

Riverside at Tea Gardens Concept Plan

Preliminary Environmental Assessment

Crighton Properties Pty Ltd

August 2010

0043707 PEA Final

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Riverside at Tea Gardens Concept Plan

Preliminary Environmental Assessment

Approved by:

Position:
Project Manager

Signed:

Date:
31 August, 2010

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Position:
Principle

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Date:
31 August, 2010

Environmental Resources Management Australia Pty Ltd Quality System

Crighton Properties Pty Ltd

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FINAL REPORT

Crighton Properties Pty Ltd

Riverside at Tea Gardens Concept Plan

Preliminary Environmental Assessment

August 2010

Reference: 0043707 PEA D02

Environmental Resources Management Australia

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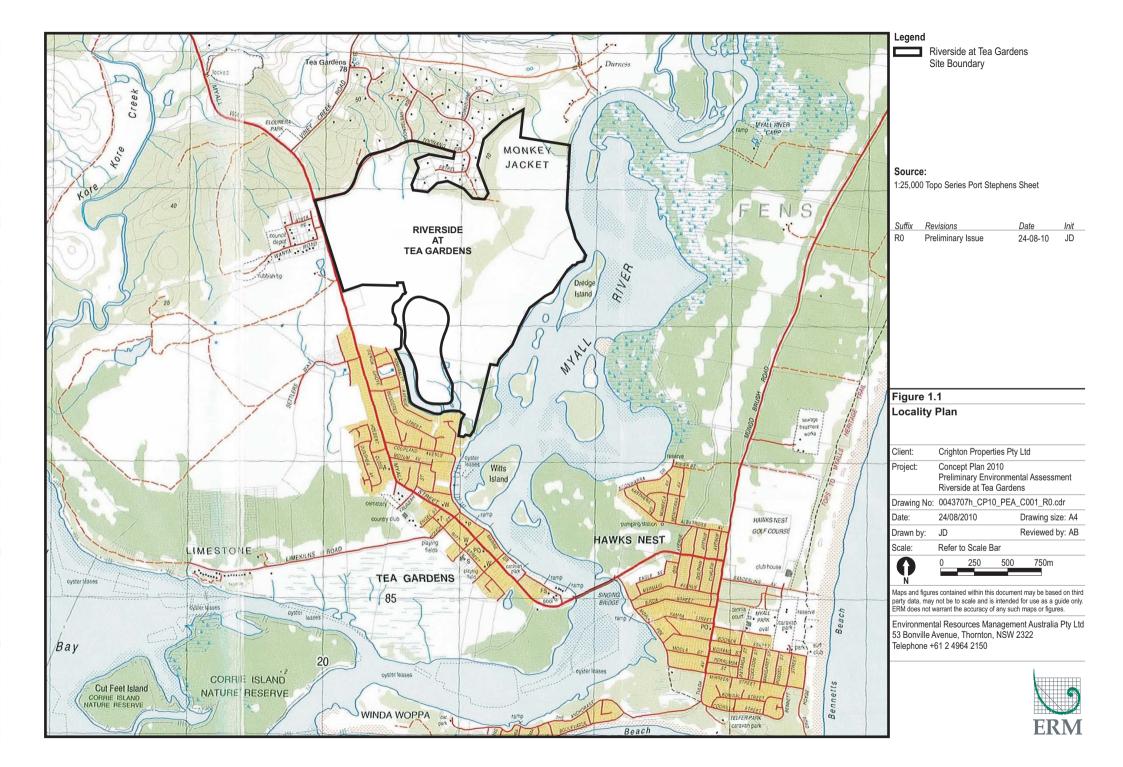
1 INTRODUCTION

1.1 Introduction

Environmental Resources Management Australia Pty Ltd (ERM) has been engaged by Crighton Properties Pty Ltd to prepare this preliminary environmental assessment (PEA) for concept approval for the proposed Riverside at Tea Gardens residential and tourist development. The Minister for Planning previously confirmed by letter dated 16 September 2008 (REF: 904 1553) that the project was a matter to which Part 3A of the *Environmental Planning and Assessment Act*, 1979 (EP&A Act) applies, and that an application may be lodged with the Director General. In a letter dated 12 August 2010 ERM have sought further confirmation that the proposed development would be considered to be a major project under Clause 6 of the Major Projects State Environmental Planning Policy.

1.2 SITE HISTORY AND PREVIOUS APPLICATION OVERVIEW

In 1991 Crighton Properties bought the 229 hectare site known as 'Riverside at Tea Gardens' (formerly 'Myall Quays') which lies immediately to the west of the Myall River and to the east of Myall Road (the main road linking Tea Gardens / Hawks Nest with the Pacific Highway). The location of the site is shown at *Figure 1.1*.



Crighton Properties originally lodged a rezoning request with Great Lakes Council for a multi-stage residential/resort type development on the site. The Council resolved to prepare a draft Local Environmental Plan (LEP) subject to the findings of a formal local environmental study (LES). The LES was prepared in 1991 and the site was finally rezoned to 2(f) mixed commercial residential in 2000.

In 2002 Crighton Properties began the process of seeking approval to develop a substantial portion of this site for residential purposes and for a nine hole golf course and tourist facilities. Following the introduction of *State Environmental Planning Policy No 71 – Coastal Protection* (SEPP 71) in November 2002, a master plan was required to be adopted by the Minister for Planning before any further residential subdivisions could be approved.

A Planning Focus Meeting was held on site on 28 December 2003 to discuss the master plan and the various development proposals. The Director-General's requirements for the EIS were subsequently issued by the Department of Infrastructure, Planning and Natural Resources in January 2004 (Ref: N91/00721) for the artificial water detention body and the residential/tourist/recreational components. The Department of Planning (DoP) also provided requirements regarding the preparation of a master plan for the development under SEPP 71 (Ref: S03/03010).

Following the introduction of Part 3A of the *Environmental Planning and Assessment Act 1979* (EP&A Act) and State Environmental Planning Policy (Major Development) 2005, the Minister for Planning confirmed by letter dated 16 September 2008 (REF: 904 1553) that the project was a matter to which Part 3A of the *Environmental Planning and Assessment Act*, 1979 (EP&A Act) applies, and that an application may be lodged with the Director General. In a letter dated 12 August 2010 ERM have sought further confirmation that the proposed development would be considered to be a major project under Clause 6 of the Major Projects State Environmental Planning Policy.

An Environmental Assessment Report for a concept plan and project application was subsequently prepared in accordance with the Director-General's Environmental Assessment Requirements (DGR's) issued on 16 September 2008. The Environmental Assessment Report was placed on public exhibition for a period of 30 days from 19 February 2009 to 20 March 2009.

The DoP appointed an Independent Hearing and Assessment Panel (IHAP), which was subsequently modified to a Planning and Assessment Commission (PAC), to undertake an expert review of the proposed development. The terms of reference of the PAC were focused on the review on two main areas: the ecological constraints of the site and the hydrological issues associated with groundwater, the SEPP14 wetland and flooding. The PAC undertook a site inspection on 6 April 2009 and held a Preliminary Public Hearing on 7 April 2009.

The PAC could not reach a unanimous view on recommendations concerning the ecological constraints of the site, and subsequently issued two reports, one being a majority report, the other a minority report. The PAC submitted its reports to the DoP in July 2009.

In a letter dated 22 October 2009, the DoP raised the following concerns regarding the concept plan and project application:

- 1. The size of the commercial area is considered excessive and not required for the likely future population;
- 2. The traffic impact assessment inadequately considers traffic generation and other aspects of the proposal;
- 3. The subdivision layout does not adequately address the constraints plan and site analysis plan;
- 4. The proposal exceeds the capacity allocated for the development within the current servicing strategies of MidCoast Water and an Integrated Water Cycle Management Plan should be required;
- 5. There are drafting issues which need to be addressed in the Community Management Statements;
- 6. The Voluntary Planning Agreement (VPA) needs to be amended in several areas;
- 7. Avoidance of Acid Sulphate Soils does not appear to have been considered in the project; and
- 8. The proponent has not adequately established that the surface and groundwater flows to the adjoining SEPP 14 Wetland would remain unaltered.

Prior to the Minister for Planning making a determination on the concept plan and project application Crighton Properties withdrew the application. The application was withdrawn to enable additional information and studies to be undertaken to address issues raised by the PAC, DoP and other government agencies. The additional investigations required have now been completed and has resulted in modifications to the development footprint. Crighton Properties now intends to proceed with a new application for concept plan approval for the Riverside at Tea Gardens development.

The current proposal differs from that previously lodged with the DoP in several key respects. Changes have been made to address concerns raised by the PAC and DoP. Key changes include the following:

- a 161 hectare biodiversity offset area is proposed adjoining the Myall National Park approximately 2km north east of the site;
- the proposed 4 hectare expansion of the existing commercial area has been removed from the Concept Plan;
- Precinct 1 which included 71 lots previously located in the south east portion of the site has been deleted and will now become part of the conservation area;
- residential lots have been moved from the north west portion (which will allow a larger open space corridor in this area) to the north east portion of the site. The overall number of dwellings proposed has been reduced from approximately 1040 to 970;
- more 'dry' water management devices (not in contact with the groundwater table) are proposed and the number of detention ponds has been reduced. There will be no link between the saltwater and freshwater basins and the single existing drain outlet to the Myall River will not be upgraded or duplicated;
- a new Integrated Water Cycle Management Strategy has been prepared which has the support of MidCoast Water; and
- additional vegetation mapping and a new ecological assessment for the project has been undertaken by a newly appointed ecological consultant.

