographs clearly showing the existing remaining colours.

* A specification of the material to be used.

5 ENERGY EFFICIENCY

Residents in Myall Quays are encouraged to give consideration to energy efficiency during the design stage of their residence. There are a number of publications available through the Energy Information Centre 18 Hickson Road, The Rocks, Sydney (02) 247.1144 which provides comprehensive and practical information. In particular this centre can provide literature which discusses how to maximise building design for energy efficiency, including climate factors, site location, landscaping, layout and construction methods. The benefits of energy efficient design are year round comfort, low energy bills and homes that do not require air conditioning.

Some specific features to be considered in designing an energy efficient residence are:-

* Windows in the largest daytime living area of the house should where possible face north.

* Window sizes should follow guidelines which depend on their orientation, the location of the house, glass type, shading and the amount of thermal mass (heavy building materials) used inside the building. The thermal mass depends upon the type of walls and floor used.

* Dwellings should have adequate ceiling and wall insulation, with a suitable R-value.

* Fixed ventilation and air leakage characteristics should not exceed given levels.

Design techniques or passive systems are an integral part of any energy efficient design, which will allow the energy from the sun to heat the residence in the winter months.

The five basic principles of passive solar design which should be considered are:-

1. Mass - amount of concrete or brick used.

2. Orientation - maximum benefits at 90° true north

3. Insulation - the thermal performance of the building.

4. Co-operation - environmentally sympathetic materials & colours.

5. Breeze ways and landscaping - spatial design to promote breezes and provide areas which can be closed off during winter.

5.1 FIVE STAR DESIGN RATING - HOW IT WORKS

The C.S.I.R.O. Division of Building Research have developed a Five Star Design Rating award. The award indicates a standard of excellence in home design and construction and is awarded by the National G.M.I. Council based on the recommendation of the examining body, the Office of Energy in New South Wales.

In a Five Star home the principles of energy efficiency as developed by the C.S.I.R.O. Division of Building Research are incorporated to provide real benefits. Homes are cooler in summer and warmer in winter, but without high energy consumption. By the planned use of insulation, glass, building materials and special design features, the best use of the local climate can be achieved.

Winter sun entering a Five Star home brings valuable warmth plus brightness to the interior. At the same time summer sun is excluded, thus greatly reducing unwanted heat.

The zoning of Five Star homes allows areas of the home to be used for different purposes, without interference. Since most Five Star homes feature sound proofing masonry walls around the living area, the children can sleep while their parents entertain.

5.2 FIVE STAR DESIGN RATING - AESTHETICS

The Five Star Design Rating was developed to allow for the practical and inexpensive use of energy efficiency principles in houses whilst ensuring that these homes retained aesthetics that made them attractive to home buyers.

Homes that meet Five Star Design Rating standards normally use traditional construction methods and can be designed in a variety of styles.

5.3 FIVE STAR DESIGN RATING - FEATURES WHICH MAKE IT UNIQUE

The design principles of Five Star Design Rates homes are elegantly simple. Three basic elements; glass, mass and insulation are used to ensure levels of comfort, value and energy efficiency in the home. This means that most methods of construction can be used to achieve the Five Star Design Rating.

The importance of each element varies from place to place. Good home design uses a proper balance of glass, mass and insulation that suits local climatic conditions and helps achieve superior energy efficiency and comfort.

Glass

Windows are sized and situated to make the most of solar energy and light collection and to control heat loss and gain.

Mass

Heavy building elements inside the home, such as brick walls and concrete floors, play an important role in moderating temperatures, thus maintaining comfortable air temperatures in all seasons.

Insulation

The correct use of insulation reduces unwanted heat flows all year round. The Five Star Design Rating is the home buyer's assurance that the walls and ceilings contain appropriate levels of insulation.

Room Orientation

The temperatures throughout a house vary due to differing amounts of exposure to the elements. The north side of a house tends to be warmer in winter because of greater exposure to direct sun, but can be easily shaded in summer by horizontal shading devices such as wide eaves, pergolas, verandahs or awnings.

West facing rooms tend to be cooler in winter, but can be hot on summer afternoons. East facing rooms receive morning sun in winter, and they tend to heat up quickly on summer mornings. East and west windows are more difficult to protect from the summer sun as the summer sun is much lower in the sky.

South facing rooms tend to be cold in winter as they receive no direct sun and often face prevailing winds. However, they are cool in summer even though they may receive some early morning or late afternoon sun.

5.4 QUESTIONS AND ANSWERS

How does the Five Star Design Rating take advantage of room orientation?

Locating the main daytime living areas (including the kitchen) to the north keeps these rooms warm in winter, but these rooms will in turn require protection from the summer sun simple shading. Other living areas used less often might face north, south or east in areas with long, hot summers. These areas which are away from the sun's heat and the heat produced by cooking activities, provide a cool haven on summer afternoons and evenings.

If the living areas of a home cannot be orientated to face due north, can a Five Star Design Rating still be obtained?

Under the Five Star Design Rating Scheme all living areas of a home should be oriented between 30° east of true north and 20° west of true north.

What are the criteria for the Five Star Design Rating?

The criteria for the Five Star Design Rating are a balance of energy efficiency and comfort with practical design and construction requirements. Five Star Homes are comfortable all year round, have low energy bills and don't need air conditioning. The Five Star Design Rating criteria are designed to make this possible at a minimum additional cost.

The following features contribute to a Five Star Award Rating:

* Windows in the largest daytime living area of the house must face a northerly direction.

* Window sizes must follow guidelines which depend on their orientation, the location of the house, glass type, shading and the amount of thermal mass (heavy building materials) used inside the building. The thermal mass depends upon the type of walls and floor used.

* Windows must have adequate shading devices and internal coverings, depending on their orientation.

* Houses must have adequate ceiling and wall insulation, with an R-value suitable for the location.

- Fixed ventilation and air leakage characteristics must not exceed given levels.

How can a Five Star Design Rating appraisal be obtained?

There are essentially two ways:

Approved Design Rating:

House designs can be appraised at drawing board stage and be given an "Approved Design Rating". This means that any home can be designed to meet the Five Star Standard of Performance.

Houses Of Approved Design:

Homes do not automatically receive the Five Star Design Rating when they are built to an approved design. Before final Ratings are issued, inspections are carried out by the examining body to ensure homes meet Five Star Standards.

Can all types of construction qualify for a Five Star Design Rating?

Yes, with appropriate design, orientation and insulation, all conventional forms of construction can be used in a Five Star home. The Five Star Design Rating is more easily achieved in some forms of construction than others, and the local climate will greatly influence this, thus before a house or design receives a Five Star Design Rating, the location of the home must be known.

Notwithstanding the wide variety of materials that can be used, research carried out by the C.S.I.R.O. Division of Building Research has shown the importance of introducing thermal mass into buildings to stabilise air temperatures, particularly in the summer.

Is full brick construction necessary to meet Five Star Design Rating criteria?

Full brick construction provides the optimum in energy efficiency and thermal comfort because it provides the highest level of thermal mass of the various types of construction. However, The National G.M.I Council has developed the concept of Masonry Core construction to enable brick veneer houses to have sufficient thermal mass to achieve the performance needed for the Five Star Design Rating. Masonry core construction (which is where some of the internal walls are made of masonry) and the selective use of hard floor coverings allows the designer flexibility on how much mass to provide inside a Five Star home.

How much extra does a Five Star home cost?

The Five Star Design principles make it possible to build energy efficient homes at little extra cost when compared to other homes. For many builders, their standards of construction already exceed the minimum Five Star Design Rating requirements, and the only new aspects are often design considerations and the use of wall and ceiling insulation. Five Star home owners save considerably on energy bills as their heating and cooling requirements will be much smaller. This adds up to big savings, year after year.

Will a Five Star Design Rating add to the resale value of a home?

Yes. The Five Star Design Rating is a major selling point that guarantees the potential buyer that your house offers superior comfort, value and efficiency.

In the USA, homes with the "Thermal Crafted" endorsement have 9% higher resale values than other houses of equal size, according to the National Association of Realtors. Similarly, Five Star homes in Australia are expected to bring higher resale prices.

How much money will be saved on energy bills in a Five Star Rated home?

Five Star Homes require less heating and don't need air conditioning. It is difficult to state precisely the level of energy savings that will be achieved in practice. However, comparisons can be made between the energy consumption and bills of Five Star and non-Five Star homes to achieve the same standards of comfort. Savings of up to 89-90% should be possible on combined heating and cooling costs.

Since much less heating or cooling is required, much less capacity is also required from heating and cooling appliances in a Five Star home. This could be expected to reduce the installed costs and maintenance costs of the appliances by around 50%. However, because the accuracy of these calculations depends on many factors no guarantee can be given as to the actual cost savings which can be achieved with a Five Star home.

Where is more information obtained from to assist with house design?

A technical design advisory service is available. Contact the Energy Information Centre for more information. Their address is 18 Hickson Road, The Rocks, Sydney (Phone (02) 247.1144).

5.5 ENERGY CONSERVATION.

The Energy Information Centre offers a wide range of services to the public on such matters as:-

* Saving energy in the home.
* Energy efficient building.
* Appraisal of building plans for energy efficiency.
* Five Star Design Rating appraisals of new homes.
* Insulation.
* Home heating and cooling.
* Water heating.
* Buying energy efficient appliances.
* Using solar energy
* Electrical safety
* Energy and the Environment

6. WATER CONSERVATION

As the cost of reticulated water is likely to continue to escalate under the now widely accepted user pay principle, it is important that all owners incorporate as many water saving devices as possible into their home and garden landscaping.

If careful thought is given to water saving devices at the design and building stage, substantial cost savings will accrue to owners over the years ahead.

With these potential savings in mind, owners should:

* Incorporate water conservation planning into the design of the internal plumbing systems within their home;

* Seek out water minimising appliances and devices, including shower heads, dishwashing machines, clothes washing machines, tapware and water closets;

* Install clothes washing machines that feature suds saving cycles;

* Consider the most efficient size of baths, shower baths, sinks and basins to reduce waste;

* Use modern pipe materials and jointing methods to minimise breakages and leakages in any water supply pipework installed in the garden or house;

* Avoid the use of inefficient or wasteful appliances such as insinkerators and other water using waste disposal units, hot water storage systems that overheat and small capacity undersink instantaneous hot water boiling units.

7. LANDSCAPE CONSIDERATIONS

PRIVATE ZONES AROUND THE HOUSE

Several zones can be identified around the house,

* Entry courts
* Outdoor rooms (Rear yards)
* Service yards and
* Interface zones to a waterway or open space

Each can be used as part of a sequence for the user, which leads and builds toward a climax i.e. the entry point to the house or specific use zones around the building such as outdoor entertainment areas.

Entry Courts

As part of this sequence, plant materials can play a major role by increasing colour and detail from common street areas toward house entry points, creating a sequence through the landscape, and heightening the experience of the architecture and entry. This approach will also provide a basis for selection of hard landscape materials, i.e. driveways and pathways.

Plant materials should be selected on the basis of space available with an emphasis on contrasting foliage size, colour and texture. They should relate to plantings in the street and park landscaping but in no way be restricted to this selection only. Diversity around each home is important to the overall streetscape.

Classified weed species such as Lantana and Privet are not permitted.

Outdoor Rooms (Rear yards)

Rear yards must be well maintained and kept in a tidy state particularly when they can be viewed from any waterway, golf course or park. Rear yard plantings and surface treatments should thus draw from the informality of the surrounding bush while closer to the home there can be more structure and introduced order.

In considering a design for these areas, retention of views out from the house to any waterway or other open space coupled with provision for a measure of privacy to the user is highly desirable. Shrub planting to 1200mm high and small to medium sized trees should be included in the rear yards to maintain privacy to user areas and at the same time allowing exposure of the architecture of the

home to the waterways or other open space. The use of medium to large shrubs, i.e. 2-4m should be kept to a minimum.

The inclusion of family structures such as cubby-houses, trampolines, swing sets etc. should be thoughtfully and carefully planned into the structure of the gardens. These elements must be screened from views so as not to detract from the overall concept.

Service Yards

It is suggested that all clothes lines, air conditioning compressors, garden maintenance equipment, compost bins, vegetable gardens, pet enclosures and the like are located in a screened Service Yard. Initial screening must be structural, i.e. lattice panelling or masonry walling, which can be softened over time by the introduction of shrubbery or climbing plant material.

Interface Zone to a Waterway or Open Space

Any existing or newly planted vegetation beyond the boundary line can play an important role in the relationship between house lot and surrounding areas and must not be interfered with by the individual home owner.

Stands of endemic Melaleuca and Eucalyptus species may be maintained in the interface zone between property boundary and any waterway or area of open space by the Community Association to promote a naturalistic setting. Planting of this vegetation would generally be limited to areas of the Community property in the vicinity of the side boundary of any property so as not to impact on views out from homes adjoining any waterway or area of open space.

Removal of Plant Materials

Permission must be sought prior to removal of any significant vegetation from the site, i.e. trees with calliper diameter of greater than 200mm. Removal of any trees, (or damage thereto), without permission from Great Lakes Council may result in severe penalties.

SITE ELEMENTS

Hard elements in the landscape such as walls, fences, decks and structures play an important role in the character development of the estate. In the outdoor room to the rear they can also impact significantly on the views of the home from

any adjoining Community property. It is therefore important to control the impact of these elements for the benefit of the whole community. The following sections outline the control and the intention behind the control.

Decks and Terraces

To avoid the potential for unsightly storage areas which inevitably result under timber decks, level areas outside the home used for formal or informal entertainment shall be constructed in pavement or for situations up to 1m off natural ground, timber decking with masonry walls to the perimeter of the deck.

Walling pertaining to these areas shall be constructed from rendered brickwork or materials to match the detailing of the particular house concerned.

Garden Structures

The Committee does not encourage ornamental structures such as arbours and gazebos with fussy detailing. Functional structures such as pergolas, (either attached to or detached from the house) are permissible but should be detailed sympathetically to the architecture.

Suitably sized timber members shall be used to reflect permanence and solidity, for example, posts should be a minimum 100mm x 100mm.

Side Fences

Side boundary fences are to be located no further forward than one metre back from the front of the dwelling and 5m from the rear boundary. Permissible materials are lapped and capped (C.C.A.) treated, timber palings, bagged and painted brick or brushwood or any other material approved by the Review Committee.

To assist Koalas that frequent the area to travel safely throughout the Estate each proprietor/owner shall immediately upon the erection of any fence of a height above 0.8 metres fully enclosing any part of any lot, fit securely to the inside of any side fence in an upright position, square lattice panels no less than 1.5 metres x 1.5 metres in size, the spacing of which shall not be less than 10 metres apart around the perimeter of the fence.

Fences Abutting any Waterway or Proposed Waterway

From the waterway it is important that solid fences do not dominate the yard space of the property and all fencing is consistent with the desired character of the Estate. If any fence is required to be constructed on any property facing any waterway or proposed waterway, permissible materials are powder coated aluminium "looped" pool fencing of a height not in excess of 1.2 m of a colour designed to tone in with the colour of the external walls of the home. No fence across a property abutting a waterway or proposed waterway is permitted to be erected closer than five (5) metres from that boundary.

Solid Colorbond fencing is not permitted.

Where allotments are adjacent to public walkways or public open space (Community or Neighbourhood Property) and fencing has been previously provided, the materials and construction of the fence cannot be altered except with the approval of the Community Association.

Front Fences

Residents will be permitted to erect a front fence parallel with the street fronting their property provided this fence is set back 1.0m from the front property boundary. All front fences will be subject to the approval of the Review Committee and residents will be encouraged to plant hedges on the side of the fence facing the street.

Fences constructed forward of a dwelling must not exceed 800mm in height and must extend down each side boundary to adjoin the side boundary fence which shall be located 1m back from the front of the respective building alignment.

Swimming Pools

The Committee encourages swimming pools to be sited in the back garden or on the sunniest side of the house. If for reasons of orientation a pool is required on the street side of the house it should be integrated into the design of the house so that the pool is within a walled courtyard or a glazed conservatory or located in some other fashion so it is not visible from the street.

Care should be taken in the siting of the pool so that the rear garden is not fragmented by fences – ideally the pool should be located adjacent to the house as an outdoor space leading from the house – possibly to one side so that a landscaped garden can extend to the rear of the property.

Pool equipment housing shall be sited discreetly and its housing detailed to relate to the house architecturally. Pool surrounds shall be stone, terracotta tile, or brick to match pavements used around the house. Pebblecrete and untreated concrete finishes will not be permitted.

Each design will be subject to the approval of the Review Committee. However certain preferred guidelines include:

* Generally pools are to be sited in the rear garden.

* Where lots face north and it is appropriate to locate the pool in the front yard the pool must be screened from the street with a brick fence of an approved design 1500 mm high and such fence shall not be forward of the designated building alignment.

* "Above ground" or "inflatable bubble" pools are not permissible.

* Glass enclosures are not permissible unless the enclosure forms part of the house.

* All pools are to be fenced in accordance with Council's requirements.

* Adequate provision is to be made for housing pool equipment and accessories and appropriate noise elimination measures must be taken.

* An approved ladder to enable a Koala to escape from the pool must be fitted permanently to the pool.

Tennis Courts!

As tennis courts will be provided within future stages of the estate, no private tennis courts will be permitted. This will also ensure that no lights and sounds from private courts will disturb the neighbourhood.

PLANTING APPROACH

Planting Plans

The Review Committee would prefer a Landscape / Planting Plan for each new home to be presented prior to commencing construction, and written approval of all landscaping work must be obtained from the Review Committee. Preferably all work should be completed before occupation of the dwelling. The

Landscaping should be designed to complement and draw from elements expressed in the streetscape landscaping.

Massing of quantities of appropriate materials to achieve colour and textural interest should be used in preference to a few plants of many species. Such an approach will create a unified garden setting which over time can increase in diversity as the structure establishes itself and niches are found for other detail plant materials.

It is useful to consider the garden as a painting with splashes of greens and colour.

Plant Materials

Ultimate sizes of plant materials should be considered when selecting and positioning materials on plan. Trees selected for front yards are not to exceed 10m in height so as not to overpower trees in the streetscape.

Particular attention should be paid to soil conditions when selecting plant materials.

A detailed list of appropriate trees and shrubs together with a maintenance schedule may be obtained from the Review Committee.

Boat Ramps

As boat ramps will be provided within future stages of the estate, no private boat ramps will be permitted. This will also ensure that no lights and sounds from private ramps will disturb the neighbourhood

Jetties and Pontoons

Refer to Community Management Statement and/or Neighbourhood Management Statement.

INTERPRETATIONS AND EXAMPLES

The purpose of this document is to provide clarification of the Architectural & Review Committee's direction in terms of the architectural theme of homes in the Myall Quays Estate in Tea Gardens. (See Section 4, P.10 in the Myall Quays Estates – Architectural & Landscape Design Guidelines).

The Architectural & Review Committee wishes to clarify terms and illustrate acceptable design criteria in terms of massing, roof pitch style, siting and setbacks for homes as detailed in the Architectural & Landscape Design Guidelines.

MASSING (4.(i))

Two storey homes should be a collection of forms, not a mass or block style.

For unacceptable design – (refer "A Block of Mass" Illustration 1)

For acceptable/encouraged design – (refer "A Collection of Forms" Illustration 2)

TWO STOREY HOMES

- No two storey home is to have an unbroken gutter/fascia line the width of the home to the rear of the home, which faces any waterway or reserve (refer Illustration 1 for unacceptable design, and Illustration 3 for acceptable/encouraged design)

- No two storey home is to have a continuous gutter/fascia line on the upper level greater than 8 metres in any length. This could be broken up by the use of gables or preferably projections of parts of the roof (refer Illustration 2 for acceptable/encouraged design).

- The "insetting" of upper levels of homes is encouraged to create a collection of forms (refer Illustration "3").

ROOF PITCH

A roof pitch of a minimum of 30 degrees is the standard acceptable roof pitch for construction in Myall Quays.

Any variation or request for a reduction of the pitch of the roof will be considered only when the home design has any roof truss length exceeding 14 metres. In such a design the Architectural and Review Committee will consider a reduction of roof pitch based off elevations and/or perspective drawings that may need to be supplied with any such request. No home plans will be approved with a roof pitch less than 26 degrees.

ROUND ROOFS

Home designs with a rounded main roof will be considered for approval.
However such approval will be at the sole discretion of the Review Committee, and may require the owner to supply elevations and perspective drawings.

MINIMUM SETBACKS – TWO STOREY HOMES

Where the upper level of any two storey home is inset from the lower wall, the upper level walls must be a minimum of 3 metres from the side boundary. In this case, lower level walls may be as close as 1.3 metres to the side boundary (refer Illustration 5(a)).

Where there is a two storey high wall facing any side boundary, that part of the dwelling must be at least 3 metres from the side boundary of the lot. This is to enhance the light to, and privacy of. adjoining owners (refer Illustration 5(b)).

Two storey homes can only be erected closer than 3 metres from the side boundary of the lot when the upper level of the home is setback a minimum of 3 metres from that boundary (refer Illustration 5(b))

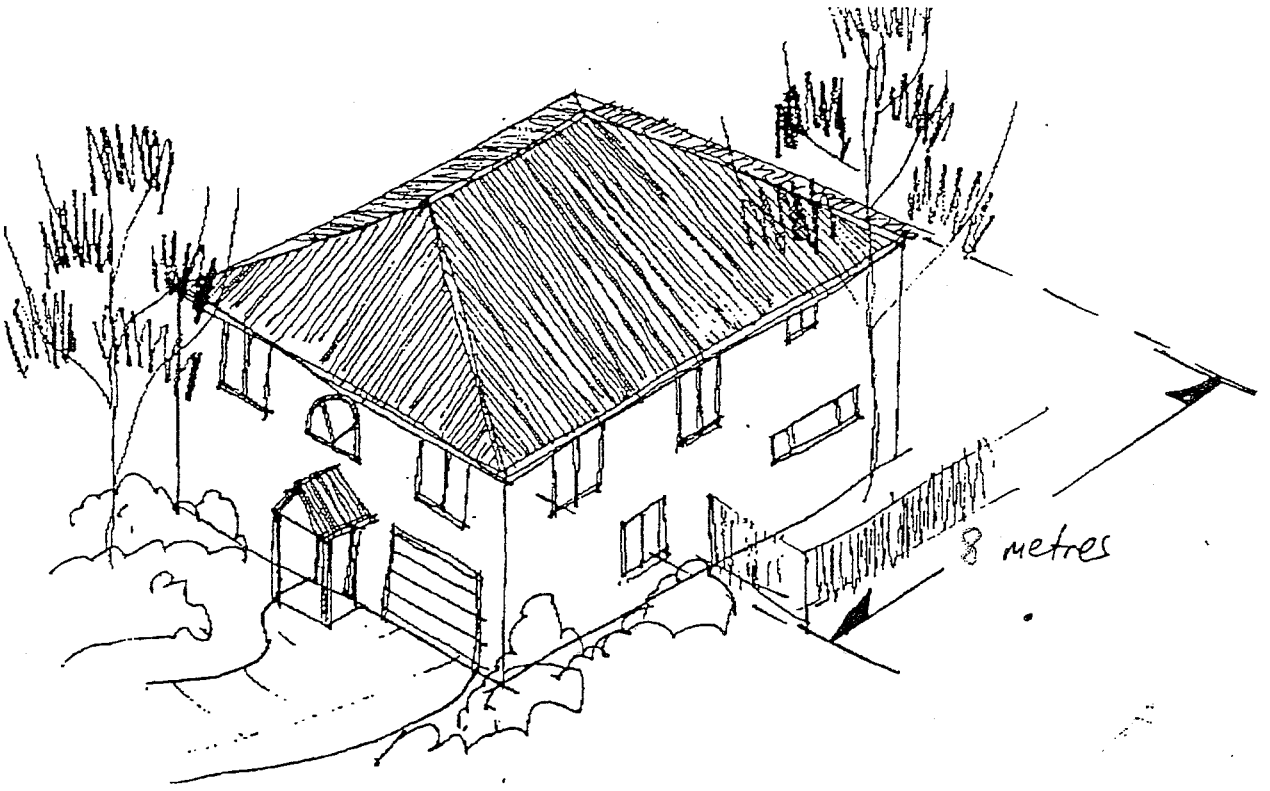


ILLUSTRATION 1.

"A BLOCK OF MASS"
(Unacceptable Design)

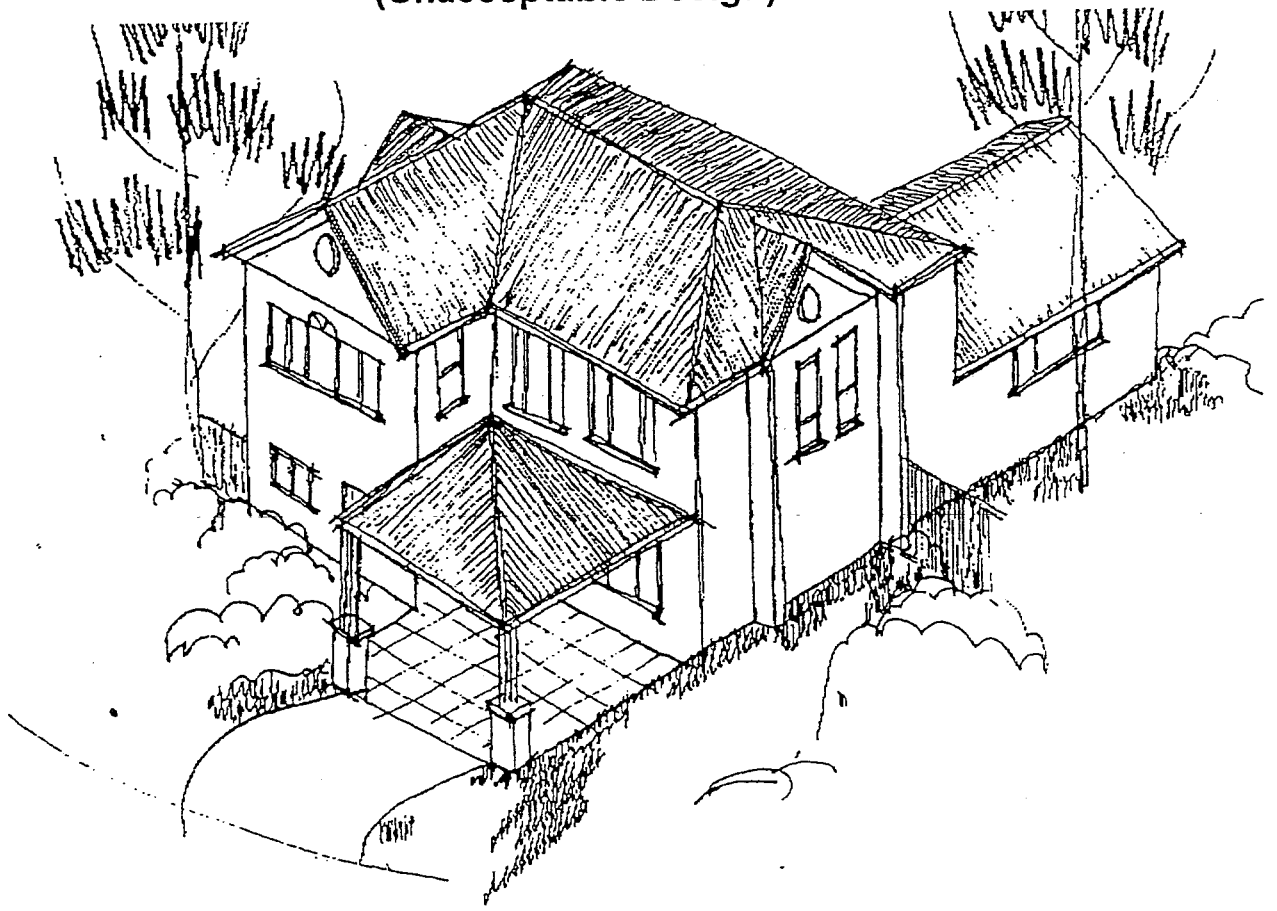


ILLUSTRATION 2.

"A COLLECTION OF FORMS"
(Acceptable/Encouraged Design)

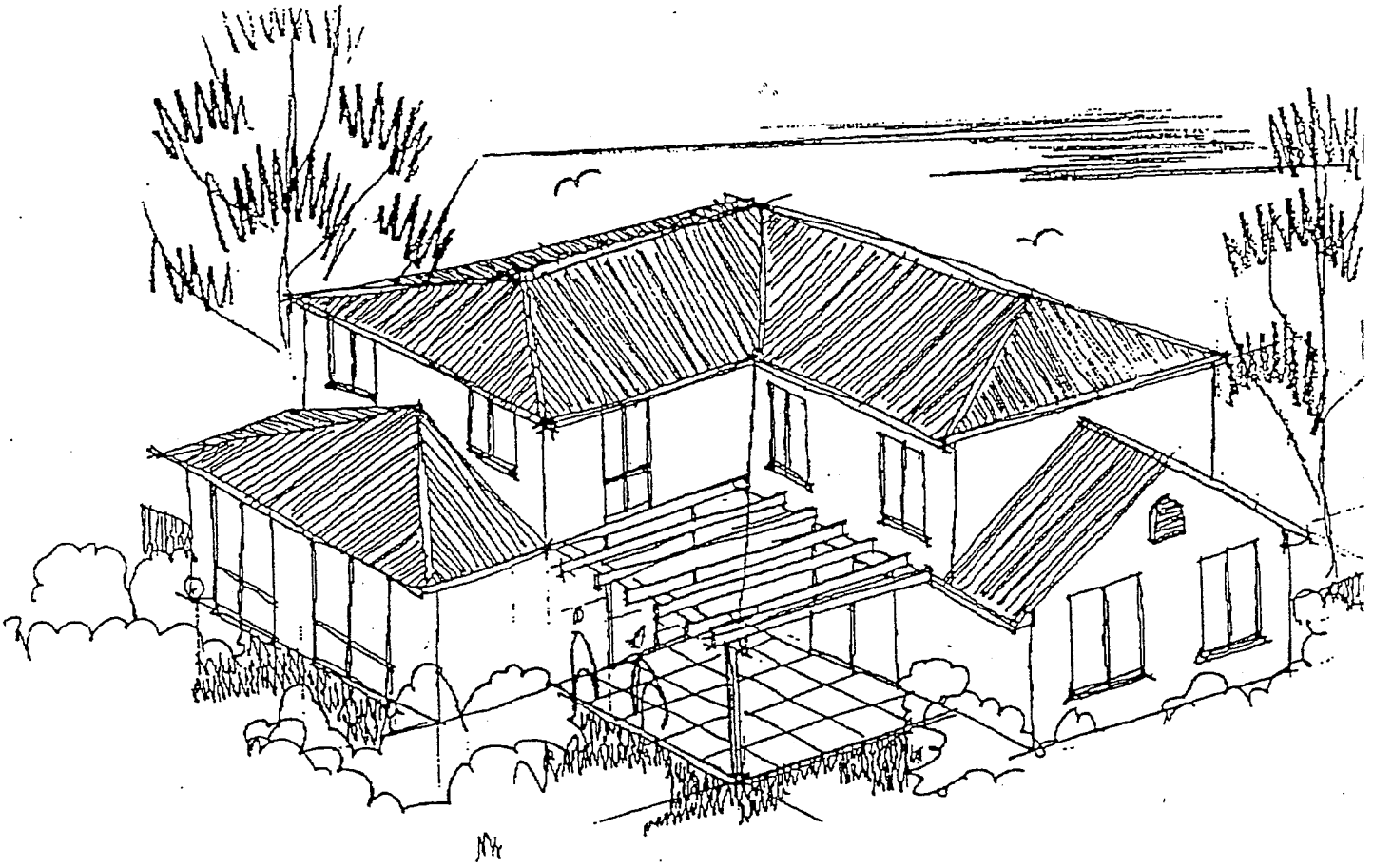


ILLUSTRATION 3

"A COLLECTION OF FORMS"
(Insetting of Upper Levels Encouraged)

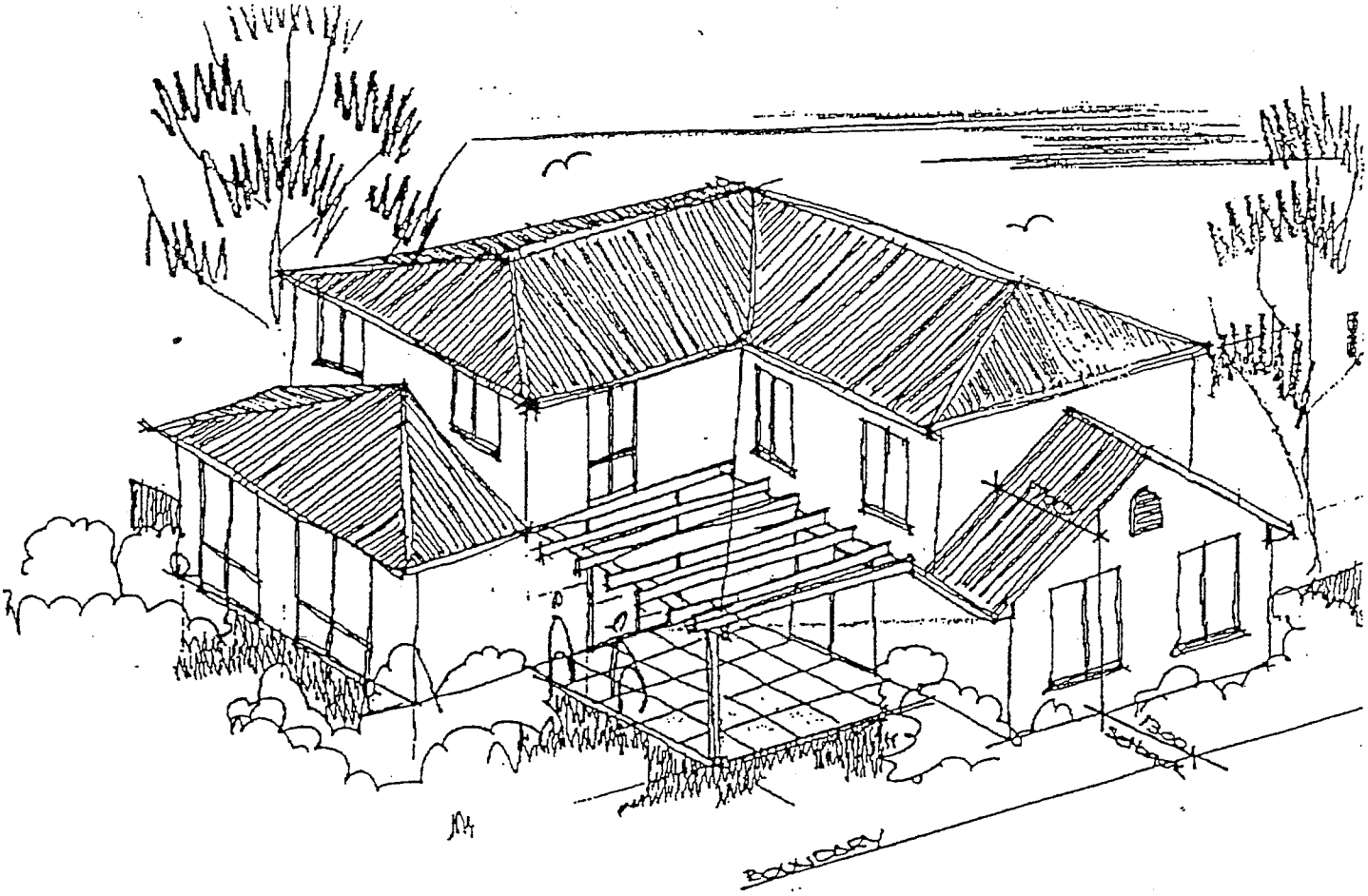


ILLUSTRATION 5(a)

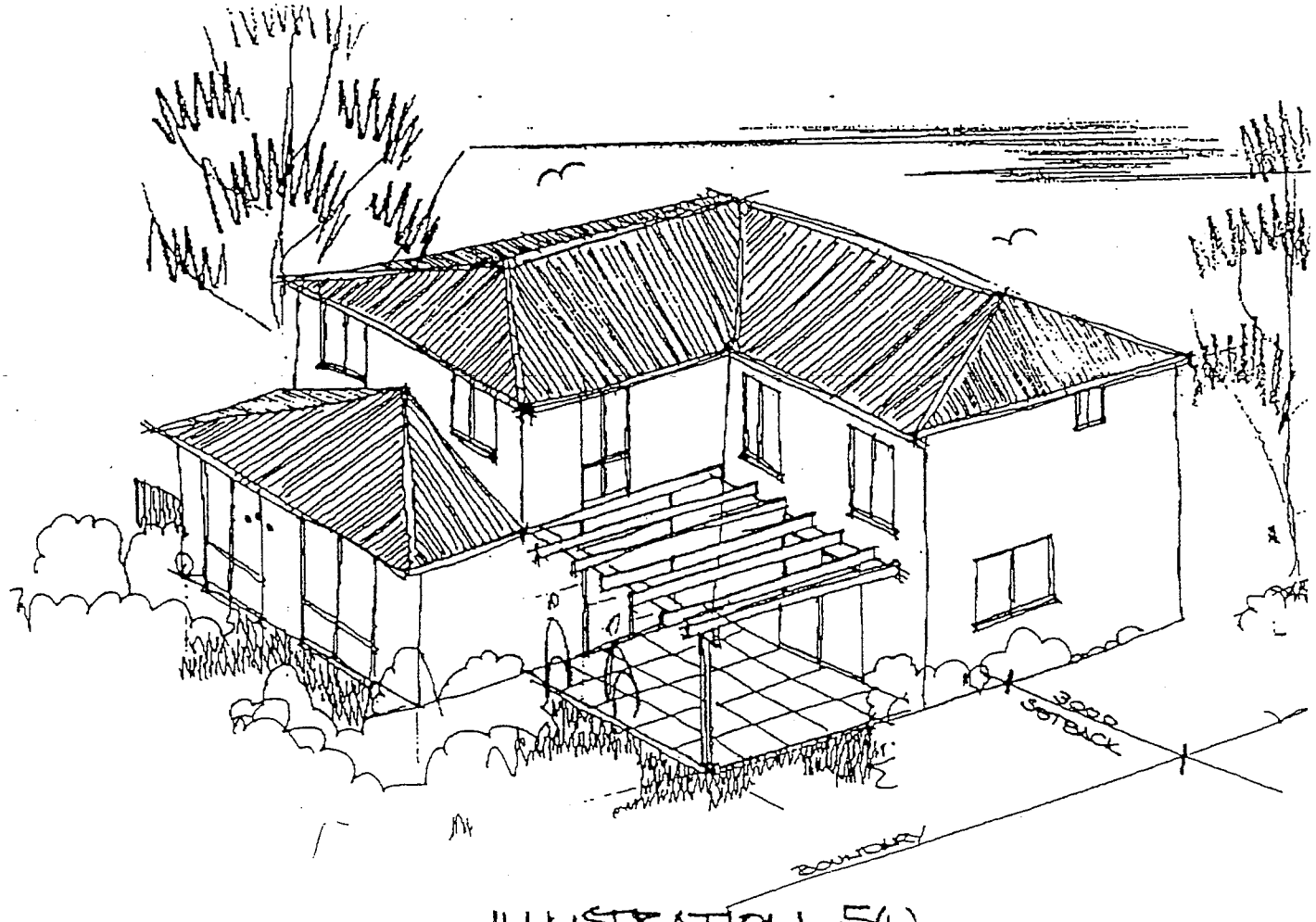


ILLUSTRATION 5(b)

Volume 3C: Landscape Design Report and Detailed Design Manual



Landscape Design Report and Detail Design Manual

RIVERSIDE, TEA GARDENS

Andrews.Neil

Job No.: 07077
Date: **October 07**

CRIGHTON PROPERTIES

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1.0 Introduction

Riverside at Tea Gardens will provide an attractive and convenient neighbourhood which is linked by a series of open space corridors, pedestrian/cyclepaths and waterways. The neighbourhood precincts are focused around Public open space areas that also contain clubhouses with private recreation facilities such as tennis courts.

The streetscapes have been designed to maximize connectivity and aesthetics through the provision of street tree planting, off road cycleways, viewing decks and platforms for access to the waters edge, pedestrian thresholds, visitor parking and street furniture. The landscape design treatment for the public domain is intended to reflect the high quality of living and lifestyle that the coastal environment of Tea Gardens has to offer.

The Landscape Design Report will outline the design intent for the public domain landscaping including; species list, materials and finishes and general design principles.

2.0 Project Description



Masterplan

Concept Plan		
Lot Size Range	**Approx No. Dwellings**	**% of Total**
Multiple Dwellings <450m²/DW	96 approx.	16%
<450m²/DW	27 approx.	4.5%
450-550m²/DW	113 approx.	18.9%
550-650m²/DW	239 approx.	39.9%
>650m²/DW	124 approx.	20.7%
Total lots	**599**	**100%**
Tourist lodges	**50**	**NA**
Town houses	**15**	**NA**
+Project Application	**381**	
OVERALL TOTAL	**980/65**	
YIELD	**980/75.4 Ha**	**13 DW/Ha**

Note: *yield not inclusive of tourist lodges or town houses*

3.0 Design Intent

The design intent is to compliment the coastal environment and create a “soft edged” landscape that minimises long term maintenance and maximise access to open space areas and waterways. The use of long lasting species and robust materials tolerant of the marine environment will be recommended with a focus on simple and high quality finishes.

The Design intent for;

- Open Space Corridors
- Streetscapes
- Foreshore/Edge Treatments
- Pedestrian/Cycleway Network

is outlined below;

3.1 Open Space Corridors

The open space corridors have been designed as multi-function corridors that address drainage water treatment, pedestrian/cycle access, recreation and amenity. The corridors have been designed with the following principles;

- Maximise accessibility through the use of “soft engineering” principles, the use of batters and ramps in lieu of retaining walls to provide logical pedestrian connections. In addition a series of small bridges will be provided where crossing of drainage lines is required.

- Maximise passive surveillance through selective planting of shrubs and a focus on the use of groundcovers and clean trunked canopy trees. In addition to sensitive landscaping the use of pedestrian lighting will be incorporated where appropriate.

- Provide for drainage requirements during high flow events through the inclusion of a defined channel which will be planted with species that tolerate periodic inundation.

- Provide for separation of the private recreation and club facilities through subtle landscape solutions that integrate with the public domain landscaping.

Recommended Planting List

TREES:

Acmena smithii (Lilly Pilly)

Allocasuarina torulosa (Forest Oak)

Brachychiton acerifolius (Illawarra Flame Tree)

Casuarina glauca (Swamp Oak)

Corymbia maculata (Spotted Gum)

Eucalyptus robusta (Swamp Mahogany)

Leptospermum laevigatum (Coastal Teatree)

Melaleuca quinquenervia (Broad Leafed Paperbark)

Syzygium paniculatum (Magenta Lilly Pilly)

SHRUBS:

Acacia myrtifolia (Red-stemmed Wattle)

Banksia ericifolia (Heath-leaved Banksia)

Banksia spinulosa (Hairpin Banksia)

Callistemon citrinus (Crimson Bottlebrush)

Dodonaea triquetra (Large-leaf Hop-bush)

Leptospermum polygalifolium (Tantoon)

Melaleuca thymifolia (Thyme Honey Myrtle)

Persoonia linearis (Narrow-leaved Geebung)

Pimelea linifolia (Slender Rice Flower)

Pittosporum revolutum (Rough Fruit Pittosporum)

Westringia fruticosa (Coastal Rosemary)

GROUNDCOVERS/GRASSES:

Clematis aristata (Old Man's Beard)

Dianella caerulea (Blue Flax Lilly)

Hardenbergia violacea (False Sarsaparilla)

Isolepis nodosa (Knobby Club-rush)

Juncus usitatus (Common Rush)

Lomandra longifolia (Spiny-headed Mat-rush)

Poa labillardieri 'Eskdale'

Pennisetum alopecuroides 'Nafray'

Themeda australis (Kangaroo Grass)

3.2 Streetscapes

Streetscapes have been designed to allow landscaping to provide separation between the dwelling and public domain. The key components of the streetscape elements are described below;

- Street trees have been selected to reflect the road hierarchys and the orientation to maximise solar access.
- Street types and their recommended street trees are indicated below.
- The treatment of verges may vary to include turf or mass planting.
- Footpaths will be of a uniform colour in exposed aggregate concrete finish or within the following colour range:



'Oyster' as supplied by Concrete Colour Systems



'Gecko' as supplied by Concrete Colour Systems



'Ghost Gum' as supplied by Concrete Colour Systems



Exposed aggregate finish



Exposed aggregate finish

Recommended Street Tree List



Angophora costata (Sydney Red Gum)

Mature height (m): 12H x 8W

- Deep wine red new foliage
- Pink/gray bark turning bright orange/brown
- Clusters of white flowers



Bauhinia purpurea (Orchid Tree)

Mature height (m): 7H x 5W

- Rich magenta flowers
- Bright green glossy leaves





Corymbia maculata (Spotted Gum)

Mature height (m): 15H x 8W

- Feature mottled bark
- Fragrant white flower clusters
- Dark green leaves



Cupaniopsis anacardioides (Tuckeroo)

Mature height (m): 8H x 5W

- Dense glossy foliage.
- Spreading canopy
- Orange fruit



Elaeocarpus eumundii (Quandong)

Mature height (m): 6H x 4W

- Evergreen tree
- Dense glossy foliage
- Deep bronze to burgundy new growth



Eucalyptus robusta (Swamp Mahogany)

Mature height (m): 15H x 8W

- Dense spreading canopy
- Red brown bark
- Dark green leaves

Recommended Street Tree List



Ficus microcarpa var. hillii (Hill's Weeping Fig)

Mature height (m): 15H x 10W

- Smooth trunk
- Green glossy leaves
- Excellent shade tree



Lophostemon confertus (Brush Box)

Mature height (m): 15H x 12W

- Pink/brown peeling bark
- Dark green glossy leaves
- White flowers



Melaleuca quinquenervia (Broad Leafed Paperbark)

Mature height (m): 8H x 5W

- Creamy/papery bark
- Cream flower spikes
- Drooping needle like leaves



Podocarpu elatus (Plum Pine)

Mature height (m): 10H x 6W

- Deep green leathery leaves
- Dense branching habit
- Blue/black fruit



Waterhousia floribunda (Weeping Lillypilly)

Mature height (m): 8H x 5W

- Weeping foliage
- Glossy green leaves



Lagerstroemia indica (Crepe Myrtle)

Mature height (m): 6H x 5W

- Deciduous tree
- Attractive smooth mottled trunk
- Heavily ruffled flowers



Pyrus calleryana (Flowering Pear)

Mature height (m): 10H x 6W

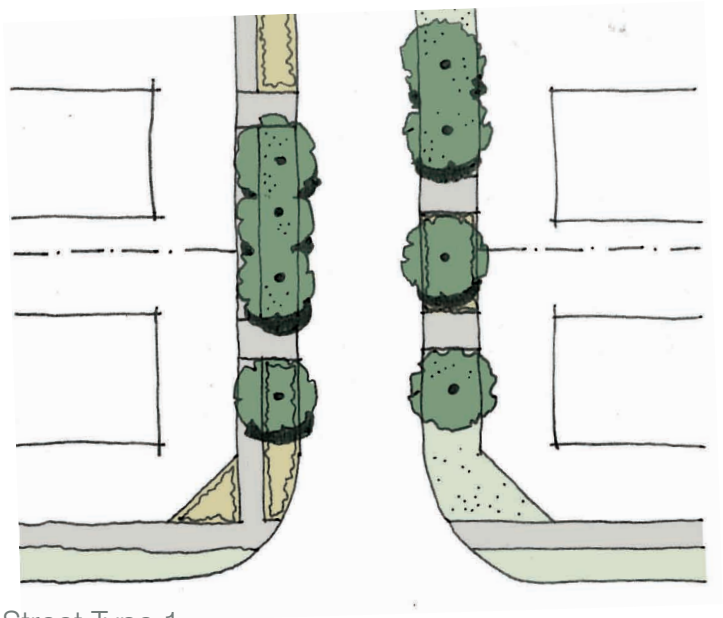
- Ornamental deciduous tree
- Deep green leaves
- Masses of white blossoms



Sapium sebiferum (Chinese Tallowood)

Mature height (m): 8H x 6W

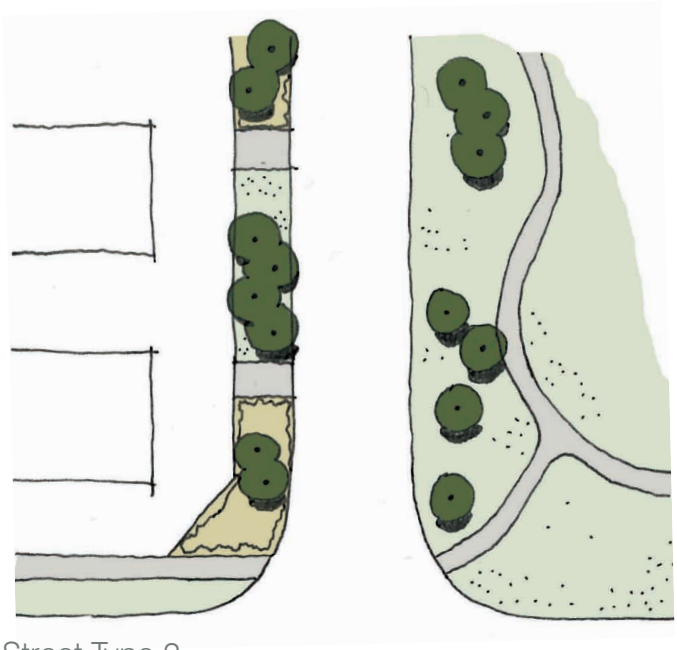
- Excellent autumn colour
- Fast growing
- Soft green heart shaped leaves



Street Type 1

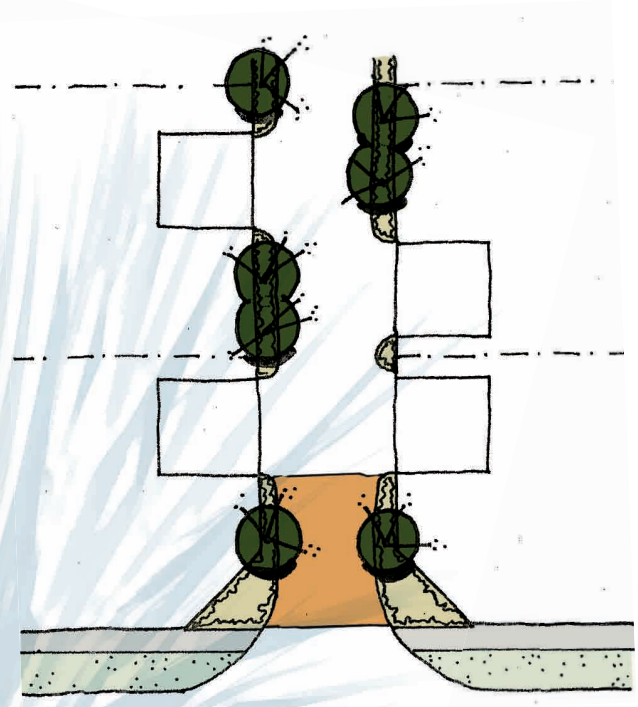
Recommended Planting List eg:

- *Elaeocarpus eumundii* (Quondong)
- *Waterhousia floribunda* (Weeping Lillypilly)



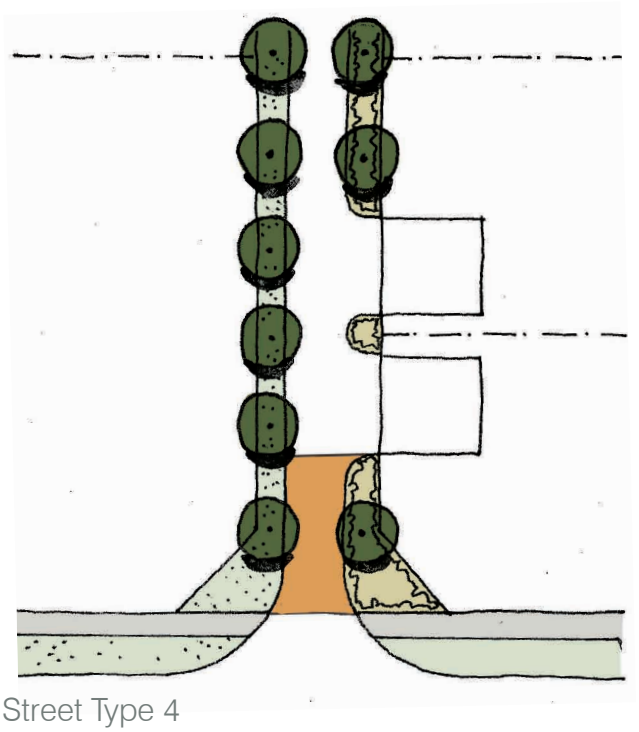
Street Type 2

- *Corymbia maculata* (Spotted Gum)
- *Melaleuca quinquenervia* (Broad Leafed Paperbark)
- *Lophostemon confertus* (Brush Box)



Street Type 3

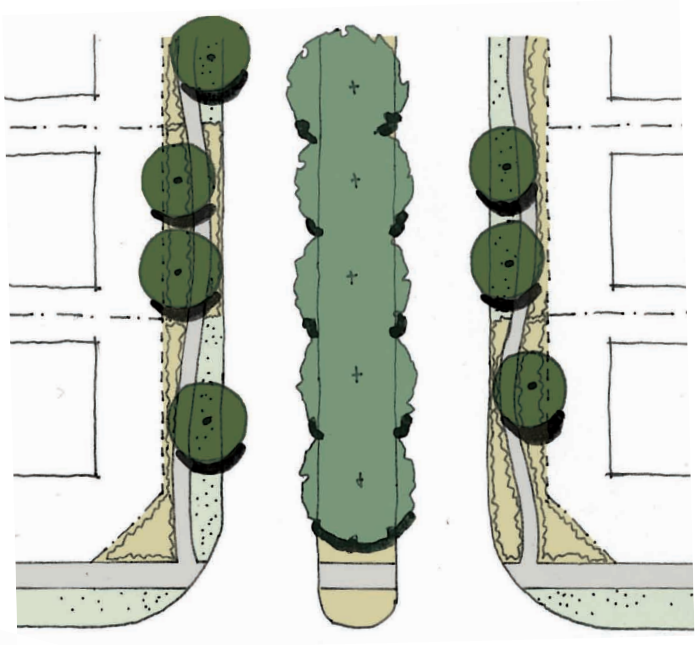
- *Lagerstroemia indica* (Crepe Myrtle)
- *Pyrus calleryana* (Flowering Pear)
- *Sapium sebiferum* (Chinese Tallowood)



Street Type 4

Recommended Planting List eg:

- *Elaeocarpus eumundii* (Quondong)



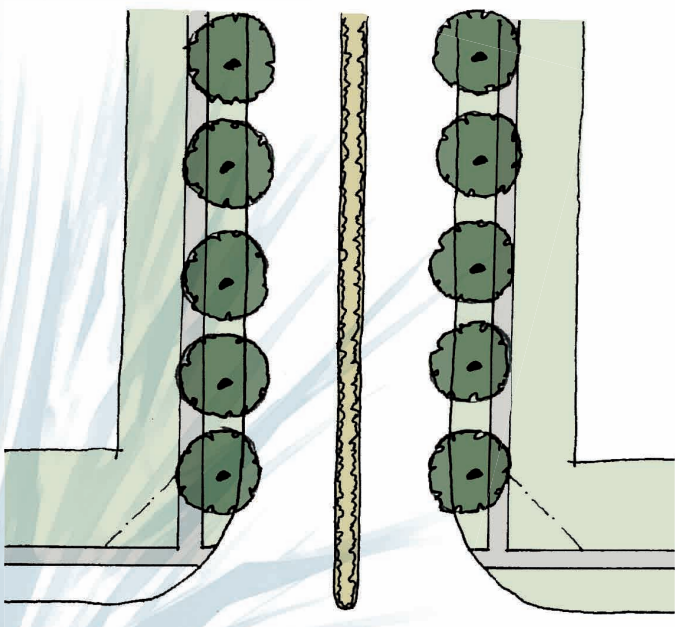
Street Type 5

VERGE:

- *Cupaniopsis anacardiodes* (Tuckeroo)
- *Waterhousia floribunda* (Weeping Lillypilly)

MEDIAN:

- *Bauhinia purpurea* (Orchid Tree)
- *Podcarpus elatus* (Plum Pine)



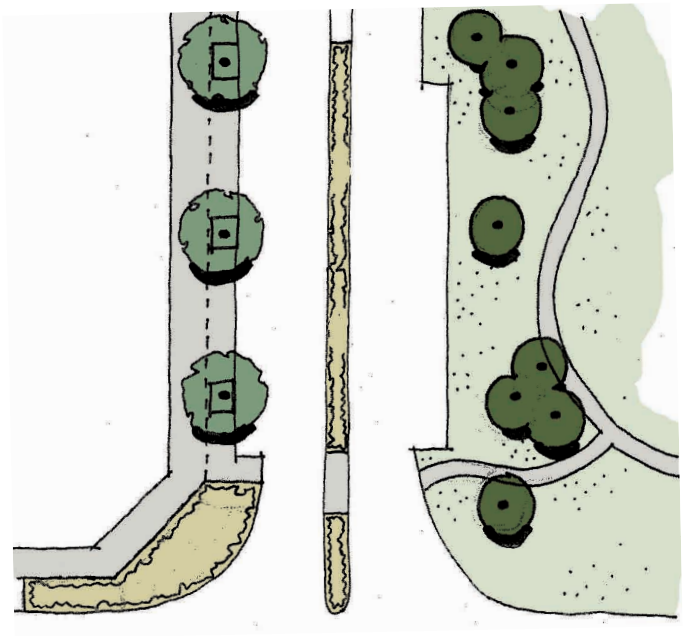
Street Type 6

VERGE:

- *Cupaniopsis anacardiodes* (Tuckeroo)
- *Waterhousia floribunda* (Weeping Lillypilly)

MEDIAN:

- *Dianella 'Breeze'* (Blue Flax Lilly)
- *Grevillea x gaudichaudi* (Grevillea)



Street Type 7

Recommended Planting List eg:

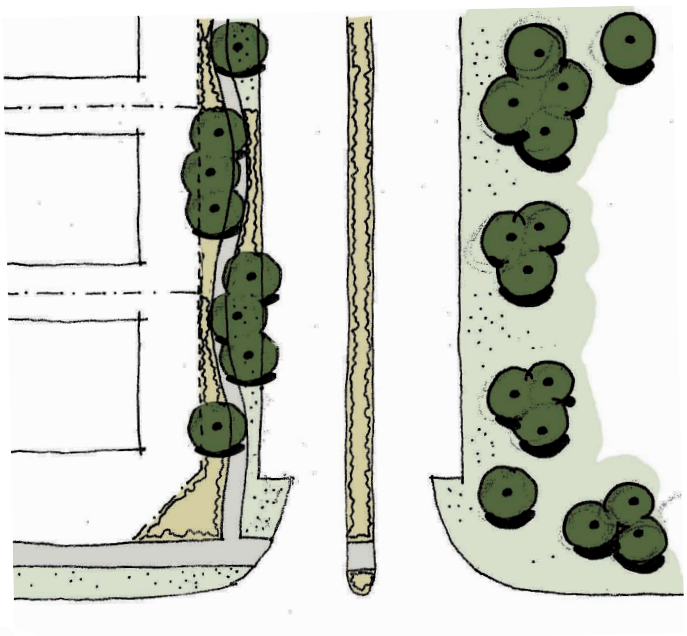
VERGE:

- *Cupaniopsis anacardiodes* (Tuckeroo)
- *Lophostemon confertus* (Brush Box)

MEDIAN:

Prostrate species eg:

- *Dianella 'Breeze'* (Blue Flax Lilly)
- *Grevillea x gaudichaudi* (Grevillea)
- *Juniperus conferta* (Shore Juniper)



Street Type 8

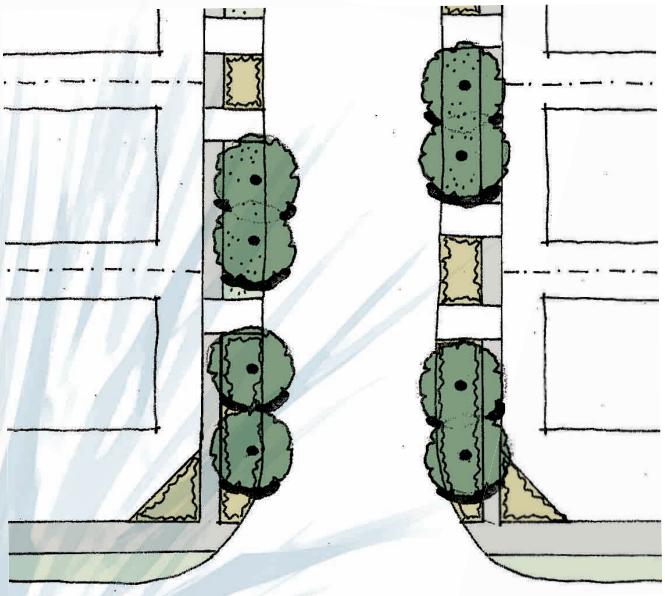
VERGE:

- *Cupaniopsis anacardiodes* (Tuckeroo)
- *Lophostemon confertus* (Brush Box)

MEDIAN:

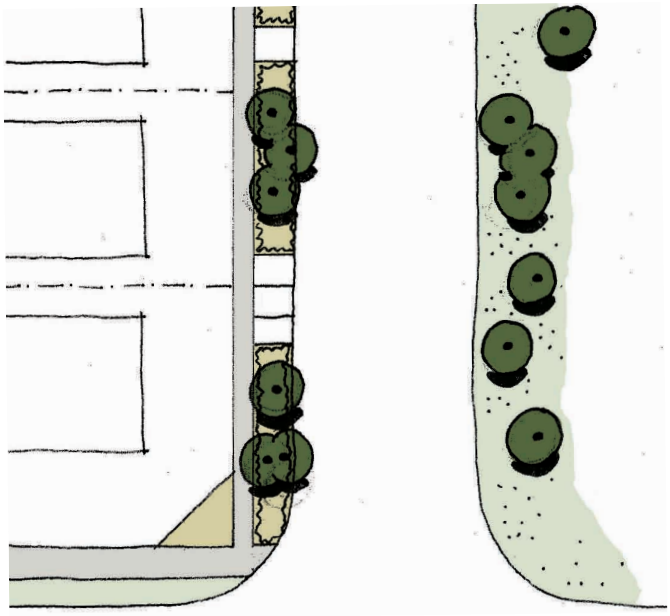
Prostrate species eg:

- *Dianella 'Breeze'* (Blue Flax Lilly)
- *Grevillea x gaudichaudi* (Grevillea)
- *Juniperus conferta* (Shore Juniper)



Street Type 9

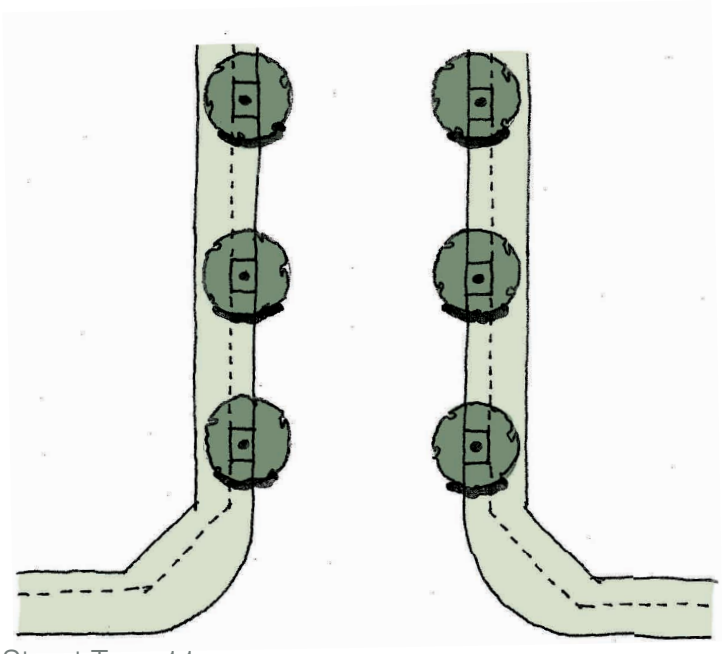
- *Elaocarpus eumundii* (Quondong))
- Waterhousia floribunda (Weeping Lillypilly)



Street Type 10

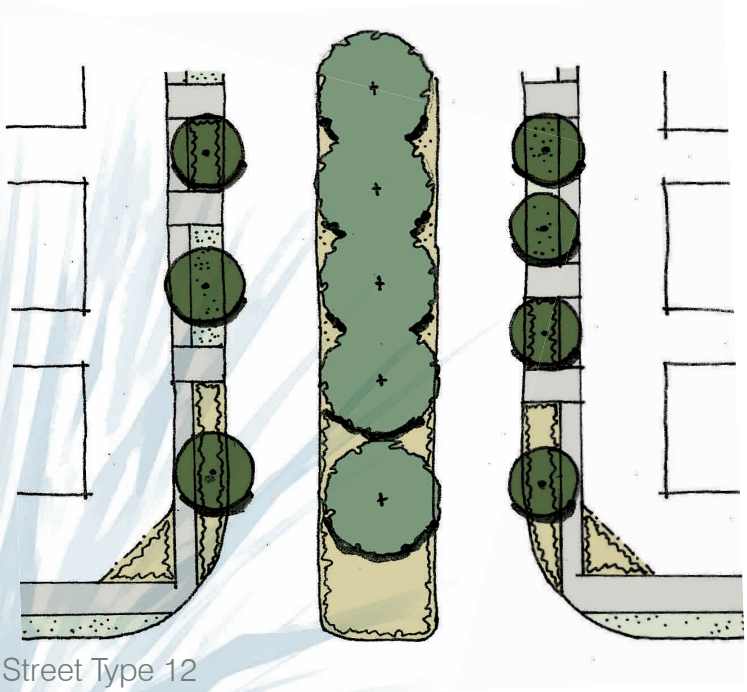
Recommended Planting List eg:

- *Corymbia maculata* (Spotted Gum)
- *Eucalyptus robusta* (Swamp Mahogany)
- *Melaleuca quinquenervia* (Broad Leafed Paperbark)



Street Type 11

- *Cupaniopsis anacardiodes* (Tuckeroo)
- *Lophostemon confertus* (Brush Box)



Street Type 12

VERGE:

- *Cupaniopsis anacardiodes* (Tuckeroo)
- *Waterhousia floribunda* (Weeping Lillypilly)

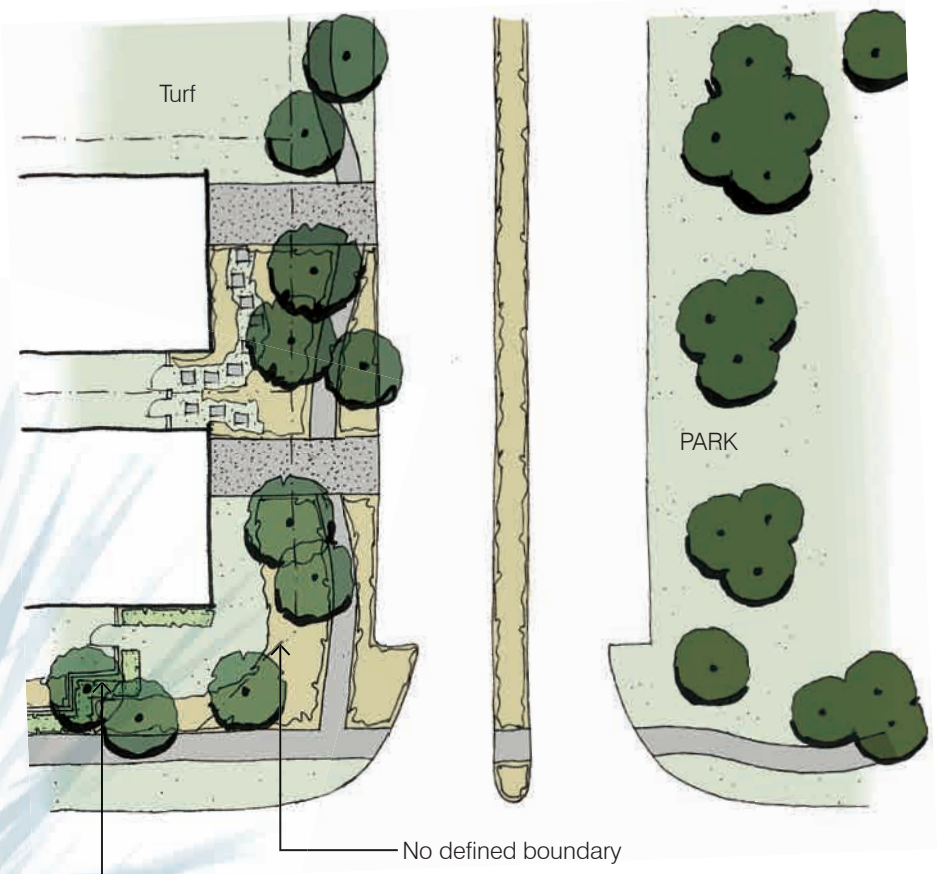
MEDIAN:

- *Bauhinia purpurea* (Orchid Tree)
- *Ficus microcarpa* (Hills Weeping Fig)

Typical Verge Treatments



TYPE 1



TYPE 2

3.3 Basin Edge Treatment

A variety of edge treatments to the waters edge including soft landscaped edges where turf and or sand will provide access for small boat craft such as kayaks, whilst timber decks, paving and retaining walls will be used to formalise promenade areas.

- Promenades may include; balustrades, lighting , formal tree planting, seating, shelter, signage and feature walls.
- Soft edges will include turf, macrophyte plantings and possibly sand.
- Decks will include; outdoor eating/cafes, handrails, pontoons, hardwood timbers and stainless steel components.



Soft landscaped edge treatment exhibiting macrophyte planting



Turfed edge to waterbody provides access for small boat craft



Water body in natural surrounding.



Water body with soft landscape edge treament and boardwalk in background.



Hard edge treatement incorporating masonry walls and handrails.



Deck with water body.

Recommended Planting List - Basin Edge

MACROPHYTES:

Baumea articulata (Jointed Twig Rush)

Eleocharis acuta (Common Spike Rush)

Gahnia sieberana (Red Fruited Saw Sedge)

Isolepsis nodosa (Knobby Clubrush)

Juncus usitatus (Common Rush)

Schoenoplectus validus (River Club Sedge)

TREES:

Casuarina glauca (Swamp Oak)

Eucalyptus robusta (Swamp Mahogany)

Melaleuca quinquenervia (Broad Leafed Paper Bark)

3.4 Pedestrian/Cycleway Network



An extensive pedestrian and cycleway network has been developed for the site that also connects with the broader pedestrian network. Internal open space corridors and roads form part of the network and contribute to the connectivity of the broader Tea Gardens area. Key features of the network include;

- Road crossings
- Threshold treatments
- Wayfinding and signage
- Surveillance
- Provision of 2.4m wide sealed shared path and 1.5m wide pedestrian paths.
- Provision of stopping and rest points along the network.







4.0 Environmental Protection

4.1 Erosion Control

All erosion and sediment control devices are to be installed prior to the start of construction. All stockpile areas are to be fenced with erosion and sediment control fencing.

Temporary protective fencing is to be placed around each tree to be retained prior to construction. The fencing is to be removed at the end of the planting establishment period

4.2 Tree Protection

The existing trees to be retained are to be protected during and after the construction period. Where possible existing trees have been retained to maintain instant landscape impact and habitat link to surrounding vegetated areas. The trees to be removed will be chipped and reused as mulch in all garden beds.

4.3 Salinity

The landscape design has undertaken the following practices to consider the impact of urban salinity;

- The use of salt tolerant native plants with low water requirements throughout the development.
- Use of organic mulch in all garden beds.
- Turf limited to rear yards and the community park to reduce the requirement of irrigation.

5.0 Maintenance

The landscape contractor will be responsible for the maintenance of all the landscaped areas for twelve months after Practical Completion has been awarded. When the twelve month maintenance period is completed the ongoing maintenance will be the responsibility of the developer. Maintenance during the twelve month period will consist of, but not limited to the following;

- Watering
- Weeding
- Mulching
- Fertilising
- Pruning
- Pest & disease attack
- Plant replacement
- Mowing
- Aerating
- Rubbish removal
- Hedging
- Monitoring
- Repairing of vandalism
- Re-staking
- etc.

Volume 3C: Retail Study

Tea Gardens Retail Study

Update report – IBECON Study of 2000

Prepared by:

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30 July 2007
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Introduction

This report provides an update to the Tea Gardens retail study of 10 August 2000 prepared by IBECON Pty Ltd. The purpose of this report is to provide updated estimates of the overall demand for retail floorspace in the Tea Gardens/Hawks Nest areas of Great Lakes Shire.

Development in the area is subject to a number of uncertainties. The coastal environment provides some constraints and restrictions on urban development and as the process of long-term strategic planning continues, efforts continue to refine population projections.

This issue was recognised in the IBECON report, which identified some of the uncertainties surrounding population growth. The IBECON report was therefore structured so that the threshold levels of retail demand could be updated as revised population figures became available. It is the purpose of this report to provide such an update.

The population projection figures for the area continue to be contested. This report examines figures provided in the update population growth projections report produced by Planning Workshop Australia in 2005 together with a review of the most recent census information, and various Council studies and reports.

Limitations

This report relies on secondary data. This includes the IBECON 2000 report, the Planning Workshop Australia 2005 report and various studies as indicated in the bibliography. Retail floorspace figures since 2000 for Tea Gardens/Hawks Nest have been provided by Crighton Properties, and are not subject to field verification. Additional information regarding retail floorspace provision within the IBECON study area has been provided by Port Stephens Council and is also available from the HillPDA Report into the Medowie area. While such information may not be comprehensive, sufficiently accurate information is available for Tea Gardens/Hawks Nest for the purpose of this report. Note that the methodologies in the IBECON and Planning Workshop Australia reports have been considered valid for the purpose of this study.

Methodology

A review was undertaken of the IBECON report, in particular to understand the specific population assumptions that underpin that study. In addition, Tea Gardens/Hawks Nest was reviewed in the context of its geographical location, and position within the overall retail hierarchy. This determined the degree to which the area can be considered on its own terms, and the degree to which it is likely to be affected by the changes within the IBECON main catchment.

Changes to retail floor space within Tea Gardens/Hawks Nest were obtained from Crighton Properties, and changes within retail provision in the main study

area obtained from Great Lakes Shire. This included discussions with Councils statutory and strategic planning sections as well as a review of the HillPDA Medowie Report.

Population work undertaken by Planning Workshop Australia was also reviewed. In general, the methodology of this report is supported, however to better understand population issues in the area additional work was undertaken reviewing a range of Council-derived studies. The latest census material from the ABS was also accessed.

A spreadsheet model was then constructed based on the IBECON data, but also including population figures from the main identified sources. This model was used to generate estimates of retail floorspace demand for 2006, but also to look forward to 2011, and 2016.

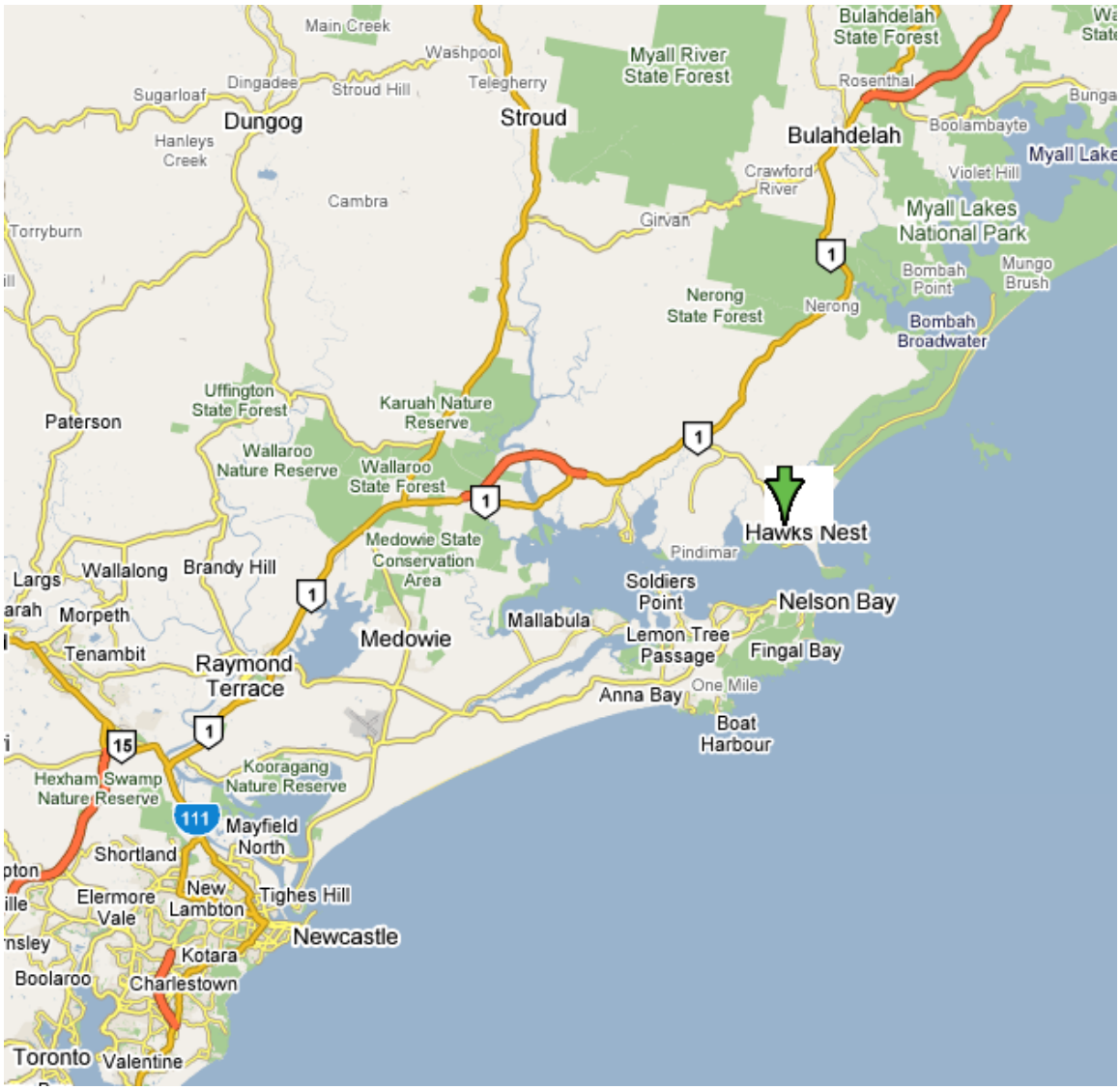
Retail Hierarchy

The retail hierarchy associated with Tea Gardens/Hawks Nest can be identified. The following table indicates the main components of the hierarchy and their level.

Locality	Centre Type	Retail GFA
Newcastle	Regional City	65,000+ (Source HVRF)
Raymond Terrace	Major Regional Centre	34,933 (Source: HillPDA)
Medowie	Local Centre	5007 (Source: HillPDA)
Tea Gardens/Hawks Nest	Local Centre	8892 (IBECON/Crighton)
Bulahdelah	Local Centre	1978 (Source: IBECON)

Table 1 – Retail Hierarchy

The hierarchy is an unusual one, in that Tea Gardens/Hawks Nest is a relatively isolated area. Raymond Terrace is the next logical level of the hierarchy in terms of shopping, with then considerable opportunities available beyond that in the Newcastle region. The Newcastle region includes major stand-alone opportunities such as Green Hills, which might be expected to attract a certain degree of regional trade from the area. Medowie is still a local centre, and even with the planned expansions over time does not really provide an alternative retailing opportunity. In terms of Tea Gardens/Hawks Nest we are therefore in the position where Raymond Terrace is the only relevant centre in terms of floorspace provision and associated changes, apart from Tea Gardens/Hawks Nest itself. This is clear from the following map:



Map of the general area indicating the relatively depauperate retail hierarchy in the area.

Tea Gardens is at a considerable distance from Raymond Terrace, being some 52 km by road. It is therefore appropriate for Tea Gardens to provide a retail capacity at a higher level than might otherwise be expected, given its population. There are no significant intervening opportunities between Tea Gardens and Raymond Terrace. This means that locally the capacity for what is known as "the weekly shop" is important, including an appropriate balance between supermarket floorspace, specialty, and other retailing. In addition, where higher order services, such as medical can be attracted, this is a significant benefit.

These factors will be considered in terms of final estimated floorspace needs.

Floorspace requirements in 2006

As outlined in the introduction there are significant issues associated with the population projections for the study area. From the point of view of the update of the IBECON study it is not necessary to fully resolve these, however one issue with respect to the figures is the difference between the 2006 census figures and the IBECON local government area projections.

There is a substantial difference in these figures, as shown in the following table:

	IBECON	ABS2006	% Variation
Port Stephens LGA	65,730	60,485	8.7
Great Lakes LGA	37,069	32,763	13.1

Table 2 – IBECON-ABS Comparisons

IBECON estimated 9551 more persons in the combined local government areas, than were measured in the 2006 Census. The impact of this is to reduce the likely take-up of retail capacity in the overall study area. In terms of Port Stephens, this is likely to mean that capacity at Raymond Terrace as predicted by IBECON may be ahead of actual demand. In the context of the distance from Tea Gardens/Hawks Nest, this should not, however, be considered as having more than a marginal impact on the level of retail offer that should be accommodated in Tea Gardens/Hawks Nest.

The next consideration is the actual population figures in Tea Gardens and Hawks Nest.

The primary trade area for Tea Gardens/Hawks Nest was reviewed in the context of available ABS data. These indicate a reasonable fit with the inclusion of the following areas:

Tea Gardens	2094
Hawks Nest	1027
Pindimar	215
North Arm Cove	701
TOTAL	4037

Table 3 – Small Area Population Figures, 2006 Census

This equates to the IBECON estimate of 4282 for the Tea Gardens Sub-Region. Minor variations in boundaries need to be noted between the two estimates. The IBECON estimate for Tea Gardens could be considered to be approximately 5% high, depending upon the likely behaviour of people at the outer edges of North Arm Cove (more likely to go to Medowie) and the south end of Bulahdelah (not included). On balance, however, the IBECON estimate is considered reasonable to adopt for 2006.

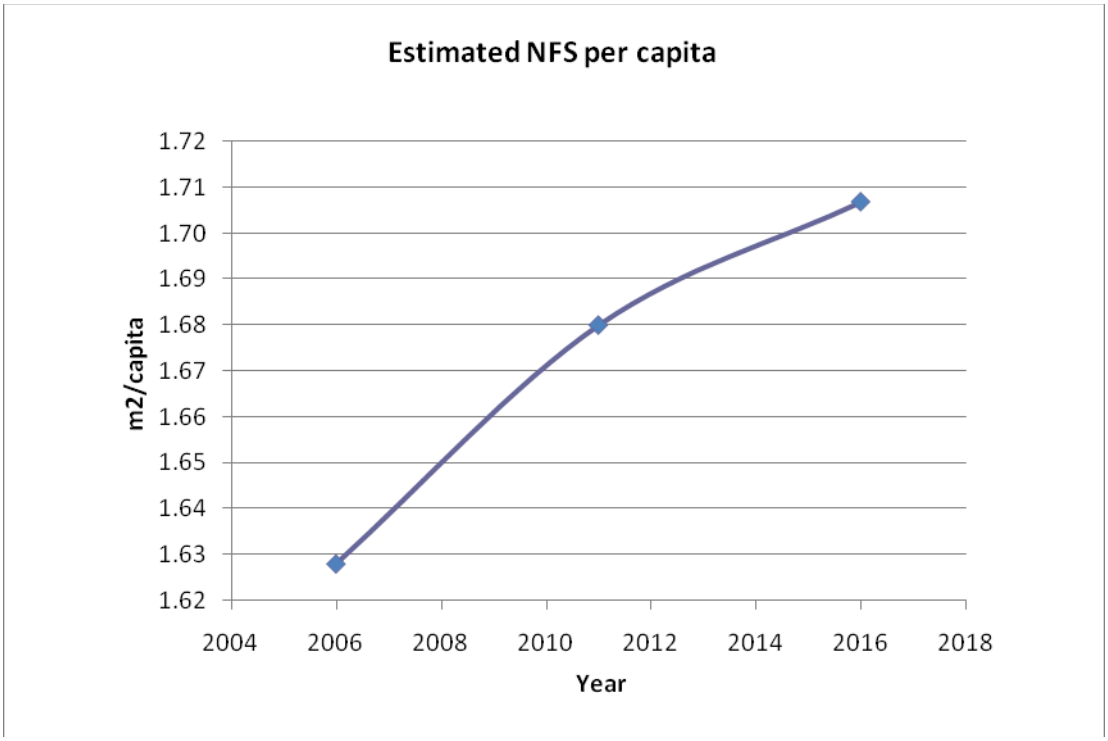
Also to be taken into consideration is the provision of new retail floorspace since the IBECON study for Tea Gardens/Hawks Nest. This is identified at 4271 m2, noting that of this 456 m2 is for a medical centre. This gives a 2006 total of 7671 m2 (existing at 2000 plus constructed). The IBECON study identified a deficit in 2006 of 3600 m2. It should be noted that IBECON uses the concept of Net Selling Area (NSA), rather than Gross Leasable Area (GLA). Factoring based on the ratios utilised for Tea Gardens/Hawks Nest requires a factor of 0.74 to be applied, giving a NSA increase of 3,161 m2.

This suggests a modest undersupply in 2006 of 439 m2. The starting point for the forward projections is therefore identified.

Forward estimates 2011 and 2016

Having established the supply and demand situation for 2006, projections can then be “rolled forward”. The simplest approach to forward projections is to examine the floor space per capita and then project this forward against future population figures. This, however, does not take into account underlying trends associated with changing population structure, changing household income structure, overall expenditure on retail and the like. These factors are included in the IBECON model.

Accordingly, the approach taken is to look at the changing relationship between population and floorspace produced by the IBECON model, adjust the starting point to the current 2006 situation and then apply the Planning Workshop Australia population projections (also adjusted to the current 2006 situation) to produce the forward estimates. The changing relationship between population and floorspace is shown in the following graph derived from the existing IBECON projections.



Graph 1 – Floorspace vs Population Ratio

This approach preserves the underlying integrity of both of these bodies of work whilst accounting for the mismatches between their original forward projections and the actual 2006 situation. Due to the fact this is an update report, it is inappropriate to extend projections to the end of the population projection period of 2031, as IBECON calculations for the floorspace/population ratio figures are only available until 2016. For the purposes of investment decisions over the 2007/8 year a projection period of 10 years, to 2016, has therefore been adopted.

The following table reviews all population projections available from the Planning Workshop report, and then on the basis of the indentified 2006 situation projects net selling space deficits and gross leasable floor area deficits for 2011 and 2016.

RETAIL DEVELOPMENT FLOORSPACE FOR TEA GARDENS/HAWKS NEST SUBREGION							
	Year						Net Floorspace per capita (m2)
PWA Population estimate	2006	3136	3548	3747	4089	5371	1.63
	2011	3726	4551	4949	5633	8197	1.68
	2016	4317	5555	6151	7177	11023	1.71
Estimated Growth Rate p.a.		3.25%	4.59%	5.08%	5.79%	7.45%	
Population 2006 (actual)		4037	4037	4037	4037	4037	
Population 2011 (estimated)		4737	5051	5172	5348	5783	
Population 2016 (estimated)		5557	6321	6627	7086	8285	
Net Floor Space 2011 (m2)		7957	8486	8690	8985	9716	
Net Floor Space 2016 (m2)		9503	10808	11332	12117	14168	
NFS 2011 Deficit (m2)		725	1254	1458	1753	2484	
NFS 2016 Deficit (m2)		2271	3576	4100	4885	6936	
GLA 2011 Deficit (m2)		1016	1756	2041	2455	3478	
GLA 2016 Deficit (m2)		3179	5007	5740	6838	9710	

Table 4 – Floorspace Requirements

The range of figures is substantial, representing the widely differing estimates of future population, noting these have been normalised to work on the 2006 actual census figures. If the Planning Workshop preferred population figures are accepted, being the highest growth rate at 7.45%, the deficits in floorspace will achieve 3478 m2 in 2011 and 9710 m2 in 2016.

Caution should, however, be exercised when applying compound growth rates on small population bases. The general tendency with population growth is for the rate of growth to moderate as the population grows. In many respects growth is likely to be a function of the land production rate rather than intrinsic underlying demand for land. Nevertheless it is clear even utilising midrange projections that deficits in the order of 2050 m2 in 2011 and 5750 m2 in 2016 are likely to be apparent.

The following table presents a comparison of the key IBECON estimates as compared to the Planning Workshop growth scenarios.

	IBECON 2011	IBECON 2016	PWA 2011	PWA 2016
NSA	5000	6500	2484	6936
GLA	7000	9100	3478	9710

Table 5 – IBECON figures compared to updated figures

Summary and Conclusions

By 2016 there should be a reasonably close correlation between the IBECON floorspace estimates and those based on the Planning Workshop Australia population projections as applied to updated census and floorspace figures.

The IBECON approach appears to somewhat overestimate floorspace in 2011 as compared to projections using the Planning Workshop Australia population figures, when applied using the methodology in this report. Nevertheless, in the context of the remoteness of Tea Gardens/Hawks Nest from the nearest significant retail offer, increased retail provision in the interim period may be justified.

Further, we note that the Riverside proposal provides for approximately 40,000 sqm of Commercial / Retail site area for development. At an FSR (floor to site ratio) of 0.25:1 (typical single storey commercial / retail development) this site area would likely yield in the order of 10,000 sqm of Gross Leasable Area, depending on the mix of uses proposed.

