

ANNEX M COMPLIANCE WITH RELEVANT POLICIES AND PLANS

Table 1 Compliance with the aims of the New South Wales Coastal Policy 1997

Policy Aims	Proposal/Comment
Protect, rehabilitate and improve the natural environment	<p>The Project has identified conservation areas, specifically the Habitat Conservation Area and the SEPP 14 Wetland which contain significant ecological communities. The SEPP 14 Wetland will be not be disturbed as it is intended to preserve these wetlands as part of the project. The Concept Plan includes details of a significant onsite conservation areas and an offsite vegetation offset. There has been a considerable reduction in proposed impacts in the current proposal due to a greater degree of avoidance on site (refer to <i>Volume 4</i>).</p> <p>The wildlife corridor identified within the north portion of the site will also be managed to conserve the existing biodiversity and provide a link between the natural environments found on site. The wildlife corridor is identified on the site analysis plan (<i>Figure 3.2</i>) within <i>Volume 1A</i> of the EA.</p> <p>A Concept Groundwater Management Plan has been prepared by Martens & Associates Pty Ltd (2011) to provide quality controls for groundwater. An Integrated Water Cycle Management Plan has been prepared by Cardno (2011) which details the management of surface water quality entering the SEPP 14 Wetlands (refer to <i>Volume 3</i>).</p>
Protect and conserve cultural heritage	<p>A Cultural Heritage Assessment has been undertaken. The Assessment concluded that the project would not have any adverse impact on identified heritage items. The key findings of the assessment are detailed within <i>Chapter 6</i> of the EA and within <i>Volume 5</i>.</p>
Provide for public access and use	<p>Public access within the coastal area of the site is directed through open space corridors which connect the residential precincts. Access through the wetlands is restricted to increase the environmental sustainability of the wetland environment and minimise risk to human safety by maintaining access to designated tracks and pathways. Access through the open space network is detailed within architectural plans contained within <i>Volume 2</i> of the Environmental Assessment Report.</p>

Policy Aims	Proposal/Comment
Recognise and accommodate natural processes	Relevant natural processes have been integrated within the water cycle management plan detailed in <i>Volume 3</i> of the Environmental Assessment Report. In addition, natural events such as floods have been accommodated in the design of the project. The site is removed from the active coastal foredune area where coastal processes including erosion are a concern.
Provide for ecologically sustainable development and use of resources	<p>Resource use and land management has been guided by zoning and Council's housing policy in determining the densities of residential housing proposed within the project. The proposal promotes the use of ecologically sustainable development principles by:</p> <ul style="list-style-type: none"> • incorporating energy efficient subdivision design; • adopting urban design principles incorporating walkable neighbourhoods and linkages between communities; • the adoption of a total water cycle management design philosophy; • creation of the Habitat Conservation Area including the SEPP 14 wetland which will preserve significant ecological communities and provide for ecological corridors; • using engineering, architectural and other best practices to reduce development impacts; • protecting Aboriginal archaeological sites of high archaeological significance; • utilising existing service infrastructure; • creating opportunities for public transport usage thereby improving the efficiency of local and regional services; and • providing additional residential land to meet increasing demand and alleviate pressure on sites which are more environmentally sensitive.
Provide information to enable effective management	The design and layout of the proposed development was determined through an overlaying process of mapping various opportunities and constraints to determine the overall building envelope and the character of the open space network, as detailed in <i>Chapter 3</i> . The site analysis (<i>Figure 3.2</i> in <i>Volume 1A</i>) and constraints mapping (<i>Figure 3.1</i> in <i>Volume 1A</i>) incorporated information from the specialist environmental studies to ensure the design and layout maximises benefits for the future residents whilst protecting environmentally sensitive areas.

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Protect and enhance aesthetic qualities	Tea Gardens is distinctive in terms of its high amenity and small scale development. The estate has been designed in response to unique features, both internally and external to the site, so that it is linked to the landscape. Open space corridors have been created along view lines from the public lookout to Yaccaba Headland. Tree planting and a network of water bodies along the open space corridors will enhance the view lines. The site will also be visible from the surrounding waterways. Riverside has been designed to reduce the visual impact from the waterway by providing appropriate buffer zones which will be generously landscaped. Further, the Landscape Design Report within <i>Volume 1B</i> has recommended a variety of edge treatments to reduce the visual impact of the proposal. Housing and community buildings will include a mix of building types and uses, and will be guided by Architectural and Design Guidelines developed for the site and provided in <i>Volume 1B</i> of the EA. They will be of a scale, height, form and design that is distinctively coastal, complements the natural setting, and is appropriately located.
Provide for ecologically sustainable human settlement	<p>The proposed development is consistent with the planning principles of the Mid North Coast Regional Strategy. This Strategy guides local planning within the local government areas of the Mid North Coast, including Great Lakes local government area. The Strategy identifies that demand to live near the coast will continue with the majority of the anticipated growth being accommodated in existing identified growth areas, including Tea Gardens / Hawks Nest. The proposed development will occur within land currently zoned for residential / commercial development. Adjacent lands zoned 7(b) conservation and the SEPP 14 Wetland are to be conserved under the proposal, which is consistent with the objectives of the Strategy.</p> <p>The proposed development involves innovative urban design, construction and environmental management principles. Housing and civic buildings will include a mix of building types and uses, and will be guided by Architectural and Design Guidelines developed for the site. The proposal does not involve ribbon or unrelated cluster development.</p>
Provide for integrated planning and management	The proposal has been designed after considering all relevant Commonwealth, State, regional and local environmental and planning legislation, policies and guidelines and is consistent with the objectives of these, as detailed in <i>Chapter 4</i> .

Table 2 Compliance with the principles of the New South Wales Sea Level Rise Policy Statement and Guideline

Principles	Criteria	Proposal/Comment
<p><i>There are six principles detailed in the Sea Level Rise Guideline publication prepared by the NSW Department of Planning. Principles 1-4 are used for strategic land use planning process. Principles 5 and 6 apply to the assessment of development in coastal areas and are addressed below.</i></p>		
<p>PRINCIPLE FIVE - Minimise exposure of development to coastal risks; and</p> <p>PRINCIPLE SIX - Implement appropriate management responses and adaptation strategies</p>	<p>Avoid or minimise exposure to immediate coastal risks</p>	<p>Cardno (2011) completed an assessment of 100 yr ARI flood levels for the final scheme resulting from local runoff under a possible climate change scenario including a 30% increase in rainfall intensities and 0.9 metre sea level rise. The assessment demonstrates that all residential lots within the proposed development remain free of inundation during a 100 yr ARI event under current conditions and under future conditions with climate change. In a 100 yr ARI event inundation within the site is generally confined to opens pace areas and drainage corridors. It should be noted that while local inundation of some local roads is expected under climate change the level of inundation would be safe for wading and that all residential would be able to evacuate to higher ground via the proposed public roads.</p>
	<p>Provide for the safety of residents, workers or other occupants on-site from risks associated with coastal processes</p>	<p>As detailed above, climate change scenarios have been accommodated in the design of lots, roads, community facilities and infrastructure to ensure that the safety of residents has been considered</p>
	<p>Do not adversely affect the safety of the public off-site from a change in coastal risks as a result of the development</p>	<p>The proposal, which incorporates an Integrated water management strategy taking into account sea level rise risks together with large areas of open space and water management areas will not adversely affect the safety of public off-site.</p>

Principles	Criteria	Proposal/Comment
	Do not increase coastal risks to properties adjoining or within the locality of the site	As above
	Ensure infrastructure, services and utilities on-site maintain their function and achieve their intended design performance	<p>Crighton Properties engaged Tattersall Lander Pty Ltd to undertake the development of an appropriate and coordinated servicing strategy, December 2011 (refer <i>Volume 5</i>) for Riverside and adjoining environs. The servicing strategy has been prepared in consultation with the appropriate Services Agencies including:</p> <ul style="list-style-type: none"> • MidCoast Water for Water & Sewer Reticulation; • Essential Energy for Electrical Reticulation; and • Telstra for Communications. <p>The servicing strategy has taken a holistic approach to the provision of essential services to the area of north Tea Gardens and is intended to be a lead document for the reticulation of major services to other adjoining areas as well as to the future potential major development sites of North Shearwater, Hawks Nest North, Myall River Downs and the partly serviced Tea Gardens Industrial Park.</p>
	Accommodate natural coastal processes	The Riverside at Tea Gardens Concept Plan 2011 sets aside large areas to the north and east of developed area as buffer zones for environment conservation purposes. Crighton recognise these areas are sensitive due to their characteristics, proximity in the coastal zone and risk of inundation.
	Protect coastal ecosystems from development impacts	As above

Principles	Criteria	Proposal/Comment
	Maintain existing public beach, foreshore or waterfront access and amenity	<p>A conservation area adjoining the Myall River within the north east section of the site will be created. Limited public access to the Myall River foreshore will be provided via pathways established between the Myall River and residential development to the west.</p> <p>Controlled public access will also be provided in proximity to the Myall River and SEPP 14 Wetland through the construction of pathways adjacent to, but not within the 7(b) Conservation zone. The location of the pathways will facilitate public access, whilst protecting the SEPP 14 Wetland and wetland buffer (conservation land) from informal public access. An asset protection zone to be constructed within the 2(f) zone, adjacent to the 7(b) conservation lands will provide additional separation to the conservation area, thereby minimising edge effects.</p>

Table 3 Compliance with Principles of the Coastal Design Guidelines for NSW

Principles	Proposal/Comment
PRINCIPLE ONE - defining the footprint and boundary of the settlement	The design for the estate has been formulated following a comprehensive site analysis and constraints mapping exercise. The development footprint excludes development of certain areas based on the ecological and / or flooding constraints of the site. The footprint will be treated with a variety of edge treatments as identified in the Landscape Design Report (refer to <i>Volume 1B</i>) to reduce the visual impact of the proposal and clearly define the boundary of the development. Particular areas within the footprint will not be developed to provide well defined residential precincts with green buffers surrounding them.
PRINCIPLE TWO- connecting open space	<p>The open space corridors and community parks proposed throughout the development provide separation between and within residential precinct areas. The open space areas are linked by walkways / cycleways, facilitating movement and access within and between precincts of the Riverside development and also with adjoining areas for both residents and visitors. This will provide movement paths between and within residential precincts, the commercial area and other natural areas throughout the site. The open space areas and the proposed clubhouse facilities provide for both active and passive recreational opportunities.</p> <p>The wildlife corridor identified within the northern portion of the site, together with the SEPP 14 wetland and 7(b) conservation land (wetland buffer) will conserve much of the existing biodiversity at the site. Together with the open space corridors across the site, these areas will act as important wildlife corridors and provide protection for areas of Aboriginal cultural heritage value.</p>
PRINCIPLE THREE- protecting natural edges	<p>Open space corridors connecting residential and commercial precincts provide defined public access within the site, providing both passive and active recreational opportunities. Access through the wetland is restricted to increase the environmental sustainability of the wetland environment and minimise risk to human safety by maintaining access to designated tracks and pathways and minimise edge effects. The SEPP 14 wetland, the adjacent 7(b) wetland buffer zone, onsite offset area and the wildlife movement corridor in the north of the site proposed as part of the development will ensure development does not encroach on the foreshore edge of the Myall River, providing a significant setback of the development and ensuring the ecological and / or aesthetic values of those areas are retained.</p> <p>An Ecological Site Management Strategy (refer to <i>Volume 4</i>) provides a range of management strategies to protect the long term environmental and ecological values of land within the Riverside site.</p> <p>All areas of open space will be bordered by perimeter roads, rather than the rear of allotments, thereby enhancing transparency and casual surveillance of these areas.</p>

Principles	Proposal/Comment
PRINCIPLE FOUR- reinforcing the street pattern	<p>The street type and layout design incorporates a street hierarchy and permeability to provide streets that fulfil their designated functions and create a legible, safe and attractive environment. The street types have sufficient reservation widths to accommodate public utility services, landscaping and footpaths where appropriate. An open space area is provided at the end of every street.</p> <p>The street network supports the provision of a public transport route with the collector roads having sufficient pavement width to cater for buses and the layout allowing buses to service the site. Street networks have been designed to provide alternative routes to destinations which include connected pedestrian pathways and separation between vehicles and pedestrian movement to encourage walkability. The road network and pedestrian walkways integrate and connect the land uses across the site.</p> <p>A comprehensive street planting scheme has been formulated to add colour and soften the built form.</p> <p>Good quality signposting, lighting, use of materials and landscape reflecting the natural coastal setting will promote pedestrian movement across the site.</p>
PRINCIPLE FIVE -appropriate buildings in a coastal context	<p>The estate's layout has been designed to be sympathetic to the natural environment. Buildings within the estate will be of a scale, height, form and design that is distinctively coastal, complements the natural setting, and is appropriately located. The open space areas provide a natural interface throughout the estate.</p> <p>All development and landscaping within the estate will be consistent with the established Architectural and Landscape Design guidelines that have been formulated for the estate.</p> <p>Conservation areas to be retained, including the SEPP 14 wetland, the adjacent 7(b) wetland buffer zone, onsite offset area and the wildlife movement corridor in the north of the site proposed as part of the development provide a significant setback of the development from the Myall River foreshore. This ensures the coastal context of the area and public accessibility to the foreshore is maintained.</p>