1.3 SITE DESCRIPTION

The Riverside at Tea Gardens site is bounded by Myall River to the east and Myall Road to the west. The Shearwater Residential Estate lies to the north of the site and residential development of Tea Gardens is to the south. The site has approximately a one kilometre frontage to Myall Road and two kilometre frontage to the Myall River. *State Environmental Planning Policy No. 14 – Coastal Wetlands* (SEPP 14) applies to wetlands within a portion of the eastern boundary of the site adjacent to the Myall River. These wetlands have been clearly identified along with a buffer to the wetlands and zoned accordingly when the site was rezoned in 2000. The remainder of the site is zoned for urban development.

The site is flat with generally sandy soils. There is a slight fall to the south. The site ranges in height from 0.6m Australian Height Datum (AHD) (along the foreshore of the Myall River) to 20m AHD (at the northern end of the side adjacent to the Shearwater Estate). However, most of the site varies in height from between 1.6m AHD to 5.0m AHD.

1.4 PROJECT DESCRIPTION

Concept Plan approval is sought for the following:

• residential development of the site which will include the potential to create approximately 970 dwellings, comprised as follows:

| Development | Number of Dwellings |
|-------------------------------|---------------------|
| Residential (variety of lots) | 905 |
| Tourist Precinct - lodges | 50 |
| Tourist Precinct - houses | 15 |
| Total | 970 |
| | |

- water sensitive urban design (WSUD) measures including the retention of the existing saltwater basin and single drain outlet to the Myall River, the creation of new freshwater detention ponds as well as new dry water management devices;
- a residentially zoned open space network comprising 58.5 Ha in total which provides for public recreation, stormwater management, a wildlife corridor, and clubhouses and community facilities;
- an 8.4 hectare tourist/recreational precinct (including a conference centre and accommodation) in the north east portion of the site and a foreshore park of 5.6 hectares;
- substantial areas (approximately 39.6 hectares) of the Residential 2(f) zoned land are proposed to be protected and enhanced as open space / wildlife movement corridors, over and above those already protected within the Environmental Protection 7(a) and 7(b) zones (which comprise 28.4 and 20.6 hectares respectively);
- approximately 28.6 hectares of drainage reserves and large parks also proposed;
- upgrading of intersections and associated road works and other construction works (such as cycleways) external to the site;
- access from Toonang Drive and Myall Street;
- an internal road network; and
- associated landscaping and infrastructure works.

Substantial areas of the Residential 2(f) zoned land are proposed to be protected and enhanced as open space / wildlife movement corridors, over and above those already protected within the Environmental Protection 7(a) and 7(b) zones.

A 161 hectare biodiversity offset area is proposed adjoining the Myall National Park approximately two kilometres north east of the site. The concept plan including the offset area is shown in *Figures 1.2 and 1.3*.

1.5 COMMUNITY TITLE SCHEDULE

The Community Management Statement is already in operation for the Riverside development and identifies the terms binding the Community Association, the Executive Committee and any future landowners with respect to the Community Scheme.

All footpaths, cycleways, open space areas, parks and water treatment facilities outside of road reserves will be owned by the Community Association. Public access to these areas (excluding the clubhouses) will be provided and encouraged. Roads will be dedicated to Great Lakes Council.

The by-laws detailed within the Community Management Statement relate to the control and preservation of the essence or theme of the Community Scheme and therefore can only be revoked or amended by a unanimous resolution of the Community Association. The Management Statement includes the following requirements for development within the Riverside site:

- the architectural and landscape standards which outline the standards/ requirements for the design of residential development and community property;
- approvals process for the construction and/or modification of buildings or landscaping;
- outlines the responsibilities of the Community Association and Executive Committee in the control, management and maintenance of community property;
- provides regulation of fence heights, collection of garbage, car parking, the keeping of animals, TV Aerials, etc; and
- identifies the need for the Community Association to ensure that the appropriate insurances are obtained and managed for all community property.

The Community Management Statement for Myall Quays does and will continue to apply to the community land within Riverside at Tea Gardens. Alterations to the Community Management Statement are unable to be made without unanimous resolution of the Community Association. Additional controls at the precinct level (via Precinct Management Statements) are proposed to be implemented to restrict development within the community lands of jetties and pontoons.



| Item | Description |
|----------|---|
| 1 | Extent of concept plan area 'Riverside' at Tea Gardens. |
| 2 | Existing 7(a) wetland zone. |
| 3 | Existing 7(b) buffer zone. |
| 4 | Wildlife movement corridor. |
| 5 | Water management & open space corridors. |
| 6 | Community parks incorporating walking/cycle ways, BBQs, children's play area equipment |
| 7 | Community pocket parks. |
| 8 | Myall foreshore park including structured and unstructured open space. |
| 9 | New fresh water, water quality management & detention ponds. |
| 10 | Existing detention and water quality lake. |
| 11 | New fresh water, water quality management & detention ponds. |
| 12 | Existing residential development. |
| 13 | Precinct community facilities. |
| 14 | Future precinct community facilities. |
| 15 | Site area currently owned by Great Lakes Council. |
| 16 | Separate medium density/commercial precir (not part of this application-current waver is- sued by DoP.) |
| 17 | Tourist lodgings precinct. |
| 18 | Additional land proposed for conservation |
| 19 | Proposed residential lot development to be developed under community title. |
| 20 | Future development site. |
| 21 | Existing house. |
| 22 | DCP buffer. |
| 23 | Location of known midden & buffer. |
| 24 | Existing drain outlet to Myall River. |
| 25 • • • | Existing drainage swale |
| 26 | Existing shopping centre/medium density approvals |
| 27=== | Future connecting road |
| | |

| 27 = = Future connecting road | | |
|--|----------|-------|
| Land Use Legend | | |
| Total Site | На | % |
| Open Space | | |
| - Wetlands (zoned 7a) | 28.4 | 12.8 |
| - Buffer Zones (zoned 7b) | 20.6 | 9.2 |
| - Additional Conservation Buffer | 12.3 | 5.5 |
| - Wildlife Corridors | 27.3 | 12.3 |
| - Myall Foreshore Park | 5.6 | 2.5 |
| - Drainage Corridors, Ponds & Large Parks | 28.6 | 12.9 |
| - Pocket Parks | 2.6 | 1.2 |
| - Existing detention & water quality lake | 6.7 | 3.0 |
| Total | 132.1 Ha | 59.4% |
| Built Upon Area | | |
| - Residential (including roads & community facilities) | 77.2 | 34.7 |
| - Tourist/Residential (Lodgings) | 8.2 | 3.7 |
| - Future Development Site | 5.0 | 2.2 |
| Total | 90.4 Ha | 40.6% |
| Total | 222.5 Ha | 100% |

Source:

Crighton Properties R.C. -03 Rev K August 2010

| Suffix Revisions Date | Init |
|-----------------------|------|
| 0 0 | |

Figure 1.2 Concept Plan for Riverside at Tea Gardens

| Client: | Crighton Properties Pty Ltd | | | |
|-------------|---|---------|---------------|------|
| Project: | Concept Plan 2010 Preliminary Environmental Assessment Riverside at Tea Gardens | | | |
| Drawing No: | 0043707h_ | CP10_PE | A_C002_R0.cd | r |
| Date: | 24/08/2010 | | Drawing size: | А3 |
| Drawn by: | JD | | Reviewed by: | AB |
| Scale: | Refer to Sc | ale Bar | | |
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2 PLANNING FRAMEWORK

2.1 COMMONWEALTH LEGISLATION

2.1.1 Environment Protection and Biodiversity Conservation Act 1999

The Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) states that approval is required under the Act for actions that are likely to have a significant impact on the environment of Commonwealth land and on matters of national environmental significance. Matters of national environmental significance under the Act include the following:

- World heritage properties;
- National heritage places;
- Ramsar wetlands;
- Threatened species or ecological communities listed in the EPBC Act;
- Migratory species listed in the EPBC Act;
- Commonwealth marine environment; and
- Nuclear actions.

The site is not in a world heritage area; is not a national heritage place; does not contain Ramsar wetlands of international importance nor a Commonwealth marine environment; the proposal is not a nuclear action nor does it have a significant impact on migratory species or ecological communities listed in the EPBC Act. One threatened species, the Grey-headed Flying-fox, has been previously recorded on the site. The species is listed as Vulnerable under the EPBC Act. A referral has been made to the Department of Environment, Water, Heritage and Arts in this regard. The ecological assessment (refer to *Section 4.1*) provides further analysis on the potential impact of the development on the species in accordance with the requirements of the EPBC Act.

2.2 PROVISIONS OF RELEVANT STATE ACTS

2.2.1 Environmental Planning and Assessment Act 1979

The principal State planning legislation for the site is the *Environmental Planning and Assessment Act* 1979 (EP&A Act). There are three approval streams under the EP&A Act for development in NSW. These are regulated

by Parts 3A, 4 and 5 of the Act. Environmental planning instruments, predominantly local environmental plans (LEPs) and State environmental planning policies (SEPPs), dictate which of these three approval streams apply in any particular circumstance. These three assessment/approval streams can be summarised as follows:

Part 3A applies to projects identified in *State Environmental Planning Policy* (*Major Projects*) 2005. The Minister for Planning is the approval authority for Part 3A projects.