If the same area were allowed to be developed at a higher FSR of say 0.4:1 (typical of a 2-3 storey mix) the Gross Leasable Area would increase to around 16,000 sqm.

Based on the site area proposed for Commercial / Retail development, the Riverside site would be able to provide for, not only the foreseeable Retail / Commercial expansion of the Tea Gardens / Hawks Nest area up to 2016, but well beyond it.

APPENDIX 1 - Data Presentation

Changes in retail floorspace provision

The following changes in retail floorspace provision were identified for this update report. These figures are understood to represent GLFA.

Tea Gardens/Hawks Nest

Myall Quays Shopping Village = 3505.9 m2

BiLo	2,000
Shop 1 / Shop 2 / Shop 3	269
Shop 4	94
Shop 5	89.7
Shop 6	100.9
Shop 7	84
Shop 8	82
Shop 9	70.9
Shop 10a	30.5
Shop 10b / Shop 11 / shop 12	193.7
Shop 13	201
Shop 14a	72.2
shop 14b	98
Shop 15	120

Medical Centre Building = 764.5 m2

Medical Centre	455.5
Cafe	167
Chemist	142

Raymond Terrace

Advice from Council is that considerable capacity exists for additional retail floorspace, and this is being encouraged. Precise figures were not available, however it appears that there has been some change since the IBECON report. Based on the HillPDA Study and interpretation of the IBECON report, it appears that there has been a growth in floorspace of approximately 11,000 m2.

Population

The following information in terms of population has been summarised from various sources. Interpolation and extrapolation have been used to derive completed data sets from a five-year period from base data.

Planning Workshop Study

			Disaggregated PWA Pop projections					
		2031	2006	2011	2016	2021	2026	2031
Method	Population		5	10	15	20	25	30
ABS 2.95%		6088	3136	3726	4317	4907	5498	6088
S94		8564	3548	4551	5555	6558	7561	8564
Cons D Str		9756	3747	4949	6151	7352	8554	9756
CDS (Adj)		11809	4089	5633	7177	8721	10265	11809
PWA Report		19500	5371	8197	11023	13848	16674	19500

IBECON Study

	2001	2006	2011	2016	2021
		5	10	15	20
Council Population	2545	2943	3404	3834	4263
IBECON Great Lakes	35400	40267	45133	50000	54867
ABS projections	31384	35068	38752	42436	46120
IBECON Trade area	3515	4282	5042	5784	6496
IBECON TG/HN	2879	3691	4373	5099	5759

ABS 2006

Place of usual residence: Great Lakes LGA: 32,763
Place of usual residence: Port Stephens LGA: 60,485

Tea Gardens	2094
Hawks Nest	1027
Pindimar	215
North Arm Cove	701
TOTAL	**4037**

TOTAL: 3121

Growth Rates:
Tea Gardens: 1996-2001 38%

Spending data and floorspace needs

This information is sourced from the IBECON report.

Tea Gardens Subregion

Total Spending

	2001	2006	2011
	73	85	97
	73	91	108

Shop Demand	2000	2006	2011	2016
Population	3400	4300	5000	5800
NSA Required	5600	7000	8400	9900
NSA Existing	3400	3400	3400	3400
NSA Surplus/Deficit	-2200	-3600	-5000	-6500

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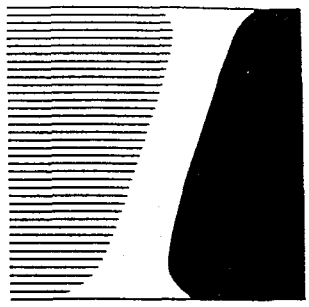
NSW Department of Planning (2006) *Draft Lower Hunter Regional Strategy*

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TEA GARDENS

RETAIL STUDY

10 AUGUST 2000

Prepared by Ian Booth

Managing Director, IBECON Pty Limited

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GLOSSARY

NSA	=	Net Selling Area including display cabinets, checkout areas etc. Defined as any area where shoppers are permitted to go + display space.
GLA	=	Gross Leasable Area = Net Selling Area + storage space & other areas on which rent is usually paid.
REGION	=	Study Region, comprising all areas shown in map 1.
MAIN CATCHMENT	=	"Inner" study region shown in map 1. This is NOT the same as traditional "Primary" catchment. See Chapter 1 for concept definition & explanation, = Great Lakes and Gosford Shire.
FRINGE	=	Outer areas of the Region not in the Main Catchment..(Coloured Yellow in Map 1a) = adjoining LGAs
SITE + CIRCA	=	Refers to persons shopping in the site under consideration, including all shops within walking distance (i.e. usually about 0.3 Kms)
AREA	=	Local Govt Area, Postcode or part Postcode, suburb or SLA
LGA	=	Local Government Area
SLA	=	Statistical Local Area (ABS concept)
ABS	=	Australian Bureau of Statistics
CLIENT/ Majors	=	Selected shops in Town Centre and all major traders plus all traders operating out of major shopping centres. (Labelled **TGD** + Mjrs in Tables)
COMPTRS	=	All other retailing in the defined categories within the study Region
SYNERGY	=	The generation effect of complementary retailing, whereby increasing supply and/or improving the range and level of services has the effect of itself increasing the level of demand. Similarly the coincidence of other factors such as transport etc. have a cumulative non linear impact on demand.
RxYx	=	Is a shorthand notation for modelling Run"x", Result year "1" or "2"
aaa^{p123}	=	Superscript refers to greater details on Page 123 about "aaa"
bbb^{A123}	=	Superscript refers reader to greater details in Appendix A123 about "bbb"

All $ values in this report for 2000 and after are in fiscal 2000$ unless otherwise specified. Data for all years up to 1999 are expressed in current year's dollars unless otherwise stated. eg. 1999 $ values are expressed in 1999$.

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LIST OF COLOUR MAPS

Colour maps graphically illustrate some of the significant results of this study. Detailed data documenting these maps are provided in Appendix A of this report.

Region Definition, Population Growth and Retail Hierarchy

Map #	Description	Page
1a-b	Main Catchment and other Sub-Regional Definitions.	vi →
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3	Percentage of Population aged 18 years or less	viii →
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Over and Under Supply of Shops "The Mismatch"

Map 6 shows over and under-supply of shop floorspace at 2000 It shows the relationship between where spending is sourced from residents, workforce and tourists and how many shops these dollars can support, and the existing provision of shops in each geographic area. Thus an apparent over-supply in a regional centre must be assessed in conjunction with the apparent under-supply in adjoining areas.

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EXECUTIVE SUMMARY

A. Introduction

In July 2000, IBECON was commissioned to assess the market potential for retail facilities in the Tea Gardens Region of NSW to enable, inter alia, feasibility, impact and other assessments of the proposed new supermarket based Centre in Tea Gardens. The proposed Centre is planned to be located in the Myall Quays Estate just off Myall Road alongside existing residential developments, on the northern edge of the town. Approval exists for a 3,000M^2 Centre on this site. This proposal is firstly evaluated and consideration is also given to a larger initial centre and the possibility, in the longer term future, of the addition of a DDS or mini majors and additional specialty shops.

Specific proposals evaluated in this assessment are as shown in the following Table 1.

Table A1 Development Options Assessed

OPTION	TOTAL M^2 GLA	COMPONENTS
A	3,000	2,000M^2 SPM/1,000M^2 Specs
B	4,500	3,500M^2 SPM/1,000M^2 Specs
C	11,000	3,500M^2 SPM/5,000 M^2 DDS/2,500M^2 Specs
D	14,000	4,000M^2 SPM/6,000 M^2 DDS/4,000M^2 Specs

The larger Options C & D were assessed for medium to longer term possible development and have not been considered in the initial Phase 1 of the development.

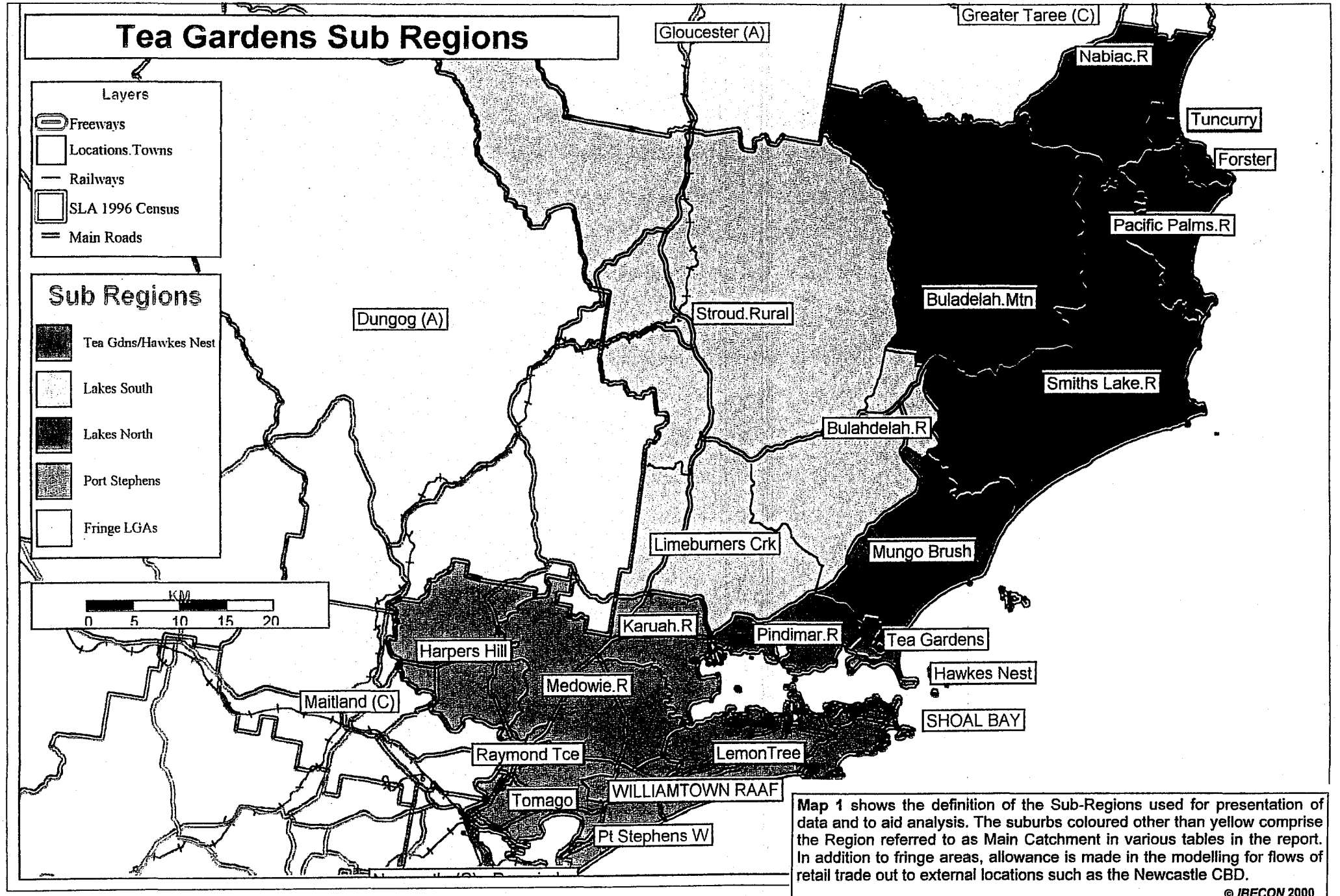
A detailed study has been undertaken providing a comprehensive analysis and forecasts of the Region's demography, major industries, retail needs, plus sales forecasts and impact assessments for all shops in the Region.

B. The Region

Definitions of the Study Region, Main Catchment and Sub-regions or Districts within this Main Catchment, for presentation of summary data are illustrated in Map 1. The Study Region has been defined to include all suburbs, towns and locations in the Local Government Areas of Great Lakes and Port Stephens plus several adjoining Local Government Areas including Taree and Newcastle. Locations in an Inner Region, referred to as the **Main Catchment**, comprise various urban and rural location/suburbs in Great Lakes and Port Stephens Shires.

The existing retail hierarchy and major trade locations in the region including major trader locations is illustrated in Map 2. This map shows the size and location of all shopping centres and locations in the Region. Detailed data showing size and composition of each of these retail locations is provided in the body of this report, in Appendix A.

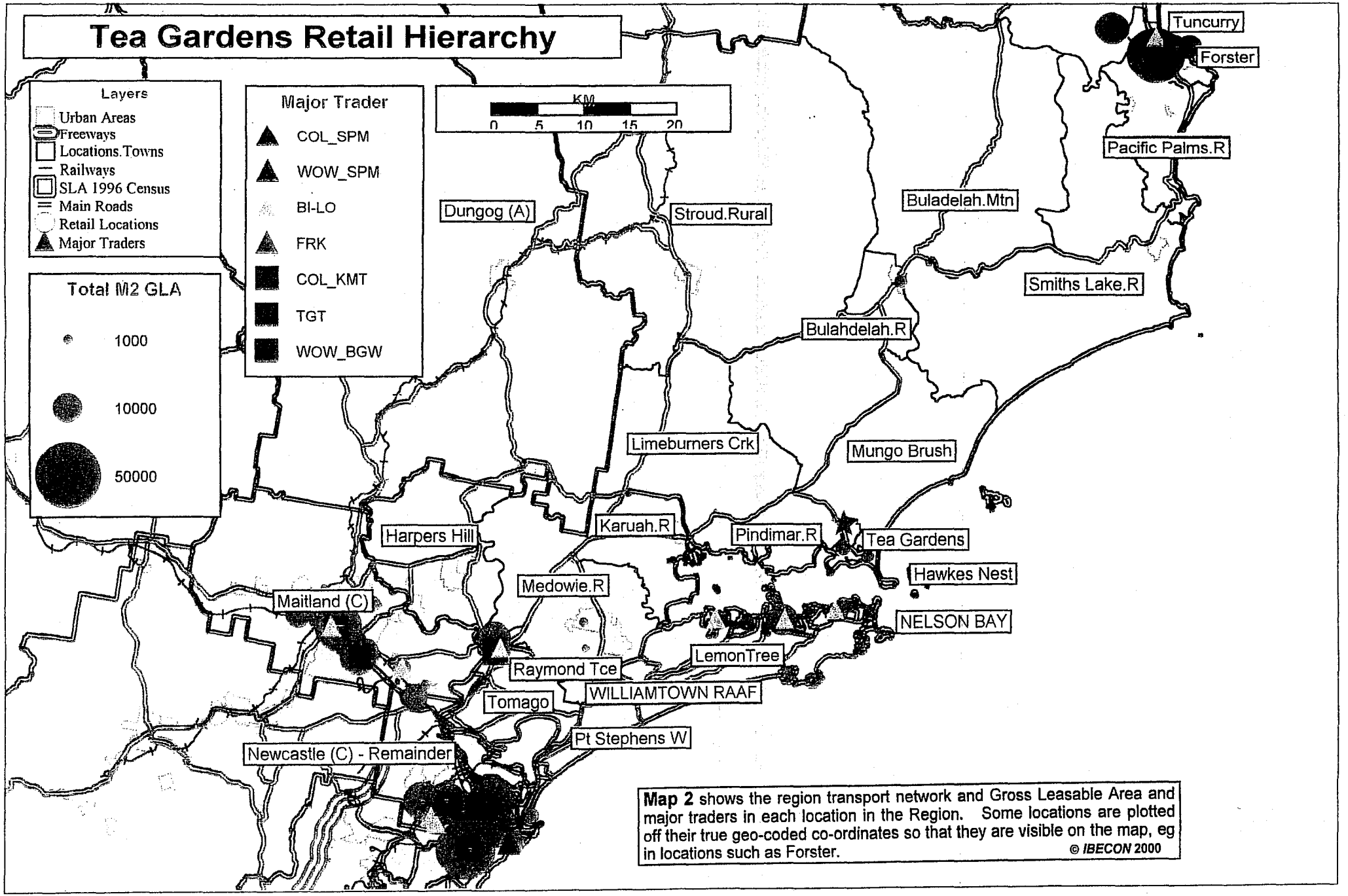
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Map 1 shows the definition of the Sub-Regions used for presentation of data and to aid analysis. The suburbs coloured other than yellow comprise the Region referred to as Main Catchment in various tables in the report. In addition to fringe areas, allowance is made in the modelling for flows of retail trade out to external locations such as the Newcastle CBD.

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Tea Gardens Retail Hierarchy



Map 2 shows the region transport network and Gross Leasable Area and major traders in each location in the Region. Some locations are plotted off their true geo-coded co-ordinates so that they are visible on the map, eg in locations such as Forster.

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C. Population Growth, Income Levels and Spending Power

Great Lakes Shire which comprises the Main Catchment for the proposed Tea Gardens Centre, has shown moderate to strong rates of growth over the past 20 years. In total, population has risen from 17,100 in total in 1981 to 28,700 in 1996, subsequently to 30,600 in 1999. IBECON has assumed that there will be a continuation of moderate to strong growth in population over the period to 2001 to a total of 35,400, with continued strong growth thereafter, reaching 50,000 by 2016. These projections are similar to the DUAP medium population projections and slightly higher than the population projections provided by Great Lakes Shire Council in the draft Tea Gardens/Hawks Nest S94 Contributions Plan. A more detailed discussion of population growth and its potential is provided in the body of the report. The current estimates produced by Great Lakes Council for the Hawkes Nest/Tea Gardens Conservation and Development Strategy appear to be conservative. Based on recent years Dwelling Approval rates, IBECON projects a higher growth rate for Tea Gardens than shown in these documents prepared by Council.

For the purposes of this report we have initially used Council population projections to calculate over/under supply of shops etc. In addition, some sensitivity tests are undertaken using the higher IBECON population projections for Tea Gardens. Most of the reporting in this report is based on the Council population projections except where otherwise indicated. Details for each area in the Region are provided in Table 3.1 @ page 19 & Table 3.2 @ pg 20.

Detailed demographic characteristics are provided in Appendix A. The age structure of the population of Great Lakes is older than the National Average. (See Map 3 following). At 2000 the percentage of population aged < 18 years in Great Lakes was 23.7% compared with 26.8% for NSW in total.

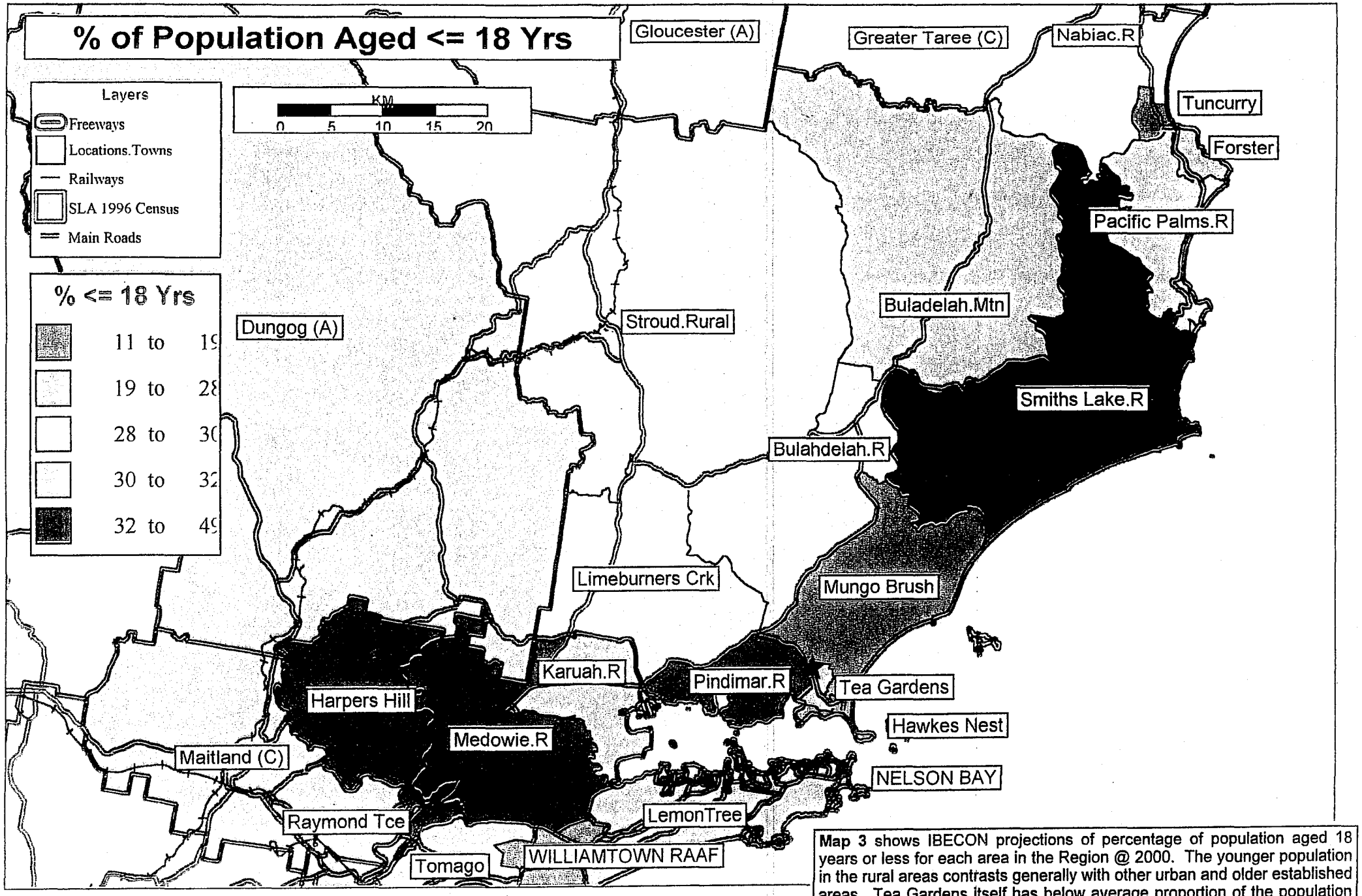
In the 1996 Census median household incomes of the Great Lakes Shire, at $401/wk (in 1996$), were well below the NSW average of about $655/wk, reflecting the high retiree component in the existing population. Map 4 (page ix) shows IBECON estimates of average household incomes in the Study Region @ 2000. This shows that there are generally lower incomes in Hawkes Nest/Tea Gardens. Household Incomes in the Great Lakes Local Government Area, @ $636/wk (in 2000$), are below average for the Region. This slightly reduces spending power in the Region.

D. Population and Total Spending Capacity of the Region and Main Catchment.

In 2000 the widely defined Study Region has 339,000 people spending $2,692m (including tourists), increasing to 386,000 by 2011, spending $3,508m. (See Table 2.1 on page 5).

In 2000 Great Lakes LGA has 31,000 people spending $292m (including tourists), increasing to 42,000 by 2011 spending $412m.

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Map 3 shows IBECON projections of percentage of population aged 18 years or less for each area in the Region @ 2000. The younger population in the rural areas contrasts generally with other urban and older established areas. Tea Gardens itself has below average proportion of the population aged 18 years or less.

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E. Spending Trends in Region, Main Catchment, Tea Gardens Sub-Region

The following Table E.1 shows total spending dollars available and projected total percentage increases over the period from 2000 to 2011, for the Study Region, Main Catchment and Tea Gardens Sub-Region.

Table E.1 Total Spending All Retail $m (2000$) **% pa Increase over period**

	2000	2006	2011	2000⇒2006	2006⇒2011
Study Region	2692	3136	3508	+2.6%	+2.3%
Main Catchment [a]	702	862	1013	+3.5%	+3.3%
Great Lakes LGA	292	353	412	+3.2%	+3.1%
Tea Gardens Sub-Region [b]	73	85	97	+2.6%	+2.7%

(a) Great Lakes & Port Stephens LGAs

(b) Town/locations in Great Lakes LGA of Hawkes Nest, Tea Gardens, Pindamar Rural, Mungo Brush, Buladelah, Stroud and Limeburners Creek

Retail spending growth in the Main Catchment and Great Lakes LGA is forecast to increase in the range of 3.0-3.5% pa in real (constant dollar) terms (ie excluding inflation) over the next decade and beyond.

E1. Effect of Higher Population Projections

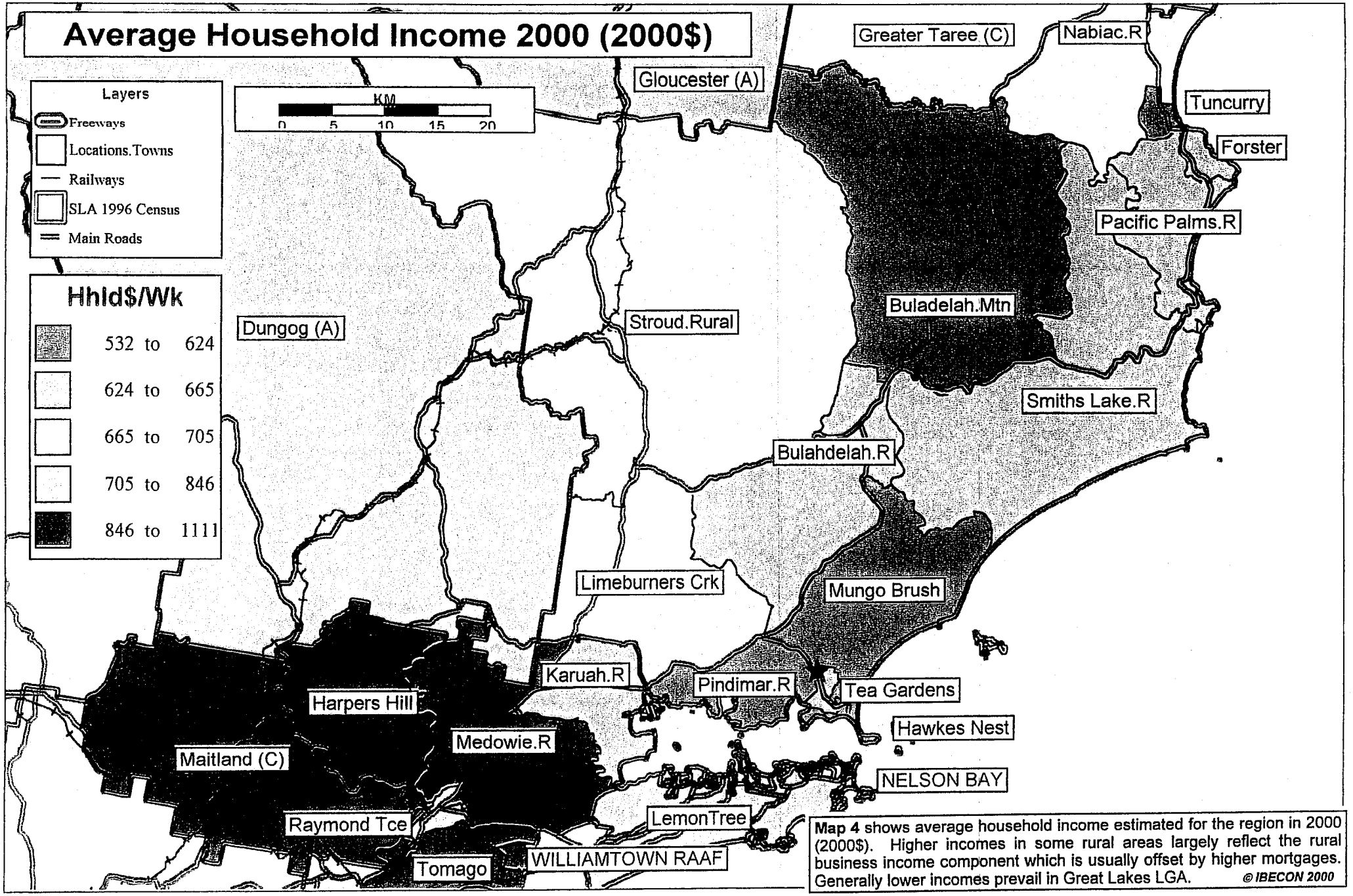
The following Table E.2 shows total spending dollars available and projected total percentage increases over the period from 2000 to 2011, for the Study Region, Main Catchment and Tea Gardens Sub-Region using the higher population projections for Tea Gardens.

Table E.2 Total Spending All Retail $m (2000$) **% pa Increase over period**

	2000	2006	2011	2000⇒2006	2006⇒2011
Study Region	2692	3142	3519	+2.6%	+2.3%
Main Catchment [a]	702	869	1024	+3.6%	+3.3%
Great Lakes LGA	292	359	423	+3.5%	+3.3%
Tea Gardens Sub-Region [b]	73	91	108	+3.7%	+3.5%

Retail spending increases by $6m (7%) in 2006 and by $11m (11%) by 2011 in Tea Gardens Sub-Region.

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Map 4 shows average household income estimated for the region in 2000 (2000$). Higher incomes in some rural areas largely reflect the rural business income component which is usually offset by higher mortgages. Generally lower incomes prevail in Great Lakes LGA.

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F. Estimated Retail Sales Levels In Tea Gardens Centre

Based on Council population projections, it is estimated that the Tea Gardens retail traders in the proposed Centre, trading from its currently proposed 3,000 M^2 Retail GLA would have a turnover of $11.8 m in 2003 (in 2000$). 98% of this trade is estimated to come from Tea Gardens Sub-Region, and 2% from the balance of Great Lakes LGA. Market penetration into Tea Garden Sub-Region totals only 28.5% of all categories of retail spending and is approximately 75% for supermarket items.

It is estimated that the Tea Gardens retail traders in the expanded Centre, trading from 4,500 M^2 GLA would have a turnover of $15.3 m in 2006 (in 2000$). 97% of this trade would come from Tea Gardens Sub-Region, and 3% from the rest of Great Lakes LGA. Market penetration into Tea Garden Sub-Region totals 33% of all retail spending. The following Table F.1 summarises IBECON estimates of sales turnover in the Centre and all other shops in Tea Gardens and Hawks Nest.

Table F.1 Estimated Sales Levels in Tea Gardens Centre + Sub-Region

Year	Size M^2 GLA				Sales $m (2000)		
	OPTION	TEA GARDENS	*OTHER	TOTAL	TEA GARDENS	*OTHER	TOTAL
2003 (a)	-	-	4,930	4,930	-	15.3	15.3
2003 (b)	A	3,000	4,930	7,930	11.8	12.9	24.7
2006	A	3,000	4,930	7,930	13.7	14.2	27.9
2006	B	4,500	4,930	9,430	15.3	13.5	28.8
2011	C	11,000	4,930	15,930	34.3	11.2	45.5
2016	D	14,000	4,930	18,930	44.2	12.0	56.2

(a) = Before proposed Centre (b) = Impact of proposed Tea Gardens Centre @ 3,000 M^2 GLA

The effect of increasing the size of Tea Gardens Centre by 50% would be an increase in its turnover of approximately $2.6m or 12%. It is estimated that the effect on all other shops in Hawkes Nest/Tea Gardens would be a decrease in turnover of about $0.7m, equivalent to 5% of their then current turnover levels.

This analysis has assumed that there are no changes either in terms of floorspace or marketing/pricing by other shops in Hawkes Nest and Tea Gardens. It is likely that some will change their marketing/merchandising to complement the range being offered in the proposed centre and that this would ameliorate, to some extent, the impact on their turnovers and, as a consequence, help reduce escape spending.

The next section assesses the effect of higher IBECON population projections.

F1. Effect of Higher Population

The following Table F.2 summarises IBECON estimates of sales turnover in the Centre and all other shops in Tea Gardens and Hawks Nest using the higher population projections.

Table F.2 Estimated Sales Levels in Tea Gardens Centre + Sub-Region

Year	Size M^2 GLA				Sales $m (2000)		
	OPTION	TEA GARDENS	*OTHER	TOTAL	TEA GARDENS	*OTHER	TOTAL
2003 (a)	-	-	4,930	4,930	-	15.3	15.3
2003 (b)	A	3,000	4,930	7,930	13.9	14.0	27.9
2006	B	4,500	4,930	9,430	18.5	14.8	33.3
2011	C	11,000	4,930	15,930	42.3	12.8	55.1
2016	D	14,000	4,930	18,930	55.6	14.3	69.9

(a) = Before proposed Centre (b) = Impact of proposed Tea Gardens Centre @ 3,000 M^2 GLA

The effect of the higher population is to significantly improve performance in the centre and to substantially reduce impacts on other shops.

G. Conclusions

Several conclusions can be drawn from the *IBECON* analysis:

1. There will be continuing moderate to strong population growth in the region and in Great Lakes LGA. The distribution of this population growth within Great Lakes LGA is shown in the following Map 5 (at page xiii).

2. The combination of this population growth, tourism growth and increased real spending at a total of about 3.0-3.5%% per annum in real terms will result in continuing growth in retail sales dollars available from Residents, Workers and Tourists in Great Lakes and Port Stephens LGAs.

3. There is currently an approximate balance in the supply of shop floorspace, in marketplace terms, in Great Lakes LGA if the deficiency in occupied floorspace is offset by the current vacant, mostly relatively poor quality, shop floorspace.

4. There is currently a significant level of net escape spending out of Tea Gardens and Great Lakes in all Retail categories to Raymond Terrace and Newcastle and to a lesser extent other fringe areas. There are no significant offsetting flows back into Tea Gardens/Hawks Nest from fringe areas of the Region.

5. Development of Tea Gardens Centre would recapture some of this escape spending.

6. The proposed development and expansion would result overall in significant increases in total retail sales in Tea Gardens, although there would be some initial loss of trade in other shops in Tea Gardens/Hawks Nest.

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7. The proposed development and expansion of Tea Gardens Centre is sustainable in economic terms and would contribute to economic growth in Tea Gardens generally.

8. The wider range of traders which would become available would increase the choices available to consumers in the Region.

9. The development of a modern supermarket based shopping centre would generally encourage other growth in Tea Gardens/Hawkes Nest, including the sale and development of permanent residential land which would result in higher population growth than used in the Council's analysis. This would result in growth of an additional 1,000 people within ten years and 2,000 in the medium to longer term. This would largely offset the impacts on other shops in Hawkes Nest and Tea Gardens.

10. The conservative population projections produced by Council, if used for retail analysis, result in a substantial deficiency of shop floorspace. The higher projections used by IBECON significantly increase this deficiency. It is recommended that the higher population projections be used.

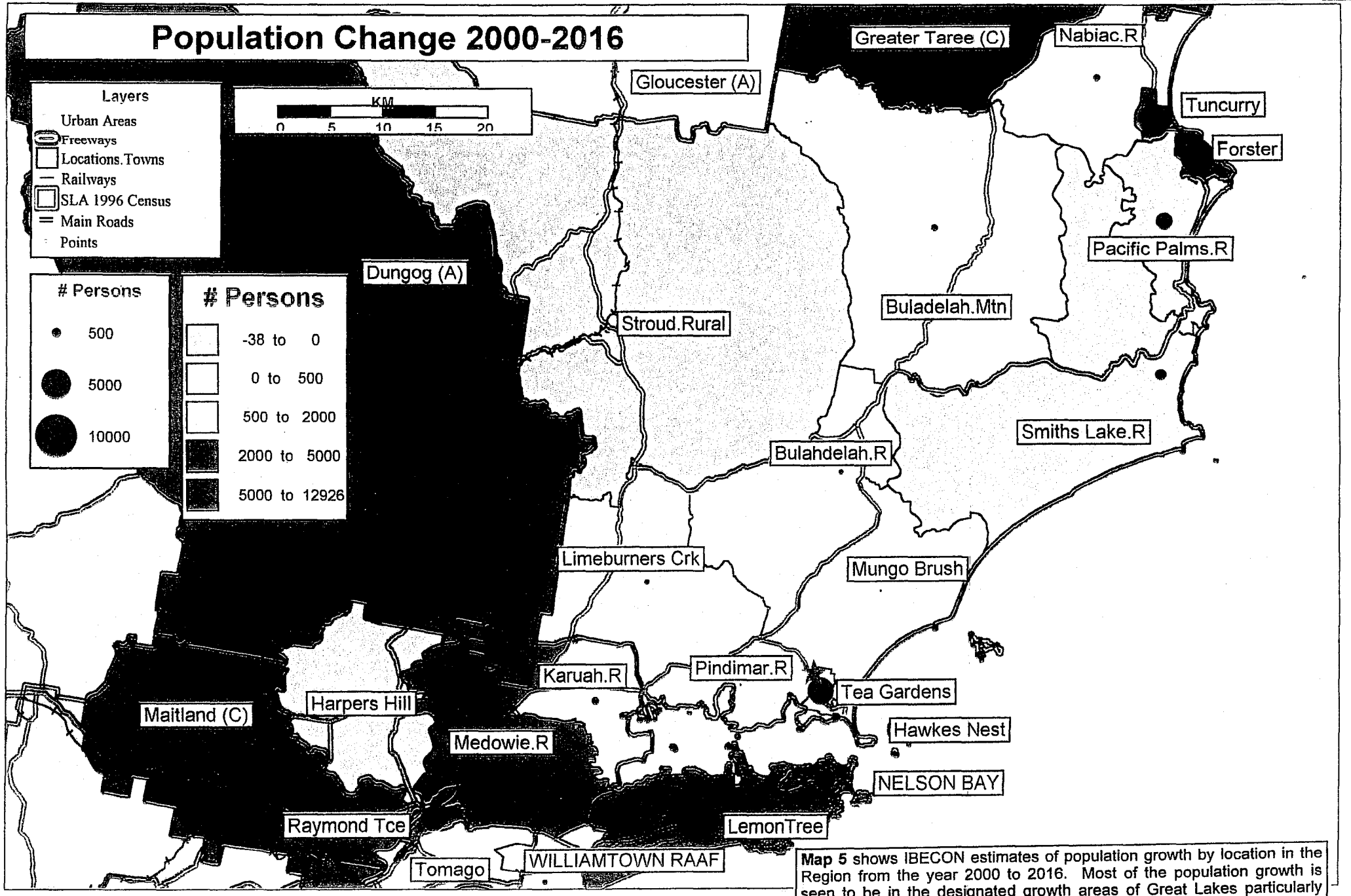
11. RECOMMENDED DEVELOPMENT PROGRAM FOR TEA GARDENS SC

APPROX YEAR	M^2 GLA		
	SPM	SPECS	TOTAL
2003	2000	1000	3000
2007-2008	3000	1500	4500
Longer Term	Add DDS and more specialty shops		

12. It is recommended that planning be modified to allow for the future longer term inclusion of a DDS and of other specialty shops with a total centre, in the range of 11-14,000 M^2, depending on the take up rate of population.

13. The issue of future population projections has raised some controversy. In this study there is no need for such debate. The analysis conducted uses certain years as benchmarks or sign posts and analyses retail requirements for projected population levels for those years. If the residential take up rate is higher or lower than either the Council or IBECON projections then, for the purposes of this exercise, there is only a need to move the opening times of the various retail proposals backwards or forwards to match that variation in population take up rate. This only applies to the longer term and can be modified as time progresses and actual residential take up rates become known.

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Map 5 shows IBECON estimates of population growth by location in the Region from the year 2000 to 2016. Most of the population growth is seen to be in the designated growth areas of Great Lakes particularly Forster/Tuncurry & Hawks Nest/Tea Gardens.

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1.00 STUDY BRIEF AND METHOD

.10 *Terms of Reference*

In July 2000, IBECON was commissioned to assess the market potential for retail facilities in the Tea Gardens Region of NSW to enable, inter alia, feasibility, impact and other assessments of the proposed new supermarket based Centre in Tea Gardens. The proposed Centre is planned to be located in the Myall Quays Estate just off Myall Road alongside existing residential developments, on the northern edge of the town. Approval exists for a 3,000M2 Centre on this site. This proposal is firstly evaluated and consideration is also given to a larger initial centre and the possibility, in the longer term future, of the addition of a DDS or mini majors and additional specialty shops.

Specific proposals evaluated in this assessment are as shown in the following Table

Table 1 Development Options Assessed

OPTION	TOTAL M^2 GLA	COMPONENTS
A	3,000	2,000M^2 SPM/1,000M^2 Specs
B	4,500	3,500M^2 SPM/1,000M^2 Specs
C	11,000	3,500M^2 SPM/5,000 M^2 DDS/2,500M^2 Specs
D	14,000	4,000M^2 SPM/6,000 M^2 DDS/4,000M^2 Specs

The larger Options C & D were assessed for medium to longer term possible development and have not been considered in the initial Phase 1 of the development.

A detailed study has been undertaken providing a comprehensive analysis and forecasts of the Region's demography, major industries, retail needs, plus sales forecasts and impact assessments for all shops in the Region.

.20 *Major Logical Steps in the Retail Model*

The simulation logic of the Retail Model is based on the following principles:

- Spending is sourced from three major streams of spending of Residents, Workforce, Tourists by type of person & spending.
- This $ spending potential sourced from each area is converted to Square Metres of Shop Floorspace which can be supported by the sum of this spending and compared with existing floorspace to determine over/under supply.
- This spending is then allocated to outlets based on characteristics of shops, range & level of service ratings, outlet appeal profiling and a comprehensive simulation of the transport system, effects of multiple purpose trips, the retail hierarchy, influence of major traders on patterns of trade etc.

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Tables showing where the retail $ comes from and where they are spent and hence sales levels in each shop or group of shops, together with impact statements and other summary tables are then created.

A rigorous, total accounting of the sourcing and destination of every retail dollar in the Region is undertaken in the model.

A more detailed description of the model is provided in Appendix B-N.

.21 *Verification Procedures*

Estimates of sales in all shops in the Region are produced and checked against known actual performance to verify the calibration of the model. Where possible, trade flows identified in shopper surveys (showing selected incidences of where residents actually lived and shopped) are checked against totally comprehensive flow tables generated by the system. With the exception of some actual shop sales data (supplied to IBECON on a strictly confidential basis), Appendix A to this report and separately bound computer printouts contain detailed statistical tables which enable verification of this calibration.

.22 *Some Important Concepts*

Appendix B to this report and a separately bound volume, provide more detailed descriptions of the modelling systems and databases used in this study. The following three concepts used in the model vary from traditional approaches. These variations enable a very close level of simulation of the retail market and produce highly informative and, if required, detailed results.

.23 *The Concept and Relevance of Over and Under Supply of Retail Floorspace*

The concept of over and under supply of shop floorspace is one of a "mismatch". It measures the relationship between where spending is sourced from residents, Workforce and tourists and how much floorspace these dollars can support, and the existing provision of floorspace in each geographic area. This mismatching reflects the retail hierarchy and partly explains the flows of shoppers between localities. Many residents and workers in "deficient" suburbs/locations, of necessity travel to "surplus" suburbs/locations to shop. The mismatch concept is illustrated in the following diagram.

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SUPPLY of shops	— (minus)	DEMAND for shops	→	MISMATCH over/under supply

Supply	=	Total of all shop floorspace in an area.
Demand	=	Resident Population + Workforce + Tourism Spending Translated to shop floorspace requirements.
Mismatch	=	Oversupply (+) If there are more shops than required in any area. Undersupply (-) If not enough shops in that area.

.24 *Main Catchment & "Trade Areas" Concepts*

The Main Catchment has been defined as shown in Map 1 to include all towns and locations within the Local Government Areas of Great Lakes and Port Stephens. The wider Region includes parts of Newcastle and Taree. The IBECON concept of **"Main Catchment" is not the same as the traditional "Primary" or "Secondary" trade catchment concepts** used by many consultants. It is an **inner study Region** and makes no preconceived statement about "trade areas" in the traditional sense. The analysis of market shares and source of trade is undertaken on a locality by locality basis, thus allowing subsequent aggregation to define "trade areas" for all Centres in the Main Catchment. Relevant data has been aggregated for the other Sub-Regions or Catchments as illustrated in Map 1.

.30 *Assumptions and Qualifications*

The following assumptions and qualifications are significant:-

- With the exception of assumed additions to floorspace as specified above, that there are no other additions in the Region between 2000 and 2016.
- That there are no major changes to the transport system in the Region before 2016.
- That any developments in the proposed developments and extensions to existing centres are undertaken so as to warrant the design and other ratings as assumed and listed in this report or detailed tables.
- While the population projections used in this modelling are based on the best information available, it is possible that take up rates of residential land could be faster or slower than indicated. Under such circumstances the timing and forecast level of sales would need to be adjusted accordingly.

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2.00 SUMMARY OF RESULTS AND CONCLUSIONS

Selected detailed results from various modeling runs are presented in this chapter. These results, together with Chapters 3 through 6, plus Appendix A in part B, provide the documentation and background to the conclusions presented in the Executive Overview.

.10 *Study Region Definition*

For the purpose of this study the "Region" for retail analysis comprises Great Lakes and Port Stephens Shires, plus adjoining LGA's of Newcastle (Remainder - Excluding Newcastle Inner), Maitland, Gloucester, Dungog and Greater Taree. This widely drawn study Region enables a comprehensive analysis of all competing retail centres and their catchments, trade flows between suburbs/locations and LGA's and hence levels of escape and captured spending. The defined Main Catchment comprises the sum of all towns and locations within Great Lakes and Port Stephens LGAs. The locations in Newcastle, Taree and other LGAs have been included as fringe or external areas to allow for retail trade inflows and outflows. Estimates and forecasts have been prepared for 2000 through to 2016. The definition of these various Sub-Regions is shown in Map 1b and listed in various tables in Appendix A.

Some slight differences occur between the actual boundaries of Great Lakes and Port Stephens LGAs and the summation of suburbs and locations identified within those LGAs. These differences are only minor and do not affect the results or conclusions.

.20 *Summary of Results - Study Region, Main Catchment, Greater Lakes LGA, Hawkes Nest & Tea Gardens Sub-Region*

A summary of relevant results of this analysis follows. The following descriptions of the overall situation for the Study Region, the Main Catchment, Great Lakes Shire. Hawkes Nest and Tea Gardens Sub-Region, provide a general background for the analysis of the proposed retail developments.

.30 *The Region Retail Requirements in 2000 - 2016*

The following Table 2.1 shows the effects of assumed population, jobs and economic growth in the Region. It summarises, population, spending and retail floorspace data over the period 2000 to 2016 assuming no increase in competing shops. The Main Catchment essentially comprises Great Lakes and Port Stephens LGAs. Other nearby LGAs making up the study region include Newcastle and Taree. This analysis is based on Council projections for Tea Gardens. Using IBECON projections would produce greater demand for shop floorspace and hence, greater deficiencies of shop floorspace.

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Table 2.1 Demand for Shops (2000$) (TOTAL RETAIL) *ABSOLUTE*

Year	2000	2006	2011	2016
Scenario	R1Y1	R2Y2	R3Y1	R3Y2
Study Region				
Population '000	339	367	386	406
$m Spending (2000$)	2692	3136	3508	919
'000 M^2 NSA Required	418	488	547	613
'000 M^2 NSA Existing	439	491	491	491
'000 M^2 NSA Surplus	+21	+3	-56	-122
Main Catchment (a)				
Population '000	89	103	114	126
$m Spending (2000$)	702	862	1013	1179
'000 M^2 NSA Required	108	133	156	182
'000 M^2 NSA Existing	108	111	111	111
'000 M^2 NSA Surplus	-	-22	-45	-72
Great Lakes LGA				
Population '000	31	37	42	47
$m Spending (2000$)	292	353	412	477
'000 M^2 NSA Required	45	55	64	74
'000 M^2 NSA Existing	46	46	46	46
'000 M^2 NSA Surplus	+1	-8	-18	-28
Tea Gardens Sub-Region (b)				
Population '000	7.0	8.0	8.9	9.7
$m Spending (1998$)	72.7	85.0	97.1	110.0
'000 M^2 NSA Required	11.2	13.1	15.0	17.1
'000 M^2 NSA Existing	5.3	5.3	5.3	5.3
'000 M^2 NSA Surplus	-5.9	-7.8	-9.7	-11.7
Hawkes Nest/Tea Gardens District (c)				
Population '000	3.4	4.3	5.0	5.8
$m Spending (1998$)	36.4	45.4	54.3	64.0
'000 M^2 NSA Required	5.6	7.0	8.4	9.9
'000 M^2 NSA Existing	3.4	3.4	3.4	3.4
'000 M^2 NSA Surplus	-2.2	-3.7	-5.0	-6.6

(a) Great Lakes and Port Stephens LGAs
(b) Hawkes Nest, Tea Gardens District, Buladelah, Stroud and Lime Burners Creek
(c) Hawkes Nest, Tea Gardens, Pindamar Rural and Mungo Brush

The most relevant areas for this analysis are Hawkes Nest/Tea Gardens District, Tea Gardens Sub-Region, Great Lakes LGA and the Main Catchment. The growth shown for the whole of the Study Region occurs throughout most parts of the Region. In absolute terms there is an approximate balance of shop floorspace in the total Great Lakes and Port Stephens LGA's. There is some vacant floorspace in Great Lakes and Port Stephens LGAs, mostly in Raymond Terrace and Forster/Tuncurry. If these vacant shops are added back into the apparent balance based on occupied shops, there would be an apparent small surplus of shops in the Main Catchment.

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In the Tea Gardens Sub-Region and Great Lakes LGA there are deficiencies in floorspace in all categories except Meals Out, and to a lesser extent Furniture and miscellaneous. The Meals Out category includes restaurants, coffee shops, sandwich shops, takeaway food etc, which cater for peak loads of tourists in the tourist season.

This analysis is based on floorspace as measured (ie in absolute terms). If the existing floorspace is weighted by quality ratings reflecting their turnover rates the effective existing floorspace in Great Lakes LGA reduces significantly. Detailed tables showing the results of this analysis are provided in Appendix A. Under the weighted analysis the apparent surplus in the LGA reduces to a noticeable deficiency which partly offsets the vacant floorspace in Tuncurry/Forster. For the Tea Gardens Sub-Region and Hawkes Nest/Tea Gardens District there is a substantial deficiency which grows strongly over the next decade and beyond if it is assumed that no further floorspace is added to the existing shops.

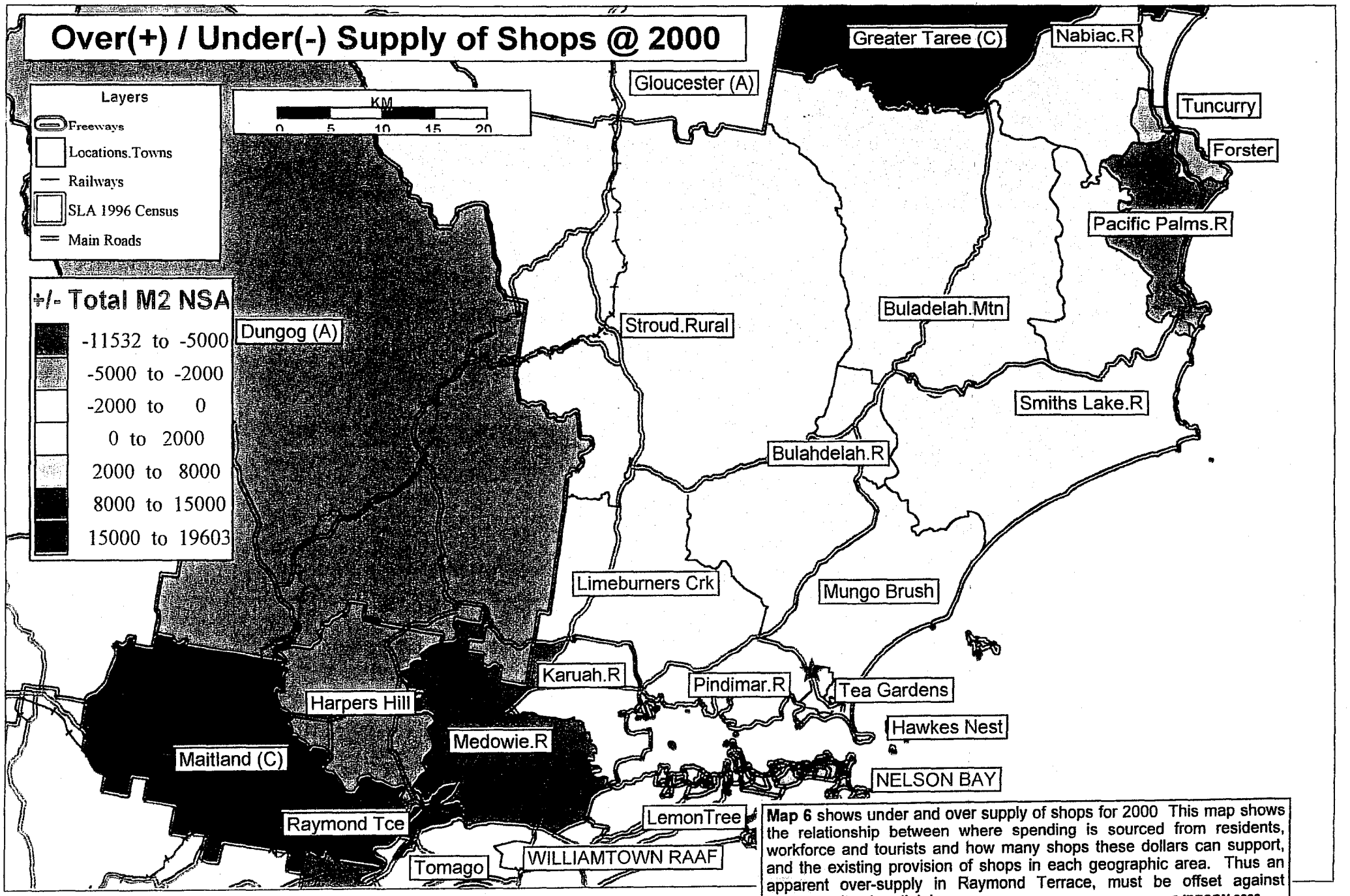
On the assumption that there are only additions to Retail floorspace as listed in this report, the Region over the coming decade would move into substantial deficiency. It is therefore likely that there will be proposals for additional shop floorspace which have not yet been submitted for approval.

A second factor which needs to be taken into account is that the floorspace and productivity rates used in this analysis to determine floorspace requirements are based upon fringe metropolitan/non-urban typical rates for New South Wales. It could possibly be argued that with the development of new shopping centres in locations such as Tea Gardens and Raymond Terrace, that higher productivity rates would be more appropriate. Even if productivity rates were increased by 10%, making them approach typical Sydney rates for all types of shops, the Main Catchment would still be approximately in balance by the Year 2002/3.

In total for the Tea Gardens Sub-Region there is currently a deficiency of almost 6,000 M^2 net selling area which equates to approximately 8,000 M^2 GLA. If there were no further additions to shop floorspace in this Sub-Region, this deficiency would grow to almost 12,000 M^2 by 2016, equivalent to 15,000 M^2 GLA. This is sufficient floorspace requirement to warrant a centre which comprised at least one major supermarket, one DDS and specialty shops. There could conceivably be scope based on this analysis alone for a second small supermarket to be included by then. If the higher population growth scenario, assumed as a possibility for Tea Gardens/Hawkes Nest and described elsewhere in this report, were to eventuate there would definitely be scope for a second supermarket. The composition and timing of deficiencies by type of shop is discussed in more detail elsewhere in this report.

Map 6 on the following page illustrates the over and undersupply of floorspace in suburb/location in the Region in 2000.

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Map 6 shows under and over supply of shops for 2000 This map shows the relationship between where spending is sourced from residents, workforce and tourists and how many shops these dollars can support, and the existing provision of shops in each geographic area. Thus an apparent over-supply in Raymond Terrace, must be offset against undersupplies in adjoining areas.

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.40 *Estimated Sales in Tea Gardens Centre*

The following table shows a range of likely estimates for sales in Tea Gardens Centre in 2003 to 2016 for each of the Options considered. The supermarket options (A & B) trade viably. Generally the turnover rates, assuming development in the years nominated for the larger options (C & D), barely achieve levels which are acceptable to major retailers. This indicates that the developments would be premature and hence would probably need to be deferred for a few years. To some extent this depends on who the traders are and their willingness to invest in this location for the longer term. For example, Option A considered for 2003 and 2006 produces a turnover level which is acceptable. If Option C were deferred to approximately 2016 it would achieve more acceptable, but not spectacular, turnover levels.

Table 2.2a Estimated Sales in Tea Gardens Centre in 2002 (2000$)

			LOW POPULATION		"MOST LIKELY" POPULATION	
YEAR	OPTION	M^2 GLA	$m SALES	$/$M^2$ GLA	$m SALES	$/$M^2$ GLA
2003	A	3000	11.8	3933	13.9	4633
2006	A	3000	13.7	4567	16.1	5367
2006	B	4500	15.3	3400	18.5	4111
2011	C	11000	34.3	3118	42.3	3845
2016	D	14000	44.2	3157	55.6	3871

At this stage it is difficult to be precise about likely take up rates of new residential blocks. This analysis, nevertheless, shows that there is scope ultimately for a larger supermarket and DDS based centre, though it may not be for quite some time. For planning purposes, allowance should be made for the possible future expansion of this centre to include a DDS and to achieve an overall size in the range of 11-14,000M^2 GLA.

.41 *Estimated Source of Patronage for Tea Gardens Centre in 2006*

Table 2.2b shows estimates of source of sales in Tea Gardens Centre for Option A (3,000M^2). The data has been aggregated to Sub-Regions as shown in Map 1 (at page xiii) to aid interpretation. Detailed data by suburb/location is provided in Appendix A.

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Table 2.2b Source data for Tea Gardens Centre in 2006 (2000$) As Is

AREA	#Pop	$000	%Share	$000	%Source
	Total	(a) Total	(b) Site	(c) Site	(d) Site
HAWKES.TEAGDNS					
Hawkes Nest	1420	19444	26.0	5064	33.0
Tea Gardens	2198	22897	42.5	9726	63.3
Pindamar.Rrl	521	2433	6.0	144	0.9
Mungo Brush	118	705	5.7	40	0.3
HAWKES.TEAGDNS	**4257**	**45479**	**32.9**	**14974**	**97.5**
LAKES STH	3782	39618	0.7	275	1.8
TG.HN+NEARBY	**8039**	**85097**	**17.9**	**15249**	**99.3**
LAKES NORTH	28954	267630	0.0	39	0.2
GREAT LAKES LGA	**36993**	**352727**	**4.3**	**15288**	**99.5**
PORT STEPHENS L	65680	509283	0.0	63	0.4
MAIN CATCHMNT	**102673**	**862010**	**1.8**	**15351**	**99.9**
Region Total	**366844**	**3135202**	**0.5**	**15361**	**100.0**

(a) Total Retail $ available from this area.
(b) % of (a) estimated to be spent in Site = Tea Gardens Centre
(c) (a) x (b)
(d) = $ in (c) expressed as % of Total Sales in Tea Gardens Centre

Total sales level in Tea Gardens Centre in 2006 is estimated @ $15.4m (in 2000$). 97.5% of the trade is estimated to come from Tea Gardens Sub-Region and 2.5% from Great Lakes LGA. No significant trade comes from fringe areas in the Region.

.42 *Source of Trade as Proposed in 2016*

Table 2.2c shows estimate source of trade in 2016 of the proposed expanded Tea Gardens Centre. (Option D - 14,000M^2)

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Table 2.2c Source Data for Tea Gardens Centre $000 - 2016 (Expanded)

AREA	#Pop	$000	%Share	$000	%Source
	Total	(a) Total	(b) Site	(c) Site	(d) Site
HAWKES.TEAGDNS					
Hawkes Nest	1737	24586	56.9	13988	31.7
Tea Gardens	3351	36056	73.4	26481	60.0
Pindamar.Rrl	539	3032	18.5	559	1.3
Mungo Brush	136	913	17.8	162	0.4
HAWKES.TEAGDNS	**5763**	**64587**	**63.8**	**41190**	**93.4**
LAKES STH	3942	45955	3.1	1444	3.2
TG.HN+NEARBY	9705	110542	38.6	42634	96.6
LAKES NORTH	37289	366740	0.1	310	0.6
GREAT LAKES LGA	**46994**	**477282**	**9**	**42944**	**97.2**
PORT STEPHENS L	78879	702270	0.2	1155	2.6
MAIN CATCHMNT	**125873**	**1179552**	**3.7**	**44099**	**99.8**
REGION TOTAL	**406102**	**3919664**	**1.1**	**44159**	**100.0**

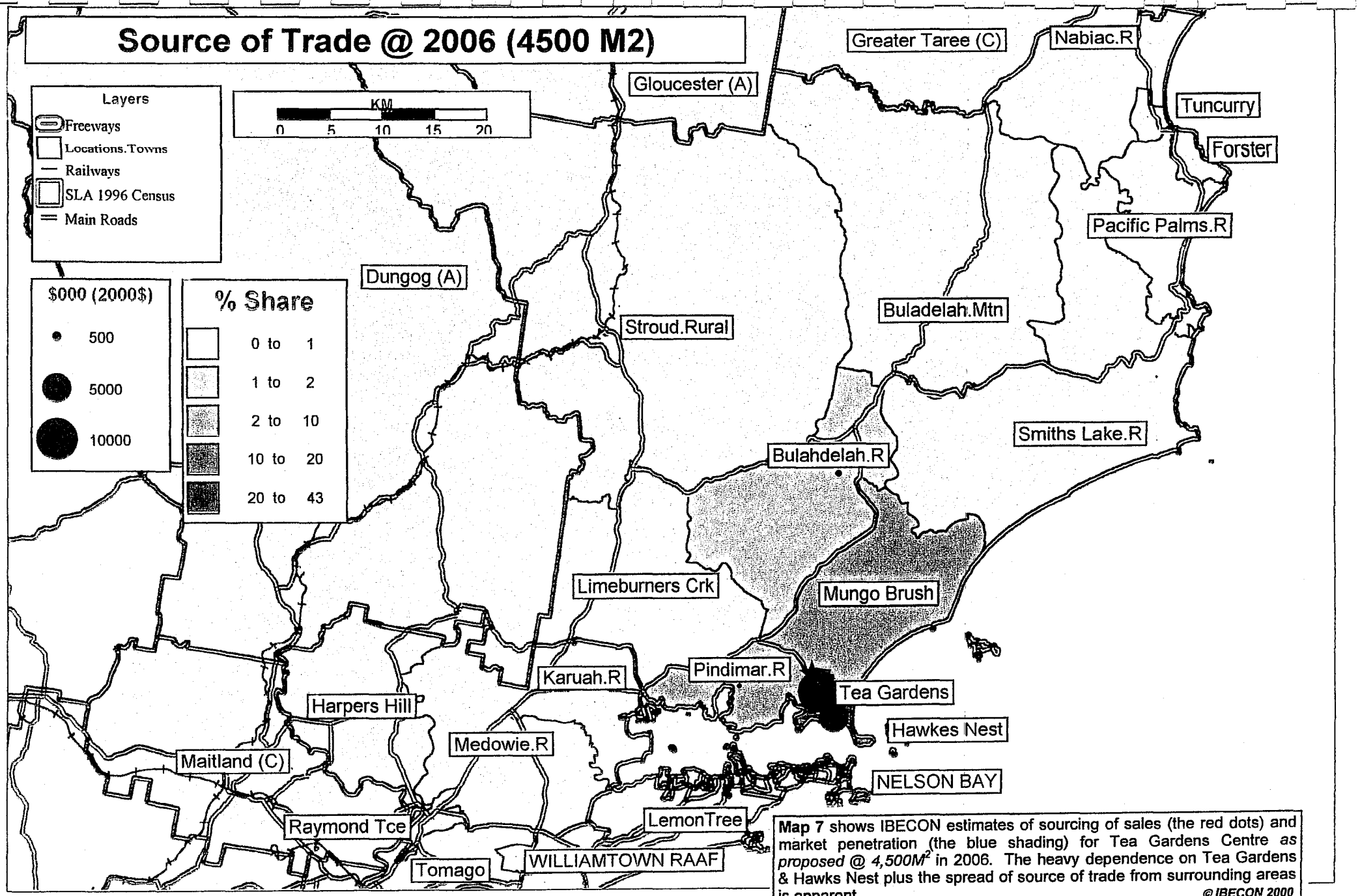
(a) Total Retail $ available from this area.
(b) % of (a) estimated to be spent in Site = Tea Gardens Centre
(c) (a) x (b)
(d) = $ in (c) expressed as % of Total Sales in Tea Gardens Centre

This shows that overall market penetration increases in all parts of the Region except in Hawkes Nest/Tea Gardens.

.43 *Market Penetration Maps*

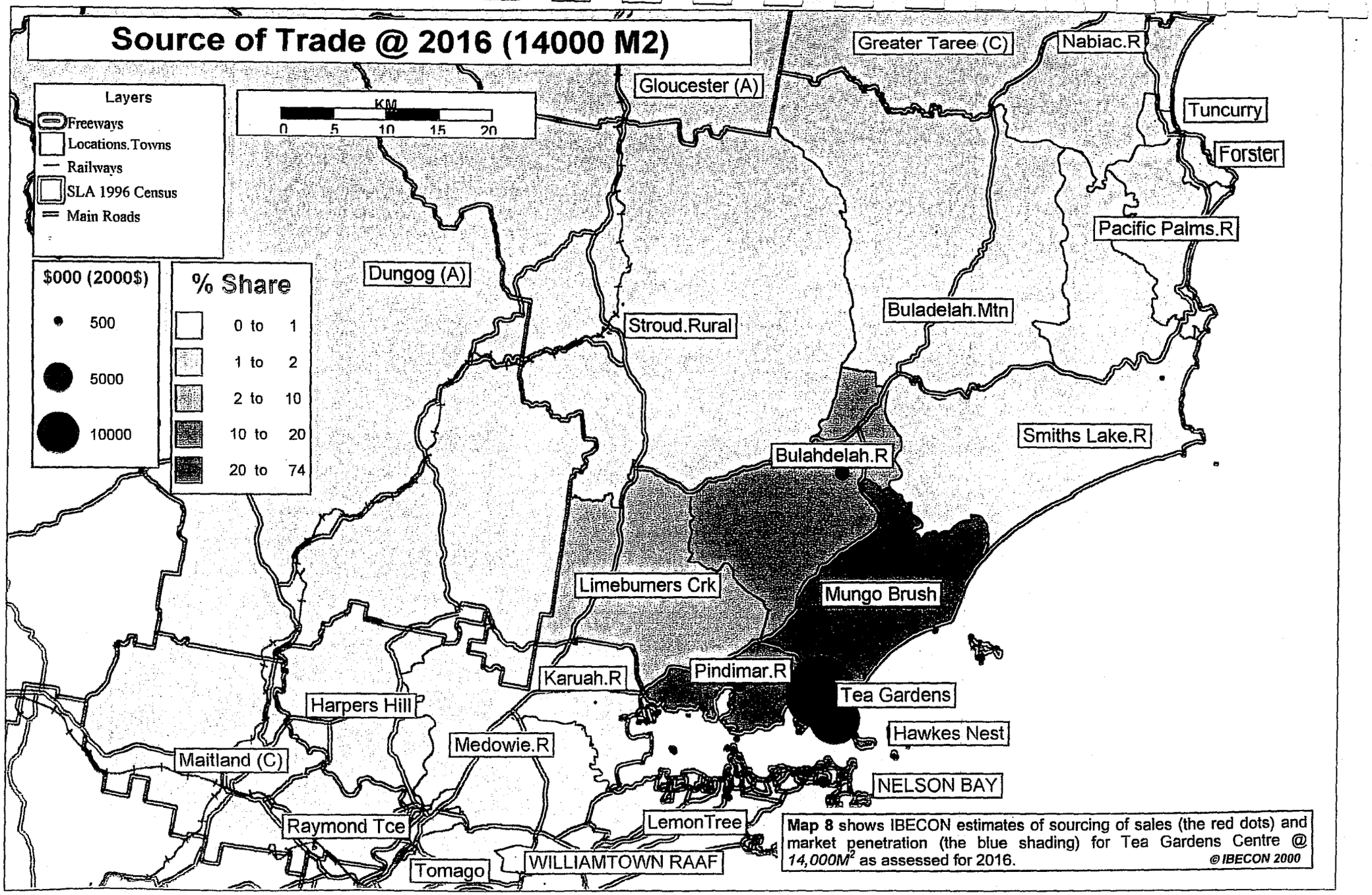
The following two maps show IBECON estimates of source of trade and market penetration for the proposed 4,500M^2 Centre in the year 2006 (Map 7) and estimates of source of trade and market share if the centre were expanded to 14,000M^2 in the year 2016 (Map 8).

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Map 7 shows IBECON estimates of sourcing of sales (the red dots) and market penetration (the blue shading) for Tea Gardens Centre *as proposed @ 4,500M²* in 2006. The heavy dependence on Tea Gardens & Hawks Nest plus the spread of source of trade from surrounding areas is apparent.

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Map 8 shows IBECON estimates of sourcing of sales (the red dots) and market penetration (the blue shading) for Tea Gardens Centre @ *14,000M²* as assessed for 2016.

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.50 *Calculation of Escape/Captured Spending for Tea Gardens District*

The modeling calculates flows of retail trade sourced from every area in the region to all possible destinations, i.e. shops in areas in the various catchments, fringe areas and to external locations. Tables for the Hawkes Nest/Tea Gardens District show a summation of these flows comprising 4 major components of "RETAINED", "ESCAPE", "CAPTURED" and "OUTSIDE" as follows.

	Source of sales $		Allocated to ↘		
Sales $ Sourced	◆◆◆◆ →→→→ Total Spending	=	↘↘↘↘ District	+	↘↘↘↘ Other Area
From District + ↓	"TOTAL FROM DISTRICT" Total of all retail $ available from all Residents, Workers and Tourists in District.	=	"RETAINED" Sourced from District and spent in District	+	"ESCAPE" Sourced from Shire but spent outside District.
From Other Areas = ↓	"TOTAL FROM OUTSIDE" All retail $ available all residents, workers etc, from Fringe Areas of Region	=	"CAPTURED" Sourced from other areas but spent in District.	+	"OUTSIDE" Sourced and Spent outside District.
Region Total $	Region Total = Σ SOURCED FROM DISTRICT + FRINGE	=	Total Sales in All shops in District.	+	Total $ Not Spent in Shops in the District.

This information is presented in tables in this report as follows:-

Source	Total Spending	*Allocated to (+% of Total) District(a)*	*Other Area(b)*
District	"TOTAL FROM DISTRICT"	"RETAINED"	"ESCAPE"
Other Areas	"TOTAL FROM OUTSIDE"	"CAPTURED"	"OUTSIDE"
Region Total	Σ of above	Σ of above	Σ of above

Tables summarising these net flows for each of the four scenarios for the defined Hawkes Nest/Tea Gardens District, for total retail sales, are provided in the following tables. The detailed data from which these tables are derived are provided as part of the bound volume of computer printouts. More detailed tables showing full origin/destination tables are available.

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.51 *Escape/Captured Spending from Hawkes Nest/Tea Gardens District*

Table 2.3 following shows estimated **escape/captured spending** from the Hawkes Nest/Tea Gardens District, in 2002 assuming the proposed Tea Gardens Centre is not developed. (For origin/destination tables for all retail sales see Appendix A013)

Table 2.3 Escape & Captured Homewares Spending 2002 Tea Garden District ($m)
"AS IS"

Source	Total Spending	*Allocated to (% of Total) District*	*Other Area*
District	39.1	12.5 (32%)	26.6 (68%)
Other Areas	2804.2	2.2 (-)	2802.0 (100%)
Region Total	2843.4	14.7 (0.5%)	2828.7 (99.5%)

In 2002, it is estimated that without the proposed Tea Gardens Centre, $12.5m (or only 32%) of the total of $39.1m retail spending available from the Tea Garden Sub-Region would be retained within the Sub-Region. The balance of $2.2m captured from outside this Shire is vastly less than the $26.6m currently escaping from the District to locations such as Raymond Terrace and Newcastle. Net escape spending is $24.4m (=39.1-14.7), equivalent to 62% of total spending generated from within the District.

.52 *Effect of Tea Gardens Proposed Centre in 2003*

Table 2.4 following shows estimated **escape/captured spending** from the Hawkes Nest/Tea Garden District in 2003 after the proposed Tea Gardens Centre (R2Y1 assumptions) commenced trading from 3,000 M^2.

Table 2.4 Escape & Captured Spending 2003 (2000$)

Source	Total Spending	*Allocated to (% of Total) District*	*Other Area*
District	40.7	22.2 (55%)	18.5 (45.0%)
Other Areas	2871.9	2.5 (-)	2369.4 (100.0%)
Region Total	2912.6	24.7 (0.8%)	2887.9 (99.2%)

With the Tea Gardens Centre in 2003, local retention would increase to $22.2m, 55% of locally generated spending. Captured trade would increase marginally so that net escape spending is estimated to decline to $16.0m (= 40.7-24.7) equivalent to 39% of locally generated spending.

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.53 *Escape/Captured Spending from the Great Lakes Shire*

Table 2.5 following shows estimated **escape/captured spending** from the defined Great Lakes Shire, in 2002 assuming Tea Gardens Centre is not trading.

Table 2.5 Escape & Captured Spending 2002 ($m)
"AS IS"

Source	Total Spending	Allocated to (% of Total) Shire	Other Area
Shire	310	210 (67.7%)	100 (32.0%)
Other Areas	2533	11 (0.5%)	2522 (99.5%)
Region Total	2843	221 (6.7%)	2622 (92.3%)

In 2002, it is estimated that without the proposed Tea Gardens Centre, $210m (or 68%) of the total of $310m retail spending available from the Shire is retained within the Shire. The balance of $11m captured from outside the Shire is less than the $100m currently escaping. Net escape spending is thus $89m, equivalent to 29% of total spending generated from within the Shire.

.54 *Effect of Tea Gardens Centre in 2003*

Table 2.6 following shows estimated **escape/captured spending** from the Great Lakes LGA in 2003 after the proposed expansion of Tea Gardens Centre (R2Y2 assumptions). (Option A = 3,000M^2).

Table 2.6 Escape & Captured Spending 2003 (2000$)

Source	Total Spending	Allocated to (% of Total) Shire	Other Area
Shire	320	226 (70.6%)	94 (29.4%)
Other Areas	2592	11 (0.5%)	2581 (99.5%)
Region Total	2913	237 (8.1%)	2676 (91.9%)

With the expanded Tea Gardens Centre in 2003, local retention would increase to $226m, 71% of locally generated spending. Captured trade would increase marginally so that net escape spending is estimated to increase to $83m (26% of locally generated spending).

.60 *Sales Levels in All Shops*

The following Table 2.7, IBECON estimates of sales in 2000 and 2002, for all suburbs/locations in Great Lakes and Port Stephens. In these tables columns headed $/M^2 NSA are $ Sales per M^2 Net Selling Area, +/-% columns are % change before and after proposed expansion in 2002 and $000 +/- are differences between $000 total sales levels before and after additions elsewhere begin by 2002.

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Table 2.7 Estimates of Sales in Outlets in Great Lakes Shire in 2000 -2002

LOCATION	$000	$000	%	$/M²NSA	$/M²NSA	%	$000
	(a) 2000	(b) 2002	CHANGE	(a) 2000	(b) 2002	CHANGE	CHANGE
HAWKES.TEAGDNS							
Hawkes Nest	5754	5895	2.5	3951	4048	2.5	141
Tea Gardens	8201	8781	7.1	4309	4614	7.1	580
Pindamar.Rrl	0	0	0.0	0	0	0.0	0
Mungo Brush	0	0	0.0	0	0	0.0	0
HAWKES.TEAGDNS	13955	14676	5.2	4154	4369	5.2	721
LAKES STH							
Bulahdelah.Rrl	5097	5034	-1.2	3982	3932	-1.3	-63
Stroud.Rrl	2108	2074	-1.6	3896	3833	-1.6	-34
Limeburners Ck	417	445	6.7	2780	2966	6.7	28
LAKES STH	7622	7553	-0.9	3867	3832	-0.9	-69
G.HN+NEARBY	21577	22229	3.0	4048	4170	3.0	652
LAKES NORTH	187367	198517	6.0	4573	4845	6.0	11150
GREAT LAKES LGA	208944	220746	5.6	4512	4767	5.6	11802
PORT STEPHENS LGA	326000	338864	3.9	5286	5258	-0.5	12864
Total Main Catchment	534944	559610	4.6	4954	5053	2.0	24666

(a) Before Additions (b) After Region Additions

Some retail trade would be redistributed reflecting the assumed additions. Overall trading rates ($/M^2 NSA) would increase slightly within the Main Catchment, reflecting the population and real spending growth and additional competition in fringe areas.

.61 *Medium Term Trading Levels in all Shops*

The following Table 2.8 shows trading levels in all shops trading in 2003 & 2006. It shows estimated sales of all shops in each suburb location which would prevail firstly in 2003 and then in 2006 with no other changes to retail floorspace or transport systems, other than as listed in this report.

Table 2.8 Estimates of Sales in all Shops in 2003 & 2006

LOCATION	$000	$000	%	$/M²NSA	$/M²NSA	%	$000
	2003	2006	CHANGE	2003	2006	CHANGE	CHANGE
HAWKES.TEAGDNS							
Hawkes Nest	6081	6646	9.3	4176	4564	9.3	565
Tea Gardens	9191	10502	14.3	4829	5518	14.3	1311
Pindamar.Rrl	0	0	0.0	0	0	0	0
Mungo Brush	0	0	0.0	0	0	0	0
HAWKES.TEAGDNS	15272	17148	12.3	4546	5105	12.3	1876
LAKES STH							
Bulahdelah.Rrl	5092	5248	3.1	3978	4100	3.1	156
Stroud.Rrl	2097	2156	2.8	3876	3985	2.8	59
Limeburners Ck	456	490	7.5	3040	3266	7.4	34
LAKES STH	7645	7894	3.3	3878	4005	3.3	249
TG.HN+NEARBY	22917	25042	9.3	4299	4698	9.3	2125
LAKES NORTH	204920	225899	10.2	5001	5513	10.2	20979
GREAT LAKES LGA	227837	250941	10.1	4920	5420	10.1	23104
PORT STEPHENS L	349844	373905	6.9	5429	5802	6.9	24061
Total Main Catchment	577681	624846	8.2	5216	5642	8.2	47165

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If there were no further additions to shop floorspace, trading levels would increase from the 2000 $4,954/M^2 NSA to $5,216/M^2 NSA in 2003 and then to $5,642/M^2 NSA by 2006. This shows that even with the assumed additions of retail floorspace, there is still scope for significant expansions to other shopping centres throughout the Region.

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3.00 BACKGROUND DATA & TRENDS

This chapter provides detailed data and information about the major factors influencing the availability of retail dollars and the types of retail demands made by residents, workers and tourists. A number of transport issues plus other issues are also addressed.

.10 *Population & Characteristics*

Several sets of population forecasts are available for Tea Gardens and Great Lake Shire. These include:

- The DUAP forecasts last updated in 1994 but now subject to review as a result of the 1996 Census and more recently published ABS data.
- The population projections included in the draft *"Tea Gardens/Hawkes Nest S94 Contributions Plan"*, prepared by Great Lakes Council in February 1998.
- Forecasts for global NSW, Metropolitan & Non-Metropolitan areas by the Australian Bureau of Statistics in catalogue # 3222.0 entitled *"Population Projections 1997-2051"*.
- Population projections included in the *"Tea Gardens/Hawkes Nest Conservation and Development Strategy"*, prepared by Great Lakes Council (not yet published but being submitted to July Council Meeting).
- Annual Buildings approvals data supplied by Great Lakes Council for years 1992/3 through 1999/2000 for various Regions throughout Great Lakes.

Each of these sources provides a range of possible future demographic projections. As part of this study IBECON reviewed all of these projections both for Great Lakes and adjoining LGA's and for specific towns and locations within Great Lakes. The resulting projections for towns and locations within Great Lakes have been used in this study.

The following projections present a summary of the results of this analysis and forecasts. Data is presented first for the total of Great Lakes LGA, DUAP projections and share of total state for Sydney and Great Lakes total population are also shown in this table.

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Table 3.1 Population Data & Projections for the Region

LGA/SSD	1976	1981	1986	1991	1996	1999	2001	2006	2011	2016
SOURCE	CENSUS	CENSUS	CENSUS	CENSUS	CENSUS	ABS	IBECON	IBECON	IBECON	IBECON
IBECON PROJECTIONS										
NSW (000)	4836	5211	5539	5899	6204	6412	6540	6858	7147	7475
SYDNEY (000)	3020	3256	3473	3673	3879	4041	4086	4262	4420	4570
BAL NSW (000)	1816	1955	2066	2226	2325	2371	2454	2596	2727	2905
DUAP PROJECTIONS - GREAT LAKES LGA										
Low				25.5	30.1	(32.8) (a)	34.6	38.9	42.9	46.7
Med							35.0	39.7	44.4	49.2
High							35.4	40.6	45.9	51.4
ABS	12.8	17.1	20.2	25.5	28.7	30.6				
Inc Average Annual		340	620	1010	640	630				
As % of NSW										
SYD TOTAL	62.4	62.5	62.7	62.3	62.5	63.0	62.5	62.1	61.8	61.1
BAL OF NSW	37.6	37.5	37.3	37.7	37.5	37.0	37.5	37.9	38.2	38.9
Great Lakes (med) (b)	0.26	0.33	0.36	0.43	0.46	0.48	0.54	0.58	0.62	0.66
Great Lakes as % of Non-Syd	0.70	0.87	0.98	1.14	1.23	1.29	1.43	1.53	1.63	1.69

This table shows that the population of Great Lakes Shire has increased from 12,800 in 1976 to 30,600 by 1999. Over this period Great Lakes Shire as a proportion of the total NSW has increased from 0.26% to 0.48%. Over the period between the 1976 and 1996 Censes, Great Lake's total population increased by an average of 800 persons per annum. In 1996-1999 this decreased to 635 persons per annum. To some extent this apparent slowing in areas outside Sydney reflects the abnormal growth which has occurred recently in Sydney's population. It is anticipated that after the Olympics, growth rates will revert to a more normal pattern and the historical trends of strong growth in coastal NSW will resume.

The following Table 3.2 shows updated Council Population Projections based on their Linear Dwelling Approvals method for Tuncurry, Forster, Tea Gardens and Hawkes Nest. Also shown on this table is the IBECON projection of Total Population based on the DUAP projection, corrected for 1996 Census Data and the aberrations caused by the Sydney Olympics. The balance of the Shire comprises areas such as Buladelah, Stroud and other coastal regions such as Seal Rocks, Smith Lake, Pacific Palms etc.

Recent Dwelling Approvals data for Hawkes Nest + Tea Gardens has been running at a rate between 120 and 134 dwellings per annum, compared with a rate of 60-77 dwellings per annum in the previous seven or eight years. While not all dwelling approvals result in an increase in the housing stock, as some replace existing dwellings and some do not proceed to completion, this nevertheless would suggest that the projections prepared by Council on their Linear Method are conservative. Current construction rates in existing development areas also support the view that these projections are conservative. Council's projections indicate that there is scope for dwellings to house approximately 140-150 persons per annum over future years. It is our view that this rate could be substantially higher at about 250 persons per annum. This additional growth is shown at the bottom of the table as additional Tea Gardens population. While to remain ultra conservative most of the IBECON retail requirements modelling has been based on Council's conservative projections we have also conducted sensitivity tests using these higher, more likely, population growth rates to assess their likely effect.

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Table 3.2 Population Projections for Great Lakes LGA

Table 3.2.1 Council Projections for Tea Gardens/Hawks Nest based on Compound Growth Rates

	1996	1999	2001	2006	2011	2016
Tea Gardens (%)	996	na	1365	1869	2561	3509
Hawkes Nest (%)	1065		1278	1534	1840	2208
S/T TG/HN	2061		2643	3403	4401	5717

Table 3.2.2 Council Projections for Tea Gardens/Hawks Nest based on Linear DAs

Tea Gardens (D)	996	na	1579	2163	2746	3329
Hawks Nest (D)	1065		1232	1398	1565	1732
S/T TG/HN	2061		2811	3561	4311	5061

Table 3.2.3 Total Population Projections for Great Lakes LGA

Tuncurry (%)	5500	na	6325	7274	8365	9620
Forster (%)	10906		12542	14423	16586	19074
Tea Gardens (D)	996	na	1579	2163	2746	3328
Hawks Nest (D)	1065	na	1232	1398	1566	1732
Balance of Shire	10233		10322	11742	12738	13245
Great Lakes (a)	28700	30600	32000	37000	42000	47000
Average # pa	+640	+630	+700	+1000	+1000	+1000

(%) Council Projections based on Compound Growth Rates.
(D) Council Projections based on Linear DAs

Table 3.2.4 DUAP Medium Growth Projections (adjusted for 1996 Census & Olympics by IBECON)

Great Lakes	28700	30600	32000	37000	42000	47000
Average # pa	640	630	700	1000	1000	1000

Table 3.2.5 IBECON (most likely) projections for Tea Gardens/Hawks Nest)

Tea Gardens	996	na	2078	3163	4246	5328
Hawkes Nest	1065	na	1232	1398	1566	1732
S/T TG/HN	2061	na	3310	4561	5812	7060
Average # pa			+250	+250	+250	+250

The IBECON base projections (= DUAP medium) assume a rate averaging 1,000 persons per annum total increase over the period to 2016. On this basis Great Lakes as a percentage of New South Wales would increase to 0.59% of the NSW total by 2011. These projections are broadly consistent with DUAP and council projections but have been modified to reflect the 1996 Census and more recent population data. The line showing "Additional Tea Gardens Population" represent additional residents based on a higher take up rate of residential development within Tea Gardens. These projections represent IBECON's "most likely" population projections. A number of factors have contributed to the relatively slow development of residential land in the Tea Garden/Hawkes Nest area over the past 5-10 years. The major factor has been the absence of available zoned land in this area compared with alternatives available elsewhere. Recent changes to zoning has substantially increased available land and the development of the Expressway North of Hexham have increased demand by potential new residents. The addition of a new supermarket will enhance the appeal of the Tea Gardens location as will development of the new Health and Medical Centre soon to be established, and hence will contribute to this higher population growth rate.

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.11 *Detailed Population Projections For Tea Gardens Region*

The following Table 3.3 shows detailed population projections for each of the locations identified in Great Lakes sub-totalled to urban and rural components together with totals for nearby local government areas and fringe local government areas. These projections do not include the "Additional Tea Gardens Population" shown in Table 3 above. The column headed "Relative Birth" (in Appendix A002) is a relative birth rate calculated by the IBECON population model. This relative birth rate is calculated by comparing the actual number of births in each area in 1996 with the expected number of births derived by applying Australian age/specific birth rates to the populations living in those areas in 1996.

Table 3.3 Conservative Population Totals for Region of Tea Gardens Retail Study

	CENSUS	CENSUS	POPULATION PROJECTIONS						
LGA/POSTCODE	1991	1996	1999	2000	2001	2006	2011	2016	2021
HAWKES.TEAGDNS									
Hawkes Nest (a)	1282	1203	1235	1247	1260	1426	1588	1743	1874
Tea Gardens (a)	**701**	**1020**	**1378**	**1498**	**1619**	**2205**	**2785**	**3356**	**3885**
Pindamar.Rrl	499	510	514	518	522	529	537	544	574
Mungo Brush	36	112	112	115	114	122	132	141	163
HAWKES.TEAGDNS	**2518**	**2845**	**3239**	**3378**	**3515**	**4282**	**5042**	**5784**	**6496**
LAKES STH									
Bulahdelah.Rrl	1351	1380	1398	1406	1414	1456	1501	1542	1597
Stroud.Rrl	1697	1571	1563	1550	1537	1527	1522	1512	1511
Limeburners Ck	562	686	720	744	768	815	862	907	951
LAKES STH	**3610**	**3637**	**3681**	**3700**	**3719**	**3798**	**3885**	**3961**	**4059**
TG.HN+NEARBY	**6128**	**6482**	**6920**	**7078**	**7234**	**8080**	**8927**	**9745**	**10555**
LAKES NORTH									
Nabiac.R	1301	1383	1450	1467	1485	1578	1674	1764	1836
Bulahdelah.Mtn	919	1002	1029	1036	1045	1140	1238	1330	1431
Smiths Lake.R	1446	1815	1955	2003	2050	2291	2536	2771	2991
Tuncurry	5177	5637	6127	6303	6479	7408	8486	9695	10656
Forster	10311	11178	11822	12108	12395	14688	16825	18891	20648
Pacific Palms	1075	1287	1338	1359	1383	1884	2384	2872	3318
LAKES NORTH	**20229**	**22302**	**23721**	**24276**	**24837**	**28989**	**33143**	**37323**	**40880**
GREAT LAKES LGA	**26357**	**28784**	**30641**	**31354**	**32071**	**37069**	**42070**	**47068**	**51435**
PORT STEPHENS LGA									
Pt Stephens W	2022	1797	1859	1892	1926	1967	1998	2052	2109
Lemon Tree Psg	12298	16364	18386	19180	19974	23502	27170	30530	33699
Williamstown	693	546	553	555	558	554	549	552	559
Nelson Bay	7914	8602	9058	9239	9421	10067	10658	11369	11952
Harpers Hill	2630	3283	3516	3633	3751	4236	4695	5205	5692
Raymond Trce	11429	12640	12961	13223	13485	14424	15283	16316	17295
Tomago	964	839	829	835	842	842	839	846	865
Medowie.R	5111	6671	7234	7470	7706	8675	9590	10410	11217
Karuah	1139	1265	1306	1337	1369	1463	1548	1652	1745
PORT STEPHENS LGA	**44200**	**52007**	**55702**	**57364**	**59032**	**65730**	**72330**	**78932**	**85133**
MAIN Catchment (b)	**70557**	**80791**	**86343**	**88718**	**91103**	**102799**	**114400**	**126000**	**136568**
REGION TOTAL	**302996**	**321014**	**332546**	**338759**	**344985**	**366999**	**386297**	**406259**	**424846**

(continued next page)

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IBECON (more likely) projections including an additional 100 persons per annum for Tea Gardens, assuming land is available.