Table 4 Compliance with Sustainability Criteria, Mid North Coast Regional Strategy

Suggested Threshold Sustainability Criteria for defining potential development boundaries	Measurable explanation of criteria	Comment
1. INFRASTRUCUTURE PROVISION		
<p>Mechanisms in place to ensure utilities, transport, open space and communication are provided in a timely and efficient way.</p>	<ul style="list-style-type: none"> Development is consistent with the Mid North Coast Regional Strategy, any subregional strategy, the State Infrastructure Strategy and relevant section 117 directions 	<p>The Mid North Coast Regional Strategy identifies Tea Gardens as a 'town', providing small to medium scale concentration of retail, health and other services with lower density residential development. The strategy identifies that demand for coastal living will result in growth within Tea Gardens - Hawks Nest. The proposed Riverside development facilitates further low density residential growth within Tea Gardens. The proposed Riverside development therefore is consistent with the Mid North Coast Regional Strategy.</p> <p>The State Infrastructure Strategy (SIS) identifies capital expenditure and infrastructure commitments for NSW based on future population growth, distribution, ageing and longevity as well as technological change, industrial and commercial developments and environmental pressures. The SIS identifies the future installation of an electricity substation within the Tea Gardens zone. No other infrastructure upgrade or development is identified within the SIS for Tea Gardens.</p> <p>Electrical services for the Riverside development will extend from existing services. Crighton Properties has provided Essential Energy with proposed subdivision layout so that they can commence designing for major new links from the existing overhead supplies. The Riverside development is consistent with the SIS.</p> <p>The Riverside development does not involve rezoning and therefore there are no section 117 directions that are relevant to the current proposal.</p>

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	<ul style="list-style-type: none"> The provision of infrastructure (utilities, transport, open space and communications) is costed and economically feasible based on government methodology for determining infrastructure development contributions 	<p>In preparing a strategy for servicing the development, investigations of the capacity of existing infrastructure to accommodate the proposal were completed (refer to <i>Volume 5</i>). The relevant service providers were consulted including MidCoast Water, Essentila Energy and Telstra. Three stages have been identified for the provision of infrastructure. These three stages are to be implemented in co-operation with Service Supply Authorities to ensure that the connection and extension of infrastructure will not impact on the functioning or capacity of existing infrastructure.</p> <p>Reticulated water supplies are available to the existing development area, south of the site. Existing water mains extend along Myall Street adjacent to the site, along Shoreline Drive and along the north side of Toonang Drive. These services will, in part, be utilised to service the development. There will be a reorganisation of major water supply services from existing dual supplies in Myall Street to a triple supply via North Shearwater. This design has the potential to reduce the trunk main sizing and future demands on potable water supply from the bore fields to the north of Tea Gardens.</p> <p>Areas to the south of the site are already serviced by a reticulated gravity sewer system. MidCoast Water has constructed a 'state of the art' vacuum sewer pumping station, which is sited adjacent to the Myall River Downs Estate, west of Myall Street. It has been specifically sized to suit and be available to provide services for the Riverside development.</p> <p>The proposed electrical and communication services will extend from existing services.</p>

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	<ul style="list-style-type: none"> Preparedness to enter into development agreement 	<p>Crichton Properties has agreed to enter into a development agreement to guarantee the provision of infrastructure to the site. This commitment is incorporated in the Draft Statement of Commitments contained in <i>Chapter 9 of Volume 1A</i>.</p>
2. ACCESS		
<p>Accessible transport options for efficient and sustainable travel between homes, jobs, services and recreation to be existing or provided.</p>	<ul style="list-style-type: none"> Accessibility of the area by public transport and/or appropriate road access in terms of: Location/land use - to existing networks and related activity centres. Network - the area's potential to be serviced by economically efficient transport services. Catchment - the area's ability to contain, or form part of the larger urban area which contains adequate transport services. Capacity for land use/transport patterns to make a positive contribution to achievement of travel and vehicle use goals. 	<p>The Riverside development incorporates a number of transport objectives that relate to pedestrian, vehicle and cycle movement, public transport and parking.</p> <p>Access for the project will be from Shoreline Drive via the existing intersection at Myall Street. Access will also be provided from a new access point along Myall Street and two access points from Toonang Drive as part of the development of Riverside. Existing traffic flows at the intersection of Myall Street and Shoreline Drive are low.</p> <p>Riverside is currently served by buses along Myall Street. The proposed development will increase the population of Tea Gardens, contributing to greater potential patronage levels to sustain a viable bus service. It is proposed to introduce bus services within the estate.</p> <p>Walkability and cycle access has been integrated in the development of the site, with a shared cycle / pedestrian network through the estate, including the existing commercial centre.</p> <p>A traffic impact assessment was undertaken for the development which investigated traffic flow and intersection capacity (refer to <i>Volume 5</i>). The traffic assessment also considered the relationship of the project to the surrounding development. Based on the traffic impact assessment and as per the RTA Guide to Traffic Generating Developments, Myall Street has capacity to absorb the additional traffic likely to be generated by the project.</p>

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	<ul style="list-style-type: none"> No net negative impact on performance of existing subregional road, bus, rail, ferry and freight network. 	<p>There are two bus routes that serve Tea Gardens. Both routes are operated by Busways and provide a service to Raymond Terrace and Newcastle three times daily during weekdays and daily on the weekend. There are also buses to Hawks Nest, Bulahdelah, Forster Tuncurry and Taree that operate at different times during the week and weekends. The Concept Plan incorporates a street hierarchy that aims to provide potential bus routes within 400 metres of all dwellings. The additional population as a result of the Riverside at Tea Gardens development will assist in maintaining a viable public transport service in this area.</p> <p>It should be noted that there is no rail transport within the Tea Gardens area.</p>
3. HOUSING DIVERSITY		
Provide a range of housing choices to ensure a broad population can be housed.	<ul style="list-style-type: none"> Contributes to the geographic market spread of housing supply, including any government targets established for aged, disabled or affordable housing. 	Riverside will comprise a combination of traditional housing lots and smaller lots, with at least ten percent of the lots less than 450 square metres in area, in accordance with Council's adopted Housing Strategy. The development will achieve a net density of at least 13 dwellings per hectare across the site, in accordance with Council's adopted Housing Strategy.
4. EMPLOYMENT LANDS		
Provide regional/local employment opportunities to support the Mid North Coast's expanding role in the wider regional and NSW economies.	<ul style="list-style-type: none"> Maintain or improve the existing level of sub-regional employment self-containment. 	<p>At the time of the 2006 Census labour force participation in Tea Gardens was 35 percent of the population which is lower than the NSW average of 58 percent. The low participation rate can in part be attributed to the age profile of the population.</p> <p>The development of Riverside will have the following beneficial effects on employment and the economy (refer to <i>Volume 5</i>):</p> <p>The local community will benefit significantly from the proposed development as outlined below:-</p> <ul style="list-style-type: none"> construction: conservative estimates suggest 40 percent of the aggregate total output benefit, or \$256 million, will flow directly to the local community. This

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		<p>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;</p> <ul style="list-style-type: none"> • 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; and • 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 benefit (direct and indirect) of 53 jobs (based on construction industry multipliers) (PB, 2010).
	<ul style="list-style-type: none"> • Meets subregional employment projections. 	As above.
	<ul style="list-style-type: none"> • Employment-related lands provided in appropriately zoned areas. 	<p>The Mid North Coast Regional Strategy identifies the need for an additional 428 hectares of employment lands in the region over the next 25 years. It does not however identify specific areas within the greater Taree / Great Lakes subregion.</p> <p>Tea Gardens currently supports an existing light industrial estate of approximately 13 hectares. An additional area of 6.5 hectares to the south of the existing industrial estate has been identified for future expansion of the estate. Both these areas are within close proximity to the Riverside site.</p>

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5. AVOIDANCE OF RISK		
Land use conflicts, and risk to human health and life, avoided.	<ul style="list-style-type: none"> No residential development within 1:100 floodplain. 	An updated Integrated Water Management Assessment is provided in <i>Volume 3</i> which identifies flooding issues. The assessment is inclusive of flooding and climate change issues. Lot filling, including the raising of drainage structures and surface levels across the site will facilitate all lots being above the modelled 100 yr flood levels, with an allowance for sea level rise under climate change scenarios.
	<ul style="list-style-type: none"> Avoidance of physically constrained land, e.g. <ul style="list-style-type: none"> High slope Highly erodible. 	<p>The design and layout of Riverside was determined through an overlaying process of mapping various opportunities and constraints to determine the overall building envelope and the character of the open space network. Key constraints at the site include: 7(a) Wetland and Littoral rainforest zone; 7(b) Conservation zone; DCP 22 buffer; asset protection zones; wildlife corridors; vegetation communities; endangered ecological communities; Wallum Froglet habitat; Aboriginal midden site and existing drainage lines.</p> <p>Part of the site is mapped as bush fire prone land in the Great Lakes Council bush fire prone land mapping. The potential bush fire threat was identified from Dry Sclerophyll Forest vegetation to the north of the site. The proposal incorporates a range of bush fire mitigation measures, including Asset Protection Zones (APZs), which were determined in accordance with NSW Rural Fire Service guidelines, building construction standards, hazard management, evacuation routes, availability to fire fighting services, water supply and communication.</p>
	<ul style="list-style-type: none"> Avoidance of landuse conflicts with adjacent existing or future landuse as planned under relevant subregional or regional strategy. 	The design of the Riverside development has incorporated an assessment of the natural constraints of the site, urban capability, availability of public services, access to employment, commercial and community facilities and the provision in choice of housing and location. The proposed development has been designed having regard to ecologically sensitive areas. The less disturbed vegetation communities (Wetland Fringing Woodland and Forests, Wetlands) with higher habitat values are afforded a

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		<p>higher level of retention and protection.</p> <p>Adjacent landuse includes existing residential and rural residential development, town centre comprising commercial and retail services and conservation lands protected under Environment Protection zoning. A light industrial estate is located to the west of Myall Street, with an area to the south identified for an expansion of the estate. A future sporting complex and residential development is identified for land west of Myall Street (to the south of the industrial estate expansion area). The Riverside development is therefore consistent with adjacent land use and proposed future landuse strategies.</p> <p>A Noise Impact Assessment has been undertaken (refer to <i>Volume 5</i>), to identify the likely noise impact of the existing industrial estate on the proposed development. The assessment concluded that:</p> <ul style="list-style-type: none"> • calculated noise levels (LAeq, 15 minute) are below the Project Specific Noise Levels (PSNL) at all Noise Assessment Locations (NAL) under calm and adverse meteorological conditions, during all assessment periods (daytime, evening and night time); • calculated noise levels (LAMax) are below the recommended DECCW ECRTN sleep disturbance noise goals; and • noise emissions associated with the existing industrial area do not result in adverse noise impacts on the residential receivers within the proposed Riverside at Tea Gardens development.

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	<ul style="list-style-type: none"> Where relevant available safe evacuation route (flood and bushfire). 	<p>Under a high climate change scenario there would be increased inundation of a number of planned roads by up to 0.8 m (which would represent Low Hazard due to the expected very low velocity of flow on the fringes of the river flooding through the development). This would comply with the requirements for safe wading.</p> <p>The proposal provides evacuation routes from the proposed development during a bush fire. The proposal includes two access points to Myall Street, including the existing access point at Shoreline Drive. From Myall Street safe egress is available to the north and south, to areas that provide adequate separation from the surrounding bush fire threats.</p>
6. NATURAL RESOURCES		
Natural resource limits not exceeded /environmental footprint minimised.	<ul style="list-style-type: none"> Demand for water within infrastructure capacity to supply water and does not place unacceptable pressure on environmental flows. 	<p>Reticulated water supplies are available to the existing development area, south of the site. Existing water mains extend along Myall Street adjacent to the site, along Shoreline Drive and along the north side of Toonang Drive. These services will, in part, be utilised to service the proposed development.</p> <p>MidCoast Water has completed the upgrade and augmentation of potable water storages at the Viney Creek Road Reservoirs. In addition an 8.1ML reservoir has recently been commissioned and will provide sufficient capacity to meet the potable water needs of various potential developments in the area in the immediate future. MidCoast Water also has a secure coastal bore water supply that has a known water supply capacity which exceeds the requirements of the current potential developments at Riverside, Myall River Downs Estate, North Shearwater and Hawks Nest North.</p> <p>The proposal also includes the provision for a third pipe reticulation of treated effluent throughout the development.</p>