Part 4 applies to all development listed as being permissible with consent under an environmental planning instrument.

Part 5 applies to any approval or decision of a government agency or statutory authority to undertake an activity that does not require approval under either Parts 3A or 4 of the EP&A Act and is not listed as exempt or complying development in an environmental planning instrument.

The Minister for Planning previously confirmed by letter dated 16 September 2008 (REF: 904 1553) that the project was a matter to which Part 3A of the *Environmental Planning and Assessment Act, 1979* (EP&A Act) applies, and that an application may be lodged with the Director General. In a letter dated 12 August 2010 ERM have sought further confirmation that the proposed development would be considered to be a major project under Clause 6 of the Major Projects State Environmental Planning Policy.

2.2.2 Native Vegetation Act 2003

The *Native Vegetation (NV) Act* 2003 commenced on 1 December 2005 and repealed the *Native Vegetation Conservation Act* 1997 which previously governed the management of native vegetation in NSW.

The NV Act aims to provide flexibility and incentives for farmers to manage native vegetation, end broad scale clearing (unless it improves or maintains environmental outcomes) and encourage healthy and productive landscapes.

Clause 12 of the NV Act states:

- "(1) Native vegetation must not be cleared except in accordance with:
 - (a) a development consent granted in accordance with this Act, or
 - (b) a property vegetation plan."

However, the NV Act does not apply to some land. Clause 5 of the NV Act states:

"(1) This Act does not apply to the following land:

- (a) the land described or referred to in Part 1 of Schedule 1 (National park estate and other conservation areas),
- (b) the land described or referred to in Part 2 of Schedule 1 (State forestry land),
- (c) the land described or referred to in Part 3 of Schedule 1 (Urban areas)."

Urban land as defined in Part 3, Schedule 1 of the NV Act includes:

'land within a zone designated "residential" (but not "rural-residential"), "village", "township", "industrial" or "business" under an environmental planning instrument or, having regard to the purpose of the zone, having the substantial character of a zone so designated, not being land to which a property vegetation plan applies'.

This means that the provisions of the NV Act do not apply to clearing within that part of the Riverside at Tea Gardens site zoned 2(f) – Mixed Residential-Commercial. No clearing is proposed on site outside of the urban zoned areas.

In addition, section 75U(1) of the EP&A Act specifies that an authorisation referred to in section 12 of the NV Act to clear native vegetation is not required for an approved project under Part 3A of the EP&A Act.

2.2.3 Rural Fires Act 1997

The main objectives of the Rural Fires Act 1997 are to:

- prevent, mitigate and suppress bush and other fires in NSW;
- co-ordinate bushfire fighting and bushfire prevention throughout the State;
- protect people from injury or death and property from damage as a result of bushfires; and
- protect the environment.

In accordance with section 100B(1) of the *Rural Fires Act* 1997, authorisation from the Commissioner of the NSW Rural Fire Service is required for "subdivision of bushfire land that could lawfully be used for residential or rural residential purposes". Section 100B(2) of the Act specifies that in determining whether to provide this authorisation, the Commissioner will take into consideration the subdivision's compliance with standards regarding setbacks, provision of water supply and other matters considered by the Commissioner to be necessary to protect persons, property or the environment from danger that may arise from a bushfire.

A bushfire hazard assessment has been undertaken by Conacher Travers for the Riverside at Tea Gardens site in accordance with *Planning for Bushfire Protection*. However, it should be noted that, in accordance with section 75U of the EP&A Act, a bushfire safety authority under Section 100B of the *Rural* Fires Act 1997 is not required for an approved project under Part 3A of the EP&A Act. Nevertheless, the subdivision has been designed to incorporate the recommendations of the bushfire hazard assessment in relation to asset protection zones, road design and layout, location of water supply and selection of landscaping species.

2.2.4 Marine Parks Act 1997

The Marine Parks Act 1997 (MPA 1997) makes provision for the declaration of marine parks. The objects of the MPA Act are:

- '(a) to conserve marine biological diversity and marine habitats by declaring and providing for the management of a comprehensive system of marine parks,
- (b) to maintain ecological processes in marine parks,
- (c) where consistent with the preceding objects:
 - (i) to provide for ecologically sustainable use of fish (including commercial and recreational fishing) and marine vegetation in marine parks, and
 - (ii) to provide opportunities for public appreciation, understanding and enjoyment of marine parks'.

The Port Stephens - Great Lakes Marine Park was declared effective from 1 December 2005. The Port Stephens - Great Lakes Marine Parks (PSGLMP) covers an area of approximately 98,000 hectares and includes offshore waters to the three nautical mile limit of state waters between Cape Hawk Surf Life Saving Club and Birubi Beach Surf Life Saving Club and all estuarine waters of Port Stephens and the Karuah River, the Myall River, Myall and Smiths Lakes and all of their creeks and tributaries to the line of tidal influence.

Four types of zones are used within marine parks with various uses permitted within each zone. The four zones are: sanctuary zones, habitat protection zones, general use zones and special purpose zones. The Myall River adjoining the site is within the general use zone. This zone permits the widest range of commercial and recreational fishing activities. To the south of the site, in the vicinity of Wallis Island, a habitat protection zone has been identified. To the north of the site a sanctuary zone has been nominated for part of the Myall River. Most commercial and recreational fishing activities are prohibited in the sanctuary zone and limited activity is permitted in the habitat protection zone.

While the MPA 1997 does not contain specific requirements in relation to land based development the objects relate to conserving marine biological diversity and habitats. The development of the site should not result in adverse impacts on the marine environment (this is also a requirement under SEPP 71). The key issue with respect to the proposed development and potential impact on the marine park relates to the management of stormwater drainage.

2.2.5 Threatened Species Conservation Act 1995

Schedules 1, 1A and 2 of the *Threatened Species Conservation Act* 1995 (TSC Act) list species, populations or ecological communities of native flora and fauna considered to be threatened in New South Wales. The status of threatened species, populations or ecological communities listed in Schedules 1, 1A and 2 have been determined by a Scientific Committee as either:

- Endangered (Schedule 1);
- Critically Endangered (Schedule 1A); or
- Vulnerable (Schedule 2).

Section 5A of the EP&A Act specifies that for the purposes of the Act, and in particular the administration of sections 78A, 79B, 79C, 111 and 112 of the Act, in deciding whether there is likely to be a significant effect on threatened species, populations or ecological communities, or their habitats, seven factors must be taken into account along with any assessment guidelines. This assessment is referred to as the 'assessment of significance'.

Where a proposal is likely to significantly affect critical habitat of a threatened species, population or ecological community, or is in critical habitat, as defined by Part 3 of the TSC Act, a species impact statement must be prepared to accompany the development application.

Section 5A of the EP&A Act does not apply to projects assessed under Part 3A of the EP&A Act. However, the site has been subject to numerous flora and fauna studies. Several vegetation mapping studies have been conducted across the subject land and surrounds, including broad scale mapping across the Great Lakes LGA as well as fine scale mapping of the subject land. Detailed vegetation mapping was undertaken by Conacher Environmental Group (Conacher) in 2007. Fauna surveys have been conducted on the subject land over the past two decades, most recently in 2007 and 2008 by Conacher. Cumberland Ecology (2010a) recently conducted additional vegetation surveys to revise and update the vegetation mapping prepared by Conacher. Cumberland Ecology also recently undertook an Ecological Assessment of the proposed development (2010b) (refer to Section 4.1).

2.2.6 Fisheries Management Act 1994

The Fisheries Management Act 1994 includes provisions to declare and list threatened species of fish and marine vegetation, endangered populations and ecological communities, and key threatening processes. These provisions are similar to those in the TSC Act and must be considered when referring to section 5A of the EP&A Act.

No species listed within the Fisheries Management Act (1994) are considered likely to occur in the Myall River. Also, wetlands and associated riverine and estuarine areas at the site will be protected within the current proposal. It is considered that there will be no significant impacts to the wetland or aquatic environments at or adjacent to the site.

2.3 STATE PLANNING POLICIES AND GUIDELINES

2.3.1 State Environmental Planning Policy (Major Development) 2005

State Environmental Planning Policy (Major Development) 2005 is the principle instrument for nominating projects to be determined by the Minister for Planning under Part 3A of the EP&A Act. Schedule 2 of the Major Development SEPP specifies the following as development to which Part 3A of the EP&A Act applies:

'subdivision for residential purposes of land that is not in the metropolitan coastal zone (unless it is wholly or partly in a sensitive coastal location) into more than 100 lots'

In accordance with section 75D of the EP&A Act approval from the Minister for Planning is required for a development which has been declared to be a project under Part 3A of the EP&A Act. Following the introduction of Part 3A of the Environmental Planning and Assessment Act 1979 (EP&A Act) and State Environmental Planning Policy (Major Development) 2005, the Minister for Planning confirmed by letter dated 16 September 2008 (REF: 904 1553) that the project was a matter to which Part 3A of the Environmental Planning and Assessment Act, 1979 (EP&A Act) applies, and that an application may be lodged with the Director General. In a letter dated 12 August 2010 ERM have sought further confirmation that the proposed development would be considered to be a major project under Clause 6 of the Major Projects State Environmental Planning Policy.