	1991	1996	1999	2000	2001	2006	2011	2016	2021
Hawkes Nest (a)	1282	1203	1235	1247	1260	1426	1588	1743	1874
Tea Gardens (a)	**701**	**1020**	**1378**	**1500**	**2100**	**3200**	**4300**	**5350**	**6400**
Pindamar.Rrl	499	510	514	518	522	529	537	544	574
Mungo Brush	36	112	112	115	114	122	132	141	163
TOTAL	**2518**	**2845**	**3239**	**3371**	**3996**	**5277**	**6557**	**7778**	**9011**

(a) Council Projections (b) Great Lakes + Port Stephens LGAs

The next Table 3.4 shows the average population growth per annum for each of these locations and LGA's.

Table 3.4 Population Growth Rates For Region of Tea Gardens Retail Study

LGA/POSTCODE	1991-1996	1996-1998	1998-1999	1999-2000	2000-2001	2001-2006	2006-2011	2011-2016	2016-2021
HAWKES.TEAGDNS									
Hawkes Nest	-15	10	11	12	13	33	32	31	26
Tea Gardens (a)	63	119	120	120	121	117	116	114	105
Pindamar.Rrl	2	0	3	4	4	1	1	1	6
Mungo Brush	15	0	1	3	-1	1	2	1	4
HAWKES.TEAGDNS	**65**	**129**	**135**	**139**	**137**	**152**	**151**	**147**	**141**
LAKES STH									
Bulahdelah.Rrl	5	6	5	8	8	8	9	8	11
Stroud.Rrl	-25	-2	-4	-13	-13	-2	-1	-2	0
Limeburners Ck	24	11	11	24	24	9	9	9	8
LAKES STH	**4**	**15**	**12**	**19**	**19**	**15**	**17**	**15**	**19**
TG.HN+NEARBY	**69**	**144**	**147**	**158**	**156**	**167**	**168**	**162**	**160**
LAKES NORTH									
Nabiac.R	16	22	23	17	18	18	19	18	14
Bulahdelah.Mtn	16	9	9	7	9	19	19	18	20
Smiths Lake.R	73	47	46	48	47	48	49	47	44
Tuncurry	92	163	164	176	176	185	215	241	192
Forster	173	214	216	286	287	458	427	413	351
Pacific Palms	42	16	18	21	24	100	100	97	89
LAKES NORTH	**412**	**471**	**476**	**555**	**561**	**828**	**829**	**834**	**710**
GREAT LAKES LGA	**481**	**615**	**623**	**713**	**717**	**995**	**997**	**996**	**870**
PORT STEPHENS LGA									
Pt Stephens W	-45	20	22	33	34	8	6	10	11
Lemon Tree Psg	813	674	674	794	794	705	733	672	633
Williamstown	-29	1	4	2	3	0	-1	0	1
Nelson Bay	137	152	152	181	182	129	118	142	116
Harpers Hill	130	77	79	117	118	97	91	102	97
Raymond Trce	242	107	107	262	262	187	171	206	195
Tomago	-25	-3	-4	6	7	0	0	1	3
Medowie.R	312	187	189	236	236	193	183	164	161
Karuah	25	13	15	31	32	18	17	20	18
PORT STEPHENS L	**1560**	**1228**	**1238**	**1662**	**1668**	**1337**	**1318**	**1317**	**1235**
MAIN Catchment	**2041**	**1843**	**1861**	**2375**	**2385**	**2332**	**2315**	**2313**	**2105**
REGION TOTAL	**3603**	**3702**	**4128**	**6213**	**6226**	**4402**	**3859**	**3992**	**3717**

(a) Council Projections

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These projections show that the bulk of the growth in Great Lakes LGA is forecast to be in the growth areas and that the majority of the growth will be concentrated in Tuncurry/Forster and Hawkes Nest/Tea Gardens. Some growth will also occur in the Pacific Palms and Smiths Lake Districts.

.20 *Jobs/workforce*

Separate estimates are prepared in the modelling for workers spending at or near their workplace. Estimates of numbers of jobs by location within Great Lakes have been prepared based on the 1991 and 1996 Census occupation by industry data together with IBECON observations of locations of employment activities and utilises data that is available from the ABS Integrated Register. The distribution of jobs by location by industry type is provided as part of Appendix A (A014). Table "AVSP.1" @ Appendix A038 which summarises total spending by residents, workers and tourists shows the IBECON estimate that in 2000 of the $291.7m in total retail spending generated from within Great Lakes Shire, a relatively low $19.1m or just over 6.5% is generated from people shopping at or near their workplace.

.30 *Tourism*

Another important component of general retail spending in the region is tourism spending. Several estimates of tourism spending are produced by ABS and the Department of Tourism. The ABS data in *"Regional Statistics"* and *"Tourism Data"* understates retail spending as it only deals with accommodation takings. The Department of Tourism estimates cover all spending not just retail components and also include a visiting friends and relative component, which in my view is generally overstated.

Appendix A014 provides a listing of the IBECON estimates of numbers of tourists bed-nights of stay by type of accommodation for each area in the region. As with jobs, Appendix A038 shows total retail spending by overnight tourists to be estimated at $103.3m for Great Lakes LGA in 2000 equivalent to 35% of all retail spending generated from the LGA. This is somewhat less than the estimate by Department of Tourism. The main reason for the difference is that the IBECON estimate includes only items which are strictly defined as retail and excludes items such as accommodation, car hire, entertainment, drinking in bars & clubs etc.

Table 3.5 shows estimates of total number of bed nights of stay in tourist accommodation in Great Lakes LGA from 1994/95 to 1999/2000.

Table 3.5 Estimate of Number of Bed Nights of Stay in Great Lakes LGA

YEAR	#000	% Increase
94/95 (a)	1782	
95/96 (a)	1873	+5.1%
96/97 (a)	1956	+4.4%
1999/2000 (b)	2200	+12.5%

Source: (a) Tourism NSW - Great Lakes Community Profile (b) IBECON estimates

This aggregate has been distributed to each location in the Region using the IBECON database of accommodation/motels, hotels etc.

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.40 *Transport & Other Issues*

Several major factors influence the retail industry. In many coastal locations these factors can include the through traffic on the highway and in the coastal areas the influence of tourism. Through traffic from the highway is unlikely to be a significant factor as likely diversions off the highway for a visit would be expected to be minimal. The influence of overnight stayers in the Shire is, however, significant. Estimates have been produced for total bed nights of stay and dollars of spending as indicated above. Day tripper tourism by contrast is likely to be negligible.

While it is difficult to precisely quantify the effects of individual components when several factors influence outcomes, the following comments represent my considered view of the relative significance of each factor and the likely translation of those factors to the situation in Tea Gardens.

.41 *Some General Factors*

Most shops in the older existing Retail Locations suffer from a number of serious design deficiencies. These include the spread out nature of strip shop locations generally. When compared with an enclosed or structured mall where the shoppers are "on the inside looking out" in strip shop locations the shoppers are forced to be "on the outside looking in".

Many of the shops are also very narrow fronted and very deep which is the opposite of the shallow wide fronted shops in structured shopping centres, which are far better from a merchandising point of view for the retailer. Access and circulation is also much better in enclosed malls.

To illustrate this latter point, IBECON has a simple test of functional design, as one of the criteria by which we rate retail centres and locations. This measure comprises firstly conducting an audit of all shops in the locations to measure how many M^2 of floor space there are. The second part of the assessment is to conduct a time trial to measure how long it takes to drive from the local road network, find a car park, park your car then walk past every single shop front in that location, including up and down arcades, aisles, malls etc and then return to your car. We then calculate the ratio of floor space to the time taken for this measure. The higher the ratio the more functional the location. Using this measure, centres such as the proposed centre score relatively highly. By contrast all shops in Hawkes Nest, and to a lesser extent Tea Gardens, score relatively lowly. While not the only factor influencing people's choice of where they shop this accessibility design issue is an important part of the choice. In conjunction with the mix and selection of retailers, this largely explains the popularity of enclosed malls when compared to old strip shop locations. Air conditioning and protection from other extreme climatic conditions also favors enclosed malls. An offsetting factor which must be allowed for in a coastal resort location is the ambiance and sometimes outside undercover eating facilities available in locations such as those restaurants along Marine Drive in Tea Gardens, which also have an outlook over the water.

All these issues have a bearing on the future of retailing in Tea Gardens/Hawkes Nest.

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4.00 RETAIL SECTOR

.10 *Structure & Hierarchy*

As a substantial part of the data gathering for this study IBECON conducted an updating audit of most shops in Great Lakes and Port Stephens. IBECON had already conducted audits in parts of the Region in earlier retail studies. Table 4.1 shows major retail locations in the Region. This listing of retail locations is mostly from the IBECON Retail Database but includes some data as published in the ABS retail census for the fringe Local Government Areas of Dungog, Gloucestor and Greater Taree. In addition, IBECON has included the new Woolworths Marketplace in Taree in the fringe competition.

Table 4.1 Total Retail Floorspace M2 (Incl vacant)

PCD	SLA	LOCID#	LOCATION NAME	NSA	GLA	
2324	3400	32450	HAWKES NEST	1556	2044	
2324	3400	32451	TEA GARDENS	1980	2887	
2324	3400	32452	THE BIG ROCK	150	200	
2423	3400	42300	BULAHDELAH	1433	1978	
2425	3400	42501	STROUD	624	783	
2428	3400	42800	FORSTER SHOPPING VLG	10621	13974	
2428	3400	42802	TUNCURRY SC	2289	3200	
2428	3400	42803	PACIFIC PALMS	362	450	(e)
2428	3400	42804	SEAL ROCKS	88	100	(e)
2428	3400	42810	TUNCURRY/FORSTER BAL	29052	39433	(e)
	3400		**Great Lakes LGA**	**48155**	**65049**	
2301	6400	30100	SALAMANDER SC	8545	11264	
2301	6400	30101	MEDOWIE 1	434	538	
2301	6400	30102	MEDOWIE VILLAGE	708	993	
2301	6400	30103	SOLDIERS POINT 1	166	200	
2301	6400	30104	CORLETTE 1	166	200	
2301	6400	30105	SALAMANDER BAY 1	608	850	
2301	6400	30106	ANNA BAY VILLAGE	339	466	
2301	6400	30107	ANNA BAY 1	467	594	
2301	6400	30108	ANNA BAY 2	771	1153	
2301	6400	30109	SALAMANDER BAY 2	962	1204	
2301	6400	30110	KOOINDAH CENTRE	1392	1698	
2301	6400	30111	LEMON TREE PASSAGE 1	916	1198	
2301	6400	30112	TANILBA BAY 1	410	750	
2301	6400	30113	BOBS FARM 1	495	600	
2301	6400	30114	TILLEGERY PLAZA	2315	2937	
2301	6400	30116	MEDOWIE 2	150	200	
2301	6400	30117	TANILBA BAY 2	252	504	
2315	6400	31500	CINEMA MALL	947	1333	
2315	6400	31501	CASCADE WALK	757	869	
2315	6400	31502	NELSON BAY MARINA	1056	1319	
2315	6400	31503	SHOAL BAY 1	113	150	
2315	6400	31504	SHOAL BAY ARCADE	352	419	

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PCD	SLA	LOCID#	LOCATION NAME	NSA	GLA	
2315	6400	31505	BAY VILLAGE	712	986	
2315	6400	31506	SHOAL BAY 2	590	707	
2315	6400	31507	FINGAL BAY 1	293	424	
2315	6400	31508	NELSON BAY 1	1011	1537	
2315	6400	31509	NELSON BAY 2	2758	3878	
2315	6400	31510	NELSON BAY 3	1686	2258	
2315	6400	31511	NELSON TOWERS	729	968	
2315	6400	31512	GARDEN COURT	298	409	
2315	6400	31513	NELSON BAY 4	1004	1254	
2315	6400	31514	NELSON PLAZA	274	314	
2315	6400	31515	NELSON BAY 5	1832	2239	
2315	6400	31516	NELSON BAY 6	931	1350	
2324	6400	32400	RAYMOND TERRACE 1	426	768	
2324	6400	32401	GAZEBO SC	492	595	
2324	6400	32402	TERRACE PLAZA	4856	6419	
2324	6400	32403	TERRACE VILLAGE	2071	2686	
2324	6400	32404	RAYMOND TERRACE 2	1509	1923	
2324	6400	32405	THE HUB	481	830	
2324	6400	32406	TERRACE CENTRE	343	410	
2324	6400	32407	BOBS PLAZA	314	385	
2324	6400	32408	RAYMOND TERRACE 3	611	889	
2324	6400	32409	RAYMOND TERRACE 4	4097	5782	
2324	6400	32410	HOME IMPROVEMENT CTR	689	1119	
2324	6400	32411	RAYMOND TERRACE STH	179	291	
2324	6400	32412	LAKESIDE SC	1034	1475	
2324	6400	32413	RAYMOND TERRACE 6	183	366	
2324	6400	32414	HEATHERBRAE 1	1379	2391	
2324	6400	32417	KARUAH 1	2240	3063	
2324	6400	32418	RT Marketplace	10565	13744	
	6400		**Port Stephens LGA**	**65908**	**88899**	
			Main Catchment	**114063**	**153948**	
	2700		Dungog	5019	6900	(a)
	3050		Gloucester	6257	8500	(a)
	3350		Greater Taree	61708	83668	(c) (a)
	5050		Maitland LGA	94994	135775	
	5902		Newcastle Rmndr	169583	8500	
			Region Total	**451624**	**619738**	

(a) = ABS Retail 1992 Census (e) = Partly Estimated (c) Excludes Woolworths Marketplace

Map 2, following page v (in Executive Summary) shows the locations and size of the retail industry measured by M^2 GLA at 2000, compared with existing urban areas and growth areas.

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.20 *Historical Sales Data*

The following Table 4.2 compares data for 1992 derived from ABS with an estimate of likely total sales in 2000 prepared by IBECON. For 1992 the table shows total population, total M^2 retail & total $m sales. For 2000 IBECON has updated the population total based on estimated resident population published by ABS to 1999. In addition to this population % growth a total retail spend per capita increase of 30% over the period from 1992 to 2000 is then added based on the monthly retail sales data published by ABS (see Appendix N). This produces an indicative estimate for 2000 of total retail sales. These total retail sales have been used as a broad target for the calibration of the retail model. In addition IBECON has other sales data supplied on a confidential basis for some specific traders and shopping centres within the region to aid in this calibration.

Table 4.2 Actual Retail Sales Target, Great Lakes & Port Stephens LGA's

	1992 (c)		2000 (b)		
	Pop	$m	Pop	$m (% Incr)	(c) +30%
GREAT LAKES	26100	137.4	31300		
'000M² GLA	*58*			(+19.9)	
PORT STEPHENS	46500	198.3	57700		
'000M² GLA	*68*			(+24.1)	
TOTAL	**72600**	**335.7**	**89000**	**411**	**535**
'000M² GLA	*128*			(+22.5)	

Source c = ABS Retail Census

(a) Growth in Spending pc (b) IBECON (c) 1992-2000 (ABS, IBECON)

Thus from 1992 to 2000 the apparent increase in floorspace is 20% with retail sales rising by 59% (in current $ terms) to $535m.

.30 *Assumed Proposed Developments*

A number of proposed developments have been assessed as part of this study. While the status and/or timing of some of these projects is unclear, allowance has been made for them in the modelling in the years shown in the following table. Table 4.3 following lists some assumed retail developments by location. Developments proposed for Tea Gardens Centre are the reason for this study and are not included in this list.

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Table 4.3 Assumed Retail Developments in the Region

PCD	SLA	LOCID	YEAR	LOCATION NAME	NSA	GLA
2289	5902	28910	2000	KOTARA HOMEMAKER	17250	23000
2289	5902	28911	2000	KOTARA	7500	10000
2324	6400	32402	2001	TERRACE PLAZA	564	720
2292	5902	29202	2001	BROADMEADOW	2625	3500
2301	6400	30119	2001	SALAMANDER BAY	2208	3001
2304	5902	30402	2001	WARABROOK	2138	3000
2323	5050	32301	2002	GREENHILLS SC PHASE1	10958	15041
2323	5050	32305	2006	GREENHILLS SC PHASE2	16030	21373
				Region Totals	**59272**	**79635**

The years of opening shown in this table are preliminary only and subject to review. Most of the proposed developments are in fringe areas and will slightly increase escape spending from Great Lakes LGA.

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5.00 RETAIL SPENDING & REQUIREMENTS

In the following tables, abbreviated columns & row headings have the following meaning. A detailed description of the contents of each category is provided in Appendix J.

Heading	=	Brief Description
Super Dry	=	Super Market Dry Goods
Meat+Fish	=	Fresh Meat + Fish
Fruit+Veg	=	Fresh Fruit + Veg
Meals Out	=	Restaurants, Takeaway, Sandwiches, Coffee shops etc
Alcohol+T	=	Bottled Alcohol + Tobacco
Cloth+Sho	=	Clothing + Shoes
Furniture	=	Furniture + Floor Coverings, Whitegoods, Blinds etc
Hardware	=	Hardware + Kitchenware, Computers, Small Electrical
Miscellaneous	=	Chemists + Newsagents, Hairdressers etc, all other nei

.10 *Definition of Broad Commodity Groups*

In some of the tables that follow showing a summary of data in some summary commodity groups the items in the table have been defined as shown in the following table:

Table 5.1 Composition of Commodity Groups

Group	Comprises	%
Supermarket	Super Dry	100
	Meat and Fish	100
	Fruit and Veg	100
Meals and Alcohol	Meals Out	100
	Alcohol and Tobacco	100
Bulk Retail	Furniture	100
	Hardware & Kitchenware	100
	Miscellaneous	15
All Other	Clothes and Shoes	100
	Miscellaneous	85

.20 *Composition of Retail Spending*

Detailed data from the 1992 Retail Census shows data for number of shops by type, their total sales and employment. Unfortunately ABS confidentiality requirements restricts the publication of quite a number of the types of shops data. For modelling purposes IBECON uses commodity categories rather than shop type categories. Thus, for example, supermarket sales are separated into dry goods, fresh fruit & vegetables, meat & fish etc.

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Similarly floorspace requirements and existing floorspace as part of the field audit are also disaggregated into commodity components rather than aggregates for shop types. This is done to enable a valid and proper comparison between shop types, as the throughput rate in fresh fruit & veg and meat & fish, measured on a dollars per M^2 basis, can be very much greater than dry goods supermarket floorspace, for example.

Detailed tables showing the composition of retail sales sourced from each location from within the region and total spending levels after allocation to shops by commodity type, by area, is provided in Appendix A. The following table 5.1 provides a summary breakup of total retail spending sourced from Hawkes Nest/Tea Gardens, Great Lakes and Port Stephens LGAs and all other areas for 2000.

In the tables which follow the Sub-Region of Hawkes Nest/Tea Gardens and nearby comprises the Hawkes Nest/Tea Garden District plus the Lakes South District. The addition of Lakes North District makes up Great Lakes LGA.

Table 5.2 Components of Retail $ Available 2000 ($m)

	HAWKES. TEAGDNS	LAKES STH	LAKES NORTH	GREAT LAKES	PORT STEPHENS	Main Catchment	TOTAL
Super Dry	36353	36307	219024	291684	410607	702291	2692384
Meat+Fish	8405	8720	52399	69524	109152	178676	686014
Fruit+Veg	1620	1825	10934	14379	29415	43794	181279
Meals Out	1821	1578	10845	14244	20844	35088	134972
Alcohol+T	4410	4320	23461	32191	37266	69457	256853
SubTotal Food	2764	2721	15317	20802	16233	37035	114420
Cloth+Sho	4535	3967	26067	34569	54450	89019	355492
Furniture	1670	1882	11941	15493	27519	43012	190462
Hardware	4066	4410	23937	32413	39483	71896	270225
Miscellan	7062	6884	44123	58069	76245	134314	502667

Appendix A provides greater detail for individual areas and LGA's and for future years.

.21 *Spending by Residents, Workers & Tourists*

The following Table 5.3 shows a summary of average per capita spending by residents, workers and tourists in Tea Gardens. In this table:

$/Rsdnt	= $ Spending per annum per resident
$/Wrkfc	= Average $ spending per annum per worker
$/Onite	= Average $ spending per night per tourist
#.Rsdnt	= number of residents in population
#.Wrkfc	= number of persons working in this area
#.Onite	= number of bed nights of stay in the area
$.Rsdnt	= Total $'000 spent by residents
$.Wrkfc	= Total $'000 spent by workforce
$.Onite	= Total $'000 spent by tourists
$.TOTAL	= The sum of resident, workers and tourist total spending for the year

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Table 5.3 Summary of Average Per Capita Spending by Residents, Workforce & Tourists in Tea Gardens $000 2000

	HN.TG	LAKES SOUTH	LAKES NORTH	GREAT LAKES	PORT STEPHENS	REGION TOTAL
Average Spending by:						
$/Rsdnt	5275	5486	5420	5413	6574	6694
$/Wrkfc	2100	2047	2222	2170	1614	2077
$/Onite	44	44	46	46	46	44
X Number of*:						
#.Rsdnt	3356	3681	24242	31279	57311	338602
#.Wrkfc	1446	1615	5728	8789	12369	123746
#.Onite	351250	288750	1627563	2267563	298397	3769549
=Total Spending by:						
$.Rsdnt	17706	20197	131405	169308	376803	2266724
$.Wrkfc	3037	3307	12728	19072	19975	257090
$.Onite	15610	12803	74891	103304	13829	168570
$.TOTAL	36353	36307	219024	291684	410607	2692384

The following Table 5.3a shows percent of type of spending by type of person for Urban Tea Gardens and the region total. It shows that shops in Great Lakes currently have vastly greater dependance upon tourists than residents when compared with the rest of the Region.

Table 5.3a % of Total $ Spending

	GREAT LAKES LGA	REGION TOTAL
Residents	58	84
Workers	7	10
Tourists	35	6
TOTAL	100%	100%

.30 *Calculation of Over/Under supply of shops*

Detailed tables in Appendix A show how the over and under supply of shops by area and type of shop has been calculated. These tables show total dollars spending sourced from each location/suburb (A007), how much floorspace this can support (A008) and what the resulting over and under supply is (A010). Similar data for subsequent years and different scenarios is also provided in Appendix A and separately bound volumes of computer printout. The following tables provide a summary of this data for areas aggregated to sub-regions of Hawkes Nest/Tea Gardens, Great Lakes and Port Stephens etc.

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.31 *Supportable and Existing M2 NSA*

The following Table 5.4 shows the optimum number of M^2 of floorspace which is supportable by spending generated from various Sub-Regions.

Table 5.4 Optimum # of Shops (M^2 NSA) in Region in 2000

	SUPERMRKT	MEALS&ALC	BULK RETL	ALL OTHER	TOTAL
HAWKES.TEAGDNS	1360	840	1406	1982	5588
LAKES STH	1383	826	1521	1853	5583
LAKES NORTH	8494	4515	8827	11995	33831
GREAT LAKES LGA	11237	6181	11754	15830	45002
PORT STEPHENS LGA	17810	6667	16134	22150	62761
Main Catchment	29071	12868	27916	37998	107853
REGION TOTAL	**113302**	**46599**	**111540**	**146879**	**418320**

Of total retail requirements generated from Great Lakes of 45,000 M^2 NSA, 11,200 M^2 NSA is for shops in the supermarket categories.

Table 5.5 shows the existing amount of M^2 NSA in shops by type of floorspace for various sub-regions within the Study Region.

Table 5.5 Existing # of Shops M^2 NSA in Tea Gardens Region 2000

	SUPERMRKT	MEALS&ALC	BULK RETL	ALL OTHER	TOTAL
HAWKES.TEAGDNS	649	836	460	1413	3358
LAKES STH	162	934	473	400	1969
LAKES NORTH	7697	4215	11930	17124	40966
GREAT LAKES	8508	5985	12863	18937	46293
PORT STEPHENS	18449	9403	10478	23329	61659
Main Catchment	26957	15388	23346	42271	107962
REGION TOTAL	**105760**	**49907**	**123830**	**159800**	**439297**

Table 5.6 following compares the difference between the optimum number M^2 of shops floorspace required and that which is existing, by category of retail and summed by major sub-region.

Table 5.6 Over(+) and Under(-) Supply of Shops (M^2 NSA) in Tea Gardens Region 2000

	SUPERMRKT	MEALS&AL	BULK RETL	ALL OTHER	TOTAL
HAWKES.TEAGDNS	-711	-7	-946	-568	-2232
LAKES STH	-1221	105	-1046	-1451	-3613
LAKES NORTH	-799	-303	3096	5127	7121
GREAT LAKES	-2731	-205	1104	3108	1276
PORT STEPHENS	619	2722	-5653	1174	-1138
Main Catchment	-2114	2518	-4569	4272	107
REGION TOTAL	**-7542**	**3306**	**12287**	**12919**	**20970**

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In Great Lakes LGA in 2000 there were 8,500 M^2 NSA of shops in the Supermarket Catgory, out of a total of 46,300 M^2 NSA.

The total provision of shops in the supermarket category in Great Lakes LGA in 2000 is less than the requirements by 2,700 M^2 NSA, but Great Lakes was over supplied in non-food categories.

.40 *Sales Levels*

The next stage of the analysis is to allocate the trade or spending sourced from residents, workers and tourists in each of these areas to the shops in which they are spent. Tables @ Appendix A 012 show estimate sales levels by suburbs and commodity type. Tables A024, A025 and A026 provide summary information about the sales levels in shops as estimated by IBECON.

.50 *Escape/Captured Spending*

As part of the process of estimating trade flows the retail model estimates the source and destination of all retail dollar flows (See Appendix A013). This enables the preparation of a summary table which shows how much of the trade originating from each of the areas or locations within Hawkes Nest.Tea Gardens is retained within Hawkes Nest/Tea Gardens and how much escapes to shops outside the Sub-Region. Similarly $ flow data for the adjoining LGA's is calculated.

Detailed tables showing flows are available if required.

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Volume 3C: Economic Impact Statement

Riverside at Tea Gardens

Economic Impact Statement

March 2007

Crighton Properties Pty. Ltd

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Executive summary

This report applies the Input-Output methodology to assess the economic impact of Crighton Properties Pty Ltd. – Proposed additions to residential, tourism and commercial development at Riverside at Tea Gardens in the Great Lakes local government area. In particular, the report provides an economic impact assessment of the proposed construction works, operations, and the associated potential economic impacts of the operations of the expanded develop. The key results can be summarised as follows:

1. National Impact

The National benefits of the construction phase are significant totalling approximately $640 million in output and supporting 3,893 equivalent full-time jobs. Of these, around 1,374 (EFT) jobs will be directly associated with the construction of the facilities.

2. Local Impact

The local community will benefit significantly from the proposed development as outlined below:-

Construction Conservative estimates suggest 40 percent of the aggregate total output benefit, or $256 million, will flow directly to the local community. This translates to a local benefit of $256 million supporting 1,557 local jobs across all sectors, spread across the anticipated 10 year life of the project.

Retail / Commercial component of the proposed development, via the construction of 15,500 square metres of commercial and retail space will support 645 jobs and, therefore an estimated $21.7 million in associated wages and salaries. The spend benefits associated with this level of activity are estimated at $8.7 million per annum for the local economy with a median multiplied output effect of $15.2 million.

Residential Consumption Activities will directly contribute $19.0 million per annum to the local economy based on the increase in population of 2,612 residents. Normal consumer spending patterns would indicate that this level of spending will consequently support 113 jobs in the district upon completion of the project.

Associated Activities - There will be an associated range of benefits which come from the infrastructure that the development will create, such as jobs associated with the day-to-day operation of the site and on-going capital maintenance. The industry estimate of these annual outgoings is in the range of 1-2% of the capital value of the development. For Riverside at Tea Gardens this would be $2,115,000 to $4,230,000. This would represent an additional 10 full-time direct jobs and an overall jobs (direct and indirect) of 53 (based on construction industry multipliers).

1. Background

PB was engaged by Crighton Properties Pty Ltd to undertake an Economic Impact Statement for the proposed construction and operations of the following:-

- 980 residential dwellings comprised of a combination of 778 individual residential lots, 116 dual occupancy and 86 medium density,
- Tourism based development of 50 lodge houses, 15 townhouses and 100 marina berths, and
- Commercial / retail development of 15,500 square metres of floor space.

This report provides a summary of that study.

Crighton Properties Pty Ltd has undertaken substantial investment into the Tea Gardens area. These proposed additional initiatives will establish this area as a preferred community development within the Great Lakes local government area.

Major operating outlays including expenditures associated with the local community are expected, supporting local commerce and employment. It is envisaged that, where possible, local suppliers and materials will be used. To this extent it is anticipated that this will provide considerable economic support to the local community. The Riverside at Tea Gardens proposed expansion is a major development initiative that offers the opportunity to create a natural commercial extension of the existing Estate. This will allow for economies of scope in terms of the infrastructure required to develop and support the range of commercial activities proposed.

The analysis presented in this report is based directly on the construction and operation of the development. It does not take into account the cost savings which will be achieved with respect to public and associated private infrastructure by developing the site as a natural extension of the existing Estate. Further, the flow-on benefits to existing businesses in the estate are also not considered, but it is expected that the development would lead to significant increased business activity at Riverside at Tea Gardens.

1.1 Goal of this report

The primary objective of this study is to estimate the overall economic impact of the development and operation of the Riverside at Tea Gardens development. The benefits from the construction phase are detailed, as well as the annual ongoing benefits from the operation of the commercial component of the development.

1.2 Structure of the economic impact report

The report will be partitioned as follows:

1. Economic Impact Construction Phase – the economic impact of constructing 1045 residential and tourism dwellings and 15,500 square metres of commercial / retail floor space (all forms) will be analysed, with particular respect to the employment (both direct and indirect) associated with the construction phase and the overall economic impact of the construction outlays, both locally and nationally.

2. Economic Impact Residential Estate – the economic impact of the 1045 dwelling residential and tourism estate will be analysed, with particular respect to the overall on-going economic value of the residential estate and related contribution to employment and economic activity.

3. Economic Impact Commercial Activities – the economic impact of the proposed mix of commercial activities will be analysed, with particular respect to the overall on-going economic value of these activities and related contribution to employment and economic activity.

4. Statement of Overall Economic Impact – the total economic value and impact of the construction, development and operation of the residential and commercial components of the development will be outlined, with particular respect to the economic stimulus (added value) to the local economy.

2. Method

The economic benefits of a particular form of activity are much greater than the output of that activity itself. There will be supplementary benefits for other sections of the economy. These flow-on effects are often much larger than the economic output of the isolated project under consideration. These flow-on impacts can be broadly classified as follows:

a) Output – the added level of production derived from increased activity within the industry in response to the initial stimulus and the added demand derived from increased consumption in the household sector as a result of wages and salaries derived from this increased activity, and

b) Employment – the overall increase in jobs that will flow from the initial stimulus. The effect is usually expressed as persons per one million dollars expended.

The best way to capture this dynamic element of the economic process is through the National Accounts. These publications are the nation's economic balance sheet and are used to derive gross domestic product (GDP) and its components: the national income account, the national capital account, the national financial account and the national balance sheet. Income, capital and financial accounts and a balance sheet are provided for each sector of the economy.

Within the National Accounts there is a specific type of derived statistical tool called the Input-Output Tables. Input-Output tables present a comprehensive picture of the supply and use of goods and services (referred to collectively as 'products') in the economy and the incomes generated from production. These identify the linkages and interaction between different parts of the economy.

The possible size of these impacts can be illustrated using multipliers based on inter-industry flows in input-output tables. These multipliers indicate the proportion of inputs required to derive final output. These provide a way of answering some of the questions often asked by input-output practitioners. These queries tend to arise because of the types of "what if" analysis for which input-output tables can be used (for example, what would be the impact on employment of a 3% change in output by the manufacturing industry). This type of analysis is dependent on knowledge of input-output multipliers and their shortcomings. Using input-output tables, multipliers can be calculated to provide a simple means of working out the flow-on effects of a change in output in an industry on one or more of imports, income, employment or output in individual industries or in total. The multipliers can show just the 'first-round' effects, or the aggregated effects once all secondary effects have flowed through the system. This paper includes analysis of the secondary effects.

The multiplier itself has certain key components.

- The initial effect - an initial $1 million of extra output of the industry, and related employment in the industry to produce that output.

- A production induced effect - the combination of:
  - The first round effect - the amount of output and employment required from all industries that supply goods and services to the industry in order for that industry to produce the initial $1 million of extra output.
  - An industrial support effect - the induced extra output and employment from all industries to support the production of the first round effect.
  - A consumption induced effect - the subsequent inducement for extra output and employment due to increased spending by the wage and salary earners across all industries arising from the compensation received for their labour as part of the other effects above.

Some qualifications need to be made:

- These multipliers are based on the national statistics. Regional multipliers are not available in any useful form. So assumptions have to be made in applying these to a particular region.
- There is an implied reliance on the stability of the national accounts and related Input-Output tables. This assumption holds that the industrial structure of the Australian economy has remained unchanged since 1996/1997 when the Input-Output tables were originally developed. This assumption directly affects the perceived accuracy of the resultant Input-Output multipliers.
- There is a general tendency of Input-Output frameworks to ignore the presence of supply side constraints. The implications of this assumption are that the economic impact tends to be overstated in situations where there is either excess production capacity, or limitations on availability of inputs (for example – skilled labour).
- An assumption needs to be made about imports: to what extent will inputs be sourced overseas. This analysis assumes no imports will be sourced from overseas (called the Direct Allocation of Imports Method).

Overall, the approach adopted represents a simple, direct and valid means of estimating the impact of the residential estate and commercial development.

3. Impact: Construction

Table 3 below summarises the multipliers for output and employment in the construction industry. The most recent input-output tables available are for 1998-99. They show that, for every $1 million spent on construction output (houses, non-residential buildings, etc.) in 1998-99, a possible $2.8m in output would be generated in the economy as a whole.

The most recent input-output employment table available is for 1996-97. The table shows that every $1 million of additional output gives rise to 6 full-time jobs in the construction industry (the initial employment effect), and 17 full-time jobs in the economy as a whole from all effects. In many cases the employment impact will be higher in terms of actual personnel as many will be employed on a part-time or casual basis (i.e. 17 full time jobs equates to 34 part-time jobs).

These flow-on effects are made up as follows:-

1. The **initial effect** of the additional construction is $1 million;

2. The **first round effect** for the additional construction would be the increased value of activity of around $0.5 million in those businesses manufacturing the materials needed for the additional construction, such as concrete and steel frames. The businesses supplying and servicing the concrete and steel frame businesses, such as aggregate quarrying and raw steel production, experience an increased demand for their products and services;

3. The **industrial support effect** is estimated to be an additional $0.4 million. As activity has increased in the construction industry, as well as in the suppliers to that industry and the suppliers to the suppliers, there is an increase in wages and salaries to employees in this chain; and

4. The spending of these wages and salaries induces a further round of **consumption effects** in other areas of the economy totalling an additional $1million.

Multiplier impacts	**Initial effects**	First round effects	Industrial induced effects	**Production induced effect**	**Consumption induced effect**	**Total multiplier**
Output ($ millions)	1.000	0.456	0.425	0.881	0.915	2.796
Employment (EFT)	6	3	2	5	6	17

Notes: Direct Allocation of Imports method. EFT denotes equivalent full time employment as defined by the ABS. Source: Australian national Accounts: Input-Output Tables 1996-97, 1998-99 (5209.0).

Care is required in interpreting multiplier effects; their theoretical basis produces estimates which may overstate the actual impacts in terms of output and employment (Miller and Blair, 1985). Nevertheless, the estimates illustrate the high flow-on effects of construction activity to the rest of the economy. Clearly, through its multipliers, construction activity has a significant impact on the economy.

3.1 Impact of Construction Phase

The estimated construction costs are:

- 1,045 residential buildings (including infrastructure) - $199.9 million
- 15,500 sq metres of commercial / retail floor space - $23.1 million
- 100 Marina Berths - $6.0 million

Total estimated construction costs - $229 million.

Based on multipliers from the national accounts the flow on effects can be summarised as follows:

- a **production induced effect** - the combination of:
  - the first round effect of 0.456 x $229 million = $104.4 million

This is the amount of output required from all industries that supply goods and services to the construction industry

  - an **industrial support effect** of 0.425 x $229 million = $97.3 million

This is the induced extra output from all industries to support the production of the first round effect;

- a **consumption induced effect** of 0.915 x $229 million = $209.5 million

This is the subsequent inducement for extra output due to increased spending by the wage and salary earners across all industries arising from the first round effect. In summary:

The total national economic impact of the project is approximately $640.2 million (see Figure 1 and dissection below).

Initial Effect	$229.0 m
First Round Effect	$104.4 m
Industrial Support Effect	$ 97.3 m
Consumption Induced Effect	$209.5 m

It seems reasonable to presume that 40 percent of these benefits would flow to the local region. This is an estimate of the localised content of the direct and first round effects. It is likely to be conservative. From this estimate the boost to the local economy from the project would be at least $256.1 million.

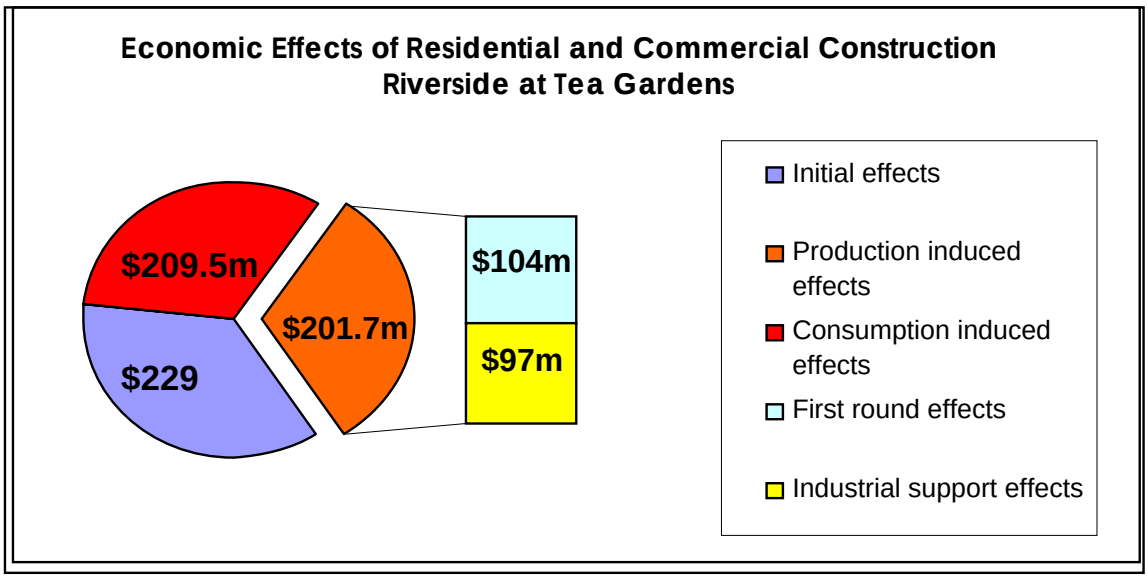


Figure 1: Economic Effects of Residential and Commercial Construction, Total Output $640.2 Million.

The chart below (Figure 2) indicates the employment impact of the construction phase.

The same basic method applies, but in this case each $1 million of construction expenditure generates a number of new full time equivalent (FTE) positions, both directly and in flow-on effects across other sectors. The initial effect of the additional construction is the amount of additional employment in the construction sector (6 persons per $1 million or 1,374 people). The jobs are assumed to be primarily locally based.

The first round effect relates to the extra labour required for the additional construction from suppliers of the materials needed for the construction phase, such as civil construction and timber frames. This amounts to three full time positions per $1 million or 687 positions.

The businesses supplying and servicing the material and civil works, experience an increased demand for their products and services. This industrial support effect is estimated to create an additional two full time positions per $1 million or 458 positions. There is an increase in wages and salaries to employees in this chain valued by these induced production effects.

The spending of these wages and salaries induces a further round of consumption effects in other areas of the economy totalling an additional 6 full time positions per $1 million spent representing 1,374 positions for the first round. The final result is an increase in the number of full time positions by 3,893.

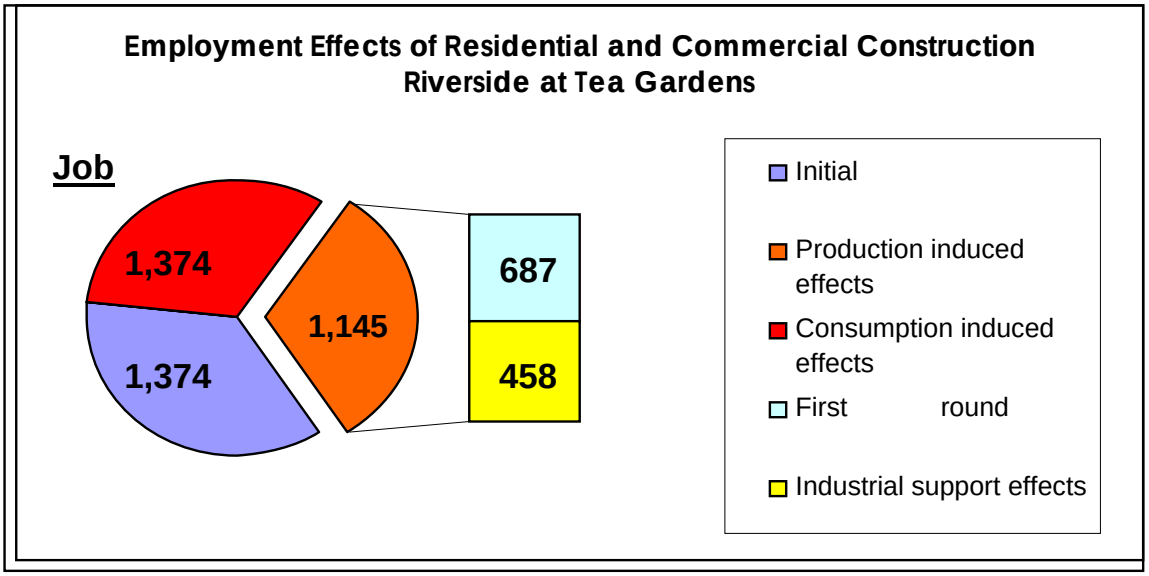


Figure 2: Employment Effects of Residential and Commercial Construction, Total 3,893 Full Time Jobs (EFT).

It is expected that the employment benefits will flow to the region in a higher proportion. This is because the direct effect on employment flowing from the construction investment will be substantially captured by the local labour force. The flow-on gains will accrue according to the standard assumption of 40 percent capture by the local economy (Figure 3). This leads to an estimate of 1,557 full time jobs in the immediate region.

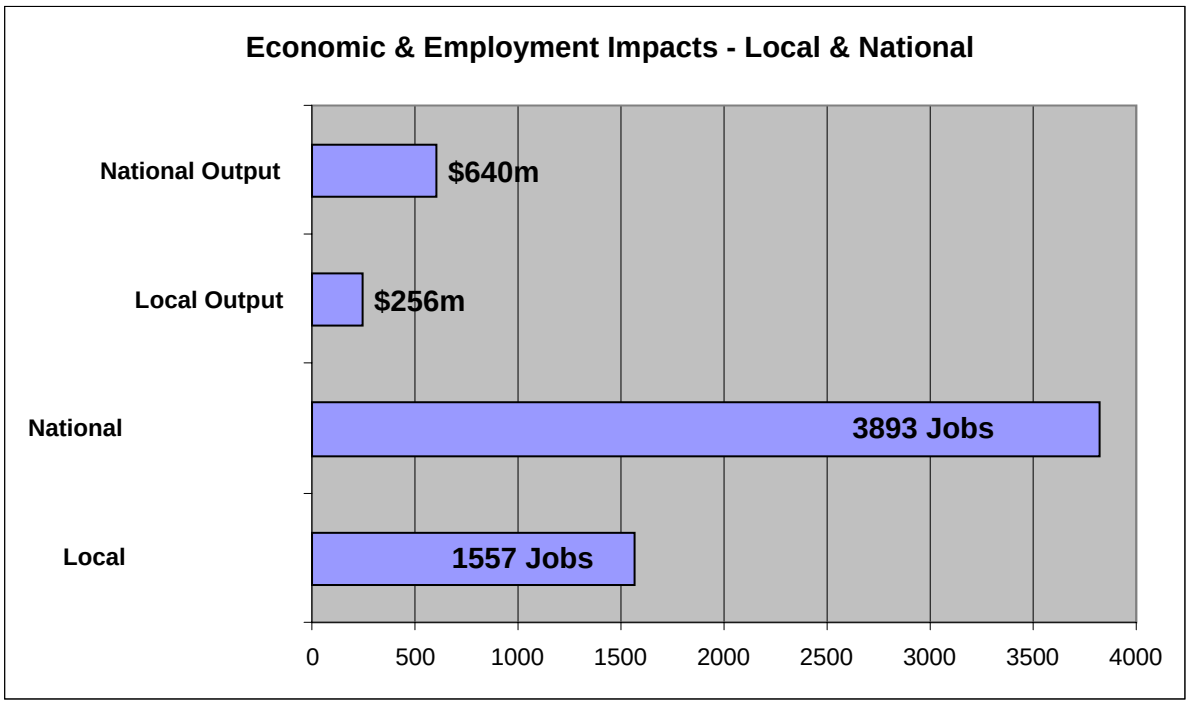


Figure 3: Economic & Employment Impacts - Local and National Effects

4. Impact: Estate Operations

The operation of the Estate has two distinct components:

1. **Sales and Marketing** - which occurs for the 8-10 years required to build the estate to capacity; and

2. **Operation of the estate** - primarily administration and co-ordination of estate maintenance and support for residents.

4.1 Sales and Marketing

This occurs over an 8 - 10 year period and involves approximately 8 full-time equivalent jobs which translate into a total pay packet of $600,000 per annum. All sales staff will be engaged from the local community and hence there is a direct pay packet effect which is estimated to be 40 percent of wages - $240,000 per annum and this has a multiplied effect totalling $480,000 (adopting the simple generic multiplier of 2). Most expenditure for marketing purposes will occur outside the local area, such as advertising, promotional materials etc.

4.2 Operation of Riverside at Tea Gardens

The estimates within this section are based on estimated expenditures associated with operations, which in this case assumes 1045 dwellings plus 15,500 square metres of commercial / retail space. The operations of the estate will involve 7 direct full time equivalent jobs, representing a pay packet of $490,000 per annum. In addition, labour services are contracted with respect to gardening and cleaning with a total combined cost of $280,000. This represents a gross pay packet of $770,000. Applying the discount rate to allow for an estimate of local spend and the generic multiplier results in a total local multiplied spend of $616,000. In addition, although not significant in itself to allow for any direct measure of local impact, in operating the estate an additional spend of $50,000 to $60,000 is expended per annum within the local community.

5. Impact: Estate Residential and Commercial Activity

5.1 Employment and economic contribution

5.1.1 Retail/Commercial

The two key impacts to consider are employment and the flow-on benefit associated with the local spend by those employed at Riverside at Tea Gardens. This does not take account of the local spending by the businesses that operate within Riverside at Tea Gardens or the rental returns to local investors in the development. It should be noted that vacancy rates for office space throughout Australia have hit a 16 year low and currently sits at 6.1% (Property Council of Australia – Office Market Report - January 2007).

These data suggest that opportunities for allocation of the reserved commercial / retail floor space for office use will be expected to yield an effective uptake and in turn consistent rental returns. A-grade commercial space rents in 2004 were in the range of $200 to $300 (median $250) per square metre per year. B Grade commercial space rents are in the range of $150 to $210 (median $180) per square metre. Annual rental returns can be considered within the context of the following return table:

Commercial / Retail Space

	A Grade	B Grade
15,500m²	$3,875,500	$2,790,000

Commercial / retail industry data indicates that every 24m² of floor space utilised supports 1 job. For Riverside at Tea Gardens this equates to 645 jobs for the 15,500 square metres of commercial / retail floor space planned. Assuming the current average individual wage and salary income of $33,567 (2001 Census), this would result in additional wages of $21,650,715 per annum.

It is estimated that 40% ($8,660,286) of these funds will flow back into local consumption of goods and services (adjusted for taxes, non-local consumption, capital repayments and savings). While there is no definitive estimate of the proportion of wages which represent local expenditure, the 40% rate does represent a significant discount which factors in the average rates of tax and loan repayments. This expenditure will have a multiplied effect within the community. Again there is no definitive estimate, however, the flow-on from the $8.7m in local consumption is expected to be in the range from 1.25 to 2.25 times the initial expenditure[†], resulting in the following range estimate as listed in the figures below:

[†] See Jensen & West (1986) and Twohill & Sheehan (1981) for an explanation of regional multipliers

Multiplier	Multiplied Impact
1.25	$10,825,358
1.50	$12,990,429
1.75	$15,155,500
2.00	$17,320,572
2.25	$19,485,644

If the mid-point (and somewhat conservative) estimate of $15,155,500 is adopted, then it is clear that the additional commercial / retail space will make a significant annual contribution to the local economy.

5.1.2 Residential

The proposed development supports 1045 residential and tourism based dwellings representing an estimated 2,612 occupiers. The 2001 Census reported that for the Tea Gardens area the median individual income was $300 - $399. If this is applied to the estimated 2,612 individuals who will occupy Riverside at Tea Gardens, then the median weekly income at Riverside at Tea Gardens will be $783,600 - $1,042,188. If this is then extended to an annual estimate, the annual median income range would be $40,747,200 - $54,193,776. This is a significant annual flow of funds into the local area. The estimated 2,612 additional residents will result in an overall population increase for the Tea Gardens area of 190% from the population recorded in the 2001 Census. This will also lead to a significant level of local economic activity.

For example, if it is estimated that 40% ($16,298,880 - $21,677,510) of these incomes flow back into local consumption of goods and services (adjusted for taxes, non-local consumption, capital repayments and savings) then this represents a major injection of additional funds into the local economy.

While there is no definitive estimate of the proportion of wages which represent local expenditure, the 40% rate does represent a significant discount which factors in the average rates of tax and loan repayments. This expenditure will have a multiplied effect within the community. Again there is no definitive estimate, however, the flow-on is expected to be in the range from 1.25 to 2.25 times the initial expenditure, resulting in the following range estimate, based on the mid-point of the discounted local expenditure range ($18,988,195):

Multiplier	Multiplied Impact
1.25	$23,735,244
1.50	$28,482,293
1.75	$33,229,341
2.00	$37,976,390
2.50	$47,470,488

If the mid-point multiplier estimate of $33,229,341 is adopted, then it is clear that the residential and tourism component of Riverside at Tea Gardens, will make a significant annual contribution to the local economy and this will be reflected by a significant increase in employment.

An alternative approach is to consider actual expenditure estimates. The Hunter Valley Research Foundation (HVRF) reports expenditure data for Hunter households:

Average Weekly Expenditure

Food & Non-Alcoholic Beverages	$135
Alcohol	24
Clothing/Footwear	38
Household Furniture & Equipment	43
Household Services & Operations	48
Medical Care & Health Expenditure	30
Transport	145
Recreation	94
Total	$557

If this expenditure data is applied to the 1045 households at Riverside at Tea Gardens under this scenario, then average weekly household expenditures will be $582,065. If this is extrapolated to an annual basis the annual household spend would be $30,267,380. The expenses which make up this estimate do not include taxes, loan repayments, major capital outlays or repayments, however, not all of these weekly expenditures will be made locally. The total expenditure estimate of $30,267,380 is higher than the discounted income estimate adopted above of $18,988,195, which indicates that the discounted income estimate allows for a significant level of non-local expenditures with respect to consumable spending of 30%. That is of the $30,267,380 of total average weekly expenditure by households occupying Riverside at Tea Gardens one-third will be non-local. In addition, both estimates provide a base for the view that 2,612 residents will generate a significant economic and subsequent employment impact, estimated to be around $20 million per annum, with a flow-on or multiplier effect estimate at $23,735,244 to $47,470,488 per annum.

5.1.3 Associated activities

There will be an associated range of benefits which come from the infrastructure that the development will create, such as jobs associated with the day-to-day operation of the site and on-going capital maintenance. There will also be a flow of local service charges to local utilities and service providers. The industry estimate of these annual outgoings is in the range of 1-2% of the capital value of the development[‡]. For Riverside at Tea Gardens this would be $2,290,000 to $4,580,000. This would represent an additional 10 full-time direct jobs and overall jobs (direct and indirect) of 53 (based on construction industry multipliers).

[‡] Estimate provided by National Project Consultants Pty Ltd - Project Managers & Property Consultants

5.2 Summary – Commercial and Residential

- Commercial / Retail – 645 FTE jobs; flow-on local household expenditure effect of $15.2 million per annum.
- Residential – local household expenditure effect of $19.0 million per annum; multiplied economic impact of between $23.7 million to $47.5 million per annum.
- Associated Impact – operation, management and maintenance of site – 53 direct and indirect jobs.

6. Overall Economic Impact

The overall economic impact of the development is expected to be significant. The construction phase is expected to generate $256 million in additional local production activity and support 1,557 equivalent full time jobs (EFT). In addition, the benefits from the estate's operations will support 10 additional jobs. The key results are highlighted below and summarised in Tables 10 and 11.

Summary of Key Results

- Impact of construction phase - $256 million in local output across all sectors and an additional 1,557 equivalent full time jobs (EFT).
- The Estate's operations are expected to support 10 equivalent full time (EFT) jobs and $0.7 million in wages per annum. Over an average 12 year project life-cycle, this translates to a total economic benefit of $8.4 million.
- Sales and marketing will support a transitional pay-packet of $0.6 million and 8 (EFT) permanent jobs over the 8 to 10 year construction period.
- Once in full operation, residential activity will support 113 EFT jobs and a direct pay-packet of $19.0 million per annum. This benefit is expected to accrue throughout the economic life of the project and represents a dynamic component of the total economic benefit.

Table 1: Estimated local economic impact

Estimated Local Economic Impact			
Economic activity	**Economic value (millions)**	**Employment (EFT)**	**Output (millions)**
Construction ([§])	$256.1	1,557	$ 91.6
Sales and marketing	$ 0.4	8	$ 0.2
Operation of the Estate (p.a.)	$ 0.6	10	$ 0.3
Residential Activity (p.a.)	$ 33.2	113	$ 19.0
Commercial/Retail Activity (p.a.)	$ 15.2	645	$ 8.7
Associated activities (p.a.)	$ 2.8	53	$ 0.6

Note: Results are model generated. It is assumed that 40% of the total national impact is absorbed at the local level

[§] Relevant Time frame is 10 year construction schedule of the development

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Miller R. E. and Blair P. D., (1985), Input-output analysis: Foundations and Extensions, Englewood Cliffs, N.J.

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Volume 3C: Statement of Social Impacts

Strategy | Analysis | Representation

Riverside @ Tea Garden

Statement of Social Impacts

for

Crighton Properties Pty Ltd

June 2008

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Matthew Crozier	Duo Consulting P/L	Update to 2006 Census data	10/11/2007
Matthew Crozier	Duo Consulting P/L	Update with project changes	25/6/2008

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Executive Summary

The Draft Concept Plan and Project Application for Riverside at Tea Gardens (Appendix 1) were developed as part of an extensive community consultation process. The Draft Concept Plan and associated Project Application propose the following uses:

- 980 lots comprising:
  - 779 at 450sqm or greater
  - 44 lots that are less than 450sqm
  - 157 medium density dwellings
  - A tourism precinct comprising 50 lodge houses and 15 townhouses
- A 800sqm expansion of the Myall Quays Shopping Village
- Up to 15,000 sqm of additional retail / commercial floor space.
- Two proposed 'home business precincts', included in the dwelling totals above.
- A series of community facilities in neighbourhood centres throughout the site that will serve neighbourhood functions. The exact form of these remains to be determined.

The new facilities, parks and landscaping will be managed under a community title arrangement. Only the roads will be dedicated to and managed by Great Lakes Council.

This Social Impact assessment examines services and facilities in the vicinity of Tea Gardens and their capacity to accommodate the growth in population proposed by the Riverside development.

This assessment examines the current profile of the Tea Gardens community and its access to key services. It then discusses the likely impact of Riverside on those services making recommendations where it is felt services could be enhanced by the development or require augmentation to accommodate Riverside and its population.

The assessment also examines issues such as employment opportunities in the locale, urban design and housing affordability and draws a number of conclusions.

Assessment is also provided of the likely cumulative impacts from other developments proposed in the Tea Gardens and Hawks Nest areas. It is important to note that, unlike other sites proposed for development in the area, Riverside is already zoned to allow for mixed use development providing a degree of certainty of outcome that may not exist for other proposed sites. It would be unreasonable, therefore, to expect the proponents of Riverside to provide facilities and social capacity to accommodate future developments. However, this analysis provides discussion of the likely implications of further growth.

The Social Impact Assessment makes the following recommendations with regard to enhancing the lifestyles of the residents of Tea Gardens and the overall cohesiveness of the community.

Overall it is clear that the development of Riverside has the potential to significantly enhance the services and community facilities in Tea Gardens. Indeed, the existing development of the commercial precinct at the site has already significantly enhanced services to residents.

Tea Gardens is well located and served with schooling and medical facilities and has access to a variety of employment nodes.

The following recommendations are designed to ensure that the community gains maximum benefit from the development and that any potential for adverse effects are carefully mitigated:

1 Riverside should have roads constructed to allow a bus a loop through the development bringing public transport access to within walking distance of each dwelling. This will be particularly important for school bus pickups but as the community grows will allow for the potential for convenient public transport services.

2 It is recommended that attention be paid to the provision of a comprehensive network of cycle ways through the Riverside site connecting all community facilities and places of interest. This network should be provided as part of the development and should, particularly, provide ease of access to the commercial centre and connect directly to the Council planned cycle way network and to the foreshore so as to augment community mobility.

3 It is recommended that, as part of discussion regarding developer contributions, consideration be given to contributing to the provision of a multipurpose community function / meeting facility in line with Council's

Section 94 plan for the area. This should be located within walking distance (400m) of the Riverside commercial precinct.

4 It is recommended that Crighton Properties give consideration to a contribution to the upgrade of library facilities either on site or as part of the provision of a multi use community facility in line with Council's Section 94 plan.

5 It is recommended that Crighton Properties keep the Principals of both Tea Gardens Public School and Bulahdelah Central School informed of the growth of school age population at Riverside in order to assist school planning. However, it is noted that school facilities in the area are sufficient to accommodate the expected growth in population from Riverside.

6 The community facilities and telecommunications being provided in the home business precincts may provide the opportunity for distance learning, in effect providing a learning hub accessible to the wider community. It is recommended that Crighton Properties should hold discussions with TAFE and the University of Newcastle on facilities that would suit these sorts of community learning facilities. These could be located in the multi use community facility or in the business precinct hub or commercial centre.

7 The opportunity exists to consolidate certain Council facilities, including sporting facilities, on to one site as part of the Myall River Downs Development. This would represent a significant upgrade of current facilities and should be pursued by Council to provide capacity for future population growth in the Tea Gardens and Hawks Nest area.

8 The Great Lakes Recreation and Open Space Strategy (2006) sets out a range of facilities that it would like to see developed in Tea Gardens (Appendix 5). It is recommended that these provide a guide to discussions with Council about what facilities be provided at a new consolidated facility. However, it is important to note that it would not be appropriate or equitable for Riverside and its residents to be expected to meet the cost of the full list of desired facilities. The list may, nonetheless, provide a useful guide both for this development and for contributions from subsequent developments in the area.

9 The Myall Quays Commercial Centre provides commercial and retail space that is adequate for the current population. As the population of Tea Gardens and Hawks Nest grows it is recommended that an additional 8,500sqm of retail space be allowed over the next 10 years and that the demand for retail space be reviewed at that point to ensure the adequacy of future retail floor space provision. The provision of 15,000sqm of retail and commercial space should adequately facilitate this expansion.

10 Whilst health services are well provided for in the area, it is recommended that the Concept Plan be submitted to the Population Health Unit of the Hunter New England Health Service who will provide detailed recommendations on measures to optimise preventative health.

11 It is recommended that as Riverside is developed a case be made to provide a further 50 beds in the aged care hostel facility at Tea Gardens Grange.

12 It is recommended that development of the two home business precincts be carefully monitored with consideration being given to the provision of similar facilities in neighbouring developments or in the town's 2b zone should the demand for these precincts outstrip supply.

13 It is recommended that the availability of permanent rental housing stock at Riverside and in the wider Tea Gardens community be monitored by Crighton Properties and that the developer's marketing should target investors should the supply of available rental accommodation dwindle.

Part A

BACKGROUND

1. Introduction & Background

This paper analyses the likely social impacts of the Draft Concept Plan and Project Application for the development of Riverside at Tea Gardens.

The site, along with a neighbouring site at Myall River Downs which Crighton Properties intends to seek approval to develop in parallel, form the vast majority of future land release in the community of Tea Gardens and, as such, will have a profound impact on the future of that community.

For the purposes of this assessment of Riverside at Tea Gardens, the cumulative impacts of the development of other sites in the area are considered where appropriate. Cumulative impacts are most relevant where infrastructure is being provided that cannot be readily upgraded on a modular basis. For example, schools respond well to increments in population, being able to add additional classrooms as pressures require, but have an ultimate capacity for growth, beyond which new facilities are required.

It should be noted that Riverside differs from other sites in the area in that it is already zoned for development. As such Riverside has a greater level of certainty of outcome than other sites. Whilst this report considers some of the cumulative impacts of population growth in the Tea Gardens area it does not represent an assessment of the social impacts of the Myall River Downs site, or indeed any site other than Riverside. These will need to be considered under a separate cover when that proposal is assessed.

Riverside was formerly known as Myall Quays and the development has substantially commenced with 261 lots either on the market or sold with a substantial number of dwellings established. In all 300 standard residential lots have been approved, a further 20 duplex or small lots have approval (18 more are currently with Council), and 37 medium density dwellings have approval with 7 with Council for approval.

3,600 square metres of retail and commercial space is already provided at the Myall Quays Shopping Village including a 2000sqm supermarket, a number of specialty stores, and a 900 sqm medical centre. A 533sqm child care centre, a 1355sqm office building and a 220sqm service station all have DA approval but are yet to be constructed.

The existing precincts of Riverside contain a network of parks and open space and a major water body all of which are maintained by the Community Title Association.

The Draft Concept Plan and Project Application propose to complete the development of the site.

This assessment of social impacts starts by building a profile of the Tea Gardens Community and looking at demographic trends, it then examines current community facilities and the likely impact of growth on these and then examines the housing market prior to making recommendations regarding the social impacts of the development of Riverside and suggested steps to optimise that impact.

2. The Development

2.1 Site Location

Tea Gardens is a small town located on the Northern shores of Port Stephens on the Southern boundary of the Great Lakes LGA.. It neighbours the small coastal community of Hawks Nest being connected via a bridge over the Myall River. It is located approximately:

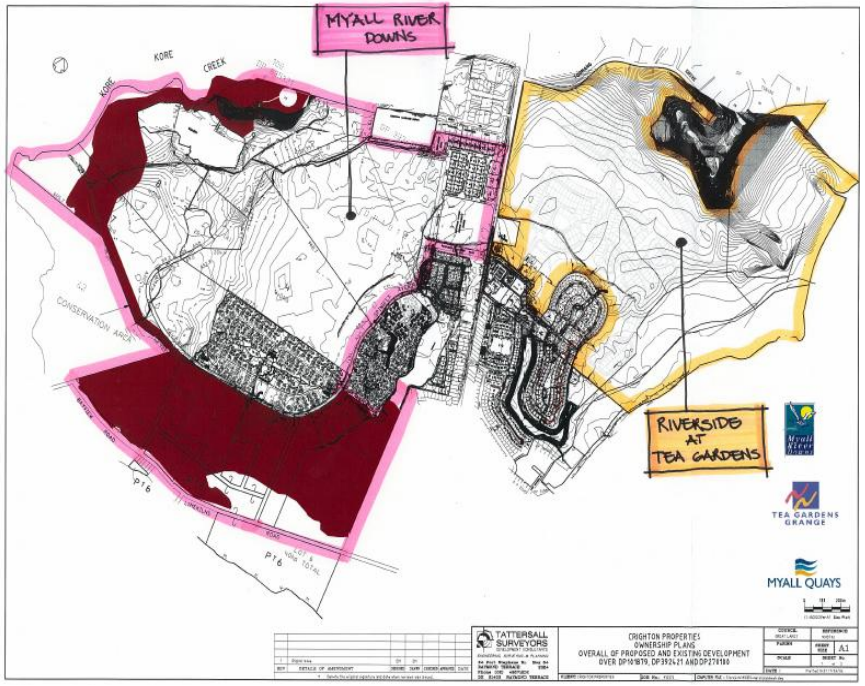
- 75km or one hour's drive North of Newcastle on the Pacific Highway.
- 110km south or an hour and a half from Forster –Tuncurry
- 51km or 40 minutes from Raymond Terrace
- 46km or 35 Minutes from Medowie
- 39km or 30 minutes from Bulahdelah

The Riverside at Tea Gardens site comprises approximately of 230 ha of land that lies between the Myall River in the West, the Myall Road to the East and is broadly bounded by Toonang Drive and the Shearwater Estate to the North and by the existing development to the South. The site is to the North West of the existing Tea Gardens township and is located on the entry road into the existing town providing the edge to the community.

Map 1: Regional location



MAP 2: Riverside and Myall River Downs Site Location



2.2 Site Description

The Draft Concept Plan and Project Application cover 179ha of the total site land with the remainder already developed or subject to existing approvals.

The site has been identified for development in the Tea Gardens Hawks Nest Conservation and Development Strategy and in the 2006 Hawks Nest Tea Gardens Housing Strategy. The site has a zoning of 2(f) Mixed Residential-Commercial under the Great Lakes LEP 1996 and is currently controlled by the Great Lakes Development Control Plan 22 which sets out development controls for the site.

The site is also covered by the 2006 Tea Gardens and Hawks Nest Section 94 Contributions Plan which sets out parameters for open space and service provision for the community.

2.3 Proposed Use

The Draft Concept Plan (Appendix 1) proposes the following uses:

- 980 lots comprising:
  - 779 at 450sqm or greater
  - 44 lots that are less than 450sqm
  - 157 medium density dwellings
  - A tourism precinct comprising 50 lodge houses and 15 townhouses
- A 800sqm expansion of the Myall Quays Shopping Village
- Up to 15,000 sqm of additional retail / commercial floor space.
- Two proposed 'home business precincts', included in the dwelling totals above.
- A series of community facilities in neighbourhood centres throughout the site that will serve neighbourhood functions. The exact form of these remains to be determined.

The new facilities, parks and landscaping will be managed under a community title arrangement. Only the roads will be dedicated to and managed by Great Lakes Council.

3. Methodology

3.1 Statistical Profiling

The statistical data used in this report is largely derived from the ABS 2006 Census.

ABS data has been supplemented with other data sources from local government and private developers where possible to provide an up to date picture. Information gathered during the Design forum and other community engagement assists in providing an up to date picture and more subjective statements are used at times when necessary or where it is felt they add perspective and value to the analysis.

3.2 Community Consultation

Between 1 and 3 February 2006 Crighton Properties held a planning design forum for the Myall River Downs and Riverside at Tea Gardens (formerly Myall Quays) sites. This forum provided an opportunity, through facilitated sessions, for the community and various government agencies to detail their views on the future development of the Tea Gardens area.

143 people attended all or part of the forum. This included 10 representatives of Great Lakes Council, and 103 community members.

The Design Forum included a site and context tour, presentations on relevant issues and constraints, community workshops and a design studio session leading to a presentation to the community of the early basis for the Draft Concept Plan.

Details of the Design Forum and its outcomes are appended to this document. Appendix 2 provides a summary of feedback forms received after the final presentation, Appendix 3 is a list of attendees and points raised, and Appendix 4 is a follow up newsletter. These included considerable information on services and perceived deficiencies which have drawn on throughout this assessment of social impacts.

A further community meeting was held on 26 April to discuss the developed Concept Plan.

3.3 Social Impact Assessment Aims

This Social Impact assessment aims to examine services and facilities in the vicinity of Tea Gardens and their capacity to accommodate the growth in population proposed by the Riverside development.

It examines the current profile of the community and its access to key services and then discusses the likely impact of Riverside on those services making recommendations where it is felt services could be enhanced by the development or require augmentation to accommodate Riverside and its population.

For the purposes of this assessment of Riverside at Tea Gardens, the cumulative impacts of the development of other sites in the area are considered where appropriate. Cumulative impacts are most relevant where infrastructure is being provided that cannot be readily upgraded on a modular basis. For example, schools respond well to increments in population, being able to add additional classrooms as pressures require, but have an ultimate capacity for growth, beyond which new facilities are required.

The assessment also examines issues such as employment opportunities in the locale, urban design and housing affordability and makes recommendations with regard to enhancing the lifestyles of the residents of Tea Gardens and the overall cohesiveness of the community.

Part B

THE TEA GARDENS COMMUNITY

4 Population Growth and Projections

The population of Tea Gardens is growing rapidly by State standards and growth is accelerating. Between 1991 and 2001 the population of Tea Gardens doubled from 684 people to 1,372 people[1] an average annual growth rate of around 7.5% (around seven times the state average). By the time of the 2006 Census there were 2,094[2] people in Tea Gardens with an average annual growth rate of around 8%. Between 1991 and 2006 the population of Tea Gardens grew by 206%.

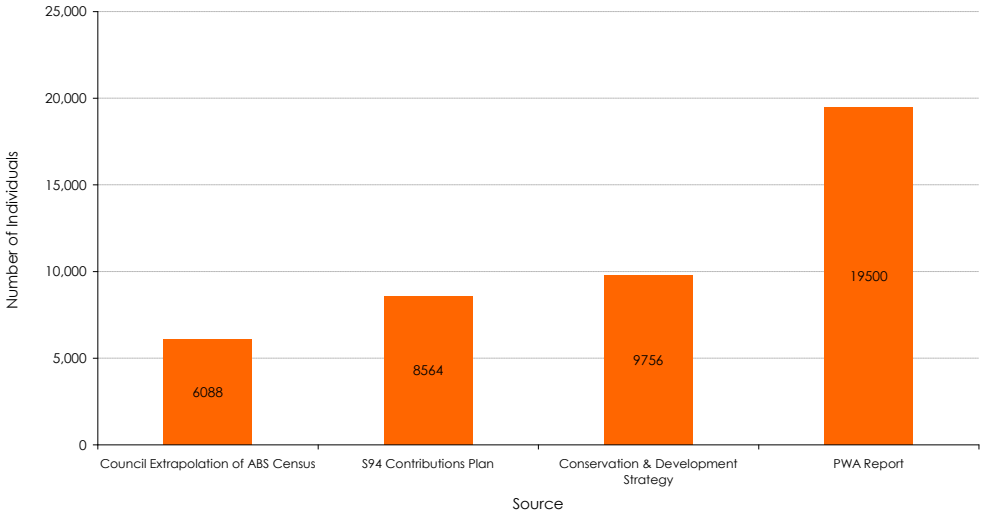
4.1 Population Projections

There are a number of projections for future growth for the Tea Gardens / Hawks Nest area. The total population of the two settlements at the 2006 Census was 3,155 (having grown from 2545 in 2001). Hawks Nest has a recent history of population decline (between the 2001 and 2006 Census counts the population declined by 9% from 1163 to 1061 people), set against the strong growth in Tea Gardens meaning that the projected growth is dominated by Tea Gardens.

Graph 1, below, shows some projections for growth. There are wide variations in projections which are explained below.

- The first and lowest projection is based on an extrapolation of Census trends carried out in a summary report by Council. This sees the combined population growing by 3,543 people over the 30 years from 2001 to 2031. This approach was based on constant future growth rates rather than looking at percentage growth. This translates to a dramatic decrease in growth rates over time and as such looks very conservative, especially when the growth of around 600 people a year between 2001 and 2006 is taken into account.

Graph 1: 2031 Population Projections
Hawkes Nest / Tea Gardens



- Council's S94 Contributions Plan predicts a population of 8,564 by 2031 which would represent growth of 6019 people over 30 years, an average of 4.1% annual growth. This is a high growth rate by State standards but remains a low average growth rate compared with the performance of the area over the past 15 years.

- Council's Conservation and Development Strategy sees a high growth rate scenario leading to growth of 9,756 people. Again, assuming growth based on increases of 750 people per 5 year period through the life of the Strategy, this forecast sees significantly declining growth rates.

- Planning Workshop Australia (2000) used a rate of growth of 6.48% and projected the population of Hawks Nest / Tea Gardens reaching 19,500 by 2031. They cite the improvements in road links to Sydney, the sea change phenomenon, increasing land supply and improving local facilities as reasons to expect growth to continue strongly.

[1] ABS Census 2001
[2] ABS Census 2006

The above projections of growth really only demonstrate demand. All show high demand and all show the community more than doubling in size over the next 25 years. The strength of demand for housing in Tea Gardens can be attributed to down shifters from Sydney and migrants from inland regional areas representing a very large potential market seeking accessible coastal locations in which to resettle. As well as State demographic shifts and vastly improved links to Sydney spurring growth, recent local improvements such as the sealing of the road to Williamtown Airport and Medowie will also be likely to provide a spur for growth.

The current down turn in the property market has led to a high number of vacant properties but this is likely to be a transient adjustment prior to strong growth resuming. Over time, demand for housing will build but supply of housing is limited in Tea Gardens and Hawks Nest. The key to the future population of the area will undoubtedly be the supply of housing rather than demand.

For the purposes of this assessment it will be assumed that significant demand exists for the growth of Tea Gardens. It is not necessary to enter into the debate about the ultimate growth of the settlement. What is more relevant here is that Riverside will play a role in meeting demand for housing and how it will impact on the housing, services, lifestyle and facilities in Tea Gardens and for its surrounding residents.

4.2 Housing Supply

Assuming that supply of housing is set to be the key determinant of growth in Tea Gardens we can chart the ultimate growth of the community. There are four major green field developments identified by the Hawks Nest Tea Gardens Housing Strategy as well as growth from infill opportunities, particularly in the 2b medium density zone and the Shearwater low density development.

Table 1 provides a summary of likely dwelling and population growth. This estimates that the community will ultimately grow by around 9,403 people from 2006 levels. This figure will be used for the purposes of understanding cumulative impacts in this assessment.

Table 1: Tea Gardens and Hawks Nest projected dwelling supply

SITE	DWELLINGS	ESTIMATED POPULATION
2006 Population		3,155 (actual)
Riverside	980	2077
Myall River Downs	1,500	3,300
Hermitage	281	506
North Hawks Nest	750	1,650**
North Shearwater	350	770
Estimated Other*	500	1,100
Total	4361	12,558

*Other dwellings based on combined infill dwellings this is an estimate only based on data provided in the TGHN Housing Strategy

** Assumes a considerably higher permanent occupancy rate than is currently the case in Hawks Nest as a highest case scenario.

5. Demographic Profile of Tea Gardens

5.1 Age Distribution

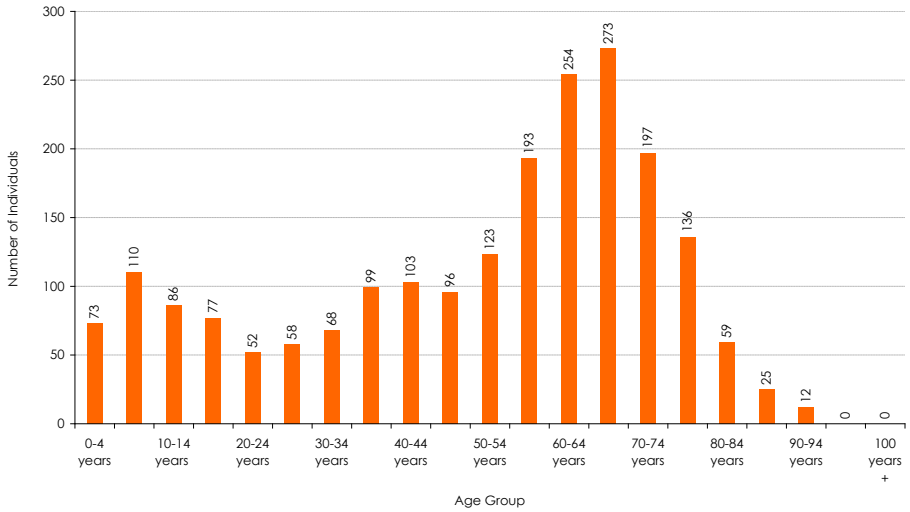
The age composition of the population of Tea Gardens is markedly older than the State Average. Graphs 2, 3 and 4 show that at the time of the 2006 census Tea Gardens had a significantly higher proportion of people in the over 55 age group than the NSW average.

At the 2006 Census 55% of the population of Tea Gardens was aged over 55. This is more than double the NSW average of 25%. The population has continued in its ageing trend in recent years, only 46% of the population were aged over 55 at the time of the 2001 census. Sales data provided by Crighton Properties back this up. Of homes sold since 2001, only 8% of purchasers were under 40 whilst 43% were over 55. This is a strong indication that this ageing trend is increasing with Tea Gardens continuing to attract retirees.

However, there is reason to believe that recent upgrades to transport infrastructure effecting access to employment opportunities along with the development of home business precincts at Riverside may go some way to offsetting the ageing trend over time. It is also interesting to note that the principal of the Tea Gardens Public School reports growth in enrollments in recent years suggesting that infrastructure changes may already be having some effect.

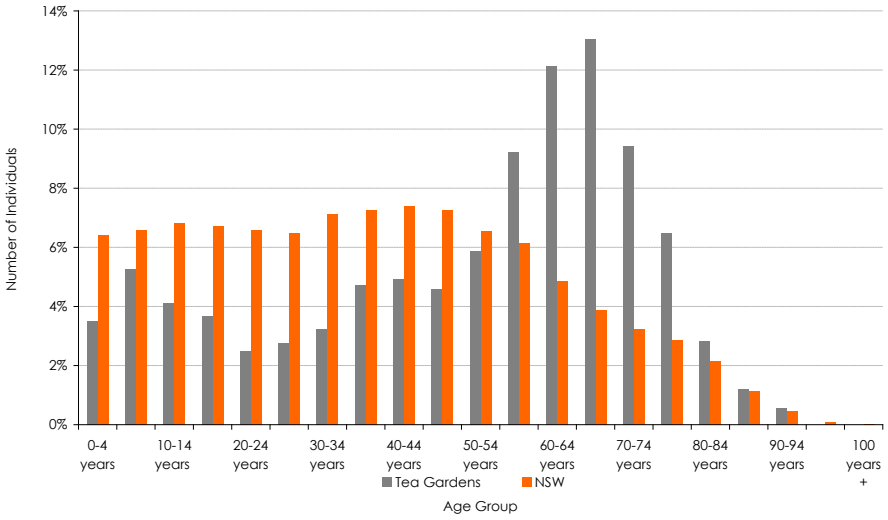
The low number of people in Tea Gardens aged between 20 and 30 is particularly striking and the representation of these age groups as a proportion of the community is likely to remain low. This is unsurprising given the nature of the community, its isolation from tertiary educational opportunities and the limited diversity of employment opportunities and housing opportunities currently afforded by the community.

Graph 2: Tea Gardens 2006 Age Structure



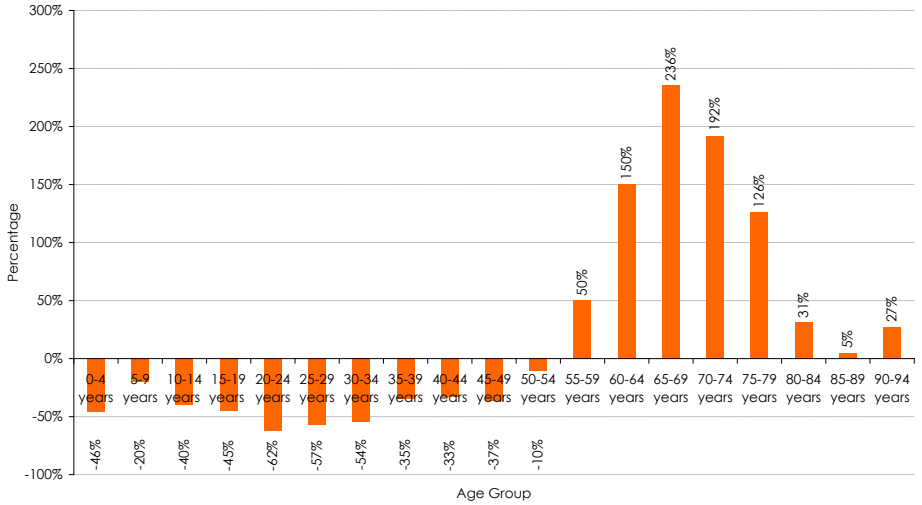
(Source: ABS 2006 + Duo)

Graph 3: 2006 Age Structure
Tea Gardens vs NSW



(Source: ABS 2006 + Duo)

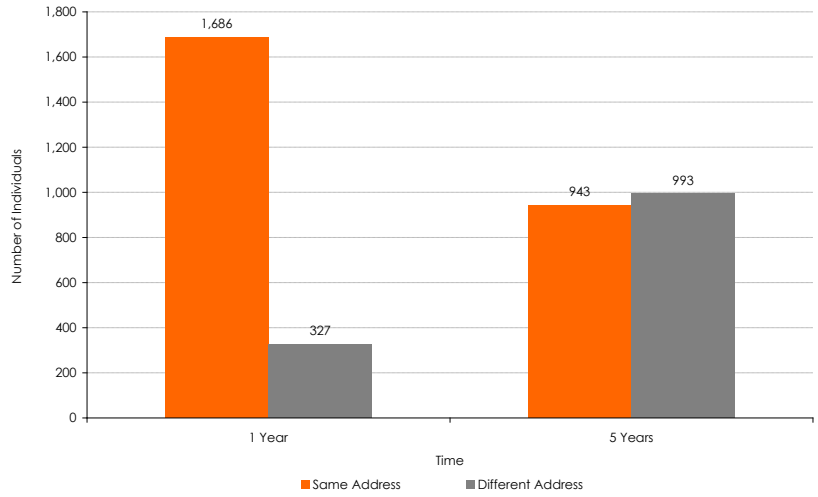
Graph 4: Tea Gardens 2006 Age Structure
Relative Variation from NSW Average



(Source: ABS 2006 + Duo)

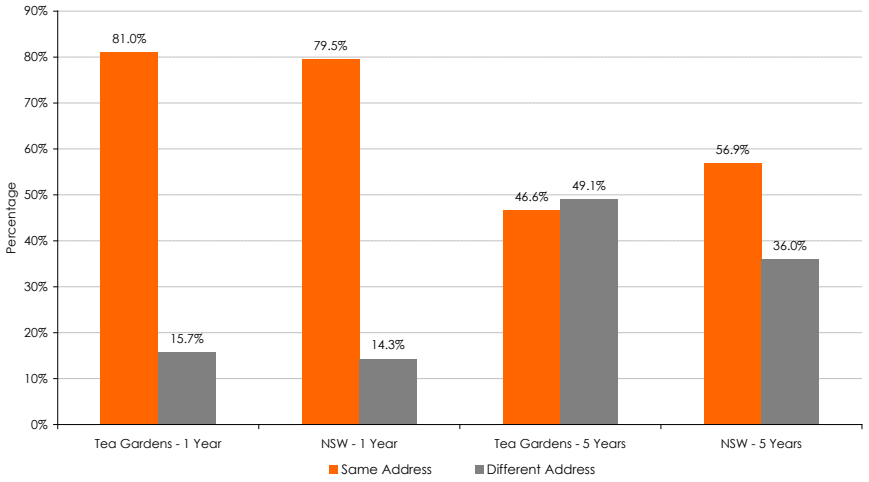
5.2 Population Stability

Graph 5: Tea Gardens Population Stability 2006



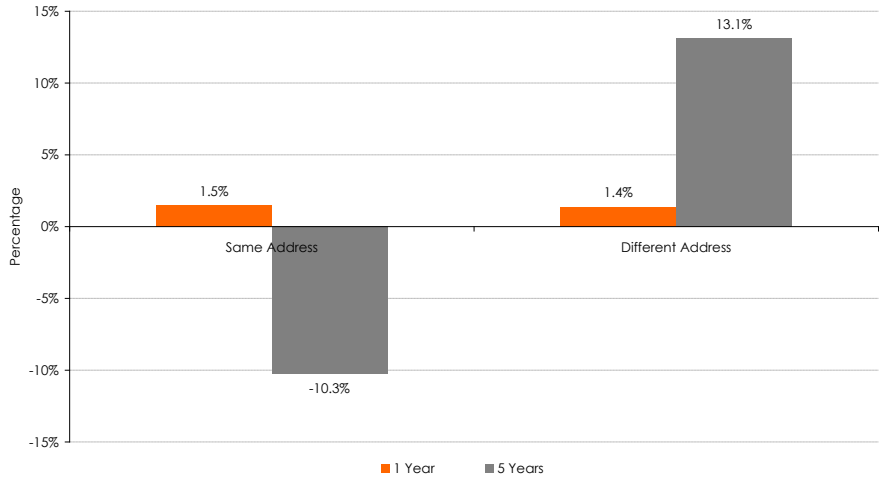
(Source: ABS 2006 + Duo)

Graph 6: Population Stability 2006
Tea Gardens vs NSW Average



(Source: ABS 2006 + Duo)

Graph 7: Tea Gardens Population Stability 2006
Real Variation from NSW Average



(Source: ABS 2006 + Duo)

It is clear from Graphs 5 to 7 that Tea Gardens has a less stable population than the State average. This reflects the rapid growth of the population.

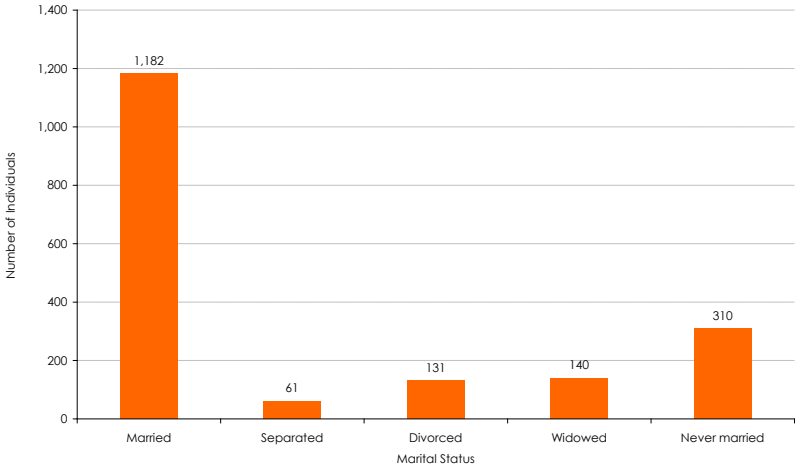
The Tea Gardens population contains a significant number of people who have moved to the area on retirement. As the community continues to attract retirees and to grow rapidly the proportion of people who have spent less than five years at their current address will be likely to remain above the State and LGA average.

However this does not imply a transient population. People who settle in Tea Gardens may happily remain in their new homes for many years. What it does tell us is that many of the community are newcomers and that measures to assist them to integrate into the community will have a high value.

5.3 Family Structure

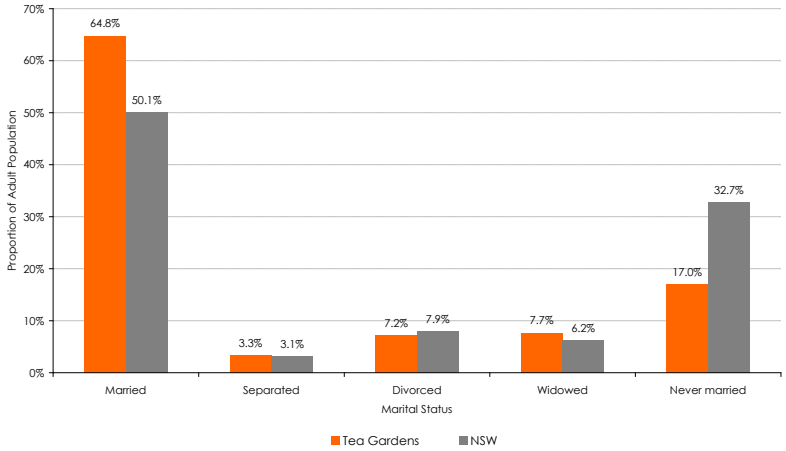
5.3.1 Marital Status

Graph 8 - Tea Garden 2006 Marital Status



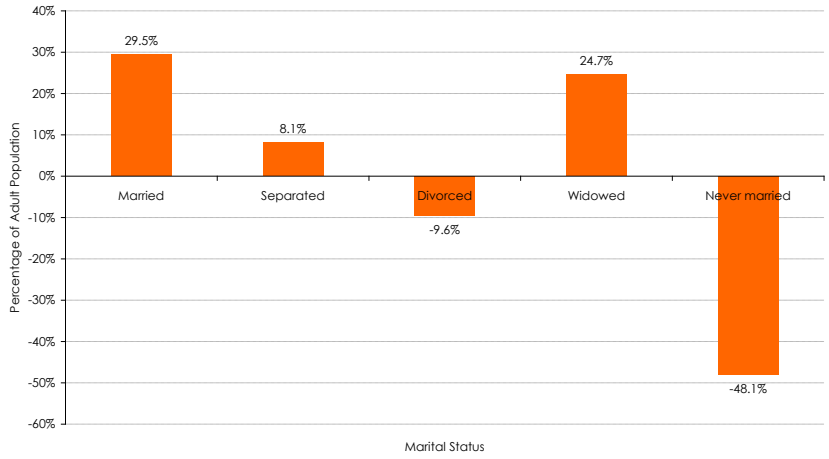
(Source: ABS 2006 + Duo)

Graph 9: Marital Status 2006
Tea Gardens vs NSW Average



(Source: ABS 2006 + Duo)

Graph 10: Tea Gardens 2006 Marital Status
Relative Variation from NSW Average



(Source: ABS 2006 + Duo)

The population of Tea Gardens is unlikely to have never married but more likely than the State average to have been widowed.

This is perhaps unsurprising given the age profile of the community. Again it points to the importance of community building initiatives and facilities to assist singles and to ensure that, particularly the elderly, have access to social networks and support services.