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	<ul style="list-style-type: none"> • Demonstrates most efficient/suitable use of land • Avoids identified significant agricultural land. • Avoids productive resource lands - extractive industries, coal, gas and other mining, and quarrying. 	<p>Most of the Riverside at Tea Gardens site was previously used for a pine plantation and has been substantially cleared of native vegetation. The site is not productive agricultural land or productive resource lands.</p>
	<ul style="list-style-type: none"> • Demand for energy does not place unacceptable pressure on infrastructure capacity to supply energy - requires demonstration of efficient and sustainable supply solution. 	<p>The proposed electrical services will extend from existing services.</p> <p>The Riverside at Tea Gardens development has incorporated passive thermal efficiency design, including consideration of solar access and orientation.</p>
7. ENVIRONMENTAL PROTECTION		
Protect and enhance biodiversity, air quality, heritage, and waterway health.	<ul style="list-style-type: none"> • Consistent with government approved Regional Conservation Plan (if available). 	<p>The draft Mid North Coast Regional Conservation Plan has been released as a working draft. The draft plan provides maps detailing priority conservation and restoration areas, however the applicability of the such areas to the proposed Riverside site is unclear due to poor mapping within the draft plan. Given the uncertainty regarding the timing and final form of the conversion of the draft plan to a final plan, it is difficult to make any further comments. A Biodiversity Biobanking Assessment (GHD 2012) of the proposed Riverside development on ecological values, including EECs threatened species, wildlife corridors and habitats has been undertaken and is detailed in <i>Volume 4</i>.</p>

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	<ul style="list-style-type: none"> Maintains or improves areas of regionally significant terrestrial and aquatic biodiversity (as mapped and agreed by DEC). This includes regionally significant vegetation communities; critical habitat; threatened species; populations; ecological communities and their habitats. 	<p>The results of the vegetation mapping, has identified vegetation of highest significance within some areas previously proposed for development in the east of the site. Proposed development has been subsequently removed from this area and retained as conservation lands and buffer zones.</p> <p>Vegetation mapping has identified other areas of less significance on site that contain floristic species consistent with that of EECs. Impacts upon these areas are proposed to be offset by onsite and offsite conservation areas. A BioBanking assessment (GHD 2012, <i>Volume 4</i>) has been completed which considers the quantum of impact upon the development site and the credits required to offset this impact. The proposed Offset Package would result in a net improvement in biodiversity values over time. It has been developed with the BioBanking methodology and associated management actions for biobank sites.</p> <p>Specifically improvements would result through assisted natural regeneration, revegetation and management of weed and pest species. Further information regarding the BioBanking Assessment report is contained in <i>Volume 4</i>.</p>
	<ul style="list-style-type: none"> Maintain or improve existing environmental condition for air quality. 	<p>Riverside at Tea Gardens proposes a residential /tourist use over the majority of the site. These land uses will not have an adverse impact on air quality other than during the construction stages when some dust is likely to be created and have localised impacts.</p>
	<ul style="list-style-type: none"> Maintain or improve existing environmental condition for water quality: <ul style="list-style-type: none"> Consistent with community water quality objectives for recreational water use and river health (DEC and CMA). 	<p>An updated Integrated Water Management Assessment is provided in <i>Volume 3</i>. The assessment included a comparison of the saline lake conditions under the integrated water management scheme (Scheme 8) compared with existing saline lake conditions and concluded:</p> <ul style="list-style-type: none"> In the near term the lake will become less brackish due to the requirement that the existing outlet remain unchanged. In the longer term sea level rise and increasing tidal inflows will increase the salinity of the lake. In the event that a

Suggested Threshold Sustainability Criteria for defining potential development boundaries	Measurable explanation of criteria	Comment
	<ul style="list-style-type: none"> Consistent with catchment and stormwater management planning (CMA and council). 	<p>sea level rise of 0.9m or greater occurs then the lake will become part of the Myall River and salinity levels would be expected to match the salinity of the Myall River;</p> <ul style="list-style-type: none"> The DO levels in bottom waters and DO saturation would improve slightly; TN and TP concentrations would increase slightly; Algal concentrations are comparable to existing conditions; Salinity and DO saturation remain within the ANZECC 2000 range; and TP, TN and algal concentrations remain under ANZECC 2000 trigger values.
	<ul style="list-style-type: none"> Protects areas of Aboriginal cultural heritage value (as agreed by DEC). 	<p>Areas of Aboriginal cultural heritage value, identified in the Aboriginal assessment, will be protected by implementation of the following measures:</p> <ul style="list-style-type: none"> provision of a 10m wide buffer around midden Riverside_01; a management plan will be developed in consultation with the local Aboriginal community to consider its significance and treatment within the site; monitoring of clearing and initial excavation works across the whole site should be undertaken by the Karuah LALC; if during clearing or construction works Aboriginal artefacts are recovered an immediate stop work protocol should be in place in the immediate vicinity of the artefact. A qualified archaeologist should at this time be contacted and the site recorded. Once recording has occurred any salvage can be undertaken and works (with minimal disruption) can continue; and a suitable area should be set aside for the possible containment of any cultural heritage material that is uncovered during the construction works. This

Suggested Threshold Sustainability Criteria for defining potential development boundaries	Measurable explanation of criteria	Comment
		dedicated 'keeping place' would only be required in the event that material is uncovered and would be under the care and control of the local Aboriginal community.
8. QUALITY AND EQUITY IN SERVICES		
Quality health, education, legal, recreational, cultural and community development and other government services are accessible.	<ul style="list-style-type: none"> • Available and accessible services. • Do adequate services exist? • Are they at capacity or is some capacity available? • Has Government planned and budgeted for further service provision? • Developer funding for required service upgrade/access is available. 	<p>Riverside at Tea Gardens is well served by education and medical facilities and has access to public transport and employment areas. The development offers the opportunity to significantly enhance the services and community facilities in Tea Gardens, which will build on the enhancement of services already delivered by the existing Riverside commercial centre.</p> <p>Development contributions will be made in accordance with Schedule 1 - Contributions Schedule in the proposed Voluntary Planning Agreement (VPA) between Crighton Properties Pty Ltd and Great Lakes Council and includes contributions that relate to open space, a new community centre, arterial roads, cycle ways, signages etc. Details on the timing and method of provisions such as payment or material public benefit or a combination of each are also provided in the VPA.</p>

Table 5 Compliance with North Coast Urban Design Guidelines

Principle	Comment
SETTLEMENT GROWTH	
Principles to apply to all future development	
<ul style="list-style-type: none"> Maintain and protect the key natural features throughout and around the settlement (coastal environment, river landscape, forested areas) to ensure the unique character they provide for the town is retained 	<p>The project has identified conservation areas, specifically the Habitat Conservation Area and the SEPP 14 Wetland which contain significant ecological communities. The SEPP 14 Wetland will be not be disturbed as it is intended to preserve these wetlands as part of the project. A Biodiversity Biobanking Assessment and Offest Strategy has been prepared (GHD 2012) and will be implemented in addition to a considerable reduction in proposed impacts in the current proposal compared to the original proposal due to a greater degree of avoidance on site (refer to <i>Volume 4</i>).</p>
<ul style="list-style-type: none"> Prevent future growth in areas of high environmental or natural resource value and areas prone to flooding, erosion and inundation. 	<p>The design of the Riverside development has incorporated an assessment of the natural constraints of the site, urban capability, availability of public services, access to employment, commercial and community facilities and the provision in choice of housing and location. The proposed development has been designed having regard to ecologically sensitive areas. The less disturbed vegetation communities (Wetland Fringing Woodland and Forests, Wetlands) with higher habitat values are afforded a higher level of retention and protection.</p> <p>Areas prone to flooding and / or inundation are not proposed to be developed and will form part of conservation or open space areas.</p> <p>Adjacent landuse includes existing residential and rural residential development, town centre comprising commercial and retail services and conservation lands protected under Environment Protection zoning.</p>
<ul style="list-style-type: none"> Maintain public open space and public access along foreshores, reserves and bushland and set development back from areas of high ecological value 	<p>Public access within the coastal area of the site is directed through open space corridors which connect the residential precincts. Access through the wetlands is restricted to increase the environmental sustainability of the wetland environment to minimise risk to human safety by restricting access to designated tracks and pathways. Access through the open space network is detailed within architectural plans contained within <i>Volume 2</i> of the Environmental Assessment Report.</p>
<ul style="list-style-type: none"> Encourage plant species which are compatible with the local climate, topography and natural vegetation 	<p>A Landscape Design Report and Detail Design Manual has been prepared by Andrews Neil (2010) (refer to <i>Annex G, Volume 1B</i>) which provides species lists for landscaping which compliment the coastal environment whilst ensuring long lasting species tolerant of coastal conditions.</p>

Principle	Comment
<ul style="list-style-type: none"> Prevent privatisation of foreshore and riparian edges 	<p>Riverside at Tea Gardens will be a community title development, whereby all public areas within the development will be managed by the Community Association. Public access within the coastal area of the site is directed through open space corridors.</p>
<ul style="list-style-type: none"> Ensure interconnectivity of parks, public spaces, main streets, services, infrastructure and natural features 	<p>Public access within the coastal area of the site is directed through open space corridors which connect the residential precincts. Walkability and cycle access is a key feature of the development of the site, with a cycle / pedestrian network through the residential precincts and integrated with the wider area. The street network is designed as an environment that is equitable for the pedestrian, cyclist and motorist. The proposal includes a range of inter-connected on street and dedicated off street cycle ways and pedestrian access ways.</p>
<ul style="list-style-type: none"> Ensure development responds sensitively to the density and scale of the existing settlement 	<p>The general layout of the road pattern provides a compact grid pattern pockets of development. The project has been designed to achieve the desired character for residential areas in Tea Gardens being a density of residential development consistent with that proposed in the Housing Strategy.</p>
<ul style="list-style-type: none"> Ensure planning and development respond to the local topography and climate 	<p>The planning layout (street grid) of the Riverside site responds to many informers of urban design, including;</p> <ul style="list-style-type: none"> ecological constraints; water movement patterns / slope of land; transport and pedestrian movement patterns; access to open space; privacy; hierarchy of density; passive surveillance; and permeability.
<ul style="list-style-type: none"> Ensure provision of commercial and community services 	<p>The Riverside development provides for an open space network comprising 141.7 hectares in total which provides for public recreation, stormwater management, wetland conservation areas, buffer zones, wildlife corridors, and clubhouses and community facilities.</p>

Principle	Comment
Principles for growth by expansion at the fringe or new 'greenfield' development	
<ul style="list-style-type: none"> Encourage new development on existing unconstrained land to minimise impact on natural environment and resources 	<p>The design of the Riverside development has incorporated an assessment of the natural constraints of the site, urban capability, availability of public services, access to employment, commercial and community facilities and the provision in choice of housing and location. The proposed development has been designed having regard to ecologically sensitive areas. The less disturbed vegetation communities (Wetland Fringing Woodland and Forests, Wetlands) with higher habitat values are afforded a higher level of retention and protection.</p>
<ul style="list-style-type: none"> Maintain the character of the formal street grid to reinforce visual and physical connections to the natural landscape 	<p>The planning layout (street grid) of the Riverside site responds to many informers of urban design, including;</p> <ul style="list-style-type: none"> ecological constraints; water movement patterns / slope of land; transport and pedestrian movement patterns; access to open space; privacy; hierarchy of density; passive surveillance; and permeability.
<ul style="list-style-type: none"> continue grid with expanding development 	<p>The general layout of the road pattern provides a compact grid pattern pockets of development. The project has been designed to achieve the desired character for residential areas in Tea Gardens being a density of residential development consistent with that proposed in the Housing Strategy.</p>

Principle	Comment
STREETSCAPE GUIDELINES	
Principles to apply to all future development	
<ul style="list-style-type: none"> Ensure local and regional transport connectivity 	<p>A Traffic Assessment has been prepared in support of the road network and its interaction with local and regional transport connectivity depicted within the engineering drawings contained in <i>Volume 2</i> (also refer to <i>Volume 5</i>).</p> <p>The street network supports the provision of a public transport route. Walkability and cycle access is a key feature of the development of the site, with a cycle / pedestrian network through the residential estate and integrated with the wider area. The street network is designed as an environment that is equitable for the pedestrian, cyclist and motorist. The proposal includes a range of inter-connected on street and dedicated off street cycle ways and pedestrian access ways.</p>
<ul style="list-style-type: none"> Street hierarchy developed in accordance with required size and function; topography and natural features determine lot and street layouts 	<p>The layout (street grid) of the Riverside site responds to many informers of urban design, including;</p> <ul style="list-style-type: none"> ecological constraints; water movement patterns / slope of land; transport and pedestrian movement patterns; access to open space; privacy; hierarchy of density; passive surveillance; and permeability. <p>Many of these concepts are explained in more detail within the Riverside Design Manual prepared by Roberts Day (2007). In addition to these design considerations, particular attention has been paid to passive thermal efficiency of the Riverside site, through the consideration of solar access and orientation. Design consideration has primarily occurred at three levels namely:</p> <ul style="list-style-type: none"> street pattern and orientation; range of lots sizes; and house design criteria. <p>Each of these will be designed to work in unison with each other to ensure a balanced thermally efficient outcome.</p>