2.3.2 State Environmental Planning Policy (Infrastructure) 2007

State Environmental Planning Policy No 11 – Traffic Generating Development (SEPP 11) was repealed on the 1st January 2008. The planning provisions previously within SEPP 11 have been updated and incorporated into *State Environmental Planning Policy (Infrastructure)* 2007, which came into effect on the 1st January 2008. Schedule 3 of the Infrastructure SEPP outlines the planning requirements for traffic generating development and identifies the following requirements for the subdivision of land based on size and / or capacity:

• site with access to any road: 200 or more allotments where the subdivision includes the opening of a public road; or

• site with access to a classified road or to a road that connects to a classified road (if access within 90m of connection, measured along alignment of connecting road): 50 or more allotments.

The Riverside at Tea Gardens development will result in the creation of greater than 200 allotments and will include the construction and dedication of public roads to service the development. The provisions of the Infrastructure SEPP therefore apply to the development and in accordance with Clause 104 of the Infrastructure SEPP, the application is required to be referred to the NSW Roads and Traffic Authority. A revised Traffic Impact Assessment will be undertaken for the development.

2.3.3 State Environmental Planning Policy 14 - Coastal Wetlands

State Environmental Planning Policy 14 – Coastal Wetlands (SEPP 14) aims to preserve and protect wetlands.

There is a SEPP 14 Wetland within the Riverside at Tea Gardens site (SEPP 14 Wetland No. 746 is located adjoining the Myall River and within the eastern portion of the site). The revised concept plan proposes the removal of Precinct 1 which included 71 lots previously located in the south east portion of the site adjoining the wetland. This will now become part of the conservation area and will reduce the potential impact of the development on the wetland.

2.3.4 State Environmental Planning Policy 44 - Koala Habitat Protection

SEPP 44 encourages the proper conservation and management of areas of vegetation that provide habitat for koalas to ensure a permanent free-living population over their present range and reverse the current trend of koala population decline.

Core koala habitat is defined as "...an area of land with a resident population of koalas, evidenced by attributes such as breeding females (that is, females with young) and recent sightings of and historical records of a population." If a site is identified as a core koala habitat a Koala Plan of Management must be prepared for the site before development consent may be granted. The SEPP does not specify that a Koala Plan of Management would be required for Part 3A Projects.

Specialist surveys for Koala have however been undertaken as part of the previous environmental assessment of the site. The surveys found that the proposed development was unlikely to impact on koala populations in the Hawks Nest/Tea Gardens locality.

2.3.5 State Environmental Planning Policy 50 - Canal Estate Development

SEPP 50 prohibits canal estate development as defined in the Policy. Clause 3 defines canal estate development as development that:

- "(a) incorporates wholly or in part a constructed canal, or other waterway or waterbody, that is inundated by or drains to a natural waterway or natural waterbody by surface water or groundwater movement (not being works of drainage, or for the supply or treatment of water, that are constructed by or with the authority of a person or body responsible for those functions and that are limited to the minimal reasonable size and capacity to meet a demonstrated need for the works), and
- (b) includes the construction of dwellings (which may include tourist accommodation) of a kind other than, or in addition to:
 - (i) dwellings that are permitted on rural land, and
 - (ii) dwellings that are used for caretaker or staff purposes, and
- (c) requires the use of a sufficient depth of fill material to raise the level of all or part of that land on which the dwellings are (or are proposed to be) located in order to comply with requirements relating to residential development on flood prone land."

Canal estate development does not include drainage works that are 'limited to the minimal reasonable size and capacity to meet a demonstrated need for the works'.

The previous scheme involved the extension of the existing detention lake and the creation of three separated freshwater basins, in addition to a number of separate smaller water quality control ponds and basins.

No extension of the existing lake system is proposed under the revised concept plan. There will also be no interaction between the saltwater and freshwater basins and the single existing drain outlet to the Myall River will be retained, with no new connection proposed. The changes to the water management regime as well as the form of the development ensure that it is not a canal estate development as defined under SEPP 50.

2.3.6 State Environmental Planning Policy 71 - Coastal Protection

State Environmental Planning Policy 71 – Coastal Protection (SEPP 71) aims to ensure that development in the NSW Coastal Zone is appropriate and suitably located and that there is a consistent and strategic approach to coastal planning and management. It provides a clear development assessment framework for the coastal zone.

The Riverside at Tea Gardens site is within the coastal zone. The parts of the site that are within 100 metres of the Myall River and Wobbegong Bay and the parts of the site within SEPP 14 Wetlands are defined as 'sensitive coastal locations' under SEPP 71 – no residential development is proposed within a sensitive coastal location.

Clause 7 of SEPP 71 specifies that the matters for consideration set out in Clause 8 of the SEPP must be taken into account when the Council prepares a draft local environmental plan and when the consent authority determines a development application to carry out development on land to which the SEPP applies. SEPP 71 does not specify that these matters for consideration are required to be taken into account when assessing a concept plan under Part 3A of the EP&A Act.

Clause 18 of SEPP 71 specifies that a consent authority must not grant consent for certain forms of subdivision within the coastal zone unless the Minister for Planning has adopted a master plan for the land. Advice from the Department of Planning is that 'master plans' are now considered 'development control plans' so that an approved concept plan for the site should satisfy the provisions of SEPP 71.

2.3.7 NSW Coastal Policy 1997

The NSW Coastal Policy 1997 is a guide for land use decision making in the designated coastal zone. It recognises that the coast is the focus of intense pressures from human activity and that there are a large range of competing interests for its resources. A decision making approach based on ecologically sustainable development seeks to reconcile these competing interests.

The NSW Coastal Policy 1997 discourages the development of land with high conservation value or other constraints where development would not be consistent with the aims of the policy. The policy also provides principles to guide future development in proposed development precincts that balance social, ecological and economic considerations. The proposal in its revised form is consistent with the aims, principles and goals of the Policy.

2.3.8 Coastal Design Guidelines for NSW

The Coastal Design Guidelines for NSW was produced in 2003 by the NSW Coastal Council. The document is designed to provide a framework for discussion and decision making involving coastal planning, design and development proposals between all stakeholders in the context of caring for the natural beauty and amenity of coastal beaches, headlands, waterways and ecologies upstream.

Part 1 of the Guidelines defines seven coastal settlement types which can be used to analyse and understand urban development along the NSW coast. Part 2 of the Guidelines identifies five principles for coastal settlement structure. These principles and their elements are presented as best practice outcomes and form the basis for understanding, debating and designing the present and future form of coastal settlements in NSW. The five principles for coastal settlement structure are:

- defining the footprint and boundary of the settlement;
- connecting open space;
- protecting natural edges;
- reinforcing the street pattern; and
- appropriate buildings in a coastal context.

The revised concept plan incorporates these principles into its design.

2.3.9 Mid North Coast Regional Strategy

The *Mid North Coast Regional Strategy* (MNCRS) was adopted in March 2009. It provides guidance for local planning in the eight local government areas of Clarence Valley, Coffs Harbour, Bellingen, Nambucca, Kempsey, Port Macquarie-Hastings, Greater Taree and Great Lakes.

Tea Gardens / Hawks Nest is at the southern end of the area included in the MNCRS and are identified as 'towns' that serve a limited catchment and have a small to medium scale concentration of retail, health and other services with lower density residential. They are recognised as relying on major regional centres and major towns for high order services, retailing and employment.

The waters adjacent to Tea Gardens / Hawks Nest are identified as 'Marine Park / Protection' in the MNCRS. The concept plan includes water management measures to ensure that quality of surface and ground water is not reduced. The concept plan also includes a buffer to the wetland, to protect its function and value.

The Mid North Coast is recognised as one of the fastest and most consistent growth areas of NSW. The strategy recognises the growing pressure for urban development in the Great Lakes and greater Taree areas, with recent road upgrades and development activity suggesting that "...these areas will experience revitalised in-migration and population growth" (DoP, 2007).

The 'strategy at a glance' aims to, amongst other objectives:

• "cater for a housing demand of up to 59,600 new dwellings by 2031 to accommodate the forecast population increase of 94, 000 and any anticipated growth beyond this figure arising from increased development pressures in the southern part of the Region"; and

• "ensure that new housing meets the needs of smaller households and an ageing population by encouraging a shift in dwelling mix and type so that 60 percent of new housing will be in Greenfield location and 40 percent in existing urban areas" (DoP, 2007).

It states that the demand to live near the coast will continue to result in the majority of the anticipated growth being accommodated in existing identified growth areas, including Tea Gardens – Hawks Nest.

The MNCRS sets out neighbourhood planning principles that include:

- "A range of land uses to provide the right mix of housing, jobs, open space, recreational space and green space;
- Easy access to major centres with a full range of shops, recreational facilities and services along with smaller village centres and neighbourhood shops;
- Jobs available locally and regionally, reducing travel times and the demand for transport services;
- Street and suburbs planned so that residents can walk to shops for their daily needs;
- A wide range of housing choices to provide for different needs and incomes. Traditional houses on their own block will be available along with smaller lower maintenance homes, units and terraces for older people and young single or couples; and
- Conservation land in and around development sites to help protect biodiversity and provide open space for recreation" (DoP, 2009).