Table 3 shows that there are just 72 lone parents in Tea Gardens but that there are significantly more empty nesters' in the community and lone persons.

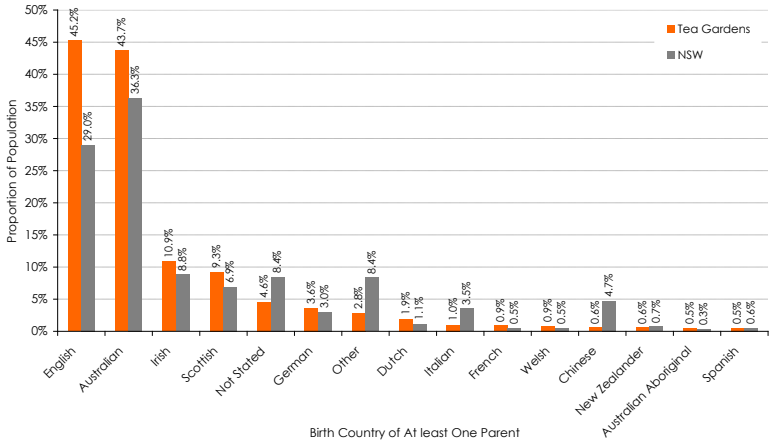
Table 3: Household Relationship by Age

	Age Group									
	0-14	15-24	25-34	35-44	45-54	55-64	65-74	75-84	85 +	Total
Husband or wife in registered marriage	..	0	34	93	130	331	365	122	9	1,084
Partner in de facto marriage	..	8	28	24	21	23	9	6	3	122
Lone parent	..	3	9	29	15	5	5	3	3	72
Child under 15	248	..	..	..	..	..	..	..	..	248
Dependent student (Aged 15-24 years)	..	45	..	..	..	..	..	..	..	45
Non-dependent child	..	28	7	9	7	3	3	0	0	57
Other related individual	..	9	6	0	0	4	5	0	4	28
Unrelated individual living in family household	..	5	5	0	0	0	0	0	0	10
Group household member	..	7	4	4	9	10	4	3	0	41
Lone person	..	7	14	21	16	32	49	47	15	201
Visitor (from within Australia)	8	0	7	7	11	10	16	0	6	65
Total	**256**	**112**	**114**	**187**	**209**	**418**	**456**	**181**	**40**	**1,973**

5.4 Ethnic Diversity

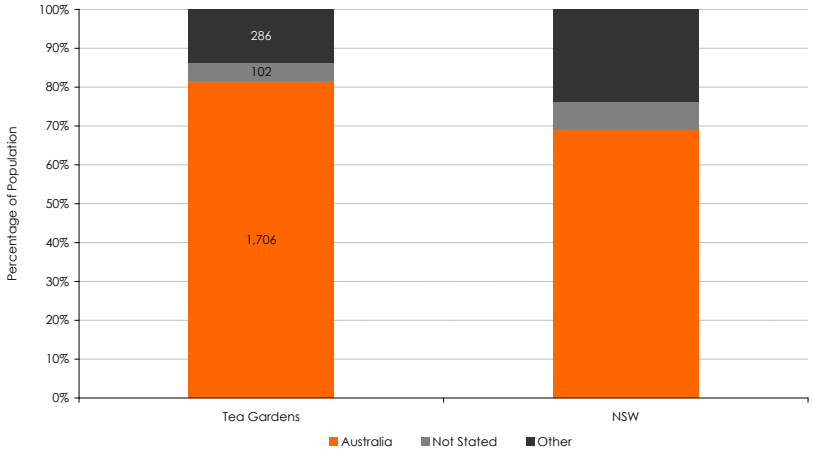
5.4.1 Ancestry

Graph G11: Major Ancestry Groups 2006
Tea Gardens vs NSW Average



(Source: ABS 2006 + Duo)

Graph 12: Birth Country 2006
Tea Gardens vs NSW Average



(Source: ABS 2006 + Duo)

Table 4: Australian Indigenous Heritage 2006 Tea Gardens vs NSW Average

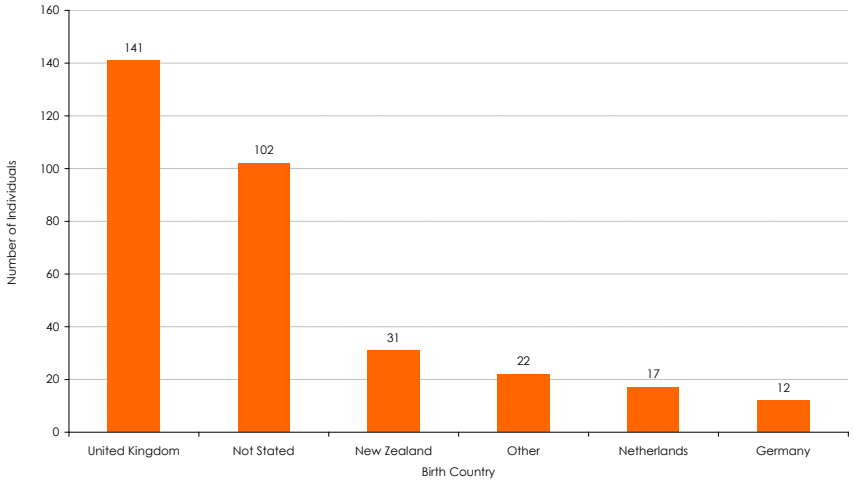
	Indigenous	Non-Indigenous	Not Stated	Total
Tea Gardens (no.)	47	1,992	54	2,093
Tea Gardens (%)	2.2%	95.2%	2.6%	100.0%
NSW (%)	2.1%	91.9%	6.0%	100.0%
Relative Diff	6.2%	3.6%	-56.8%	0.0%

Diversity in a community provides a broad indicator of adaptiveness, vibrancy and strength. Ethnicity is only one of a variety of indicators including age, language and religion that give an idea of diversity in the community. Broadly speaking the addition of significant new population is an opportunity to add to the diversity of a community.

The population of Tea Gardens is dominated by European and Australian ancestry and is distinctly not ethnically diverse. Only 286 people in the community in 2006 were not born in Australia and the vast majority of these are European, or from New Zealand.

The population of Tea Gardens has a slightly higher than NSW average proportion of people of indigenous and Torres Straight Islander background.

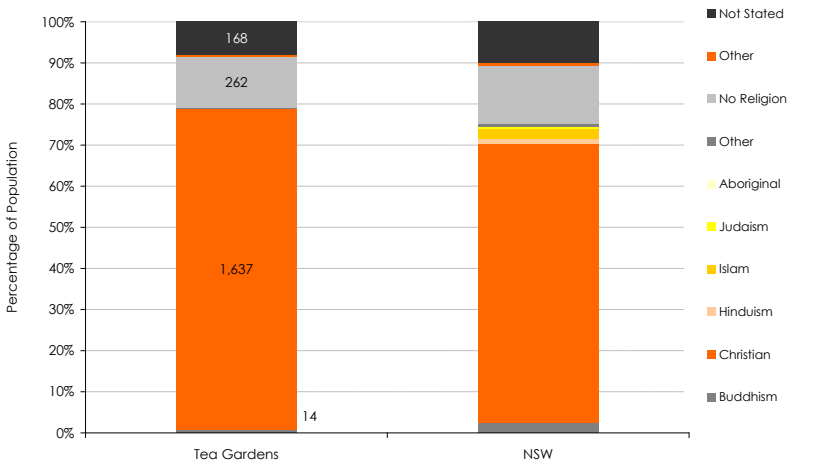
Graph 13: Tea Gardens 2006 Major Overseas Birth Country Groups



(Source: ABS 2006 + Duo)

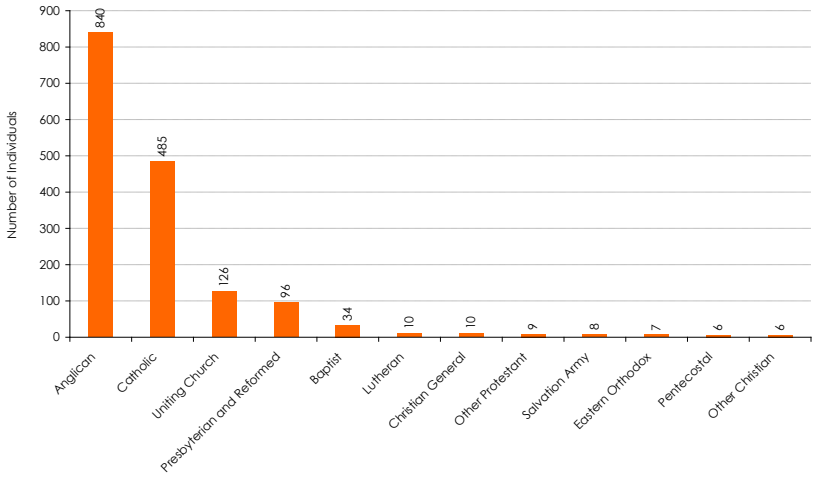
5.4.2 Religion

Graph 14: Religious Affiliation 2006
Tea Gardens vs NSW Average



(Source: ABS 2006 + Duo)

Graph 15: Tea Gardens 2006 Christian Religions



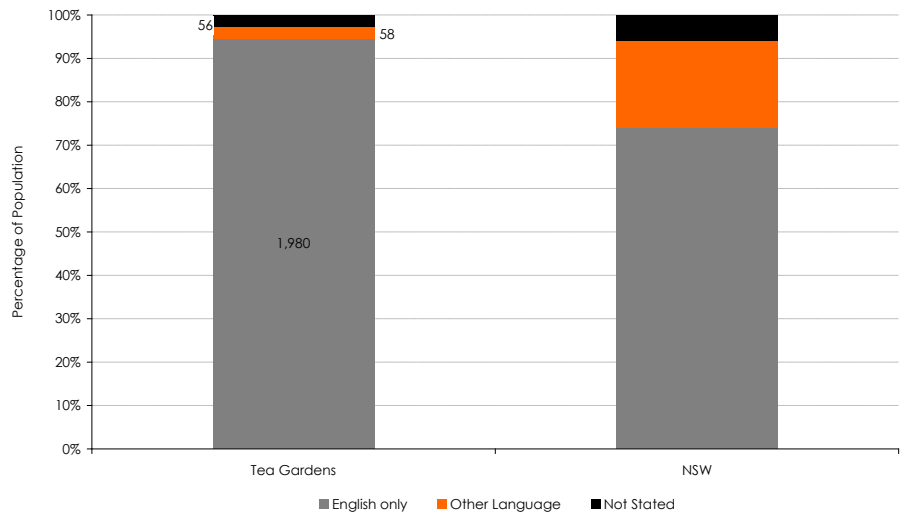
(Source: ABS 2006 + Duo)

Religious diversity, as one would expect given the ethnicity data, is limited. Over 90% of the population is either non religious or Christian. Most of the remainder simply did not answer the question. There is no indication of religious diversity in the community.

Almost 500 of the current population of Tea Gardens is Catholic. This may provide an indicator of likely school attendance raising the possibility of demand for Catholic School places, though by no means all Catholics choose to send their children to Catholic schools, and of course these schools are also attended by no Catholics. Over 1600 of the population identify themselves as of Christian religion perhaps pointing to a demand for places at the Medowie Christian School should facilities be available.

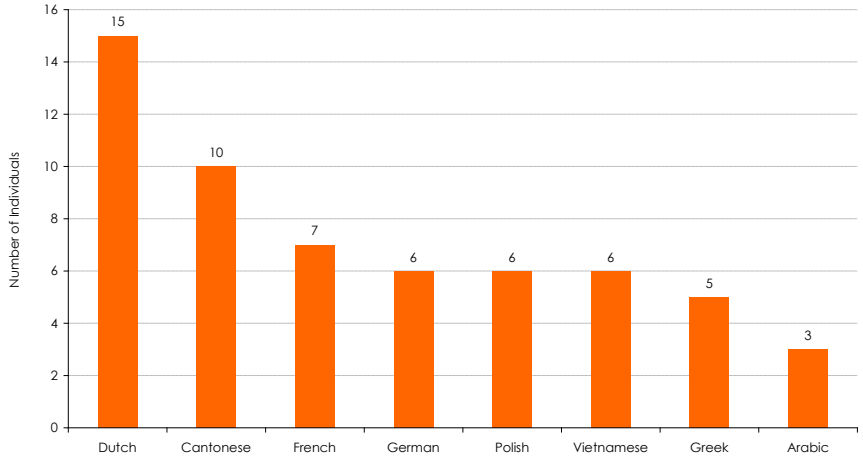
5.4.3 Language

Graph 16: Tea Gardens 2006 Language Spoken at Home



(Source: ABS 2006 + Duo)

Graph 17: Tea Gardens 2006 Language Spoken at Home other than English



(Source: ABS 2006 + Duo)

The lack of foreign language speaking households in Tea Gardens relative to the NSW average reflects the lack of ethnic diversity in the community.

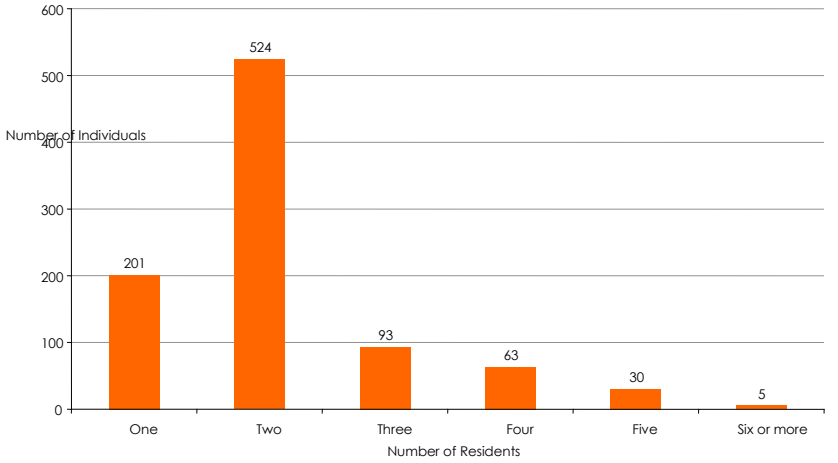
5.5 Housing

Table 5 uses 2006 census data to provide a snapshot of Tea Gardens Housing at that time. It demonstrates that the overwhelming majority of homes were separate houses (92%). Duplexes, townhouses etc formed only 5% of the total housing stock and flats and units just 2%.

TABLE 5: Dwelling Structure – 2006 Census data	Number	Proportion of all Dwellings	Number	Proportion of all Individuals
Separate house	841	92%	1833	93%
Semi-detached, row or terrace house, townhouse etc.	41	5%	88	4%
One storey	29	3%	69	3%
Two or more storeys	12	1%	19	1%
Flat, unit or apartment:	18	2%	31	2%
In a one or two storey block	18	2%	31	2%
In a three storey block	0	0.0%	0	0.0%
In a four or more storey block	0	0.0%	0	0.0%
Attached to a house	0	0.0%	0	0%
Other dwelling:	11	1%	29	1%
Caravan, cabin, houseboat	0	0%	5	0%
Improvised home, tent, sleepers out	0	0.0%	0	0.0%
House or flat attached to a shop, office, etc.	11	1%	24	1%
Not stated	0	0%	0	0%
Total	911	100.0%	1981	100.0%

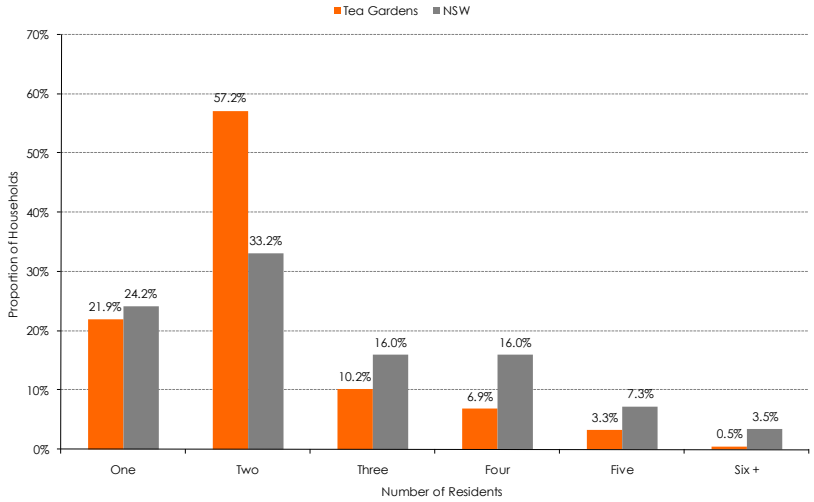
5.6 Household Size

Graph 18: Tea Gardens 2006 Number of Residents per Household



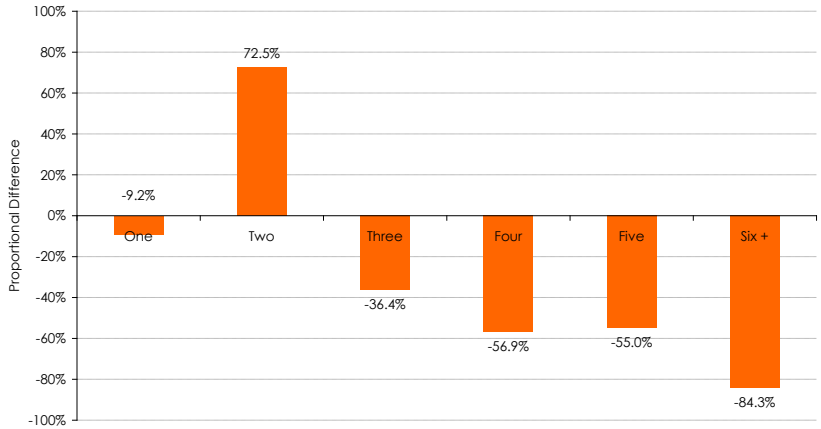
Source: ABS 2006 + Duo)

Graph 19: Residents per Household 2006 Tea Gardens vs NSW



(Source: ABS 2006 + Duo)

Graph 20: Tea Gardens 2006 Residents per Household
Relative Variation from NSW Average



(Source: ABS 2006 + Duo)

Household size reflects other elements of the demographic profile of the area with empty nesters, widows and retirees dominating the population.

This indicates a demand for smaller dwellings, though in many cases the retiree market demands family size homes to accommodate visits from family members and through personal preference for space.

For the purposes of this assessment average household size is assumed to be 2.2, other than for retirement units (1.8) and medium density development(1.3).

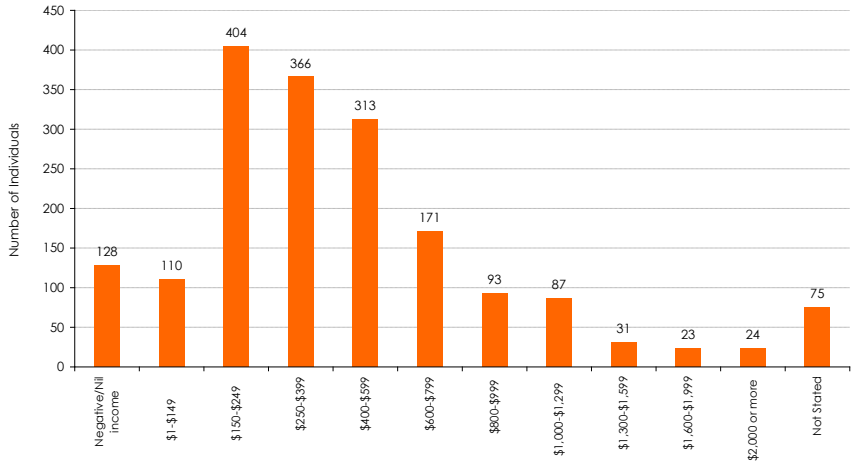
5.7 Incomes

At the time of the 2006 census Tea Gardens had fewer people than the State Average in high income earning groups and more than the State Average in lower income groups.

Tea Gardens had more people than the NSW Average earning between $150 and $600 a week and less than the average earning more and less than that figure.

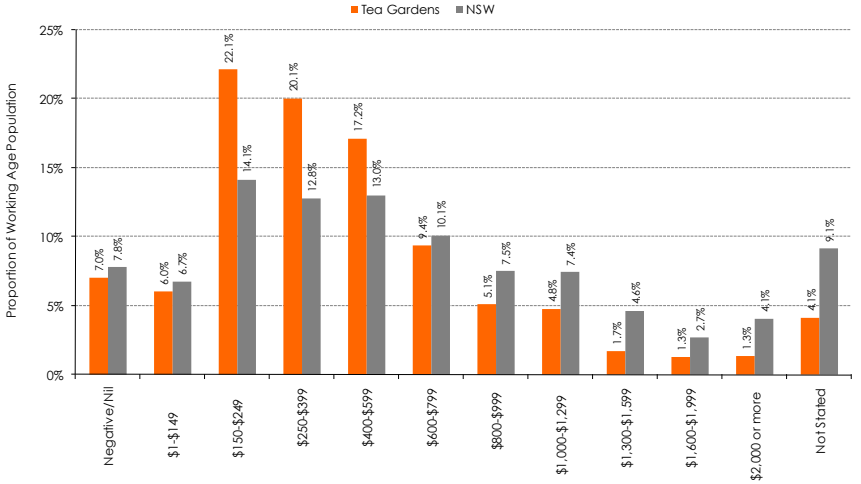
Fewer people earning less than $150 can be attributed to having less young people in the community. The number of people on low incomes may be partially attributable to the high number of retirees in the community. Retirees often live on relatively low incomes but own assets such as their homes. This does not necessarily indicate any serious social issues.

Graph 21: Tea Gardens 2006 Individual Weekly Incomes



(Source: ABS 2006 + Duo)

Graph 22: Individual Weekly Income 2006
Tea Gardens vs NSW Average



(Source: ABS 2006 + Duo)

Graph 23: Tea Gardens Weekly Individual Income 2006
Relative Variation from NSW Average



(Source: ABS 2006 + Duo)

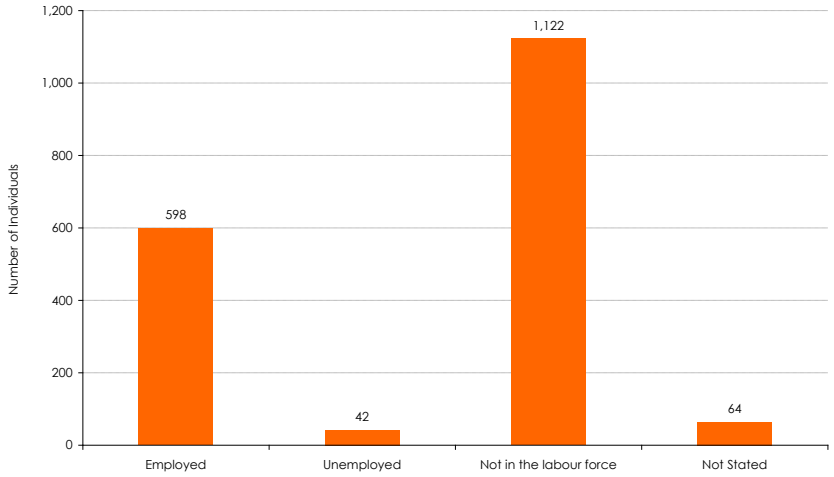
5.8 Employment

At the time of the 2006 Census labour force participation in Tea Gardens was very low by NSW standards with 35% participating in the workforce next to 61% not with the remainder unstated. This compares with a NSW average of 58% participation with 34% not participating.

The low participation rate can be attributed to the age profile of the community and is not necessarily a major issue.

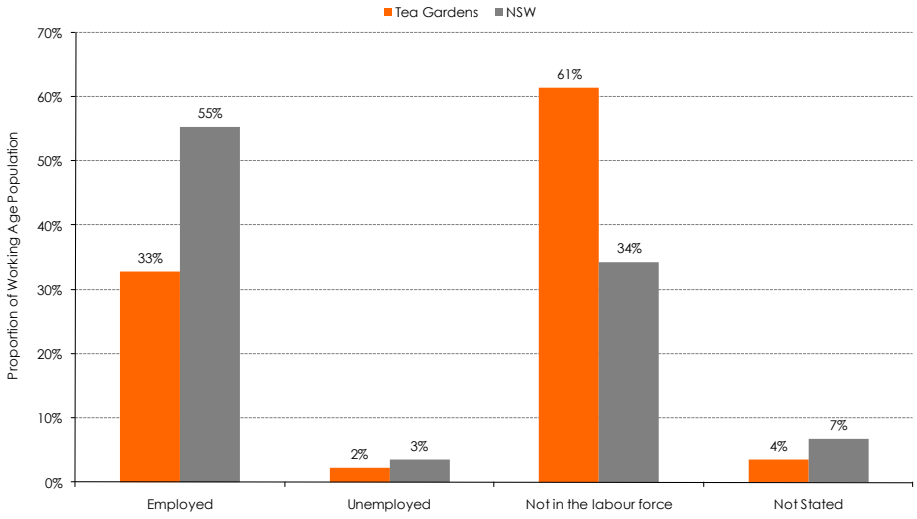
However, with just 339 people in the community in full time employment (there are a further 259 in part time employment), an objective to create more employment would be a positive step towards improving the balance of the community.

Graph 24: Tea Gardens 2006 Labour Force Status



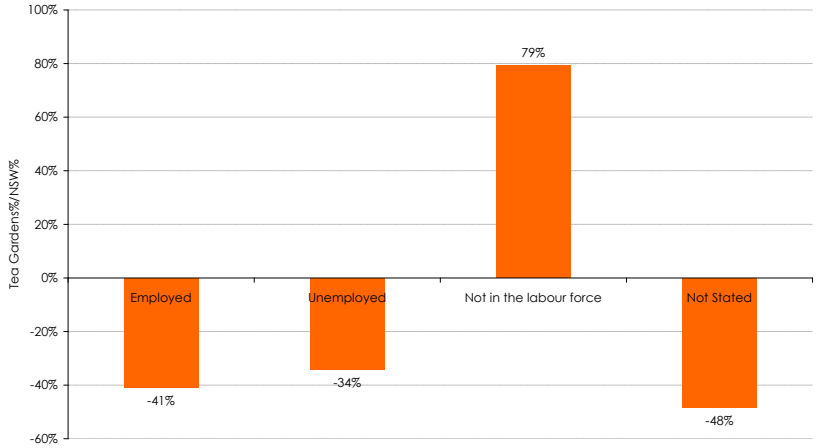
(Source: ABS 2006 + Duo)

Graph 25: Labour Force Status 2006
Tea Gardens vs NSW Average



(Source: ABS 2006 + Duo)

Graph 26: Tea Gardens 2006 Labour Force Status
Relative Variation from NSW Average



(Source: ABS 2006 + Duo)

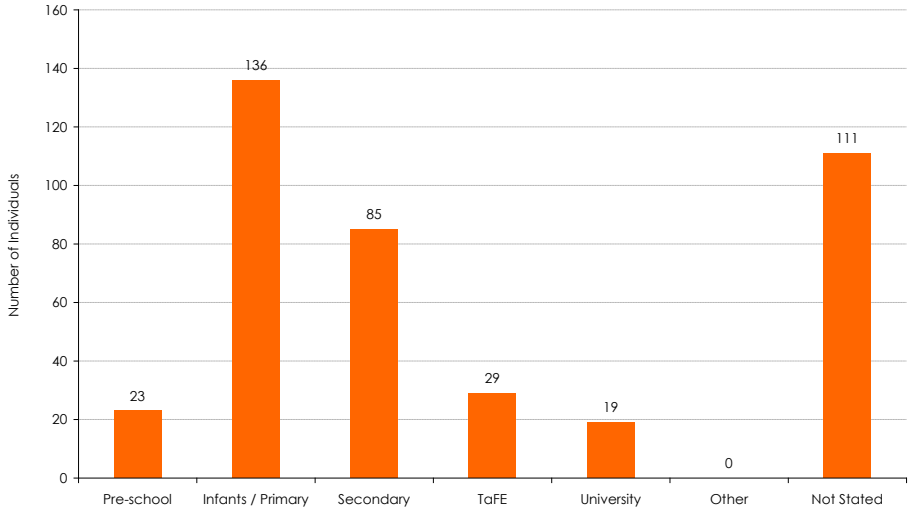
5.9 Educational Attendance

Educational attendance data relates directly to the age breakdown of the community.

In Tea Gardens in 2006 6.4% of the population attended primary school, 4% secondary school and 2% a tertiary institution or technical college.

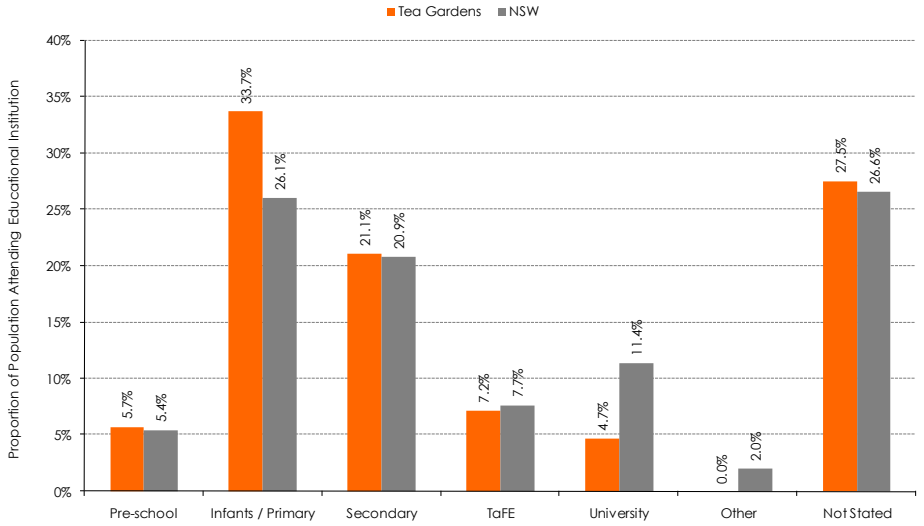
There are benefits to be gained both socially and economically from life long learning and opportunities to improve access to tertiary education through outreach and on line services may enhance participation rates.

Graph 27: Tea Garden 2006 Educational Institution Attending



(Source: ABS 2006 + Duo)

Graph 28: Educational Institution Attending 2006
Tea Gardens vs NSW Average



(Source: ABS 2006 + Duo)

Part C

CURRENT SERVICES AND THE IMPACT OF RIVERSIDE

6 Scope of Potential Impacts

6.1 Demographic Change

Riverside at Tea Gardens will provide a dwelling mix as per Table 6 ultimately providing approximately 980 dwellings (excluding tourist accommodation) to help meet demand for housing in the Tea Gardens area.

Table 6: Riverside Population Impacts

Location	Dwellings	Rate	Persons
Riverside at Tea Gardens			
Residential less than 450 sqm	44	2.2	97
Residential at least 450 sqm	779	2.2	1,713
Medium density	157	1.3	204
Sub Total	**980**		**2,014**

Based on current growth rates provided in Council's Housing Strategy for the area these dwellings will cater for around 10 years supply. If coupled with timely land release at Myall River Downs the two sites should ensure that Tea Gardens has adequate land supply over the next 25 years.

Riverside will add some 2,014 people to the population of Tea Gardens. This projection is on the high side and assumes current occupancy rates rather than a continuation of the trend to declining occupancy. It also assumes that homes at Riverside will all be occupied full time. However, it is appropriate to estimate on the high side to ensure that full potential impact on services is being provided for.

The age distribution is estimated based on 2006 census data. The age distribution of these residents is projected as follows:

Table 7: Projected age distribution

	% population	No. with 490 dwellings	No. with 980 dwellings
Under 5	3.5%	35	70
5 to 14	9.4%	95	189
15 to 19	3.7%	37	75
19 to 24	2.5%	25	50
25 to 54	26.1%	263	526
55 to 64	21.3%	214	429
65+	33.5%	337	675

Assuming that land at Myall River Downs is released to the market 2 years after Riverside becomes available it is estimated that it will take seven years from approval for Riverside to reach 490 dwellings and a further eight years to reach full capacity.

6.2 Accessibility & Mobility

6.2.1 Public Transport

There are two bus routes that serve Tea Gardens. These routes, operated by Busways, provide services to Raymond Terrace and Newcastle three times daily on weekdays and daily at weekends. For more local trips to Hawks Nest there are also three daily buses in either direction. Two buses on weekdays and one on weekends serve Bulahdelah, Forster Tuncurry and Taree.

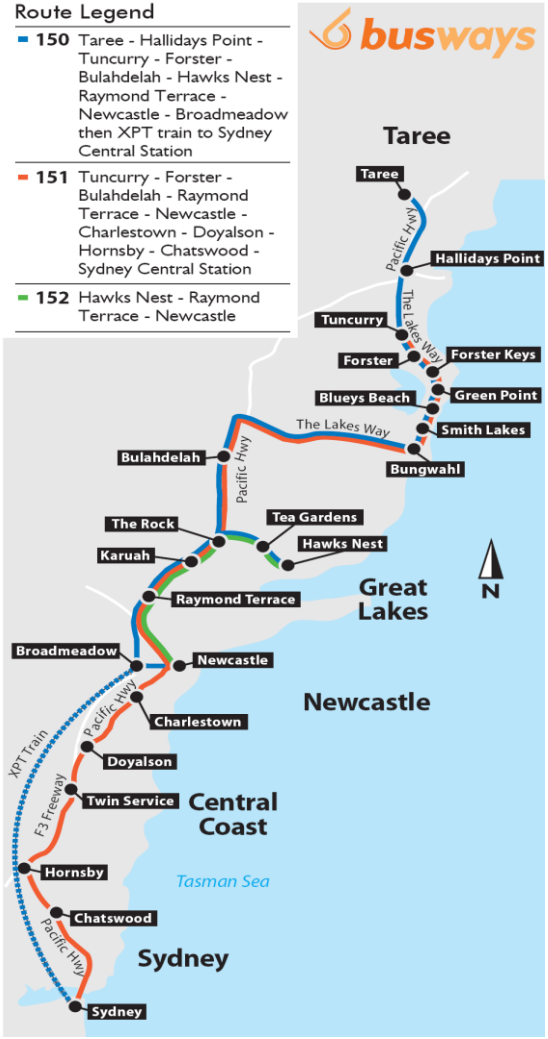
There are also services in either direction which do not come into the township but pass by on the Pacific Highway stopping at the nearby Red Rock Service Station. These are discounted for the purpose of this analysis because a private vehicle would be needed to reach Tea Gardens from this stop.

In addition to these services a school bus service is provided to a number of schools detailed in section 6.9.

The development of Riverside and Myall River Downs will more than treble the population of Tea Gardens enhancing the viability of public transport services and making it more likely that increased service frequencies will be offered.

Riverside is currently served by buses on Myall Road. It is recommended that, as the development progresses, roads are built to accommodate buses such that a loop through Riverside is possible bringing public transport access to within walking distance of each dwelling and allowing buses to serve the site without doubling back on themselves.

Trevor Jennings, Manager of Planning and Infrastructure at Busways was consulted in the development of this SIA. He confirmed that there are no current plans to expand services to Tea Gardens but conceded that in the long term significant population changes may lead to a review of service levels. However, there is considerable spare capacity in current services so growth will be likely to simply take up this capacity for some time.



There are no current plans to increase services to potential employment nodes such as Williamtown, however, as demand increases the potential for future services will be assessed.

Mr Jennings also requested that a suitable 'collector' road layout be provided within the subdivision that permits school buses to service the area without those roads being on the periphery of the development, and designed such that school buses can enter and depart the site from/to Myall Way near either end of the development, so that the buses don't have to enter and depart from the same point.

Tea Gardens is also connected to Nelson Bay and Karuah by daily private ferry services costing $20 and $25 per person. Given the high prices this service is considered to be more suited to tourism than to accessing services.

WEEKDAYS

Route Number	XPT Train (departs Central)	Newcastle (Bus Interchange)	Raymond TCE (Colonial Motor Inn)	Tea Gardens (Lone Pine C'van Park)	Bulahdelah (Mobile Service Station)	Forster (Coach Terminal)	Taree (Railway Station)
150	07:15	09:45	10:30	11:20	11:50	12:50	13:30
150	11:35	14:30	15:15	16:05	16:35	17:40	18:25

WEEKDAYS

Route Number	Taree (Railway Station)	Forster (Coach Terminal)	Bulahdelah (Shell Service Station)	Tea Gardens (Lone Pine C'van Park)	Raymond TCE (Opp. Colonial Motor Inn)	Newcastle (Bus Interchange)	XPT Train arrives (Central Station)
150	09:55	10:40	11:45	12:25	13:05	13:55	16:38
150	15:05	15:45	16:45	17:20	18:05	18:55	21:54

WEEKENDS

Route Number	Taree (Railway Station)	Forster (Coach Terminal)	Bulahdelah (Shell Service Station)	Tea Gardens (Lone Pine C'van Park)	Raymond TCE (Opp. Colonial Motor Inn)	Newcastle (Bus Interchange)	XPT Train arrives (Central Station)
150	09:55	10:40	11:45	12:25	13:05	13:55	16:38

WEEKENDS

Route Number	XPT Train (departs Central)	Newcastle (Bus Interchange)	Raymond TCE (Colonial Motor Inn)	Tea Gardens (Lone Pine C'van Park)	Bulahdelah (Mobile Service Station)	Forster (Coach Terminal)	Taree (Railway Station)
150	11:35	14:30	15:15	16:05	16:35	17:40	18:25

MON - FRI EXCEPT PUBLIC HOLIDAY
AFTERNOONS Opposite Direction

Route Number	Newcastle (Bus Interchange)	Raymond TCE (Colonial Motor Inn)	Karuah (Opp. Karuah Motor Inn)	Tea Gardens (Lone Pine C'van Park)	Hawks Nest (Community Centre)
152	15:30	16:00	16:30	16:55	17:00

MON - FRI EXCEPT PUBLIC HOLIDAY
MORNINGS Opposite Direction

Route Number	Hawks Nest (Community Centre)	Tea Gardens (Lone Pine C'van Park)	Karuah (Karuah Motor Inn)	Raymond TCE (Marketplace)	Newcastle (Bus Interchange)
152	06:35	06:50	07:15	07:45	08:35

6.2.2 Pedestrian & Bicycle

Tea Gardens is an almost entirely flat community and as such is perfect for cycling and walking as alternatives to motorised transport.

The potential for cycling and walking in Tea Gardens is recognised by Great Lakes Council who have a costed program to provide a network of separated at grade cycle paths in the town (opposite).

In 2004 Great Lakes Council received a grant of $70,000 from the NSW Government to create a cycle path linking Tea Gardens with Hawks Nest. This will allow more mobile members of the community to access services and amenities in Hawks Nest and Tea Gardens without using private cars.

At the Planning Forum for Riverside the importance of cycling and walking facilities was recognised with community suggestions that cycle facilities might be build to accommodate buggies and other powered vehicles allowing the mobility impaired to enjoy enhanced mobility.

It is recommended that attention be paid to the provision of a comprehensive network of cycle ways through the Riverside site as part of the development. This network should connect all community facilities and places of interest. This network should particularly provide ease of access to the commercial centre and should connect directly to the Council planned cycle way network so as to augment community mobility.

H N / T G - CYCLEWAY / WALKWAY PRIORITY PROGRAMME 2006
Updated January 2006

Priority Number	Street	Location	Off Road	Rough Order of Cost
1	Marine Drive (F/shore)	Public Wharf - Existing Path	Yes	$30,000
2	Marine Dr(Sth West)	Hough St to Ogden St	Yes	$16,000
3	Coupland Ave (Nth)	Budgeree St to Port Stephens St	Yes	$15,000
4	Ogden St (School)	Witt St to Marine Dve	Yes	$24,000
5	Witt St (School)	Maxwell St to Ogden St	Yes	$34,000
6	Maxwell St (School)	Witt St to Number 203 Myall St	Yes	$12,000
7	Tuloa Ave (West)	Binda Ave - Kingfisher Ave	Yes	$29,000
8	Kingfisher Ave (Nth)	Ibis Ave to Tuloa Ave	Yes	$50,000
9	Myall St (Sth West)	Number 117 to Penn Dve	Yes	$25,000
10	Myall St (Sth West)	Number 53 to Settlers Way	Yes	$32,000
11	Moira Pde	Yamba St to Mirreen St	Yes	$39,000
12	Tuloa Ave (West)	Moola St to Number 50	Yes	$6,000
13	Ibis Ave	Kingfisher Ave to Albatross Ave	Yes	$34,000
14	Langi St	Moira Pde to Booner St	Yes	$6,000
15	Tuloa Ave (East)	Mirreen St to Coorilla St	Yes	$33,000
16	Tuloa Ave (East)	Booner St to Mirreen St	Yes	$30,000
17	Mungo Brush Rd (W)	Kingfisher Ave to Albatross Ave	Yes	$34,000
18	Yamba St (Nth)	Booner St to Tuloa Ave	Yes	$45,000
19	Marine Drive (West)	Maxwell St -Charles St	Yes	$15,000
20	Marine Drive (West)	Number 133 - Charles St	Yes	$19,000
21	Charles St (Both)	Myall St to Marine Dr	Yes	$21,000
22	Coorilla St	Bowral St to Bennett St	Yes	$18,000
23	Bennett St	Coorilla St to Mirreen St	Yes	$14,000
24	Walkway	Walkway to Mirreen St (parallel West Cl)	Yes	$9,000
25	Beach Rd	Mirreen St to Booner St	Yes	$5,000
26	Coupland Ave (Nth)	Myall St to Budgeree St	Yes	$58,000
27	Tuloa Ave (Sth side)	Coorilla St - The Anchorage	Yes	$95,000
28	Myall St (Nth East)	Marine Dr to Maxwell St	Yes	$75,000
29	Myall St (Nth East)	Maxwell St to Hough St	Yes	$50,000
30	Albatross Ave	Koonawarra to Mungo Brush Rd	Yes	$134,000
31	Kingfisher Ave (Sth)	Bridge to Tuloa Ave	Yes	$76,000
32	Yamba St	Number 2B to Booner St	Yes	$6,000
33	Booner St (Sth Wst)	Yamba St to Langi St	Yes	$11,000
34	Booner St (Sth)	Langi St to Tuloa Ave missing links	Yes	$12,000
35	Myall St (Nth East)	Hough St to North St	Yes	$66,000
36	Myall St (Nth East)	North St - Coupland St	Yes	$56,000
37	Myall St (Nth East)	Coupland Ave to Number 2 Myall St	Yes	$112,000
38	Elouera Cl	Bowral St to Walkway	Yes	$8,000
39	The Anchorage	Winda Woppa Reserve to The Boulevarde	Yes	$102,000
40	Ibis Ave	Mermaid Ave to Kingfisher Ave	Yes	$22,000
41	Mermaid Ave	Moira Pde to Tuloa Ave	Yes	$60,000
42	Yamba St	Booner St to Caravan Park	Yes	$40,000
43	Marine Dr (F/shore)	Coupland Ave to Maxwell St (full length)	Yes	$145,000
44	Budgeree St	Boston St to Coupland Ave	Yes	$46,000
45	Hough St	Marine Dr to Myall St	Yes	$7,000
46	Yalinbah St (Nth)	Myall St to Walkway	Yes	$12,000
47	Walkway	Yalinbah St to Houlbert Cl	Yes	$21,000
48	Walkway	Billabong Ave to Myall St	Yes	$8,000

6.3 Retirement Living and Aged Care

The increase in ageing population expected to result from the new residents of Riverside will increase demand for aged care accommodation of all types.

Tea Gardens currently has 190 self care units and approval for a 80 bed hostel at Tea Gardens Grange (though only 30 beds currently have Government funding). A further 281 self care units are approved for the Hermitage site adjoining Myall River Downs. There are also 10 low care retirement units at the Myall Lodge Aged Care Facility in Hawks Nest with plans to develop a further 20 units, though the planned extension has been delayed by bushfire concerns.

However, the design of Riverside is suited to ageing in place, effectively providing a retirement option that is not segregated from the mainstream population.

A number of features of Riverside lend themselves to this view including:

- The provision of small and duplex lots
- The community infrastructure including precinct based facilities
- The flat nature of the site
- The proximity of the commercial facilities and shops including the medical centre
- The design and layout aiming to ensure that eyes on the street maximise security.
- Emphasis on home business allowing economic activity and partial retirement.

Commonwealth benchmarks suggest the need for 1 aged care bed for each 10 residents aged over 70. At the 2006 Census Tea Gardens had 429 residents aged over 70. On this basis it is estimated that existing demand is for 43 beds. Much of this demand will be provided for by the 30 beds available or to be constructed at Myall Lodge.

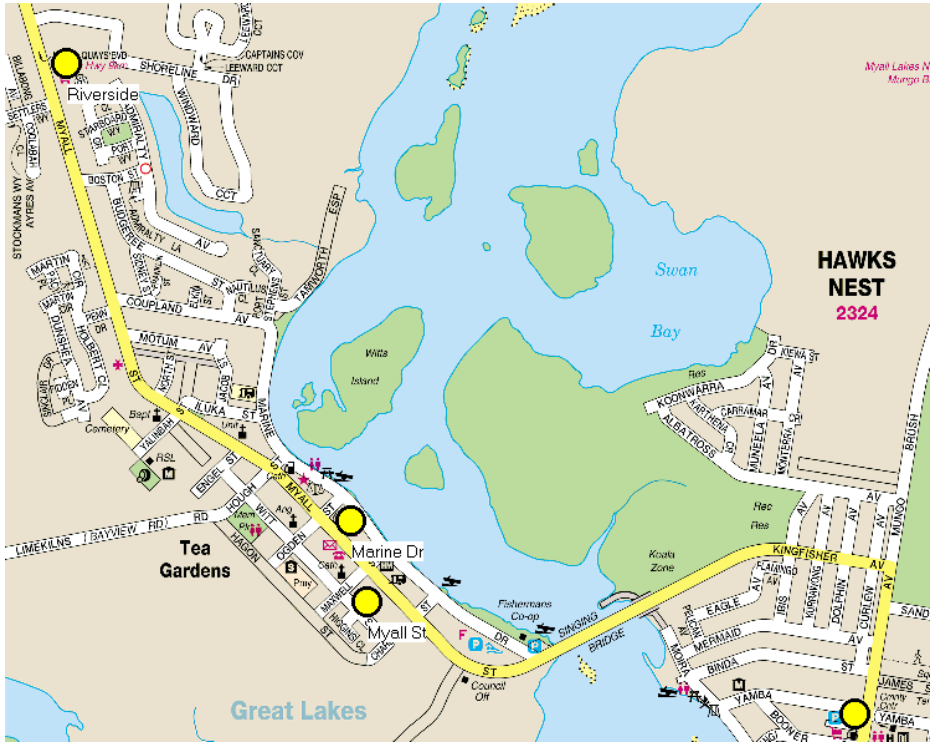
It is estimated that Riverside will lead to demand for approximately 30 additional aged care places when fully developed. These will be provided by currently funded beds at Tea Gardens Grange. Myall River Downs will subsequently require a further 50 beds when fully developed. These can be provided by the Tea Gardens Grange Facility.

Ultimately, it is estimated that Tea Gardens and Hawks Nest will grow to 12,558 residents with (assuming 2006 census age distributions) 8% of population aged over 70 or 1,005 people. This will mean demand for 101 aged care beds. 80 of these will be provided with the funding of the additional beds at the Tea Gardens Grange facility and a further 30 beds will be available at Myall Lodge. These will be enough to service growth anticipated in the Tea Gardens Hawks Nest area.

6.4 Commercial

Tea Gardens has three distinct commercial areas. An area on Myall Street offers stores such as convenience goods and a newsagency, Marine Drive which has a number of cafes, a real estate agent and tourism related stores, and

MAP 3: COMMERCIAL CLUSTERS



Riverside's own commercial precinct which boasts a 2000sqm supermarket and a number of specialty stores. The Riverside Commercial precinct is also home to a medical centre, pharmacy and approval is in place for a child care centre and a service station. This centre is well established as an emerging community hub and has room to grow considerably beyond the 3000sqm retail cap currently imposed.

It is typically accepted that 2sqm per resident is an appropriate allocation of retail floor space. In 2000 there was 1,556sqm[3] of retail space in Hawks Nest and 1,980sqm in Tea Gardens. There are currently around 3500 sqm in the Riverside Commercial precinct with DA approval for a child care centre and service station and potential for expansion. This provides service for up to 3,518 people which provides for the current population of Tea Gardens and Hawks Nest. Given the high number of holiday rental properties, particularly in Hawks Nest, some additional floor space is needed to cater for tourism. As Riverside reaches full development and Myall River Downs begins to fill, there will be demand for significant additional retail space. The potential for this growth exists within the commercial precinct but is constrained by a clause of the LEP. It is recommended that this be amended to allow significant additional retail floor space to be provided in the commercial precinct.

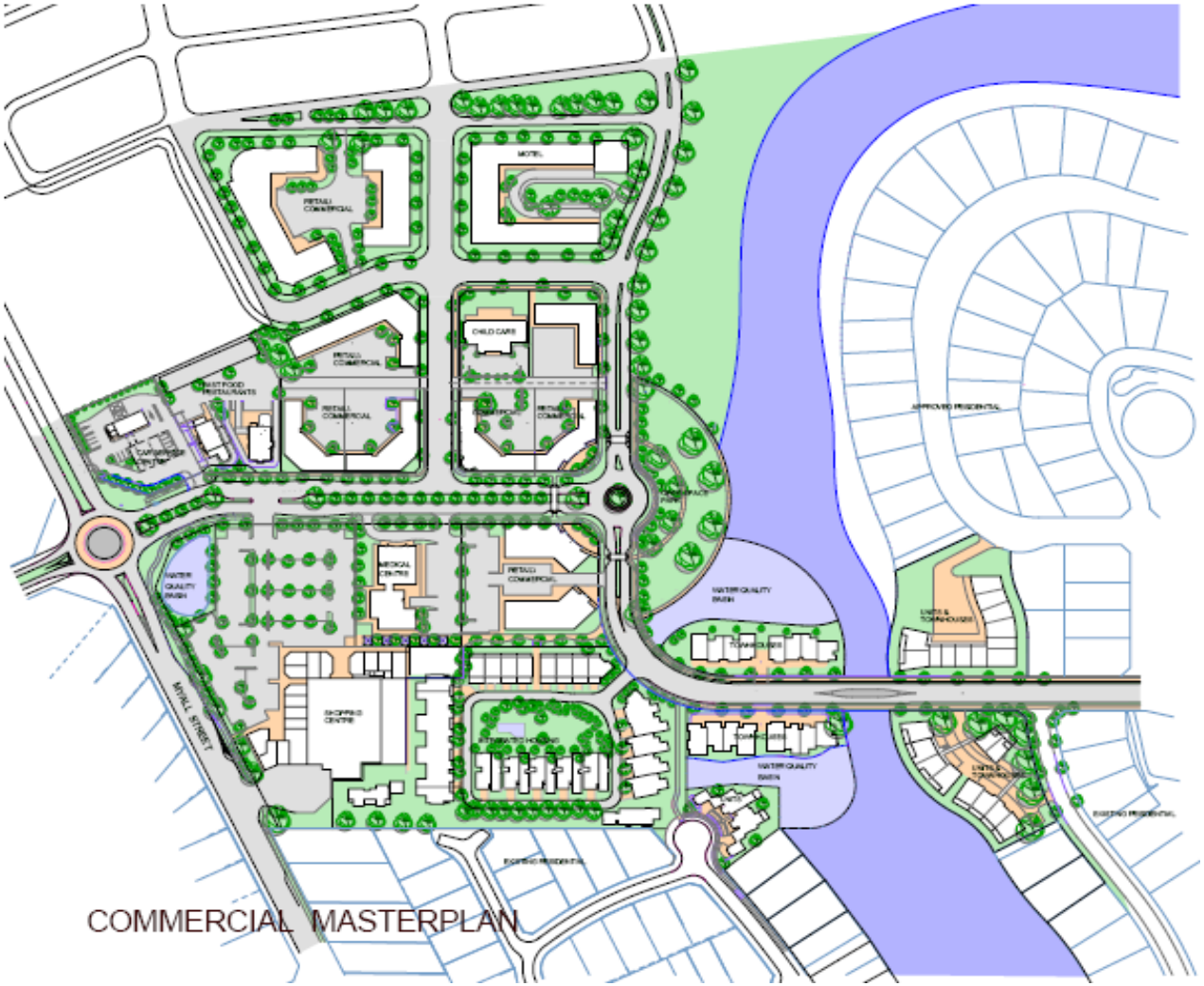
A study carried out by IBECON in 2000 looking into the demand for retail floor space in Tea Gardens found that at that time (prior to the provision of 3,500sqm in Myall Quays Commercial Centre) there was a deficiency of retail space in the Tea Gardens Sub Catchment of some 6000sqm of net selling area or 8000sqm of gross land area. The report projected that this deficiency would rise to 12,000sqm of retail floor space by 2016 or 15,000 sqm of gross land area. Given that 3,500 sqm has already been provided this implies the need for a further 8,500sqm of retail floor space in the next decade. This broadly aligns with current expectations based on projected population growth.

Concern that the Riverside commercial precinct may reduce the viability of other more traditional commercial areas seem to have little basis in the medium to long term, though there may be transitional impacts and some businesses may need to relocate to areas more suited to their markets in the newly emerging retail hierarchy. However, the Marine Drive Precinct is unlikely to be adversely affected due to its tourism market. The shops in Hawks Nest fulfil their own neighbourhood and tourism functions. The shops on Myall Street are most vulnerable to competition from the Riverside commercial precinct in the medium to long term. However, they may still be able to serve a strong neighbourhood function in the context of an expanding medium density zone the older areas of Tea Gardens.

[3] IBECON 2000, Tea Gardens Retail Study

The Riverside Commercial precinct with the supermarket offers a service not previously available in the area providing an alternative to out of town supermarket trips. It should also be noted that the new Riverside Commercial precinct is already well established and that the Concept Plan has no influence on the uses already located on the site. The Commercial Precinct provides sufficient expansion opportunities to cater for the ultimate growth in population in Tea Gardens and Hawks Nest.

Figure 1: Riverside Commercial Masterplan



6.5 Recreation

A number of facilities are currently available in Tea Gardens and Hawks Nest. Council considers (2006 Tea Gardens / Hawks Nest S94 Plan)that there is currently sufficient space in reserves (see below) to expand facilities and that additional land would not need to be acquired for formal open space until the combined population of Hawks Nest and Tea Gardens reaches 4123, a threshold likely to be some years away.

Notwithstanding this, an opportunity exists to consolidate and augment certain Council facilities, including sporting facilities, on to one site as part of the Myall River Downs Development. This would represent a significant upgrade of current facilities and should be investigated by Council as a strategy to ensure that the long term needs of the community are met.

The Great Lakes Recreation and Open Space Strategy (2006) sets out a range of facilities that it would like to see developed in Tea Gardens (Appendix 5). It is recommended that these provide a guide to discussions with Council about what contribution to a new consolidated facility might be provided. However, it is important to note that it would not be appropriate or equitable for Riverside and its residents to be expected to meet the cost of the full list of desired facilities. The list may, nonetheless, provide a useful guide.

6.5.1 Sporting and outdoor facilities

Myall Parks Sports Reserve is located in Yamba Street Hawks Nest, adjacent to Hawks Nest Caravan Park.

Myall Park Tennis Club which has two courts and Hawks Nest Croquet Club are also situated at this site and are individually managed by their own committees.

This complex is 4ha in area and has a large multi use field primarily used for rugby league. The field is floodlit and toilet and canteen facilities are provided. There are also swings and a park on the site.

Figure 1: Myall Park Sports Reserve



Memorial Park Sports Field is located in Witt Street Tea Gardens. This complex is 1.2 ha in area and is utilised for soccer and cricket and has toilet and canteen facilities. Floodlighting is not available at this complex.

Figure 2: Memorial Park Sports Field



Figure 3: Tea Gardens Swimming Pool



Tea Gardens swimming pool is located in Myall Street Tea Gardens. The complex has a main pool as well as a toddler's pool. The dimensions of the main pool are 25m x 17m with a depth ranging from 1m to 1.5m. The dimensions of the toddlers pool is 6m x 4m.

The pool is opened 6am to 7pm daily typically from the September school holidays to the Easter school holidays. The pool is supervised from 9am to 7pm during school holidays, weekends and public holidays, and from 3pm to 7pm on Mondays, Tuesdays, Thursdays and Fridays.

6.5.2 Beaches

Hawks Nest Beach, also known as Bennetts Beach, runs a distance of 14.3 km from Seal Rocks to the north and Hawks Nest to the south.

Great Lakes Council controls an area of 3.7 km from Hawks Nest Caravan Park Reserve in the north to Providence Bay Reserve to the south. Hawks Nest, Tea Gardens Surf Life Saving Club is located adjacent to the Hawks Nest Caravan Park and provides public toilets and car parking facilities.

Jimmy's beach offers access to the Port Stephens Waterway with abundant water sports opportunities.

6.6 Community Infrastructure

6.6.1 Community Halls

Currently the main community gathering place is the Hawks Nest Community Hall. The facilities for this hall include seating for 200 people, supper room, kitchen facilities, car parking, disabled parking and bus access.

Figure 4: Hawks Nest Community Hall



Although Department of Community Services guidelines recommend one community centre per 7,000 – 10,000 population and Riverside will not see that threshold reached for Tea Gardens, there are clear benefits from the provision of a community centre in Tea Gardens. A dedicated community centre for multipurpose community uses would represent a highly desirable part of the Tea Gardens community infrastructure and such a facility will be required for the Tea Gardens Hawks Nest Community over the next 20 years.

It is recognised that Riverside residents will have access to a number of neighbourhood facilities providing community functions and that this will reduce pressure from Riverside residents on more widely available community facilities. However, the social cohesiveness of the overall Tea Gardens Community remains important and shared community facilities will contribute to ensuring that Tea Gardens grows into one community rather than disparate enclaves.

It is recommended that, as part of discussion regarding developer contributions, consideration be given to the provision of a multipurpose community function / meeting facility in line with Council's Section 94 plan for the area. This should be located within walking distance (400m) of the Riverside commercial precinct.

6.6.2 Library

The library is located in a demountable style building adjacent to the swimming pool complex in Tea Gardens.

Council's S94 Strategy talks about closing the old library in Hawks Nest to develop a consolidated community facility and library in Tea Gardens. Standards dictate a branch library for 5000 persons. It is unlikely that the current population of Hawks Nest Tea Gardens will rise beyond this mark with the development of Riverside but, given the cumulative impacts of other developments expected to take place in the community, it is recommended that Crighton Properties give consideration to a contribution to the upgrade of library facilities either on site or as part of the provision of a multi use community facility in line with Council's Section 94 plan.

6.6.3 Preschool

Hawks Nest / Tea Gardens Pre School is located in Hawks Nest and is currently open 3 days a week accommodating 20 children on each day. There is potential to open on more days subject to Government funding being granted.

The Tea Gardens Childcare Centre is open 5 days a week offering long day care and preschool. There are approximately 20 places at this facility with some spare capacity on a number of days.

The S94 Report states that the current preschool facilities are sufficient to accommodate anticipated growth in the area. However, the currently approved child care facility at the Riverside Commercial Centre will augment that service offering as an alternative.

An accepted standard is the provision of 1 long day care place per 11 children aged 0-4. Thus, it is anticipated that Riverside will ultimately lead to demand for an additional 7 places at long day care. This can be readily accommodated by current services combined with the new child care facility being constructed at the Myall Quays commercial centre.

6.6.4 Tea Gardens Grange Facilities

Tea Gardens Grange has on site facilities for residents including a swimming pool, a library, a croquet lawn, a billiard table, a large lounge and covered deck plus a meeting hall/and dance floor/indoor bowling area.

6.6.5 Rural Fire Service Station

The Rural Fire Service has a 2 berth $135,000 facility in the industrial area of Tea Gardens. This facility was formally opened in February 2007 though it has been operating for some time.

6.6.6 Places of Worship

Tea Gardens is home to St Andrews Anglican Church, St Stephens Catholic Church, the Tea Gardens Uniting Church and The Tea Gardens Baptist Church.

6.6.7 Post Office

There is a Post Office at 166a Myall Road and another in Hawks Nest.

6.6.8 Veterinary Services

There is a vet on Myall Street Tea Gardens.

6.7 Employment

The data presented in Section 5.8 of this report clearly demonstrates the need to attract more jobs and working people to the Tea Gardens area in order to achieve some balance of economic activity in the area. In part, Riverside itself will contribute to achieving a better balance through commercial and home business precincts and through benefits to the community form construction. In addition to these factors, recent road infrastructure upgrades mean that Tea Gardens is now easily accessible to some major regional employment nodes.

Tea Gardens is located approximately 75km or one hour's drive North of Newcastle on the Pacific Highway. It is an hour and a half journey or 110km from Forster–Tuncurry and can access Raymond Terrace and Williamtown Airport in around 40 minutes.

Forster has been identified as an area with very rapidly increasing employment:

> *"Heading this list is the New South Wales coastal town of Forster in Great Lakes Shire. The workforce in this pretty seachange community jumped by 1,768 or 16.9 per cent in the year to June 2005, well ahead of a 1.6 per cent increase in population in the same year. Accordingly, the rate of unemployment in Great Lakes dropped from 11.2 per cent to 7.7 per cent. Great Lakes Shire and the town of Forster is being thrust forward on a tide of economic confidence."*
> From: Bernard Salt Hot towns signal general shift Newcastle Herald 27 July 2006

Newcastle is the Regional Centre of the Lower Hunter and has major employment nodes around its port and CBD and Williamtown Airport is home to a burgeoning aerospace sector employing several thousand people as well as a RAAF base and one of the most rapidly growing regional airports in the country.

> "…with Jetstar, Boeing and BAE all setting up facilities at Williamtown, creating some 3500 jobs"
> Premier Morris Iemma from Newcastle Herald 2 March 2007

In Tea Gardens and Hawks Nest there is an existing industrial precinct on Myall Way

An economic impact study for Riverside carried out by Parsons Brinkerhoff using national accounts data found that the development of Riverside would have the following economic impacts:

- The construction component of the project will, by conservative estimates, mean $243 million will flow directly to the local community. This translates to a local benefit of $243 million supporting 1,479 local jobs across all sectors, spread across the anticipated 10 year life of the project.

- The Retail / Commercial component of the proposed development, via the construction of 15,500 square metres of commercial and retail space will support 645 jobs and, therefore an estimated $21.7 million in associated wages and salaries. The spend benefits associated with this level of activity are estimated at $8.7 million per annum for the local economy with a median multiplied output effect of $15.2 million.

- Residential Consumption Activities will directly contribute $17.9 million per annum to the local economy based on the increase in population. Normal consumer spending patterns would indicate that this level of spending will consequently support 107 jobs in the district upon completion of the project.

- Associated Activities - There will be an associated range of benefits which come from the infrastructure that the development will create, such as jobs associated with the day-to-day operation of the site and on-going capital maintenance. The industry estimate of these annual outgoings is in the range of 1-2% of the capital value of the development.* For Riverside at Tea Gardens this would be $2,115,000 to $4,230,000. This would represent an additional 10 full-time direct jobs and an overall jobs (direct and indirect) of 53 (based on construction industry multipliers).

The provision of two home business precincts is likely to have a significant impact on local employment levels and offer some strong social benefits in terms of allowing people to avoid long commutes to work and preventing the sort of social dislocation that is often associated with long distance commuting patterns.

It is likely that the business focus of these homes will also encourage extended economic activity for some residents who might otherwise retire, allowing them to enjoy the lifestyle of the area whilst maintaining employment, at least on a part time basis. This will be likely to be an important strategic goal for NSW in the future.

6.8 Health

Riverside boasts its own medical centre which hosts three GPs, 2 dentists, pathology, radiology and pharmacy services. A range of specialists visit the centre including a Ophthalimic Surgeon, Gastro Intestinal Surgeon, Gynaecologist, Cardiologist and Audiologist.

There are two other GPs in Tea Gardens and Hawks Nest located at Booner St and Myall Street. There is also a second pharmacy in Hawks Nest. Tea Gardens also has its own ambulance station.

The Hawks Nest / Tea Gardens Community Health Centre in Hawks Nest also offers a range of community based health services to all members of the community. Clinical staff working within the community provide the following services on a clinic basis:

- Aged Care
- Child & Family Counselling /
- Continence
- Diabetes
- Dietetics
- Early Childhood Nursing
- Genetic Counselling
- Generalist Care
- Mental Health
- Paediatric Occupational Therapy
- Paediatric Physiotherapy
- Paediatric Speech Therapy
- Palliative Care and
- Women's Health

More acute medical facilities are provided in Newcastle where the John Hunter Hospital and Mater Hospital provide a full range of specialist services and have a total over 800 beds.

A clinic bus service operates between GP surgeries on Thursdays and Manning Valley Transport operate health and domestic related transport services on Wednesday and Thursdays.

The Department of Health and Ageing advises that the national average for hospital bed provision of 2.43 per 1000 population. It is therefore envisaged that the population of Riverside will lead to an additional requirement for 5 beds when the site is fully developed.

This needs to be seen in the context of the Lower Hunter Regional Strategy, which assumes population growth of 160,000 people over the next 25 years, and the Draft Mid North Coast Regional Strategy which sees growth of 90,000 people over the same time period. Hunter New England Health will plan their service provision to accommodate this growth of which Riverside is a part. Either way this impact, over a period of 15 years, is considered to be negligible and will be provided for by the hospital system.

For General Practitioners a ratio of one to 1500 population is generally used. With 3 GPs and room for a fourth, there is sufficient capacity within the Myall Quays medical centre to allow for the addition of Riverside and Myall River Downs to the population of Tea Gardens. The combination of these services and the other 2 GPs in Tea Gardens and Hawks Nest means the population is very well served and can accommodate the envisaged expansion of the communities for the foreseeable future. Whilst Tea Gardens has the GP services to cater for its ultimate foreseeable growth there may be a requirement for additional services in Hawks Nest when the North Hawks Nest Development is completed.

A discussion with Chris Williams of the Hunter New England Health Service Population Health Unit revealed no serious issues. However, it is recommended that the Concept Plan be submitted to the Population Health Unit who will provide detailed recommendations on measures to optimise preventative health.

6.9 Education

School bus routes link the community of Tea Gardens to a range of primary and secondary schools (table 6). There are currently four high schools served by direct bus routes offering secondary education as well as five primary schools. Tea Gardens also has its own public school for primary education.

Table 6: School Bus Routes

School Name	Time of morning bus	Direct / Indirect
Alesco Learning Centre	0650	Indirect
All Saints / St Peters	0650	Indirect
Bulahdelah Central School	0800	Direct
Callaghan College – Jesmond and Waratah	0650	Indirect
Francis Greenway HS	0650	Indirect
Hunter Valley Grammar	0650	Indirect
Hunter Christian School	0650	Indirect
Hunter River HS	0740	Direct
Hunter School of Performing Arts	0650	Indirect
Hunter Sports HS	0650	Indirect
Irrawang HS	0740	Direct
Irrawang PS	0740	Direct
Lambton HS	0650	Indirect
Linuwell	0650	Indirect
Merewether HS	0650	Indirect
Newcastle Grammar	0650	Indirect
Newcastle HS	0650	Indirect
San Clemente HS	0650	Indirect
St Brigids PS	0740	Direct
St Francis Xavier HS	0650	Indirect
St Phillips Christian College	0650	Indirect
St josephs PS Bulahdelah	0750	Direct
Medowie Christian School	0750	Direct

Students can also access specialist schools in Newcastle including the Hunter Sports High, the Hunter School of Performing Arts, the selective Merewether High School, and a variety of private, catholic and Christian schools.

A telephone discussion with Lesley Greenwood, A/Manager, Service Planning of the Department of Education and Training was held on 21 March 2007. The Department's general guidelines for the provision of education facilities are based on the following ratios:

- Primary Schools: 1 for each 2000 to 2500 dwellings
- Secondary Schools: 1 for every 6000 to 7500 dwellings
- TAFE: 1 for every 100,000 dwellings
- Special Needs Schools: 1 for every 20,000 dwellings.

Based on these ratios, the Riverside development - on its own - will not lead to a requirement for additional schools in Tea Gardens. However, the ultimate development anticipated in the Tea Gardens Community may lead to a requirement for additional school facilities provision, including acquisition of additional land.

Ms Greenwood also commented that we cannot necessarily assume that new developments will continue to mirror current demographic character. For example, it is only in more recent years that there have been some students from TG/HN enrolling in non-government schools (from negligible in 1991 and 1996 censuses to over 10% of primary school students in 2001; and from 4% in 1991 and 1996 to 23% of secondary students in 2001). The area has also consistently exhibited a high rate, of unoccupied dwellings. If the nature of housing was to change from weekenders/holiday houses to permanent residences, then this too would affect the composition of the population and potentially have an impact on school demand. The DET will continue to monitor urban growth and urban development proposals in the area and respond appropriately to any significant changes.

6.9.1 Primary Education

Duo Consulting estimates, based on the demographic analysis in section 6.1, and 2006 educational attendance rates that there will be demand for an additional 120 primary school places as a result of the Riverside development over the next 14 years with half of those arriving in the first six years. There are a number of primary school options with a direct connection to Tea Gardens.

There is clearly capacity to accommodate this growth in the existing school system. Additional demountables will probably be required at the Tea Gardens Public School whilst other schools appear to have considerable capacity as

detailed below. It is recommended that Crighton Properties directly communicate progress at Riverside with the Principal of the Tea Gardens Public School to assist with facility planning.

Although there is capacity in the existing school system to accommodate growth in pupil numbers from the development of Riverside, clearly, as Tea Gardens and Hawks Nest grow to the levels predicted in Table 1, there may be justification for an additional primary school in the towns. However, this need is many years away.

Tea Gardens Public School

Tea Gardens Public School is located in Witt Street some 1.6km from the Riverside site. The school site is denoted by the yellow spot on map 3 below.

Discussion with the Principal Sue Estens revealed that the school currently has 218 pupils and has the capacity to continue to grow to meet projected community growth. There has been strong expansion in recent years leading to the recent instalment of new demountables. Further demountables can be accommodated should demand rise considerably and the school has the land to accommodate this growth as it is set on a site with well over a hectare of land and has generous grounds that would allow a number of additional buildings to be added without making the playing fields unacceptably small.

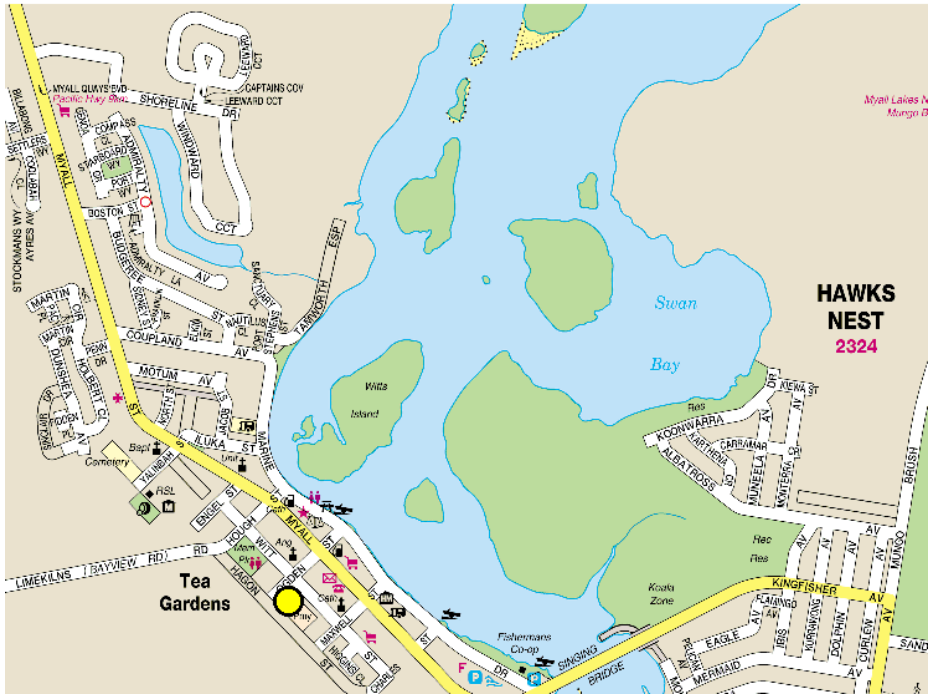
After hours school care is about to commence on the site and will be available from 3pm to 6pm each day.

Irrawang Public School

An interview with the Principal revealed the school currently has 305 pupils but has room to accommodate an additional 130. The schools offers a pre school and a parent support facility.

Direct bus routes operate to Irrawang Public School which feeds to the Irrawang High School in Raymond Terrace.

MAP 3 – Tea Gardens PS



Bulahdelah Central School

A direct bus service operates to the Bulahdelah Central School which provides education from kindergarten to year 12 and incorporates the only purpose built middle school complex in NSW.

Bulahdelah Central School currently has 155 primary school places and could readily accommodate 50 more.

The school has just had a $14 million upgrade and is one of the most modern in the state.

St Brigids Catholic School

St Brigids is based in Raymond Terrace it is a Catholic School catering for years K to 6. It has 420 students but spare capacity for an additional 25 pupils.

A discussion with a representative of the principal David Palmer indicated that the capacity to expand beyond 445 pupils is limited.

Medowie Christian School

Medowie Christian School has a direct bus service to the school from Tea Gardens. The school currently has 302 pupils from kindergarten to year 9 but will soon offer to year 12. The school has plans in place to expand to 800 pupils.

An interview with the school's business manager John Whittal revealed that demand is the only constraint on expansion. The school will be 800 strong within 20 years but Mr Whittal emphasised that this expansion would take place more quickly should demand increase.

St Josephs PS

St Josephs is a Catholic school in Bulahdelah offering year K to 6. It has 38 pupils enrolled and has capacity for up to 90. A discussion with the assistant to the Principal John New revealed that the school has modern facilities including air conditioning and a new $35,000 playground.

6.9.2 Secondary Education

Duo Consulting estimates, based on the demographic analysis in section 6.1, that there will be demand for an additional 104 secondary school places as a result of the Riverside development over the next 14 years with half of those arriving in the first six years. There are a number of secondary school options with a direct connection to Tea Gardens. There are also a variety of more specialist schools in Newcastle which can be accessed. Directly connected schools are discussed here.

There are sufficient places to accommodate the expected growth in secondary pupils resulting from the development of Riverside. There is further capacity in the longer term with the addition of buildings or demountables at schools. However, it is worth noting that, whilst Bulahdelah Central School has no other major growth areas in its catchment, the other secondary schools are all located in areas experiencing rapid demographic growth. Consequently Bulahdelah Central is likely to gain a large proportion of students from a growing population in Tea Gardens.

It is therefore recommended that communications with the Principal of Bulahdelah Public school be established to assist with facility planning. As growth of the community beyond the Riverside development takes place additional building works will be required to accommodate additional pupils, though this requirement is likely to be a decade or more away due to spare capacity that currently exists in the local school system.

Bulahdelah Central School

A direct bus service operates to the Bulahdelah Central School which provides education from kindergarten to year 12 and incorporates the only purpose built middle school complex in NSW.

Bulahdelah Central School currently has 360 secondary school places and could readily accommodate 60 to 70 more without any need for new buildings.

The school has just had a $14 million upgrade and is one of the most modern in the state.

The Principal Robert Brenton pointed out that the school is the main secondary school for the Tea Gardens area. He expressed an interest in the pace of development to assist with school planning.

Medowie Christian School

Medowie Christian School has a direct bus service to the school from Tea Gardens. The school currently has 302 pupils from kindergarten to year 9 but will soon offer to year 12. The school has plans in place to expand to 800 pupils.

An interview with the school's business manager John Whittal revealed that demand is the only constraint on expansion. The school will be 800 strong within 20 years but Mr Whittal emphasised that this expansion would take place more quickly should demand increase.

Hunter River High School

The Hunter River High School in Heatherbrae has around 730 students and runs a number of specialist programs for those with learning disabilities and behavioural problems. It also has a high aboriginal population and offers specialist support to these groups.

Consultation with the Principal Chris Charters revealed that only a small number of children from Tea Gardens use the school despite the direct bus service. The main public school for Tea Gardens is Bulahdelah Central. However, the school does have the capacity to expand with room for another 100 pupils prior to additional building work being required.

Irrawang High School

In Heatherbrae, Irrawang currently serves around 1000 pupils. The school currently houses a number of pupils in demountable units and has no capacity for further growth without the addition of more demountable units.

6.9.3 Tertiary and Adult Education

The University of Newcastle has a campus offering a wide variety of Under and Post Graduate studies at Callaghan, an hour drive from Tea Gardens.

There is also a TAFE Campus in Newcastle.

The University of the Third Age operates courses in Tea Gardens providing a critical life long learning function drawing on the expertise and experience of retirees in the area.

The community facilities and telecommunications being provided in the home business precincts may provide the opportunity for distance learning, in effect providing a learning hub accessible to the wider community. It is recommended that discussions take place with TAFE and the University of Newcastle on facilities that would suit these sorts of community learning facilities. These could be located in the multi use community facility or in the business precinct hub or commercial centre.

7 Housing

7.1 Community identity and housing density

Between 1 and 3 February 2006 Crighton Properties held a planning design forum for the Myall River Downs and Riverside at Tea Gardens (formerly Myall Quays) sites. This forum provided an opportunity, through facilitated sessions, for the community and various government agencies to detail their views on the future development of the Tea Gardens area.

The community (as represented at the forum) was deeply concerned that dense development, as proposed by the Draft Tea Gardens / Hawks Nest Housing Strategy (up to 40dwph), would detract from the traditional character of the town. Numerous examples of how this had occurred in the past were cited.

The community defined the traditional character of Tea Gardens in a number of ways. Images in Figure 6 summarise their views.

The community character seems equally easily defined by what it should not be. There appeared to be unanimity on this point. The image in figure 7 illustrates this point; this is one building, on the river front at Marine Drive that residents feel goes against the character of the area. Similar views were expressed about any buildings of more than two storeys.

Many of the points made about what is valued in terms of the architecture and character of the Tea Gardens community are also instructive in terms of how to design a community for the future that both protects and nurtures these values. Strong emphasis was placed on traditional neighbourhood design with walkable neighbourhoods, connectivity between areas and integration with the surrounding natural environment. Many comments related more to streetscape and to neighbourhood layout than to building design. These values have informed the development of the Riverside Concept Plan.

Strong support was demonstrated by the community for the concept of mixed density neighbourhoods. This was in direct contrast to the idea of the establishment of specific areas of lower and higher density which had been advocated in the Tea Gardens / Hawks Nest Draft Housing Strategy.

Figure 6 – Images of traditional character.



There was also support for the premise of allowing higher densities in areas of greater amenity and lower densities where little or no amenity existed. However, amenity was defined to be far more complex than mere access to a town centre. Amenities were discussed to include commercial services, open space, playing fields, pocket parks, bush outlooks, cycleways and even areas of pleasant views, such as pond or wetland frontage.

Figure 7 – A building not seen as representative of traditional character



It was commonly held that developments of levels of densities at the upper end of the scale could be managed if they were carefully controlled architecturally and not grouped together in great numbers – thus resulting in a different town character.

The community were shown and liked the existing duplexes on Leeward Circuit as an example of smaller lot housing. In summary five key points

arose from the design forum which may provide guidance on the provision of future housing in Tea Gardens.

1. The community is very attached to the low rise, coastal seaside village character of Tea Gardens and wishes to see it preserved.
2. The community does not wish to see any more 2b zoned land.
3. If higher densities are to be created it is preferable to be delivered through a mixture of house types throughout a neighbourhood and not concentrated in any specific location.
4. Attractive walkable streets linking areas of amenity are a priority.
5. Densities of up to 13 dwellings per ha would be appropriate on greenfield sites in the area if properly master planned and managed.

Riverside has been designed on principles adopted in the Tea Gardens Hawks Nest Housing Strategy and which were also adopted by seminal projects including Ellenbrook in the Swan Valley (AUS), Seaside in Florida (US) and Poundbury in Dorset (UK). All of these projects have become symbols of community building within their respective countries.

For new communities, neighbourhood density must be locally calibrated to establish a character that is appropriate to the wider context and is market responsive. The draft Housing Strategy proposes a net density (including internal roads and parks) of 13 dwellings per ha for both Myall River Downs and Riverside (Myall Quays). These targets have evolved in conjunction with the design and planning process for Riverside and are suited to both the character and desired community outcome of the development as well as the wishes and concerns of the local community.

Within the existing settlement, there is an existing gradation of density from the most urban adjoining the waterways and beaches of Hawks Nest and Tea Gardens to the most rural towards Monkey Jacket. This gradation has naturally occurred as the amenity of Jimmy's Beach, Bennetts Beach and Myall River has prompted selective infill development able to capitalize upon the adjacency of these natural features.

Inland from these amenities, however, a market that is driven predominately by the retiree lifestyle sector has been slow to absorb denser building types, such as apartments. Whilst many reasons exist, the simple fact that most elderly do not like stairs and that it is cheaper to construct a small single storey cottage than a lifted apartment cannot be ignored. The task has been to establish a framework that permits self-sufficiency when a driver's license is lost. In other words, a mixed use pedestrian friendly neighbourhood.

The aim is to create an authentic character that genuinely reflects the lifestyle choice desired by its inhabitants should be established. As part of the "sea-change", the retiree lifestyle sector is moving to the north coast to retire to a coastal suburb. As the master plan prepared during the Riverside Design Forum demonstrates, a "suburb" configured according to the principles of the neighbourhood design is markedly different to a conventional "suburban estate".

The principles of the draft Housing Strategy form the fundamental framework for future growth to occur in a sustainable manner. Following this framework, the master plan for Riverside and Myall River Downs prepared at the recent Design Forum demonstrates the practical application of these principles which has both the support of the developer and community alike.

Accordingly, density targets for Myall River Downs and Riverside allow for minimum net density of 13 dw/ha across both sites.

7.2 Housing Affordability

Affordable housing is not provided as an end in itself but so that members of the community, especially existing residents and those providing essential services to the community, can afford to reside locally.

7.2.1 Home Ownership

Three bedroom houses in Tea Gardens are available from around $300,000 with some smaller dwellings available for lower amounts. This price is affordable set next to Sydney prices and is broadly comparable to prices found in other coastal centres.

Because the vast majority of people moving to the area are retirees who tend to have relatively low incomes, but who are able to finance their homes from capital they have accumulated, a standard analysis of affordability carried out by comparing incomes with average mortgage payments has limited validity in Tea Gardens. For retirees seeking to move to the area it is safe to assume that they will only do so if they can afford to. There is no strong social imperative to encourage lower income retirees to relocate to Tea Gardens.

For essential workers and younger people the situation is different. It is important to the health and vitality of any community that young families can afford to establish and remain in the area. The need to encourage younger people to remain in the community was emphasised many times in the Riverside Planning Design Forum.

The Westpac mortgage calculator shows that at the $55,000 income level (an income level analogous to a number of key professions such as policemen and teachers) a single income household with no children can borrow $300,000 (enough to enter the housing market in Tea Gardens). A single income family with children can borrow up to $230,000 and as a consequence this purchaser would find difficulty in purchasing a house anywhere in coastal New South Wales. A dual income family on the other hand with a combined income of $55,000, can borrow $287,000 – enough to purchase entry level housing in the Tea Gardens/Hawks Nest area.

As a consequence, for many of the critical professions necessary to service the Tea Gardens area, housing is within reach, though some financial pressure may be experienced in the early years of a mortgage. For lower income groups the purchase of housing may be beyond their reach. However, it is the norm in almost all communities to have people unable to afford a home when they first enter the workforce, typically these people access housing through the rental market.

7.2.2 The rental market

The rental market in the Tea Gardens / Hawks Nest area is very competitive and cheap by almost any other comparison. Many people who cannot afford to purchase a house enjoy high quality accommodation by renting. Local Real Estate Agent Rick Wraight advises that Tea Gardens Real Estate alone manages 154 permanent rental properties in Tea Gardens with an average rent of $195 per week and with 34 homes renting for below $155 per week.

Notwithstanding this, Crighton Properties have been exploring a number of options to trial innovative solutions to the provision of affordable rental accommodation. Modular housing with garage top units and dual key housing where areas of a dwelling can be rented out as self contained units, are both being considered in the design of the Concept Plans for the Riverside and Myall River Downs Estates.

7.2.3 The impact of Home Business Development

The small business sector is growing rapidly with half of Australian businesses not operating from home. The development of two purpose built home business parks within the Riverside development will encourage small business operators to locate at the site.

As well as providing advantages in terms of social cohesion with owners spending more time and money in the local community, this approach provides an affordable alternative for anyone running a small enterprise suited to a home located business.

Instead of paying rental on a business premises, owning a home and paying to travel between the two, the home business park significantly reduces these costs offering an affordable lifestyle package.

The home business park concept is also likely to play an important role for those in the transition between a full time career and retirement, allowing access to the lifestyle on offer in Tea Gardens with the potential to remain economically active.

Because this concept is new it is difficult to quantify the likely results. However, it is judged that the combining of home and workplace will play an important role in housing affordability for a significant minority of families.

7.2.4 Housing Stress

Housing stress is typically defined in terms of more than 30% of gross income being spent on housing. For a $300,000 dwelling with a 10% deposit at an interest rate of 7% a household income of $65,000 would be required to not be considered to be in housing stress.

Average rental properties in Tea Gardens are accessible without stress to any household with a combined income of $34,000 per annum and there is significant rental stock available for those with even lower incomes.

This means that housing is available in Tea Gardens to most groups in society without them experiencing housing stress. Notwithstanding this, many people behave aspirationally and choose to place themselves in housing stress on a temporary basis to get into the purchase housing market.

There are a number measures to ameliorate housing stress and not all relate to housing prices. Affordable lifestyles are part of the key rather than focusing solely on the housing itself. At Riverside dwellings will be in walking distance of shops and community facilities reducing car usage and possibly the need to own multiple vehicles. It is estimated that it costs in excess of $10,000 in after tax dollars to run a car for a year. If residents of Riverside are able to cope with one less vehicle this has an immediate and substantial impact on the affordability of their lifestyle.

7.2.5 Measures to enhance affordability

To provide dwelling choice is a sensible measure and a good indicator of a healthy and vibrant community. However, unlike in major metropolitan areas where land values are the dominant feature of house prices, attempts to simply drive down block sizes will not achieve the same result in terms of reduced housing costs as it does in Sydney.

The impact of reducing land size on cost reduces with size until, at the smaller lot sizes and higher densities, the price of housing actually increases. This is because the build costs for higher density forms of housing are considerably higher than for mass market project homes.

The most affordable form of housing is a small lot project duplex.

This is not to say that there is not a market for higher density dwellings, they are an important component of the Tea Gardens Market but their take up rate is considerably lower than that of more traditional larger lots.

Medium density housing actually best serves a high end market niche rather than the affordable market in this area. The laws of supply and demand will not reduce prices if a glut of this stock is provided because prices are dictated by build and land costs. The impact will be that if there is not a sufficient margin or if there is a glut of the same product on the market, additional homes will be not built.

At Riverside three approaches are proposed by the proponents to encourage the provision of affordable housing:

- The inclusion of at least 10% of dwellings on lots of less than 450 sqm to ensure that a variety of lots are provided. This will include duplex lots.
- The use of dual key dwellings to allow the creation of separate self contained dwellings within the dwelling envelope will be encouraged.
- The Riverside Concept Plan will ensure adequate supply of housing.
- The rental market will be encouraged.

In addition to these it is recommended that the supply of rental housing stock be monitored by the proponent and that consideration be given to targeted marketing to investors to ensure a strong supply of rental dwellings is available.

8 Conclusions & Recommendations

Overall it is clear that the development of Riverside has the potential to significantly enhance the services and community facilities in Tea Gardens. Indeed, the existing development of the commercial precinct at the site has already significantly enhanced services to residents.

Tea Gardens is well located and served with schooling and medical facilities and has access to a variety of employment nodes.

The following recommendations are designed to ensure that the community gains maximum benefit from the development and that any potential for adverse effects are carefully mitigated:

1 Riverside should have roads constructed to allow a bus a loop through the development bringing public transport access to within walking distance of each dwelling. This will be particularly important for school bus pickups but as the community grows will allow for the potential for convenient public transport services.

2 It is recommended that attention be paid to the provision of a comprehensive network of cycle ways through the Riverside site connecting all community facilities and places of interest. This network should be provided as part of the development and should, particularly, provide ease of access to the commercial centre and connect directly to the Council planned cycle way network and to the foreshore so as to augment community mobility.

3 It is recommended that, as part of discussion regarding developer contributions, consideration be given to the provision of a multipurpose community function / meeting facility in line with Council's Section 94 plan for the area. This should be located within walking distance (400m) of the Riverside commercial precinct.

4 It is recommended that Crighton Properties give consideration to a contribution to the upgrade of library facilities either on site or as part of the provision of a multi use community facility in line with Council's Section 94 plan.

5 It is recommended that Crighton Properties keep the Principals of both Tea Gardens Public School and Bulahdelah Central School informed of the growth of school age population at Riverside in order to assist school planning. However, it is noted that school facilities in the area are sufficient to accommodate the expected growth in population from Riverside.

6 The community facilities and telecommunications being provided in the home business precincts may provide the opportunity for distance learning, in effect providing a learning hub accessible to the wider community. It is recommended that Crighton Properties should hold discussions with TAFE and the University of Newcastle on facilities that would suit these sorts of community learning facilities. These could be located in the multi use community facility or in the business precinct hub or commercial centre.

7 The opportunity exists to consolidate certain Council facilities, including sporting facilities, on to one site as part of the Myall River Downs Development. This would represent a significant upgrade of current facilities and should be pursued by Council to provide capacity for future population growth in the Tea Gardens and Hawks Nest area.

8 The Great Lakes Recreation and Open Space Strategy (2006) sets out a range of facilities that it would like to see developed in Tea Gardens (Appendix 5). It is recommended that these provide a guide to discussions with Council about what facilities be provided at a new consolidated facility. However, it is important to note that it would not be appropriate or equitable for Riverside and its residents to be expected to meet the cost of the full list of desired facilities. The list may, nonetheless, provide a useful guide both for this development and for contributions from subsequent developments in the area.