Principle	Comment
<ul style="list-style-type: none"> Plan services and infrastructure to accommodate future growth strategies and ensure development is located for cost effective service provision 	<p>In preparing a strategy for servicing the development, investigations of the capacity of existing infrastructure to accommodate the proposal were completed (refer to <i>Volume 5</i>). The relevant service providers were consulted including MidCoast Water, Essential Energy and Telstra. Three stages have been identified for the provision of infrastructure. These three stages are to be implemented in co-operation with Service Supply Authorities to ensure that the connection and extension of infrastructure will not impact on the functioning or capacity of existing infrastructure.</p>
<ul style="list-style-type: none"> Establish a development scale and density which is supportive of public transport, cyclist and pedestrian use; provide pedestrian and cycle routes that connect key community facilities, parks and open spaces 	<p>The street network supports the provision of a public transport route with the collector roads having sufficient pavement width to cater for buses and the layout allowing buses to service the site, via a loop route, without having to double back on themselves. Walkability and cycle access is a key feature of the development of the site, with a cycle / pedestrian network through the residential precincts and integrated with the wider area. The street network is designed as an environment that is equitable for the pedestrian, cyclist and motorist. The proposal includes a range of inter-connected on street and dedicated off street cycle ways and pedestrian access ways.</p>
<ul style="list-style-type: none"> In new subdivisions, continue the established city grid and maintain direct physical and visual connections, avoid car-dependent, cul-de-sac development 	<p>The general layout of the road pattern seeks to minimise large areas of a continuous/ repetitious grid pattern in favour of a series of more compact grid pattern pockets of development where split streets, open spaces and perimeter roads maximise the edges through which solar access, as well as outward looking to open space, can occur.</p>
<ul style="list-style-type: none"> Ensure that street patterns provide maximum physical and visual connectivity, offer a choice of routes and allow for double sided blocks such that development is oriented towards the street frontage 	<p>Generally the road pattern is aligned diagonally to true north. This allows for greater freedom of house design in a low density setting to capitalise on solar access to individual lots. Where density is increased (for example along the main road at the second roundabout approach), orientation is configured north / south and rear lane access is provided to assist solar orientation and maximisation of frontage to the active street.</p>
<ul style="list-style-type: none"> In multi-dwelling development, provide a street entry for each dwelling, avoid battle-axe, villa-style development and design appropriately to topography, climate and aspect 	<p>Riverside has been designed to provide street entry for each dwelling within multiple dwelling lots (refer to Drawing R.C. 07, Volume 2). No battle-axe blocks or villa-style development is proposed. The orientation of lots maximises solar access and north/south orientation.</p>

Principle	Comment
<ul style="list-style-type: none">• Reinforce original subdivision patterns and streetscapes that characterise the settlement, maintain consistent setbacks from front and rear of lots in low density areas and continuous street and awning edges along core streets/perimeters of major blocks	The general layout of the road pattern provides a compact grid pattern pockets of development. The project has been designed to achieve the desired character for residential areas in Tea Gardens being a density of residential development consistent with that proposed in the Housing Strategy. A range of lot and house types are proposed with 6m / 4.5m setbacks as detailed in Drawings R.C. 30 to R.C 25 provided in <i>Volume 2</i> .
<ul style="list-style-type: none">• Encourage deep soil zones to centre of blocks to allow the cultivation of large trees with large canopies and to permit infiltration of rainwater to the watertable	A comprehensive street planting scheme has been developed (refer to Drawings R.C 23 to R.C 29, <i>Volume 2</i> which provides detail on landscape schedules for differing street types).

Table 6 Compliance with Development Control Plan 22- Myall Quays Estate

DCP Requirement	Compliance Yes / No / Partial / N/A	Comment
SECTION 1 GENERAL OBJECTIVES OF THE PLAN		
<ul style="list-style-type: none"> • To provide a framework for controlling and co-ordinating tourist and residential development on the land the subject of this plan; • To provide an opportunity to develop residential lots, with particular aesthetic values such as water views, park views or golf course views which supplement rather than compete with the market for conventional lots; • To provide an opportunity for tourist facilities to be developed in conjunction with residential development; • To ensure that commercial and retail facilities on the site are limited to those needed to serve the minor convenience needs of the residents and day and over-night visitors; • To ensure the most appropriate and efficient use or management of land and natural resources, including for the protection of biodiversity, including threatened species and their habitats; • To ensure that the appearance of development is in keeping with the low-key natural coastal resort character of the Tea Gardens/Hawks Nest urban area; • To maximise efficiency in the provision of utility, transport, retail and other services; • To encourage adoption of land management practices which are sustainable over long periods of time without degradation of natural environmental systems or depletion of natural resources; and • To provide adequate protection for the community from environmental hazards including flooding, soil erosion, bushfires, and pollution. 	Partial	<p>The proposed development will consist of residential dwellings, a tourist precinct and areas of open space, wildlife corridors and conservation areas. This will ensure that the ecological values of the site are retained and protected whilst providing for a mix of low and medium density development supported by commercial and recreational facilities.</p> <p>The proposed development has undergone design changes to meet the requirements of Council's revised draft Housing Strategy. The design has therefore moved away from the intended use envisaged by DCP 22 which included provision for a golf course development. The golf course element of the design has been removed.</p> <p>The provision of views of the golf course cannot be achieved since a golf course no longer forms part of the design. The aesthetic values of the Myall River and SEPP 14 Wetland will be maintained, with the wetland buffer preventing development encroachment and ensuring the values of these areas are conserved.</p>

DCP Requirement	Compliance Yes / No / Partial / N/A	Comment
SECTION 2 MANAGEMENT PRINCIPLES AND ACTIONS		
<i>2.2 Conservation of wetland and native vegetation associations</i>		
<p><i>2.2.1 Objective</i></p> <p>To conserve the long term sustainability of the SEPP 14 Wetland No.746 and the associated vegetation, including the adjoining Habitat Conservation Precinct, and ensure that these are not adversely impacted upon by any proposed development.</p>	Y	The proposed Concept Plan includes a commitment to implement a biodiversity offset strategy (GHD 2012) including offsite offsets in addition to onsite offset areas. There has been a considerable reduction in proposed impacts also in the current proposal due to a greater degree of avoidance on site. Refer <i>Volume 4</i> .
<p><i>2.2.2 Objective</i></p> <p>Provide a buffer area of 150 metres wide along the Myall River frontage that is to be managed for the purpose of public recreation and nature conservation.</p> <p>The principle functions of the buffer are to protect the Myall River from the pressure of development for recreational purposes, secure native vegetation and habitat for native species and to provide for a visual corridor of natural appearance along the river bank.</p>	Y	<p>The buffer has been retained so it can fulfil the purpose it was created for. No development is proposed within the 150 metre buffer</p> <p>In addition, a swale corridor which also acts as part of the Asset Protection Zone has been provided along the edge of the 7(b) Wetland zone to ensure sufficient separation between the native vegetation within the 7(b) zone and future dwellings.</p>
<p><i>2.2.3 Objective</i></p> <p>To preserve elements of native vegetation and fauna habitat within that part of the 2 (f) Zone shown cross-hatched on the DCP map.</p>	Y	The site analysis plan (<i>Figure 3.2 in Volume 1A</i>) has identified native vegetation for preservation within the 2(f) zone. Buffer areas have been designed surrounding the estate as well as a habitat corridor linking the remnant vegetation to the Habitat Conservation Zone adjoining the SEPP 14 Wetland.
<p><i>2.2.4 Objective</i></p> <p>Provide for an east-west movement corridor(s) for use by wildlife, including flora and fauna from the Myall River and SEPP 14 Wetland No.746 to the east, across the site to link with the area zoned 6(a) at Lot 9, DP 733241, Toonang Road.</p>	Y	Conacher Environmental Group has prepared an Environmental Management Plan (see <i>Volume 4</i>) for the site which includes the corridor connecting the 6(a) land adjoining Toonang Drive to the SEPP 14 Wetlands. The management plan has identified the threatened flora and fauna species and their habitats to be protected and maintained within the

DCP Requirement	Compliance Yes / No / Partial / N/A	Comment
The primary objective is to maintain a corridor of high ecological value and integrity, for use by wildlife for dispersion across the site and for the enhancement of remnant vegetation and habitat values on the site.		wildlife corridor. The architectural plans also identify the wildlife movement corridor.
<p>2.2.5 Objective</p> <p>Minimise adverse impact on seagrass beds in the lower Myall Estuary.</p>	Y	<p>No development will occur within 150 metres of the Myall River. Any potential indirect impacts on the seagrass beds are associated with construction activities and future use and access by residents of this area. These indirect impacts will be managed by:</p> <ul style="list-style-type: none"> • a Construction Environmental Management Plan (see <i>Volume 5</i>) which will detail all appropriate mitigation measures, including erosion and sediment control, to be implemented during construction activities; • the design of the development incorporates extensive pedestrian and cycleway linkages to facilitate community use and access across the site. These formed pathways and cycleways will provide controlled access across the site, thereby limiting disturbance along the Myall River, SEPP 14 wetland and conservation areas.
2.3 Earthworks, hydraulic assessment and waterbodies		
<p>2.3.1 Objective</p> <p>To prevent flooding and adverse impacts on water quality through changes to surface hydrology and potential acid sulfate soils.</p>	Y	<p>Geotechnical investigations including ASS testing were undertaken by Coffey Geotechnics. An ASS Management Plan has been prepared to address the ASS present on the site (refer to <i>Volume 4</i>). The Management Plan aims to manage the site preparation, all earthworks proposed and the requirements for excavation and development within ASS. The soil and water management measures proposed are in accordance with the requirements specified within the DGRs.</p>

DCP Requirement	Compliance Yes / No / Partial / N/A	Comment
2.4 <i>Water Quality</i>		
<p data-bbox="163 528 320 552">2.4.1 <i>Objectives</i></p> <p data-bbox="163 572 1088 632">The standard of discharge of water from the site to the Myall River is to meet primary contact recreation requirements.</p> <p data-bbox="163 651 1088 740">The principle function of the water quality treatment system is to detain stormwater runoff and provide a water quality control system. The stormwater detention system may also provide aesthetic value and opportunities for secondary contact recreation.</p>	Y	An updated Integrated Water Management report (Cardno, 2011) is provided and demonstrates compliance with discharge water quality requirements.
2.5 <i>Infrastructure</i>		
<p data-bbox="163 823 315 847">2.5.1 <i>Objective</i></p> <p data-bbox="163 868 1088 927">To provide for the health and amenity of the community through the provision of a clean, healthy and reliable water supply.</p>	Y	Consultation with MidCoast Water has been undertaken to determine the servicing requirements for Riverside. An appropriate servicing strategy will be developed and implemented in accordance with the requirements of MidCoast Water (refer to <i>Volume 5</i>).
<p data-bbox="163 975 315 999">2.5.2 <i>Objective</i></p> <p data-bbox="163 1019 1088 1078">To ensure the health of the community through environmentally responsible collection and disposal of water-borne wastes.</p>	Y	Areas to the south of the site are already serviced by a reticulated gravity sewer system. MidCoast Water has recently constructed a 'state of the art' vacuum sewer pumping station, which is sited within the Myall River Downs Estate, west of Myall Street. It has been specifically sized to provide services for the Riverside development.
<p data-bbox="163 1155 315 1179">2.5.3 <i>Objective</i></p> <p data-bbox="163 1200 1088 1259">To ensure that traffic within and generated by development on the site is managed effectively in terms of amenity and the capacity of the existing road system.</p>	Y	A Traffic Assessment (Mark Waugh Pty Ltd, 2010) has been prepared in support of the road network depicted within the engineering drawings contained in <i>Volume 2</i> (also refer to <i>Volume 5</i>). Crighton Properties will enter into a Voluntary Planning Agreement (VPA) with Great Lakes Council. A draft VPA has been prepared (see <i>Volume 1B</i>) which details the contribution to be made to the road network and upgrades required to the existing road network to service Riverside.

DCP Requirement	Compliance Yes / No / Partial / N/A	Comment
<p><i>2.5.4 Objective</i></p> <p>To ensure services are provided and constructed in a co-ordinated manner.</p>	Y	<p>Consultation has taken place with Telstra, MidCoast Water and Essential Energy regarding service provision. The location of existing electrical and communication infrastructure and the proposed servicing strategy is illustrated in the Tattersall, 2007 report submitted within <i>Volume 5</i>.</p>
<p><i>2.6 Open Space and Conservation Area</i></p>		
<p><i>2.6.1 Objective</i></p> <p>To ensure an adequate level of environmental protection and residential amenity by provision of an open space system catering for structured and unstructured recreational activity consistent with the principles of ecological sustainability.</p>	Y	<p>Section 93 and Section 94A of the EP&A Act provide greater flexibility for levying development contributions. A Voluntary Planning Agreement (VPA) has been prepared which details the contributions to be made towards environmental protection and open space for recreation purposes. The VPA (see <i>Volume 1B</i>) includes the dedication of land for a major sporting complex and monetary contributions toward the embellishment of this future sporting complex. The timing and commitment to the provision of contributions is detailed within the VPA.</p>
<p><i>2.7 Community and Recreation Facilities</i></p>		
<p><i>2.7.1 Objective</i></p> <p>To ensure that appropriate sites are reserved and facilities constructed to adequately service the social and recreational needs of the community.</p>	Y	<p>The sites nominated as recreation areas have been identified in consultation with the community at the Design Forum held in 2006 and have been extensively discussed with Great Lakes Council.</p>

DCP Requirement	Compliance Yes / No / Partial / N/A	Comment
2.8 Archaeology		
2.8.1 Objective To protect sites of archaeological value.	Y	The previously recorded aboriginal site (Brayshaw 1988) located within the SEPP 14 Wetland will not be disturbed as part of the Riverside development. An archaeological and aboriginal heritage assessment has been undertaken which identified an additional site located within the proposed tourist precinct (refer to <i>Volume 5</i>). The Concept Plan for the tourist precinct has been modified to ensure that the midden site and a 10 metre buffer around the midden is protected from the development. The Assessment concluded that the proposal would not have any adverse impact on identified heritage items and recommended a number of mitigation measures to limit potential environmental impacts. If additional heritage items are discovered during the construction phase appropriate measures have been identified for the management of discovered items of heritage significance.
2.9 Bushfire Protection		
2.9.1 Objective <ul style="list-style-type: none"> • to minimise risk to residents from bushfire 	Y	Bushfire Prone Land in the Great Lakes Council Bushfire Prone Land Mapping and <i>Planning for Bushfire Protection, 2006</i> were consulted to determine appropriate asset protection zones (APZ) and Bushfire Attack Levels (BAL). The proposal incorporates a range of bushfire mitigation measures, including APZs and BALs which were determined in accordance with NSW Rural Fire Service guidelines, building construction standards, etc. The Bushfire Assessment prepared by Conacher Environmental Group, 2011a is contained within <i>Volume 4</i> .