The concept plan meets the aims of the MNCRS and adopts the planning principles through its creation of a greenfield development with a range of lot sizes to accommodate different housing types that are linked by an open space network that retains wildlife corridors and buffers to the wetlands. The residential lots also provide for home based business which allows people to work at home, thereby reducing the need to travel and providing employment diversity in the Tea Gardens - Hawks Nest area.

The residential lots are close to a range of commercial, community and retail services in the new town centre at the corner of Myall Street and Shoreline Drive. The town centre can be accessed from the residential area within Riverside, by the internal streets or by pedestrian and cycle paths located in the open space network.

The *Mid North Coast Regional Strategy* includes Sustainability Criteria against which new proposals are to be assessed. A full assessment of the Riverside at Tea Gardens development against the Sustainability Criteria will be provided at the Environmental Assessment stage.

2.4 LOCAL PLANNING INSTRUMENTS, POLICIES, STRATEGIES AND STUDIES

2.4.1 Great Lakes Local Environmental Plan 1996

Great Lakes Local Environmental Plan 1996 (Great Lakes LEP) is the principal local environmental planning instrument governing land use within the Great Lakes local government area (LGA).

Zones

The Riverside at Tea Gardens site was rezoned by Council in 2000 from 1(a) Rural to part 2(f) – Mixed Residential-Commercial, part 7(a) Wetlands and Littoral Rainforest and part 7(b) Conservation. The majority of the site is contained within the 2(f) zone. The 7(a) zone is adjacent to the Myall River and contains SEPP 14 Wetlands. The 7(b) zone is the designated buffer to the wetlands.

The proposal is permissible with consent within the 2(f) zone.

Clause 33A - Development at Myall Quays (Riverside At Tea Gardens)

Clause 33A relates to development at Myall Quays, which is now known as Riverside at Tea Gardens. The objective of Clause 33A is to ensure that appropriate commercial and retail facilities are provided on the site and that any water body is maintained under the provisions of a community or neighbourhood scheme.

Subclause 33A(1) relates to the construction a shopping centre at Myall Quays and limits the gross floor area of any such centre to 3000 square metres. The revised concept plan does not propose any commercial development.

Subclause 33A(2) relates to the impact on adjoining conservation areas and the Myall River of the development of a lake or other water body at Myall Quays. It states that Council must have the concurrence of the Department of Planning before granting consent to such a development, and that the Department must take into consideration the environmental impacts of such a development on the surrounding wetlands, wet heath areas and the Myall River.

On 24 February 2004, the Minister for Planning made a declaration under Section 76A(7)(b) of the EP&A Act that made any waterbody proposed on parts of the Riverside site 'State Significant Development'. It is noted that Section 76A(7) has been repealed and a reference in any Act or instrument to State significant development within the meaning of the Act is taken to be a reference to a project to which Part 3A of this Act applies.

2.4.2 Development Control Plans

Development Control Plan 22 - Myall Quays Estate

Development Control Plan 22 – Myall Quays Estate (DCP 22) applies to 'Riverside at Tea Gardens'. DCP 22 provides management principles and actions that proposed development should follow.

DCP 22 is outdated as it was prepared prior to recent environmental studies and investigations into the capabilities and suitability of the site. While many of the management principles actions outlined in the DCP remain relevant, some of the specific controls are no longer appropriate as they are based on a previous master plan that has little resemblance to the current (and proposed) development of the site, nor in any event, can this master plan be realised, given the current planning legislation. It is anticipated that the DCP will be repealed and replaced by a concept plan for the Riverside at Tea Gardens Estate.

Development Control Plan 30 Residential Urban Areas

Development Control Plan 30 – Residential-Urban Areas (DCP 30) provides design guidelines for high quality urban housing. DCP 30 provides performance criteria that should be considered in the design of residential developments. Design elements covered in DCP 30 include:

- site planning;
- site analysis;
- site layout;
- building design;
- building appearance;
- landscape design;
- security; and
- services and site facilities.

The subdivision layout allows for dwellings to be erected that generally comply with the provisions of DCP 30. Lot sizes vary from less than 450m² (generally corner duplex lots or lots with rear lane access) to greater than 650m².

Development Control Plan 31 – Subdivision (DCP 31) outlines the subdivision requirements in residential, commercial/industrial and rural and environmental zones. Section 2 outlines the general requirements for subdivision in all zones regarding site considerations, site hazards, road design and construction, landscaping and site design, services, drainage, existing development and heritage and environmental protection.

Section 3 of DCP 31 relates to residential subdivision. Performance criteria are provided in DCP 31 which are intended as a guide to developers. Generally lots less than 450m² will not be permitted in a residential zone, and lots over 450m² should be capable of containing a building envelope measuring 8m x 20m or 10m x 16m and have private open space areas of 40m² with a minimum dimension of 4m. However, the *revised draft Tea Gardens / Hawks Nest Housing Strategy* recommends that this DCP be amended to make provision for small lot housing (i.e. between 300m² and 450m²). The project generally complies with the provisions of DCP 31.

Car Parking Policy

Great Lakes Council *Car Parking Policy* outlines the amount of car parking required for various types of development. The car parking requirements outlined are considered excessive for the site as a "walkable community". Nevertheless, proposed lots are of sufficient size to accommodate a dwelling and on site car parking space.

2.4.3 Draft Development Control Plan 34 - Acid Sulphate Soils

Draft Development Control Plan 34 Acid Sulphate Soils provides guidance regarding the procedures to be followed in areas affected by acid sulphate soils. According to the Acid Sulphate Soils Risk Map for Port Stephens the site is located in an area where there is a low probability of acid sulphate soil materials occurring between one metre and three metres below the ground surface. An updated assessment of potential ASS for the revised concept plan which addresses the previous concerns of the DoP and the PAC will be incorporated into the Environmental Assessment.

2.4.4 Local Planning Strategies and Studies

Tea Gardens Hawks Nest Conservation and Development Strategy

The *Tea Gardens / Hawks Nest Conservation and Development Strategy* (Great Lakes Council and Acacia Environmental Planning Pty Ltd, 2003) was produced in response to the increasing demand for development in the area. The strategy identifies areas that are suitable for development and areas that should be conserved for ecological purposes.

The Riverside at Tea Gardens site is not identified in the strategy as a potential future residential area, due to the fact that the site is already zoned 2(f) and can be developed for urban purposes. The strategy does identify the Myall Quays (Riverside at Tea Gardens) site on its precinct map and provides brief comments including that the site was rezoned in 2000, and is suitable for low and medium density residential development, tourism, shopping, community and recreational facilities.

Tea Gardens/Hawks Nest Housing Strategy

The was adopted by Council in November 2006. Subject to suitable controls being in place, the strategy recommends an average net density of 13 dwellings per hectare for the site, along with the flexibility to site slightly denser developments closer to identified focal points and disperse smaller lot housing throughout. Riverside at Tea Gardens will have a minimum net density of 13 dwellings per hectare in accordance with Council's Housing Strategy. Smaller lot housing is also dispersed throughout the site, creating the flexibility to allow for a range of housing types.

Urban Design and Density Review Forster Tuncurry and Tea Gardens Hawks Nest

The Forster/Tuncurry & Tea Gardens/Hawks Nest Urban Design and Density Review Background Report was prepared as a follow-on from the Housing Strategies for Forster/Tuncurry and Tea Gardens/Hawks Nest. The Report identifies planning framework and assessment deficiencies for high and medium density residential development and town centre urban designs, which have led to the development of Development Control Plan No.51 - Forster/Tuncurry Town Centres and Development Control Plan No.52 Tea Gardens/Hawks Nest Town Centres.

The Riverside at Tea Gardens site is not a site defined within DCP 52 and the planning controls within DCP 52 are not applicable to the Riverside site.

Recovery Plan for the Hawks Nest and Tea Gardens Endangered Koala (Phascolarctos Cinereus) Population

The Hawks Nest and Tea Gardens koala population was listed as endangered in 1999 under the *Threatened Species Conservation Act 1995*, and as a result the Director-General of the National Parks and Wildlife Service (now Department of Environment and Conservation or 'DEC') was required to prepare a Recovery Plan for the population.

The Recovery Plan outlines measures that Council, as the land use planning and development control authority, should follow when assessing development applications. The Recovery Plan encourages the conservation of koala habitat and for identified areas of koala habitat to be incorporated into local planning instruments. Koala Management plans will be prepared to support any development proposed, where applicable.

3 CONSULTATION

Crighton Properties and its consultants began the process of seeking approval to develop a substantial portion of the Riverside at Tea Gardens site in 2002. Crighton Properties has consulted with the DoP, other government agencies and the community over many years with regard to the form of the proposal, the planning framework / process and outcomes of the environmental assessment related to the project.

Consultation and development of the previous project proposal culminated in the lodgement and exhibition of a concept and project plan in February 2009, public exhibition from 19 February to 20 March 2009 and PAC review and public hearing on 7 April 2009. The previous application was subsequently withdrawn by Crighton Properties due to unresolved concerns raised by DoP, the PAC and other government agencies.