9 The Myall Quays Commercial Centre provides commercial and retail space that is adequate for the current population. As the population of Tea Gardens and Hawks Nest grows it is recommended that an additional 8,500sqm of retail space be allowed over the next 10 years and that the demand for retail space e reviewed at that point to ensure the adequacy of future retail floor space provision. The expansion of the combined retail

and commercial floor space by 15,000 sqm is considered likely to meet this need.

10 Whilst health services are well provided for in the area, it is recommended that the Concept Plan be submitted to the Population Health Unit of the Hunter New England Health Service who will provide detailed recommendations on measures to optimise preventative health.

11 It is recommended that as Riverside is developed a case be made to provide a further 50 beds in the aged care hostel facility at Tea Gardens Grange.

12 It is recommended that development of the two home business precincts be carefully monitored with consideration being given to the provision of similar facilities in neighbouring developments or in the town's 2b zone should the demand for these precincts outstrip supply.

13 It is recommended that the availability of permanent rental housing stock at Riverside and in the wider Tea Gardens community be monitored by Crighton Properties and that the developer's marketing should target investors should the supply of available rental accommodation dwindle.

Volume 3C: An Assessment of Housing Issues

Strategy | Analysis | Representation

An Assessment of Housing issues relating to Riverside at Tea Gardens

For: Crighton Properties

April 2007



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1. Introduction and Background

This paper examines issues relating to housing choice, density and demand and supply in Tea Gardens in order to inform a discussion of lot size and housing options for Crighton Properties' Riverside development. It also examines how the development will comply with the Tea Gardens / Hawks Nest Housing Strategy (detailed in Section 4) including examination of issues relating to the affordability of housing.

Riverside was formerly known as Myall Quays and the development has substantially commenced with 261 lots either on the market or sold with a substantial number of dwellings established. In all 300 standard residential lots have been approved, a further 20 duplex or small lots have approval (18 more are currently with Council), and 37 medium density dwellings have approval with 7 with Council for approval.

The Draft Concept Plan (Appendix 5) proposes the following uses:

- 980 lots comprising:
  - 779 at 450sqm or greater
  - 44 lots that are less than 450sqm
  - 157 medium density dwellings
  - A tourism precinct comprising 50 lodge houses and 15 townhouses
- A 800sqm expansion of the Myall Quays Shopping Village
- Up to 15,000 sqm of additional retail / commercial floor space.
- Two proposed 'home business precincts', included in the dwelling totals above.
- A series of community facilities in neighbourhood centres throughout the site that will serve neighbourhood functions. The exact form of these remains to be determined.

The new facilities, parks and landscaping will be managed under a community title arrangement. Only the roads will be dedicated to and managed by Great Lakes Council.

This report demonstrates that the Draft Concept Plan not only complies with all the principles espoused by the Hawks Nest / Tea Gardens Housing Strategy but the community process through which the Concept Plan was developed was critical in illustrating the benefits of these principles to the community and facilitating their acceptance of these principles.

2. Community Design and Density

2.1 Community Views

Between 1 and 3 February 2006 Crighton Properties held a planning design forum for the Myall River Downs and Riverside at Tea Gardens (formerly Myall Quays) sites. This forum provided an opportunity, through facilitated sessions, for the community and various government agencies to detail their views on the future development of the Tea Gardens area.

The community (as represented at the forum) was deeply concerned that dense development, as proposed by the Draft Tea Gardens / Hawks Nest Housing Strategy (up to 40dwph), would detract from the traditional character of the town. Numerous examples of how this had occurred in the past were cited.

The community defined the traditional character of Tea Gardens in a number of ways. Images in Figure 1 below and in Appendix 2 summarise their views.

Figure 1 – Images of traditional character.



Many of the points made about what is valued in terms of the architecture and character of the Tea Gardens community are also instructive in terms of how to design a community for the future that both protects and nurtures these values. Strong emphasis was placed on traditional neighbourhood design with walkable neighbourhoods, connectivity between areas and integration with the surrounding natural environment. Many comments related more to streetscape and to neighbourhood layout than to building design. These values have informed the development of the Riverside Concept Plan.

Strong support was demonstrated by the community for the concept of mixed density neighbourhoods. This was in direct contrast to the idea of the establishment of specific areas of lower and higher density which had been advocated in the Tea Gardens / Hawks Nest Draft Housing Strategy.

There was also support for the premise of allowing higher densities in areas of greater amenity and lower densities where little or no amenity existed. However, amenity was defined to be far more complex than mere access to a town centre. Amenities were discussed to include commercial services, open space, playing fields, pocket parks, bush outlooks, cycleways and even areas of pleasant views, such as pond or wetland frontage.

The community were shown and liked the existing duplexes on Leeward Circuit as an example of smaller lot housing. The details of these buildings are shown in Appendix 4. Indicative sketches in Appendix 3 show some modern house designs in keeping with the traditional character of the town.

In summary five key points arose from the design forum which may provide guidance on the provision of future housing in Tea Gardens.

1. The community is very attached to the low rise, coastal seaside village character of Tea Gardens and wishes to see it preserved.
2. The community does not wish to see any more 2b zoned land.
3. If higher densities are to be created it is preferable to be delivered through a mixture of house types throughout a neighbourhood and not concentrated in any specific location.
4. Attractive walkable streets linking areas of amenity are a priority.
5. Densities of up to 13 dwellings per ha would be appropriate on greenfield sites in the area if properly master planned and managed.

2.2 Design Principles and Density

In response to the views of the community, Riverside has been designed on principles adopted in the Tea Gardens Hawks Nest Housing Strategy and which were also adopted by seminal projects including Ellenbrook in the Swan Valley (AUS), Seaside in Florida (US) and Poundbury in Dorset (UK). All of these projects have become symbols of community building within their respective countries.

For new communities, neighbourhood density must be locally calibrated to establish a character that is appropriate to the wider context and is market responsive. The draft Housing Strategy proposes a net density (including internal roads and parks) of 13 dwellings per ha for both Myall River Downs and Riverside (Myall Quays). These targets have evolved in conjunction with the design and planning process for Riverside and are suited to both the character and desired community outcome of the development as well as the wishes and concerns of the local community.

Within the existing settlement, there is an existing gradation of density from the most urban adjoining the waterways and beaches of Hawks Nest and Tea Gardens to the most rural towards Monkey Jacket. This gradation has naturally occurred as the amenity of Jimmy's Beach, Bennett's Beach and Myall River has prompted selective infill development able to capitalize upon the adjacency of these natural features.

Inland from these amenities, however, a market that is driven predominately by the retiree lifestyle sector has been slow to absorb denser building types, such as apartments. Whilst many reasons exist, the simple fact that most elderly do not like stairs and that it is cheaper to construct a small single storey cottage than a lifted apartment cannot be ignored. The task has been to establish a framework that permits self-sufficiency when a driver's license is lost. In other words, a mixed use pedestrian friendly neighbourhood.

The aim is to create an authentic character that genuinely reflects the lifestyle choice desired by its inhabitants. As part of the "sea-change", the retiree lifestyle sector is moving to the north

coast to retire to a coastal suburb. As the master plan prepared during the Riverside Design Forum demonstrates, a "suburb" configured according to the principles of the neighbourhood design is markedly different to a conventional "suburban estate". Such a suburb meets the aspirations of retirees whilst also providing a high quality living environment for younger age groups.

The principles of the draft Housing Strategy form the fundamental framework for future growth to occur in a sustainable manner. Following this framework, the master plan for Riverside and Myall River Downs prepared at the recent Design Forum demonstrates the practical application of these principles which has both the support of the developer and community alike.

Accordingly, density targets for Myall River Downs and Riverside allow for minimum net density of 13 dw/ha across both sites. Appendix 6 illustrates how this density target is to be achieved at Riverside.

3. Housing Affordability

Affordable housing is not provided as an end in itself but so that members of the community, especially existing residents and those providing essential services to the community, can afford to reside locally and can do so without unduly compromising their lifestyle or suffering stress from meeting high housing costs. There are a number of elements to the community and housing market that together form a picture of affordability. These include: the market for the purchase of housing, the rental market and overall lifestyle affordability. All are important components of the affordability of housing in the community. These are examined here along with recommended measures to enhance affordability in the community.

3.1 Home Ownership

Three bedroom houses in Tea Gardens are available from around $300,000 with some smaller dwellings available for lower amounts. This price is affordable set next to Sydney prices and is broadly comparable to prices found in other coastal centres.

Because the vast majority of people moving to the area are retirees who tend to have relatively low incomes, but who are able to finance their homes from capital they have accumulated, a standard analysis of affordability carried out by comparing incomes with average mortgage payments has limited validity in Tea Gardens. For retirees seeking to move to the area it is safe to assume that they will only do so if they can afford to. There is no strong social imperative to encourage lower income retirees to relocate to Tea Gardens.

For essential workers and younger people the situation is different. It is important to the health and vitality of any community that young families can afford to establish and remain in the area. The need to encourage younger people to remain in the community was emphasised many times in the Riverside Planning Design Forum.

The Westpac mortgage calculator shows that at the $55,000 income level (an income level analogous to a number of key professions such as policemen and teachers) a single income household with no children can borrow $300,000 (enough to enter the housing market in Tea Gardens). A single income family with children can borrow up to $230,000 and as a consequence this purchaser would find difficulty in purchasing a house anywhere in coastal New South Wales. A dual income family on the other hand with a combined income of $55,000, can borrow $287,000 – enough to purchase entry level housing in the Tea Gardens/Hawks Nest area.

As a consequence, for many of the critical professions necessary to service the Tea Gardens area, housing is within reach, though some financial pressure may be experienced in the early years of a mortgage. For lower income groups the purchase of housing may be beyond their reach. However, it is the norm in almost all communities to have people unable to afford a home when they first enter the workforce, typically these people access housing through the rental market.

3.2 The Rental Market

The rental market in the Tea Gardens / Hawks Nest area is very competitive and cheap by almost any other comparison. Many people who cannot afford to purchase a house enjoy high quality accommodation by renting. Local Real Estate Agent Rick Wraight advises that Tea Gardens Real Estate alone manages 154 permanent rental properties in Tea Gardens with an average rent of $195 per week and with 34 homes renting for below $155 per week.

Notwithstanding this, Crighton Properties have been exploring a number of options to trial innovative solutions to the provision of affordable rental accommodation. Modular housing with garage top units and dual key housing where areas of a dwelling can be rented out as self contained units, are both being considered in the design of the Concept Plans for the Riverside and Myall River Downs Estates.

3.3 Housing Stress

Housing stress is typically defined in terms of more than 30% of gross income being spent on housing. For a $300,000 dwelling with a 20% deposit at an interest rate of 7.5% a household income of $67,000 would be required to not be considered to be in housing stress.

Average rental properties in Tea Gardens are accessible without stress to any household with a combined income of $34,000 per annum and there is significant rental stock available for those with even lower incomes.

This means that housing is available in Tea Gardens to most groups in society without them experiencing housing stress. Notwithstanding this, many people behave aspirationally and choose to place themselves in housing stress on a temporary basis to get into the purchase housing market.

There are a number measures to ameliorate housing stress and not all relate to housing prices. Affordable lifestyles are part of the key rather than focusing solely on the housing itself. At Riverside dwellings will be in walking distance of shops and community facilities reducing car usage and possibly the need to own multiple vehicles. It is estimated that it costs in excess of $10,000 in after tax dollars to run a car for a year. If residents of Riverside are able to cope with one less vehicle this has an immediate and substantial impact on the affordability of their lifestyle.

3.4 The potential to enhance affordability

To provide dwelling choice is a sensible measure and a good indicator of a healthy and vibrant community. However, unlike in major metropolitan areas where land values are the dominant feature of house prices, attempts to simply drive down block sizes will not achieve the same result in terms of reduced housing costs as it does in Sydney.

An inspection of the cost structure of providing dwellings at Riverside and at Myall River Downs in Tea Gardens (Appendix 1) reveals that, as block sizes reduce, the land costs become an increasingly small proportion of total cost and that below a certain size building costs keep rising to a level that more than cancels out any savings brought about by reduced land cost.

Thus, the impact of reducing land size on cost reduces with size until, at the smaller lot sizes and higher densities, the price of housing actually increases. This is because the build costs for higher density forms of housing are considerably higher than for mass market project homes. The most affordable form of housing in Myall River Downs is a project duplex on a 350 sqm block which costs the purchaser about $330,000. At Myall River Downs this will also buy a project home on a 350 sqm block. For smaller blocks (300 sqm) the build cost increases meaning that the price of a home on a smaller lot actually rises - to between $340,000 and $450,000 per dwelling.

It is also worth noting that for a modest additional outlay larger homes can be purchased. For example at Myall River Downs a much larger home on a 650 sqm block will cost $380,000.

This is not to say that there is not a market for higher density dwellings, they are an important component of the Tea Gardens Market but their take up rate is considerably lower than that of more traditional larger lots.

Medium density housing actually best serves a high end market niche rather than the affordable market in this area. The laws of supply and demand will not reduce prices if a glut of this stock is provided because prices are dictated by build and land costs. The impact will be that if there is not a sufficient margin or if there is a glut of the same product on the market, additional homes will be not built.

At Riverside six approaches will be used to encourage the provision of affordable housing:

1. The inclusion of at least 10% of dwellings on lots of less than 450 sqm to ensure that a variety of lots are provided. This will include duplex lots.

2. The encouragement of shared use dwellings incorporating home office facilities along with the dwelling. Working from home will be encouraged throughout the site but there will be a particular focus in the two home business precincts.

   Many small business operatives earn low incomes periodically and especially during the start up period of a business. The combination of home and office facilities can serve to make housing affordable for these people. Running a business from home may lead to the need for one less car (approximately $10k p.a.) it will certainly mean alternative office accommodation will not need to be rented and there are a number of tax advantages from having an office in the home which will, to a large extent, offset the home construction, lot purchase and community levy premiums.

   A number of other affordable lifestyle opportunities arise from home based businesses including a reduced dependence on costly child care services and a reduced meal cost when at work.

3. The use of dual key dwellings to allow the creation of separate self contained dwellings within the dwelling envelope will be encouraged. Dual key dwellings are also known as modular housing or garden units, they are self contained dwellings that can be incorporated into a home or rented out separately.

4. The Riverside Concept Plan will ensure adequate supply of housing.

5. The rental market will be encouraged wherever possible through marketing initiatives carried out by the developer.

6. The design of the development will ensure that opportunities to enjoy an affordable lifestyle through use of non motorised transport modes, accessibility of services and facilities and energy and water efficiency in dwellings are maximised.

4. Performance against Housing Strategy principles

The Riverside Concept Plan has been designed to adhere to the principles of the Tea Gardens Hawks Nest Housing Strategy. A point by point summary of how Riverside meets the requirements and principles of the Housing Strategy follows:

Reinforce and consolidate existing commercial centres

"Council must develop strategies to promote and enhance the role of these commercial centres as well as securing the future of Myall Quays as the major commercial and retail centre."

The Concept Plan includes an additional 15,000 square meters of commercial and retail floor space which will be predominantly located in the Myall Quays commercial and retail centre in a major extension of the current commercial precinct that responds to increased demand in the community with the growth in population. This expansion will reinforce the role of this area as the major commercial centre of Tea Gardens.

A number of medium density lots in the form of units, townhouses and adaptive housing (with potential to ultimately provide commercial areas on one level and shop top housing) are planned to be located in and in proximity of the centre. There will also be a home business precinct adjoining the commercial precinct. These measures will further reinforce the vibrancy and commercial activity in this centre.

Establish focal points for development

Riverside offers the major community focal point of the Commercial Centre but will also be divided into a series of precincts with their own unique focal points and facilities. There will be four club house facilities provided on the site as well as a range of sporting and lifestyle opportunities.

Open space areas (e.g. parks) and other community facilities can also act as focal points for residential development.

At Riverside, as well as the provision of community facilities as focal points for neighbourhoods, the lake, and the network of parks and cycleways will provide focal points such that all homes have ready access to recreational facilities.

Encourage higher density development around focal points

The Riverside Concept Plan includes higher density dwellings around the commercial centre and at some community focal points. However, density on the site is to be achieved through a mix of development rather than distinct medium density precincts. This reflects community wishes and the final Housing Strategy.

Protect natural features

Development at Riverside avoids steep land and is specifically and carefully designed to retain significant trees on the site. The site is bounded by SEPP 14 wetlands which are buffered from the site and drainage is managed through a network of swales and wet and dry detention basins to ensure that pre development flows are matched in quantity and quality and that the net impact of the development on water quality is positive.

Significant conservation corridors and buffers are provided. A previous proposal for a golf course on the site has been shelved to allow better wildlife movement corridors.

Promote scenic amenity

The development will use swales rather than kerb and gutter wherever possible to reflect the feeling of a seaside town. All streets terminate in green space providing vistas for all the

community. The water body will be surrounded by public walkways and parkland. Major streets and boulevards will align with the view to the Yakabah Headland in the distance.

Restrict incompatible land uses

Commercial activities will be concentrated in the Commercial centre and, to a lesser extent, the area around the marina. Home businesses will be encouraged across the site, especially in home business precincts but will be carefully controlled under community title agreements. These community title agreements will ensure that uses on the site are managed to avoid incompatible land uses.

Restrict inefficient use of urban land

Riverside is to achieve a density of at least 13 dwellings per hectare across the entire site in line with the recommendations of the Housing Strategy. The major constraint to development on the site is the high water table. The approach being adopted to manage this issue through a mix of dry and wet detention basins is the most efficient approach available and ensures maximum land areas are available for development.

Gateways

Crighton Properties have offered to contribute to a range of gateway enhancement projects including upgrading landscaping on the Myall Way entering Tea Gardens as part of a Developer agreement for the site.

Maintain connections with existing towns

Riverside is designed to offer a grid pattern of interconnected streets consistent in nature to that in the older parts of Tea Gardens.

Reduce reliance on cars

Riverside has a comprehensive network of pedestrian and cycle routes that link to the commercial centre and to older parts of Tea Gardens. The proximity of the commercial centre will reduce car dependence.

The grid pattern of streets will ensure that streets are pedestrian and cycle friendly. The houses will be designed to ensure that there are eyes on the street enhancing security and public safety.

The vast majority of dwellings will be within 800m walk of the commercial centre. This is the prescribed walking distance in the Housing Strategy.

Consider future technologies

The site will have access to high bandwidth technologies and home business will be encouraged throughout the site. There will be up to two precincts focused specifically on attracting home business operators. These will have community facilities targeted to home business operators as well as home office space and separate parking provision for clients.

It is considered that an average net density of 13dw/ha could be achieved throughout this area.

The Concept Plan and Project Application provide for average densities of 13 dwellings per hectare with a range of dwelling types sizes and configurations including single dwellings on a variety of lot sizes, duplex lots, townhouses and units. Some 980 dwellings are proposed for the site.

Appendix 6 demonstrates how the project application for the first precincts will be configured to achieve 13 dwellings per hectare.

A cumulative approach is adopted by the Concept Plan ensuring that the average net density across the site must not drop below 13 dph when any project application is lodged. This will ensure that development respects the yield targets for the site.

All residential subdivisions in Myall Quays, a minimum of 10% of land to be subdivided and/or lots created is to be utilised for small lot housing (ie. between 300 m2 and 450m2)

This will be achieved through a mix of units, town houses, duplex lots and small housing lots. Appendix 6 demonstrates how 10% of small lot housing is achieved in the project application area.

The Concept plan proposes 157 duplex or medium density cluster dwellings out of a total of 980 dwellings, amounting to over 16% of the total dwelling number.

Continue to permit and encourage tourist facilities within Myall Quays where it can be demonstrated that such facilities will not limit or reduce the amount of land available for residential development.

The concept plan includes scope for tourism lodges in the vicinity of the marina. These may also serve a residential function and will not result in reductions in the amount of residential land to below that anticipated by the housing strategy. In fact the inclusion of the marina precinct may allow higher densities to be achieved in the vicinity of the marina than have been anticipated by the Housing Strategy.

Conserve habitat corridors and environmental protection areas

Significant areas of the site are dedicated to wildlife movement corridors linking the wetlands and Myall River to the higher ground inland from the site.

Ensure habitat corridors and traffic, pedestrian and bicycle links are established and maintained with the existing Tea Gardens township and North Shearwater. Incorporate provisions for the incorporation of cycle routes and pedestrian access to and from nearby focal points (i.e. recreation areas, community facilities and commercial centres) and along identified gateways

A comprehensive network of walking and cycle paths will be provided linking the Lions Club lookout to the North of the site with older areas of Tea Gardens to the South as well as providing a comprehensive internal network of walking and cycle ways and links to the commercial centre.

Encourage development of affordable housing options in appropriate locations

At Riverside six approaches will be used to encourage the provision of affordable housing:

1. The inclusion of at least 10% of dwellings on lots of less than 450 sqm to ensure that a variety of lots are provided. This will include duplex lots.

2. The encouragement of shared use dwellings incorporating home office facilities along with the dwelling. Working from home will be encouraged throughout the site but there will be a particular focus in the two home business precincts.

   Many small business operatives earn low incomes periodically and especially during the start up period of a business. The combination of home and office facilities can serve to make housing affordable for these people. Running a business from home may lead to the need for one less car (approximately $10k p.a.) it will certainly mean alternative office accommodation will not need to be rented and there are a number of tax advantages from having an office in the home which will, to a large extent, offset the home construction, lot purchase and community levy premiums.

A number of other affordable lifestyle opportunities arise from home based businesses including a reduced dependence on costly child care services and a reduced meal cost when at work.

3. The use of dual key dwellings to allow the creation of separate self contained dwellings within the dwelling envelope will be encouraged. Dual key dwellings are also known as modular housing or garden units, they are self contained dwellings that can be incorporated into a home or rented out separately.

4. The Riverside Concept Plan will ensure adequate supply of housing.

5. The rental market will be encouraged wherever possible through marketing initiatives carried out by the developer.

6. The design of the development will ensure that opportunities to enjoy an affordable lifestyle through use of non motorised transport modes, accessibility of services and facilities and energy and water efficiency in dwellings are maximised.

5. Conclusion

The Concept Plan for Riverside has been designed based on community views and needs and in line with key principles of new urban design as espoused by the Hawks Nest / Tea Gardens Housing Strategy.

The development will be a combination of traditional housing lots with smaller lots and slightly higher densities scattered through the community but particularly located around community focal points. At least 10% of lots will be less than 450 sqm and the development will achieve a net density of at least 13 dwellings per ha across the site. The mix of dwelling types will provide choice to the market and will cater for a variety of demographic groups including retirees. The predominance of retirees in the Tea Gardens market means that single storey dwellings are likely to continue to be the predominant housing type.

Streetscapes will maintain the traditional character of Tea Gardens and all homes will be within walking distance of parks, shops and other community facilities. The accessibility of facilities on the site will enhance community cohesiveness, provide access to facilities for an ageing population who may not always be able to drive, and will facilitate attributes of an affordable lifestyle.

Although housing in Tea Gardens is currently relatively affordable, housing affordability will be secured for the future by the provision of a range of housing opportunities including shared use dwellings and smaller lot housing. Dual key housing will also be encouraged as well as investment in long term rentals. Above all, Riverside will assist to maintain supply to the market keeping prices in check.

Appendix 1

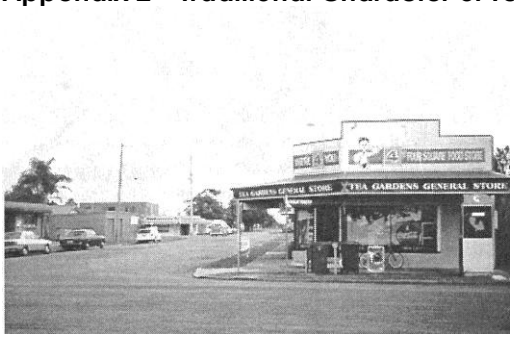
Riverside / Myall River Downs Development Options

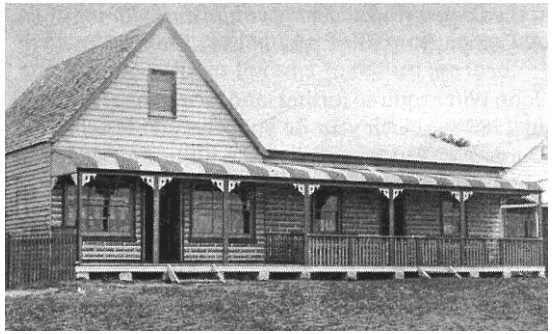
Land Type / Size	**Land Cost**	**Building size / Type**	**Building Cost including fees, charges**	**Profit / Risk (by developer)**	**Total cost to purchaser**	**Market Value**
Standard residential vacant Block @ Myall Quays – 450 sqm	$225,000.00	**Single Storey 20 square project home including driveways, landscaping**	$155,000.00		**$380,000.00**	
Standard residential vacant Block @ Myall Quays – 450 sqm	$225,000.00	**2 Storey 25 square project home including Driveways, landscaping**	$200,000.00		**$425,000.00**	
Standard residential vacant Block @ Myall Quays – 650 sqm	$275,000.00	**Single Storey 25 square project home including driveways, landscaping**	$180,000.00		**$455,000.00**	
Duplex residential vacant Block @ Myall Quays – 800 sqm (1/2 allocation)	$150,000.00	**Single storey side by side project home duplex 150 sqm single garage (1/2 allocation) including Driveways and Landscaping**	$180,000.00		**$330,000.00**	
Lakefront residential vacant Block @ Myall Quays – 1100 sqm	$385,000.00	**Single storey 30 Square Project Home including driveways, landscaping**	$220,000.00		**$605,000.00**	
Lakefront residential vacant Block @ Myall Quays – 1100 sqm	$400,000.00	**2 Storey Architectural / Custom designed 30 Square home including driveways, Landscaping**	$350,000.00+		**$750,000.00+**	
Standard residential vacant Block @ Myall River Downs – 350 sqm	$190,000.00	**Single Storey 18 square project home including driveways, landscaping**	$140,000.00		**$330,000.00**	
Standard residential vacant Block @ Myall	$225,000.00	**Single Storey 20 square project home including**	$155,000.00		**$380,000.00**	

River Downs – 650 sqm		**driveways, landscaping**				
300 sqm lakefront site allocation (Townhouse development – 'Vista')	$120,000.00	**1 of 8 - 2 storey Strata Townhouses 200 sqm (excl garages) 3 Bedroom with double garage**	$270,000.00	$90,000.00 (22% on cost)	**$480,000.00 (being marketed)**	
375 sqm lakefront site allocation (Big house concept – Quarterdeck)	$180,000.00	**1 of 4 – single storey walkup units (2 up, 2 down) 150 sqm GFA (excl garage) 3 bedroom with Double Garage**	$330,000.00 (prohibitive due to raised concrete floors)	$100,000.00 (20% on cost)	**$610,000.00 (project shelved – not feasible)**	
300 sqm site allocation (Townhouse development – 'Vista' like not lakefront)	$95,000.00	**1 of 8 - 2 storey Strata Townhouses 200 sqm (excl garages) 3 Bedroom with double garage**	$275,000.00	$80,000.00 (22% on cost)	**$450,000.00**	
400 sqm site allocation (Integrated detached housing – Regatta)	$100,000	**1 of 10 – 2 storey Strata, zero lot line houses 240 sqm (excl garages) 3-4 Bedroom with Double Garages**	$225,000	$70,000 (22% on cost)	**$395,000.00**	
300 sqm site allocation (Integrated Housing – Attached – Regatta)	$80,000	**1 of 8 – 2 storey Strata Town Houses 200sqm (excl garages) 3 bedroom, single garage with car port**	$200,000	$60,000 (22% on cost)	**$340,000.00**	
450 sqm site allocation courtyard lot Myall River Downs (standard lot with rear lane access allowing	$220,000	**2 Storey Courtyard house with Unit over garage (3 bedrooms + 1 BR unit) double garage + single car**	$250,000		**$470,000.00**	Possible rental return from single bedroom unit

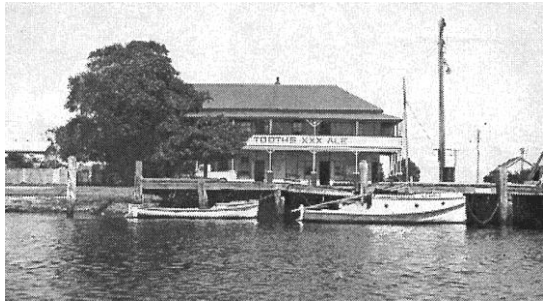
unit over garage or dual occupancy)		**port.**				over garage.
250sqm site allocation in commercial precinct of MQ – 'shop-top' housing	$95,000	**1 of 7 - 2 storey townhouse, 3 bedroom with 60sqm commercial premises on ground floor**	$275,000	$80,000 (22% on cost)	**$450,000.00**	Possible rental return from commercial / retail premises on ground floor

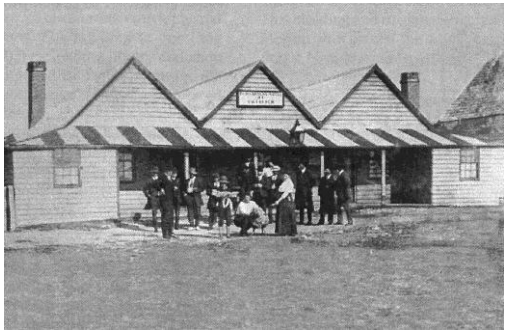
Appendix 2 – Traditional Character of Tea Gardens







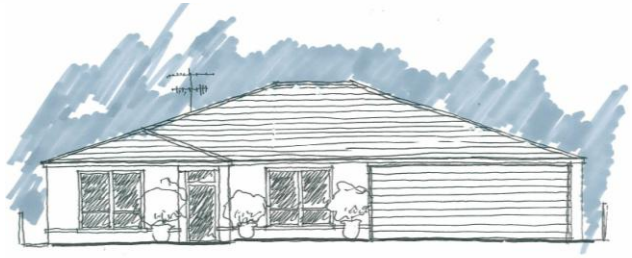






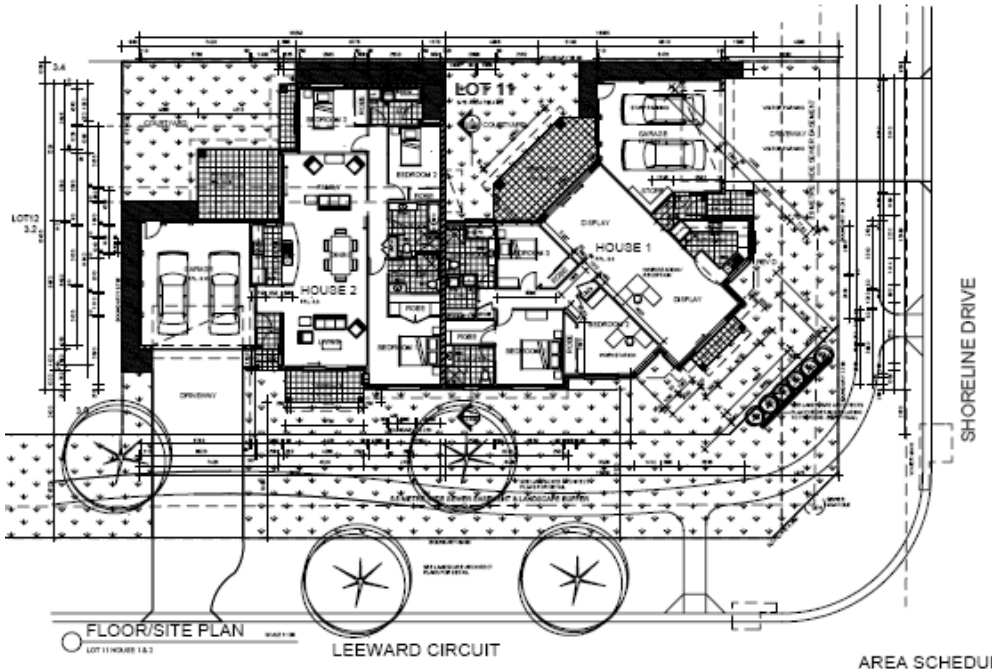
Appendix 3 – Sketches indicative of dwelling designs in line with community aspirations











AREA SCHEDULE

HOUSE 1	AREA - SQUARE METRES
LIVING AREA	142.11
GARAGE	41.58
COURTYARD - SOFT LANDSCAPE	41.65
- COVERED PAVING	18.69
DRIVEWAY	33.48
FOOTPATHS	9.70
ROOFED TILED - FRONT	6.12
SOFT LANDSCAPE - FRONT	104.12
SOFT LANDSCAPING - TOTAL	145.77

HOUSE 2	AREA - SQUARE METRES	
LIVING AREA	141.76	
GARAGE	41.58	
COURTYARD - SOFT LANDSCAPE	53.97	
- COVERED PAVING	19.17	
DRIVEWAY	31.59	
FOOTPATHS	24.05	
ROOFED TILED - FRONT	8.49	
SOFT LANDSCAPE - FRONT	33.83	
SOFT LANDSCAPING - TOTAL	91.80	
SITE AREA	735.44	
F.S.R.	383.81 : 735.44	0.39 : 1
SITE COVERAGE / G.F.A.	366.59 / 735.44	49.8%
SOFT LANDSCAPE RATIO	227.57 / 735.44	30.9%



PROPOSED DISPLAY HOME - STAGE 7 DUPLEXES
LOT 11
CRIGHTON PROPERTIES PTY. LTD.
LANDSCAPE SCHEDULE DETAILS
10201-07-11 SCHEDULE A

CRIGHTON PROPERTIES

APPENDIX 4

Volume 3C: Riverside Design Report

RIVER SIDE

MYALL LAKES,
AUSTRALIA

THE PROCESS & TECHNIQUES FOR DESIGNING & DELIVERING TRADITIONAL NEIGHBOURHOODS

PURPOSE OF THE RIVERSIDE DESIGN REPORT

The Riverside Design Report presents the vision for Riverside and Myall River Downs prepared at a three day Design Forum held late February 2006. The Forum was led by Roberts Day on behalf of Crighton Properties.

The Design Report is organised into five sections: Vision; Approach; Existing Conditions; Master Plan and Architecture. Each section provides a thorough understanding of the evolution of the Master Plan for Riverside and Myall River Downs.

The Vision for Riverside and Myall River Downs gives an overall overview of the future provided by the Master Plan.

The Approach provides a summary of the Forum and principles of Traditional Neighbourhood Design (TND). It establishes the framework within which the vision was prepared.

The Existing Conditions presents the technical constaints of the site. It also provides an overview of the planning policy context. In particular, it reinforces the validity of the principles proposed by Great Lake's Council draft Housing Strategy. However, it clearly identifies the issues and inappropriateness of the proposed density targets.

The Master Plan provides a detailed explanation on the physical components of the Plan. It demonstrates the realisation of the community ideas and principles of TND for the project.

Architecture presents a critique of conventional suburban housing proliferating throughout Hawke's Nest and Tea Gardens. Architectural principles for reconnecting to the local coastal tradition are then provided.





PURPOSE OF THE RIVERSIDE DESIGN MANUAL

The master plan for Riverside identifies the location of the neighbhourhoods, thoroughfare network, open space system, civic reservations and private block structure. It is illustrative.

The Riverside Design Manual provides the technical data neccessary to enable the implementation of the vision for Riverside and Myall River Downs.

It is a transect-based code which approaches control over development in a manner that is fundamentally different in both its goal and functioning from conventional zoning. The transect focuses on the conditions that maintain character and diversity within a series of typologically distinct places.

The Manual is organised into four main sections: Transects Plan; Character Zones; Thoroughfare Standards and Architectural Standards.

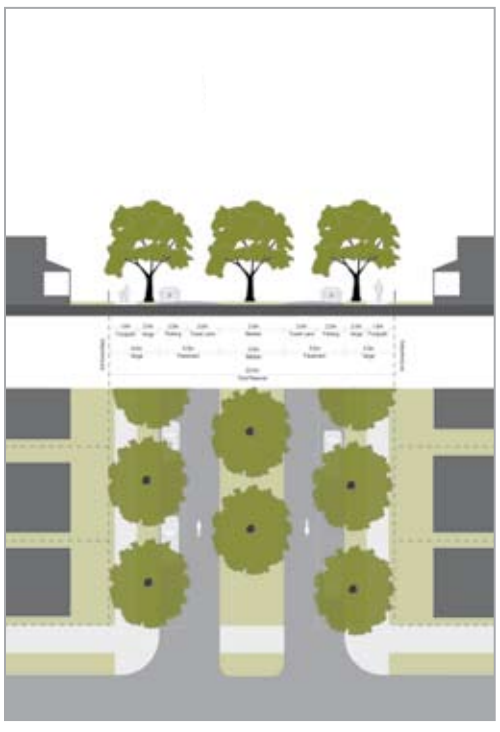
The Regulating Plan is mandatory and must be followed by developers, architects, builders and others involved in the delivery of Riverside and Myall River Downs. It comprises a map that (a) assigns the types of open space and thoroughfares; (b) shows the private land; and allocates the assignment of this land into transect zones.

The Character Zones summarize the "immersive" quality for each transect zone.

The Thoroughfare Standards identifies the vehicular and pedestrian ways into types based on capacity and character. It specifies travel and parking lanes, footpaths, curb radii, planters and street trees.

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Transect Plan..... 13

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Thoroughfare Network..... 16

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RIVERSIDE

DESIGNING TRADITIONAL NEIGHBOURHOODS

VISION: A NEW COASTAL COMMUNITY



This drawing illustrates the transformation of the sand quarry into a major lake and public parklands.

On 3 February 2006, the proposed Master Plan for Riverside and Myall River Downs was presented to a large gathering of local residents and officers of Great Lakes Council at the Tea Gardens Community Hall. The presentation represented the culmination of an intense three day Design Forum led by Roberts Day for Crighton Properties. It was met with resounding community support.

The vision proposes a new coastal community based upon the most advanced principles and techniques of traditional neighbourhood design. It proposes three compact, walkable mixed- use neighbourhoods surrounded by a comprehensive open space system of parklands and water bodies- Villages freestanding in the countryside. It also includes two smaller hamlets.

Each is limited in size and scaled for the pedestrian, with a clearly defined centre and edge. The needs of community gathering are able to be provided for within each. Each centre provides a focus for daily life, providing an excellent location for a public bus stop, live / work building types, community events and leisure activities.

This pattern of development, which draws upon the best local precedent within Hawke's Nest and Tea Gardens, is markedly different to conventional suburban development distinguished by "residential estates" of a single housing type with an emphasis on the vehicle.

Instead, the proposed development reconnects to a pattern of growth based upon the increment of the Neighbourhood Unit. The pattern dominated prior to the Second World War and resulted in the creation of our most loved hamlets, villages and towns.

A key feature of the proposal is the integration and celebration of nature. The plan allocates legislated environmentally sensitive land into a permanent nature preserve. A network of carefully laid trails and boardwalks provides the entire community with the opportunity to engage meaningfully with nature.

The steep topography to the north of the site, overland water flows and high water table has resulted in the creation of extensive green corridors. A variety of swales, pools and small lakes will envionmentally manage water run-off. Functioning as "greenbelts" for each village and hamlet, it is ensured that neighbourhood edges are clearly defined and development cannot sprawl out into the countryside. Pedestrian and cycle trails weave throughout this system connecting each village and hamlet.

The key feature of environmental innovation for the project is the "Eco-Quarter", located at the north-western corner of the site. Accessed by a single, gently curving rural road which retains existing trees wherever possible, movement throughout the quarter occurs along green pedestrian pathways fronted by small footprint houses and cultivation of a xeriscape landscape.

The pathways terminate upon the existing sand quarry, which has been transformed into a major lake, public parklands and village centre which leverage off the environmental amenity. It includes conference and educuational facilities, studios, short term accommodation specialty shops and residential.

The architecture of this quarter, along with each village and hamlet, draws upon the local vernacular architecture of the region. It will create a character which reflects its coastal and bushland setting.

By balancing and integrating both the natural and human habitats, and establishing an urban-to-rural transect which distributes development appropriately across the site, Riverside and Myall River Downs will be a model for sustainable development.











The Design Forum was a participatory process which established a shared vision for the project.

THE RIVERSIDE DESIGN FORUM & TRADITIONAL NEIGHBOURHOOD DESIGN







Ellenbrook and Seaside - projects which have demonstrated the practical application of neighbourhood design principles with an average density approximating 16 dwellings / hectare.

A DIVIDED TOWN

Throughout the later half of 2005, debate waged in the Tea Gardens community about the form of future growth. It was triggeed by the release of Great Lake's Council Draft Housing Strategy.

Consensous existed between Council, community and developer that the neighbourhood orientated design principles articulated in the Draft Strategy provide a sustainable alternative to conventional suburban development.

Where the camps became divided, however, were the proposed net densities of 11 dwellings per hectare and 40 dwellings per hectare for Tea Gardens and Hawke's Nest to deliver the principles.

Council had proposed the densities to fulfil the principles of the draft Strategy. A noble objective.

The majority of locals felt that the proposed densities would establish a character inappropriate for the relaxed coastal setting of the area. The unmistakable evidence, they argued, are the recent developments towards Myall River.

In agreement with the local community was Crighton Properties. Beyond the issue of character, Crighton was certain that for a market dominated by the retiree lifestyle sector, the proposed densities would result in building product which was difficult to sell and worked against affordability. The occupancy and sales rates of denser developments within Tea Gardens supported this concern.

At the time Roberts Day was approached by Crighton Properties to facilitate a resolution, it had become clear that the "pro-density versus no-growth" dichotomy was a false choice, and nobody wins. Amongst other issues, relations between Council, developer and community were disintergrating rapidly.

A BETTER WAY: SMART GROWTH

Roberts Day immediately proposed a third alternative: growth which would achieve the principles of Council's draft Housing Strategy and ensure neighbourhood density was locally calibrated to establish an appropriate character that is market responsive.

THE DESIGN FORUM PROCESS

The debate about growth in Tea Gardens, focusing on Riverside and Myall River Downs, had moved at last to a solution-orientated stage with the Design Forum process.

A three day Design Forum was held at the Hawke's Nest Golf Club between 1st - 3rd February 2006.

The Forum involved an open and participatory planning process involving the community, stakeholders, Council officers, technical specialists and a team of design professionals led by Roberts Day.

The Forum commenced with an opening presentation from Roberts Day. It established the validity of an approach to community design known as Traditional Neighbourhood Development as the framework for progressing ideas throughout the Forum.

An important component of this opening address, for both Council and community, was the presentation of two seminal projects, Ellenbrook (AUS) and Seaside (US), which have demonstrated the practical application of Counci's principles on the ground with an average net density of 16 dw/ha.

With this established, participants boarded a number of buses to tour the site and surrounding development. It was made clear throughout the course of this tour that neither the ill conceived higher density development occurring throughout Tea Gardens nor conventional suburban "McMansions" were desirable housing types for Riverside or Tea Gardens.

Across the next two days a variety of facilitated sessions addressing the environment / landscape, water management engineering, housing diversity and recreation / open space were undertaken. The outcomes of these sessions have been documented under separate cover by Matthew Crozier.

THE COMMUNITY VISION

A special evening session was held for the community to express their ideas. There were many recurring themes that threaded throughout the particpants' comments. Using the words of the community, themes included:

[Verandahs]; [Walkability]; [People]; [Series of neighbourhoods - not amorphous housing estate]; [Security]; [Design Guidelines - reflect character of existing town]; [To encourage interaction and foster community]; [Focal points that encourage people to meet]; [Certainity for the town - long term plan]; [Quality of streets - people want to walk down]; [Model for growth areas in the future]; [Sense of informality]; [A town for all seasons].

As a result of these themes, several overarching principles emerged to serve as goals for the evolving Master Plan:

1. Preserve the character of this iconic town;
2. Reinforce the unique community spirit - town of self helpers;
3. Protect and enhance natural assets.

TND PRINCIPLES

The fundamental difference between Traditional Neighbourhood Development (TND) and Conventional Suburban Development (CSD) is the accommodation of the vehicle. How the vehicle is treated determines most of the physical attributes of the communities we live in.

The *traditional neighbourhood* was the fundamental form of settlement on Australia through to the Second World War. The traditional neighbourhood - represented by mixed-use, pedestrian friendly communities of varied population - has proven to be a sustainable form of growth.

Suburban sprawl, now the standard Australian pattern of growth, ignores historical precedent and human experience. Designed around the vehicle, its low density consumes land at an alarmaing rate, produces significant traffic problems and excerbates social inequality.

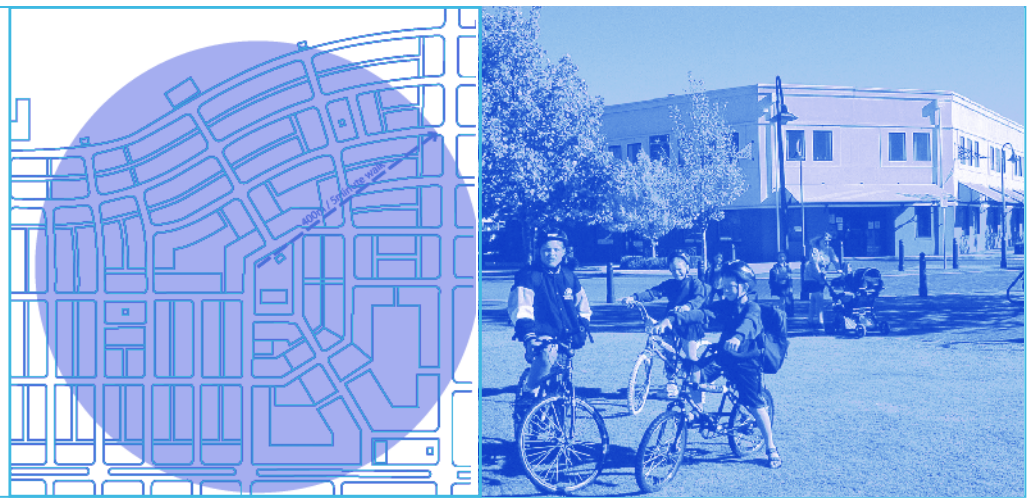
Councils, government agencies, developers and citizens are all faced with a choice: to continue to grow along the suburban sprawl model, or to reintroduce the principles and techniques of traditional neighbourhood development.

With great foresight, both Great Lakes Council through the Draft Housing Strategy and Crighton Properties, proposed in the lead-up to the Forum that TND shall form the basis of the design approach for Riverside and Myall River Downs. This approach was endorsed by the community at the opening presentation.

These time tested principles of urban design are outlined opposite and establish an agreed approach for the design of the Master Plan for Riverside and Myall River Downs.

WALKABLE NEIGHBOURHOODS

The neighbourhood is limited in size so that the majority of the population is within a 5-minute walk of its centre (400m). The needs of daily life are theoretically available within this area. This centre provides an excellent location for a public transport stop and mix of uses. By bringing the activities of daily life into walking distance, all people gain independence of movement, particularly the young and elderly.



CONNECTED NETWORK

Thoroughfares are laid out in a network so there are alternate routes to most destinations. This permits most streets to be smaller with slower traffic, as well as having parking, trees, footpaths and buildings. They are designed for both pedestrians and vehicles. People feel comfortable walking and are able to get to know each other and to watch over their collective security.



MIX OF BUILDINGS & USES

There is a mixture of houses (large and small), outbuildings, small apartment buildings, terraces, live/works, courtyard houses, mixed use buildings, offices and warehouses. These buildings are diverse in function but compatible in size and disposition on their lots. By providing a full range of housing types and work places, age and economic classes are integrated and the bonds of an authentic community are formed.



QUALITY OPEN SPACE

Open space is provided in the form of specialised plazas, squares, greens, playgrounds, parks and greenways. Each type is defined by its size; the landscaping used, if any; and the way the space is surrounded. Open space to be truly public should be overlooked by buildings and fronted by thoroughfares. To be fully functional, it should straddle pedestrian trajectories or be adjacent to meaningful destinations.



CIVIC BUILDINGS

Civic buildings, such as schools, meeting halls, theaters, churches, clubs, museums etc.) are located within open spaces or at the termination of important vistas. By being built at important locations these structures function as important landmarks. Such structures promote democratic inititives and the balanced evolution of society is facilitated.





THE RIVERSIDE AND MYALL RIVER DOWNS MASTER PLAN

INTRODUCTION

The 350 hectare Crighton owned property is split down the middle by Myall Street which is the major entry to the township of Tea Gardens. In its current state it does not provide a memorable arrival experience.

Within and adjacent to the property, there is spectacular frontage to Myall River, the adjacency of Kore Kore Creek, wetlands and natural habitat. The land is generally flat, but views towards coastal headlands, particularly Yacaaba Head, provide visual interest. The proximity of the shopping centre is an additional amenity. The existing quarry and adjoining lands, which could continue to be mined as-of-right, provide the opportunity to create something truly special.

THE CHALLENGE

The creation of a Master Plan which responds to the unique features and opportunities of the site, the principles of Council's Draft Housing Strategy and community's concerns for coastal character estabilised a bold challenge.

The practice of Roberts Day, Australia's leading town planners and urban designers in traditional neighourhood development, set out to respond to this challenge.

THE MASTER PLAN

The proposed Master Plan for Riverside and Myall River Downs represents the realisation of this challenge. The plan is structured on three main elements: Nature Preserve, Neighbourhoods and Corridors.

The Nature Preserve includes all areas which will remain as open space permanently, and includes legislated habitat and wetlands.

The Neighbourhood is the building block of the human habitat. The plan incorporates three complete neighbourhoods - villages freestanding in the countryside - and two smaller hamlets. All are limited in size for walkability with clearly defined centres and edges. Each is mixed-use and multifunctional, providing a range of building types which includes home business.

Each village and hamlet will have a minimum net density of 16dwellings per hectare. There will be a variety of dwelling types provided, ranging from terraces and duplexes to larger rural homes on stewardship lots. At this density, both the coastal character of Tea Gardens and principles of Counci's draft Housing Strategy will be realised.

The Corridors are the linear open space systems which weave between the villages and hamlets and interconnect the Nature Preserve.

Throughout Riverside and Myall River Downs these corridors have been sculptured into beautiful linear parks with open swales, ponds and water bodies to effectively manage water.

A comprehensive system of pedestrian, cycle paths and trails will weave throughout these three main elements.

MYALL BOULEVARD

In assessing how the Master Plan could contribute to the existing township of Tea Gardens, the design team immediately recognised the potential of the project to create a memorabe arrival experience to Tea Gardens.

In its current configuration Myall Street is dysfunctional. It is unpleasant and dangerous for pedestrians. Its failure as a unifying element of the township is perhaps best recognised by the fact that it is known locally under three different names.

The Master Plan proposes the reconfiguration of Myall Street into a boulevard. It will allow pedestrians to cross safely, and traffic to move more slowly than it does today. The proposal offers a traffic calming solution that is beautiful, distinctive and effective. At the same time it preserves the thoroughfare's traffic capacity.

The reconfiguration proposes one-way parrallel service roads to be built on both sides allowing local traffic to access Riverside and Myall River Downs and minimise interference with through traffic. A central median will also be added. Closely spaced canopy trees will line the median, service roads and pedestrain /cycle paths. The trees combined with distinctive butteries at the northern edge of the township, will herald arrival and further calm traffic. The reconfiguration will dramatically improve the pedestian and cycle paths into the township, and provide a safe crossing environment. It will provide the impetus for future public works closer to the town itself.

Through the proposed treatment, form and function come together. The design balances community walkability goals and helps to create a dignified entry to Tea Gardens.

TWO SIDES, EAST AND WEST OF MYALL BOULEVARD



Sketch of Myall River Hamlet

Whilst structured on three elements, there are a variety of features on the east side of Myall Boulevard that do not exist on the west side, and vice versa. People will want to visit both sides.

Recognising this desire, the plan provides a natural arc - a series of beautiful tree lined avenues, park edge drives, waterside parklands and pedestrian trails - connecting Myall River in the east to Kore Kore Creek in the west.

The east side of Myall Boulevard hosts the shopping centre, which has the potential to evolve into a pedestrian friendly town centre. It is a significant attractor.

This side also has the only accessible river frontage - the Myall River. It is a rare and sought after amenity, particularly due to the fact that its shoreline is suitable for moorings. It provides one of the last major opportunities for people to be able to actively engage the River. Moorings focused around a small inlet and water square provide this opportunity.

The west side of Myall Boulevard provides for a more intense experience of nature. Beyond the existing dirt road which is the determined line identifying areas of greater environmental sensitivity further west, the plan responds to nature. A crushed gravel road and pedestrian paths weave between trees and open spaces providing links to boardwalks and trails. Tree houses sit lightly on the landscape. The quarry itself has become a feature of environmental design, shaped into a remediating wetland / lake which provides a focus for eco-orientated activities .

While the two side of Myall Boulevard celebrate different features, the fact that each is designed according to the principles of TND ensures a connected community.



Early concept design for the central greenway of the Eastern Neighbourhood The design has been refined to provide a wider median with drainage by open swales.

RIVERSIDE EAST OF MYALL BOULEVARD

EASTERN NEIGHBOURHOOD

The tree lined avenues of the eastern neighbourhood converge at one of the principle gathering places - the central greenway.

Commencing at the site's northern edge as a triangular park, it becomes an elegant linear greenway before terminating at a lakeside park. The axis of the park is aligned to two features.

At the scale of the neighbourhood it terminates upon a community hall which is piled directly into the water and provides a place for social events.

At the scale of the region it terminates upon the highpoint of Yacaaba Head, creating a physical and psychological connection to the the ocean.

The lakeside park, with its continuous public foreshore promenade, connects back to the existing shopping centre and community of Myall Lakes to ensure everybody is able to benefit from this wonderful amenity.

At the eastern most crossing of the proposed bridge connection to Myall Lakes, a group of live / work building types are clustered around a green. It also includes a neighbourhood work centre. The precinct will serve as a model for home business and its applicability to the retiree lifestyle sector.

MYALL RIVER HAMLET

Protected from south-easterly winds by the ridgeline to the west, the Myall River Hamlet includes large woodland lots able to retain existing trees amongst rustic lodges.

A focus for the lodges will be a small navigatable inlet providing boat moorings. As part of this assemblage, an informal "camp meeting place" will exist. Including a meeting hall, it can serve as a conference centre for corporate events, venue for private functions, such as weddings and be available for a range of other activities. The inlet will not simply be a parking space for boats. Rather it will be an aesthetic amenity designed as a space with "Mediterranean Moorings" promoting social interaction.



The Eastern Neighborhood and Myall River Hamlet.

RIVERSIDE WEST OF MYALL BOULEVARD

WESTERN NEIGHBOURHOOD

West of Myall boulevard, narrower building types front tree lined avenue converging on a central civic square, creating a civic outdoor room at the centre of a consolidated urban neighbourhood. Directly opposite the square the neighbourhood has capacity to support a corner store providing daily necessities within a five minute walk of all neighbourhood residents.

The neighbourhood is divided into four quadrants divided by tree lined avenues and streets providing gently curving vistas and views to civic structures and out into the linear open space network and nature.

In each quadrant there is a graduation of building types with larger residential form at the core encompassing a central green or playground.

NORTHERN HAMLET

The northern hamlet is linked to the western neighbourhood via a tree lined avenue with a linear central green.
The hamlet is bound to the south by a linear open space network and to the north by Kore Kore Creek and the sourouding bush land. The hamlet shares similar attributes to the central neigwwhbourhood with streets providing views out into nature.



Typical neighbourhood streetscape with gently curving road and single storey houses.



Typical neighbourhood streetscape with gently curving road and two storey houses.



The Western Neighbourhood, Northern Hamlet and Eco-Quarter.



Sketch of the conference centre overlooking the quarry which has been transformed into a large lake and wetland surrounded by public parklands.

THE ECO-QUARTER

Crighton Properties was faced with a choice for their land holdings west of the existing dirt road, which includes the quarry, for Myall River Downs.

Either continue sand mining activites as-of-right which permits the clearing of all trees and excavation of top soils, or seek an outcome that is better for the community and environment, but still makes financial sense. The proposed Eco-Quarter achieves the later.

Rather than clearing all trees, they are retained where ever possible and enhanced with additional plantings. A dense thicket will be planted along the eastern edge of the quarter to screen views and enhance its rural character.

A single, gently curving rural road provides the only vehicle access into the quarter. Since most residents of the quarter will use their cars rarely, the Plan introduces a series of informal parking courts that are not visible from the street or parklands. The presence of the rear courts permits every house to front a green connected by paths and boardwalks into the nature preserve.

The houses will have small footprints to minimse impact on the ground, and permit the common landscaping of a xeriscape and native species.

All pedestrian paths and the rural road converge upon the sand quarry. It has been sculptured into a large lake with informal parklands around its edges. It is a public amenity available to all in the community.

Engaging the southern edge of the lake is the village. Laid out creating picturesque streets, plazas and squares, the village will be able to capitalise upon the environmental amenities. Two to three storeies in height, it will include conference and educational facilities, short term accommodation, studios, space for small shops and a variety of other uses including residential.

The village and lake it engages will become a famous gathering place of unique beauty for the Great Lakes Region.

Residents and visitors will be able to enjoy a model for sustainable development demonstrating the integration of the natural and human habitats.



Existing Conditions.



Future Character.

DESIGN PRINCIPLES

VIEW SHEDS

Responding to unique features, both internal and external to the site, establishes a Master Plan which celebrates its context and is inexplicity linked to the landscape.

Approaching the existing township of Tea Gardens from the north, as Myall Street drops over the ridge a spectacular view towards Yacaaba Head is established. It provides not only a physical view to the headland, but a psycological connection to the South Pacific Ocean.

For the pedestrian hiking along the trails at the edge of town, this view is also prevelant from the public lookout at Elourera Park.

The Master Plan responds to this viewshed. A wide linear green has been provided along the view axis from public lookout to headland. Tree planting and a network of water bodies along the green will enhance this view-shed.

Secondary north-south streets within this neighbourhood have also been aligned along this axis with smaller neighbourhood parks to create layered vistas comprising park, house and headland. It will be a constant prescence throughout the estern neighbourhood.

Throughout the remainder of this and the other neighbourhoods, thoroughfares have been orientated perpendicular to the open space corridors, creating gently curving views out to nature from within the neighbourhood quadrants.



View Sheds

PEDESTRIAN SHEDS

The measure of the "pedestrian shed" is the fundamental increment for the design of hamlets, villages, neighbourhoods and towns.

The standard pedestrian shed corresponds to a five-minute walk for the average person, which approximates a 400m radius from the neighbourhood centre. A larger pedestrian shed averages a radius of 800m, the distance of a ten-minute walk at a leisurely pace. It is typically the maximum threshold of walking to major destinations, such as a town centre, people will walk rather than drive. A smaller pedestrain shed which corresponds to a two-and-a-half minute walk (200m radius) provides a good measure for hamlets permenately constrained by nature.

The diagram opposite shows the pedestrian shed areas for Riverside and Myall River Downs. Each side of Myall Boulevard contains two five - minute pedestrian sheds and two two-and-a-half minute pedestrian sheds. The Eco-Quarter includes a longer, elongated pedestrian shed due to the variety of activities around the quarry which will attract people. Each pedestrian shed has a centre for community gathering.

The large, pedestrian shed demostrates the catchment of people within walking distance of the shopping centre and its facilities.



Pedestrian Sheds

THOROUGHFARE NETWORK

The reason conventional suburban development handles traffic so poorly is that so few streets actually provide multiple routes to destintations. The consequence is traffic congestion.

Conventional suburban development also typically results in a disorientating subdivision due to streets that dramatically curve in multiple directions.

As the diagram opposite illustrates, the proposed Master Plan rememedies both.

For each neighbourhood, streets are organised into a comprehensible network that manifests the structure of the neighbourhood. The largest streets pass through the centre, generally dividing the neighbourhoods into four quadrants. These quadrants generally contain smaller streets carrying less through traffic. The network structure of the neighbourhood, while emphasising the centre, provides multiple paths to and from any destination, so that traffic back-ups are limited.

The thoroughfare network designed integrates both capacity and character. It is designed as an environment equitable for the pedestrian, cyclist and driver. Accordingly, vehicle lanes, curb radii and assemblage of the public streetscape are designed to keep vehicle speeds low and encourage walking.

Also in contrast to conventional subdivision, note the placement of drives to create a public frontage along green corridors.



Thoroughfare Network



Public Transport

PUBLIC TRANSPORT

Regardless of the immediate viability of a public bus system, the Master Plan has been designed as "transport-ready".

As the diagram opposite illustrates, the neighbourhood structure naturally supports the provision of a public bus service across the project. It is a direct and logical route.

Stops are naturally located at the neighbourhood centres. Ideally, these stops will be located next to a corner store / cafe where it will be possible to wait for the bus in a dry and dignified setting. The potential to read the newspaper with coffee in hand is a markedly different proposition to conventional bus stops which are randomly located on the side of the road within a graffiti covered plastic bubble.

The diagram also clearly illustrates the built-in catchments for pedestrians to support public transport when design occurs according to the Neighbourhood Unit.

As the development is built-out and the local population reaches a critical mass, a public bus system will become viable.



Open Space & Civic Sites

OPEN SPACES AND CIVIC SITES

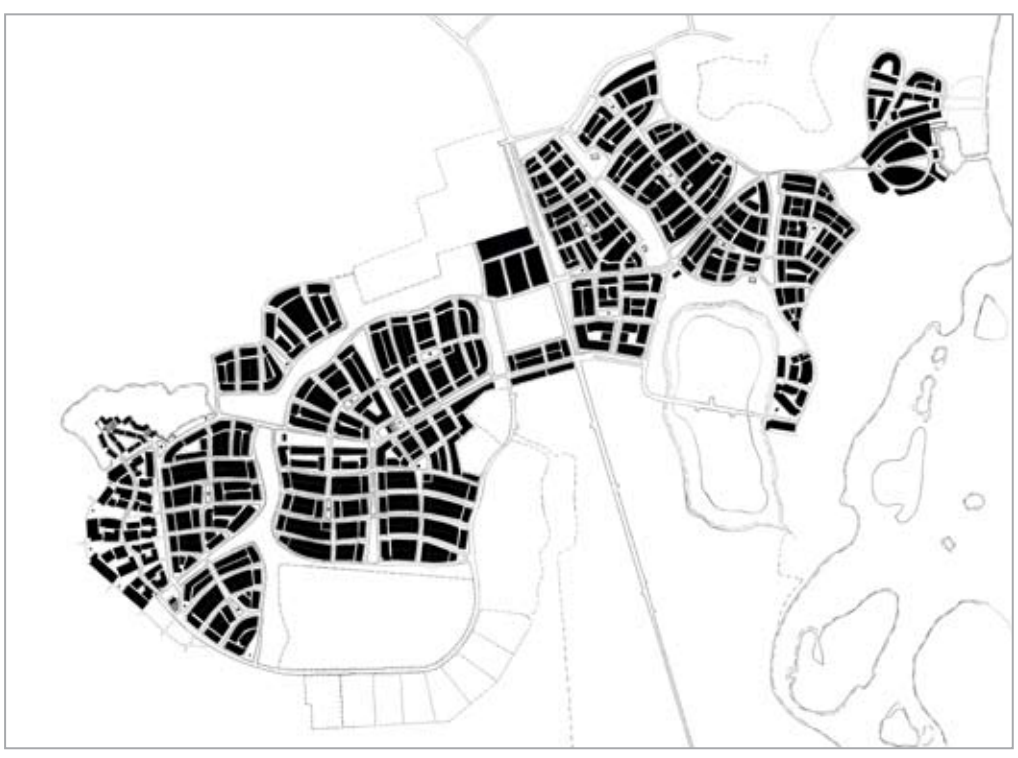
The diagram opposite illustrates the logic and continuity of the open space system. Green corridors between neighbourhoods create a connected system for humans and animals, and to manage water run-off. This system connects to the nature preserve around the perimeter of the site.

Within each neighbourhood, a variety of time tested open space typologies are provided including attached plazas, squares, greens and pocket parks. Each has been sized and located to function properly based on the needs of people and the urban-to-rural transect. For example, the central neighbourhood squares are bound by the enfronting buildings and then public frontage. It creates outdoor rooms which people feel comfortable to use.

Within this open space system, each village and hamlet is equipped with a variety of civic reservations to foster social interaction and community identity. Over time, and dependent upon the demands of the future community, a meeting hall should be provided in the central square of each neighbourhood.

Other civic reservations need not be as grand to instil a sense of "civic awareness" for the future community. For example, folly structures have been located in open spaces to terminate views.

The build-out of the project will take many years. It is important that these civic reservations are set aside at the inception of the project.



Private Blocks

PRIVATE BLOCKS

The block is the middle scale of design, affecting both the thoroughfare network and building type. As the diagram opposite illustrates, the master plan provides three basic block types.

Towards the centre of each neighbourhood, larger, square blocks capable of accommodating the additional parking which may be generated by a mix of uses over time are provided.

Beyond the square block, the majority of blocks within each neighbourhood are elongated and rectangular. It provides two distinct building frontage types. With the end grain or short side assigned to the major avenues and drives, the majority of buildings are able to front onto the quieter side of the long block. This block type is also able to gently curve, creating pleasant streetscapes.

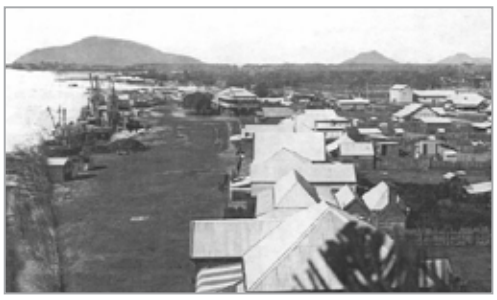
The final block type provided is the irregular organic block. It is predominately located along the edge of the Eco-Quarter as a transition into nature creating a picturesque rural setting.

The overall orientation of blocks responds to the view sheds established by Yaacaba Head and the nature corridors. This pattern of two block lengths with nature at both ends has been modelled upon historic precedent within Tea Gardens and Hawke's Nest.



ESSENTIAL ELEMENTS OF TEA GARDENS COASTAL ARCHITECTURE:

1 Simple, straightforward volumes with front wings and verandahs added to make more complex shapes.
2 Deep, usable posted front verandahs with regular arrangement of columns and openings.
3. Simple eave lines accommodate gabled roof forms.
4. Single driveway to a garage set far back on the lot.
5. Buildings raised off ground on a plinth.
6. Limited use of materials with lighter materials above heavier and joined horizontally.





RECONNECTING TO A COASTAL ARCHITECTUREAL TRADITION







Prior to the Second World War there existed a vernacular architecture tradition in Tea Gardens and Hawke's Bay. A tradition which has left behind the most valued and cherised buildings of the two townships.

Simple cottages with deep verandahs and eaves, constructed from a mix of weatherboard and masonry, which address the street with windows and doors and locate the garage towards the rear of the block.

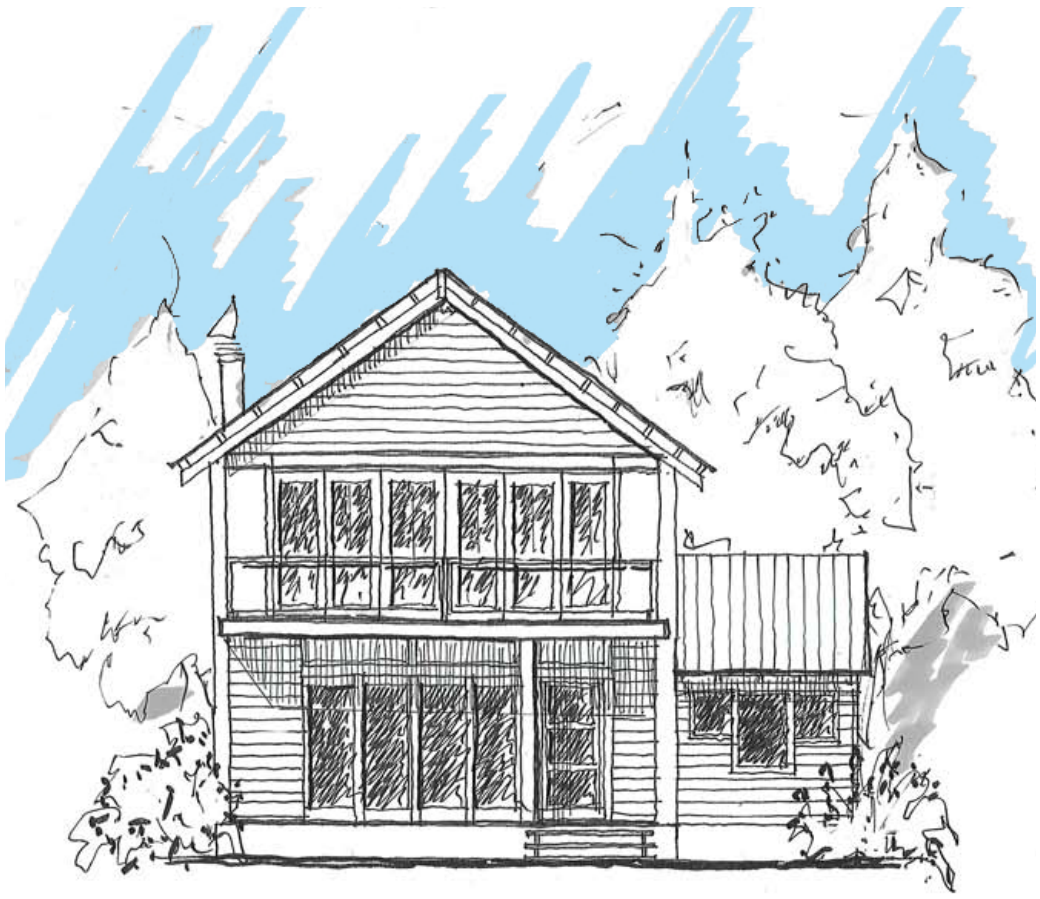
Buildings which when assembled side-by-side within a landscape setting create the relaxed streetscapes people associate with the coastal character of Tea Gardens and Hawke's Nest.

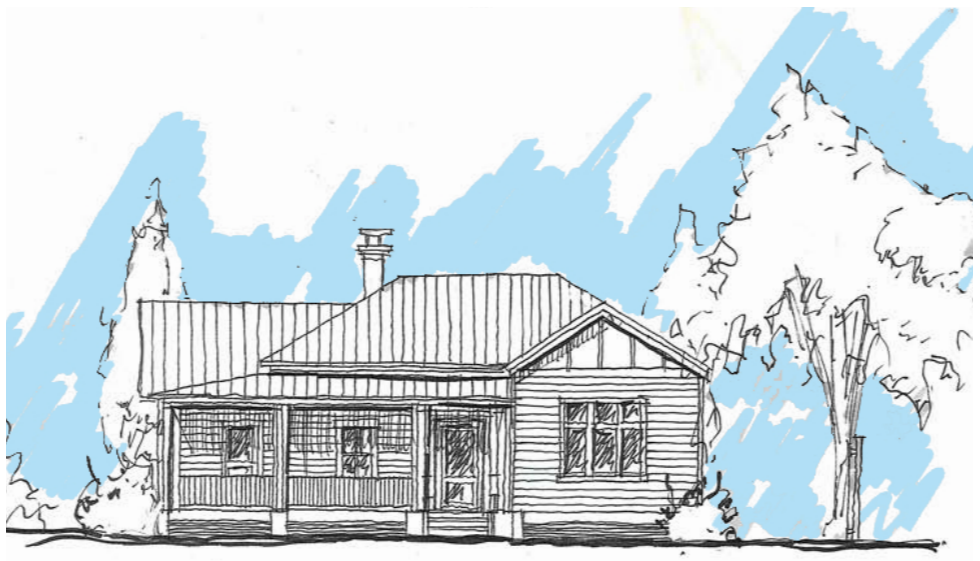
With the advent of prefabricated brick and tile suburban housing, and the uniform streetscapes brought with it, this tradition is at a risk of being lost. It does not have to be this way.

Locals referred the design team to the best examples of local architecture during the Forum. Collectively, these examples establish the genetic material for reconnecting to the coastal architecture of Tea Gardens and Hawke's Nest.

It will establish an evolving vernacular architecture for Tea Gardens and Hawke's Nest. It will not be rigid or historicist, but rather incoporate the practical knowledge of building innovation and climatic response. It will ensure buildings respond appropriately along the urban-to rural transect across the site.

Over the coming decade it will provide the many builders and architects who will participate in the delivery of the vision to evolve a tradition which ceased during the Second World War. Through this approach and the passing of time, a style known fondly by residents and visitors as "Tea Gardens" architeture will emerge.







Elevation sketches prepared during the Design Forum.

RIVERSIDE

DELIVERING TRADITIONAL NEIGHBOURHOODS

THE RIVERSIDE TRANSECT PLAN

The Transect Plan for Riverside and Myall River Downs is transect based. It precisley locates five T-Zone categories - Nature Preserve, Rural Reserve, Sub-Urban, Urban General, Urban Centre - and a District across the site. It also identifies Civic Reservations.

The T-Zone categories co-ordinate the assembleage of the public streetscape and thoroughfares, private frontage and building type, and land use to create "immersive environments" with internally consistent characters.

The T-Zones have been locally calibrated to build upon the best local precedent and the community vision for "neighbourhoods with quite inner quarters".

The resulting allocation of T-Zones across the neighbourhoods establishes a pattern unique to Tea Gardens. Rather than the transect zones occurring as a series of concentric circles as is often typical, it establishes urban avenues and drives of a more urban character defining the neighbourhood quadrants, with a more rural village character within the quadrants.

The T-Zones identified by the Regulating Plan for Riverside and Myall River Downs are:



The Transect Plan for Riverside and Myall River Downs will regulate development to achieve the vision

The first zone, designated Nature Preserve (T1), is the most pristine natural condition in which human intervention is orientated toward ecological stewardship rather than to accommodating human uses. It includes legislated wetlands and squirrel glider habitat. Human use is restricted, with access provided by strategic trails and paths to protect nature.

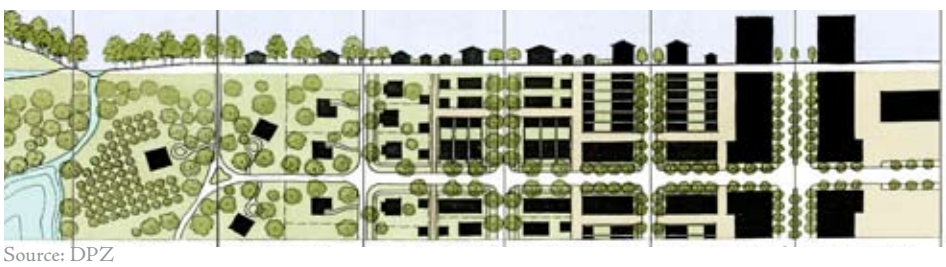
The second zone is designated Rural (T2) which allows human habitation, but the character is rural and requirements of nature dominate over humans. Trees are retained and replanted, xeriscape landscape established, and drainage by open percolation in swales.

The third zone is Sub-Urban (T3). It will be similar in character to many of the historic residential streetscapes within Tea Gardens and Hawke's Nest. Houses are set well back from the street with natuarilstic planting. Roads drain by swales.

The fourth zone, designated General Urban (T4) is more urban in character. Residential building types include duplexes and terraces. Streets drain by curb and footpaths exist. Trees are planted both formally and naturally.

The final zone, designated Urban Centre (T5) approximates "main street." and is mixed uses.

WHAT IS THE TRANSECT?



Source: DPZ

A transect is a cross-section across a geographic region which reveals a variety of habitats. In the natural environment for example, a transect includes beach to dune system, dune system to valley plain, valley plain to mountain. Environmentalists take samples along this transect, systematically analysing the characteristic of each zone to determine the elements necessary to create an authentic and viable habitat.

When this technique is extrapolated into the human environment, it provides a framework to identify a set of habitats that vary by their level and intensity of urban character along an urban-to-rural transect. In transect based design, this range of environments is the basis for organising the components of the built form: public streetscape, building type and private frontage and land use to create an "immersive environment". Environments which have a strong, internally consistent and authentic sense of place.

This approach, when applied with the principles of traditional neighbourhood design (TND), provides the opportunity for a variety of lifestyle choices within a neighbourhood. For people it provides for social inclusion and diversity - an interesting place to live. For developers the opportunity to access multiple market segments on the same infrastructure, resulting in faster product absorption.

Extended into the human environment, the transect can be divided into six locally-calibrated context zones distrubted from Nature to Rural, Sub-Urban, General Urban, Urban Centre and Urban Core. It is easily administered.

The key task is to find the main qualities of the context zones. Once discovered, urban and rural elements can be allocated correctly. It is the role of allocation rather than prohibition which establishes the proper balance between natural and human environments, resulting in higher quality places at every point along the spectrum.

TRANSECT ZONE CHARACTER SUMMARY

TRANSECT ZONE T5 URBAN CENTRE

CHARACTER

Consists of higher density mixed use building types that accommodate retail, offices, rowhouses and apartments. It has a tight network of streets, with wide footpaths, steady street tree planting and buildings set close to frontages. Its character emulates the traditional Australian "main street". The most intense allocation of T5 is around the existing shopping centre and quarry. Each neighbourhood is also equipped to support a corner store.





TRANSECT ZONE T4 GENERAL URBAN

CHARACTER

Consists of a mixed use but primarily residential urban fabric. It has a wide range of building types: single, sideyard and terraces Setbacks and landscaping are variable. Streets define medium-sized blocks. For River Side and Myall River Downs it is predominately located at the edge of the neighbourhood quadrants to establish a more urban character fronting the avenues and drives.





TRANSECT ZONE T3 SUB-URBAN

CHARACTER

Consists of low density suburban residential areas, differing by allowing home occupations. Planning is naturalistic and setbacks relatively deep. Blocks may be large and the roads irregular to accommodate natural features. It differs to conventional suburban development by its superior connectivity. For Riverside and Myall River Downs it is predominately locatedwith the neighbourhood quadrants to create a "village" like residential fabric.

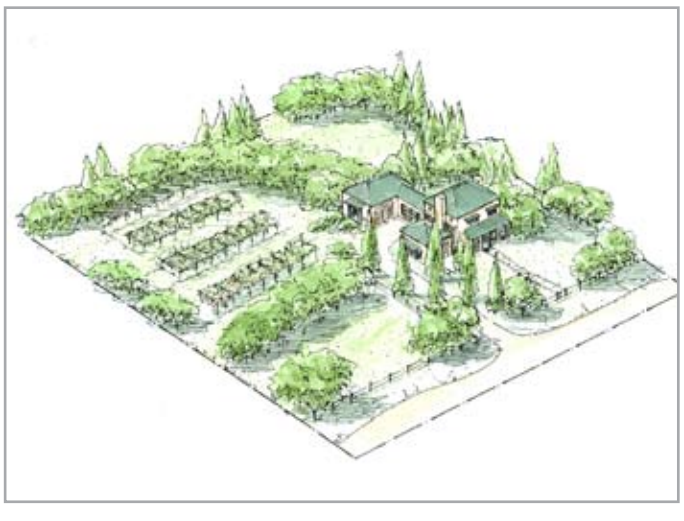




TRANSECT ZONE T2 RURAL LIVING

CHARACTER

Consists of large manor homes, eco-houses and stewardship lots set within a lnaturalistic landscape setting. Preservation efforts are married with human habitation. For Riverside and Myall River Downs it is located to provide an appropriate transition to the nature preserve.

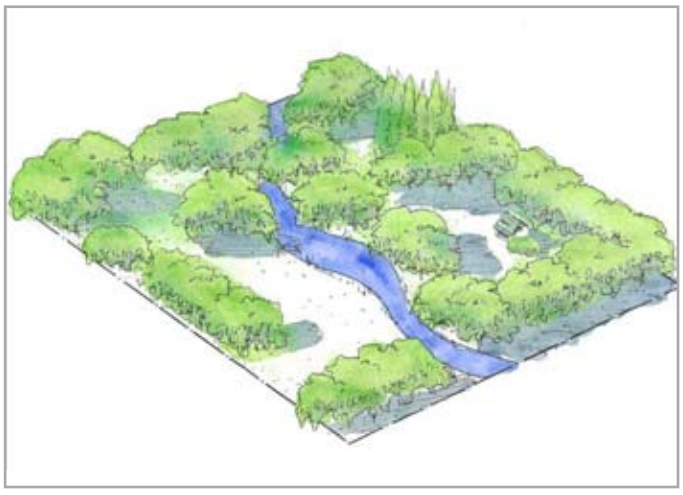




TRANSECT ZONE T1 NATURE PRESERVE

CHARACTER

Consists of lands approximating or reverting to a wilderness condition, including lands unsuitable for settlement due to topography, hydrology or vegetation or habitant values.







Thoroughfare Plan identifying the thoroughfare types for Riverside and Myall River Downs

RIVERSIDE THOROUGHFARE STANDARDS

Thoroughfares form a major part of the open space system for Riverside and Myall River Downs. A thoroughfare is endowed with two attributes: Character and Capacity.

Character is the suitability of a thoroughfare as a setting for pedestrian activities and as a location for a variety of building types. Character is physically manifested by the associated frontage types as determined by the location within the Transect. As a shared setting for most buildings, thoroughfares provide the opportunity for community interaction. As such, they must be carefully designed for pedestrian use. The streetscape is the publicly held layer between the lot line and the edge of the vehicle lanes and consists of the curb, the footpath, planters, street trees, and streetlights and furniture.

Capacity is the number of vehicles that can move safely through a segment of a thoroughfare within a given time period. It is physically manifested by the number of lanes and their width, by the centreline radius, the curb radius, and the superelevation of the pavement. The capacity of vehicular circulation of a system is determined by the combination of moving and parking lanes within thoroughfares. Because Riverside and Myall River Downs is designed to encourage pedestrian use, the velocity of traffic movement is carefully controlled through the use of narrower lane widths, shorter intersection spacing, smaller curb radii, and on-street parking. This is the only true way to calm traffic, as posted speed limits and/or retrofits such as speed bumps and chicanes signify a failure to correctly dewsign the thoroughfare in the first place.



The design studied local models to assist in determining the thoroughfare types.

The plan above identifies the proposed thoroughfare types. Specific standards for each type will be resolved at detail design.



Rear lanes and alleys (red) for Riverside and Myall River Downs.