DCP Requirement	Compliance Yes / No / Partial / N/A	Comment
2.10 <i>Building Guidelines</i>		
2.10.1 <i>Requirements</i> <ul style="list-style-type: none"> • Policies relate to the appearance of development, building design and form. 	Y	<p>An open space network plan has been prepared as part of the project identifying the landscape masterplan for the subdivision. The plan includes natural open space corridors for wildlife movement and formal recreation areas for public use.</p> <p>Architectural Guidelines have been prepared which provide parameters for building design and materials to conform to the natural setting of Riverside and the coastal landscape of Hawks Nest and Tea Gardens. Refer <i>Volume 1B</i></p>
2.11 <i>Tourist uses</i> – the preferred location of recreational facilities for the use of the general community and tourists is shown on the Development Control Map.	Y	The architectural drawings identify a low density tourist residential development within the location specified on the DCP map. Recreational facilities will be provided throughout the estate.
2.12 Development below Mean High Water Mark (MHWM) – Any development below MHWM requires the consent of Council.	N/A	The project forms a Part 3A application and therefore the Minister for Planning will be the approval authority.
SECTION 3 - DEVELOPMENT STRUCTURE		
The Development Plan and desired character are defined for the various precincts.	Partial	<p>The project has been designed to achieve the desired character for the Residential Precinct with setbacks to the Habitat Conservation Zone and a density of residential development consistent with that proposed in the Housing Strategy. All residential areas will have access to open space areas, including those surrounding the detention lake system.</p> <p>The Housing Strategy prepared by Great Lakes Council seeks to increase the residential density within Riverside to cater for the expected population growth within the Tea Gardens/ Hawks Nest area. The</p>

DCP Requirement	Compliance Yes / No / Partial / N/A	Comment
		<p>proposed layout incorporates the buffer to the Habitat Conservation Precinct and allows for open spaces corridors to function as wildlife movement and recreational areas.</p> <p>The DCP22 map cross-hatched area contains natural bushland areas which have been identified within the Concept Plan for retention due to its conservation value.</p> <p>Wetland Precinct- the SEPP 14 Wetland area is to be conserved.</p> <p>The Habitat Conservation Precinct is to be set aside. An assessment of national listed threatened species and ecological communities including Ramsar Wetlands has been prepared taking into account the requirements of the <i>Environment Protection and Biodiversity Conservation Act, (1999)</i>. Biodiversity mapping and Biobanking assessments are provided within <i>Volume 4</i>.</p>
SECTION 4 - SUBDIVISION AND BUILDING		
4.1 <i>Subdivision Guidelines</i>	N/A	The project is to be managed under a community title scheme. The community title scheme will be assessed as a Part 3A application.

Table 7 Compliance with Development Control Plan 31 - Subdivision

DCP Requirement	Compliance Yes / No / Partial / N/A	Comment
SECTION 2 GENERAL REQUIREMENTS FOR SUBDIVISION IN ALL ZONES		
2.2 SITE CONSIDERATIONS		
<ul style="list-style-type: none"> The matters that may be taken into account when determining the suitability or otherwise of a site for subdivision. 	Y	<p>The design and layout of Riverside at Tea Gardens was determined through an analysis of the opportunities and constraints of the site (see <i>Figure 3.1</i> and <i>3.2</i> in <i>Volume 1A</i>) to determine the development footprint, overall building envelope and the character of the residential areas and open space network. The elements that guided the formulation of the design include:</p> <ul style="list-style-type: none"> the surrounding wetland; the presence of the Wallum Froglet and its habitat; visual impact and vistas from key vantage points; the integration of adjoining developed areas; traffic and access considerations; existing areas of highest biodiversity value on the site; fauna movement across the site; the topography of the land and the existing drainage network; areas of cultural significance; and bushfire potential and geotechnical conditions. <p>A series of technical reports have been prepared to support the proposal. They demonstrate how the features of the site and surrounds have shaped the proposal.</p>

DCP Requirement	Compliance Yes / No / Partial / N/A	Comment
2.3 SITE HAZARDS		
<p>2.3.2 Controls and Design Principles</p> <p>Proposed allotments in urban areas (excluding corner allotments) will not be permitted to have frontages to more than one public road.</p>	Partial	<p>One proposed multi - dwelling lot has a frontage to two public roads to reduce the bulk of the built form presented by dual garages and dwellings. The ability for multiple dwelling lots to present to both streets frontages provides for greater flexibility in design;</p> <p>A number of allotments less than 450m² have frontages to a public road as well as a laneway. These lots are smaller than the majority of lots to provide housing choice with the potential to develop terrace style housing. These lots also front open space areas. The reduced width of these lots would create an undesirable streetscape if driveways were provided side-by-side in close proximity to the adjoining public open space. In order to provide an improved amenity to the streetscape, rear laneways have been provided to accommodate on-site parking; and</p> <p>A number of allotments proposed between 450m² - 550m², 550m² - 650m² and greater than 650m² have frontages to more than one public road. These lots are located within the south east portion of the Concept Plan and provide for greater design flexibility for future potential home based business, which would require additional parking spaces. In order to provide an improved amenity to the streetscape, dual access has been provided to accommodate rear and front on-site parking.</p> <p>The use of rear laneways and access ways is shown in Drawing No. R.C. -35 within <i>Volume 2</i>.</p>
<p>Effluent disposal</p> <p>Subdivision in unsewered areas may be permitted only where allotment sizes and layouts are adequate to allow on site disposal of effluent.</p>	N/A	<p>The strategy for servicing the development includes a sewer system that connects to the recently constructed MidCoast Water vacuum sewer pumping station, which is sited within the Myall River Downs Estate, west of Myall Street (refer to Tattersalls Report within <i>Volume 5</i>). There will therefore be no unsewered areas within the</p>

DCP Requirement	Compliance Yes / No / Partial / N/A	Comment
		Riverside estate.
<p><i>Threatened species</i></p> <p>In order to determine whether the subdivision will be likely to have an impact on any rare, endangered or threatened flora or fauna species, an eight part test carried out under the provisions of Part 5A of the <i>Environmental Planning and Assessment Act 1979</i> (as amended) must accompany any Development Application. Where an eight-part test reveals that a subdivision is likely to have a significant impact upon threatened species; a Species Impact Statement must accompany the Development Application.</p>	N/A	This clause does not apply to Part 3A applications. Nonetheless the BioBanking Assessment prepared by GHD (2012) has proposed compensatory measures to ensure no net loss of biodiversity values (refer to <i>Volume 4</i>).
<p><i>Flooding and inundation</i></p> <p>The design and extent of development is to take into account the likelihood of flooding in the locality. Where information is unavailable in relation to flooding, the applicant may have to undertake a Flood Study, at their own expense. Subdivision layouts shall be based on a strategy for surface water drainage that minimises the incidence of nuisance flooding.</p>	Y	An updated Integrated Water Management Assessment is provided in <i>Volume 3</i> .
<p><i>Unstable ground conditions</i></p> <p>In areas suspected of being subject to subsidence, landslide or any other potentially hazardous ground conditions; Council may require the completion of a geotechnical assessment prior to considering an application to subdivide.</p>	Y	<p>A Geotechnical Engineering Report has been prepared by Coffey Geotechnics (Coffey, 2008 and 2009). It considers the ground conditions for subdivision, development of the road network and the potential for ASS.</p> <p>An ASS Management Plan has been prepared (refer to <i>Volume 4</i>).</p>
<p><i>Coastal hazards</i></p> <p>Subdivision design shall take into account the likelihood of short and long term coastal recession, and dune transmigration. Council may require the carrying out of a Coastal Hazards Risk Assessment, by a suitably qualified person.</p>	N/A	The site is not affected by coastal recession or dune transmigration. A Coastal Hazard Risk Assessment is therefore not required.

DCP Requirement	Compliance Yes / No / Partial / N/A	Comment
<p><i>Erosion and sediment control</i></p> <p>Appropriate measures are required to avoid soil erosion and sedimentation in accordance with <i>Managing Urban Stormwater – Soils and Construction</i> issued by the NSW Department of Housing. In this regard, subdivision layouts that minimise the need for cut and fill are preferred.</p>	Y	<p>A Construction Environmental Management Plan (CEMP) was prepared and is contained within <i>Volume 5</i>.</p> <p>The Statement of Commitments detailed within the EA notes that a stormwater and sediment management plan will be prepared as part of the project. The management plan will be prepared in accordance with <i>Managing Urban Stormwater – Soils and Construction</i> issued by the NSW Department of Housing.</p>
<p><i>Bushfire</i></p> <p>In areas subject to significant bushfire risk subdivision will need to take into account the recommendations of any bushfire risk assessments. The provision of fire radiation zones and construction of bushfire trails may be required.</p>	Y	<p>Part of the site is mapped as Bushfire Prone Land. The land is categorised as having a Forest Fire Danger Index (FDI) of 80 and therefore Table A3.4 of <i>Planning for Bushfire Protection, 2006</i> was used to determine appropriate assets protection zones. The potential bushfire threat was identified from Dry Sclerophyll Forest vegetation to the north of the site. A reduced risk is present to the east of the site comprising the Forested Wetlands and Saline Wetlands. A greatly reduced risk is present from the west and south-west as a result of cleared grass land, scattered trees, industrial land use and existing residential development (Conacher 2011). The proposal incorporates a range of bushfire mitigation measures, including Asset Protection Zones (APZs) and BALs, which were determined in accordance with NSW Rural Fire Service guidelines and building construction standards (refer to <i>Volume 4</i>).</p>
<p><i>Site contamination</i></p> <p>In areas suspected to contain contaminated soil Council may require the completion of hazards assessment prior to considering an application to subdivide for any purpose.</p>	Y	<p>Previous uses of the site do not suggest that the soil is contaminated. The site was previously a pine plantation (see the specialist report in <i>Volume 5</i>). No industry or intensive agricultural activities have been undertaken on the site.</p>
<p><i>Acid sulphate soils</i></p> <p>Should Council suspect the presence of actual or potential acid sulphate conditions, details of testing will be required to be submitted with the</p>	Y	<p>A geotechnical assessment of the site investigated the potential for acid sulphate soils. Results from laboratory testing indicated that 13 of the 19 samples tested, exceeded the Acid Sulphate Soil Management Advisory Committee action criteria.</p>

DCP Requirement	Compliance Yes / No / Partial / N/A	Comment
development application. Testing procedures are contained within the <i>Acid Sulphate Soil Manual</i> , produced by the Acid Sulphate Soils Management Advisory Committee (NSW Agriculture).		Therefore, an Acid Sulphate Soils Management Plan has been prepared (refer to <i>Volume 4</i>) and relates to future earth works at Riverside. The plan will inform all lot purchasers and contractors required to work on the site.
2.4 ROAD DESIGN AND CONSTRUCTION		
<p>2.4.2 Controls and Design Principles - Road Network</p> <p>DESIGN OF NEW ROADS</p> <p>Where subdivision involves the construction of new roads, the road network to be established shall be designed in such a manner so that each lot can be developed and accessed in a practical and feasible manner. The developer shall be responsible for connecting new to existing road construction. The configuration and design of roads shall be in accordance with Council's <i>Design Specifications</i>.</p>	Y	<p>The engineering plans prepared by Tattersall Surveyors accompanying the EA details the road network proposed. Refer <i>Volume 2</i>.</p> <p>The subdivision plans submitted with the EA also propose on site parking for each allotment which is feasible and practical within either a communal car park for multiple dwellings or individual garages for dual and single dwelling allotments. Refer <i>Volume 2</i>.</p> <p>The Traffic Assessment Report prepared by Mark Waugh Pty Limited (2010) (refer <i>Volume 5</i>) outlines the staging of works to the existing road network to service the proposed development.</p> <p>The road configuration varies from Council's Design Specifications, however the variations have been justified to Council and Council officers have agreed to these departures.</p>