Since the withdrawal of the previous application, Crighton Properties was briefed directly by the PAC with regard to the assessment and subsequently has consulted with the DoP and the Department of Environment Climate Change and Water (DECCW) on a number of occasions to discuss additional assessments being undertaken to resolve the concerns of DoP and the PAC, and the form of a revised concept plan and future application.

Additionally, Crighton Properties has directly consulted with a number of government agencies to resolve outstanding concerns, including:

- ongoing liaison with the DECCW in respect to ecological impacts, in particular revised vegetation mapping and ecological impact assessment which have been recently completed;
- liaison with NSW Office of Water (NOW) in respect to the amended water management strategy for the site;
- consultation with MidCoast Water during the development of the Integrated Water Cycle Management Plan; and
- consultation with Council re VPA inclusions.

Crighton Properties will continue to liaise with the DoP, a range of government agencies and the community during the preparation of the Environmental Assessment for the revised concept plan. Additional community and agency involvement will also occur during the formal public exhibition period for the new concept plan application.

4 PRELIMINARY ENVIRONMENTAL ASSESSMENT

4.1 ECOLOGY

4.1.1 Overview

The site has been subject to numerous flora and fauna studies. Several vegetation mapping studies have been conducted across the subject land and surrounds, including broad scale mapping across the Great Lakes LGA as well as fine scale mapping of the subject land. Detailed vegetation mapping was undertaken by Conacher Environmental Group (Conacher) in 2007. Fauna surveys have been conducted on the subject land over the past two decades, most recently in 2007 and 2008 by Conacher. Cumberland Ecology (2010a) recently conducted additional vegetation surveys to revise and update the vegetation mapping prepared by Conacher. Cumberland Ecology also recently undertook an Ecological Assessment of the proposed development (2010b).

4.1.2 Vegetation Communities, Fauna Habitat and Movement Corridors

Vegetation Communities

Additional vegetation surveys and mapping undertaken by Cumberland Ecology were conducted from 14 to 16 December 2009, 13 to 15 January 2010 and 10 February 2010 in accordance with the standards provided in the (then) DEC Threatened Biodiversity Survey and Assessment Guidelines for Development and Activities (Working Draft) (DEC (NSW), 2004) and BioBanking Assessment Methodology and Credit Calculator Operational Manual (DECC, 2009). Habitat assessments were undertaken in accordance with the methodology within the BioBanking Assessment Methodology and Credit Calculator Operational Manual (DECC, 2009).

The mapping identified that the vegetation on the site includes a mosaic of woodland, forest, scrub, heath, grassland and wetland with the mosaic reflecting topography, drainage and land use. The vegetation was categorised into three broad native vegetation groups and one exotic vegetation group, with each vegetation group containing a suite of vegetation communities (16 in total) that are readily distinguishable by the dominant canopy species present:

- Dry forest / woodland:
 - Eucalyptus pilularis Open Forest;
 - Corymbia maculata Eucalyptus paniculata Open Forest;

- Eucalyptus umbra Open Forest;
- Eucalyptus microcorys Open Forest; and
- Eucalyptus signata Woodland.
- Wet forest / woodland / scrub / heath:
 - Corymbia gummifera Open Forest;
 - Angophora costata Eucalyptus resinifera Woodland;
 - Eucalyptus robusta Woodland/Open Forest;
 - Wet Heath;
 - Casuarina glauca Melaleuca Regrowth Forest;
 - Melaleuca quinquinervia Forest; and
 - Melaleuca ericifolia Scrub.
- Wetland communities:
 - Casuarina glauca Forest;
 - Baumea juncea Rushland;
 - Juncus kraussii Saltmarsh; and
 - Avicennia marina Mangroves.
- Exotic Communities:
 - Pine Forest;
 - Exotic Grassland/Pasture; and
 - Disturbed Estuarine Vegetation.

Several of the vegetation communities recorded corresponds to the following endangered ecological communities (EECs) listed under the TSC Act:

- Coastal Saltmarsh in the NSW North Coast, Sydney Basin and South East Corner bioregions;
- Swamp Sclerophyll Forest on coastal floodplains of the NSW North Coast, Sydney Basin and South East Corner bioregions; and
- Swamp Oak Floodplain Forest of the NSW North Coast, Sydney Basin and South East Corner bioregions.

Cumberland Ecology concluded that a high proportion of the site contains native vegetation that will require offsetting (2010a).

Fauna Habitat

Vegetation within the site provides potential habitat for a range of native vertebrate fauna species, including amphibians, birds, terrestrial and arboreal mammals, bats and reptiles. Key habitat features recorded by Cumberland Ecology (2010b) include:

- wetland and riparian environments which provide habitat for wetland birds, frogs and reptiles;
- ground cover, leaf litter and fallen timber suitable as shelter for small terrestrial fauna species;
- tree hollows suitable as shelter and nesting habitat for a range of hollow dependant fauna;
- Koala feed tree species; and
- blossom-producing trees suitable for foraging for a range of nectivorous species.

Wildlife Corridors

The site has been mapped as forming part of a regional corridor and as a key habitat area. The site forms part of the Nerong – Pindimar regional corridor, which provides a link between Nerong Waterholes and Kirks Knoll. The regional corridor extends from the west to north east and covers the central and northern thirds of the site. Detailed examination of the vegetation and landscape of the site indicates several potential local movement corridors for wildlife (Cumberland Ecology, 2010b).

4.1.3 Fauna Observed or Likely to Occur

Fauna surveys of the site have resulted in the detection of over 200 vertebrate species, including 20 amphibian, 125 bird, 43 mammal and 15 reptile species. A number of threatened fauna species listed under the TSC Act and EPBC Act are known to occur within the locality. The following threatened fauna have been recorded on the site:

- Wallum Froglet (Crinnia tinnula);
- Varied Sitella (*Daphoenositta chrysoptera*);
- Little Lorikeet (GlossOpsitta pusilla);
- Black Bittern (Ixobrychus flavicollis);

- Osprey (Pandion haliaetus);
- Barking Owl (*Ninox connivens*);
- Squirrel Glider (Petaurus norfolcensis);
- Koala (*Phascolarctos cinereus*);
- Grey-headed Flying-fox (*Pteropus poliocephalus*);
- Common Blossom-bat (Syconycteris australis);
- Little Bentwing-bat (*Miniopterus australis*);
- Eastern Bentwing-bat (Miniopterus screibersii oceanensis);
- Eastern Freetail-bat (Mormopterus norfolkensis); and
- Greater Broad-nosed Bat (Scoteanax rueppellii).

All these species are listed as Vulnerable under the TSC Act. The Koala also forms part of an endangered population in the Hawks Nest and Tea Gardens area. The Grey-headed Flying-fox is also listed as Vulnerable under the EPBC Act (Cumberland Ecology, 2010b).

4.1.4 Threatened Species

Over 500 flora species have been recorded on the site, approximately 85% of which are native. No threatened flora species have been detected within the site (Cumberland Ecology, 2010b).

4.1.5 Summary of Potential Impacts

The primary impact resulting from the proposed development is vegetation clearance. The total development footprint is approximately 222.5ha, of which 132.1ha comprises open space and 90.4ha comprises built upon area. Approximately 65.64ha of the vegetation to be removed from the development footprint is comprised of Swamp Sclerophyll Floodplain Forest EEC. The following key threatening processes are applicable to the development:

- clearing of native vegetation;
- loss of hollow-bearing trees;
- removal of dead wood and dead trees; and
- alteration to the natural flow regimes of rivers and streams and their floodplains and wetlands.

The Riverside at Tea Gardens development will reduce the widths of potential local movement corridors for wildlife, constituting dispersal, foraging and nesting habitat for a range of fauna groups, particularly birds and small-medium sized mammals.

An Ecological Site Management Strategy has been developed for the site to mitigate the impacts of Riverside at Tea Gardens on biodiversity. An Integrated Water Management Plan has also been developed for the site to mitigate the impacts of Riverside at Tea Gardens on hydrological regimes.

Additionally, a biodiversity offset area is proposed adjoining the Myall National Park approximately 2 km north east of the site (refer to *Figure 1.2*).

4.1.6 Proposed Assessment Methodology

The site has been subject to numerous flora and fauna studies, including recent vegetation mapping undertaken by Cumberland Ecology (2010a). The results of previous surveys will be detailed in the Environmental Assessment, together with the recent Ecological Assessment Report prepared by Cumberland Ecology (2010b).

4.2 WATER MANAGEMENT

4.2.1 Groundwater

The existing groundwater regime is characterised by a sandy aquifer local to the development. Shallow rock levels to the north of the site provide a barrier to groundwater inflow. The sand aquifer is likely to extend to the south and west of the site and be in hydraulic contact with the Waters of the Myall River to the south, Wobbegong and Pindimar Bay to the south-west and Kore Kore Creek to the west. Rainwater infiltration forms the main groundwater recharge mechanism and previous monitoring results from bores over the site show a marked groundwater level response to rainfall events. Groundwater is generally quite shallow ie between 0.5m and 1.7m below ground level.