Volume 3C: Riverside at Tea Gardens Design Forum

RIVERSIDE AT TEA GARDENS DESIGN FORUM

CRIGHTON PROPERTIES

CARDNO WILLING CONACHER TRAVERS ERM HARRIS RESEARCH

HUNTER WETLAND RESEARCH ROBERTSDAY TATTERSALLS PATTERSON BRITTON

ROBERTSDAY TOWN PLANNING DESIGN

DESIGN FORUM PROGRAM

WEDNESDAY 1 FEBRUARY

OPENING PRESENTATION

SITE & CONTEXT TOUR

LUNCH

ISSUE IDENTIFICATION

DESIGN STUDIO

THURSDAY 3 FEBRUARY

ISSUE INVESTIGATION

- Environment / Landscape
- Engineering Services
- Housing Diversity
- Recreation / Open Space

COMMUNITY FORUM

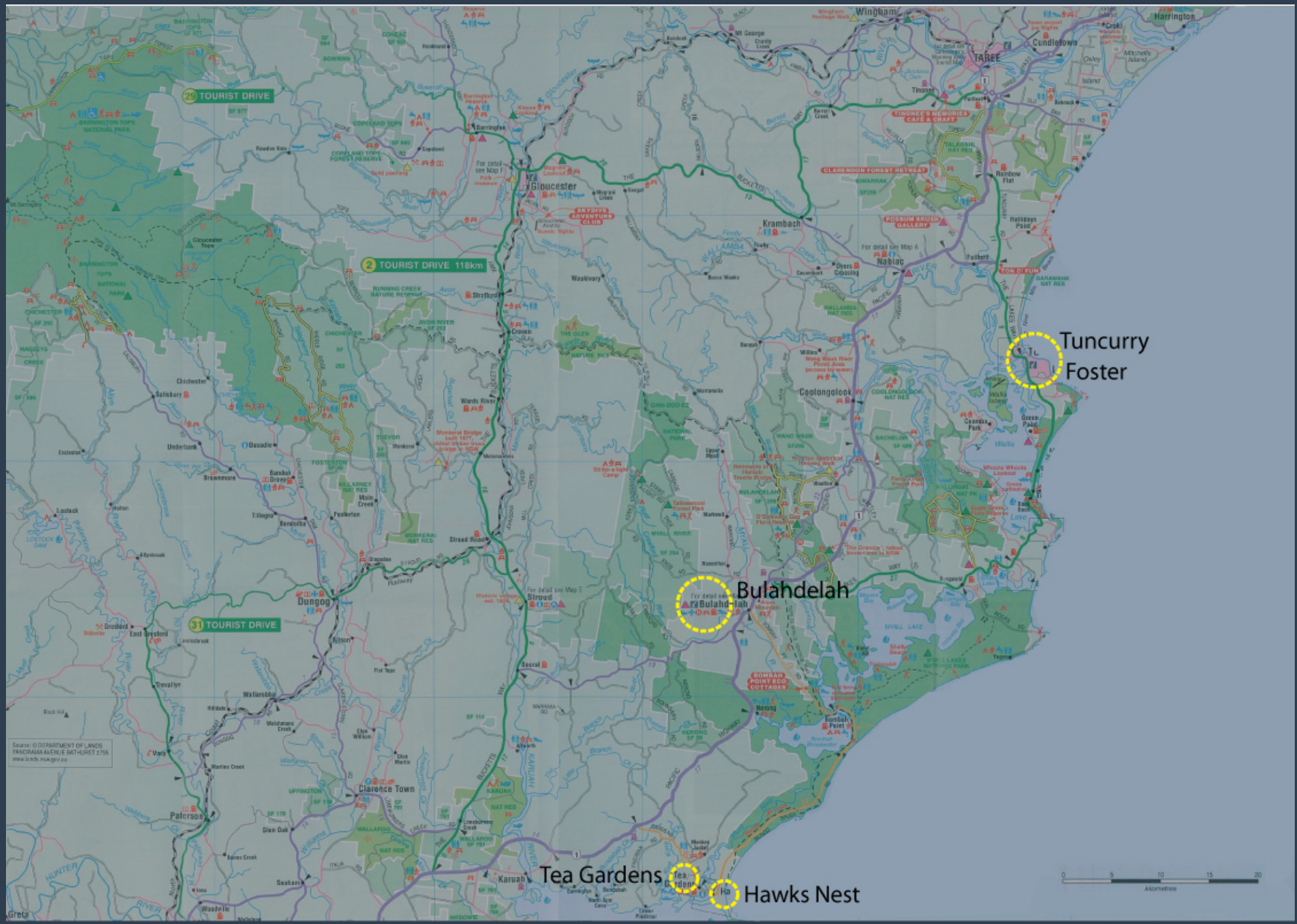
DESIGN STUDIO

FRIDAY 4 FEBRUARY

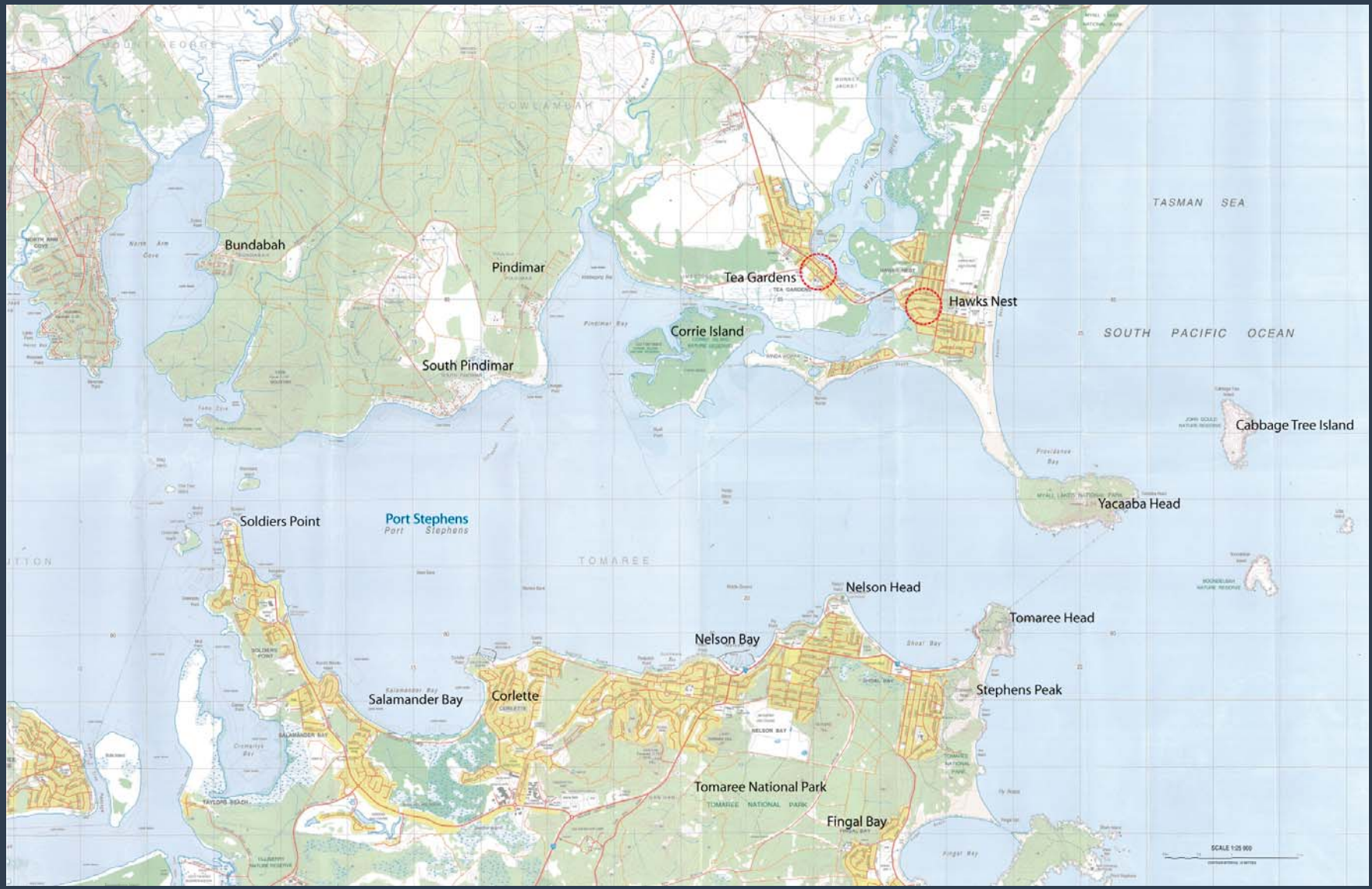
DESIGN STUDIO

CLOSING PRESENTATION

REGIONAL CONTEXT

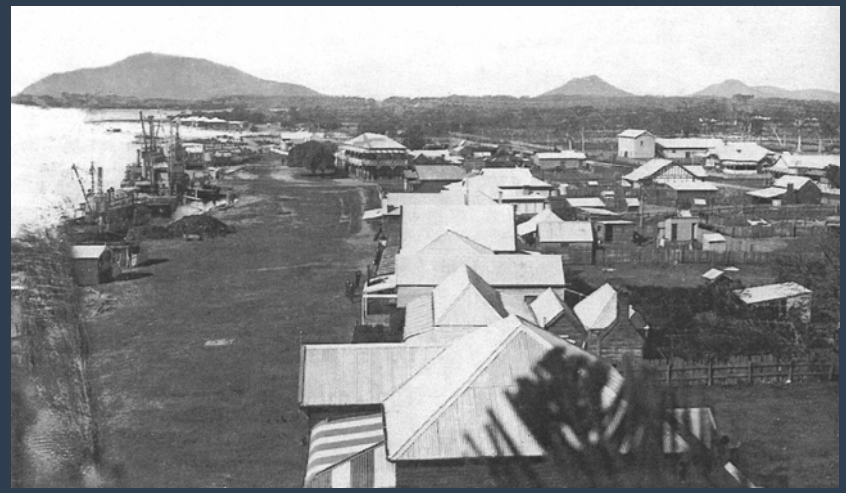


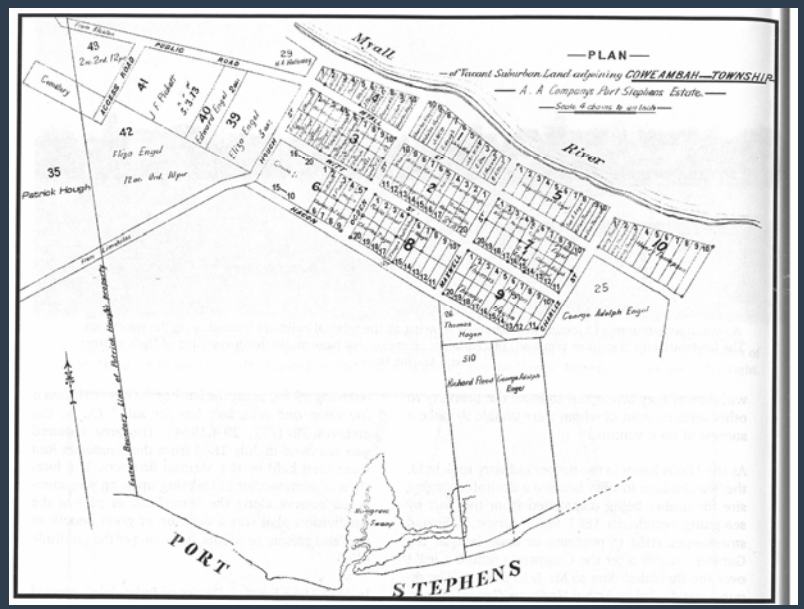
REGIONAL CONTEXT



TEA GARDENS 1920







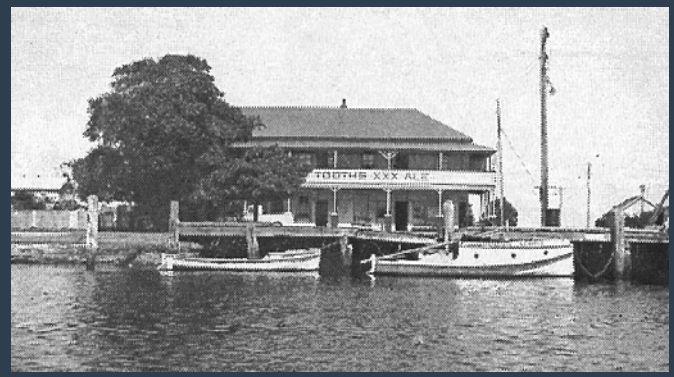


TEA GARDENS

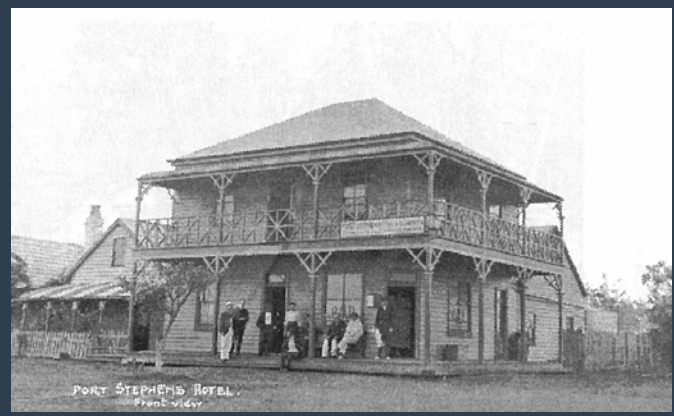

TEA GARDENS GENERAL STORE



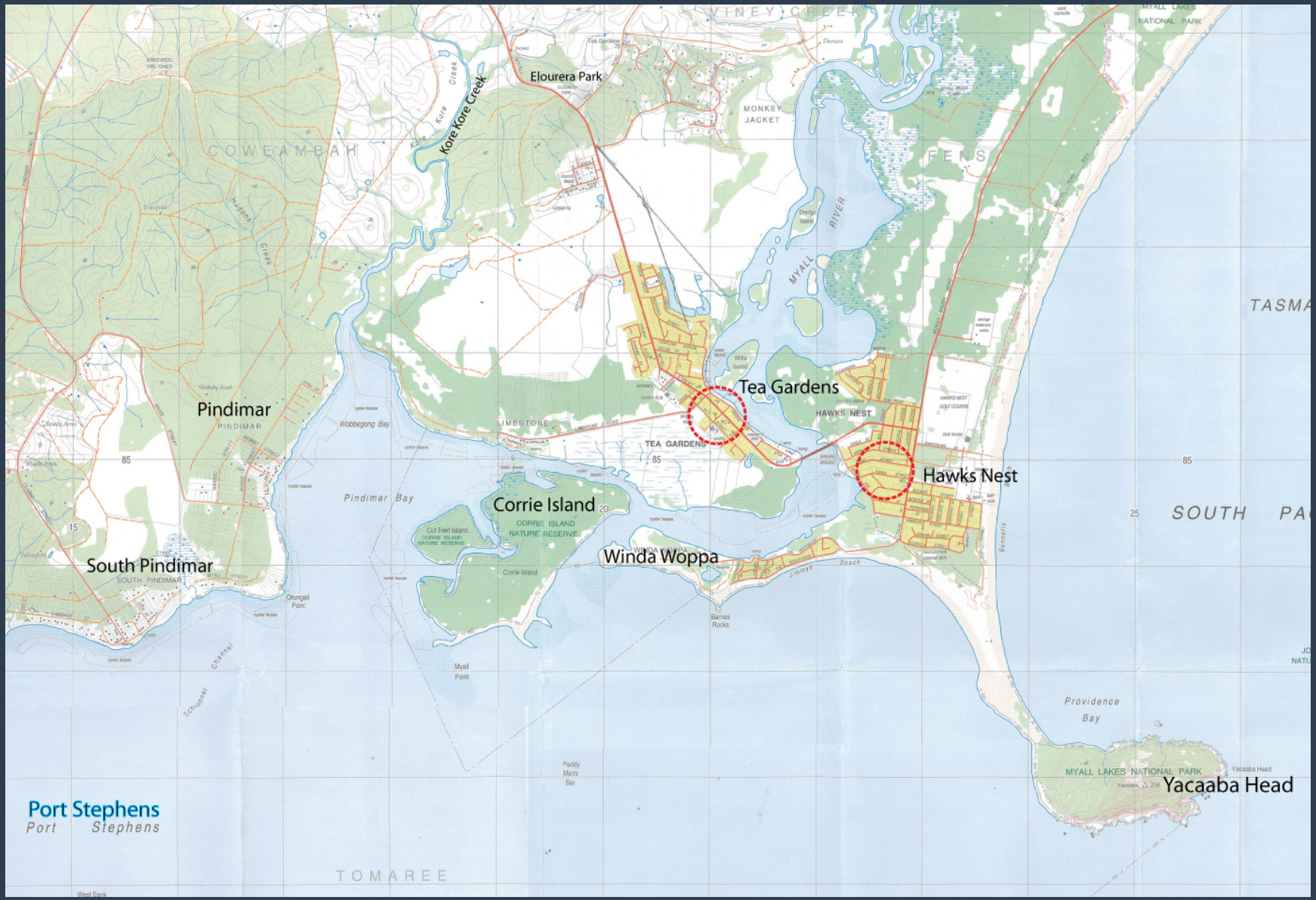



TOOTHS XXX ALE

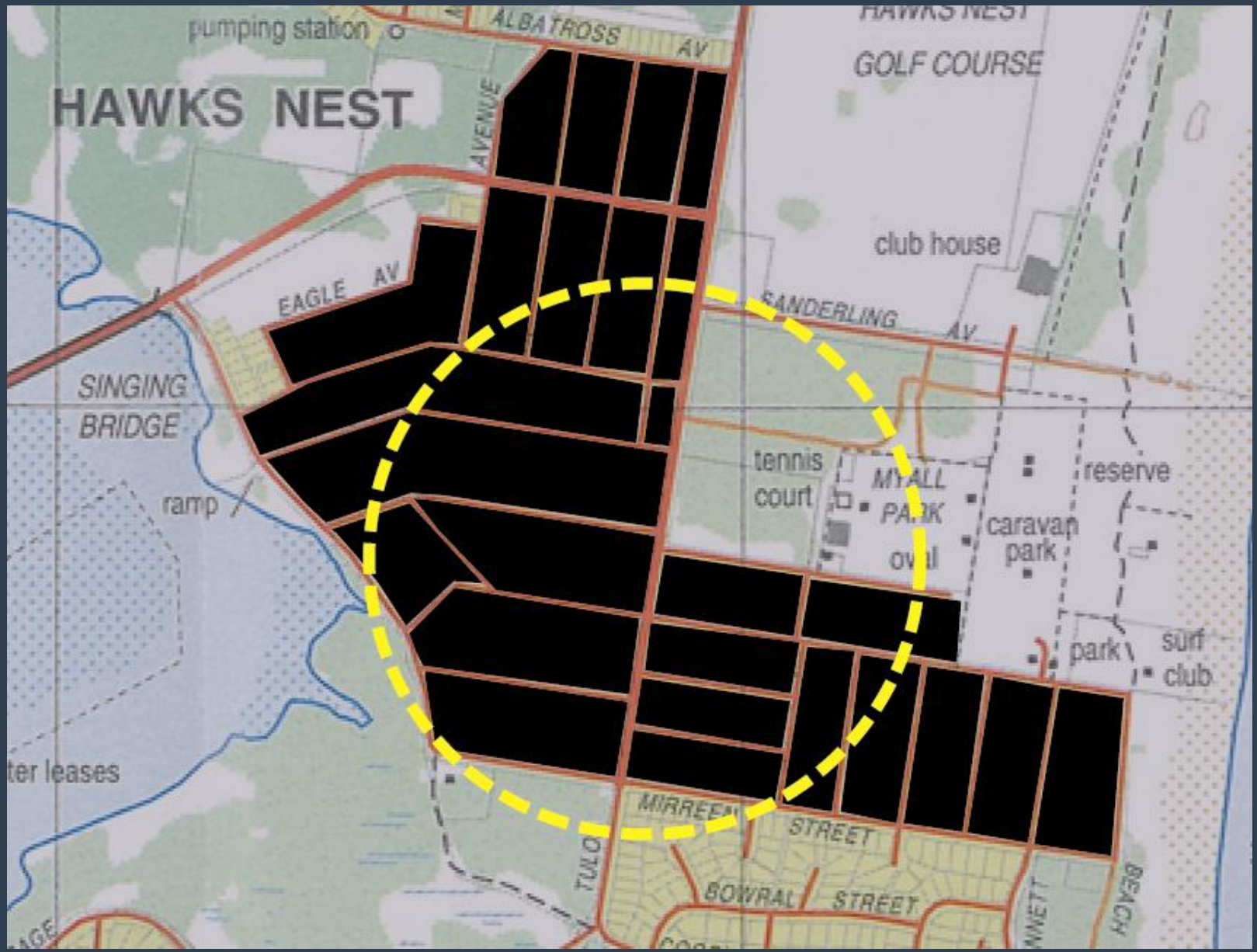



PORT STEPHENS HOTEL.

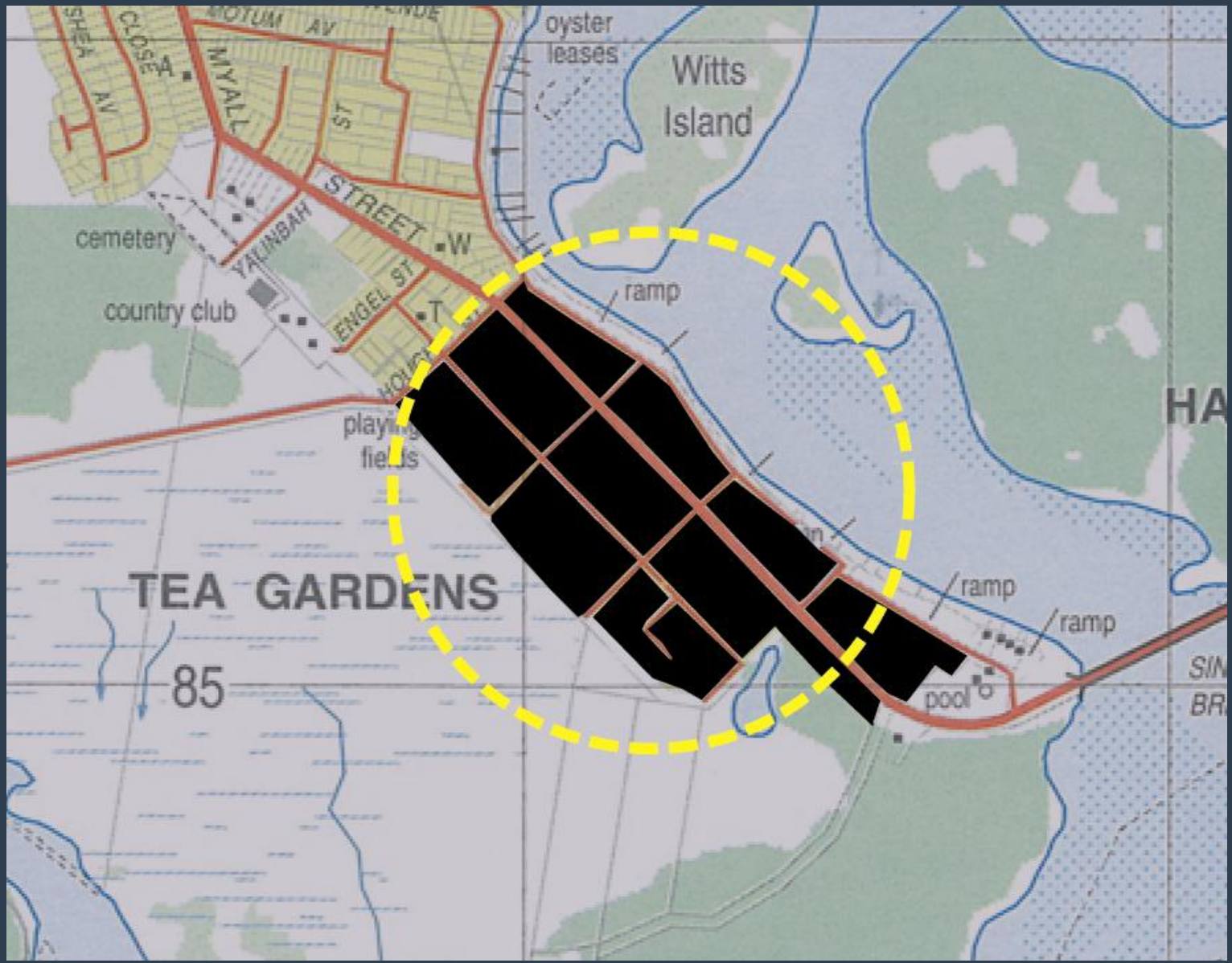
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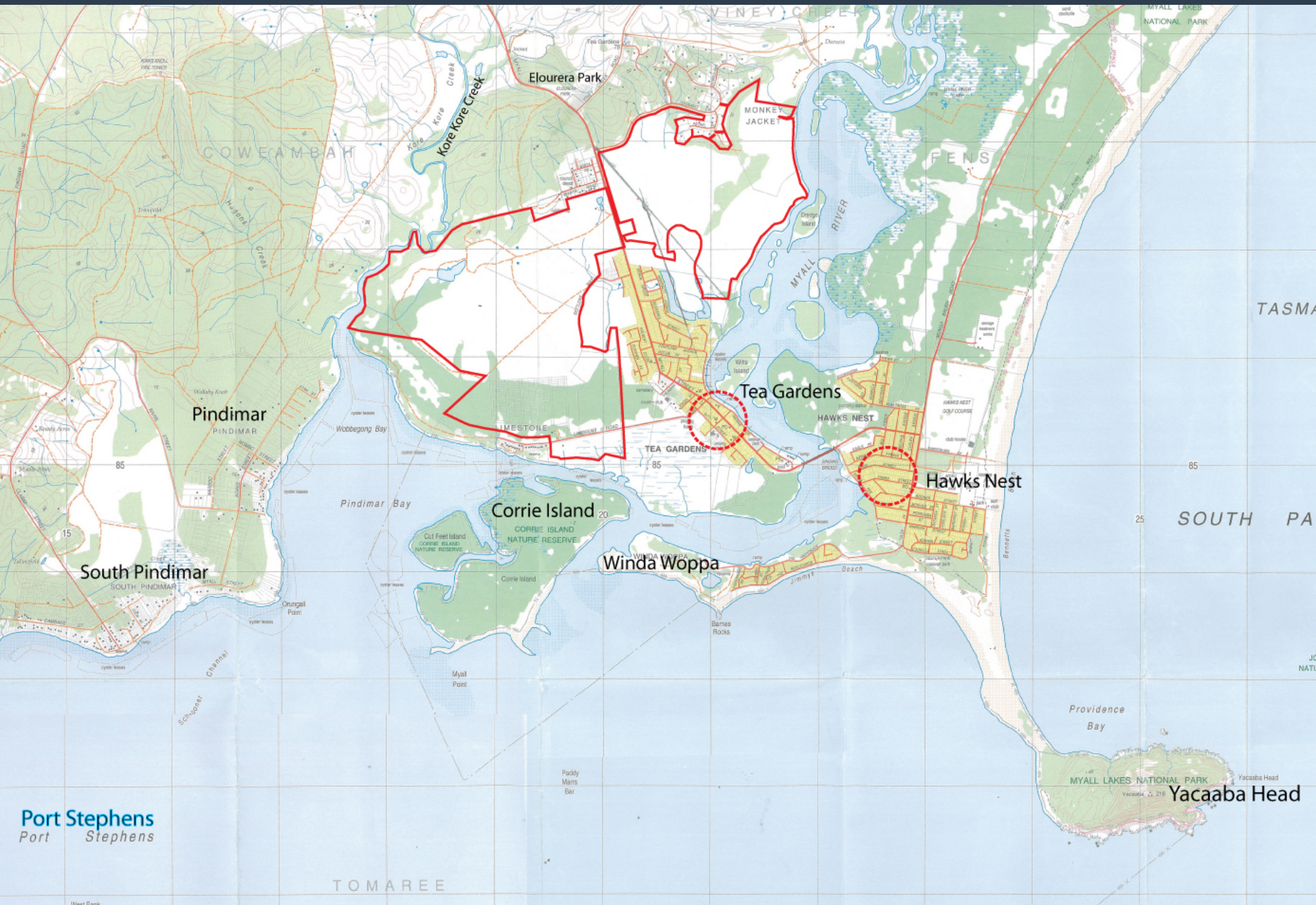
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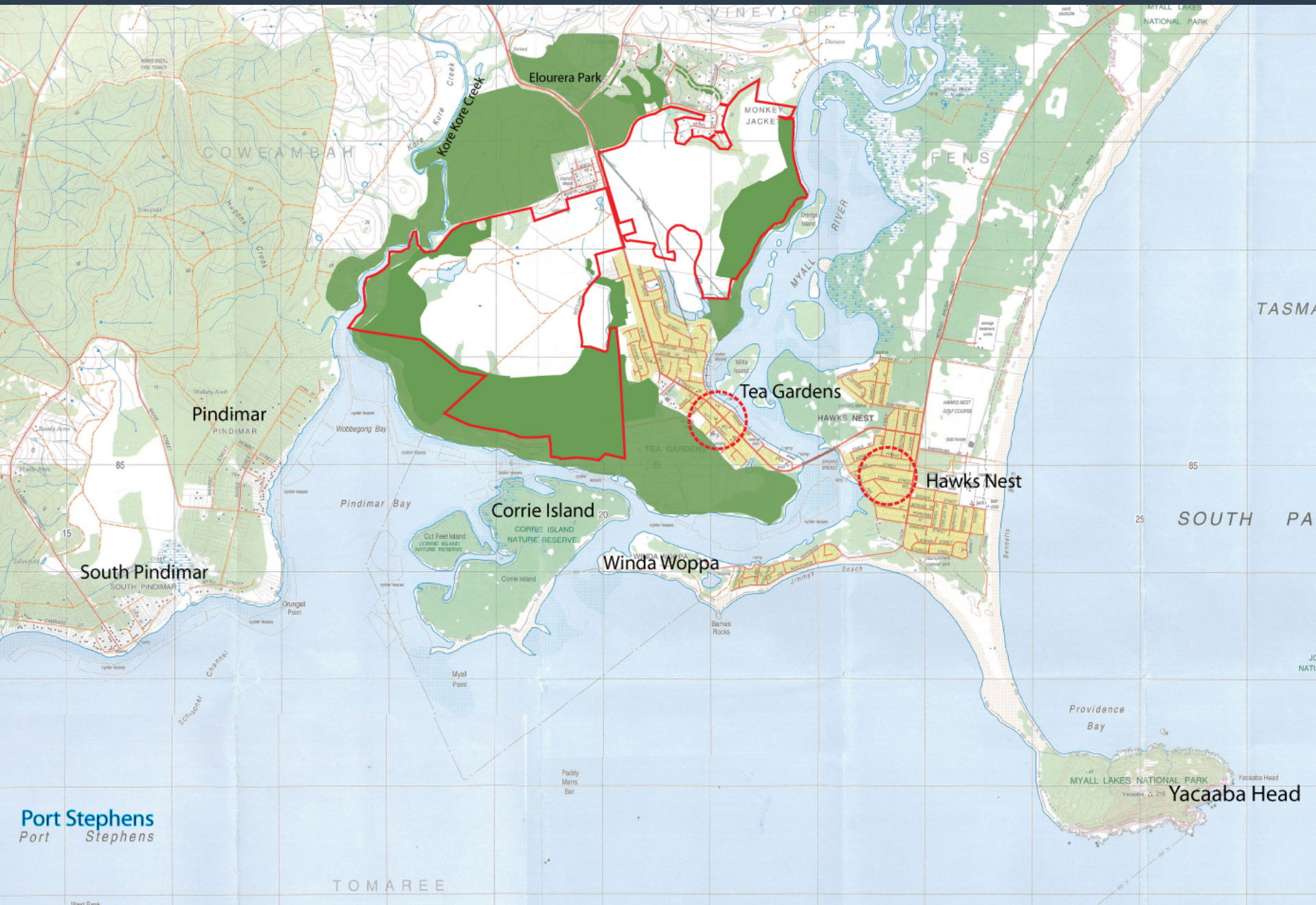
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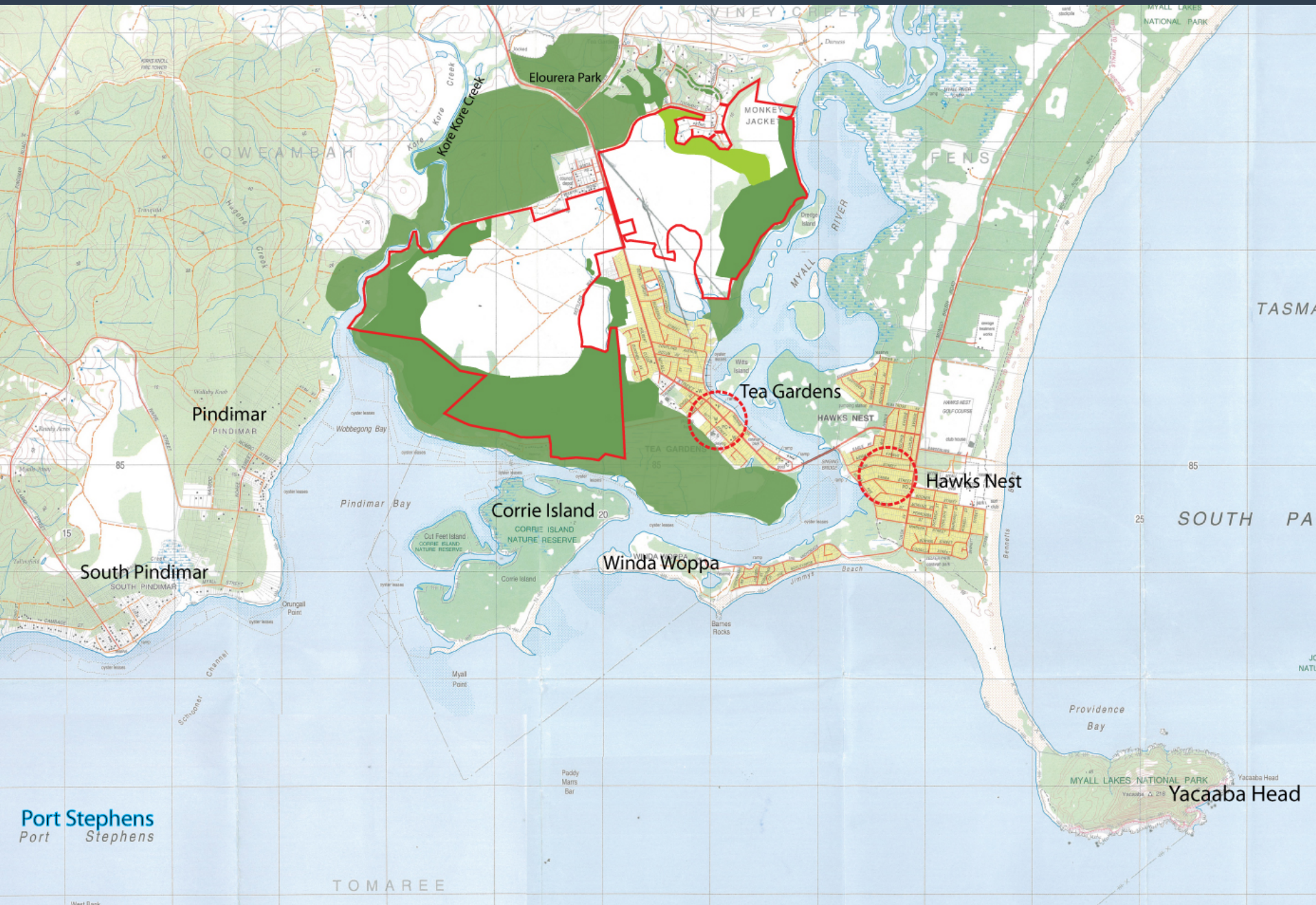
COMMUNITY CHALLENGE - CRIGHTON LANDHOLDINGS



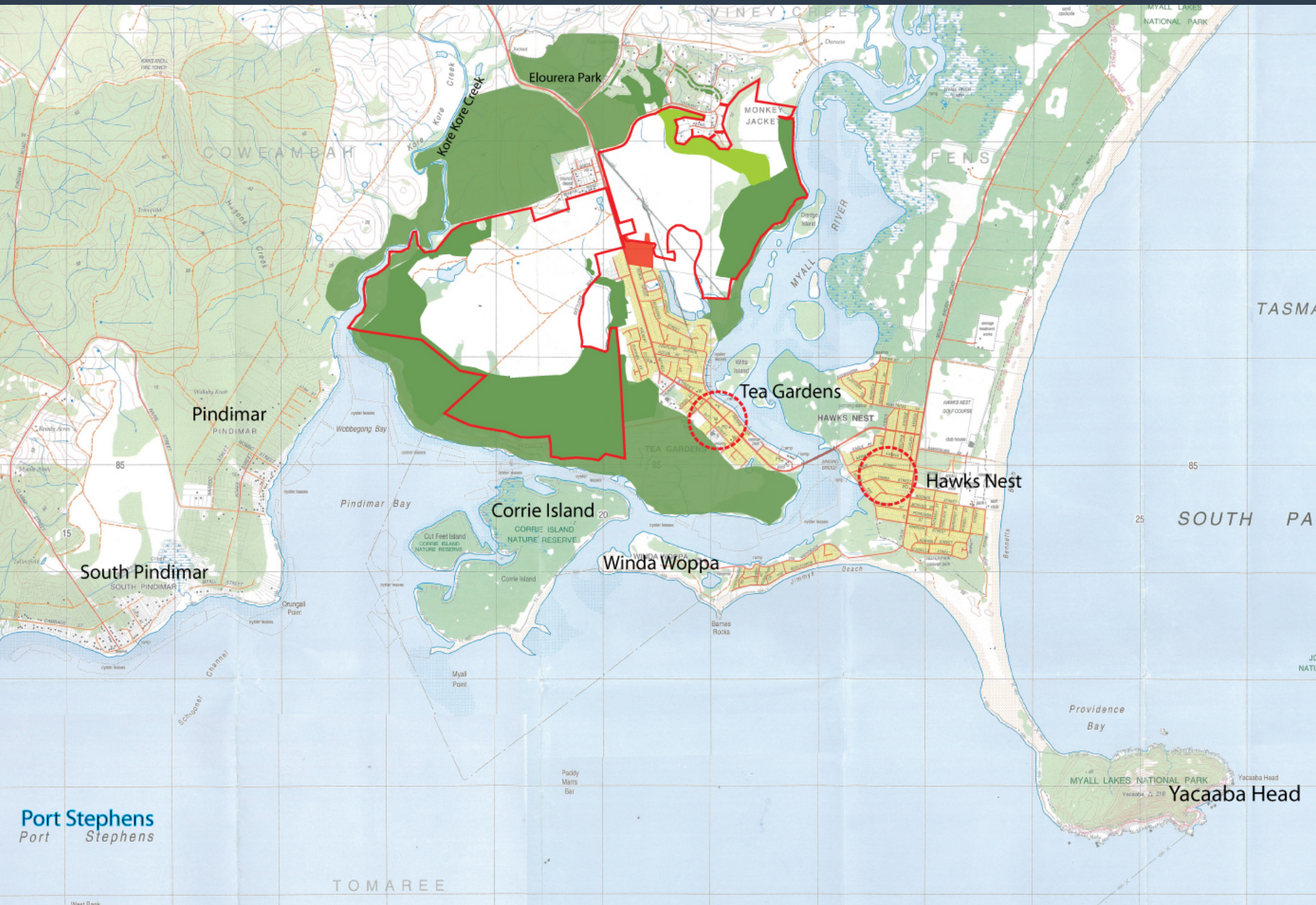
COMMUNITY CHALLENGE - ENVIRONMENT



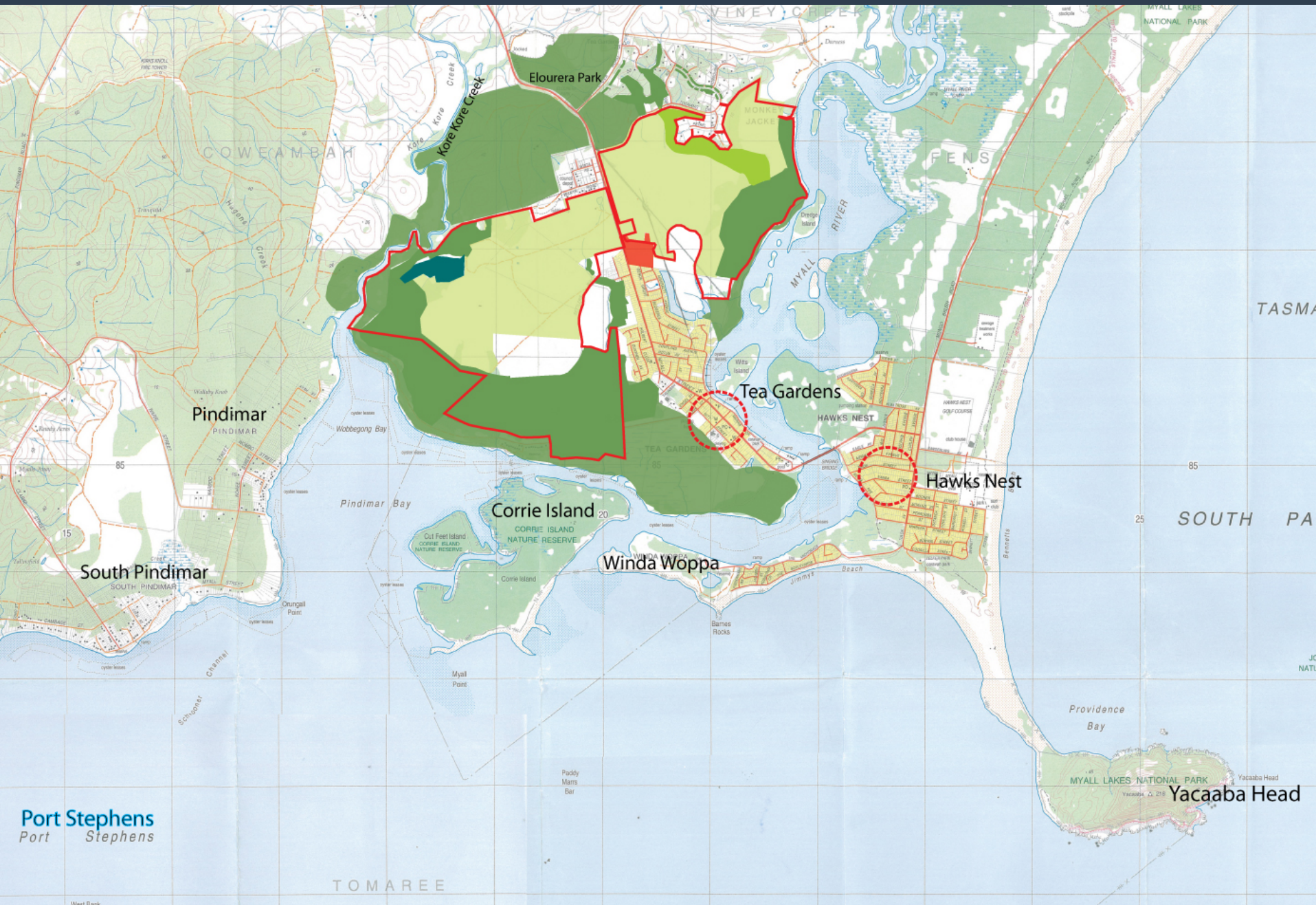
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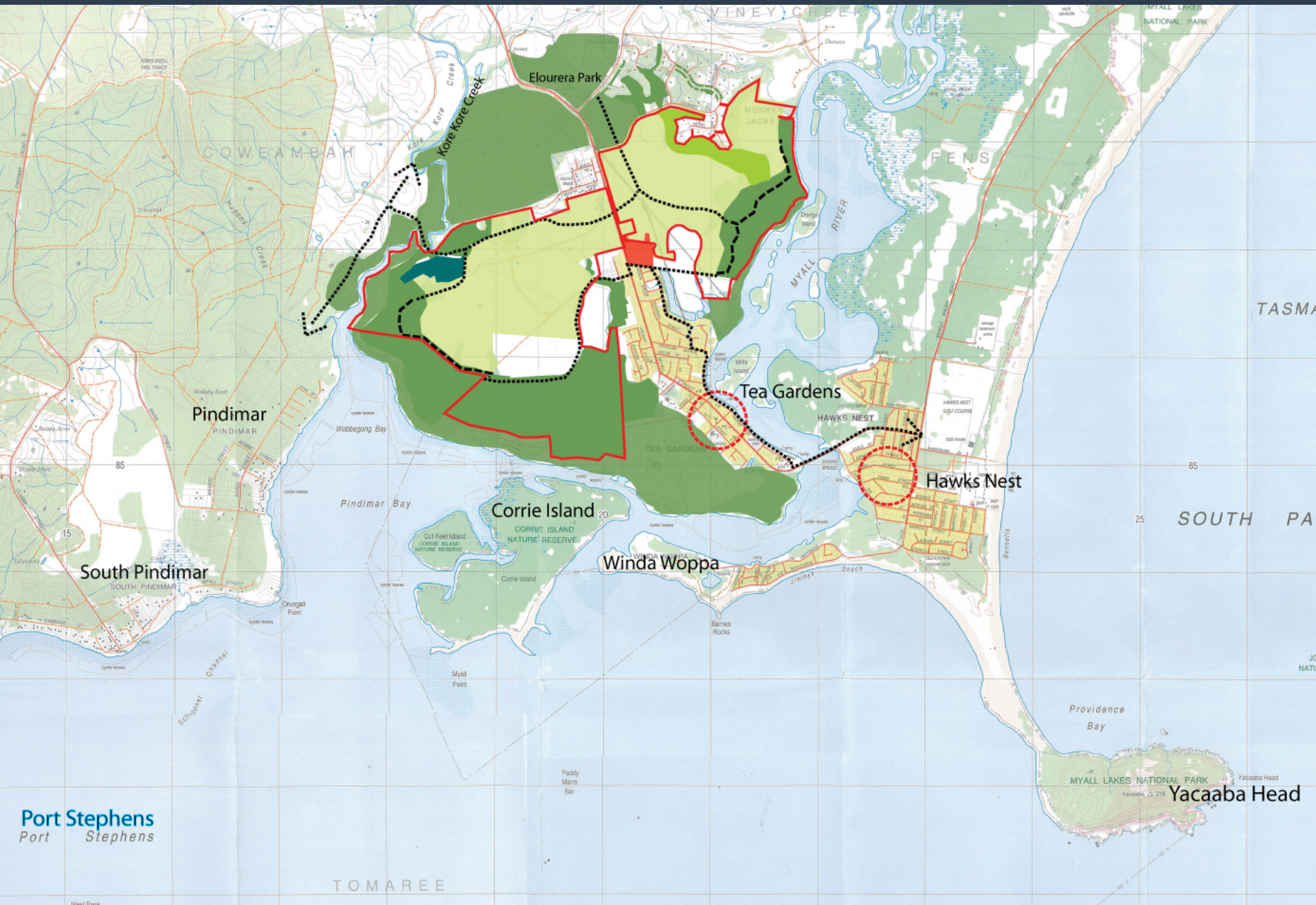
COMMUITY CHALLENGE – ENERGISED CENTRE



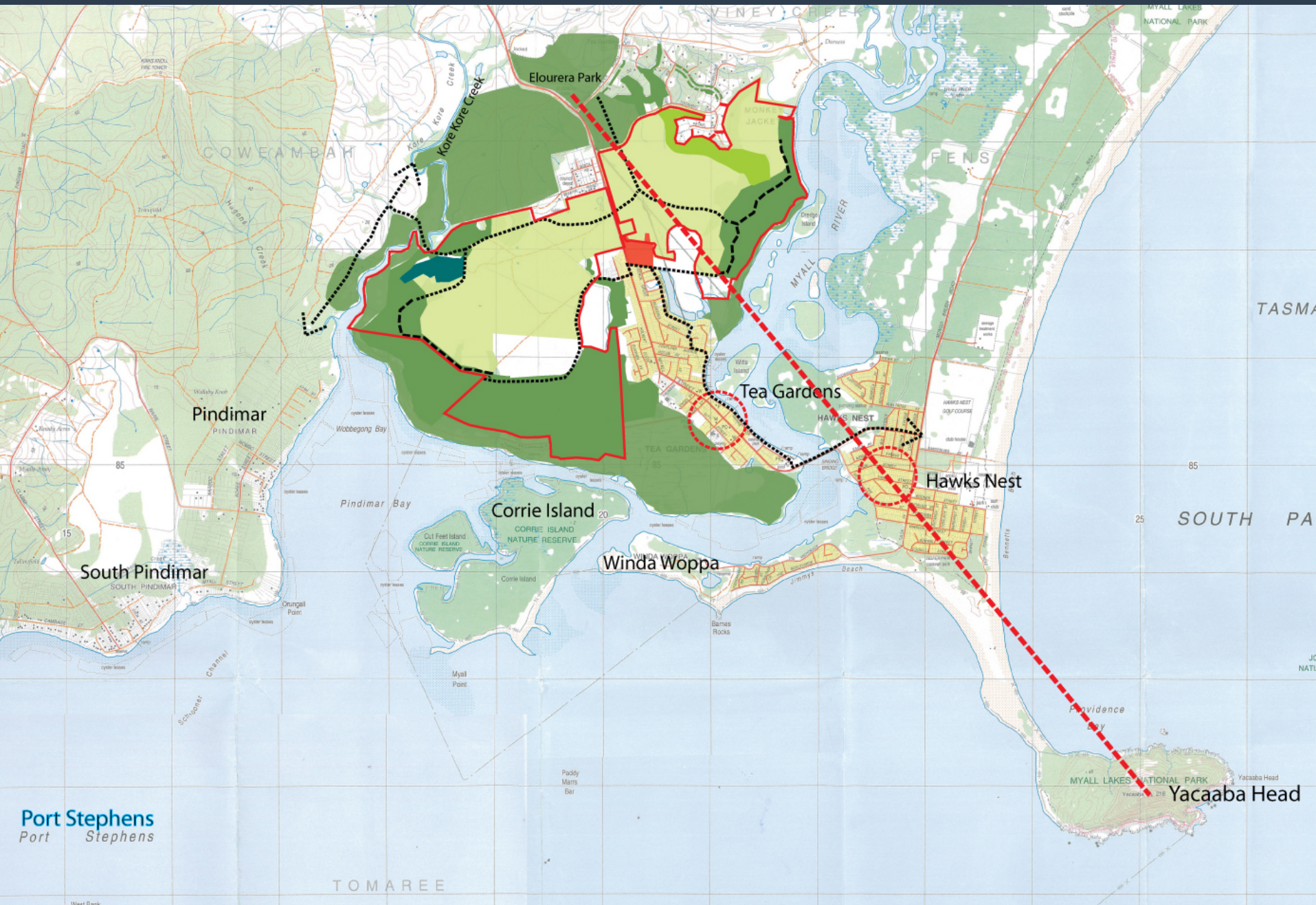
COMMUNITY CHALLENGE – CONNECTED COMMUNITY



COMMUNITY CHALLENGE – CONNECTED PATHWAYS & TRAILS



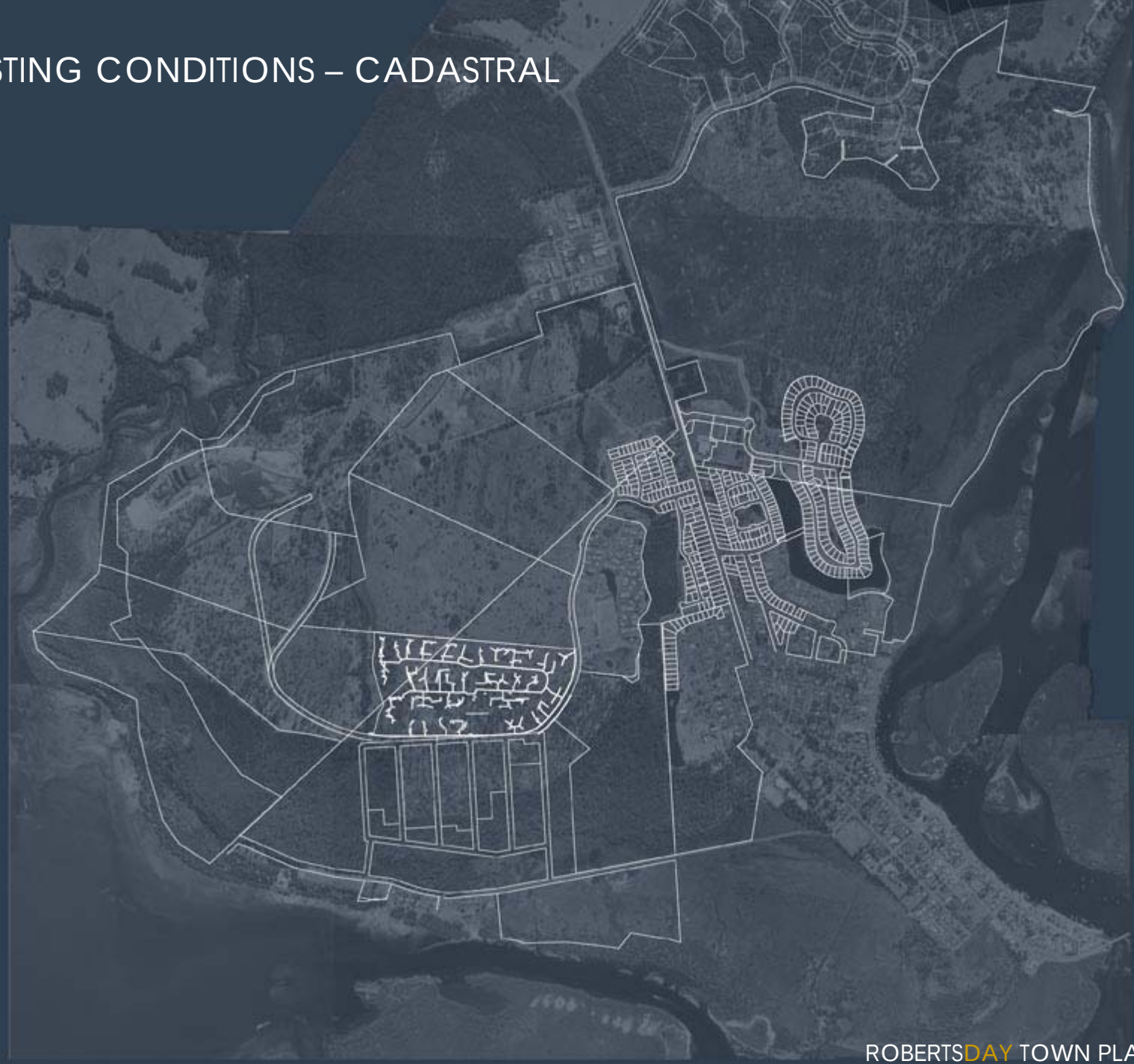
COMMUNITY CHALLENGE – CONNECTING TO THE LANDSCAPE



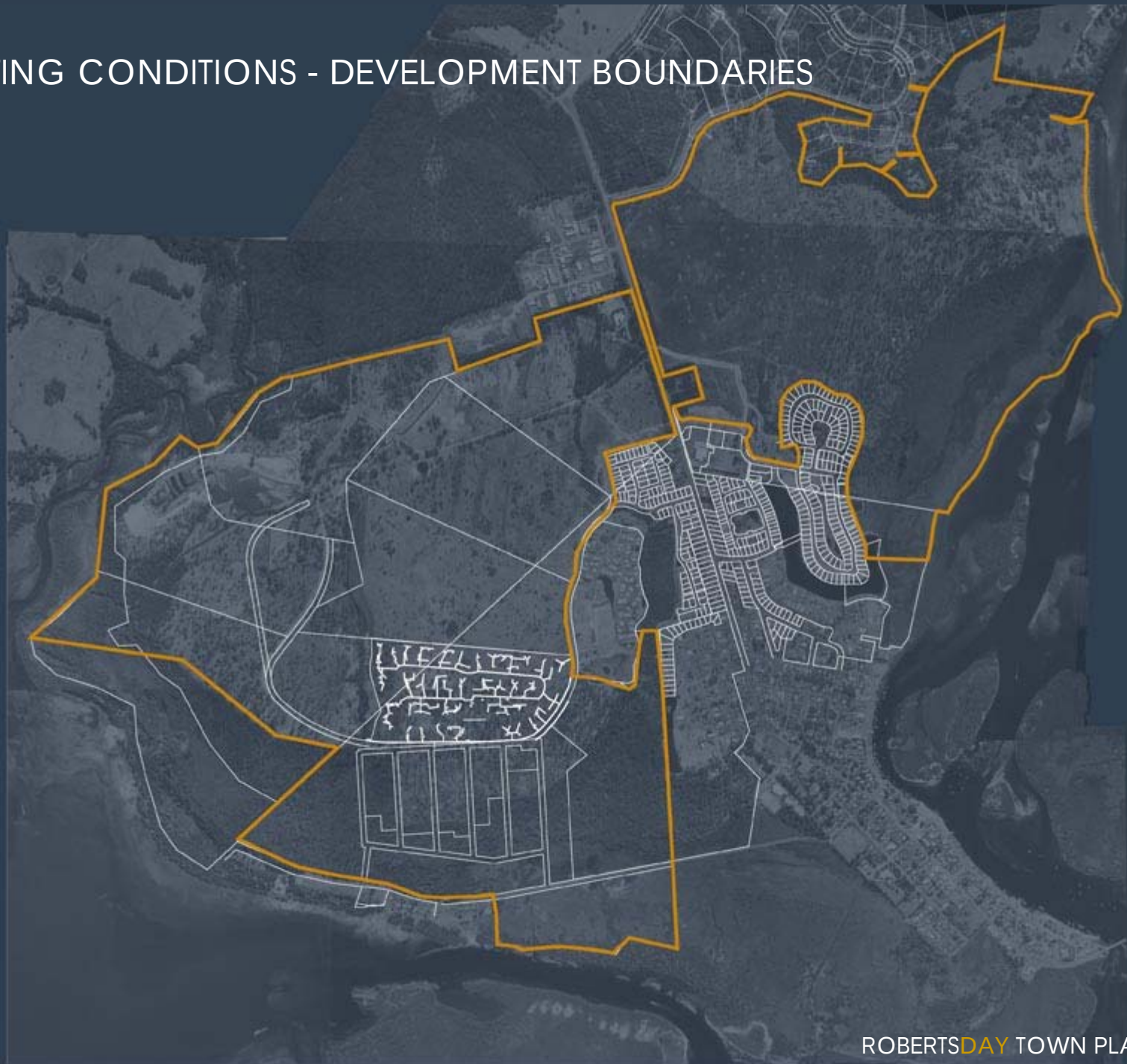
EXISTING CONDITIONS



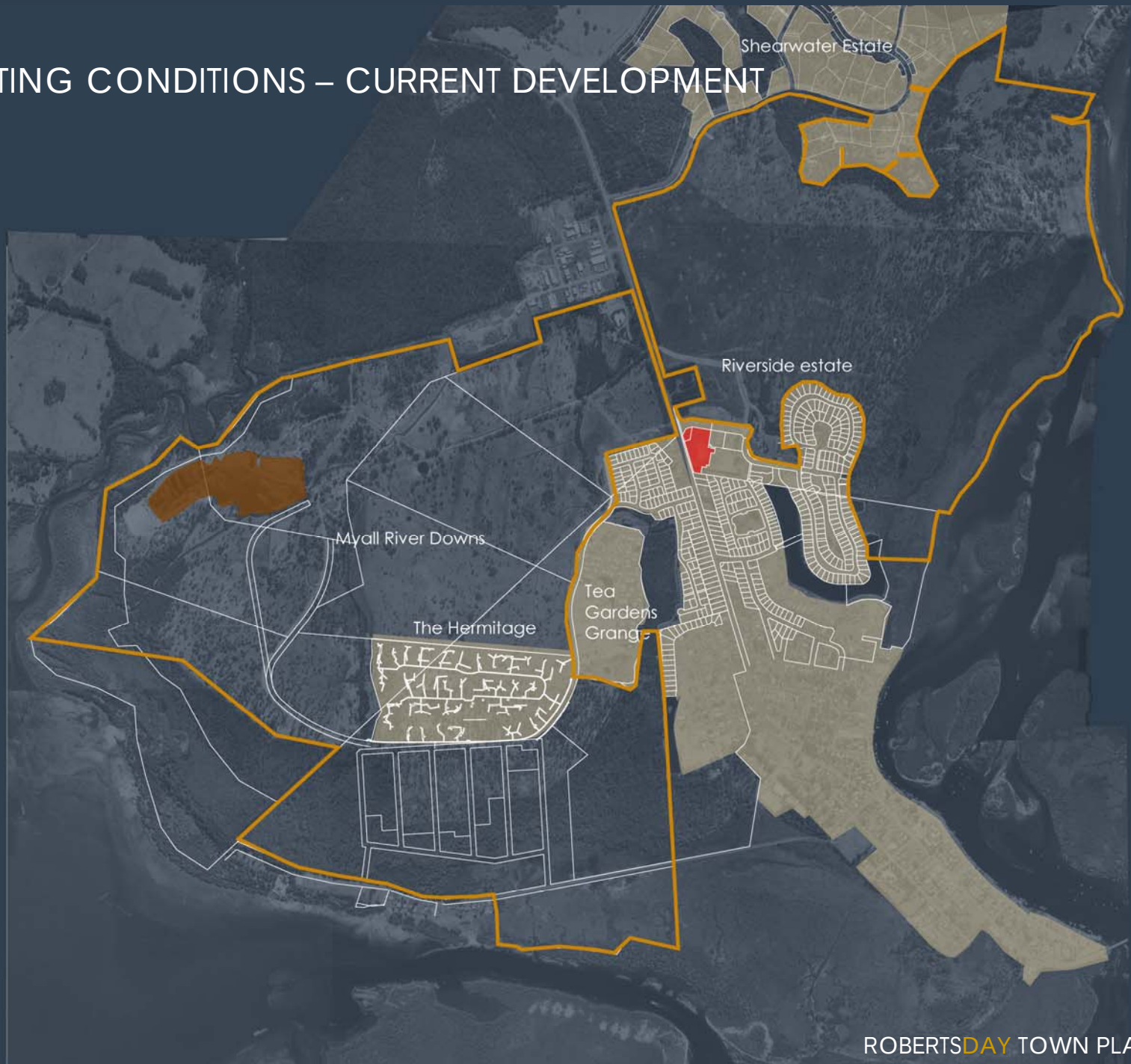
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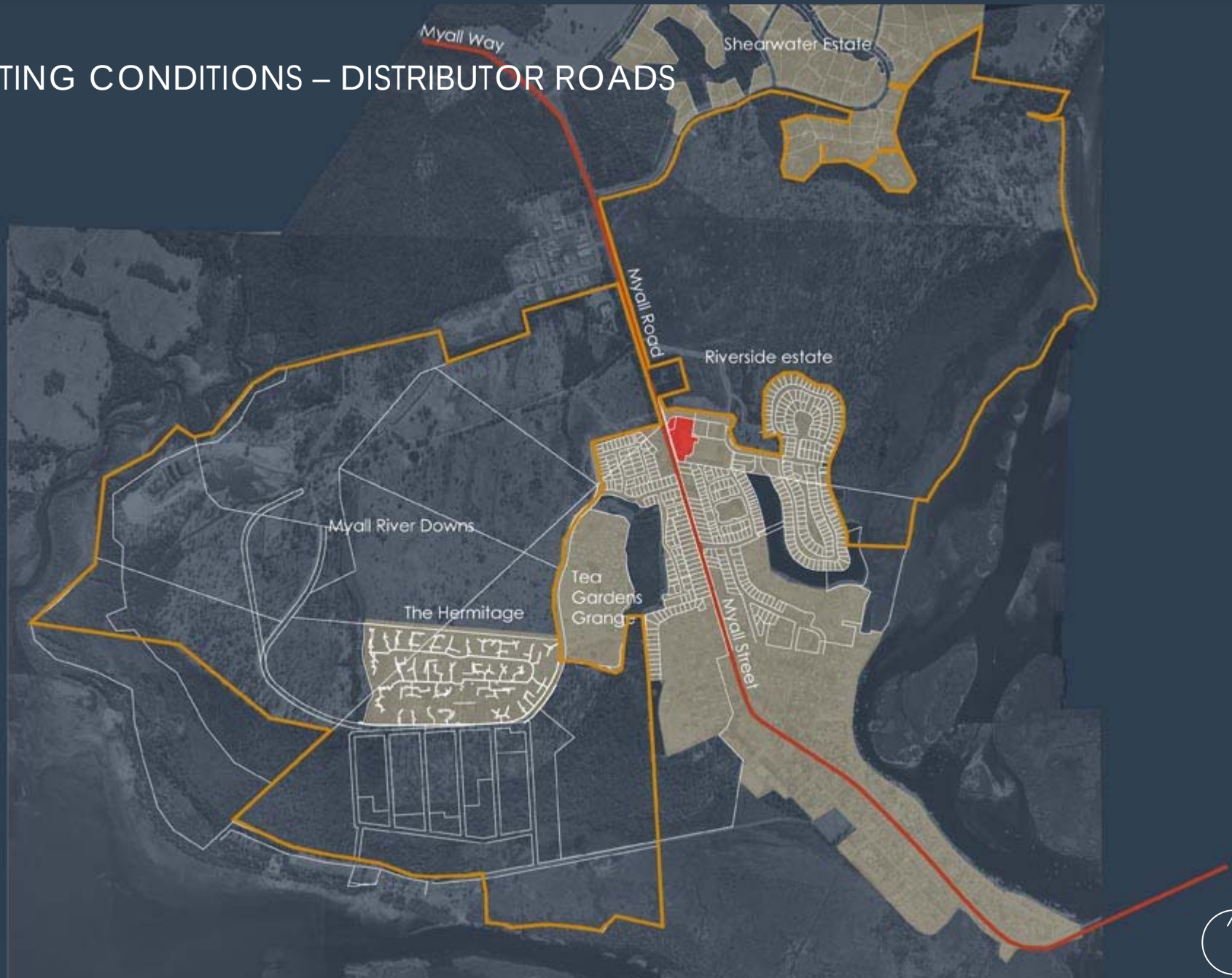
EXISTING CONDITIONS - DEVELOPMENT BOUNDARIES



EXISTING CONDITIONS – CURRENT DEVELOPMENT



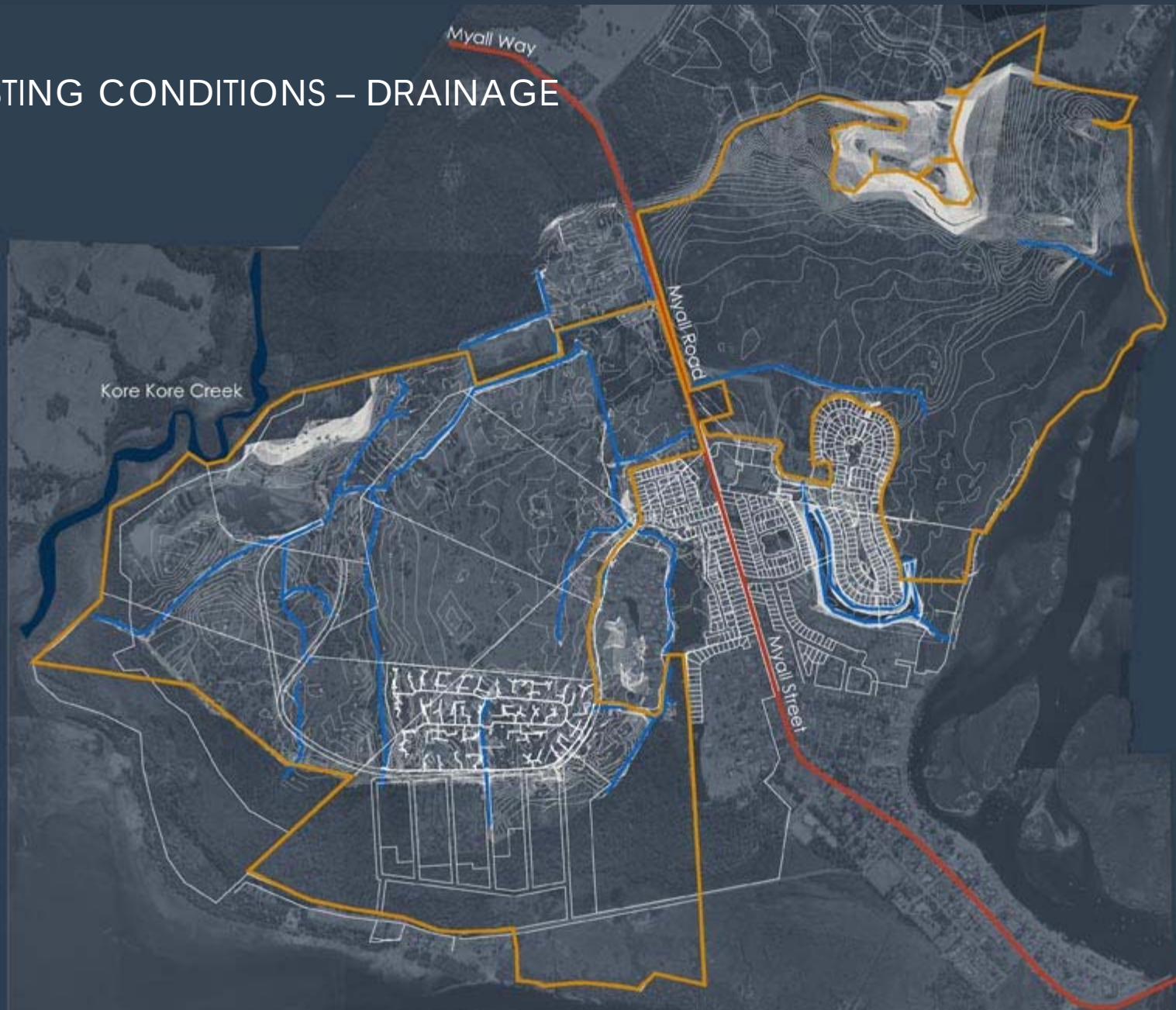
EXISTING CONDITIONS – DISTRIBUTOR ROADS



EXISTING CONDITIONS – TOPOGRAPHY



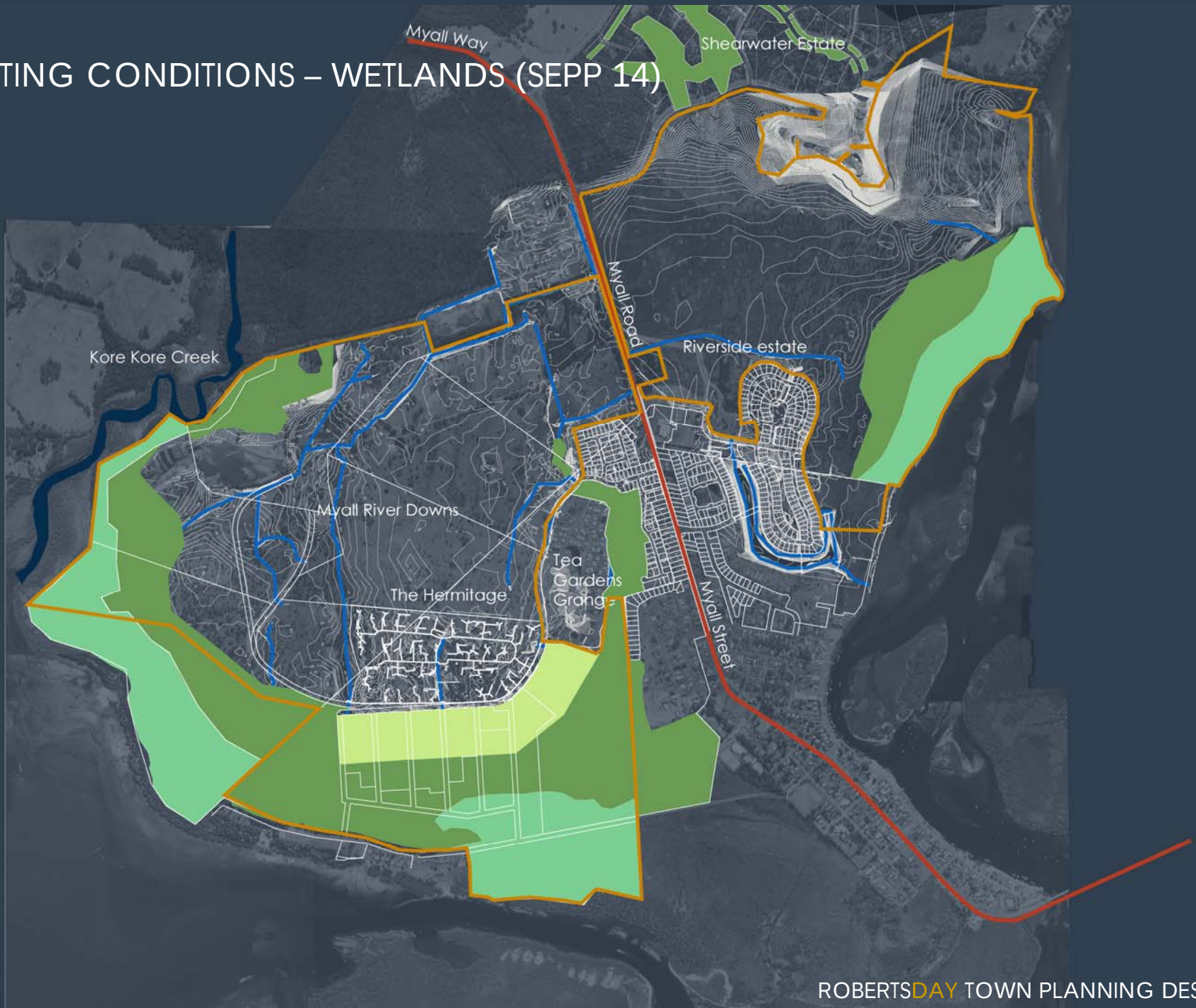
EXISTING CONDITIONS – DRAINAGE



THE SITE – CONSERVATION



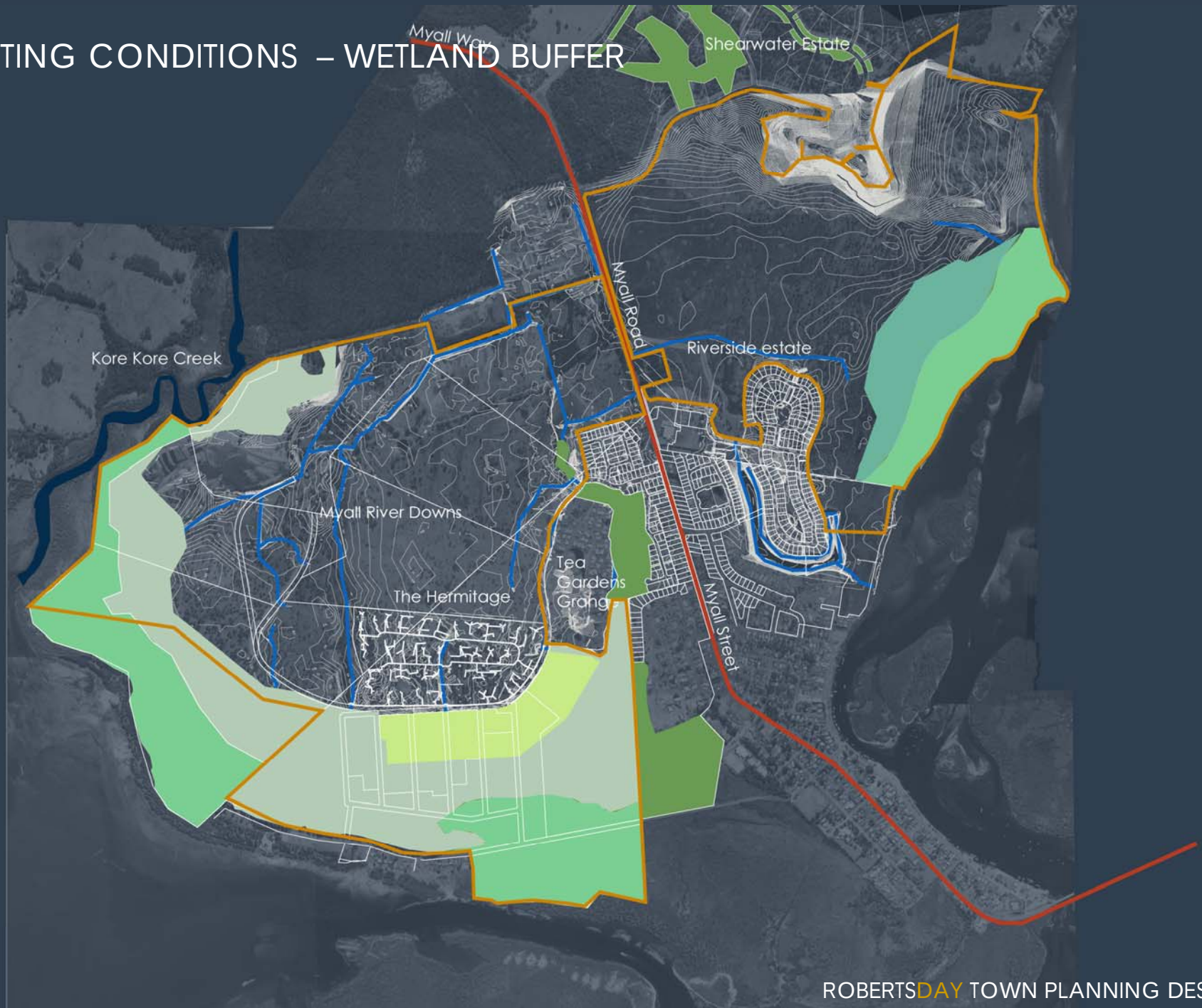
EXISTING CONDITIONS – WETLANDS (SEPP 14)



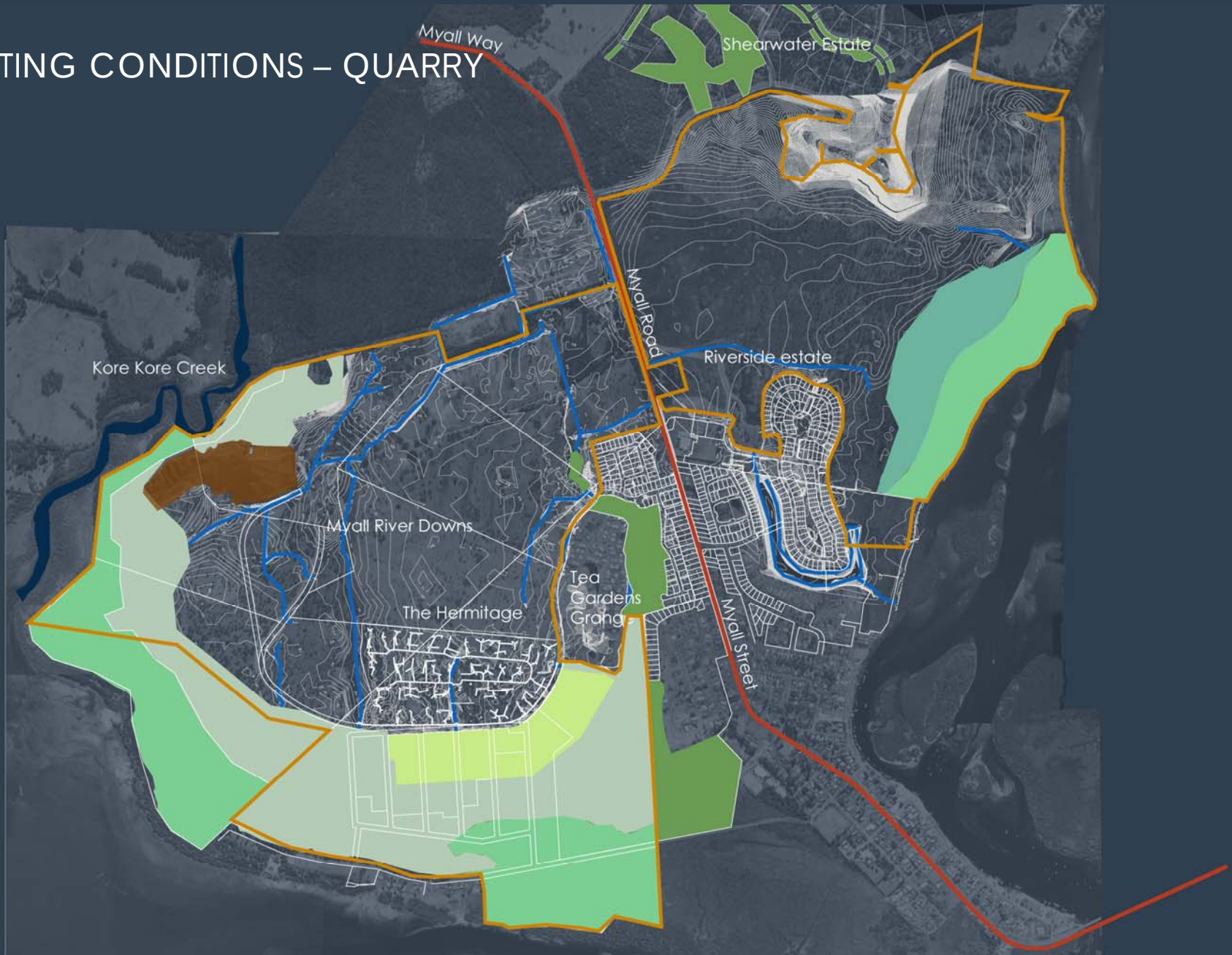
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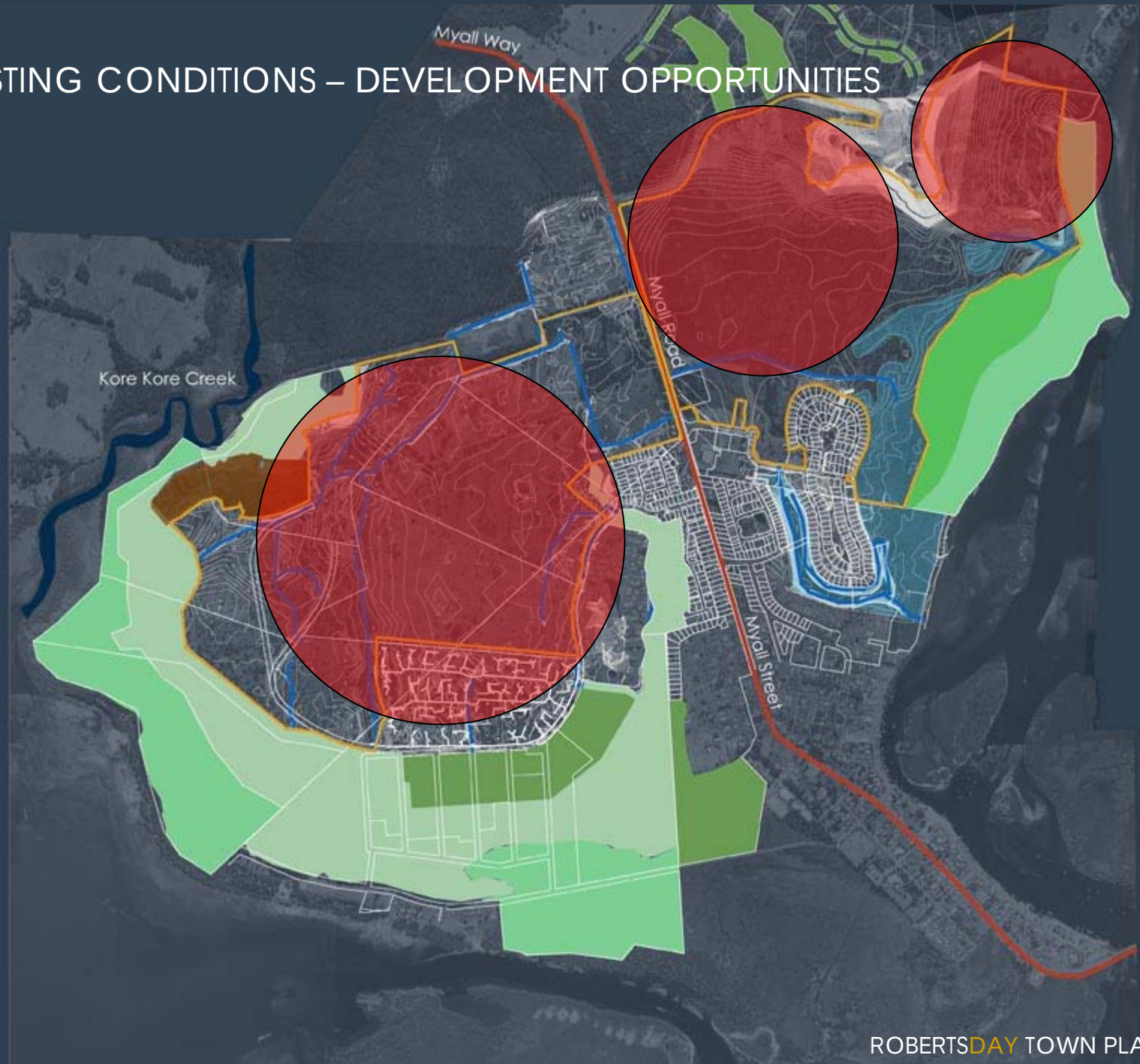
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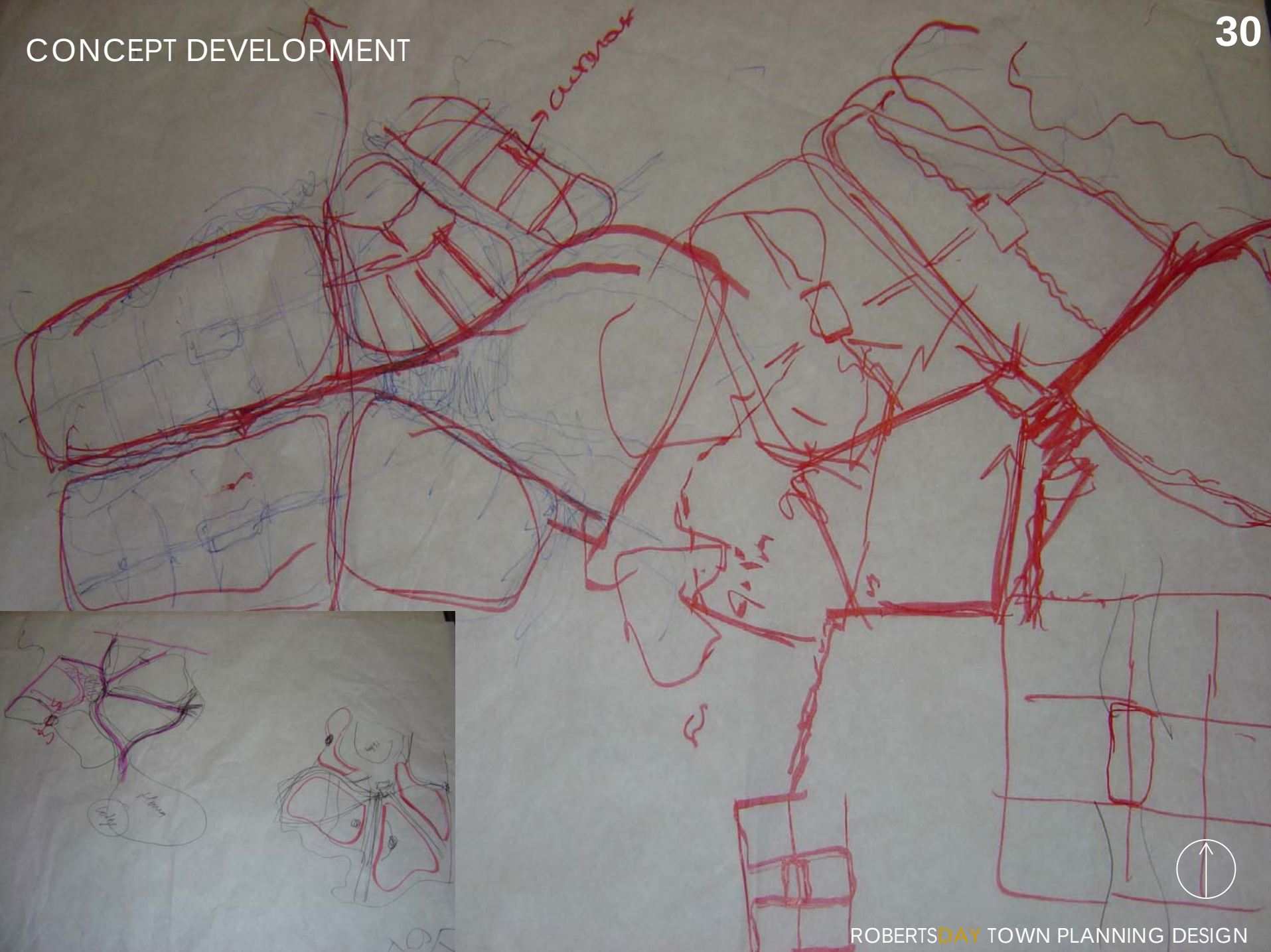
EXISTING CONDITIONS – QUARRY



EXISTING CONDITIONS – DEVELOPMENT OPPORTUNITIES



CONCEPT DEVELOPMENT



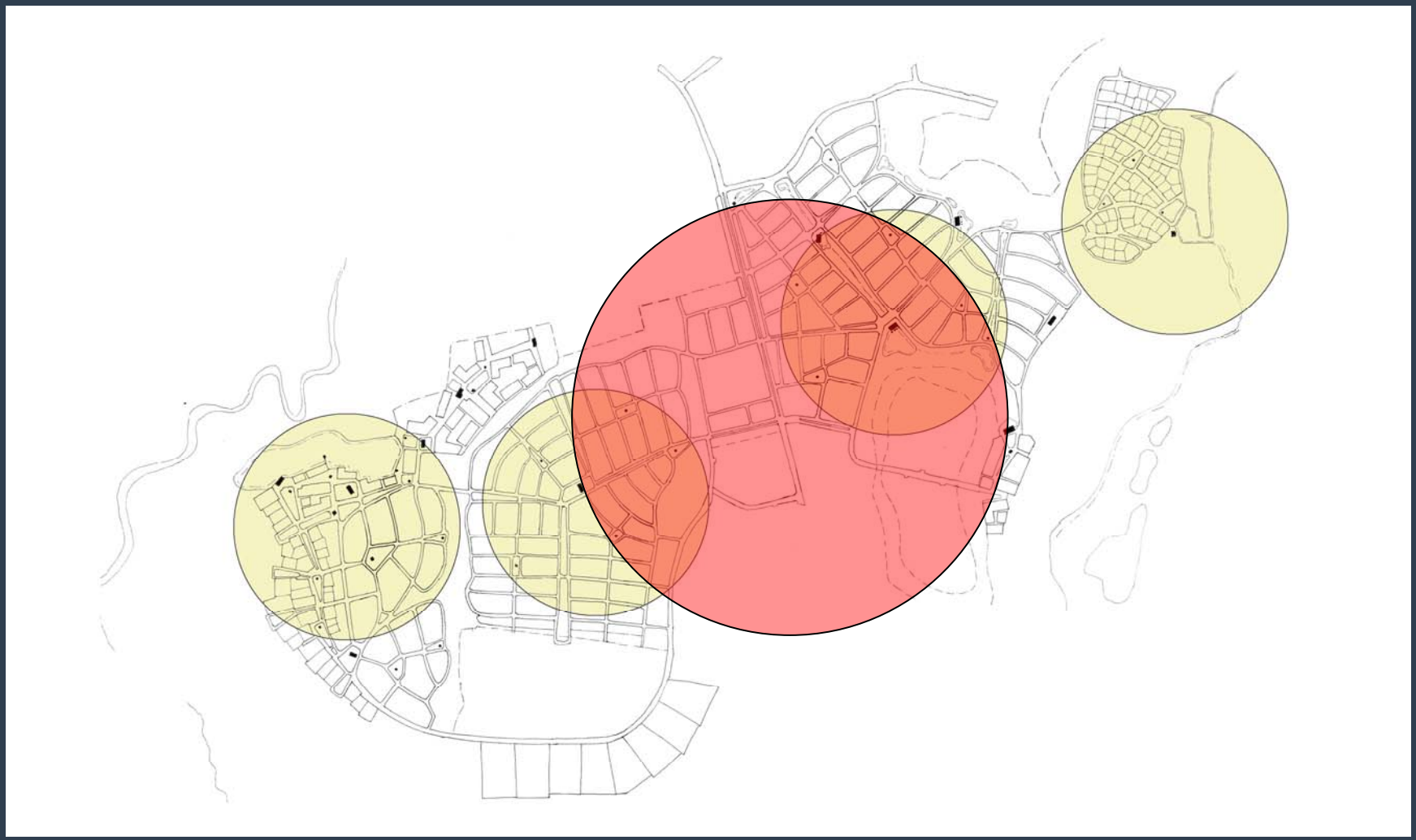
THE MASTER PLAN



NEIGHBOURHOOD STRUCTURE



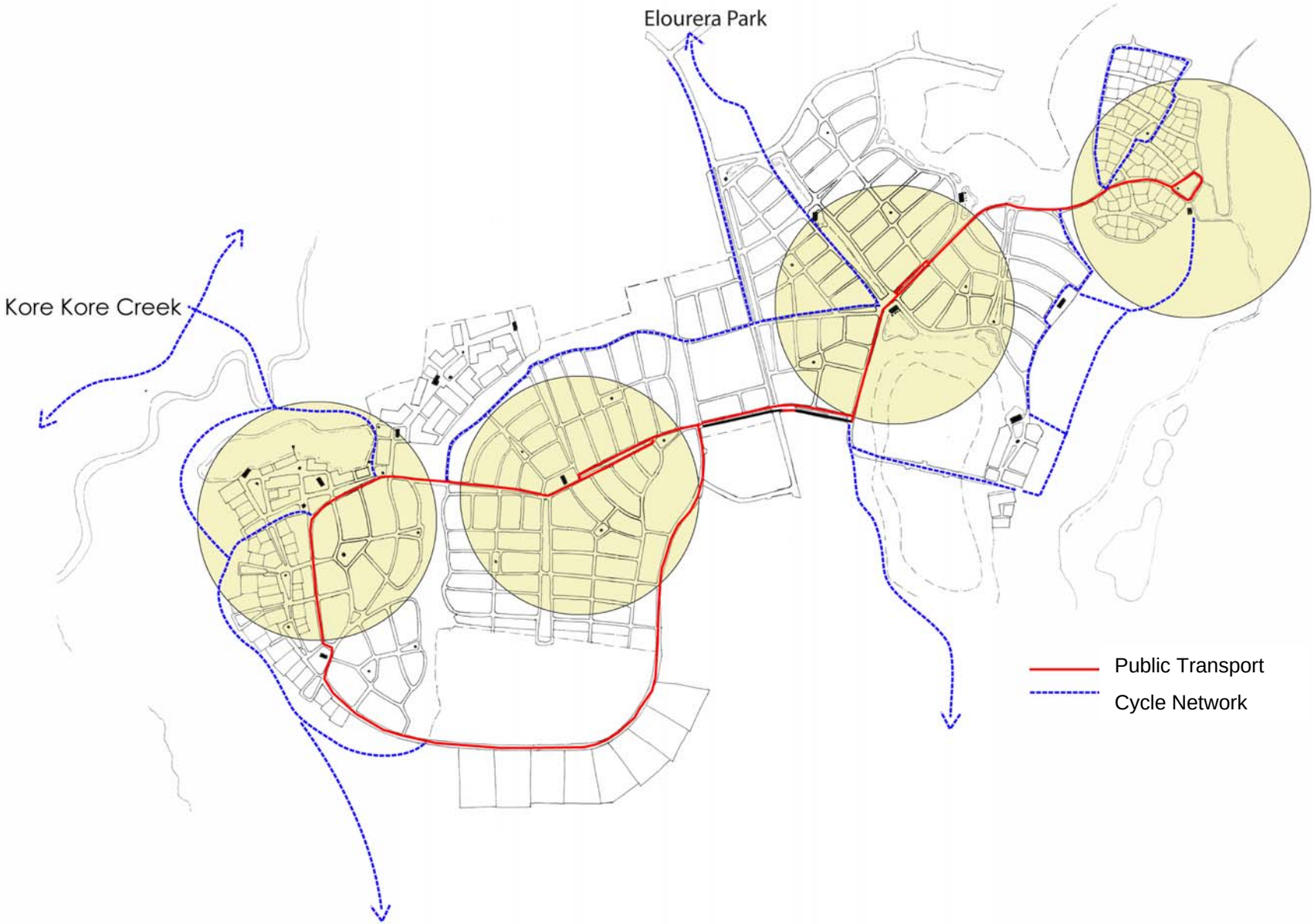
NEIGHBOURHOOD STRUCTURE - A WALKABLE CENTRE