DCP Requirement	Compliance Yes / No / Partial / N/A	Comment
<p>EXISTING ROAD FRONTAGES</p> <p>Where a subdivision adjoins an existing road, the road infrastructure may be required to be upgraded. This may include the construction of kerb and guttering, pavement widening and sealing, ancillary drainage and footpaths.</p>	Y	<p>The Traffic Assessment (Mark Waugh, 2010) has identified upgrading works required to Myall Quays Boulevard and Myall Street. Recommended upgrades include access lanes to Myall Street and the development of roundabouts on Myall Quays Boulevard and Myall Street. The Statement of Commitments identifies that all roadwork shall be undertaken and the associated timing of the construction of these works.</p>
<p>2.4.3 Road Dedication</p> <p>Council, except for Community Titles subdivision, will require the dedication of all roads and pathways constructed to public road standards. The dedication of roads within Community Titles subdivisions will be considered on a case-by-case basis.</p> <p>Street name signs shall be erected at the junction of all roads in the subdivision. Proposed street names shall be submitted for approval by Council's Engineering Services Division. Signage shall conform to and be located according to Councils standard drawings.</p>	Y	<p>The subdivision is proposed within a Community Title subdivision, however all roads are proposed to be dedicated as public roads .</p> <p>The Traffic Impact Assessment concluded that Myall Street and Myall Quays Boulevard would have capacity to service the proposed development and future development options within the adjoining Myall River Downs site, subject to the upgrading of existing intersections. Toonang Drive was also identified as having capacity to service the proposed subdivision. It was concluded that the proposed development would not unduly impact on existing road networks and that upgrading to these existing networks would meet the requirements of the proposed development and future development of the Myall River Downs site.</p>
<p>2.5 LANDSCAPING AND SITE DESIGN</p>		
<p>2.5.2 Controls and Design Principles</p> <p>Site works and landscaping shall be designed to enhance the natural features of the site and adjoining areas. Existing landscape elements such as rock formations, vegetation or watercourses should be preserved. In established areas, landscaping shall relate to the scale of other elements of the streetscape and the landscaping of adjoining development. Where possible, landscaped areas shall adjoin the landscaped areas of adjacent allotments.</p>	Y	<p>The project seeks to upgrade Myall Quays Boulevard and Myall Street as the main thoroughfare to the site. The treatment of arterial and connector roads will include median strip planting and landscaping of the pedestrian footpaths to enhance and maintain the existing streetscape character. The inclusion of roundabouts will also define vehicle speed and vehicle interaction with pedestrians. Main street planting will be spaced so as to provide shade, wind and weather protection in conjunction with ground level awnings.</p>

DCP Requirement	Compliance Yes / No / Partial / N/A	Comment
<p>All Cabbage Tree Palms that will be affected by subdivision works are to be relocated to another site on the land or to a public reserve.</p> <p>A plan is to be submitted showing the location of any existing Cabbage Tree Palms so that a decision can be made as to whether these should be relocated or should remain. Where trees are to be relocated, a bond will be payable depending upon the size and number of trees to be relocated.</p> <p>Council prefers street tree planting to be undertaken by the developer once the subdivision is at an advanced stage; when roads and main service lines are in place and the location of footpaths and driveway crossings identified. Additional plantings may be required adjacent to public roads where access is to be restricted.</p>		<p>The proposed local street network including laneways and access ways include street tree landscaping to enhance the local amenity.</p> <p>The Concept Plan includes a commitment to implement a biodiversity offset strategy (refer <i>Volume 4</i>) in addition to onsite offset areas. There has been a considerable reduction in proposed impacts also in the current proposal due to a greater degree of avoidance on site.</p> <p>Landscaping design guidelines have been prepared for the development (refer to <i>Volume 1B</i>).</p>
<p>2.5.3 Filling and Levelling</p> <p>Site works are to be planned to allow topsoil to be stripped, stockpiled and reused on the site. The stockpiling of soil is to occur without the killing of the "seed-bank" and "soil microhiziz" (soil bacteria/fungi). No soil is to be removed from the site without consent. The quality, laying and compaction of fill will be required to meet Council's <i>Design Specifications</i>. Geotechnical certification will be required to indicate compliance with Council's <i>Design Specifications</i> and Australian Standard AS 2870 (Residential Slabs and Footings). Filling and leveling shall not adversely affect adjoining land.</p> <p>Levels shall be adjusted so that allotments drain to the street and/or the stormwater drainage system. Siteworks shall be designed and constructed to prevent ponding of stormwater or intensification of runoff to adjacent land.</p>	Y	<p>The draft Statement of Commitments (<i>Chapter 9</i> in <i>Volume 1A</i>) identify that all earthworks will be completed in accordance with the Acid Sulphate Management Plan included in <i>Volume 4</i>.</p> <p>Due to the location of ASS the removal, stockpiling and re-use of topsoil will need to be managed to mitigate any potential environmental impacts associated with the proposed development.</p> <p>To mitigate any potential environmental impacts to the existing drainage system commitments have been made within the EA to design and install water quality control measures and monitoring program in accordance with the updated <i>Integrated Water Management Strategy</i> (refer to <i>Volume 3</i>).</p> <p>Cut and fill requirements across the site are detailed within the engineering plans in <i>Volume 2</i>.</p>

DCP Requirement	Compliance Yes / No / Partial / N/A	Comment
<p><i>Erosion and Sediment Control</i></p> <p>Erosion control and sediment control principles shall be designed to be in accordance with <i>Managing Urban Stormwater – Soils and Construction</i> (NSW Department of Housing). For subdivisions involving an area of more than 2 hectares of land, plans lodged with the development application shall be clearly notated to indicate the proposed staging of works.</p>	Y	The Construction Environmental Management Plan (CEMP) submitted with the EA (see <i>Volume 5</i>) outlines the requirements for a Stormwater Management Plan to address erosion and sediment control. The management plan is to be prepared prior to the commencement of work in accordance with the relevant guidelines and policies. This action is contained within the draft Statement of Commitments.
2.6 SERVICES		
<p><i>2.6.2 Controls and Design Principles</i></p> <p>Where available, satisfactory arrangements shall be made with the appropriate authority for the provision of utility services to each allotment in the subdivision.</p>	Y	Tattersall Surveyors (2010) prepared a strategy for servicing the proposed development (refer to <i>Volume 5</i>). Investigations into the capacity of existing infrastructure to accommodate the proposal were completed in consultation with the relevant service providers including MidCoast Water, Essential Energy and Telstra.
<p><i>Water supply</i></p> <p>In areas where reticulated water supply is available, applicants are required to provide water supply mains and service conduits to each allotment in the subdivision. An adequate reticulated water supply system is to be provided for domestic supply and fire fighting purposes.</p>	Y	Reticulated water supplies are available to the existing development area, south of the site. MidCoast Water has completed the upgrade and augmentation of potable water storages at the Viney Creek Road Reservoirs. An 8.1ML reservoir has recently been commissioned and will provide sufficient capacity to meet the potable water needs of various potential developments in the area in the immediate future (Tattersall, 2011). A third pipe recycled treated effluent reticulation system is part of the proposal.
<p><i>Sewerage</i></p> <p>In areas where sewerage service is available, applicants are required to provide sewerage reticulation to each allotment in the subdivision. Sewerage reticulation is to be arranged where possible to allow the whole of each new allotment to be serviced by gravity drainage.</p>	Y	Areas to the south of the site are already serviced by a reticulated gravity sewer system. MidCoast Water has recently constructed a sewer pumping station within the Myall River Downs Estate, west of Myall Street (refer to Tattersalls report contained within <i>Volume 5</i>). It has been specifically sized to provide services for the Riverside development.

DCP Requirement	Compliance Yes / No / Partial / N/A	Comment
<p>Electricity</p> <p>For subdivision requiring a new low voltage electricity supply, reticulation is to be via an underground supply system unless Council determines the ground conditions to be unsuitable for extensive underground infrastructure.</p>	Y	Essential Energy is proposing to relocate and upgrade its electrical supply network. The proposed electrical services will extend from existing services. Crighton Properties has provided Country Energy with the proposed subdivision layout so that they can commence designing for major new links from the existing overhead supplies.
<p>Telstra</p> <p>An underground service shall be provided to each allotment in the subdivision. The positioning of services shall conform to Council's approved standards.</p>	Y	Existing communication infrastructure, which incorporates fibre optic technology, is available along Myall Street and Toonang Drive. Telstra has already upgraded its services to Tea Gardens, which includes a 'fibre to the node' for The Hermitage and has offered via its Smart Communities program, the provision of services to Riverside.
<p>Shared trenching</p> <p>Where possible, compatible public utility services shall be coordinated in common trenching to maximum cost effect.</p>	Y	This matter shall be addressed in consultation with the relevant service providers.
<p>Reforming</p> <p>Areas affected by construction works are to be reformed to appropriate grades, covered with 100mm of topsoil and then grassed.</p>	Y	This work will be undertaken as required by the DCP (following consultation with the relevant service providers).
<p>Easements</p> <p>Easements are to be provided in accordance with authority requirements for each service. Easements to drain sewage shall be created in favour of MidCoast Water, over existing sewer mains and over sewer mains laid within proposed allotments.</p>	Y	Easements will be created following consultation with the relevant service providers.
<p>Restoration</p> <p>Any trenching is to be rendered erosion resistant by turfing/mulching or otherwise suitably stabilised within a period of three (3) days of completion of trenching works.</p>	Y	This work will be undertaken as required in the DCP following consultation with the relevant service providers.

DCP Requirement	Compliance Yes / No / Partial / N/A	Comment
2.7 DRAINAGE		
<p>2.7.2 Controls and Design Principles Drainage system design</p> <p>The drainage system shall be designed in accordance with Council's <i>Design Specifications and Construction Specifications</i>. Allotment drainage shall discharge to the roadway gutter wherever possible. Inter-allotment drainage (including the creation of easements to drain water) will be required where discharge to the street for all lots is not possible.</p> <p>On site detention/infiltration</p> <p>Applicants may be required to provide on site detention to maintain flows no greater than the undeveloped rate of flow, both within and downstream from the development area. Advice should be sought from Council's Engineering Services Division to determine if this is required.</p>	Y	An updated Integrated Water Management Assessment is provided in <i>Volume 3</i> .
<p>Water quality, erosion and sedimentation</p> <p>Water quality control measures must be provided on-site, where subdivisions have the potential to drain either directly or indirectly into natural waterways. Therefore, careful consideration must be given to the impact of the development on erosion, pollution and sediment loading. Water quality control measures will be required to meet the requirements outlined in <i>Managing Urban Stormwater – Soils and Construction</i> (NSW Department of Housing), the <i>Constructed Wetlands Manual</i> [Vol 1 & 2] (Department of Land and Water Conservation [NSW]), and any adopted Stormwater Management Plans.</p>	Y	<p>The Integrated Water Management Strategy identifies the water quality management system proposed to handle stormwater flows. The report includes stormwater treatment and water quality management guidelines to manage the flows directed through the proposed development. A combination of, wetlands, ponds, bio-filtration trenches and swales will manage stormwater runoff.</p> <p>Sediment and erosion control measures will be implemented in the construction phases in accordance with the requirements of the current edition of the <i>Managing Urban Stormwater – Soils and Construction (Blue Book)</i> released by the NSW Department of Housing as detailed within the draft Statement of Commitments.</p>

DCP Requirement	Compliance Yes / No / Partial / N/A	Comment
<p>Easements</p> <p>Easements shall be created over drainage systems, including piped stormwater lines and open drainage channels. Widths of required easements shall depend upon the circumstances.</p>	Y	Easements will be created as required by the relevant service providers.
<p>Flood prone land</p> <p>Consideration will be given to the likely effects of flooding in determining any application (see Clause 25 of <i>Great Lakes Local Environmental Plan 1996</i>). Land will generally be required to be filled to ensure that the development will conform to Councils flood management policy and particular flood management plans, where relevant.</p>	Y	The Integrated Water Management Strategy contained within <i>Volume 3</i> assesses the flooding impact of the proposed development. All lots will be flood free at the subdivision stage and emergency flood access will be available throughout the development.
<p>Works as executed drawings</p> <p>Works as executed drawings are to be supplied upon completion of works (copies are also to be supplied in electronic format).</p>	Y	Work as executed drawings will be provided to service providers.
2.8 EXISTING DEVELOPMENT AND HERITAGE		
<p>2.8.2 Controls and Design Principles</p> <p>Where subdivision affects heritage items, Council may require the submission of a Heritage Impact Statement prior to consideration of the application. The impact of any subdivision on the curtilage or immediate context of a heritage item must be evaluated in this Statement.</p>	Y	An updated Aboriginal Heritage Assessment was undertaken by ERM (2011), which addressed the DECC Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation and PAC comments (refer to <i>Volume 5</i>).