When assessing the previous concept plan and project application for the site, the Planning Assessment Commission (PAC) raised several concerns in relation to the impact of the development on the existing groundwater conditions. Additional groundwater monitoring has since been completed by Martens and Associates to address the concerns. Martens and Associates note the following:

 lake nutrient levels appear to be considerably lower than those observed in nearby bores, supporting the initial observation that the discharge of urban water has not detrimentally affected lake and therefore groundwater quality;

- additional groundwater level data has been provided which confirms that groundwater fluctuations may be of the order of >0.5m throughout the site on an annual and seasonal basis. This comes about primarily due to incident rainfall and seasonal evapotranspiration rates. Tidal effects appear negligible across most the site; and
- there appears to be limited interchange between the lake and the adjoining groundwater system. Groundwater level fluctuations adjacent to the lake are significantly damped compared to observed lake fluctuations.

The NSW Office of Water (NoW) have recently issued formal advice that any water coming into contact with the groundwater table should meet or better background water quality standards prior to contact. Following this advice and the work carried out by Martens and Associates, the water management proposals for the site have been revisited. More dry primary water management facilities are proposed particularly toward the upper end of the site catchment and the number of secondary treatment ponds reduced.

No extension of the existing lake system is now proposed. There will also be no interaction between the saltwater and freshwater basins and the single existing drain outlet to the Myall River will be left as is, with no new connection proposed. It is anticipated that the additional work undertaken by Martens and Associates together with the revised water management proposal will address concerns previously raised by the PAC in relation to groundwater.

4.2.2 Surface Water and Stormwater Management

The surface water catchment for Riverside extends well beyond the boundaries of the site. The site is virtually flat and the ground level rises only a few metres over more than a kilometre. A detailed assessment has been carried out of existing and future catchment runoff, pollutant exports and water management options, while maintaining as far as possible the existing lake water quality and its ancillary role as a fish habitat. The current proposal is for Myall River to be the receiving water body.

4.2.3 Site Servicing

A new Integrated Water Cycle Management Strategy to ensure servicing of the development has been prepared in consultation with MidCoast Water.

Water

The existing water supply for the area comes from the Tea Gardens aquifer six kilometres north of the site. Groundwater is pumped from the aquifer, treated and transferred to reservoirs prior to distribution. The existing capacity of the bore field is 8.6ML/d, which is identified to be augmented to 12.4ML/d in 2016 and 16.2ML/d in 2031 to meet future demands (Worley Parsons).

The water management objectives adopted in developing a potable water supply concept for the site include the following:

- minimise the potable water demand from the site by using water saving devices on fixtures and water efficient appliances;
- installation of rainwater tanks and connection to toilet flushing and hot water systems;
- use of alternative water supply sources where possible;
- retention of native vegetation and minimal use of turf to reduce irrigation requirements; and
- infrastructure to be designed with long term sustainability in mind.

Wastewater

The existing settlements of Tea Gardens and Hawks Nest are serviced by the Hawks Nest Waste Water Treatment Works (WWtW). The WWtW currently has limited capacity and will need to be augmented to accommodate additional flows.

The management objectives adopted in developing a servicing concept for the site include the following:

- minimise impacts on existing infrastructure by reducing sewage loads where possible;
- minimise impacts on receiving waters by designing optimal effluent management practices and minimising effluent discharge;
- reuse of treated effluent where possible and appropriate; and
- infrastructure to be designed with long term sustainability in mind. This will involve location of sewage systems with adequate buffer zones and flexibility for future expansion to meet potential augmentation requirements.

4.3 CONSIDERATION OF CLIMATE CHANGE

4.3.1 Overview

The Floodplain Risk Management Guideline titled *Practical Consideration of Climate Change* (DECC, 2007) should be considered for all developments where there are potential impacts as a result of climate change. This relates to impacts associated with sea level rise and increase in rainfall intensity. The planned development is subject to flooding from both the Myall River and from runoff from the local catchment.

The Intergovernmental Panel on Climate Change (IPCC) has recommended that for the east coast of New South Wales the sea level rise is expected to be 0.18 to 0.91 metres by between 2090 and 2100. Additionally, climate change impacts on flood producing rainfall events to 2070 show a trend for larger scale storms which will potentially impact on current design ARI due to increases in rainfall.

The Riverside at Tea Gardens site will be developed in accordance with the current 0.91m climate change forecast. The previous Riverside concept plan and project application incorporated a climate change sensitivity analysis which recommended compliance with the mid range target of 0.55m. However, DoP and DECCW raised concerns regarding the application of the 0.55m mid range target and potential flooding impacts as a result of climate change on the lower lying areas of the site.

Accordingly, the revised concept plan and Environmental Assessment will incorporate the high range forecast of 0.91m as adopted by DoP and DECCW in recent policies. Additionally, Precinct 1 which included 71 lots previously located in the lower lying south east portion of the site, has been deleted and will now become part of the conservation area.

4.3.2 Proposed Assessment Methodology

A revised climate change sensitivity analysis incorporating the high range forecast of 0.91m will be included in the Environmental Assessment.

4.4 Soils

4.4.1 Acid Sulphate Soils

According to the Acid Sulphate Soils Risk Map for Port Stephens the site is located in an area where there is a low probability of acid sulphate soil materials occurring between one metre and three metres below the ground surface. The map indicates that acid sulphate soil (ASS) materials, if present, are sporadic and may be buried by alluvium or windblown sediments.

A geotechnical assessment which investigated the potential for acid sulphate soils on site was carried out by Coffey Geotechnics Pty Ltd (2008). The assessment was undertaken to support the previous concept and project application. The assessment included the collection and screening of 105 samples across the site for ASS.

Results from laboratory testing indicated that 19 of the 28 samples analysed for SPOCAS / SCR exceeded the Acid Sulphate Soil Management Advisory Committee action criteria, confirming the occurrence of low potential ASS below the water table in sporadic locations across the site, including within three of the four test locations in the proposed lake extension. An Acid Sulphate Soils Management Plan was subsequently prepared that related to future earthworks at Riverside. The plan provides information for all lot purchasers and contractors required to work on the site.

The DoP and the PAC raised concerns regarding ASS, in particularly the need for further investigation in order to fully understand the potential impacts associated with the disturbance and treatment of the potential ASS.

In response to DoP and PAC concerns, modifications to the concept plan have reduced the potential impacts associated with the disturbance of potential ASS, including:

- the deletion of Precinct 1 in the south east portion of the site and its inclusion in the conservation area; and
- inclusion of more 'dry' water management devices (not in contact with the groundwater table) and a reduction in the number of detention ponds. There will be no link between the saltwater and freshwater basins and the single existing drain outlet to the Myall River will not be upgraded or duplicated.

Furthermore, additional assessment of potential ASS is currently being undertaken for the revised concept plan, including consideration of the issues raised by the DoP and PAC.

4.4.2 Proposed Assessment Methodology

An updated assessment of potential ASS for the revised concept plan which addresses the previous concerns of the DoP and the PAC will be incorporated into the Environmental Assessment.

4.5 HERITAGE

4.5.1 Aboriginal Heritage

A number of archaeological investigations have been undertaken across the Riverside at Tea Gardens site, the most recent being surveys undertaken in 2008 and 2009 (ERM).

The investigations identified two Aboriginal archaeological sites, one being a previously recorded midden 38-4-0148 (Dredge Island midden) located within the SEPP 14 wetland and another midden (Riverside 01) identified during the 2008 fieldwork, and further revisited in 2009 located adjacent to the tourist precinct in the north east portion of the site. Both middens are located in the raised sand dune landform near the Myall River.

The middens will not be directly impacted by the development and will be within the buffer zones for the wetland area (midden 38-4-0148) and within community lands adjacent to the designated tourist precinct (Riverside 01). A management plan will be developed in consultation with the local Aboriginal community to ensure the long-term protection of the middens.

4.5.2 Proposed Assessment Methodology

The site has been subject to numerous archaeological investigations, including recent surveys in 2008 and 2009 (ERM). The previous investigations will be detailed in the Environmental Assessment.

4.6 TRAFFIC MANAGEMENT

4.6.1 Overview

The proposed development of Riverside at Tea Gardens will have an impact on the external road network. A previous Traffic Impact Assessment was undertaken by Mark Waugh Pty Ltd (2008) to support the previous Part 3A application for concept plan and project application. DoP raised concerns regarding the impact of the previous concept plan on existing traffic and the capacity of the road network.

4.6.2 Proposed Assessment Methodology

An updated Traffic Impact Assessment will be undertaken for the Riverside at Tea Gardens development, incorporating comments from DoP on the previous concept plan and project application. The assessment will include an examination of intersection capacity and arrangement with Myall Road, public transport availability, pedestrian and cyclist access and pedestrian and traffic safety.

4.7 BUSHFIRE HAZARDS

4.7.1 Overview

Sections of the Riverside at Tea Gardens site are mapped as bushfire prone on Great Lakes Council's bushfire prone land maps. Any development of the site will need to comply with the NSW Rural Fire Service's *Planning for Bush Fire Protection Guidelines 2006 (PBP)*. A Bushfire Protection Assessment was undertaken by Conacher Environmental Group (2008) to accompany the previous concept plan and project application.

4.7.2 Proposed Assessment Methodology

A Bushfire Protection Assessment for the revised Riverside at Tea Gardens concept plan will be incorporated into the Environmental Assessment in accordance with the *Planning for Bush Fire Protection Guidelines 2006*. It should be noted that Appendix 3 of Planning for Bush Fire Protection 2006 has been updated effective 1 May 2010. All development on bush fire prone land in NSW should comply with the requirements of this Appendix and other bush fire protection measures identified in the (PBP).