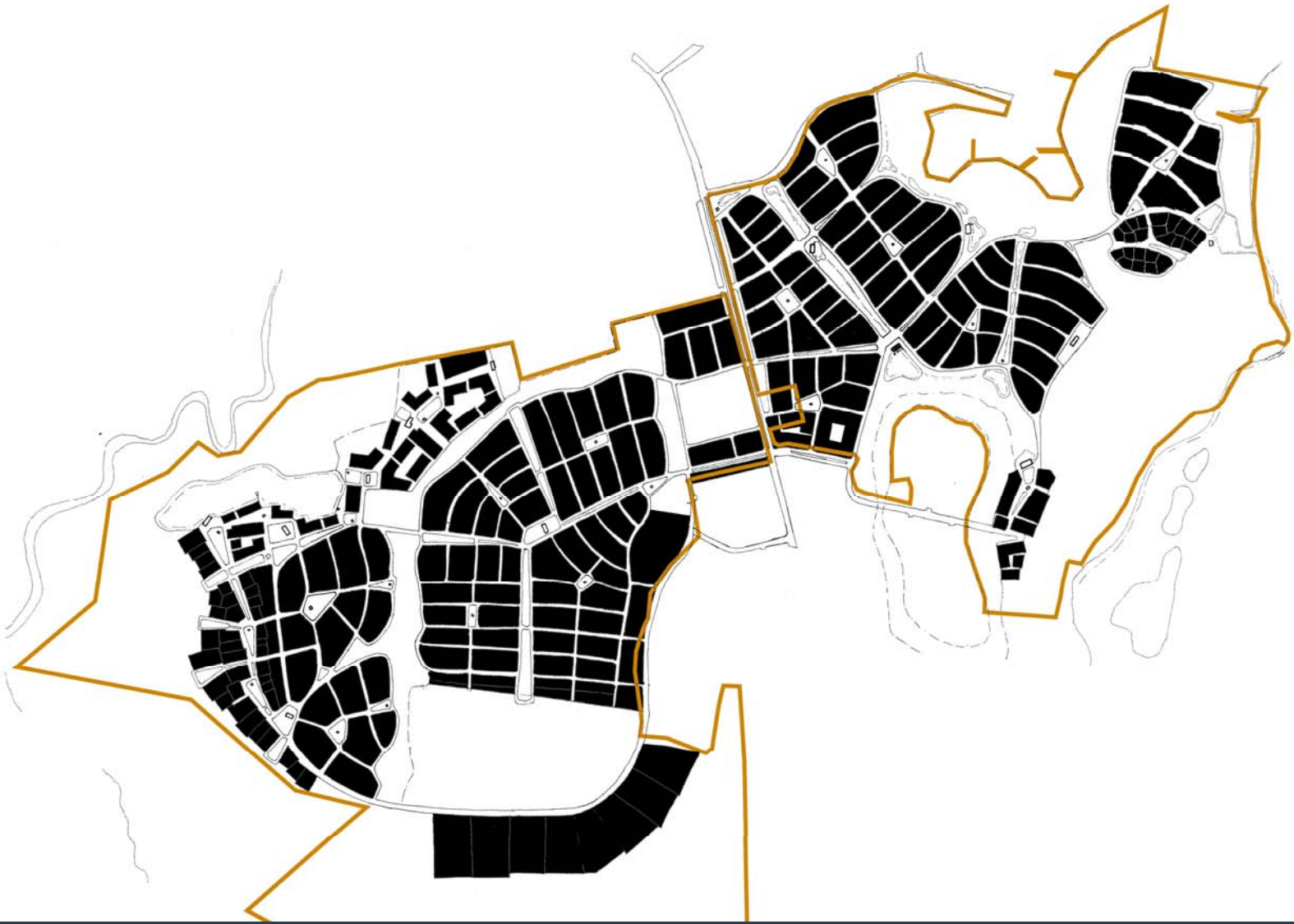




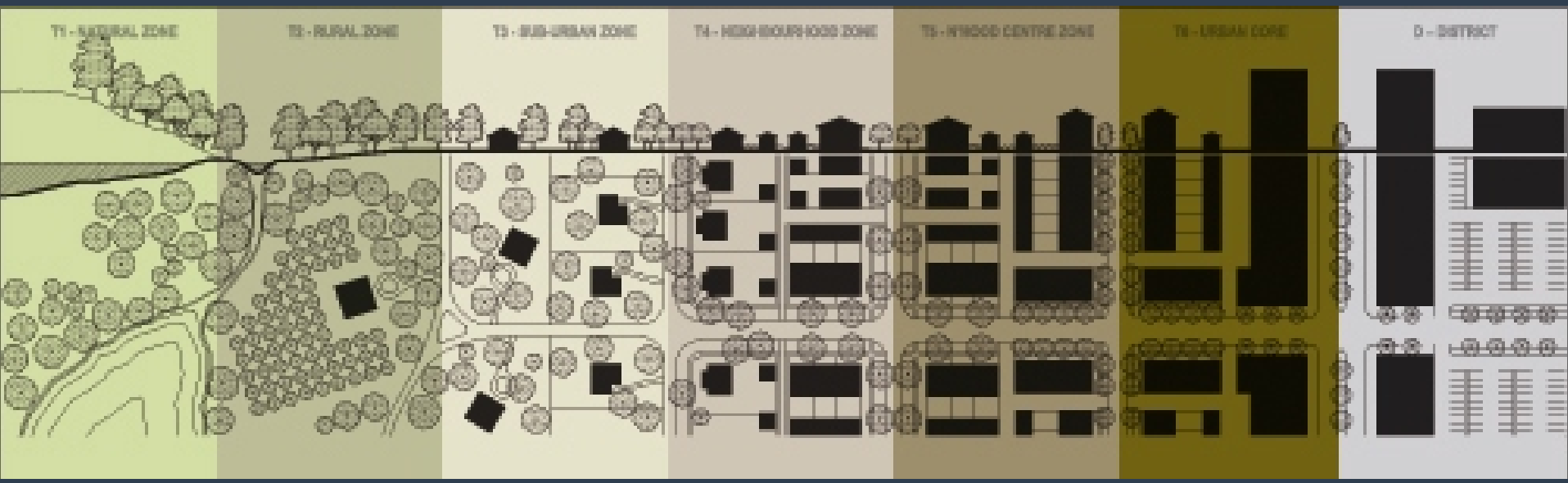



Elourera Park
Kore Kore Creek
Public Transport
Cycle Network





THE TRANSECT – CREATING AN AUTHENTIC COASTAL CHARACTER









T1 – NATURAL ZONE







T2 – RURAL ZONE: LOCAL PRECEDENT







T2 – RURAL ZONE: CONTEMPORARY INTERPRETATION





T2 – RURAL ZONE: ECO-LODGE



T2 – RURAL ZONE: ECO-VILLAGE







T3 – SUB URBAN ZONE: LOCAL PRECEDENT @ DOLPHIN ST


T3 – SUB URBAN : ILLAROO ST
50







T4 – URBAN GENERAL: LOCAL PRECEDENT @ MYALL ST

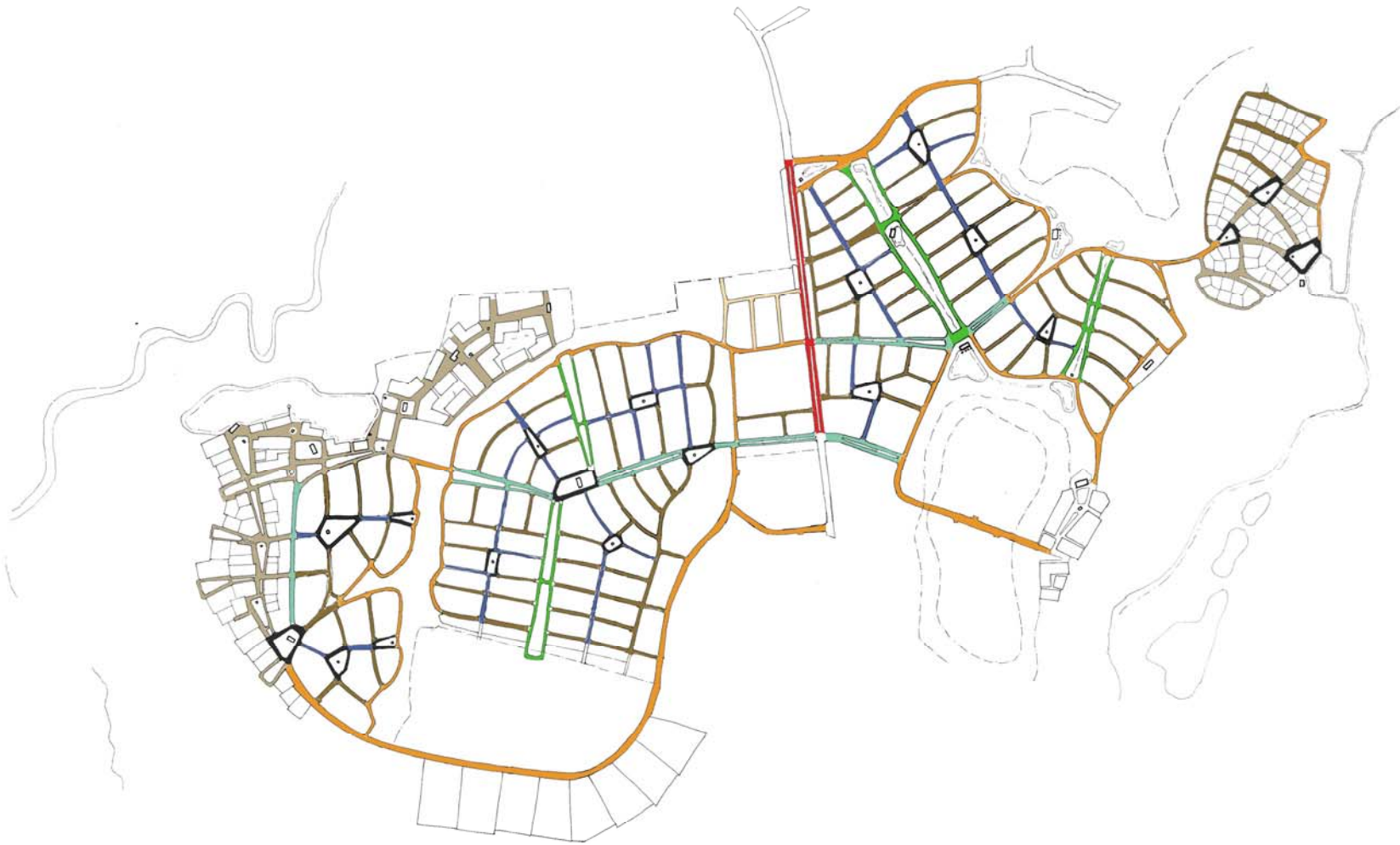


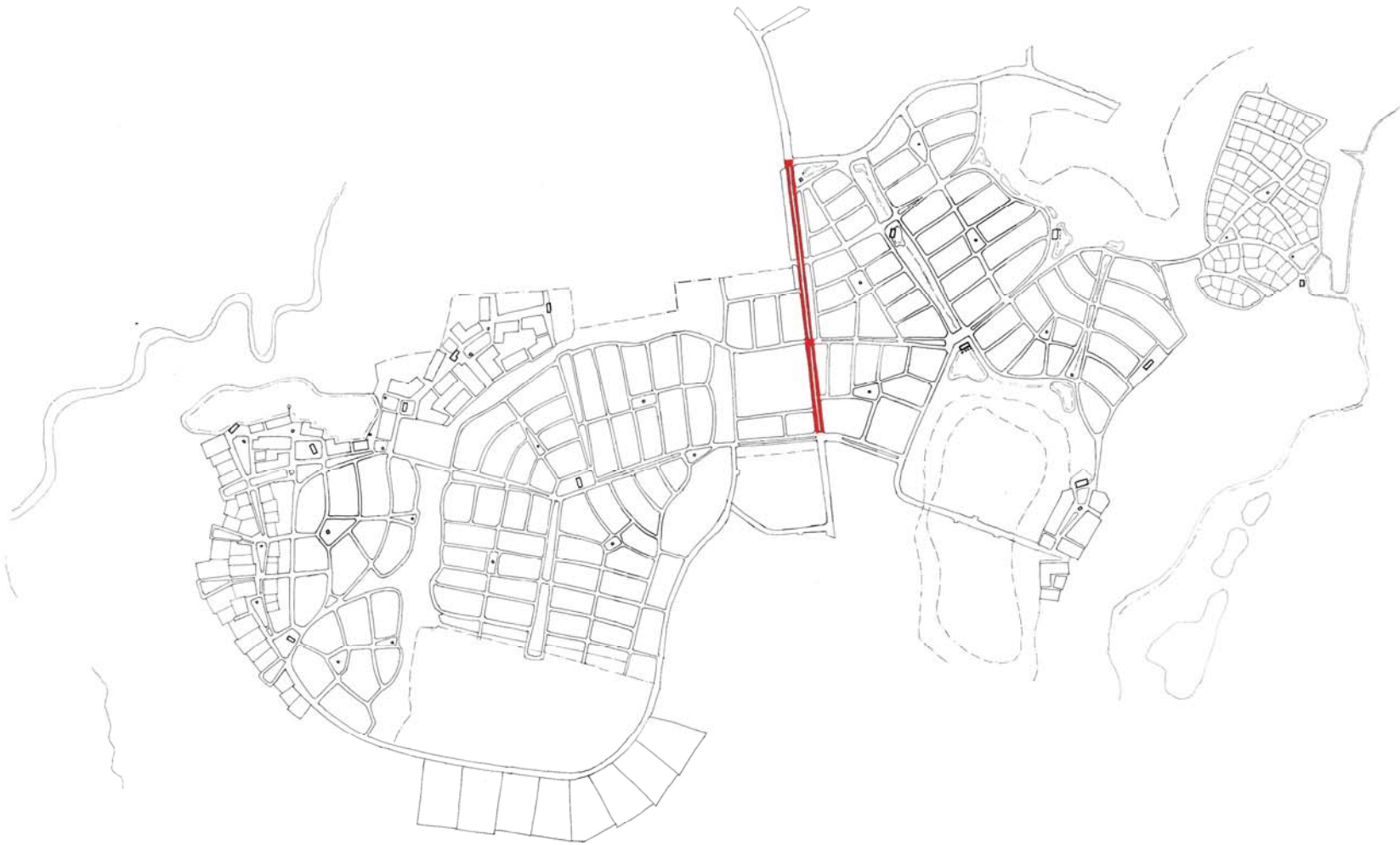




























T2 – RURAL ZONE: RETAINING TREE

AUTHENTIC STREETSCAPE CHARACTER





RURAL.....URBAN

AUTHENTIC STREETSCAPE CHARACTER





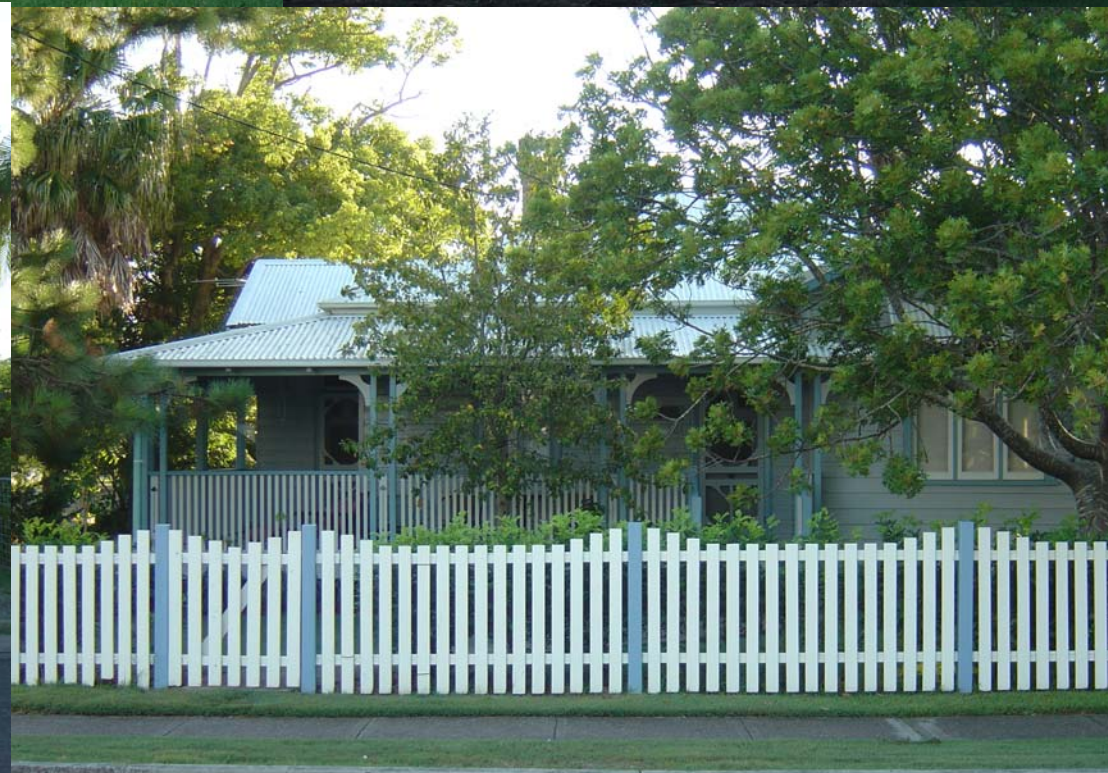
RURAL.....URBAN

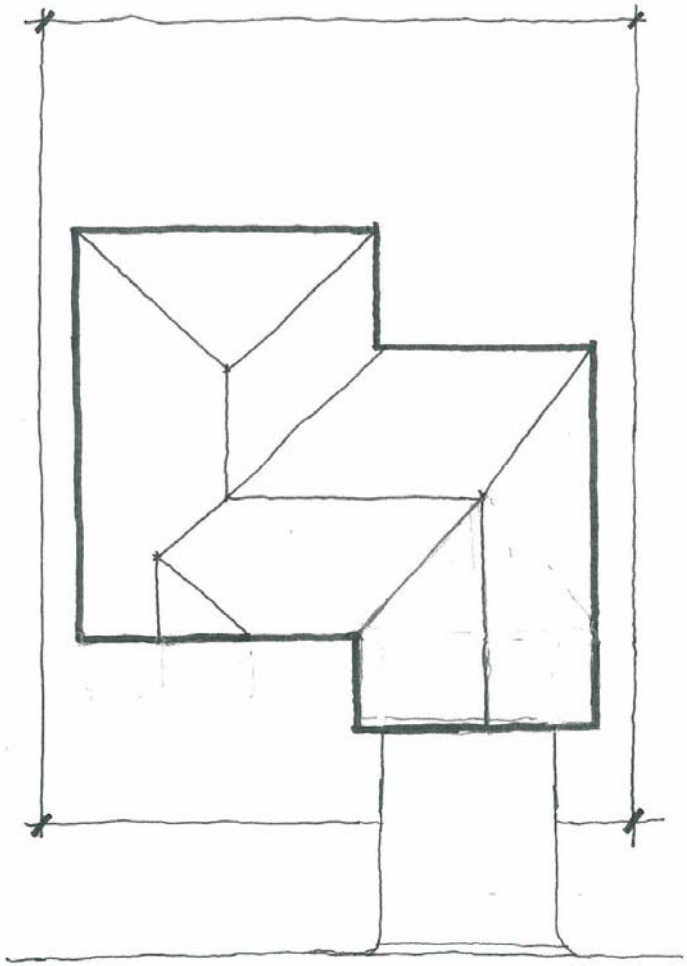


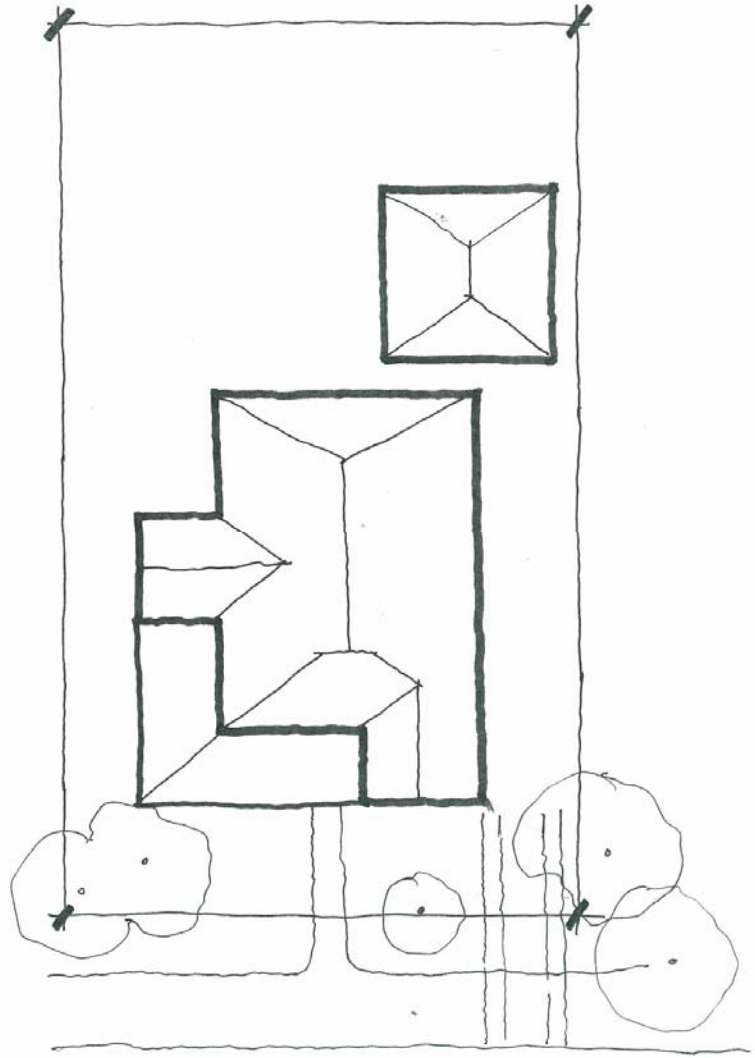


TRADITIONAL COASTAL ARCHITECTURE

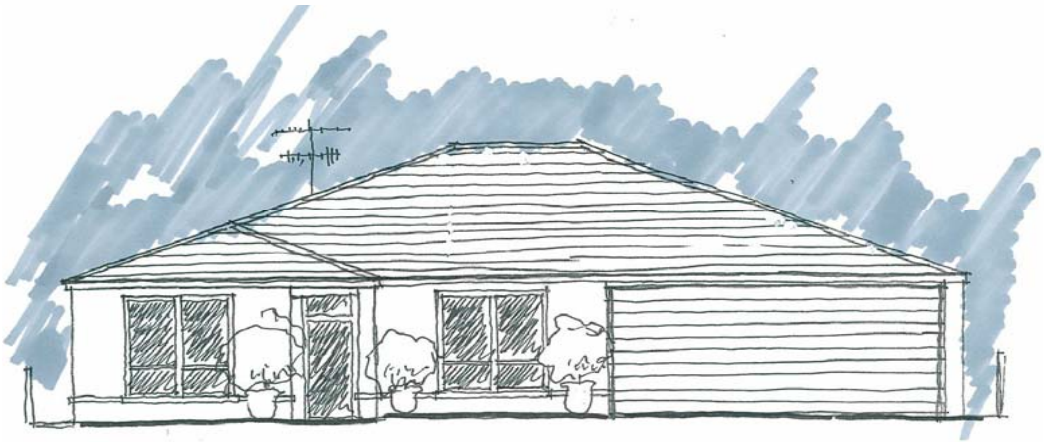


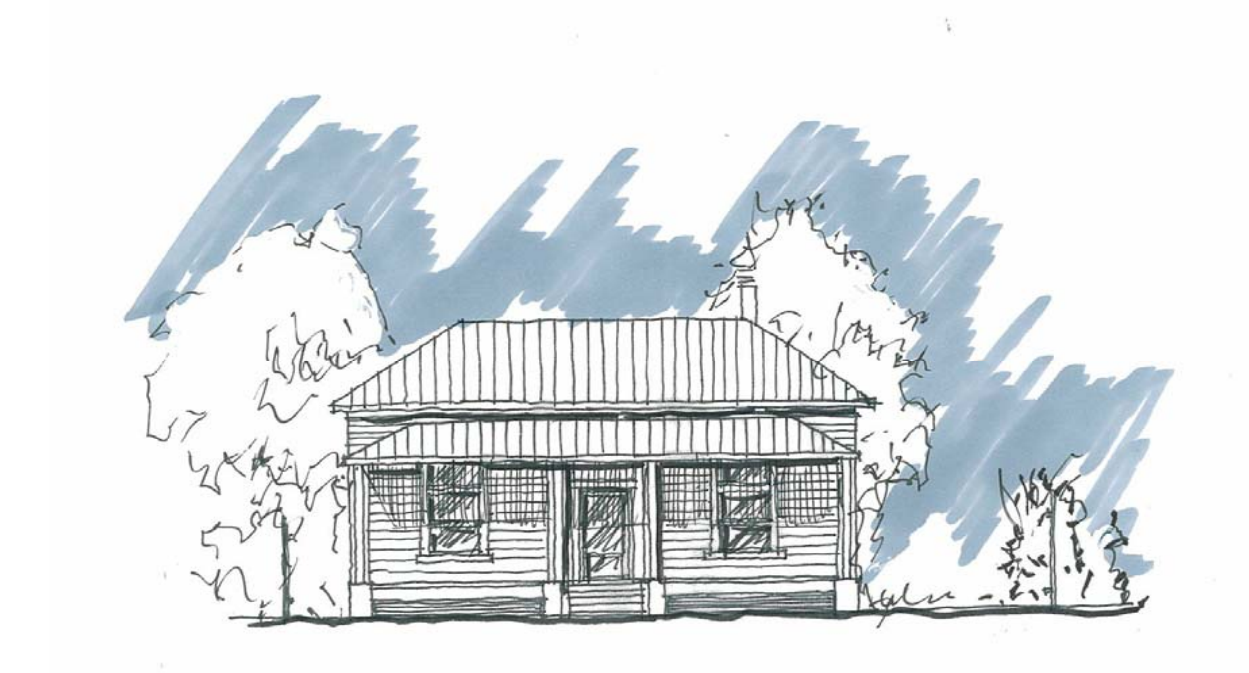
















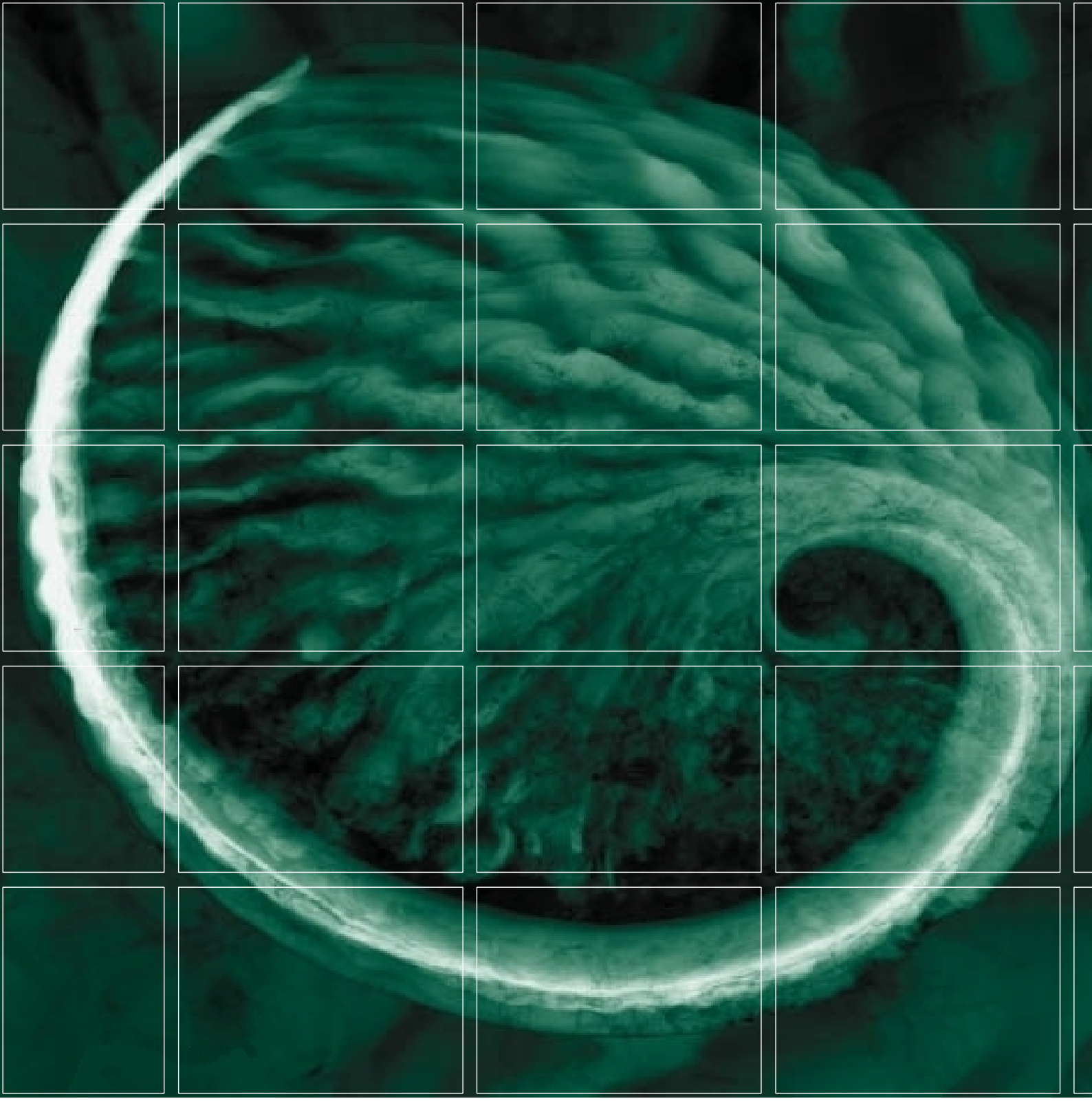








Volume 3C: Phase 1 Environmental Site Assessment



Riverside at Tea Gardens

Phase 1 Environmental Site Assessment

For Crighton Properties Pty Ltd

July 2008

0043707Final

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Delivering sustainable solutions in a more competitive world

ERM

Prepared by:	*Craig Wellings*
Position:	*Senior SIR Consultant*
Signed:	
Date:	*9 July, 2008*
Approved by:	*Steve O'Connor*
Position:	Principal Consultant
Signed:	
Date:	*9 July, 2008*

Environmental Resources Management Australia Pty Ltd Quality System

Riverside at Tea Gardens

Phase 1 Environmental Site Assessment

For Crighton Properties Pty Ltd

July 2008

0043707Final

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This report has been prepared in accordance with the scope of services described in the contract or agreement between Environmental Resources Management Australia Pty Ltd ABN 12 002 773 248 (ERM) and the Client. The report relies upon data, surveys, measurements and results taken at or under the particular times and conditions specified herein. Any findings, conclusions or recommendations only apply to the aforementioned circumstances and no greater reliance should be assumed or drawn by the Client. Furthermore, the report has been prepared solely for use by the Client and ERM accepts no responsibility for its use by other parties.

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ABBREVIATIONS

C6-C36	Hydrocarbon chainlength fraction
COC	Chemicals of Concern
COPC	Chemicals of Potential Concern
ERM	Environmental Resources Management Pty Ltd
LOR	Limit of Reporting
mbgs	metres below ground surface
mTOC	metres below Top-of-Casing
MSL	mean sea level
OCP	Organochlorine Pesticides
OPP	Organophosphorus Pesticides
ppm	parts per million
SWL	Static Water Level
TDS	Total Dissolved Solid
TOC	Top of Casing
TPH	Total Petroleum Hydrocarbon
VOC	Volatile Organic Compound

1 INTRODUCTION

1.1 GENERAL

Crighton Properties Pty Ltd (Crighton Properties) have sought Project Application and Concept Plan approval for a mixed use residential and tourist development at the Riverside site in Tea Gardens, NSW. The development will also include a two hectare extension of the existing detention and water quality management lake, creation of three fresh water basins, an open space network which provides for public recreation and a wildlife corridor, and community facilities.

Environmental Resources Management Australia Pty Ltd (ERM) has been engaged by Crighton Properties to prepare a Phase 1 Environmental Site Assessment (ESA) for the site which comprises Lot 1 DP 270100, Lot 10 DP 270100, Lot 19 DP 270100, Lot 30 DP 270100 and Lot 38 DP 270100 (refer to *Figure 2* in *Annex A* for site boundary).

1.2 OBJECTIVE

In accordance with the NSW EPA Guidelines for Consultants Reporting on Contaminated Sites (Ref 1; *Annex B*) the objective of the Environmental Site Assessment was to:

- identify all past and present potentially contaminating activities;
- identify potential contamination types;
- discuss the site condition;
- provide a preliminary assessment of site contamination; and
- assess the need for further investigations.

1.3 SCOPE OF WORKS

In order to meet the above objectives ERM undertook the following scope of works:

A review of site geology, hydrology, hydrogeology (including a desktop search of the DIPNR groundwater bore data base) and topography information for the site;

- a site history review including historical land titles and aerial photographs;

- a review of site geology, hydrology, hydrogeology (including a desktop search of the DIPNR groundwater bore data base) and topography information for the site; and

- a site inspection for potential sources of contamination (eg current and former land uses etc).

2 BACKGROUND INFORMATION

Table 2.1 Phase 1 ESA – Riverside - Site Identification

Site Identification	Riverside
Site Location	Tea Gardens
Property Description	Lot 1 DP 270100, Lot 10 DP 270100, Lot 19 DP 270100, Lot 30 DP 270100 and Lot 38 DP 270100
Site Area	229 hectares (approximately)
Current Zoning Lot 10 DP 270100	2 (f) Mixed Residential/Commercial (majority of the site) 7 (b) Conservation Zone (eastern part of the site)
Current Zoning Lot 38 DP 270100	2 (f) Mixed Residential/Commercial (majority of the site) 7 (a) Wetlands Zone (easternmost part of the site) 7 (b) Conservation Zone (eastern part of the site)
Current Ownership Lot 10 DP 270100	Geoffrey John Cox
Current Ownership Lot 38 DP 270100-	Crighton Properties Pty Limited

2.1 SITE LOCATION

The Riverside at Tea Gardens (the site) is located adjacent to Myall Street, Tea Gardens, NSW 2324, Australia (refer to *Figure 1*, *Annex A*).

Access to the site is via a Myall Street. The site is currently vacant and has a total area of approximately 229 hectares.

2.2 ADJACENT LAND USE

The site is bounded by Myall River to the east and Myall Street to the west. The Shearwater Residential Estate bounded by Toonang Drive, lies to the north of the site and residential development surrounding the township of Tea Gardens lies to the south.

In the immediate vicinity of the site there are:

North: Toonang Drive and bushland north of the site and the Shearwater Residential Estate;

West: Myall Street and at a distance of 50 metres commercial/residential buildings;

South: Tea Gardens with residential buildings; and

East: directly adjacent Myall River.

The nearest surface water body to the site is Myall River to the east and a brackish detention lake to the south. The section of the Myall River closest to the site is tidal estuary and flows towards the south into Port Stephens, which is open to the South Pacific Ocean. The site is generally flat and is located at approximately 2-10 m Australian Height Datum (AHD).

3 SITE HISTORY

3.1 ZONING

State Environmental Planning Policy No.14 – Coastal wetlands (SEPP 14) applies to wetlands within a portion of the site adjacent to the Myall River. The majority of the site is available for urban purposes and zoned for mixed use urban development.

The majority of the site is zoned Residential 2(f) – Mixed Residential/Commercial. Part of the site, adjacent to Myall River, is zoned Environmental Protection 7(a) Wetlands and Littoral Rainforest and 7(b) Conservation.

A figure showing the zoning on the site *(Figure 2*) is appended in *Annex A.*

3.2 PRIOR SITE USES

Prior site uses have been identified by a Historical Title Search conducted by Advance Legal Search Pty Ltd. Details of the search have been summarized in *Table 3.1* and are included in *Annex C.*

According to the *Riverside at Tea Gardens Concept Plan and Project Application* (ERM, November) the majority of the site was previously used for a pine plantation and has been substantially cleared of native vegetation.

Table 3.1 Phase 1 ESA – Riverside – Historical Title Search

Date	
	Lot 10 DP 270100
1998 – todate	Geoffrey John Cox
1998 – 1998	Crighton Properties Pty Limited
	Lot 5 DP 270100
1996 – 1998	Crighton Properties Pty Limited
	Lot 430 DP 856447
1996 – 1996	Crighton Properties Pty Limited
	Lot 43 DP 791899
1991 – 1996	Crighton Properties Pty Limited
1989 – 1991	Rakebu Pty Limited
	Lot 60 DP 786548
1989 – 1989	Rakebu Pty Limited
	Lot 42 DP 738450
1987 – 1989	Rakebu Pty Limited
	Lot 10 DP 733241

Date	
1986 – 1987	Rakebu Pty Limited
	Lot 2 DP 230785 – CTVol 12411 Fol 59
1983 – 1986	Rakebu Pty Limited
1977 – 1983	Coastal Forests Limited
1974 – 1977	Public Trustee
	(Lot 7 & 8 of a subdivision of Lot 35 and also Lot 492 of land Granted to Australian Agricultural Company Parish Coweambah – Area 829 Acres 2 Roods 4 ¼ Perches – CTVol 6726 Fol 114)
1967 – 1974	Public Trustee
1953 – 1967	Australian Pines and Products Limited
	(Lot 7 & 8 of a subdivision of Lot 35 and also Lot 492 of land Granted to Australian Agricultural Company - Parish Coweambah)
1951 – 1953	Australian Pines and Products Limited
1940 – 1951	John Bede Hough, grazier
1913 – 1940	Bridget Hough, wife of grazier
	Lot 38 DP 270100
2007 – to date	Crighton Properties Pty Limited
	Lot 36 DP 270100
2007 – 2007	Crighton Properties Pty Limited
	Lot 34 DP 270100
2004 – 2007	Crighton Properties Pty Limited
	Lot 31 DP 270100
2004 – 2004	Crighton Properties Pty Limited

3.3 AERIAL PHOTOGRAPHS

No evidence of significant development of any kind can be identified on current aerial photographs of the Site. A current aerial photograph of the site is provided as *Figure 1* in *Annex E.*

3.4 GROUNDWATER BORE SEARCH

ERM conducted a search of the NSW Department of Infrastructure, Planning and Natural Resources (DIPNR) groundwater bore database, for all licensed bores located within a 2.0 km radius of the investigation site. A total of seven monitoring bores are located in the vicinity of the site. In total six monitoring bores are located west/ south west of the site and are classified as test bores, irrigation bores, dewatering bores for domestic and industrial use. Several groundwater bores intercepting the Tomago Sandbeds and used for potable water abstraction are located at a distance of about 2.5km north of the site.

The locations of the bores are provided in *Figure 1*, *Annex D*.

3.5 *POTENTIALLY CONTAMINATING ACTIVITIES*

The review of the title search did not result in the identification of potentially contaminating activities. A limited risk might exist as parts of the site were previously used as a commercial pine plantation. Therefore impact due to fertilizer and / or , pesticides cannot be excluded or that minor oil and/or fuel spills from machinery might exist on the site.

3.6 *RELEVANT LEGISLATION*

The Great Lakes Council (GLC) Section 149 Planning Certificate for the site, issued in accordance with the Environmental Planning and Assessment Act 1979 (*Ref 3*, *Annex B*), states that a total of twenty one State Environmental Planning Policies (SEPPs), one draft SEPP and one Regional Environmental Plan apply to the site. Of these, three have particular relevance to this assessment:

- SEPP 14 – Coastal Wetlands;
- SEPP 71 – Coastal Protection; and
- SEPP 55 – Remediation of Contaminated Land.

No evidence has been observed during the undertaking of the current Phase 1 ESA, that past or present site uses are either in breach or would require that the above SEPPs be actioned to ensure compliance.

4 SITE CONDITION AND SURROUNDING ENVIRONMENT

4.1 REGIONAL GEOLOGY

According to the geological map of Newcastle 1:250,000 Geological Series Sheet S1 56-2 first edition (1966), the site is underlain by Quaternary marine and freshwater deposits (gravel, sands, silts and clays) which is underlain by carboniferous sandstones, siltstones, claystones and lavas (Wootton Beds) at a depth between 8-15 metres. Although unlikely, it cannot be excluded that fill material is present on the site.

The Acid Sulphate Soil Risk Map for Port Stephens shows that the site is located in an area where there is a low probability of acid soil materials occurring between one and three metres below the ground surface. The map indicates that acid sulphate soil materials, if present, are sporadic and may be buried by alluvium or windblown sediments. However, testing of soil samples collected from the site during soils sampling indicated that Acid Sulphate soil criteria were exceeded in 13 of 19 samples. An Acid Sulphate Soils Management Plan has been prepared as a result, and should be implemented during future earthworks.

4.2 REGIONAL TOPOGRAPHY

The site is generally flat and slopes slightly to the south. The average elevation in the northern part of the site is between 6-12 m AHD and in the southern part between 3-6 m AHD. Towards the east (close to the Myall River) the elevation is between 1-2 m AHD. An elevated area exits to the north of the site with heights of up to 50 m AHD.

4.3 REGIONAL CLIMATE

Information regarding the regional climate was obtained from the Bureau of Meteorology. The nearest weather station is located at Nelson Bay (Nelson Head / Site number 061054). The mean maximum temperature ranged between 27.4°C in January and 17. °C in July. The average annual maximum temperature is 23.0°C and the respective minimum temperature is 13.7°C. The mean minimum temperature ranged between 18.4°C in February and 8.4°C in July. The highest mean rainfall was recorded for June with 153.1 mm and the lowest mean rainfall was recorded for October with 78.3mm. The average annual rainfall is 1347.8 mm.

4.4 REGIONAL HYDROGEOLOGY

The groundwater assessment showed that the groundwater tables ranges from 0.5 metres to 1.7 metres below ground level (Coffey Geotechnics Pty Ltd (Coffey) 2007: Groundwater Assessment) and tends to be shallower in the proximity of the Myall River. The effects of the development to the groundwater were modelled in the same report prepared by Coffey and it was concluded that the groundwater levels within the site would not be significantly affected by the development.

The *Riverside at Tea Gardens Concept Plan and Project Application (*ERM, November 2007*)* states that the groundwater quality has not changed significantly since 2004. The groundwater results are generally below the key criteria for protection of species in marine water presented in the ANZECC guidelines, with the exception of some metal concentrations. Groundwater encountered in monitoring bores closer to the Myall River tends to have higher electrical conductivities and a similar anion and cation ratio as seawater. Comparison of the analytical results with the Australian Drinking Water Guidelines shows that the water cannot be considered potable due to concentrations of a range of analytes in excess of the drinking water guidelines.

4.5 SURFACE WATER

No major drains were identified on the aerial photographs available for review. The surface water runoff after rainfall events will generally follow the topography and flow to the southern side of the site and towards the east to the Myall River.

Due to the low lying nature of most of the site is prone to occasional flooding. However this is not likely to be a frequent occurrence and would not impact on the total site area.

4.6 CHEMICALS OF POTENTIAL CONCERN

Based on ERM's knowledge of the site, chemicals of potential concern are pesticides associated with the use of parts of the Site as a pine plantation. Pesticide use in pine plantations is usually confined to the first two years of a plantation crop cycle. Furthermore all chemical pesticides used in commercial pine plantations in Australia are also used in general agriculture (Forest and Wood Products Research and Development Corporation (2006): Pesticides in Plantations, The use of chemical pesticides by the Australian plantation forest industry, Summary Report). Therefore the potential impact to the site from the use of pesticides associated with the former pine plantation is considered to be minor.

4.7 *POTENTIAL SOURCE AREAS*

No information with respect to storage areas for chemicals of any kind was reviewed.

No potential source areas were identified within the site during the course of this assessment.

4.8 *POTENTIAL TRANSPORT MECHANISMS AND POLLUTION LINKAGES*

The greatest potential for potential transport mechanisms and pollution linkages on the site is assessed as being the shallow groundwater aquifer. The shallow aquifer is unconfined and is considered to have significant potential to act as transport mechanism for the offsite migration of contaminants.

A secondary transport mechanism is considered to be the potential for airborne migration of contaminated soil due to wind erosion. The secondary transport mechanism is considered to have minor potential only, as the site surface is well vegetated and the potential for wind erosion is therefore low.

4.9 *POTENTIAL RECEPTORS*

For the purpose of this assessment, 'receptors' include persons, structures and utilities, ecological receptors and water supply wells that are, or may be adversely affected by the chemicals of concern. The potential receptors identified for the site include the following:

- future residents and patrons of facilities;
- on-site workers and patrons;
- off-site residents (adult and child);
- off-site water supply or irrigation wells; and
- the Myall River.

5 *SITE CHARACTERISATION*

The Phase 1 ESA which has been undertaken for the site considers the environmental conditions based on three criteria:

- available background information;
- site history; and
- the conditions of the site and surrounding environment.

Based on the information reviewed it is considered that the assessment objectives detailed in *Section 1.2* have been met for the site.

Generally the site was assessed as being free of potential contaminants or past and present contaminating activities, likely to have a significant adverse impact on human health or the environment. The site, although disturbed in parts by former use as a commercial pine plantation, is currently free from development. Also no evidence of former development was noted. As the site is largely uncontrolled it cannot be discounted that illegal dumping of potentially contaminating materials has occurred. However, based on the information reviewed it is considered that the potential for such dumping is low.

Potential for existing site contamination therefore is considered to be low and if encountered contamination is likely to be limited in extent to localized zones within the site. Therefore the site is considered to have low potential to adversely affect human health or the environment either on surrounding properties or local receiving waters.

It is not considered that further investigations to assess the site for environmental conditions in accordance with the current assessment objectives, are required prior to the site being developed.

6 CONCLUSIONS AND RECOMMENDATIONS

The Phase 1 ESA undertaken for the Riverside at Tea Gardens site has not identified any significant potential for site contamination. Therefore it is concluded that in terms of the objectives of this assessment that the site is suitable for the proposed development. Providing that environmental conditions on the site do not deteriorate due to unforeseen circumstances further investigation to assess the environmental conditions on the site are not recommended.

7 *STATEMENT OF LIMITATIONS*

The findings of this report are based on the scope of work outlined within this report. ERM performed the services in a manner consistent with the normal level of care and expertise exercised by members of the environmental profession. No warranties, express or implied, are made.

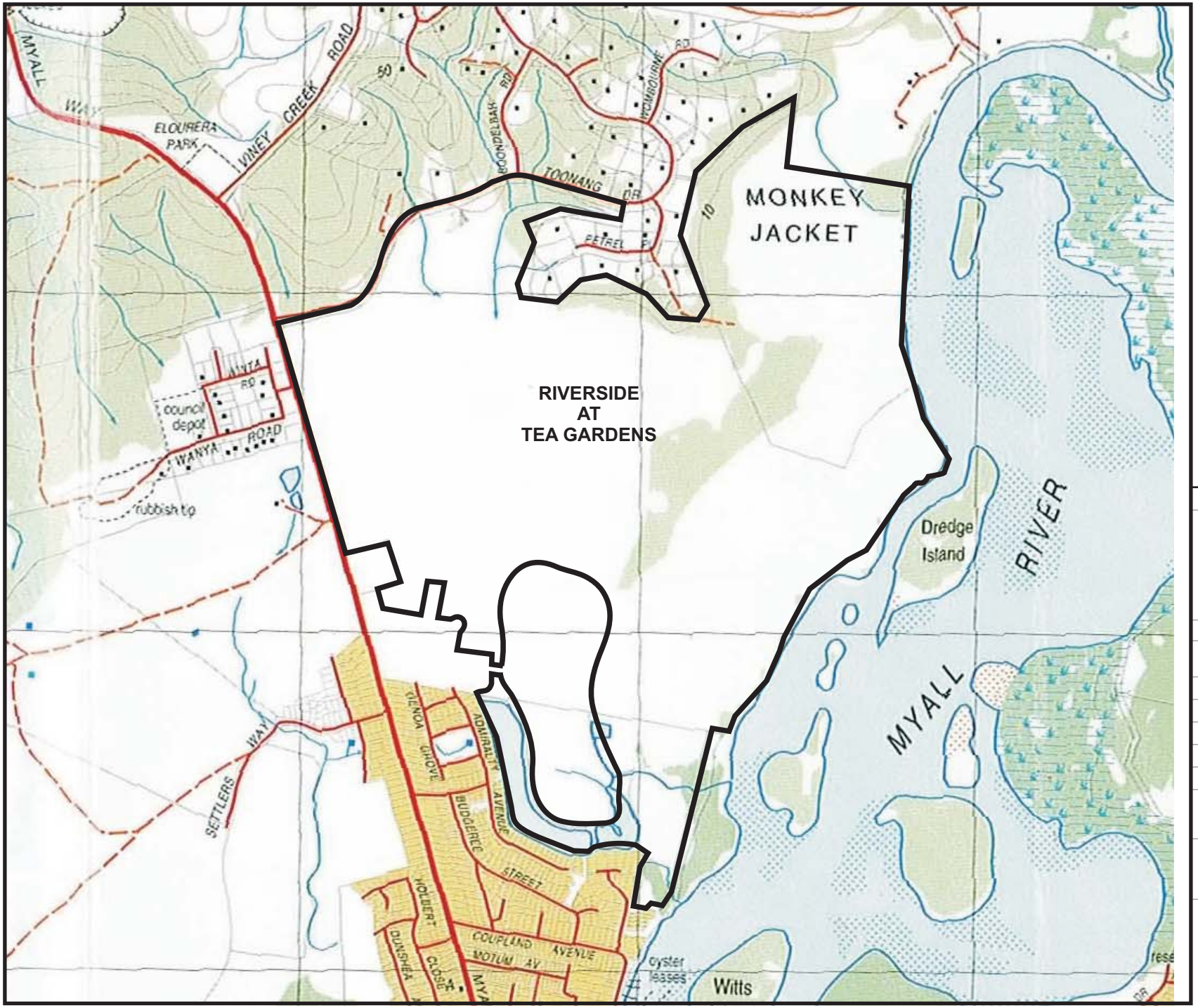
Subject to the scope of work, ERM's assessment is limited strictly to identifying typical environmental conditions associated with the subject property and does not evaluate structural conditions of any buildings on the subject property, nor any other issues. Although normal standards of professional practice have been applied, the absence of any identified hazardous or toxic materials on the subject property should not be interpreted as a guarantee that such materials do not exist on the site.

This assessment is based on desk top review of information provided by Great Lakes Council or other people with knowledge of site conditions. All conclusions and recommendations made in the report are the professional opinions of the ERM personnel involved with the project and, while normal checking of the accuracy of data has been conducted, ERM assumes no responsibility or liability for errors in data obtained from regulatory agencies or any other external sources, nor from occurrences outside the scope of this project.

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Annex A

Figures



Legend

Riverside at Tea Gardens Site Boundary

Figure 1

Locality Plan

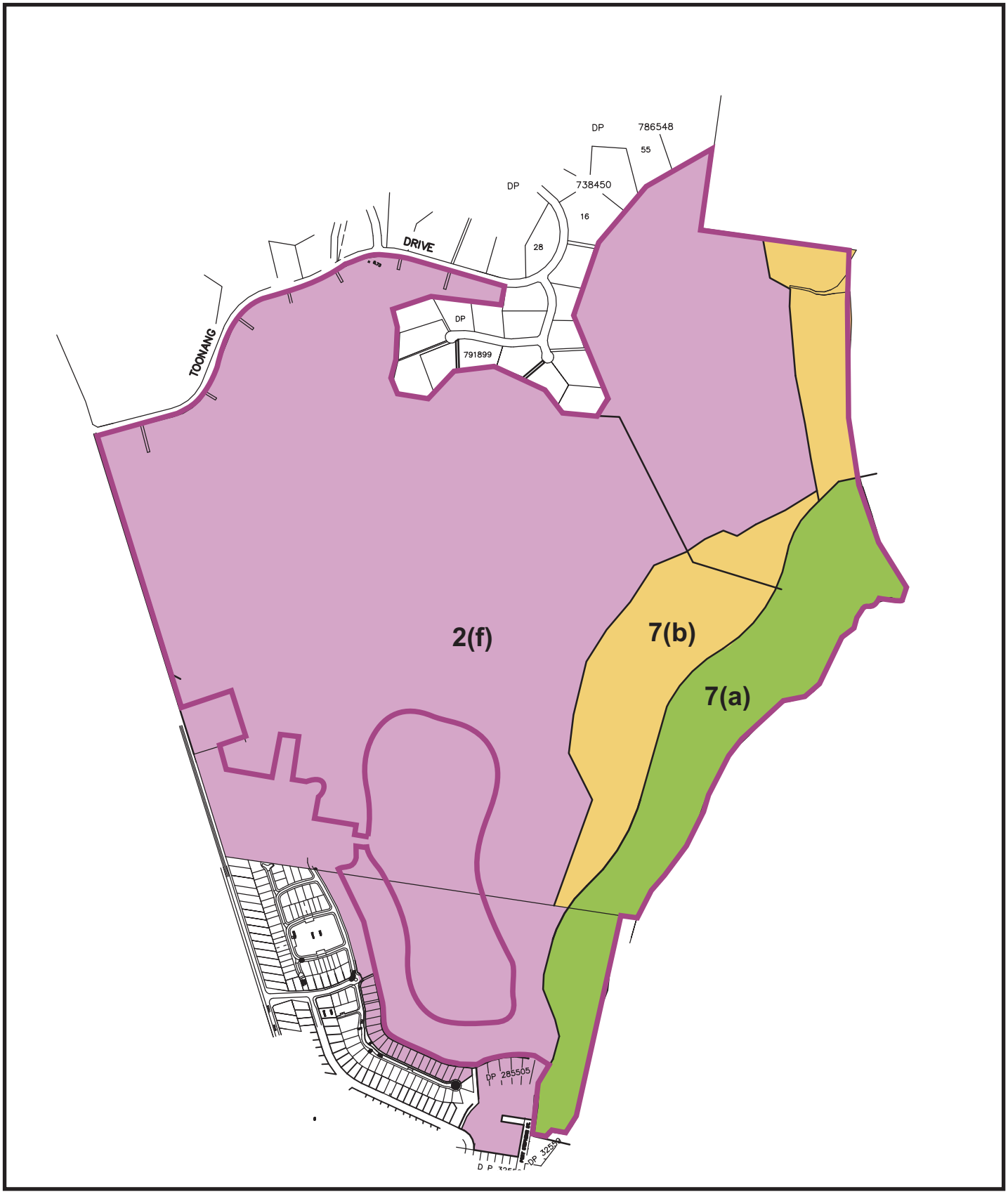
Client:	Crighton Properties Pty Ltd		
Project:	Environmental Assessment Riverside at Tea Gardens - Phase 1 ESA		
Drawing No:	0043707hv_EA_annexA_ph1_esa_02		
Date:	18/06/08	Drawing size:	A4
Drawn by:	JD	Reviewed by:	SO'C
Source:	1:25,000 Topo Series Port Stephens Sheet		
Scale:	Refer to Scale Bar		

N

0 250 500m

Environmental Resources Management Australia Pty Ltd
53 Bonville Avenue, Thornton, NSW 2322
Telephone +61 2 4964 2150

ERM



Legend

Riverside at Tea Gardens Site Boundary

Great Lakes Draft Amendment No.44 LEP 1996

- 2(f) Mixed Residential/Commercial
- 7(a) Wetlands Zone
- 7(b) Conservation Zone

N

Figure 2

Existing Zoning Plan Riverside at Tea Gardens

Client:	Crighton Properties Pty Ltd		
Project:	Environmental Assessment Riverside at Tea Gardens - Phase 1 ESA		
Drawing No:	0043707hv_EA_annexA_ph1_esa_03		
Date:	19/06/08	Drawing size:	A4
Drawn by:	JD	Reviewed by:	AA
Source:	Great Lakes Draft Amendment No.44 LEP 1996		
Scale:	Refer to Scale Bar		

Environmental Resources Management Australia Pty Ltd
53 Bonville Avenue, Thornton, NSW 2322
Telephone +61 2 4964 2150

ERM

Annex B

References

REFERENCES

Environment Protection Authority (EPA) NSW Contaminated Sites (November 1997). **Guidelines for Consultants Reporting on Contaminated Sites,**

Environment Resources Management (ERM (November 2007) **Riverside at Tea Gardens Concept Plan and Project Application**

NSW Government (1979) **Environmental Planning and Assessment Act**

Annex C

Results of Title, ERM and CLR Searches

Environmental Resources Management Australia
Referred to: | Ref. No.
Date Received 31 MAR 2008
Checked: | Date:

ADVANCE LEGAL SEARCH PTY LIMITED

(ACN 077 067 068)
ABN 49 077 067 068

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Yagoona NSW 2199

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25 March 2008

Environmental Resources Management Australia Pty Ltd
PO Box 71,
THORNTON NSW 2322

Attention: Dominic Brown

RE: **Lot 10 & 38 DP 270100**
TEA GARDENS

Note 1: **Lot 10 DP 270100**
Note 2: **Lot 38 DP 270100**

Note 1:

Current Search

Folio Identifier 10/270100 (attached)
DP 270100 (plan attached)
Dated 19 March 2008
Registered Proprietor:
GEOFFREY JOHN COX

Title Tree
Lot 10 DP 270100

Folio Identifier 10/270100

Folio Identifier 5/270100

Folio Identifier 430/856447

Folio Identifier 43/791899

Folio Identifier 60/786548

Folio Identifier 42/738450

Folio Identifier 10/733241

Certificate of Title Volume 12411 Fol 59

Certificate of Title Volume 6726 Fol 114

PA 38305

Conveyance Book 2180 No 669

Conveyance Book 989 No 768

*****

Summary of Proprietors
Lot 10 DP 270100

Year	Proprietor
	(Lot 10 DP 270100)
1998 – todate	Geoffrey John Cox
1998 – 1998	Crighton Properties Pty Limited
	(Lot 5 DP 270100)
1996 – 1998	Crighton Properties Pty Limited
	(Lot 430 DP 856447)
1996 – 1996	Crighton Properties Pty Limited
	(Lot 43 DP 791899)
1991 – 1996	Crighton Properties Pty Limited
1989 – 1991	Rakebu Pty Limited
	(Lot 60 DP 786548)
1989 – 1989	Rakebu Pty Limited
	(Lot 42 DP 738450)
1987 – 1989	Rakebu Pty Limited
	(Lot 10 DP 733241)
1986 – 1987	Rakebu Pty Limited
	(Lot 2 DP 230785 – CTVol 12411 Fol 59)
1983 – 1986	Rakebu Pty Limited
1977 – 1983	Coastal Forests Limited
1974 – 1977	Public Trustee
	(Lot 7 & 8 of a subdivision of Lot 35 and also Lot 492 of land Granted to Australian Agricultural Company Parish Coweambah – Area 829 Acres 2 Roods 4 ¼ Perches – CTVol 6726 Fol 114)
1967 – 1974	Public Trustee
1953 – 1967	Australian Pines and Products Limited
	(Lot 7 & 8 of a subdivision of Lot 35 and also Lot 492 of land Granted to Australian Agricultural Company - Parish Coweambah)
1951 – 1953	Australian Pines and Products Limited
1940 – 1951	John Bede Hough, grazier
1913 – 1940	Bridget Hough, wife of grazier

****

Note 2:

Current Search

Folio Identifier 38/270100 (attached)
DP 270100 (plan attached)
Dated 19 March 2008
Registered Proprietor:
CRIGHTON PROPERTIES PTY LIMITED

Title Tree
Lot 38 DP 270100

Folio Identifier 38/270100

Folio Identifier 10/270100

Folio Identifier 36/270100

Folio Identifier 34/270100

Folio Identifier 31/270100

(a) **(b)**

Folio Identifier 18/270100 Folio Identifier 25/270100

Folio Identifier 11/270100 Folio Identifier 22/270100

\ Folio Identifier 17/270100

\ **(bi)** **(bii)** **(biii)**

\ F/I 11/270100 F/I 8/270100 F/I 14/270100

\ / \ F/I 9/270100

Folio Identifier 5/270100 Folio Identifier 4/270100

Folio Identifier 430/856447 Folio Identifier 300/855274

Folio Identifier 43/791899 Folio Identifier 251/843211

Folio Identifier 60/786548 Folio Identifier 32/829692

Folio Identifier 42/738450 Folio Identifier 31/808202

Folio Identifier 10/733241 Folio Identifier 1/564129

CTVolume 12411 Fol 59 CTVolume 12456 Fol 2

CTVolume 6726 Fol 114 CTVolume 11805 Fol 99

PA 38305 **(biia)** **(biib)**

**** CTVol 11805 Fol 99 PA 50120

**** ****

Summary of Proprietors
Lot 10 DP 270100

Year	Proprietor
	(Lot 38 DP 270100)
2007 – todate	Crighton Properties Pty Limited
	(Lot 36 DP 270100)
2007 – 2007	Crighton Properties Pty Limited
	(Lot 34 DP 270100)
2004 – 2007	Crighton Properties Pty Limited
	(Lot 31 DP 270100)
2004 – 2004	Crighton Properties Pty Limited

See Notes (a) & (b)

Note (a)

	(Lot 18 DP 270100)
2002 – 2004	Crighton Properties Pty Limited
	(Lot 11 DP 270100)
1998 – 2002	Crighton Properties Pty Limited
	(Lot 5 DP 270100)
1996 – 1998	Crighton Properties Pty Limited
	(Lot 430 DP 856447)
1996 – 1996	Crighton Properties Pty Limited
	(Lot 43 DP 791899)
1991 – 1996	Crighton Properties Pty Limited
1989 – 1991	Rakebu Pty Limited
	(Lot 60 DP 786548)
1989 – 1989	Rakebu Pty Limited
	(Lot 42 DP 738450)
1987 – 1989	Rakebu Pty Limited
	(Lot 10 DP 733241)
1986 – 1987	Rakebu Pty Limited
	(Lot 2 DP 230785 – CTVol 12411 Fol 59)
1983 – 1986	Rakebu Pty Limited
1977 – 1983	Coastal Forests Limited
1974 – 1977	Public Trustee
	(Lot 7 & 8 of a subdivision of Lot 35 and also Lot 492 of land Granted to Australian Agricultural Company Parish Coweabah – Area 829 Acres 2 Roods 4 ¼ Perches – CTVol 6726 Fol 114)
1967 – 1974	Public Trustee
1953 – 1967	Australian Pines and Products Limited
	(Lot 7 & 8 of a subdivision of Lot 35 and also Lot 492 of land Granted to Australian Agricultural Company - Parish Coweabah)
1951 – 1953	Australian Pines and Products Limited
1940 – 1951	John Bede Hough, grazier
1913 – 1940	Bridget Hough, wife of grazier

****

Note (b)

	(Lot 25 DP 270100)
2002 – 2004	Crighton Properties Pty Limited
	(Lot 17 DP 270100)
2002 – 2002	Crighton Properties Pty Limited

See Notes (bi), (bii) & (biii)

Note (bi)

	(Lot 11 DP 270100)
1998 – 2002	Crighton Properties Pty Limited
	(Lot 5 DP 270100)
1996 – 1998	Crighton Properties Pty Limited
	(Lot 430 DP 856447)
1996 – 1996	Crighton Properties Pty Limited
	(Lot 43 DP 791899)
1991 – 1996	Crighton Properties Pty Limited
1989 – 1991	Rakebu Pty Limited
	(Lot 60 DP 786548)
1989 – 1989	Rakebu Pty Limited
	(Lot 42 DP 738450)
1987 – 1989	Rakebu Pty Limited
	(Lot 10 DP 733241)
1986 – 1987	Rakebu Pty Limited
	(Lot 2 DP 230785 – CTVol 12411 Fol 59)
1983 – 1986	Rakebu Pty Limited
1977 – 1983	Coastal Forests Limited
1974 – 1977	Public Trustee
	(Lot 7 & 8 of a subdivision of Lot 35 and also Lot 492 of land Granted to Australian Agricultural Company Parish Coweabah – Area 829 Acres 2 Roods 4 ¼ Perches – CTVol 6726 Fol 114)
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1951 – 1953	Australian Pines and Products Limited
1940 – 1951	John Bede Hough, grazier
1913 – 1940	Bridget Hough, wife of grazier

****

Note (bii)

	(Lot 14 DP 270100)
1999 – 2002	Crighton Properties Pty Limited
	(Lot 9 DP 270100)
1997 – 1999	Crighton Properties Pty Limited
	(Lot 4 DP 270100)
1996 – 1997	Crighton Properties Pty Limited
	(Lot 300 DP 855274)
1995 – 1996	Crighton Properties Pty Limited
	(Lot 251 DP 843211)
1994 – 1995	Crighton Properties Pty Limited
	(Lot 32 DP 829692)
1993 – 1994	Crighton Properties Pty Limited
	(Lot 31 DP 808202)
1991 – 1993	Crighton Properties Pty Limited
1991 – 1991	Rakebu Pty Limited
	(Lot 1 DP 564129)
1989 – 1991	Rakebu Pty Limited
1988 – 1989	Andruce (Pastoral) Pty Limited
	(Lot 1 DP 564129 – CTVol 12456 Fol 2)
1974 – 1988	Andruce (Pastoral) Pty Limited

See Notes (biia) & (biib)

Note (biia)

	(Lot 1 DP 242036 – CTVol 11805 Fol 99)
1974 – 1988	Andruce (Pastoral) Pty Limited
	(Roads Parish Coweambah)
Prior – 1974	Various Roads

****

Note (biib)

	(Part Lots 9 & 10 of the Australian Agricultural Company Subdivision – Area 44 Hectares – being Lots 55 to 78, 86 to 188, 191 to 259, 263 to 412, 414 to 482, 458 to 503, 4 Reserves and other lands, Lots 81, 82 & 83 DP 32559 and being part of Lot 1 DP 564129)
1970 – 1974	Andruce (Pastoral) Pty Limited
Prior – 1970	Numerous ownership

****

Note (biii)

	(Lot 8 DP 270100)
1997 – 2002	Crighton Properties Pty Limited
	(Lot 4 DP 270100)
1996 – 1997	Crighton Properties Pty Limited
	(Lot 300 DP 855274)
1995 – 1996	Crighton Properties Pty Limited
	(Lot 251 DP 843211)
1994 – 1995	Crighton Properties Pty Limited
	(Lot 32 DP 829692)
1993 – 1994	Crighton Properties Pty Limited
	(Lot 31 DP 808202)
1991 – 1993	Crighton Properties Pty Limited
1991 – 1991	Rakebu Pty Limited
	(Lot 1 DP 564129)
1989 – 1991	Rakebu Pty Limited
1988 – 1989	Andruce (Pastoral) Pty Limited
	(Lot 1 DP 564129 – CTVol 12456 Fol 2)
1974 – 1988	Andruce (Pastoral) Pty Limited

See Notes (biiia) & (biiib)

Note (biiia)

	(Lot 1 DP 242036 – CTVol 11805 Fol 99)
1974 – 1988	Andruce (Pastoral) Pty Limited
	(Roads Parish Coweambah)
Prior – 1974	Various Roads

****

Note (biiib)

	(Part Lots 9 & 10 of the Australian Agricultural Company Subdivision – Area 44 Hectares – being Lots 55 to 78, 86 to 188, 191 to 259, 263 to 412, 414 to 482, 458 to 503, 4 Reserves and other lands, Lots 81, 82 & 83 DP 32559 and being part of Lot 1 DP 564129)
1970 – 1974	Andruce (Pastoral) Pty Limited
Prior – 1970	Numerous ownership

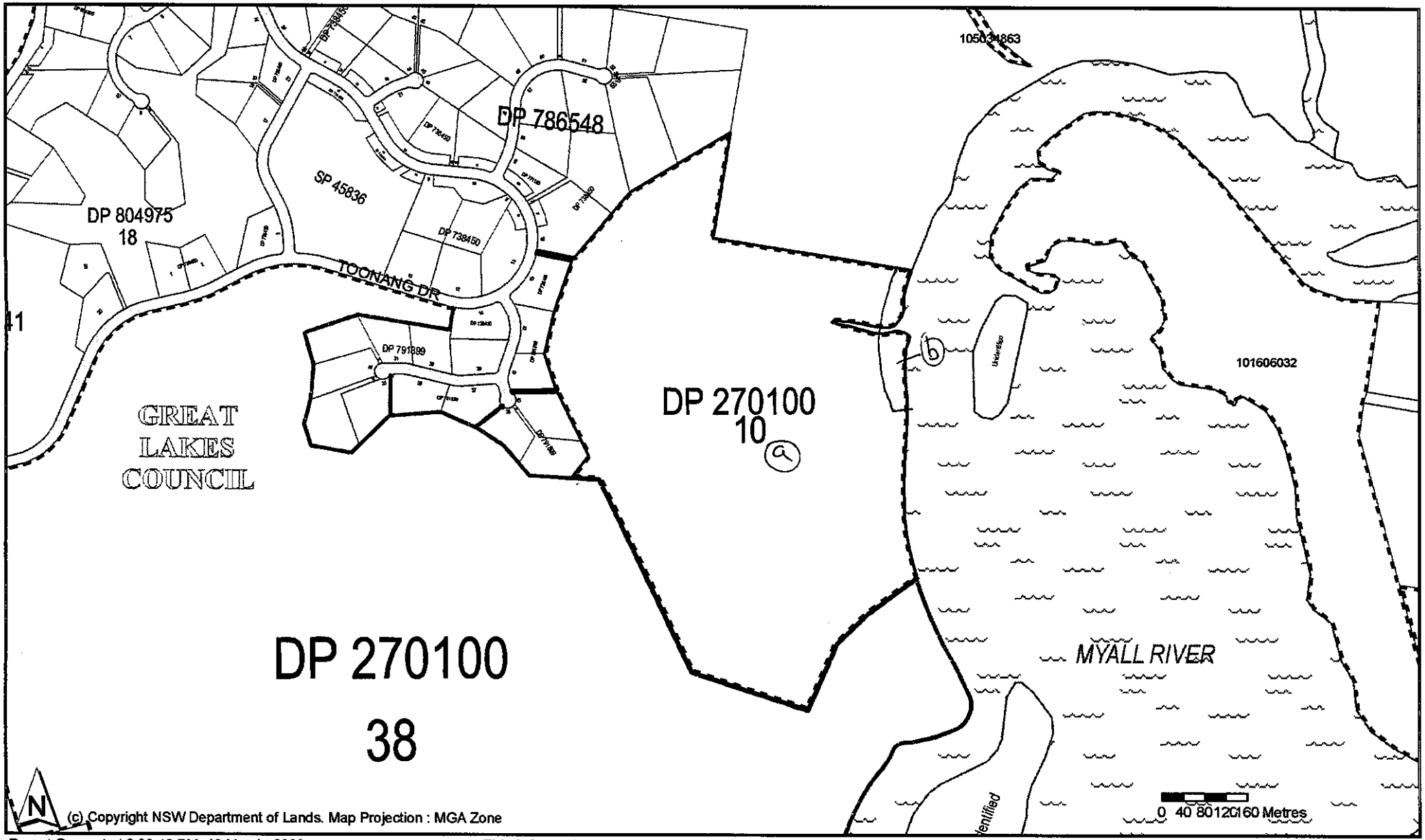
****

Department of Lands
Reliable from the ground up

Cadastral Records Enquiry Report

Requested Parcel : Lot 10 DP 270100 **Identified Parcel** : Lot 10 DP 270100

Locality : TEA GARDENS **LGA** : GREAT LAKES **Parish** : COWEAMBAH **County** : GLOUCESTER



(c) Copyright NSW Department of Lands. Map Projection : MGA Zone

Report Generated 6:39:46 PM, 18 March, 2008

This information is provided as a searching aid only. While every endeavour is made to ensure the current cadastral pattern is accurately reflected, the Registrar General cannot guarantee the information provided. For all ACTIVITY PRIOR to SEPT 2002 you must refer to the RGs Charting and Reference Maps.

PLAN FORM 4

NAME OF DEVELOPMENT, IF ANY	ADDRESS FOR SERVICE OF NOTICE
MYALL QUAYS ESTATE	DYNAMIC - COMMUNITY & STRATA MANAGEMENT PTY. LTD. 16-18 POPLAR ST. DARLINGHURST 2010

COMMUNITY PLAN DP 270100

SHEET 1 OF 7 SHEETS

For reference to additional sheets see schedule below

Registered: MB 21.3.1996

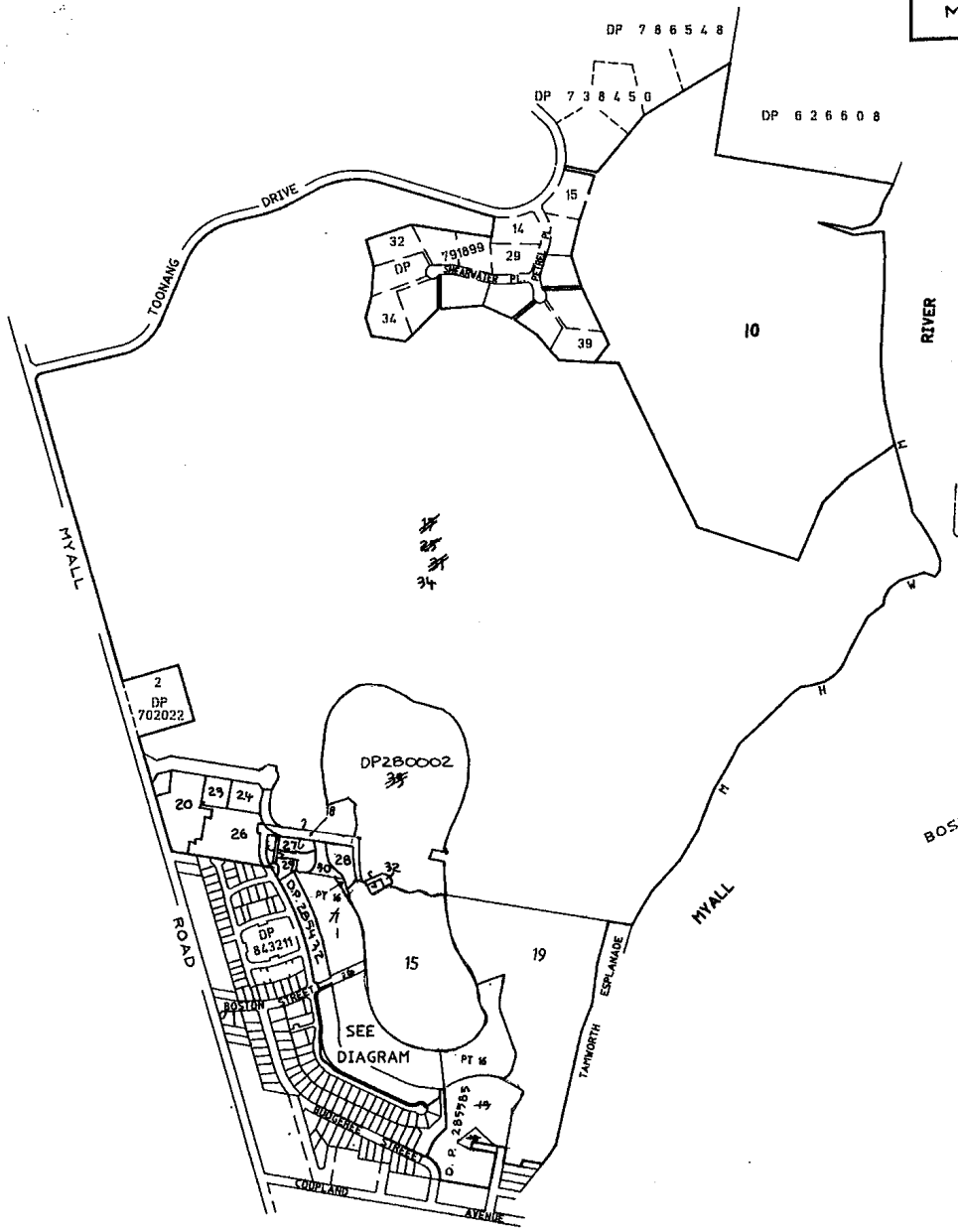
This sheet is being continually updated to show the current subdivisional pattern of the scheme.
For details of such updates and additional and replacement sheets added see schedule below.

Council's Approval No. 21/96
Date: 14/2/96
Council Clerk's Signature:
GENERAL MANAGER

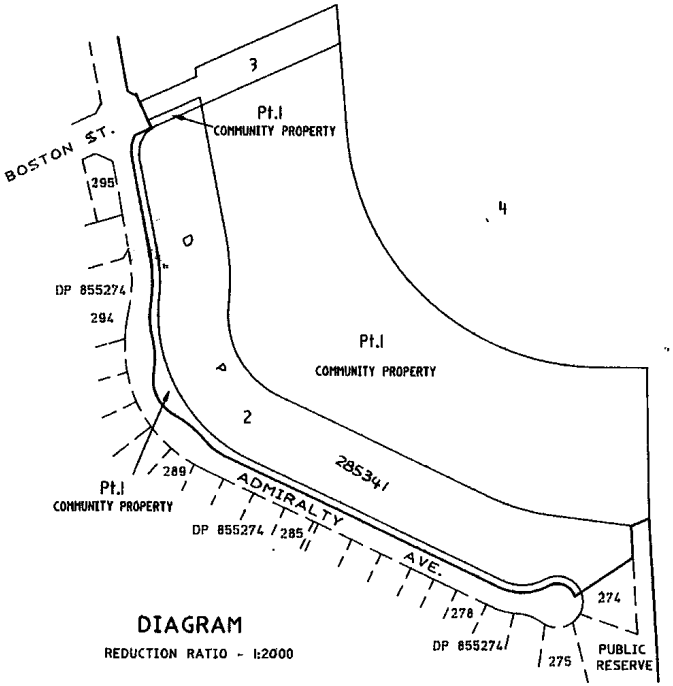
Surveyor's Signature:
Date: 25/1/96

LOCATION PLAN

REDUCTION RATIO - 1:8000



THIS PLAN DOES NOT CONTAIN A DEVELOPMENT CONTRACT



DIAGRAM

REDUCTION RATIO - 1:2000

SCHEDULE OF CHANGES TO THE SCHEME

Lot No.	Details	Sheet No.
2	DP 285341	
4	SUBDIVIDED INTO LOT 6-9 INCL BSB	8
6	DP 285432	
7	CONVERTED TO ASSOCIATION PROPERTY VIDE 9157802	
5	SUBDIVIDED INTO LOTS 10-11	9
9	SUBDIVIDED INTO LOTS 12-14	11-12
12	SEVERED FROM SCHEME	11
13	SUBDIVIDED INTO LOTS 1-26 IN DP 285585	
3,8,11, 14	SUBDIVIDED INTO LOTS 15-19	13-15
15	SUBDIVIDED INTO LOTS 1-38 IN D.P. 280001	
17	SUBDIVIDED INTO LOTS 20-22	16-17
16,21	CONVERTED TO ASSOCIATION PROPERTY VIDE 9852322	6C,6D
22	SUBDIVIDED INTO LOTS 23-25	18-19
18,25	SUBDIVIDED INTO LOTS 26-31	20-23
31	SUBDIVIDED INTO LOTS 32-34	24-25
33	DP280002	
34	NOW SUBDIVIDED INTO LOTS 35 & 36	26-27
10 & 32	SEVERED FROM THE SCHEME VIDE AB547646	
36	SUBDIVIDED INTO LOTS 37 & 38	28 - 29

SURVEYOR'S REFERENCE: 94145/1

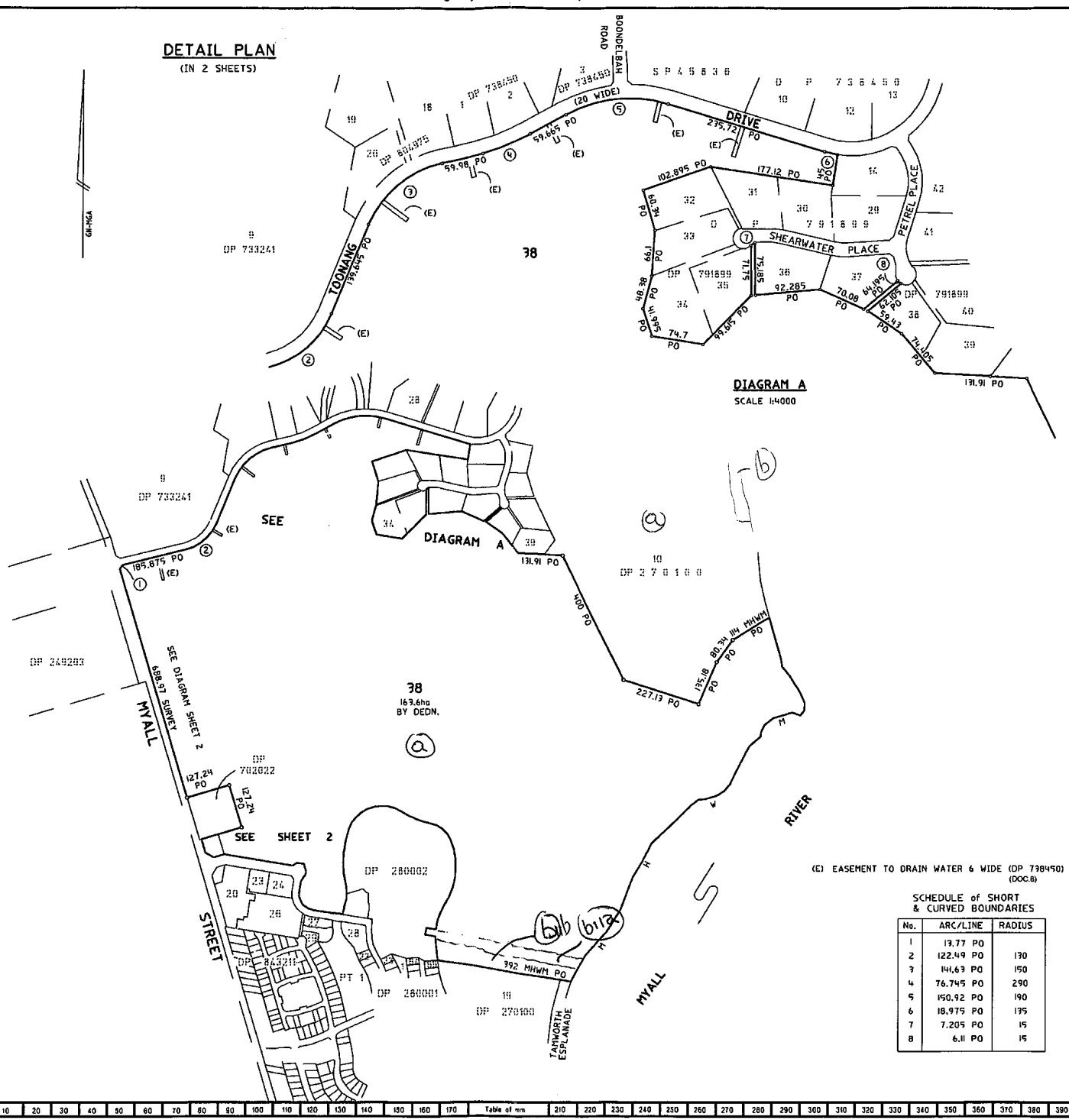
Req:R068801 /Doc:DP 0270100 P /Rev:28-Sep-2007 /Sts:SC.OK /Prt:19-Mar-2008 19:40 /Pgs:ALL /Seq:1 of 51
Ref:ALSP /Src:M

PLAN FORM 2 — Plan Drawing only to appear in this space — ePlan — OFFICE USE ONLY

SIGNATURE AND SEALS ONLY

FOR SIGNATURES, SEALS AND CERTIFICATES SEE SIGNATURES FORM

DETAIL PLAN
(IN 2 SHEETS)



SCHEDULE of SHORT & CURVED BOUNDARIES

No.	ARC/LINE	RADIUS
1	13.77 PO	
2	122.49 PO	130
3	141.63 PO	150
4	76.745 PO	290
5	150.92 PO	190
6	18.975 PO	135
7	7.205 PO	15
8	6.11 PO	15

Crown Lands Office Approval

PLAN APPROVED ..... Authorised Officer

Land District .....

Paper No. .....

Field Book ..... pages .....

Subdivision Certificate

I certify that the provisions of s.109J of the Environmental Planning and Assessment Act 1979 have been satisfied in relation to the proposed

..... set out herein
(* insert subdivision or new road)

..... * Authorised Person/General Manager/Accredited Certifier

Consent Authority: .....

Date of endorsement: .....

Accreditation no: .....

Subdivision Certificate no: .....

File no: .....

Note:
When the plan is to be lodged electronically in the Land Titles Office, it should include a signature in an electronic or digital format approved by the Registrar - General.

* Delete whichever is inapplicable.

SURVEYOR'S REFERENCE: 202400

COMMUNITY PLAN
DP270100
Additional Sheet 28

Registered 18.09.2007
Title System: TORRENS
Purpose SUBDIVISION
Ref. Map PARISH
Last Plan DP 270100#

PLAN OF SUBDIVISION OF LOT 36 IN DP 270100

Lengths are in metres. Reduction Ratio 1:8000

LGA: GREAT LAKES
Locality: TEA GARDENS
Parish: COWEAMBAH
County: GLOUCESTER

This is sheet 1 of my plan in 3 sheets.
(Delete if inapplicable)

Surveying Regulation 2006
I DONALD GEORGE BEGG
of TATTERSALL SURVEYORS
2 BOURKE ST, RAYMOND TERRACE 2324
a surveyor registered under the Surveying Act 2002, hereby certify that the survey represented in this plan is accurate, has been made in accordance with the Surveying Regulation 2006 and was completed on 12/06/2007
The survey relates to LOT 37
LOT38 - COMPILED RESIDUE
(here specify the land actually surveyed, or specify any land shown in the plan that is not the subject of the survey)
Datum Line of Azimuth 'A'-'B'
Type: Urban/Rural
SEE SIGNATURES FORM
(Signature) .....
Date: 12/06/2007 Surveyor registered under the Surveying Act 2002

Plans used in preparation of survey / ~~compilation~~.
DP 270100
DP 280001

PANEL FOR USE ONLY for statements of intention to dedicate public roads, to create public reserves, drainage reserves, easements, restrictions on the use of land or positive covenants.

PURSUANT TO SECTION 88B OF THE CONVEYANCING ACT 1919-1964 AS AMENDED IT IS INTENDED TO CREATE:-

1. RESTRICTION ON USE VARIABLE WIDTH
2. RIGHT OF ACCESS 6.5 WIDE

LOTS 37 AND 38 ARE DEVELOPMENT LOTS

THIS IS SHEET 28 OF DP 270100 AND IT REPLACES SHEET 26 AS REGARDS TO LOT 36 AND IS AN ADDITIONAL SHEET

10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 Table of mm 210 220 230 240 250 260 270 280 290 300 310 320 330 340 350 360 370 380 390

WARNING: CREASING OR FOLDING WILL LEAD TO REJECTION

FILE S:\PROJECTS\MQUAYS\dwg\Stg7\DPs\20522I L37.dwg

Req:R068801 /Doc:DP 0270100 P /Rev:28-Sep-2007 /Sts:SC.OK /Prt:19-Mar-2008 19:40 /Pgs:ALL /Seq:47 of 51:270100_37
Ref:ALSP /Src:M

PLAN FORM 3 — To be used in conjunction with Plan Form 2 — WARNING: CREASING OR FOLDING WILL LEAD TO REJECTION — ePlan — OFFICE USE ONLY

DETAIL PLAN

(IN 2 SHEETS)

(R) RESTRICTION ON USE- VARIABLE WIDTH
(D) RIGHT OF ACCESS - 6.5 WIDE
(S) BENEFIT TO RIGHT OF ACCESS 20 WIDE

SURVEYING REGULATION 2006: CLAUSES 35(b) AND 61(2)
MGA CO-ORDINATES

MARK	EASTING	NORTHING	CLASS/ORDER	METHOD	ORIGIN
SSM 67729	420 105.174	6386 890.458	C / 4		SCIMS
SSM 88747	420 563.579	6386 544.546	C / 4		SCIMS
SSM 87358	420 363.714	6386 765.202	C / 4		SCIMS
SSM 122550	420 190.794	6387 053.491	C / NA	CADASTRAL TRAVERSE	FOUND
SSM 149956	420 459.645	6387 021.961	C / NA	CADASTRAL TRAVERSE	FOUND

MGA CO-ORDINATES ADOPTED FROM SCIMS AS AT 12/06/2007
COMBINED SCALE FACTOR = 0.999678. ZONE 56

SCHEDULE OF SHORT AND CURVED BOUNDARIES

No.	BEARING	CHORD	ARC	RADIUS
9			30.435 PO	108 PO
10			54.06 PO	90.35 PO
11			166.895 PO	285 PO
12			179.91 PO	100 PO
13			93.13 PO	250 PO
14			73.95 PO	75 PO
15			194.35 PO	212 PO
16			78.31 PO	200 PO
17			19.975 PO	66 PO
18			55.83 PO	44 PO
19			11.895 PO	16 PO
20			29.74 PO	20 PO
21			11.895 PO	16 PO

TOONANG DRIVE
RM GIP FD 167°29' 1 (DP 856447)
PEG GONE
70.84 PO DED
RM GIP GONE
RM GIP 0.515 DP 702022
MYALL (VARIABLE WIDTH) STREET
37 2928m²
38
(S)
RM GIP FD 0.08 SURV 1 (DP 270100)
RM DH&W IN KB 1.575
81.535 PO 81.555 SURVEY
120.045 PO 120.025 SURVEY
(DP 270100) RM DH&W FD 6.255
QUAYS BOULEVARDE (30 WIDE)
SSM 122550 FD
(DP 270100) RM GIP FD 0.97

DIAGRAM

NOT TO SCALE

SEE SHEET 1

DP 702022
127.24 PO
70.84 PO DED
SEE DIAGRAM
37
38
MYALL
QUAYS BOULEVARDE (30 WIDE)
SSM 122550 FD
(DP 270100) RM SSM 149956 FD
SSM 149956 NOT EST.
201.58
270.78
PT 1 D.P.270100
23 D P 270100
24 D P 270100
20 D P 270100
26
27 D P 270100
30 D P 270100
28
347°43' 488.77
ESTABLISHED SSM 67729
ESTABLISHED SSM 87358
'A'
'B' ESTABLISHED SSM 88747
287.39 287.376
297.81 297.813 MGA GRND
137°49'50"
SHORELINE DRIVE
WINDWARD CIRCUIT
LEEWARD CIRCUIT
CAPTAINS COVE CIRCUIT
DP 280002
PT 1
PT 63
392 PO MHWM
LOTS 37 AND 38 ARE DEVELOPMENT LOTS

THIS IS SHEET 29 OF DP 270100 AND IT REPLACES SHEET 26 AS REGARDS TO LOT 96 AND IS AN ADDITIONAL SHEET

COMMUNITY PLAN
DP270100
Additional sheet 29

Registered: 18.09.2007

This is sheet 2 of my plan in 3 sheets dated 25/08/2006

SEE SIGNATURES FORM
Surveyor registered under Surveying Act 2002

This is sheet 2 of the plan of 3 sheets covered by Subdivision Certificate No. of

SEE SIGNATURES FORM
Authorised Person/General Manager/Accredited Certifier

For use where space is insufficient in any panel on Plan Form 2.