DCP Requirement	Compliance Yes / No / Partial / N/A	Comment
2.9 ENVIRONMENTAL PROTECTION		
<p>2.9.2 Controls and Design Principles</p> <p>Consultation with Council is advisable to determine whether subdivision will constitute "integrated development" or "designated development" and whether an Environmental Impact Statement is required. Council may require the submission of specialist reports prepared by suitably qualified persons where it considers there may be a risk to the environment.</p>	N/A	<p>The proposed development falls under Part 3A of the <i>Environmental Planning and Assessment Act 1979</i> (NSW) therefore an Environmental Impact Statement (EIS) is not required. An Environmental Assessment (EA) has been prepared as part of the Part 3A process.</p>
SECTION 3 CONTROLS FOR RESIDENTIAL SUBDIVISION		
3.2 ALLOTMENT ORIENTATION		
<p>3.2.2 Controls and Design Principles</p> <p>Staggering of allotments and extensive use of landscaping are encouraged to reduce adverse wind impacts and achieve maximum exposure to cooling breezes in summer, and create streetscape variety and interest.</p> <p>Allotment orientation shall take into account the various types of dwellings that may be constructed on them. Ensure that potential indoor living and related private open space areas of future dwellings can be oriented to the north.</p> <p>Consider the possible overshadowing impact of and on existing or future adjoining buildings.</p> <p>Consideration of road orientation is an important factor in influencing allotment orientation to achieve an energy efficient subdivision.</p> <p>Roads running close to east west provide for good</p> <p>Orientation of allotments for solar access to dwellings and private open space,</p>	Y	<p>A site analysis plan (see <i>Figure 3.2</i> in <i>Volume 1A</i>) has been prepared for the site which identified significant site features including the wetland areas to the east, the vegetation corridor to the north and Myall River to the east. Given the location of these natural features on site the subdivision has been designed to minimise the impact on these features and provide an open space corridor to link these natural environments.</p> <p>To take advantage of these features allotments abut open space corridors along the wetland zones to provide separation between the natural and built environment to allow pedestrian access along the fringe of the wetland zone.</p> <p>The architectural plans submitted with the EA (<i>Volume 2</i>) consider lot orientation.</p>

DCP Requirement	Compliance Yes / No / Partial / N/A	Comment
<p>while maintaining a narrow allotment frontage.</p> <p>On roads running north south, allotments may need to be widened to provide for solar access and prevent overshadowing of dwellings and private open space.</p>		
3.3 ALLOTMENT DIMENSIONS		
<p>3.3.2 Controls and Design Principles</p> <p><i>Site frontage</i></p> <p>Site frontage shall be sufficient to permit vehicular and pedestrian access to the site, with landscaping to provide visual relief to development, and privacy for its inhabitants.</p> <p><i>Allotment proportions</i></p> <p>Each allotment should have a depth to frontage ratio sufficient to avoid the possibility of “gun barrel” development and permit development to respond to particular site circumstances such as orientation, topography etc.</p> <p>Building setbacks from roads need to be considered when formulating allotment dimensions in order to ensure that a dwelling can be situated on an allotment.</p> <p><i>Residential lots less than 450m²</i></p> <p>Allotments less than 450m² in area will only be permitted where those allotments are:</p> <p>Incorporated within an integrated housing development; or</p> <p>Created via subdivision of an approved existing multiple dwelling development.</p> <p>In determining the suitability or otherwise of any subdivision application for</p>	<p>Partial</p>	<p>The EA identifies Riverside as providing a combination of traditional housing lots and smaller lots, with at least ten percent of the lots less than 450 square metres in area. The development will achieve a net density of at least 13 dwellings per hectare across the site, in accordance with Council’s adopted Housing Strategy.</p> <p>In line with Council’s Housing Strategy, the majority of buildings will be low density, detached or semi detached and restricted to a maximum height of 9 metres. These building controls combined with streetscape planting will create a low impact, natural coastal living environment.</p> <p>Allotment proportions - the street hierarchy does not depict any ‘gun-barrel’ design. The various types of allotment sizes proposed allow for variation to the built form.</p> <p>The building setbacks proposed are shown in the Architectural drawings contained within <i>Volume 2</i>.</p>

DCP Requirement	Compliance Yes / No / Partial / N/A	Comment
<p>small lots (less than 450m²), the following matters will be taken into account:</p> <ul style="list-style-type: none"> • Cost of providing services and the capacity of existing services; • The advantages of building to a boundary and using attached and semi-detached forms of housing; • That adequate visual and aural privacy can be assured for each proposed dwelling; and • That adequate provision is made for access to the sun and natural light for each proposed dwelling. <p>Residential lots greater than 450m²</p> <p>Lots with an area greater than 450m² shall be capable of containing a rectangle suitable for building purposes measuring 8m x 20m or 10m x 16m behind the building line and a private open space area of 40m² with a minimum dimension of 4m.</p> <p>Corner lots</p> <p>Special consideration needs to be given to the creation of private outdoor spaces in relationship to building setbacks and sight distance requirements on corner lots.</p>		
<p>3.4 Road Network</p>		
<p>3.4.1 Road Hierarchy</p> <p><i>Refer to Appendix No. 3 for an excerpt of minimum road widths.</i></p> <p>Within the internal road network of a residential estate, up to five distinct levels of roads may be provided. They are:</p>	<p>Y</p>	<p>The road network is based on the <i>RTA Guide to Traffic Generating Developments</i>. A traffic impact assessment which investigated traffic flow and intersection capacity was completed by Mark Waugh Pty Ltd (2010) for the development of the Concept Plan (it is contained within <i>Volume 5</i>).</p> <p>The street network supports the provision of a public transport route with the</p>

DCP Requirement	Compliance Yes / No / Partial / N/A	Comment
<ul style="list-style-type: none"> _ Shareway _ Access Place (Cul-de-sac) _ Local Street _ Collector Road _ Distributor Road <p>Please consult Council's <i>Design Specifications</i> for definitions of these streets/ roads.</p> <p>Larger subdivisions, or those which require direct access to distributors or the external road network, are subject to negotiation with Council. Where large lots for future development are created, potential traffic generation from these lots should be taken into account when determining road characteristics.</p>		<p>collector roads having sufficient pavement width to cater for buses and the layout allowing buses to service the site. The road network also incorporates the varying levels of road hierarchy including distributor road, collector road, local roads and laneways.</p> <p>The engineering drawing and architectural drawings of the street types clearly identify the different capacities of the roadways and their interaction with pedestrians and cyclists through the use of median strips and increased footpaths and landscaped verges.</p>
<p>3.4.3 Controls and Design Principles - Road Network</p> <p>The road network shall conform to a structure plan for the area (where such plan exists) showing an existing and proposed major road network above the level of collector which satisfies projected district and regional travel. The road network shall provide for access to bus routes within acceptable walking distance from all dwellings (400m).</p>	Partial	<p>The road network proposed differs from the structure plan produced by Council. The alternate design however adequately manages the existing and predicted traffic volumes, provides public transport routes and connects to surrounding developments including Shearwater Estate to the north, Myall Quays to the south and the future development of Myall River Downs to the west.</p> <p>The alternate design is supported by a Traffic Assessment prepared by Mark Waugh Pty Ltd contained within <i>Volume 5</i>.</p> <p>Architectural Drawing No. R.C - 04 contained with <i>Volume 2</i> identifies the transport and access plan for the Riverside development. The plan shows that access to the bus route is provided to all dwellings based on the 400m criteria.</p>

DCP Requirement	Compliance Yes / No / Partial / N/A	Comment
3.5 ROAD DESIGN AND CONSTRUCTION		
<p>3.5.2 Controls - General</p> <p>The design of roads and streets including kerb and gutter shall be in accordance with Council's <i>Design Specifications</i>.</p> <p>If an application fails to meet the requirements of Council's <i>Design Specifications</i>, but does meet the objectives stated in Section 3.5.1 of this DCP, it may be considered for approval.</p>	Y	The design of the kerb and guttering is shown in the engineering plans prepared by Tattersall Surveyors contained within <i>Volume 2</i> . These objectives have been captured within the proposed design. A focus of the road network is on the amenity, safety and useability of the network by pedestrians and cyclists within dedicated cycleway and landscaped pedestrian footpaths. This integration of transport modes create residential amenity by promoting alternative means of transport for residents.
<p>3.5.3 Controls and Design Principles - Target Vehicle Speeds</p> <p>A combination of measures may be required to limit design speeds by:</p> <ul style="list-style-type: none"> • limiting street length; • introducing bends; and • introducing slow points, bends and other traffic management measures such as constriction of carriageway width, speed humps etc. <p>Consult Council's <i>Design Specifications</i> for details. Designs shall conform to Council's <i>Design Specifications</i></p>	Y	The proposed development includes traffic calming measures including roundabouts proposed along Myall Street and Myall Quays Boulevard. The traffic calming measures are indicated on the engineering drawings (see <i>Volume 2</i>).
<p>3.5.4 Controls and Design Principles - road reserves</p> <p>Minimum carriageway, verge and road reserve widths shall be in accordance with Council's <i>Design Specifications</i>.</p>	Partial	Engineering plans and a Traffic Assessment have been prepared for the Riverside development. The road network has therefore been designed to cater for the existing and predicted traffic volumes. Traffic calming devices and street landscaping has also been proposed to manage the traffic to be generated from the subdivision. The development proposes an alternative road network which achieves the aims and objectives of Council's DCP.

DCP Requirement	Compliance Yes / No / Partial / N/A	Comment
<p>3.5.5 Controls and Design Principles – Pedestrian/Cyclist Facilities</p> <p>A road serving more than 50 allotments shall be provided with a minimum of one 1.2m wide paved footpath. Where an approved strategy exists, pedestrian and cyclist paths shall be provided.</p>	Y	The arterial, collector, link roads, local streets and one way streets all provide footpaths for pedestrian movement. The laneways which service less than 50 allotments do not provide footpaths since they function for vehicular access to on-site garages and car spaces.
3.6 PUBLIC OPEN SPACE		
<p>3.6.2 Controls</p> <p>Open space shall be provided within the particular subdivision, generally at the rate of 2.83 ha per 1000 population (28.3m²/person). Population rates are to be calculated on the basis of 3.3 persons per dwelling allotment.</p> <p>Where it is proposed to provide open space off-site, justification is to be provided via an open space strategy prepared at the cost of the applicant. Where Council determines that the public open space component of a subdivision shall be located elsewhere, a contribution will be required for acquiring and/or improving more suitable open space in the vicinity in accordance with Council's current contribution rate. Public open space and reserves shall be suitably landscaped and embellished with play equipment or sports equipment.</p>	Y	<p>The proposed development incorporates open space corridors which link existing natural environments including the stand of vegetation to the north of the site and the wetland zones located along the eastern boundary adjoining the Myall River. These open spaces also provide valuable habitat corridors for natural flora and fauna through the estate.</p> <p>The open space network includes active and passive recreation areas which are supported by community facilities including club houses and organised recreation areas including tennis courts and swimming pools. The recreation areas are connected via overland bridges, cycleway and pedestrian networks to allow access through the entire open space network.</p>

Table 8 Compliance with the principles of the New South Wales Groundwater Quality Protection Policy 1998

Principles	Proposal/Comment
<p>FIRST PRINCIPLE - All groundwater systems should be managed so that the most sensitive identified beneficial use (or environmental value) is maintained.</p>	<p>The primary aim for the management of groundwater is to protect the adjacent SEPP 14 wetland. This will be achieved through the implementation of an integrated water management scheme (refer to <i>Volume 3</i>), which details the management of water quality entering the SEPP 14 wetland. It includes measures to intercept and treat potentially polluted surface water runoff, including the directing of runoff from the catchment to a tidally flushed lake, and provision of a number of smaller ponds and wetlands located within the residential areas.</p> <p>The management plan includes monitoring programs and base line data taken during site surveys to support the management of the SEPP 14 wetlands.</p> <p>The surface water modelling (Cardno, 2011) predicts a reduction in pollutant loads (suspended solids, total nitrogen, total phosphorus) in water flowing into the wetlands as a result of implementation of the integrated water management scheme. Accordingly, there should be no impact on the wetlands resulting from the modelled pollutants.</p> <p>Modelling also indicates that the salt water interface would not be significantly affected by the development and groundwater level modelling indicates that there will be little impact within the wetland area. Groundwater level changes resulting from the proposed development are assessed to be below 0.1 m within the wetland area. Changes to this magnitude would be within the existing groundwater level variability and are therefore considered unlikely to adversely affect adjacent ecosystems (refer to <i>Volume 3</i>).</p>
<p>SECOND PRINCIPLE - Town water supplies should be afforded special protection against contamination.</p>	<p>The aquifer is not a potential potable water resource due to its limited extent and concentrations of a range of analytes exceeding the drinking water guidelines.</p> <p>In assessing the potential use of the groundwater as a drought reserve for Council, beneficial uses of the aquifer are considered limited due to the following:</p> <ul style="list-style-type: none"> • The aquifer is not a potential potable water resource due to concentrations of a range of analytes exceeding the drinking water guidelines. Treatment would be required to create potable water. • The aquifer is not a potential irrigation resource due to high concentrations of phosphorus which have the potential to result in bio-clogging of irrigation equipment.