4.8 SOCIAL AND ECONOMIC IMPACTS

4.8.1 Social Impacts

A Social Impact Assessment (SIA) of the previous Riverside at Tea Gardens concept plan and project application was completed by Duo Consulting (Duo, 2008). It examined the capacity of services and facilities in the vicinity of Tea Gardens to accommodate the growth in population anticipated as a result of the proposed development. The assessment examined the current profile of the population of Tea Gardens, existing access to key services, the likely impact of Riverside on those services and recommendations for enhancement of services where required to service the future Riverside population.

The SIA was based on statistical profiling and community consultation. The statistical data was mostly derived from the Australian Bureau of Statistics (ABS) 2006 Census, with supplementary data from local government and private developers. Information obtained from the Design Forum conducted in February 2006 and other community consultation programs were incorporated into the assessment to provide perspective and value to the analysis.

An assessment of housing issues relating to Riverside was also investigated by Duo (2007). It examined issues relating to housing choice, density and demand and supply in Tea Gardens to inform lot size and housing options for the Riverside development.

Riverside will provide additional housing in Tea Gardens, which will contribute to housing choice and opportunities in the area. Demographic features of households by type and by age point toward the predominance of couples without children ('empty nesters') and lone person households, which is indicative of an aging population. The proposal provides allotments that can accommodate a variety of dwelling types, which would appeal to a range of household types. The proposal will therefore contribute to a more diverse housing pattern within Tea Gardens.

The concept plan incorporates a range of community facilities, including the provision of a new community building, ability for internal roads to accommodate a bus route, a cycle and pedestrian network connecting all community facilities and a commitment to consolidate sporting and recreational facilities on one adjacent site as part of the Myall River Downs development.

4.8.2 Economic Impacts

The expected employment generated by the project (full time equivalent excluding construction employment) is ten operational jobs. It is envisaged that the construction of the project will take place in stages over a ten year period. During this period approximately 438 jobs will be created in the construction industry and related industries due to first round effects and a further 803 jobs due to the multiplier effect.

An Economic Impact Assessment was undertaken by Parsons Brinkerhoff (2007). The report provided an economic impact assessment of the proposed construction works, operations, and the associated potential economic impacts of the operations of the expanded development. The assessment incorporated the commercial precinct which has been removed from the current concept plan. The economic impact assessment will thus require updating based on the revised concept plan.

The economic benefits to the Tea Gardens/ Hawks Nest area created by the Riverside proposal will facilitate the growth anticipated by the Mid North Coast Regional Strategy (MNCRS) as one of the fastest and most consistent growth areas of NSW. The regional and local jobs created by the Riverside proposal will support dynamic population growth within the area by offering a range of employment opportunities.

4.8.3 Proposed Assessment Methodology

Updated social and economic impact assessments for the revised Riverside at Tea Gardens concept plan (excluding the commercial precinct and reduced lots) will be incorporated into the Environmental Assessment.

4.9 URBAN DESIGN AND DENSITY

4.9.1 Overview

Riverside at Tea Gardens will have a minimum net density of 13 dwellings per hectare in accordance with Great Lakes Council's Housing Strategy. It is intended to create an authentic character that reflects the lifestyle choice desired by Riverside residents which is consistent with the Tea Gardens Hawks Nest Housing Strategy. The concept plan incorporates a range of lot sizes throughout, to create a mixed development.

A three day design forum was conducted by Roberts Day on behalf of Crighton Properties in February 2006 to undertake a workshop with local residents and officers of the Great Lakes Council to identify the urban design concepts for Riverside (Roberts Day, 2007). The Riverside development incorporates a number of urban design objectives that relate to pedestrian, vehicle and cycle movement, public transport and parking, including:

- to promote 'walkability' through the site by: providing direct links within
 the site and to neighbouring attractions; giving pedestrians priority over
 vehicles within the site; creating pedestrian links through open spaces; and
 providing a high standard of pedestrian accessibility / mobility through
 good quality signposting, lighting and use of materials;
- to enhance pedestrian safety, traffic calming methods will be implemented within the local road system;
- to promote high pedestrian activity, low vehicle usage and high residential amenity, roads widths will be reduced to a level that still allows for essential vehicle access and movement;
- to provide high quality bus facilities at Myall Street and Shoreline Drive;

- to promote access to public transport from the site by using local shops as a focal point for access to bus services; and
- to promote cycling and protect the pedestrian environment by providing well located cycle routes.

4.9.2 Proposed Assessment Methodology

The Environmental Assessment will incorporate details on urban design and density prepared by Roberts Day (2007) and consistent with the Tea Gardens Hawks Nest Housing Strategy.

4.10 VOLUNTARY PLANNING AGREEMENT

The development of Crighton Properties holdings including Riverside is expected to occur over a period which is not adequately facilitated by the Great Lakes Council Contribution Plan. A Voluntary Planning Agreement (VPA) between Crighton Properties and Great Lakes Council was therefore prepared as part of the previous concept plan and project application for the site. The purpose of the VPA was to facilitate development contributions towards a range of public facilities in the Tea Gardens locality, which is subject to approval by the Minister for Planning under Part 3A of the EP&A Act 1979.

Provisions for planning agreements have been codified under Section 93 of the EP&A Act. Planning agreements are intended to be voluntary and can be entered into as part of the rezoning or development approval process. Planning agreements may be directed towards achieving the following:

- meeting the demands created by development for new public infrastructure, amenities and services;
- securing off-site planning benefits for the wider community;
- compensating for loss of or damage to a public amenity, service, resource or asset by development through replacement, substitution, repair or regeneration; and
- meeting the recurrent costs of facilities and services.

It has been agreed between the proponent and Council that the drop in yield across the site will not change the quantum of the VPA. However the VPA may need to be updated with regard to staging and checked for currency with current contributions requirements.

5 CONCLUSION

The revised Riverside at Tea Gardens concept plan incorporates a reduced residential and tourist development, with substantial areas of the Residential 2(f) zoned land proposed to be protected and enhanced as open space / wildlife movement corridors, over and above those already protected within the Environmental Protection 7(a) and 7(b) zones. Additionally, a 161 ha biodiversity offset area is proposed adjoining the Myall National Park approximately two kilometres north east of the site.

Detailed assessments have been updated for the proposed development of the Riverside at Tea Gardens site, including updated vegetation mapping and ecological assessment, revised water management system, acid sulphate soils, consideration of climate change, heritage, traffic, bushfire and socio-economics. The revised concept plan has evolved in response to comments and advice from the DoP, the PAC, key government agencies and the community, consideration of the suitability and inherent constraints of the site as well as technical investigations to ensure that the proposal responds to the built form, character and environmental features of the site and its surrounds. This PEA has identified the likely environmental impacts associated with the proposal.

A formal request is made for the issue of the Director General's Requirements for a Concept Plan for the proposed Riverside at Tea Gardens development, so that an Environmental Assessment can be prepared and placed on public exhibition.

REFERENCES

Coffey Geotechnics Pty Ltd (Coffey), 2008, Riverside Estate Project Application and Master Plan Area, Tea Gardens - Geotechnical and Acid Sulfate Soils Assessment. Report prepared for Crighton Properties Pty Ltd.

Conacher Environmental Group, 2008, **Bushfire Protection Assessment Report, Riverside at Tea Gardens**. Prepared for Crighton Properties Pty Ltd.

Cumberland Ecology, 2010a, Riverside Tea Gardens Vegetation Mapping Report (Draft). Prepared for Crighton Properties Pty Ltd.

Cumberland Ecology, 2010b, Riverside Tea Gardens Ecological Assessment Report (Draft). Prepared for Crighton Properties Pty Ltd.

Department of Environment and Climate Change (DECC), 2009, **BioBanking Assessment Methodology and Credit Calculator Operational Manual.** Department of Environment and Climate Change, Hurstville, NSW.

Department of Environment and Climate Change (DECC), 2007, Floodplain Risk Management Guideline: Practical Consideration of Climate Change. Department of Environment and Climate Change, Hurstville, NSW.

Duo Consulting Pty Ltd (Duo), 2008, Riverside @ Tea Gardens, Statement of Social Impacts. Report prepared for Crighton Properties Pty Ltd.

Duo Consulting Pty Ltd (Duo), 2007, An Assessment of Housing Issues relating to Riverside at Tea Gardens. Report prepared for Crighton Properties.

Environmental Resources Management Australia Pty Ltd (ERM), 2009, **Riverside at Tea Gardens Aboriginal Heritage Assessment, Draft Report**. Prepared for Crighton Properties Pty Ltd.

Mark Waugh Pty Ltd, 2008, **Proposed Riverside Residential Subdivision**, **Tea Gardens**, **Traffic Impact Assessment**. Prepared for Crighton Properties Pty Ltd.

Parsons Brinckerhoff Pty Ltd (PB), 2007, **Riverside at Tea Gardens Economic Impact Statement**. Report prepared for Crighton Properties Pty Ltd.

Roberts Day Urban Designers, 2007, **Riverside Design Report**. Report prepared for Crighton Properties Pty Ltd.

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