Reduction Ratio: 1: 2000

Plan Drawing only to appear in this space — SURVEYOR'S REFERENCE: 202400

Req:R068801 /Doc:DP 0270100 P /Rev:28-Sep-2007 /Sts:SC.OK /Prt:19-Mar-2008 19:40 /Pgs:ALL /Seq:48 of 51:270100_37
Ref:ALSP /Src:M

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Title Search

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LAND AND PROPERTY INFORMATION NEW SOUTH WALES - TITLE SEARCH

FOLIO: 35/270100

SEARCH DATE	TIME	EDITION NO	DATE
18/3/2008	6:36 PM	1	27/8/2007

LAND

LOT 35 IN COMMUNITY PLAN DP270100
AT TEA GARDENS
LOCAL GOVERNMENT AREA GREAT LAKES
PARISH OF COWEAMBAH COUNTY OF GLOUCESTER
TITLE DIAGRAM DP270100

FIRST SCHEDULE

CRIGHTON PROPERTIES PTY LIMITED

SECOND SCHEDULE (8 NOTIFICATIONS)

1 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)
2 INTERESTS RECORDED ON REGISTER FOLIO 1/270100
3 ATTENTION IS DIRECTED TO THE MANAGEMENT STATEMENT OF THE COMMUNITY SCHEME FILED WITH THE COMMUNITY PLAN
4 BK 864 NO 856 LAND EXCLUDES MINERALS
5 DP738450 RESTRICTION(S) ON THE USE OF LAND
6 DP786548 RESTRICTION(S) ON THE USE OF LAND
7 DP270100 EASEMENT FOR WATER SUPPLY 3 METRE(S) WIDE,4 METRES WIDE AND VARIABLE AFFECTING THE PART(S) SHOWN SO BURDENED IN THE TITLE DIAGRAM (DOC.4)
8 DP270100 EASEMENT FOR TRANSMISSION 1 METRE WIDE, 4 METRES WIDE & VARIABLE AFFECTING THE PART(S) SHOWN SO BURDENED IN THE TITLE DIAGRAM (DOC.4)

NOTATIONS

UNREGISTERED DEALINGS: PP DP270561.

*** END OF SEARCH ***

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LAND AND PROPERTY INFORMATION NEW SOUTH WALES - TITLE SEARCH

FOLIO: 10/270100

SEARCH DATE	TIME	EDITION NO	DATE
18/3/2008	6:34 PM	3	13/7/2005

LAND

LOT 10 IN COMMUNITY PLAN DP270100
AT TEA GARDENS
LOCAL GOVERNMENT AREA GREAT LAKES
PARISH OF COWEAMBAH COUNTY OF GLOUCESTER
TITLE DIAGRAM DP270100

FIRST SCHEDULE

GEOFFREY JOHN COX (T 5333813)

SECOND SCHEDULE (8 NOTIFICATIONS)

1 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)
2 INTERESTS RECORDED ON REGISTER FOLIO 1/270100
3 BK 864 NO 856 LAND EXCLUDES MINERALS WITHIN THE PART SHOWN SO BURDENED IN THE TITLE DIAGRAM
4 DP738450 RESTRICTION(S) ON THE USE OF LAND AFFECTING THE PART SHOWN SO BURDENED IN THE TITLE DIAGRAM
5 DP786548 RESTRICTION(S) ON THE USE OF LAND AFFECTING THE PART SHOWN SO BURDENED IN THE TITLE DIAGRAM
6 5333814 MORTGAGE TO STATE BANK OF NEW SOUTH WALES LIMITED
7 AB527646 THIS LOT DOES NOT FORM PART OF A COMMUNITY SCHEME
* 8 DP1118863 EASEMENT FOR ACCESS OVER TRACK IN USE APPURTENANT TO THE LAND ABOVE DESCRIBED

NOTATIONS

UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***

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LAND AND PROPERTY INFORMATION NEW SOUTH WALES - HISTORICAL SEARCH

SEARCH DATE

19/3/2008 7:41PM

FOLIO: 10/270100

First Title(s): OLD SYSTEM
Prior Title(s): 5/270100

Recorded	Number	Type of Instrument	C.T. Issue
19/2/1998	DP270100	DEPOSITED PLAN	FOLIO CREATED EDITION 1
16/10/1998	5333812	DISCHARGE OF MORTGAGE	
16/10/1998	5333813	TRANSFER	
16/10/1998	5333814	MORTGAGE	EDITION 2
13/7/2005	AB527646	REQUEST	EDITION 3
23/11/2007	DP1118863	DEPOSITED PLAN	

*** END OF SEARCH ***

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LAND AND PROPERTY INFORMATION NEW SOUTH WALES - HISTORICAL SEARCH

SEARCH DATE
19/3/2008 7:42PM

FOLIO: 5/270100

First Title(s): OLD SYSTEM
Prior Title(s): 430/856447

Recorded	Number	Type of Instrument	C.T. Issue
21/3/1996	DP270100	DEPOSITED PLAN	FOLIO CREATED EDITION 1
2/5/1997	3027945	DISCHARGE OF MORTGAGE	
2/5/1997	3027946	MORTGAGE	EDITION 2
2/6/1997	DP270100	DEPOSITED PLAN	EDITION 3
19/2/1998	DP270100	DEPOSITED PLAN	FOLIO CANCELLED

*** END OF SEARCH ***

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LAND AND PROPERTY INFORMATION NEW SOUTH WALES - HISTORICAL SEARCH

SEARCH DATE
19/3/2008 7:44PM

FOLIO: 430/856447

First Title(s): OLD SYSTEM
Prior Title(s): 43/791899 PA64656

Recorded	Number	Type of Instrument	C.T. Issue
1/2/1996	PA64656	PRIMARY APPLICATION	FOLIO CREATED EDITION 1
14/2/1996	O915728	DEPARTMENTAL DEALING	
21/3/1996	DP270100	DEPOSITED PLAN	FOLIO CANCELLED

*** END OF SEARCH ***

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LAND AND PROPERTY INFORMATION NEW SOUTH WALES - HISTORICAL SEARCH

SEARCH DATE
19/3/2008 7:46PM

FOLIO: 43/791899

First Title(s): OLD SYSTEM
Prior Title(s): 60/786548

Recorded	Number	Type of Instrument	C.T. Issue
13/9/1989	DP791899	DEPOSITED PLAN	FOLIO CREATED EDITION 1
17/4/1990	Y948966	MORTGAGE	EDITION 2
7/9/1990	Z205831	CAVEAT	
30/7/1991	Z778102	WITHDRAWAL OF CAVEAT	
30/7/1991	Z778103	TSFR BY MTGEE-POWER OF SALE	
30/7/1991	Z778104	MORTGAGE	EDITION 3
31/1/1996	DP856447	DEPOSITED PLAN	FOLIO CANCELLED

*** END OF SEARCH ***

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LAND AND PROPERTY INFORMATION NEW SOUTH WALES - HISTORICAL SEARCH

SEARCH DATE
19/3/2008 7:49PM

FOLIO: 60/786548

First Title(s): OLD SYSTEM
Prior Title(s): 42/738450

Recorded	Number	Type of Instrument	C.T. Issue
9/2/1989	DP786548	DEPOSITED PLAN	FOLIO CREATED EDITION 1
23/2/1989	Y203750	DEPARTMENTAL DEALING	
13/9/1989	DP791899	DEPOSITED PLAN	FOLIO CANCELLED RESIDUE REMAINS

*** END OF SEARCH ***

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PRINTED ON 19/3/2008

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Historical Search

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LAND AND PROPERTY INFORMATION NEW SOUTH WALES - HISTORICAL SEARCH

SEARCH DATE
19/3/2008 7:54PM

FOLIO: 42/738450

First Title(s): OLD SYSTEM
Prior Title(s): 10/733241

Recorded	Number	Type of Instrument	C.T. Issue
31/3/1987	DP738450	DEPOSITED PLAN	FOLIO CREATED EDITION 1
8/9/1987	X76555	DISCHARGE OF MORTGAGE	EDITION 2
3/2/1989	DP786548	DEPOSITED PLAN	FOLIO CANCELLED RESIDUE REMAINS

*** END OF SEARCH ***

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LAND AND PROPERTY INFORMATION NEW SOUTH WALES - HISTORICAL SEARCH

SEARCH DATE
19/3/2008 7:55PM

FOLIO: 10/733241

First Title(s): OLD SYSTEM
Prior Title(s): VOL 12411 FOL 59

Recorded	Number	Type of Instrument	C.T. Issue
27/6/1986	DP733241	DEPOSITED PLAN	FOLIO CREATED EDITION 1
31/3/1987	DP738450	DEPOSITED PLAN	FOLIO CANCELLED

*** END OF SEARCH ***

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LAND AND PROPERTY INFORMATION NEW SOUTH WALES - TITLE SEARCH

FOLIO: 38/270100

SEARCH DATE	TIME	EDITION NO	DATE
19/3/2008	7:38 PM	3	16/2/2008

LAND

LOT 38 IN COMMUNITY PLAN DP270100
AT TEA GARDENS
LOCAL GOVERNMENT AREA GREAT LAKES
PARISH OF COWEAMBAH COUNTY OF GLOUCESTER
TITLE DIAGRAM DP270100

FIRST SCHEDULE

CRIGHTON PROPERTIES PTY LIMITED

SECOND SCHEDULE (11 NOTIFICATIONS)

1 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)
2 INTERESTS RECORDED ON REGISTER FOLIO 1/270100
3 ATTENTION IS DIRECTED TO THE MANAGEMENT STATEMENT OF THE COMMUNITY SCHEME FILED WITH THE COMMUNITY PLAN
4 BK 864 NO 856 LAND EXCLUDES MINERALS
5 DP738450 EASEMENT TO DRAIN WATER 6 METRE(S) WIDE AFFECTING THE PART(S) SHOWN SO BURDENED IN THE TITLE DIAGRAM
6 DP738450 RESTRICTION(S) ON THE USE OF LAND
7 DP786548 RESTRICTION(S) ON THE USE OF LAND
8 DP270100 EASEMENT TO DRAIN WATER VARIABLE WIDTH AFFECTING THE WHOLE OF THE LAND ABOVE DESCRIBED (DOC.8)
9 DP270100 RIGHT OF ACCESS 6.5 METRE(S) WIDE APPURTENANT TO THE PART SHOWN SO BENEFITED IN THE TITLE DIAGRAM (DOC.9)
10 DP1118863 EASEMENT FOR ACCESS OVER TRACK IN USE AFFECTING THE PART(S) SHOWN SO BURDENED IN DP1118863
11 AD771287 MORTGAGE TO AUSTRALIA AND NEW ZEALAND BANKING GROUP LIMITED

NOTATIONS

UNREGISTERED DEALINGS: PP DP280012.

*** END OF SEARCH ***

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LAND AND PROPERTY INFORMATION NEW SOUTH WALES - HISTORICAL SEARCH

SEARCH DATE
19/3/2008 7:40PM

FOLIO: 38/270100

First Title(s): OLD SYSTEM
Prior Title(s): 36/270100

Recorded	Number	Type of Instrument	C.T. Issue
18/9/2007	DP270100	DEPOSITED PLAN	FOLIO CREATED EDITION 1
23/11/2007	DP1118863	DEPOSITED PLAN	EDITION 2
16/2/2008	AD771287	MORTGAGE	EDITION 3

*** END OF SEARCH ***

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LAND AND PROPERTY INFORMATION NEW SOUTH WALES - HISTORICAL SEARCH

SEARCH DATE
19/3/2008 7:41PM

FOLIO: 36/270100

First Title(s): OLD SYSTEM
Prior Title(s): 34/270100

Recorded	Number	Type of Instrument	C.T. Issue
27/8/2007	DP270100	DEPOSITED PLAN	FOLIO CREATED CT NOT ISSUED
18/9/2007	DP270100	DEPOSITED PLAN	FOLIO CANCELLED

*** END OF SEARCH ***

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LAND AND PROPERTY INFORMATION NEW SOUTH WALES - HISTORICAL SEARCH

SEARCH DATE
19/3/2008 7:43PM

FOLIO: 34/270100

First Title(s): OLD SYSTEM
Prior Title(s): 31/270100

Recorded	Number	Type of Instrument	C.T. Issue
6/7/2004	DP270100	DEPOSITED PLAN	FOLIO CREATED EDITION 1
2/6/2007	AD165888	DISCHARGE OF MORTGAGE	EDITION 2
27/8/2007	DP270100	DEPOSITED PLAN	FOLIO CANCELLED

*** END OF SEARCH ***

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LAND AND PROPERTY INFORMATION NEW SOUTH WALES - HISTORICAL SEARCH

SEARCH DATE

19/3/2008 7:45PM

FOLIO: 31/270100

First Title(s): VOL 11805 FOL 99 OLD SYSTEM
Prior Title(s): 18/270100 25/270100

Recorded	Number	Type of Instrument	C.T. Issue
5/7/2004	DP270100	DEPOSITED PLAN	FOLIO CREATED CT NOT ISSUED
6/7/2004	DP270100	DEPOSITED PLAN	FOLIO CANCELLED

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SEARCH DATE
19/3/2008 7:48PM

FOLIO: 25/270100

First Title(s): VOL 11805 FOL 99 OLD SYSTEM
Prior Title(s): 22/270100

Recorded	Number	Type of Instrument	C.T. Issue
21/6/2004	DP270100	DEPOSITED PLAN	FOLIO CREATED CT NOT ISSUED
5/7/2004	DP270100	DEPOSITED PLAN	FOLIO CANCELLED

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SEARCH DATE

19/3/2008 7:47PM

FOLIO: 18/270100

First Title(s): OLD SYSTEM
Prior Title(s): 11/270100

Recorded	Number	Type of Instrument	C.T. Issue
17/6/2002	DP270100	DEPOSITED PLAN	FOLIO CREATED EDITION 1
15/6/2004	AA717176	TRANSFER	
5/7/2004	DP270100	DEPOSITED PLAN	FOLIO CANCELLED

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SEARCH DATE
19/3/2008 7:52PM

FOLIO: 11/270100

First Title(s): OLD SYSTEM
Prior Title(s): 5/270100

Recorded	Number	Type of Instrument	C.T. Issue
19/2/1998	DP270100	DEPOSITED PLAN	FOLIO CREATED EDITION 1
13/10/1998	5325312	DISCHARGE OF MORTGAGE	EDITION 2
17/3/1999	5686732	MORTGAGE	EDITION 3
26/4/2001	7563647	VARIATION OF MORTGAGE	EDITION 4
28/3/2002	8468316	CAVEAT	
30/5/2002	8621056	DISCHARGE OF MORTGAGE	
17/6/2002	DP270100	DEPOSITED PLAN	FOLIO CANCELLED RESIDUE REMAINS

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SEARCH DATE
19/3/2008 7:50PM

FOLIO: 22/270100

First Title(s): VOL 11805 FOL 99 OLD SYSTEM
Prior Title(s): 17/270100

Recorded	Number	Type of Instrument	C.T. Issue
28/8/2002	DP270100	DEPOSITED PLAN	FOLIO CREATED EDITION 1
26/11/2002	8850107	WITHDRAWAL OF CAVEAT	
31/5/2004	AA682643	MORTGAGE	EDITION 2
21/6/2004	DP270100	DEPOSITED PLAN	FOLIO CANCELLED RESIDUE REMAINS

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SEARCH DATE
19/3/2008 7:53PM

FOLIO: 17/270100

First Title(s): VOL 11805 FOL 99 OLD SYSTEM
Prior Title(s): 8/270100 11/270100
14/270100

Recorded	Number	Type of Instrument	C.T. Issue
17/6/2002	DP270100	DEPOSITED PLAN	FOLIO CREATED EDITION 1
18/7/2002	8785885	DEPARTMENTAL DEALING	
25/7/2002	8810067	DISCHARGE OF MORTGAGE	
25/7/2002	8810068	DISCHARGE OF MORTGAGE	EDITION 2
28/8/2002	DP270100	DEPOSITED PLAN	FOLIO CANCELLED RESIDUE REMAINS

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LAND AND PROPERTY INFORMATION NEW SOUTH WALES - HISTORICAL SEARCH

SEARCH DATE
19/3/2008 7:56PM

FOLIO: 8/270100

First Title(s): OLD SYSTEM VOL 11805 FOL 99
Prior Title(s): 4/270100

Recorded	Number	Type of Instrument	C.T. Issue
2/6/1997	DP270100	DEPOSITED PLAN	FOLIO CREATED EDITION 1
23/11/1998	5413147	MORTGAGE	EDITION 2
17/6/2002	DP270100	DEPOSITED PLAN	FOLIO CANCELLED RESIDUE REMAINS

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SEARCH DATE
19/3/2008 7:58PM

FOLIO: 4/270100

First Title(s): OLD SYSTEM VOL 11805 FOL 99
Prior Title(s): 300/855274

Recorded	Number	Type of Instrument	C.T. Issue
21/3/1996	DP270100	DEPOSITED PLAN	FOLIO CREATED EDITION 1
3/4/1997	2946247	DISCHARGE OF MORTGAGE	
3/4/1997	2946248	MORTGAGE	EDITION 2
2/6/1997	DP270100	DEPOSITED PLAN	FOLIO CANCELLED

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LAND AND PROPERTY INFORMATION NEW SOUTH WALES - HISTORICAL SEARCH

SEARCH DATE
19/3/2008 7:59PM

FOLIO: 300/855274

First Title(s): OLD SYSTEM VOL 11805 FOL 99
Prior Title(s): 251/843211

Recorded	Number	Type of Instrument	C.T. Issue
15/12/1995	DP855274	DEPOSITED PLAN	FOLIO CREATED EDITION 1
27/12/1995	O797992	WITHDRAWAL OF CAVEAT	
14/2/1996	O915728	DEPARTMENTAL DEALING	
21/3/1996	DP270100	DEPOSITED PLAN	FOLIO CANCELLED

*** END OF SEARCH ***

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LAND AND PROPERTY INFORMATION NEW SOUTH WALES - HISTORICAL SEARCH

SEARCH DATE
19/3/2008 8:01PM

FOLIO: 251/843211

First Title(s): OLD SYSTEM VOL 11805 FOL 99
Prior Title(s): 32/829692

Recorded	Number	Type of Instrument	C.T. Issue
4/10/1994	DP843211	DEPOSITED PLAN	FOLIO CREATED EDITION 1
3/4/1995	O134412	CAVEAT	
13/11/1995	O683412	DEPARTMENTAL DEALING	
14/12/1995	O738642	REQUEST	
14/12/1995	O738643	REQUEST	
14/12/1995	O738644	REQUEST	
15/12/1995	DP855274	DEPOSITED PLAN	FOLIO CANCELLED RESIDUE REMAINS

*** END OF SEARCH ***

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SEARCH DATE
19/3/2008 8:02PM

FOLIO: 32/829692

First Title(s): OLD SYSTEM VOL 11805 FOL 99
Prior Title(s): 31/808202

Recorded	Number	Type of Instrument	C.T. Issue
8/4/1993	DP829692	DEPOSITED PLAN	FOLIO CREATED EDITION 1
2/9/1994	U585762	DEPARTMENTAL DEALING	
29/9/1994	DP843211	DEPOSITED PLAN	FOLIO CANCELLED RESIDUE REMAINS
18/9/2006	DP1102424	DEPOSITED PLAN	

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SEARCH DATE
19/3/2008 8:03PM

FOLIO: 31/808202

First Title(s): OLD SYSTEM VOL 11805 FOL 99
Prior Title(s): 1/564129

Recorded	Number	Type of Instrument	C.T. Issue
28/2/1991	DP808202	DEPOSITED PLAN	FOLIO CREATED EDITION 1
30/7/1991	Z778103	TSFR BY MTGEE-POWER OF SALE	
30/7/1991	Z778105	MORTGAGE	EDITION 2
13/8/1992	E674999	DEPARTMENTAL DEALING	
8/4/1993	DP829692	DEPOSITED PLAN	FOLIO CANCELLED RESIDUE REMAINS

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LAND AND PROPERTY INFORMATION NEW SOUTH WALES - HISTORICAL SEARCH

SEARCH DATE
19/3/2008 8:04PM

FOLIO: 1/564129

First Title(s): SEE PRIOR TITLE(S)
Prior Title(s): VOL 12456 FOL 2

Recorded	Number	Type of Instrument	C.T. Issue
28/3/1988		TITLE AUTOMATION PROJECT	LOT RECORDED FOLIO NOT CREATED
30/8/1988		CONVERTED TO COMPUTER FOLIO	FOLIO CREATED CT NOT ISSUED
4/4/1989	Y272065	WITHDRAWAL OF CAVEAT	
4/4/1989	Y272066	DISCHARGE OF MORTGAGE	
4/4/1989	Y272067	TRANSFER	EDITION 1
13/4/1989	Y280802	CAVEAT	
1/6/1990	Z35028	MORTGAGE	EDITION 2
28/2/1991	Z523610	WITHDRAWAL OF CAVEAT	
28/2/1991	DP808202	DEPOSITED PLAN	FOLIO CANCELLED RESIDUE REMAINS

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LAND AND PROPERTY INFORMATION NEW SOUTH WALES - HISTORICAL SEARCH

SEARCH DATE

19/3/2008 7:57PM

FOLIO: 11/270100

First Title(s): OLD SYSTEM
Prior Title(s): 5/270100

Recorded	Number	Type of Instrument	C.T. Issue
19/2/1998	DP270100	DEPOSITED PLAN	FOLIO CREATED EDITION 1
13/10/1998	5325312	DISCHARGE OF MORTGAGE	EDITION 2
17/3/1999	5686732	MORTGAGE	EDITION 3
26/4/2001	7563647	VARIATION OF MORTGAGE	EDITION 4
28/3/2002	8468316	CAVEAT	
30/5/2002	8621056	DISCHARGE OF MORTGAGE	
17/6/2002	DP270100	DEPOSITED PLAN	FOLIO CANCELLED RESIDUE REMAINS

*** END OF SEARCH ***

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SEARCH DATE
19/3/2008 7:58PM

FOLIO: 14/270100

First Title(s): VOL 11805 FOL 99 OLD SYSTEM
Prior Title(s): 9/270100

Recorded	Number	Type of Instrument	C.T. Issue
1/7/1999	DP270100	DEPOSITED PLAN	FOLIO CREATED EDITION 1
17/8/1999	6080905	REQUEST	
17/8/1999	6080908	DISCHARGE OF MORTGAGE	
18/8/1999	6104551	DEPARTMENTAL DEALING	EDITION 2
17/6/2002	DP270100	DEPOSITED PLAN	FOLIO CANCELLED RESIDUE REMAINS

*** END OF SEARCH ***

ERM - Tea Gardens ALSP PRINTED ON 19/3/2008

* ANY ENTRIES PRECEDED BY AN ASTERISK DO NOT APPEAR ON THE CURRENT EDITION OF TITLE. WARNING: THE INFORMATION APPEARING UNDER NOTATIONS HAS NOT BEEN FORMALLY RECORDED IN THE REGISTER. ADVANCE LEGAL SEARCH PTY LTD CERTIFIES THAT THE INFORMATION CONTAINED IN THIS DOCUMENT HAS BEEN PROVIDED ELECTRONICALLY BY THE REGISTRAR-GENERAL IN ACCORDANCE WITH SECTION 96B(2) OF THE REAL PROPERTY ACT, 1900.

Information Provided Through
Advance Legal Search Pty Ltd
Ph. 0297541590 Fax. 0297541364

Historical Search

EziSearch
An Approved LPI NSW
Information Broker

LAND AND PROPERTY INFORMATION NEW SOUTH WALES - HISTORICAL SEARCH

SEARCH DATE
19/3/2008 8:05PM

FOLIO: 9/270100

First Title(s): OLD SYSTEM VOL 11805 FOL 99
Prior Title(s): 4/270100

Recorded	Number	Type of Instrument	C.T. Issue
2/6/1997	DP270100	DEPOSITED PLAN	FOLIO CREATED EDITION 1
3/6/1997	DP285432	DEPOSITED PLAN	
23/11/1998	5413147	MORTGAGE	EDITION 2
1/7/1999	DP270100	DEPOSITED PLAN	FOLIO CANCELLED

*** END OF SEARCH ***

ERM - Tea Gardens ALSP

PRINTED ON 19/3/2008

* ANY ENTRIES PRECEDED BY AN ASTERISK DO NOT APPEAR ON THE CURRENT EDITION OF TITLE. WARNING: THE INFORMATION APPEARING UNDER NOTATIONS HAS NOT BEEN FORMALLY RECORDED IN THE REGISTER. ADVANCE LEGAL SEARCH PTY LTD CERTIFES THAT THE INFORMATION CONTAINED IN THIS DOCUMENT HAS BEEN PROVIDED ELECTRONICALLY BY THE REGISTRAR-GENERAL IN ACCORDANCE WITH SECTION 96B(2) OF THE REAL PROPERTY ACT, 1900.

Req:R068828 /Doc:DL 5333813 /Rev:20-Oct-1998 /Sts:NO.OK /Prt:19-Mar-2008 20:07 /Pgs:ALL /Seq:1 of 1
Ref:ALSP /Src:M

TRANSFER

Real Property Act, 1900

5333813V

Office of

[illegible] 994003512 [illegible]
[illegible] 10 PT 5/270100 TFR [illegible]
CRIGHTON PROPERTIE COX GJ
[illegible] 30.00 09281756

(A) **LAND TRANSFERRED**

Show no more than 20 References to Title.
If appropriate, specify the share transferred.

FOLIO IDENTIFIER 10/270100

(B) **LODGED BY**

L.T.O. Box	Name, Address or DX and Telephone
DX	L. J. & W. RALPH CITY LEGAL SEARCHING SERVICES Level 2, Suite 3 195 Macquarie St, SYDNEY 2000 Ph: 9223 9488 DX882 SYDNEY REFERENCE (max. 15 characters): 32/COX.

(C) **TRANSFEROR** CRIGHTON PROPERTIES PTY LIMITED
ACN 000 830 875

(D) acknowledges receipt of the consideration of $420,000.00

and as regards the land specified above transfers to the Transferee an estate in fee simple

(E) subject to the following **ENCUMBRANCES** 1. ..... 2. ..... 3. .....

(F) **TRANSFEREE**

T TS (s713 LGA) TW (Sheriff)	GEOFFREY JOHN COX

(G) **TENANCY:** ~~—~~

(H) We certify this dealing correct for the purposes of the Real Property Act, 1900. **DATED** .....

Signed in my presence by the Transferor who is personally known to me.

THE COMMON SEAL of CRIGHTON PROPERTIES PTY. LIMITED was hereunto affixed by authority of its Board of Directors in the presence of:

Signature of Witness

Name of Witness (BLOCK LETTERS)

Address of Witness

Secretary Director

CRIGHTON PROPERTIES PTY. LIMITED A.C.N. 000 830 875 Common Seal

Signature of Transferor

Signed in my presence by the Transferee who is personally known to me.

Signature of Witness

LORRAINE MCCARTHY

Name of Witness (BLOCK LETTERS)

40 THE CORSO SARATOGA

Address of Witness

Signature of Transferee

INSTRUCTIONS FOR FILLING OUT THIS FORM ARE AVAILABLE FROM THE LAND TITLES OFFICE

CHECKED BY (office use only)

AUSDOC Office Pty. Ltd.

Req:R068829 /Doc:DL AA717176 /Rev:21-Jun-2004 /Sts:NO.OK /Prt:19-Mar-2008 20:09 /Pgs:ALL /Seq:1 of 1
Ref:ALSP /Src:M

Form: 01T
Licence: 01-05-025
Licensee: Kendall A. Tully

TRANSFER

New South Wales
Real Property Act 1900

AA717176L

PRIVACY NOTE: this information is legally required and will become part of the public record

STAMP DUTY Office of State Revenue use only

(A) TORRENS TITLE If appropriate, specify the part transferred
18/270100

(B) LODGED BY

Delivery Box	Name, Address or DX and Telephone	CODES
25A	28A Gallowa[illegible] legal service[illegible] Phone: (02) 9233 1011 Fax: (02) 9232 34[illegible] Reference (optional): CRIGH-	T TW (Sheriff)

(C) TRANSFEROR GREAT LAKES COUNCIL

(D) CONSIDERATION The transferor acknowledges receipt of the consideration of $0.00 and as regards

(E) ESTATE The land specified above transfers to the transferee an estate in fee simple.

(F) SHARE TRANSFERRED WHOLE

(G) Encumbrances (if applicable) 1. 2. 3.

(H) TRANSFEREE CRIGHTON PROPERTIES PTY LIMITED ACN 000 830 875

(I) TENANCY:

DATE The Common Seal of the Council of Great Lakes was hereunto affixed in pursuance of a resolution of Council dated 8 June, 2004

(J) Certified correct for the purposes of the Real Property Act 1900 by the corporation named below the common seal of which was affixed pursuant to the authority specified and in the presence of the authorised person(s) whose signature(s) appears(s) below.
Corporation: **GREAT LAKES COUNCIL**
Authority: MAYOR

Signature of authorised person:
Name of authorised person: JOHN CHADBAN
Office held: Mayor

GREAT LAKES COUNCIL Common Seal

Signature of authorised person:
Name of authorised person: KEITH O'LEARY
Office held: General Manager

Certified correct for the purposes of the Real Property Act 1900 by the corporation named below the common seal of which was affixed pursuant to the authority specified and in the presence of the authorised person(s) whose signature(s) appears(s) below.
Corporation: **CRIGHTON PROPERTIES PTY LIMITED ACN 000 830 875**
Authority: DIRECTOR

Signature of authorised person:
Name of authorised person: Angelique Hogan
Office held: Director

CRIGHTON PROPERTIES PTY. LIMITED A.C.N. 000 830 875 Common Seal

Signature of authorised person:
Name of authorised person: GEOFFREY COX
Office held: DIRECTOR

ALL HANDWRITING MUST BE IN BLOCK CAPITALS

Req:R082163 /Doc:PA 064656 PA /Rev:07-Feb-2005 /Sts:SC.OK /Prt:25-Mar-2008 19:46 /Pgs:ALL /Seq:1 of 4
Ref:ALSP /Src:M

20-0620-

PRIMARY APPLICATION

Section 14 Real Property Act 1900

$87 –

PA 064656 H

CAUTION Severe penalties are provided for procuring a certificate of title through fraud.	Office of State Revenue use only

(A) **LODGED BY**

L.T.O. Box	Name, Address or DX and Telephone	Lodging Party's Reference (15 characters maximum)
	CRIGHTON PROPERTIES P/L. DX 7215 GOSFORD (043) 65.2822	

(B) **APPLICANT** ...CRIGHTON.PROPERTIES.PTY.LIMITED.(ACN.....000.830.875.).of..1.Stratford.Drive,.....
Terrigal

applies to have the land described below brought under the provisions of the Real Property Act 1900:

(C) All that piece of land situated at ....Tea.Gardens..... County: ...CLOUCESTER..... Parish: ....COWEAMBAH.....
being .....ϕ.....

(D) and requests that the follo of the Register issue in the name of :

THE APPLICANT

(E) **TENANCY:**.....

(F) **STATUTORY DECLARATION**

In support of this Application I .Lorraine.Margaret.McCarthy.of.1.Stratford.Park.Drive;.....
Terrigal, N.S.W., A Director of the Applicant Company..... solemnly and sincerely declare that:

1. The Applicant is seised of ~~(a) an estate in fee simple in the above described land.~~
   (b) possession of the above described land.
   ~~(c) a life estate in the above described land.~~
2. There is no person in possession or occupation of the said land or any part thereof adversely to the estate or interest therein of the Applicant.
3. The said land is now unoccupied / ~~occupied by the persons specified in Schedule One~~.
4. There does not exist any lease or agreement for lease of the said land for any term exceeding a tenancy for one year, or from year to year, except as set out in Schedule One.
5. There does not exist any right of way, right of drainage or other easement or any restrictive covenant affecting the said land, except as disclosed in Schedule One.
6. There does not exist any mortgage, lien, writ of execution, order, charge, encumbrance, will, settlement, deed, writing, contract, or dealing giving any right, claim or interest in the said land, or any part thereof, to any person other than the Applicant except as set out in Schedule One; nor, to the best of my knowledge and belief is there any action, proceeding or suit pending which affects or could affect the said land, or any person other than the Applicant who has or claims any estate, right, title or interest therein, except as disclosed in Schedule One.
7. There is no resumption or instrument whereby minerals or substrata have been excepted or reserved to any person, except as disclosed in Schedule One.
8. Schedule Two contains a full and correct list of all settlements, deeds, documents, instruments, maps, plans and papers relating to the said land so far as I have any means of ascertaining them. All such documents as are in my possession or under my control are lodged herewith; the whereabouts of all other documents listed, so far as is known to me, is stated in such list.
9. The Applicant has not become bankrupt nor assigned his/her estate for the benefit of creditors. If the Applicant is a corporation, the corporation has not appointed a liquidator.

Continued overleaf

Formerly Conveyed Bk 2637 No 601.
ϕ New PT Lot 420 in DP 856443

10. The information shown in the schedules hereto is to be taken as part of this declaration.

11. Searches and inquiries for those documents shown as whereabouts unknown, and referred to in Schedule Two as Numbers 1 and 2 were never in possession of Applicant, ~~have been made at the premises of the applicant, previous and present lending institutions, solicitors and agents and have not been lodged with any person as security for a loan or for any purpose whatsoever.~~

I, Lorraine Margaret McCarthy of 1 Stratford Park Drive, Terrigal make this solemn declaration conscientiously believing the same to be true and by virtue of the Oaths Act 1900 and certify this Application to be correct for the purposes of the Real Property Act 1900, and I hereby undertake to notify the Registrar General promptly of any further interest in the said land created after the making of this my declaration and before issue of the Certificate of Title.

Made and subscribed at Sydney on 19th January 19 96 in the presence of

Roy P Ringrose
Signature of Witness

Roy P. RINGROSE
Name of Witness (BLOCK LETTERS)

16 Oakleigh Ave Thornleigh 2120
Address and Qualification of Witness Solicitor

L McCarthy JP.
Signature of Applicant/Authorised Agent of Applicant

(G) **CONSENT OF MORTGAGEE**

....., being the mortgagee under mortgage Registered Book ..... Number ..... hereby joins in and consents to this Application subject to :

(i) entry on the folio of the register to be created and on the Certificate of Title to issue of a notification relating to such mortgage, AND

(ii) delivery to me of the Certificate of Title.

Witness

Mortgagee

(H) **SCHEDULE ONE**

Particulars of Subsisting Interests

Full name and address (of Occupier, Lessee, Mortgagee, etc.)	Nature of entitlement ("Occupier, "Lessee","Mortgagee", etc.)	Particulars of Instrument (if any) by which entitlement created
Roy P Ringrose		

(I)

SCHEDULE TWO

PA 64656

Location of Documents referred to below

[To be completed by the declarant]

Document numbers ....3 to 67..... LODGED HEREWITH

Document numbers ....1 and 2..... WHEREABOUTS UNKNOWN See clause 11 of declaration

Document numbers ..... PERMANENTLY LODGED - Receipt Numbers:

.....

Document numbers ..... TO BE LODGED BY: .....

.....

(J)

Schedule of Documents

[List each chain of title separately. The Schedule should commence from a good root of title]

No.	Date	Nature of Document	Parties	Book	Number
1		Crown Grant	Australian Agricultural Company		
2	03/11/1961	Conveyance	Australian Agricultural Company to Australian Pines and Products Limited	0	
(3)	15/01/1996	Statutory Declaration	F.G. Wraight		
(4)	19/01/1996	Statutory Declaration	G.J. Cox		
(5)	10/1/1996	Statutory Declaration	J. Turner		
6			Searches		
(7)	10/1/1996	Statutory Declaration	A D Cox		

0 Bk 2637 No 601

Continued overleaf

SCHEDULE TWO (Continued)

[List each chain of title separately. The Schedule should commence from a good root of title]

No.	Date	Nature of Document	Parties	Book	Number

B97
/Req: B409087
/Doc: DL Y272067
/Prt: 20-Mar-2008

OFFICE USE ONLY

Y272067

B

TRANSFER

REAL PROPERTY ACT, 1900

T 33 of 3 X

$ 92

R3/3

Torrens Title Reference	If Part Only, Delete Whole and Give Details	Location
Volume 12456 Folio 2 Now 1/5694/29	WHOLE	At Tea Gardens

DESCRIPTION OF LAND Note (a)

TRANSFEROR Note (b)

ANDRUCE (PASTORAL) PTY LIMITED

ESTATE Note (c)

(the abovenamed TRANSFEROR) hereby acknowledges receipt of the consideration of $ 275,000.00 and transfers an estate in fee simple in the land above described to the TRANSFEREE

TRANSFEREE Note (d)

RAKEBU PTY LIMITED of 280 Pacific Highway, Lindfield

OFFICE USE ONLY

S

TENANCY Note (e)

as joint tenants/tenants in common

PRIOR ENCUMBRANCES Note (f)

subject to the following PRIOR ENCUMBRANCES 1. Caveat S632963 2. ..... 3. .....

DATE 22nd March 1989

We hereby certify this dealing to be correct for the purposes of the Real Property Act, 1900.

EXECUTION Note (g)

Signed in my presence by the transferor who is personally known to me

THE COMMON SEAL of ANDRUCE (PASTORAL) PTY LIMITED was hereunto
Signature of Witness

affixed pursuant to a resolution of the Board of
Name of Witness (BLOCK LETTERS)

Directors in the presence of:-
Address and occupation of Witness

Secretary
Signed in my presence by the transferee who is personally known to me

ANDRUCE (PASTORAL) PTY. LTD.

G. [signature]
Director Signature of Transferor

Note (g)

Signature of Witness

Name of Witness (BLOCK LETTERS)

Address and occupation of Witness

[signature] (F.P. Zipfinger)
Signature of Transferee
Solicitor for the Transferee
21/11/88

TO BE COMPLETED BY LODGING PARTY Notes (h) and (i)

LODGED BY

Delivery Box Number 5mm

LODGED B
MALLESONS STEPH[illegible]
SOLICITO[illegible]
Lev[illegible]
50 C[illegible]

LOCATION OF DOCUMENTS

CT	OTHER	
		Herewith.
		In L.T.O. with
		Produced by

OFFICE USE ONLY

Checked	Passed	REGISTERED - -19	Secondary Directions	
ecf				
Signed	Extra Fee	4 APR 1989	Delivery Directions	CT 4/J

B97
/Req: B409085
/Doc: CT 12411-059
/Prt: 20-Mar-2008

NEW SOUTH WALES

Appln.No.38305

Prior Title Vol.6726 Fol.114

Vol. 12411 Fol. 59

Edition issued 22-4-1974

CANCELLED W

I certify that the person described in the First Schedule is the registered proprietor of the undermentioned estate in the land within described subject nevertheless to such exceptions encumbrances and interests as are shown in the Second Schedule.

Registrar General.

(Page 1) Vol. 12411 Fol. 59

ESTATE AND LAND REFERRED TO

Estate in Fee Simple in Lot 2 in Deposited Plan 230785 in the Shire of Great Lakes Parish of Coweambah and County of Gloucester, being part of 1880 square kilometres granted to Australian Agricultural Company on 20-11-1847. EXCEPTING THEREOUT all mines and minerals excepted by Registered Book 864 No.856.

FIRST SCHEDULE

~~PUBLIC ROAD.~~

SECOND SCHEDULE

1. Reservations and conditions, if any, contained in the Crown Grant above referred to.
2. ~~Caveat No.K78277 entered 6-8-1968.~~ WITHDRAWN P696008 8-7-1976

1976M7

Reg. Gen.
22-2-1977

WARNING: THIS DOCUMENT MUST NOT BE REMOVED FROM THE LAND TITLES OFFICE.

PERSONS ARE CAUTIONED AGAINST ALTERING OR ADDING TO THIS CERTIFICATE OR ANY ENDORSEMENT HEREON

NOTE: ENTRIES RULED THROUGH AND AUTHENTICATED BY THE SEAL OF THE REGISTRAR GENERAL ARE CANCELLED.

Vol. 12411 Fol. 59

PLAN SHOWING LOCATION OF LAND

LENGTHS ARE IN METRES

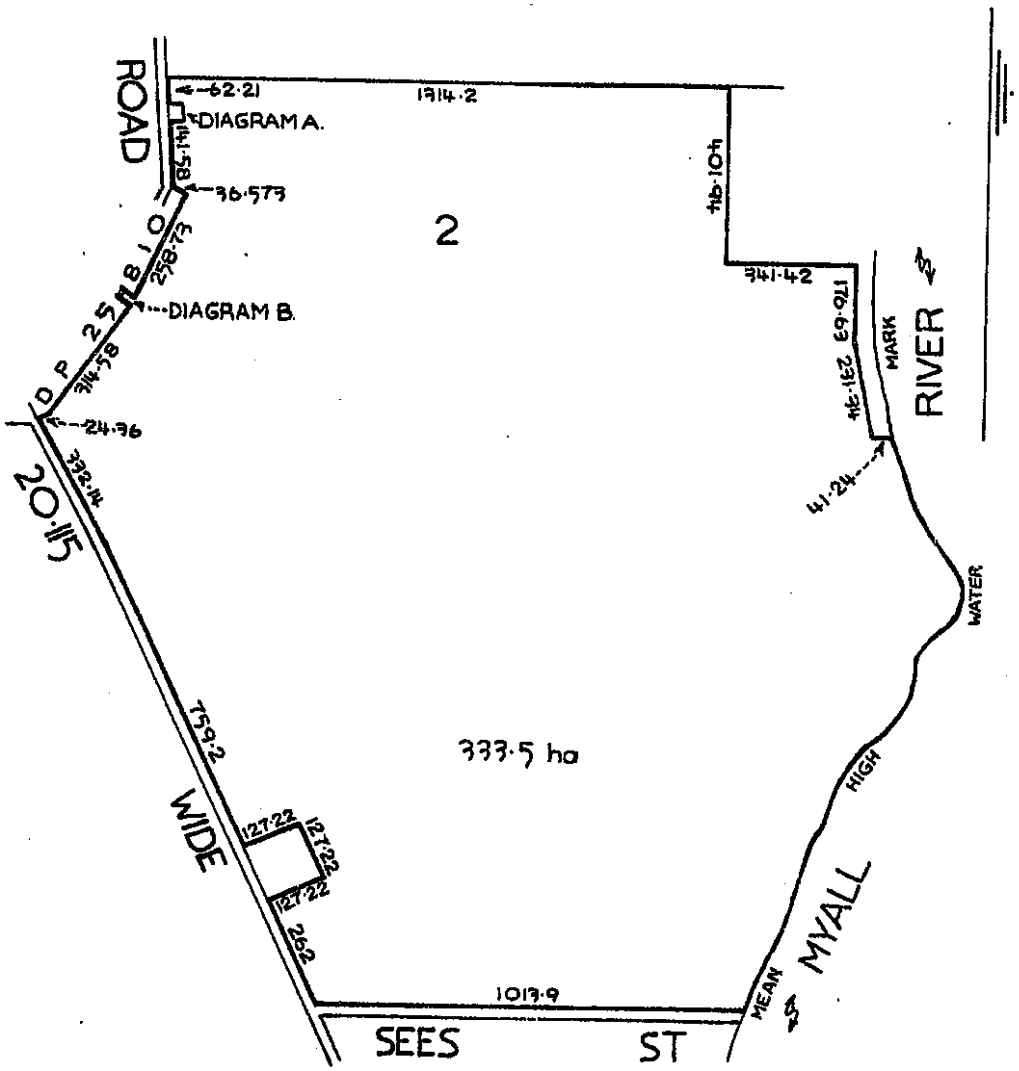


DIAGRAM A
NOT TO SCALE

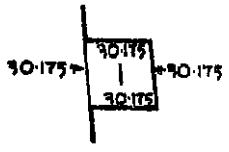
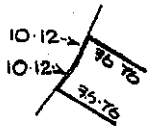


DIAGRAM B
NOT TO SCALE



KT82778 J.R.
4N

REDUCTION RATIO 1:12500

FIRST SCHEDULE (continued)

REGISTERED PROPRIETOR	INSTRUMENT NATURE	INSTRUMENT NUMBER	INSTRUMENT DATE	ENTERED	Signature of Registrar General
~~Coastal Forests Limited~~ Rakerbi ~~Rakerby~~ Pty Limited by Transfer T554209. Registered 8-6-1983.	Transfer	988702	———	~~1-3-1977~~	
DP/SP 733241 Registered 24.6.1986 This folio is cancelled as to whole/~~part~~ upon creation of computer folios for lots 1 to 10 inclusive in the abovementioned plan.					

SECOND SCHEDULE (continued)

INSTRUMENT NATURE	INSTRUMENT NUMBER	INSTRUMENT DATE	PARTICULARS	ENTERED	Signature of Registrar General	CANCELLATION		
~~Mortgage~~	R978089	———	~~to Bank of New South Wales~~	~~18-8-1980~~		Discharged	T554207	
T554210 Mortgage to Oakminster Limited. Registered 8-6-1983.								
			Limited pursuant to Section 88S Conveyancing Act, 1919, by the registration of DP 733241 Registered 24.6.1986					

NOTE: ENTRIES RULED THROUGH AND AUTHENTICATED BY THE SEAL OF THE REGISTRAR GENERAL ARE CANCELLED

Q348270ff
#887027e
T554207 T554209
-210M
(Page 1 of 4 pages)
DP733241R

Vol. 12411 Fol. 59

Vol. 12411 Fol. 59

FIRST SCHEDULE (continued)

REGISTERED PROPRIETOR	INSTRUMENT			ENTERED	Signature of Registrar General
	NATURE	NUMBER	DATE		

SECOND SCHEDULE (continued)

INSTRUMENT			PARTICULARS	ENTERED	Signature of Registrar General	CANCELLATION		
NATURE	NUMBER	DATE						
			Interests created pursuant to Section 88B Conveyancing Act, 1919, by the registration of DP Registered					

(Page 4 of 4 pages)

NOTE: ENTRIES RULED THROUGH AND AUTHENTICATED BY THE SEAL OF THE REGISTRAR GENERAL ARE CANCELLED.

B97
/Req: B409086
/Doc: CT 12456-002
/Prt: 20-Mar-2008

NEW SOUTH WALES

Vol. 12456 Fol. 2

Appln. No.50120 (part)

Prior Title (part) Crown Grant Vol.11805 Fol.99

Edition issued 7 - 6 - 1974

(Page 1) Vol. 12456 Fol. 2

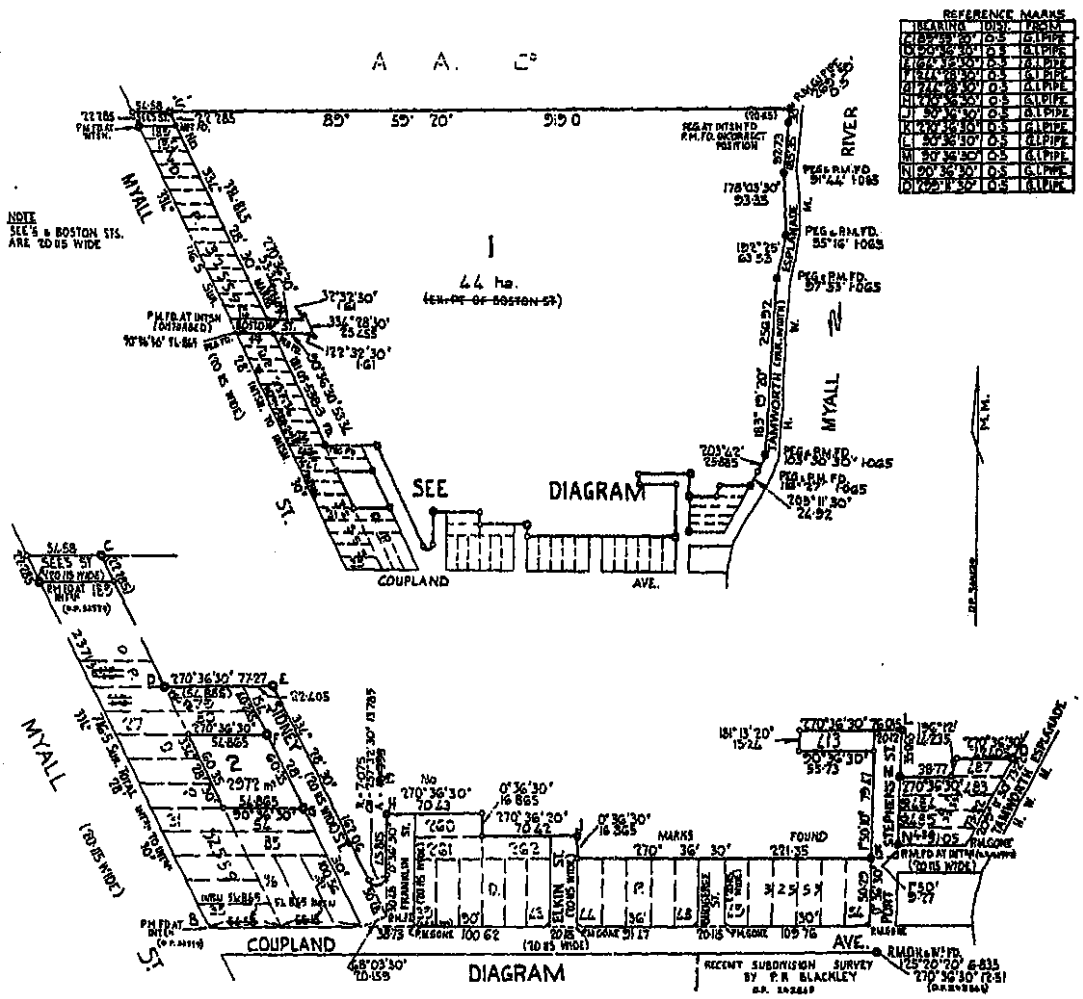
I certify that the person described in the First Schedule is the registered proprietor of the undermentioned estate in the land within described subject nevertheless to such exceptions encumbrances and interests as are shown in the Second Schedule.

CANCELLED

Registrar General.

PLAN SHOWING LOCATION OF LAND SEE AUTO FOLIO

LENGTHS ARE IN METRES



ESTATE AND LAND REFERRED TO

Estate in Fee Simple in Lot 1 in Deposited Plan 564129 at Tea Gardens in the Shire of Great Lakes Parish of Coweambah and County of Gloucester being part of 1880 square kilometres granted to Australian Agricultural Company on 20-11-1847 and being 10.19 hectares granted by Crown Grant Volume 11805 Folio 99, EXCEPTING THEREOUT all mines and minerals excepted by Deed Book 864 No.856 and all minerals reserved by the 10.19 hectare grant.

FIRST SCHEDULE

ANDRUCE (PASTORAL) PTY. LIMITED.

SECOND SCHEDULE

1. Reservations and conditions, if any, contained in the Crown Grants above referred to.
2. ~~Mortgage No.N4329 of the part of the land above described formerly comprised in Crown Grant Volume 11805 Folio 99 to Custom Credit Corporation Limited. Entered 5-2-1973.~~ Discharged R20453
3. ~~Mortgage No.N298355 of the part of the Land above described formerly comprised in Crown Grant Volume 11805 Folio 99 to Custom Credit Corporation Limited. Entered 25-6-1973.~~ Discharged R20453

WARNING: THIS DOCUMENT MUST NOT BE REPRODUCED FROM THE LAND TITLES OFFICE.
PERSONS ARE CAUTIONED AGAINST ALTERING OR ADDING TO THIS CERTIFICATE OR ANY NOTIFICATION HEREON
NOTE: ENTRIES RULED THROUGH AND AUTHENTICATED BY THE SEAL OF THE REGISTRAR GENERAL ARE CANCELLED.

Vol. 12456 Fol. 2

FIRST SCHEDULE (continued)

REGISTERED PROPRIETOR	INSTRUMENT NATURE	INSTRUMENT NUMBER	INSTRUMENT DATE	ENTERED	Signature of Registrar General
CANCELLED					
SEE AUTO FOLIO					

SECOND SCHEDULE (continued)

INSTRUMENT NATURE	INSTRUMENT NUMBER	INSTRUMENT DATE	PARTICULARS	ENTERED	Signature of Registrar General	CANCELLATION		
~~Mortgage~~	~~N699932~~	~~9-10-1972~~	~~of that part of the land within described formerly~~					
			~~comprised in Real Property Application 50120 to Custom~~					
			~~Credit Corporation Limited.~~	~~7-6-1974~~		~~Discharged~~	~~R20454~~	
~~Mortgage~~	~~N699933~~	~~6-6-1973~~	~~of that part of the land within described formerly~~					
			~~comprised in Real Property Application 50120 to Custom~~					
			~~Credit Corporation Limited.~~	~~7-6-1974~~		~~Discharged~~	~~R20454~~	
~~Mortgage~~	~~R20455~~		~~to Sales Assistance Pty. Limited~~	~~10-1-1979~~		~~Discharged~~	~~S169455~~	
~~Mortgage~~	~~S169456~~		~~to Credit wise Pty. Limited~~	~~20-11-1980~~		Discharged	V398717	
S632963 P	Caveat by The Council of the Shire of Great Lakes. Registered 20-8-1981							
V398718 P	Mortgage to Davidsons Finance Pty. Limited. Registered 30-10-1984.							
S632963 P	Caveat. V398718 Caveator consented. Registered 30-10-1984.							
W129030 P	Mortgage to Davidsons Pty Limited Registered 16.9.1986							
S632963 P	Caveat. Caveator consented Registered 16.4.1986							
W129030 P	Mortgage. W833084	Variation	Registered 13-4-1987.					
S632963 P	Caveat. W833084		Caveator consented. Registered 13-4-1987.					

(Page 1 of 2 pages)

N699932 Mtge of [illegible] — 933 Mtge of that pt fly comprised in RPA 50120

R20453D/M — 54 D/M — 55 M. R

S169455 of [illegible] — 6m R

S632963 plus R

V398717 D/M — 8M R

W129030 M.

W833084 VM R

NOTE: ENTRIES RULED THROUGH AND AUTHENTICATED BY THE SEAL OF THE REGISTRAR GENERAL ARE CANCELLED

No. 1972/289

NEW SOUTH WALES
seventy
five
cents
STAMP DUTY
SYDNEY, N.S.W.

New South Wales

Register Book
Vol. 11805 Fol. 99
Registered 10 - 4 - 1972

Registrar General

GRANT OF LAND
(UNDER THE PUBLIC ROADS ACT, 1902)

ELIZABETH the SECOND, by the Grace of God of the United Kingdom, Australia and Her other Realms and Territories Queen, Head of the Commonwealth, Defender of the Faith:-

TO ALL to whom these Presents shall come, Greeting:-

CANCELLED

WHEREAS ANDRUCE PTY. LIMITED (hereinafter called the GRANTEE) being the owner of land adjoining the land hereinafter described and intended to be hereby granted (formerly roads which were duly closed in accordance with the provisions of the Public Roads Act, 1902) agreed to have such land granted to it upon payment of the sum of five hundred dollars being the value thereof agreed upon between Our Minister for Lands of Our State of New South Wales and the GRANTEE AND WHEREAS the said sum has been duly paid and all things required by law to be done to entitle the GRANTEE to a Grant of the fee simple of the said land Subject to the Reservations and Exceptions hereinafter contained have been done and performed NOW THESE PRESENTS WITNESS That in consideration of the premises WE DO HEREBY GRANT unto the GRANTEE Subject to the Reservations and Exceptions hereinafter contained ALL THAT parcel of land in Our said State containing by admeasurement twenty five acres thirty perches be the same more or less situated in the County of Gloucester Private Parish of Coweambah at Tea Gardens Being the closed roads shown in plan catalogued No. Ms.8389 Md. in the Department of Lands and being Lot 1 in Deposited Plan No.242036 As per Plan on page 3 hereof TO HOLD unto the GRANTEE in fee simple PROVIDED NEVERTHELESS AND WE DO HEREBY RESERVE AND EXCEPT unto Us Our Heirs and Successors all minerals which the said land contains other than mines and minerals excepted and reserved by Conveyance Book 864 No.856 with full power and authority for Us Our Heirs and Successors and such person or persons as shall from

FOR ENDORSEMENTS SEE PAGE 4

(Page 1) Vol. 11805 Fol. 99
ON P.I.P. 242036 CAN 1-11-71
B97 /Req: B409091 /Doc: CT 11805-099 /Prt: 20-Mar-2008
PERSONS ARE CAUTIONED AGAINST ALTERING OR ADDIN
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time to time be authorised by Us or Them to enter upon the said land and to search for mine dig and remove the said minerals AND ALSO all such parts and so much of the said land as may hereafter be required for public ways in over and through the same to be set out by Our Governor for the time being of Our said State or some person by him authorised in that respect with full power for Us Our Heirs and Successors and for Our Governor as aforesaid by such person or persons as shall be by Us Them or him authorised in that behalf to make and conduct all such public ways And the right of full and free ingress egress and regress into out of and upon the said land for the several purposes aforesaid or any of them IN TESTIMONY WHEREOF We have caused this Our Grant to be Sealed with the Seal of Our said State

WITNESS Our Governor of Our State of New South Wales and its Dependencies in the Commonwealth of Australia, at Sydney in Our said State, this twenty seventh day of March in the twenty first year of Our Reign and in the year of Our Lord one thousand nine hundred and seventy two

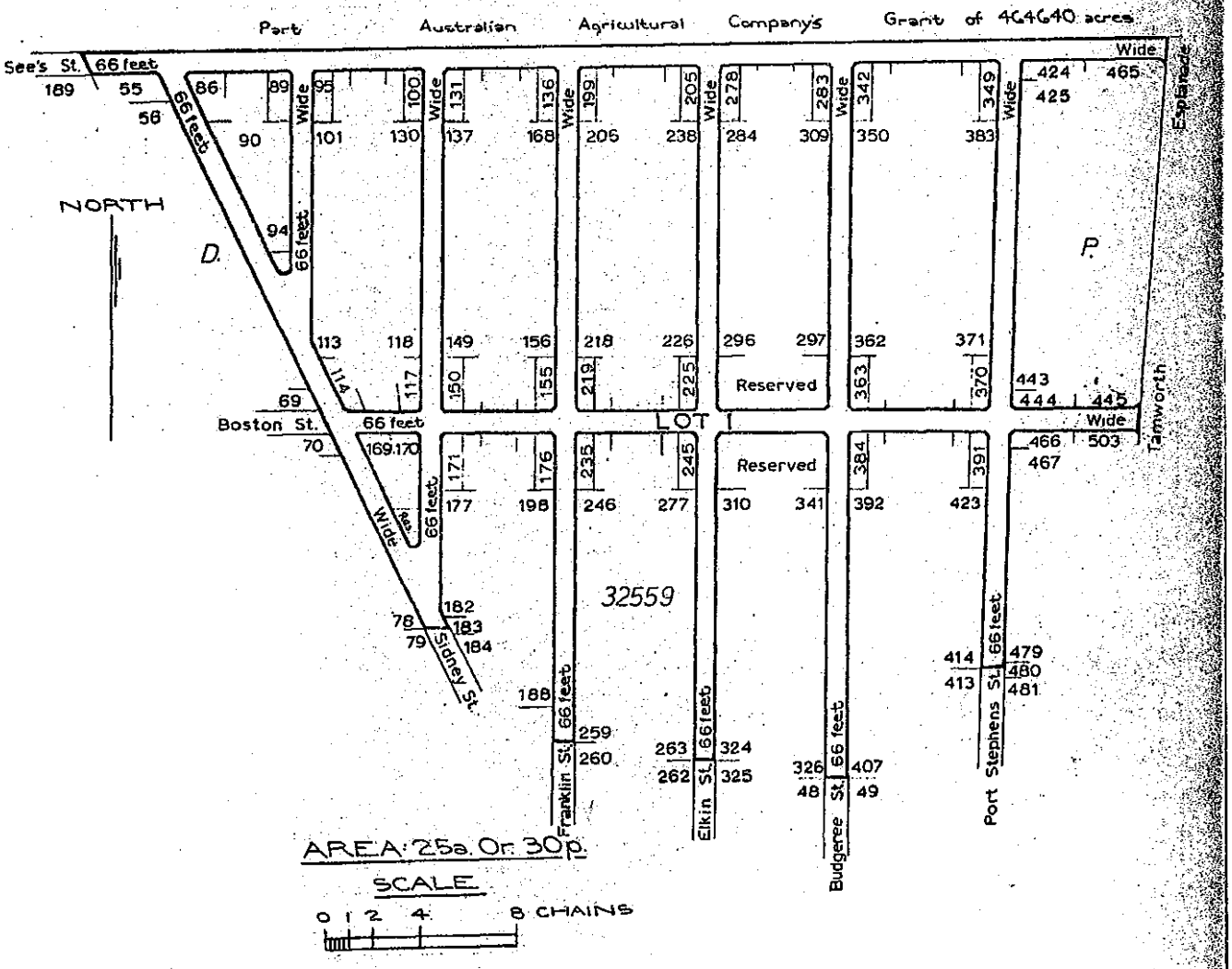
H. Abrahams

A. R. Cutler

Governor.

Vol. 11805 Fol. 99

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R.P. 572 V. C. N. Blight, Government Printer.

Vol. 11805 Fol 99

SCHEDULE OF REGISTERED PROPRIETORS

REGISTERED PROPRIETOR	INSTRUMENT NATURE	INSTRUMENT NUMBER	INSTRUMENT DATE	ENTERED	Signature of Registrar General
Andruce (Pastoral) Pty. Limited	Transfer	N405302	29.6.1973	24.8.1973	

This deed is cancelled as to the whole
New Certificates of Title have issued on 7.6.1974
for lots in Deposited Plan No. 56429 as follows:-
Lots 123 Vol. 12456 Fol 243 respectively.
Vide RPA 50120 Consolidation

REGISTRAR GENERAL

N405302C
N298355 M R
N405302K
PA 50120 (Lease)
Prod Deed
D6/56429 (whole)

SCHEDULE OF ENCUMBRANCES ETC.

INSTRUMENT NATURE	INSTRUMENT NUMBER	INSTRUMENT DATE	PARTICULARS	ENTERED	Signature of Registrar General	CANCELLATION		
Mortgage	N.4329	9.10.1972	to Custom Credit Corporation Limited	5.2.1973				
Mortgage	N298355	6.6.1973	to Custom Credit Corporation Limited	25.6.1973		cd		

NOTE: ENTRIES RULED THROUGH AND AUTHENTICATED BY THE SEAL OF THE REGISTRAR GENERAL ARE CANCELLED

(Page 4 of 4 pages)

ADVANCE LEGAL SEARCH PTY LIMITED

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25 March 2008

Environmental Resources Management Australia Pty Ltd
PO Box 71,
THORNTON NSW 2322

Attention: Dominic Brown

RE: **260 & 270 Pacific Hway**
DOYALSON NORTH
Job Number 78974

Note 1: **Lot 10 DP 270100**
Note 2: **Lot 38 DP 270100**

Note 1:

Current Search

Folio Identifier 10/270100 (attached)
DP 270100 (plan attached)
Dated 19 March 2008
Registered Proprietor:
GEOFFREY JOHN COX

Note (a)

	(Lot 43 DP 791899)
1991 – 1996	Crighton Properties Pty Limited
1989 – 1991	Rakebu Pty Limited
	(Lot 60 DP 786548)
1989 – 1989	Rakebu Pty Limited
	(Lot 42 DP 738450)
1987 – 1989	Rakebu Pty Limited
	(Lot 10 DP 733241)
1986 – 1987	Rakebu Pty Limited
	(Lot 2 DP 230785 – CTVol 12411 Fol 59)
1983 – 1986	Rakebu Pty Limited
1977 – 1983	Coastal Forests Limited
1974 – 1977	Public Trustee
	(Lot 7 & 8 of a subdivision of Lot 35 and also Lot 492 of land Granted to Australian Agricultural Company Parish Coweambah – Area 829 Acres 2 Roods 4 ¼ Perches – CTVol 6726 Fol 114)
1967 – 1974	Public Trustee
1953 – 1967	Australian Pines and Products Limited
	(Lot 7 & 8 of a subdivision of Lot 35 and also Lot 492 of land Granted to Australian Agricultural Company Parish Coweambah)
Prior – 1953	Australian Agricultural Company

****

Note (b)

	(Part Parish Coweambah Myall River)
1996 – 1996	Crighton Properties Pty Limited
1961 – 1996	Australian Pines and Products Limited
Prior – 1961	Australian Agricultural Company

****

Title Tree
Lot 38 DP 270100

Folio Identifier 38/270100

Folio Identifier 10/270100

Folio Identifier 36/270100

Folio Identifier 34/270100

Folio Identifier 31/270100

(a) **(b)**

Folio Identifier 18/270100 Folio Identifier 25/270100

Folio Identifier 11/270100 Folio Identifier 22/270100

Folio Identifier 17/270100

(bi) **(bii)** **(biii)**

F/I 11/270100 F/I 8/270100 F/I 14/270100

F/I 9/270100

Folio Identifier 5/270100 Folio Identifier 4/270100

Folio Identifier 430/856447 Folio Identifier 300/855274

Folio Identifier 43/791899 Folio Identifier 251/843211

Folio Identifier 60/786548 Folio Identifier 32/829692

Folio Identifier 42/738450 Folio Identifier 31/808202

Folio Identifier 10/733241 Folio Identifier 1/564129

CTVolume 12411 Fol 59 CTVolume 12456 Fol 2

CTVolume 6726 Fol 114 CTVolume 11805 Fol 99

PA 38305 **(biia)** **(biib)**

**** CTVol 11805 Fol 99 PA 50120

**** ****

Note (b)

	(Lot 25 DP 270100)
2002 – 2004	Crighton Properties Pty Limited
	(Lot 17 DP 270100)
2002 – 2002	Crighton Properties Pty Limited

See Notes (bi), (bii) & (biii)

Note (bi)

	(Lot 11 DP 270100)
1998 – 2002	Crighton Properties Pty Limited
	(Lot 5 DP 270100)
1996 – 1998	Crighton Properties Pty Limited
	(Lot 430 DP 856447)
1996 – 1996	Crighton Properties Pty Limited
	(Lot 43 DP 791899)
1991 – 1996	Crighton Properties Pty Limited
1989 – 1991	Rakebu Pty Limited
	(Lot 60 DP 786548)
1989 – 1989	Rakebu Pty Limited
	(Lot 42 DP 738450)
1987 – 1989	Rakebu Pty Limited
	(Lot 10 DP 733241)
1986 – 1987	Rakebu Pty Limited
	(Lot 2 DP 230785 – CTVol 12411 Fol 59)
1983 – 1986	Rakebu Pty Limited
1977 – 1983	Coastal Forests Limited
1974 – 1977	Public Trustee
	(Lot 7 & 8 of a subdivision of Lot 35 and also Lot 492 of land Granted to Australian Agricultural Company Parish Coweabah – Area 829 Acres 2 Roods 4 ¼ Perches – CTVol 6726 Fol 114)
1967 – 1974	Public Trustee
1953 – 1967	Australian Pines and Products Limited

****

Note (biii)

	(Lot 8 DP 270100)
1997 – 2002	Crighton Properties Pty Limited
	(Lot 4 DP 270100)
1996 – 1997	Crighton Properties Pty Limited
	(Lot 300 DP 855274)
1995 – 1996	Crighton Properties Pty Limited
	(Lot 251 DP 843211)
1994 – 1995	Crighton Properties Pty Limited
	(Lot 32 DP 829692)
1993 – 1994	Crighton Properties Pty Limited
	(Lot 31 DP 808202)
1991 – 1993	Crighton Properties Pty Limited
1991 – 1991	Rakebu Pty Limited
	(Lot 1 DP 564129)
1989 – 1991	Rakebu Pty Limited
1988 – 1989	Andruce (Pastoral) Pty Limited
	(Lot 1 DP 564129 – CTVol 12456 Fol 2)
1974 – 1988	Andruce (Pastoral) Pty Limited

See Notes (biiia) & (biiib)

Note (biiia)

	(Lot 1 DP 242036 – CTVol 11805 Fol 99)
1974 – 1988	Andruce (Pastoral) Pty Limited
	(Roads Parish Coweambah)
Prior – 1974	Various Roads

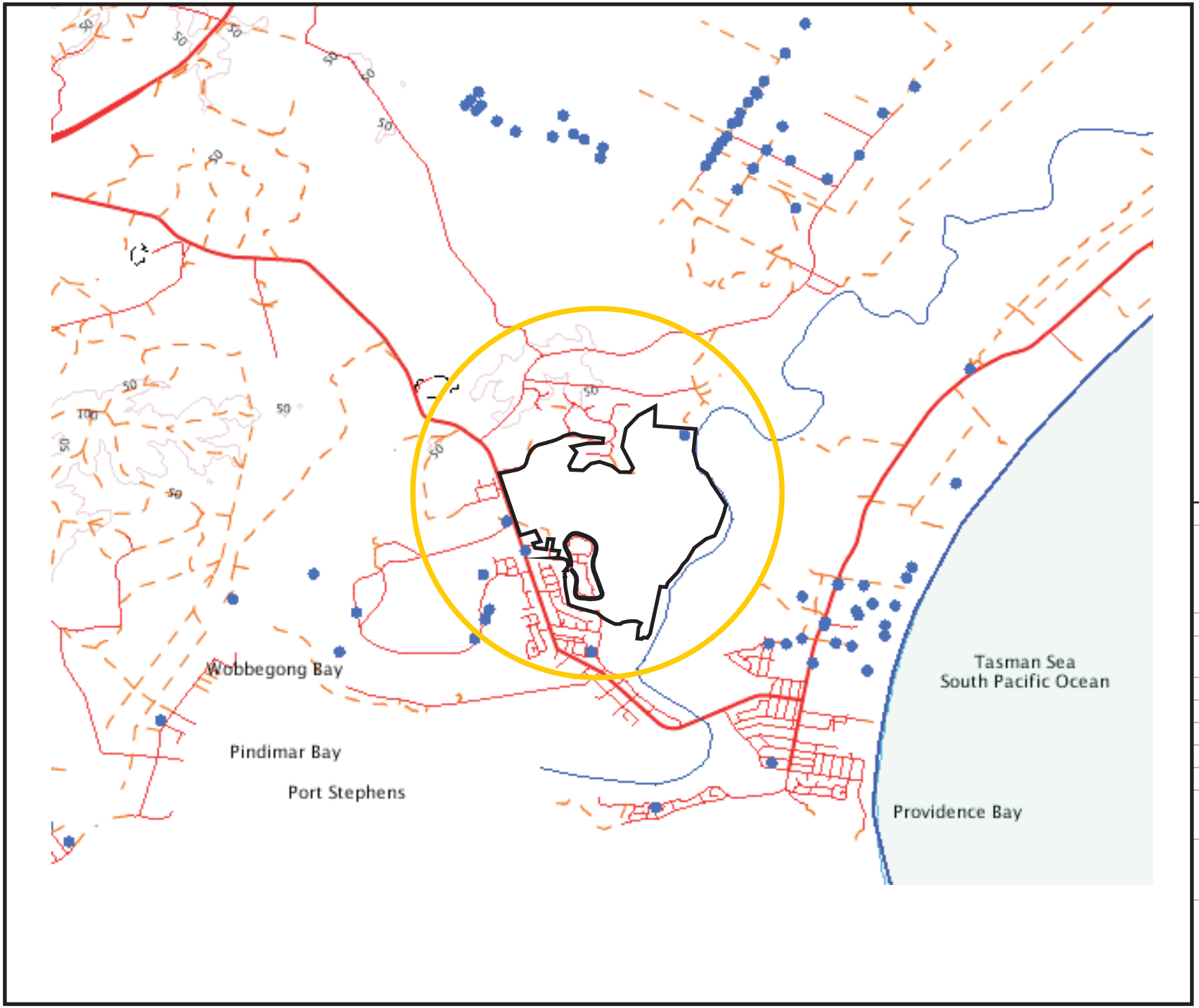
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Note (biiib)

****

Annex D

Results of 2km Borehole Search



Legend

- Site Boundary
- Groundwater Bores
- 2km Radius from Centre of Site

Figure 1

Location of Groundwater Bores

Client:	Crighton Properties Pty Ltd		
Project:	Environmental Assessment Riverside at Tea Gardens - Phase 1 ESA		
Drawing No:	0043707hv_EA_annexD_ph1_esa_01		
Date:	07/05/08	Drawing size:	A4
Drawn by:	JD	Reviewed by:	RME
Source:	NSW Natural Resources Atlas		
Scale:	Refer to Scale Bar		

N

0 0.5 1 1.5km

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Annex E

Aerial Photographs



Legend

Site Boundary

Figure 1

Aerial Photograph

Client:	Crighton Properties Pty Ltd		
Project:	Environmental Assessment Riverside at Tea Gardens - Phase 1 ESA		
Drawing No:	0043707hv_EA_annexE_ph1_esa_04		
Date:	07/05/08	Drawing size:	A4
Drawn by:	JD	Reviewed by:	RME
Source:	Google Maps		
Scale:	Refer to Scale Bar		

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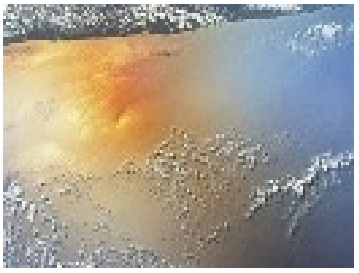
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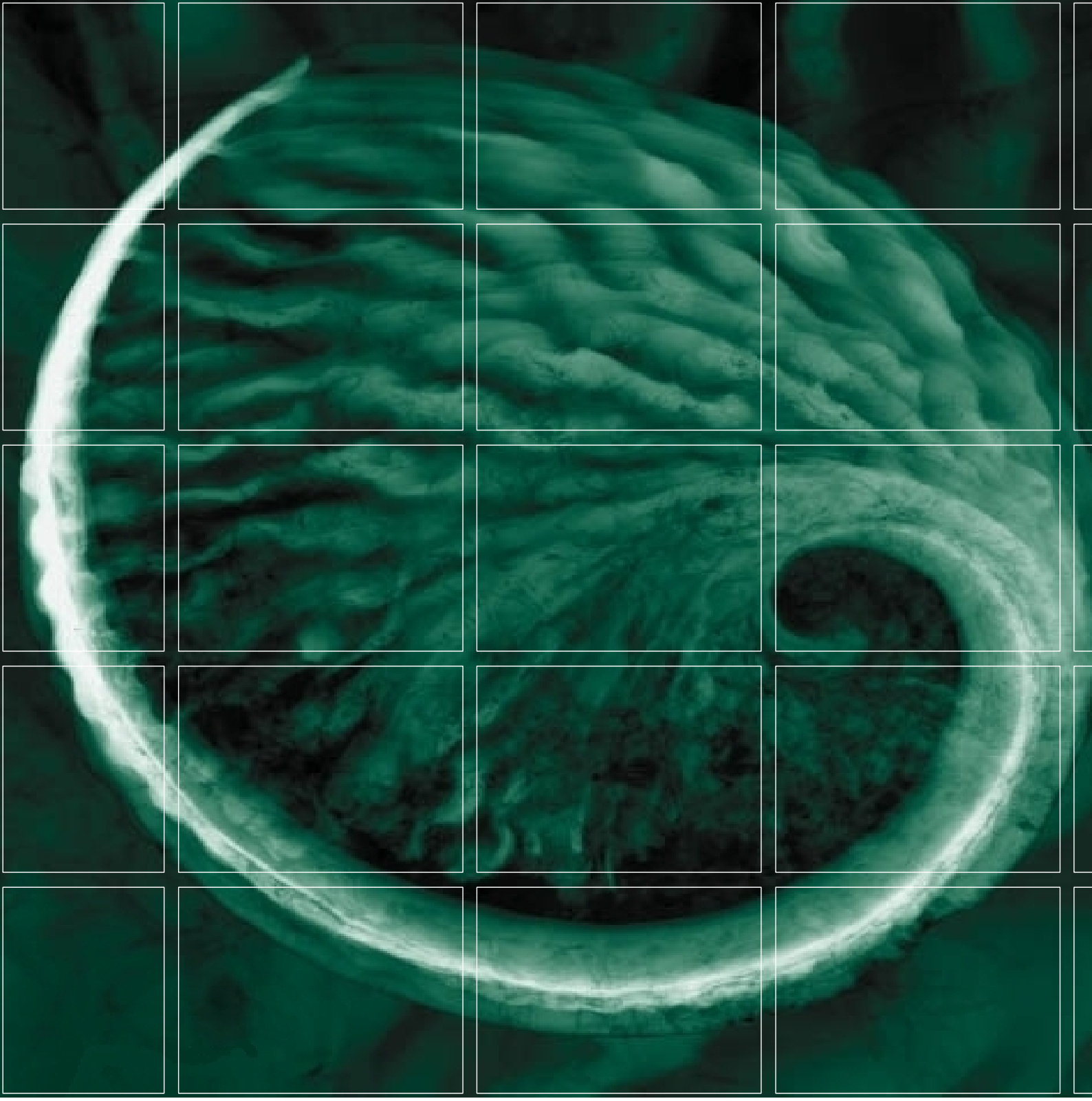
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Volume 3C: Construction Noise Assessment



Riverside at Tea Gardens

Construction Noise Assessment

For Crighton Properties Pty Ltd

July 2008

0043707 FINAL

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Prepared by:	*Oliver Muller*
Position:	Senior Scientist - Acoustics
Signed:	
Date:	*2 July 2008*
Approved by:	*Steve O'Connor*
Position:	Project Director
Signed:	
Date:	*2 July, 2008*

Environmental Resources Management Australia Pty Ltd Quality System

Riverside at Tea Gardens

Construction Noise Assessment

For Crighton Properties Pty Ltd

July 2008

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This report has been prepared in accordance with the scope of services described in the contract or agreement between Environmental Resources Management Australia Pty Ltd ABN 12 002 773 248 (ERM) and the Client. The report relies upon data, surveys, measurements and results taken at or under the particular times and conditions specified herein. Any findings, conclusions or recommendations only apply to the aforementioned circumstances and no greater reliance should be assumed or drawn by the Client. Furthermore, the report has been prepared solely for use by the Client and ERM accepts no responsibility for its use by other parties.

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2	GLOSSARY	
3	CONSTRUCTION NOISE EMISSION CRITERIA	
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6	CONSTRUCTION MITIGATION AND MANAGEMENT	
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1 CONSTRUCTION NOISE ASSESSMENT

1.1 INTRODUCTION

Noise emissions associated with bulk earth works, particularly in relation to the construction of the fresh stormwater quality management and detention ponds at the proposed Riverside Estate, Tea Gardens have the potential to impact on the acoustic amenity of several adjacent residential receptors.

ERM have completed an acoustical assessment to determine the extent of noise impacts associated with these construction activities. *Figure 1.1* presents a locality plan identifying the proposed stormwater quality management ponds. This assessment focuses on existing residences in the northern section of Leeward Circuit, Tea Gardens, as identified on *Figure 1.1*.

This assessment has been prepared with reference to the Department of Environment and Climate Change (DECC) NSW Industrial Noise Policy (INP, 2000) and the Environmental Noise Control Manual (ENCM).



Legend

- Riverside at Tea Gardens Site Boundary
- Proposed Stormwater Ponds
- Attended Measurement Location (residence)
- Assessed Distances of Construction Works

Figure 1.1

Locality Plan

Client:	Crighton Properties Pty Ltd		
Project:	Environmental Assessment Riverside at Tea Gardens		
Drawing No:	0043707hv_EA_river_noise_01		
Date:	01/07/08	Drawing size:	A4
Drawn by:	JD	Reviewed by:	OM
Source:	Crighton Properties Concept Plan March 08		
Scale:	Refer to Scale Bar		

N

0 50 100 150m

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2 *GLOSSARY*

A number of technical terms used in this report describe various noise levels. These terms are explained in *Table 2.1*.

Table 2.1 Glossary of Terms

Term	Description
ABL	Assessment Background Level (ABL) is defined in the INP as a single figure background level for each assessment period (day, evening and night). It is the tenth percentile of the measured L_{90} statistical noise levels.
dB(A)	Noise is measured in units called decibels (dB). There are several scales for describing noise, the most common being the 'A-weighted' scale. This attempts to closely approximate the frequency response of the human ear.
dB(LinPeak)	The peak sound pressure level (not RMS) expressed as decibels with no frequency weighting.
L1	The noise level exceeded for 1 % of a measurement period.
L10	A noise level which is exceeded 10 % of the time. It is approximately equivalent to the average of maximum noise levels.
L90	Commonly referred to as the background noise, this is the level exceeded 90 % of the time.
Leq	*The summation of noise over a selected period of time. It is the energy average noise from a source, and is the equivalent continuous sound pressure level over a given period.*
Lmax	The maximum root mean squared (rms) sound pressure level received at the microphone during a measuring interval.
RBL	The Rating Background Level (RBL) is an overall single figure background level representing each assessment period over the whole monitoring period. The RBL is used to determine the intrusiveness criteria for noise assessment purposes and is the median of the ABL's.
Sound power level	This is a measure of the total power radiated by a source. The sound power of a source is a fundamental location of the source and is independent of the surrounding environment.
Temperature inversion	A positive temperature gradient. A meteorological condition where atmospheric temperature increases with altitude to some height.

3 CONSTRUCTION NOISE EMISSION CRITERIA

The DECC's current guidelines for construction are described below and apply to residential receivers only:

3.1.1 Working Hours

The primary objective of the DECC is to limiting audible construction working hours to:

- Monday to Friday - 0700 hours to 1800 hours
- Saturday - 0800 hours to 1300 hours
- No work on Sundays or Public Holidays
- Noise Levels

To determine the likelihood of impact, the provide noise level based criteria. DECC guidelines set out methods for determining construction criteria associated with proposed developments. *Table 3.1* summarises the construction noise criteria with respect to the rating background noise level (RBL) based on duration that applies to nearest sensitive receivers.

Table 3.1 Construction Noise Goals

Construction Period	Acceptable LA10 Noise Level[1]
4 weeks and under	Background LA90 plus 20 dBA
4 weeks to 26 weeks	Background LA90 plus 10 dBA
Greater than 26 weeks	Background LA90 plus 5 dBA

For a cumulative period of exposure to noise from construction activity of up to four (4) weeks in duration, the LA10 (15minute) noise level emitted by the works, when measured at a residential receiver, should not exceed the LA90 (15minute) RBL by more than 20 dBA.

For a cumulative period of exposure to noise from construction activity of between 4 weeks and 26 weeks duration, the LA10 (15minute) noise level emitted by the works, when measured at a residential receiver, should not exceed the LA90 (15minute) RBL more than 10 dBA.

For a cumulative period of exposure to noise from construction activity in excess of 26 weeks duration, the LA10 (15minute) noise level emitted by the works, when measured at a residential receiver, should not exceed the LA90 (15minute) RBL by more than 5 dBA.

4 ATTENDED NOISE MONITORING RESULTS

4.1 ATTENDED NOISE MONITORING RESULTS

To gain an understanding of the existing noise environment ERM conducted attended noise monitoring during calm clear weather conditions to ascertain dominate ambient noise sources and to quantify existing noise contributions. Fifteen minute noise measurements were undertaken using a Brüel and Kjær Type 2250 one-third octave integrating sound level meter (see results in *Table 4.1*). Calibration of the instrument was undertaken using a Brüel and Kjær type 4231 calibrator.

Table 4.1 Attended Noise Survey Results – 4 April 2008

Monitoring Location Time	Primary Noise Descriptor (dBA ref 20µPa)					Observations, Description of Noise Emissions (dBA)
	LAmax	LA1	LA10	LAeq	LA90	
Opposite 52 Leeward Circuit, Tea Gardens 10:38 am	66	51	44	43	38	Distant Road Traffic (Myall Street) 30 to 40 Birds 36 to 48 Wind 37 to 40

1. Meteorological conditions at the time of the survey were calm and clear. (Temp 20°C, Wind Speed 2m/s NW)

4.2 CONSTRUCTION NOISE CRITERIA

The construction phase of this project is expected to occur for a period of between 4 weeks and 26 weeks duration.

Therefore in accordance with the DECC guidelines, the construction noise goals are set to background plus 10 dBA (LA90 + 10dBA). Therefore, the following noise criteria shown in *Table 4.2* for construction apply. It should be noted that the DECC rarely set noise limit based restrictions for construction sites. Therefore, the construction limits should be seen as an indicative goal for the development.

Table 4.2 Construction Noise Goals (between 4 weeks to 26 weeks construction period)

Location	Project Specific Noise Criteria L10(15minute)
All Receivers	48 dBA

1. Construction may only occur between the hours of 7.00 am and 6.00 pm Monday to Friday, and 8.00 am to 1.00 pm Saturdays. For all other times construction noise must be inaudible at the receiver.

5 NOISE IMPACT ASSESSMENT

5.1 PROPOSED CONSTRUCTION OPERATIONS

Several items of mobile construction plant and equipment are proposed to be used during construction of the stormwater management and detention ponds associated with the Riverside Estate.

The noise assessment calculated the received L10 noise levels at nearby sensitive receptors. It should be noted that this assessment has assumed that all plant and equipment operate simultaneously. In practice, such an operating scenario would be unlikely to occur and the results should therefore be considered conservatively high. Where relevant, modifying factors in accordance with Section 4 of the INP have been applied to calculations.

Table 5.1 presents the items of plant along with the overall sound power level (SWL) adopted in this assessment.

Table 5.1 *Sound Power Levels (SWL) of Construction Plant*

Proposed Mobile Items	Sound Power Level (dB(A))
CAT D9N Dozer	113
CAT 825 Compactor	110
Volvo A30 Haul Truck	105
Volvo A40 Haul Truck	105
CAT 631 Scraper	111
Komatsu PC300 Excavator	103
Komatsu PC450 Excavator	105

Note : Sound power levels were obtained from the ERM database of noise sources.

5.2 RESULTS

Construction noise impacts were assessed from two distances representing the near and far distances of construction positions of the stormwater quality/detention ponds from residences within Leeward Circuit, Tea Gardens. Results for both distances are represented as highest (at 40 metres) and lowest (at 280 metres), additionally, plant was assessed at the existing ground surface at the same level as nearby residences and when at lower levels when in the base of the proposed ponds (up to 3.5 m below current ground surface levels). The results of the assessment for both scenarios are presented in *Table 5.2*.

Table 5.2 Calculated Construction Noise Emissions

Receptor	Highest L10 Noise Impact dB(A)	Lowest L10 Noise Impact dB(A)	Construction Noise Criteria L10 dB(A)
Leeward Circuit, Tea Gardens.	76	45	48

Calculations of noise emissions associated with the construction of the Riverside stormwater quality/detention ponds identify that the construction noise criteria would be exceeded when plant items are stripping the surface soils, although would reduce significantly when are at lower depths within the lower areas of the proposed ponds. To minimise the potential acoustic impacts of construction activities on nearby residences, it is recommended that the management and mitigation activities (described in *Chapter 6*) be implemented as part of the construction process.

6 *CONSTRUCTION MITIGATION AND MANAGEMENT*

To minimise the impacts of construction noise emissions on nearby residences in Leeward Circuit, Tea Gardens during construction of the Riverside stormwater quality/detention ponds, it is recommended the following mitigation and management procedures be implemented:

- where practical, pushing topsoil or fill to form earth mounds between the construction site and residences during initial stripping. Barrier calculations identify that noise levels may be reduced by up to 15 dBA if a 3.5 metre earth mound is established between the sources and residences;

- where agreement can be reached negotiated agreements between developers and residents in close proximity to the proposed works should be established;

- where possible barriers should be placed nearest to plant and equipment to maximise barrier attenuation;

- maximise the offset distance between noisy plant items and nearby noise sensitive receivers;

- avoiding any coincidence of noisy plant working together in close proximity simultaneously near to sensitive receivers;

- minimising the occurrence of consecutive days works in the same locality;

- orienting noisy plant or equipment away from sensitive areas;

- carrying out loading and unloading away from noise sensitive areas, if loading near sensitive receivers acoustic enclosures or barriers of a suitable height should be constructed to minimise the noise impacts;

- where noise complaints arise, monitor construction noise levels to quantify potential impact at most sensitive residences; and

- the contractor must take reasonable steps to manage and control noise from all plant and equipment. Examples of appropriate noise management and control may include installation of acoustic silencers, low noise mufflers and alternatives to reversing alarms.

7 *CONCLUSION*

ERM has completed a noise impact assessment for the proposed construction activities associated with of proposed stormwater quality management ponds adjacent to residence situated in Leeward Circuit, Tea Gardens, NSW.

Noise levels associated with construction are likely to be above the relevant construction noise criteria during initial stages, although when operations are at lower levels within the proposed ponds noise levels would reduce significantly. To minimise impacts on residences during construction, management and mitigation strategies provided in this assessment would significantly reduce impacts on nearby residences.

REFERENCES

Environment Protection Authority of NSW (1994), Environmental Noise Control Manual (ENCM).

Environment Protection Authority of NSW (January 2000), Industrial Noise Policy.

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