Principles	Proposal/Comment
<p>THIRD PRINCIPLE - Groundwater pollution should be prevented so that future remediation is not required.</p>	<p>The Riverside development lies in an area with a shallow groundwater table that has the potential to be impacted by the proposed development if not managed adequately. An integrated water management scheme has been developed to protect against water pollution. This management plan includes monitoring programs and base line data taken during site surveys to support ongoing management.</p> <p>The surface water modelling (Cardno, 2011) predicts a reduction in pollutant loads (suspended solids, total nitrogen, total phosphorus) in water flowing into the wetlands as a result of implementation of the integrated water cycle management scheme.</p>
<p>FOURTH PRINCIPLE - For new developments, the scale and scope of work required to demonstrate adequate groundwater protection shall be commensurate with the risk the development poses to a groundwater system and the value of the resource.</p>	<p>The groundwater chemistry at Riverside at Tea Gardens has been described by Coffey Geosciences (Coffey, 2004) and Coffey Geotechnics (Coffey, 2007a). An updated preliminary groundwater assessment study has been prepared by Martens & Associates Pty Ltd (December 2011) (refer to <i>Volume 3</i>).</p>
<p>FIFTH PRINCIPLE - A groundwater pumper shall bear the responsibility for environmental damage or degradation caused by using groundwaters that are incompatible with soil, vegetation or receiving waters.</p>	<p>Pumping/dewatering may be required during earthworks/excavation construction activities, which could potentially cause environmental damage or degradation if not managed adequately.</p> <p>Geotechnical investigations including ASS testing were undertaken by Coffey Geotechnics. An ASS Management Plan has been prepared to address the ASS present on the site. The Management Plan aims to manage the site preparation, all earthworks proposed and the requirements for excavation and development within ASS. All measures detailed within the Acid Sulphate Soils Management Plan (Coffey, 2011) are to be implemented, including:</p> <ul style="list-style-type: none"> • management of exposed acid sulphate soils through neutralisation methods (the application of lime for example); • management of dewatering processes to minimise the impact of acidic groundwater; • monitoring pH levels of soils; • monitoring pH levels of groundwater removed during dewatering operations; and • contingencies for use of additional neutralising agents as required.

Principles	Proposal/Comment
<p>SIXTH PRINCIPLE - Groundwater dependent ecosystems will be afforded protection.</p>	<p>The SEPP 14 area will be fully preserved as part of the proposed development. The SEPP 14 Wetland will be buffered from the development by the retention of vegetation communities between the wetland boundary and the development edge. Measures to protect and manage the wetlands are detailed in the Ecological Site Management Plan (Conacher Environmental Group, 2011) provided in <i>Volume 4</i> of the EA.</p> <p>The Ecological Site Management Plan and the Biobanking Assessment (GHD, 2012) details management strategies to protect the long term environmental and ecological values of land within Riverside, including the management of the wetland area (refer to <i>Section 4.12.8</i>). In addition, the Wetland Assessment completed by Winning (2009), recommends the preparation of a Wetland Management Plan specifically to manage any potential environmental impacts and ongoing monitoring.</p>
<p>SEVENTH PRINCIPLE - Groundwater quality protection should be integrated with the management of groundwater quantity.</p>	<p>An integrated water cycle management plan has been prepared by Cardno (2011). The management plan considers flooding and drainage, water quality and maintenance activities, monitoring and management.</p> <p>The Riverside design incorporates stormwater drainage and water quality measures within the open space network. The treatment train includes a number of smaller ponds and artificial wetlands located within the residential areas. A combination of measures will be implemented, including:</p> <ul style="list-style-type: none"> • the installation of rainwater tanks on all new residential lots; • constructing a number of ancillary water quality control ponds to create a 'treatment train' for runoff prior to discharge into the lake; • constructing local wetlands to create a 'treatment train' for runoff prior to discharge to the Myall River and the existing wetland; and • constructing a 770 metre long swale along the eastern edge of the development to distribute flow to the buffer area and existing wetland.

Principles	Proposal/Comment
<p>EIGHT PRINCIPLE - The cumulative impacts of developments on groundwater quality should be recognised by all those who manage, use, or impact on the resource.</p>	<p>Monitoring programs are proposed to occur for the SEPP 14 Wetlands, the detention lake, the constructed freshwater lakes, ponds and wetlands. These programs are to be designed and implemented by various stakeholders including the landowner, contactor/builder, Myall Quays Community Association (residents), Great Lakes Council and DECC. Stakeholders are proposed to meet and review the outcomes of the monitoring after three (3) years and agree to the scope of ongoing monitoring programs, the timing and any subsequent review. The details of the technical methods for the monitoring programs are outlined within the Integrated Water Cycle Management Report prepared by Cardno (2011) annexed within <i>Volume 3</i>.</p> <p>Management actions have been proposed to rectify any potential failures as a mitigation measure to meet the water quality objectives. These proposed actions would trigger immediate sampling of the waterbodies. The frequency of sampling will be increased at this time until it is certain that any effect of the event has been prevented from reaching the waterbody or has passed through the waterbody. These management measures should ensure that water discharged from the development does not impact upon the primary contact recreational condition of the Myall River. Details of the proposed management actions are outlined within the Integrated Water Cycle Management report prepared by Cardno (2011) annexed within <i>Volume 3</i>.</p>
<p>NINTH PRINCIPLE - Where possible and practical, environmentally degraded areas should be rehabilitated and their ecosystem support functions restored.</p>	<p>Existing groundwater quality results are generally below the key criteria for protection of species in marine water (90% protection) presented in the ANZECC (2000) guidelines, with the exception of some metal concentrations.</p> <p>The surface water modelling (Cardno, 2011) predicts a reduction in pollutant loads (suspended solids, total nitrogen, total phosphorus) in water flowing into the wetlands as a result of implementation of the integrated water management scheme for the proposed development.</p>

Table 9 *Compliance with the principles of the New South Wales Groundwater Dependent Ecosystems Policy 2002*

Principles	Proposal/Comment
<p>FIRST PRINCIPLE - The scientific, ecological, aesthetic and economic values of groundwater-dependent ecosystems, and how threats to them may be avoided, should be identified and action taken to ensure that the most vulnerable and the most valuable ecosystems are protected.</p>	<p><i>State Environmental Planning Policy No 14 (SEPP 14) - Coastal Wetland No. 746 adjoins the Myall River within the eastern portion of the Riverside site.</i></p> <p>The value of wetlands was assessed as part of the <i>Coastal Wetlands of NSW: A Survey and Report Prepared for the Coastal Council of NSW (1985)</i>. SEPP 14 wetlands allow for the continued growth of native plant communities and the provision of habitat for native species and populations within the intertidal estuarine environment. The SEPP 14 wetland adjacent to the Riverside at Tea Gardens development contains the attributes and values as identified in the Coastal Wetlands of NSW study (Coastal Council of NSW), including significant ecological communities, facilitation of habitats and corridor linkages. The SEPP 14 Wetland will be fully preserved as a result of the proposed Riverside at Tea Gardens development.</p> <p><i>Indirect Impacts</i></p> <p>Developments adjacent to wetlands also have the potential to indirectly affect the wetland communities in a number of ways:</p> <ul style="list-style-type: none"> • changes in quantity and quality of surface and groundwater flows into the wetlands, • human pedestrian and vehicular intrusion; and • general 'edge effects', including: <ul style="list-style-type: none"> • predation of native fauna by domestic cats and dogs; • 'light spill' of street lights which can affect the behaviour of native animals; • dumping of rubbish and garden refuse; • 'weed creep' from lawn grasses, etc.; and • mowing of wetland margins (Winning, 2009). <p>An Ecological Site Management Strategy has been prepared which details management strategies to protect the long term environmental and ecological values of land within Riverside, including the management of the wetland area (refer to <i>Volume 4</i>). In addition, the Wetland Assessment completed by Winning (2009), recommends the preparation of a Wetland Management Plan specifically to manage any potential environmental impacts and ongoing monitoring.</p>

Principles	Proposal/Comment
<p>SECOND PRINCIPLE - Groundwater extractions should be managed within the sustainable yield of aquifer systems, so that the ecological processes and biodiversity of their dependent ecosystems are maintained and/or restored. Management may involve establishment of threshold levels that are critical for ecosystem health, and controls on extraction in the proximity of groundwater dependent ecosystems.</p>	<p>An Integrated Water Cycle Management Report (Cardno, 2011), includes an assessment of impacts on groundwater and is provided in <i>Volume 3</i>.</p>
<p>THIRD PRINCIPLE - Priority should be given to ensuring that sufficient groundwater of suitable quality is available at the times when it is needed:</p> <ul style="list-style-type: none"> • for protecting ecosystems which are known to be, or are most likely to be, groundwater dependent; and • for groundwater dependent ecosystems which are under an immediate or high degree of threat from groundwater-related activities. 	<p>As above.</p>
<p>FOURTH PRINCIPLE - Where scientific knowledge is lacking, the Precautionary Principle should be applied to protect groundwater dependent ecosystems. The development of adaptive management systems and research to improve understanding of these ecosystems is essential to their management.</p>	<p>As above.</p>

Principles	Proposal/Comment
<p>FIFTH PRINCIPLE - Planning, approval and management of developments and land use activities should aim to minimise adverse impacts on groundwater dependent ecosystems by:</p> <ul style="list-style-type: none">• maintaining, where possible, natural patterns of groundwater flow and not disrupting groundwater levels that are critical for ecosystems;• not polluting or causing adverse changes in groundwater quality; and• rehabilitating degraded groundwater systems where practical.	As above.

Table 10 *Compliance with the principles of the New South Wales Groundwater Quantity Management Policy (Draft)*

Principles	Proposal/Comment
FIRST PRINCIPLE - Total use of groundwater in a water source or zone will be managed within the sustainable yield, so that the groundwater is available for future generations, and dependent ecological processes remain viable.	There will be some pumping/dewatering of groundwater associated with earthworks/excavation activities for construction of the proposed water management ponds within the development, however it is proposed that this extracted groundwater will be returned to the aquifer in close proximity to the dewatering excavations.
SECOND PRINCIPLE - Significant groundwater dependent ecosystems must be identified and protected.	<p>An Integrated Water Cycle Management Report (Cardno, 2011), including an assessment of impacts on groundwater is provided in <i>Volume 3</i>.</p> <p>An updated preliminary groundwater assessment study has been prepared by Martens & Associates Pty Ltd (December 2011) (refer to <i>Volume 3</i>).</p> <p>Protection of GDEs is achieved through appropriate management and monitoring programs proposed for the adjacent SEPP 14 wetlands. This will be achieved through the implementation of an integrated water cycle management scheme (refer to <i>Volume 3</i>).</p>
THIRD PRINCIPLE - Total licensed entitlements will not exceed 125% of the sustainable yield in currently over-allocated groundwater sources or zones.	N/A - the proposal does not include any licensed entitlement to the groundwater source.
FOURTH PRINCIPLE - Groundwater access must be managed in such a way that it does not cause unacceptable local impacts.	<p>The construction dewatering activities for the proposed excavations are unlikely to cause significant impacts on the groundwater system beneath the site and surrounding area for the following reasons:</p> <ul style="list-style-type: none"> • the analytical assessment indicates that the dewatering extent of influence is contained within the development site within a radius of approximately 400 m around the smaller ponds and approximately 500 m around the larger ponds under construction; • dewatering and subsequent groundwater drawdown is for a short time frame. Construction of each of the larger ponds is expected to take less than two months; • the aquifer is not a potential potable water resource due to its limited extent and concentrations of a range of analytes exceeding the drinking water guidelines; and

Principles	Proposal/Comment
	<ul style="list-style-type: none"> • the aquifer is not a potential irrigation resource due to surrounding residential land uses and high concentrations of phosphorus which have the potential to result in bio-clogging of irrigation equipment. <p>During construction the following mitigation measures can be adopted to minimise groundwater impacts at the site:</p> <ul style="list-style-type: none"> • soakage trenches for groundwater discharge would return groundwater to the aquifer in close proximity to the dewatering excavations; • staged construction of the water management ponds allows newly created ponds to act as a groundwater discharge area, returning groundwater to the aquifer; • groundwater discharge to stormwater infrastructure can be limited in favour of the above options and is dependent on the quality and quantity of the groundwater; and • groundwater level and quality monitoring during construction dewatering would assess groundwater drawdown and potential groundwater quality changes.
FIFTH PRINCIPLE - Artificial recharge of groundwater will be strictly controlled.	<p>An Integrated Water Cycle Management Report (Cardno, 2011), including an assessment of impacts on groundwater is provided in <i>Volume 3</i>.</p> <p>An updated preliminary groundwater assessment study has been prepared by Martens & Associates Pty Ltd (December 2011) (refer to <i>Volume 3</i>).</p>
SIXTH PRINCIPLE - Landholders overlying an aquifer will have a basic right to access groundwater for domestic and stock purposes.	N/A
SEVENTH PRINCIPLE - Access to groundwater will be managed according to an established priority of use.	N/A
EIGHTH PRINCIPLE - All rights (excepting basic rights) to access and extract groundwater must be licensed and metered.	N/A

Principles	Proposal/Comment
NINTH PRINCIPLE - In systems that are not subject to a license embargo or a Ministerial order, groundwater access licences will be issued on the basis of demonstrated need, within the sustainable yield.	N/A - the proposal will not cause a decline in groundwater quantity, thus will not require an access licence.
TENTH PRINCIPLE - Groundwater access licence holders have resource stewardship obligations, and are required to abide by the conditions of their licence.	N/A - the proposal will not cause a decline in groundwater quantity, thus will not require an access licence.
ELEVENTH PRINCIPLE - Permanent and temporary transfer of groundwater access will be permitted within sustainable yield constraints, if the transfer does not cause unacceptable impacts on other users, water quality or dependent ecosystems. Inter-aquifer transfers will not be permitted.	N/A - the proposal will not cause a decline in groundwater quantity, thus will not require an access licence.
TWELTH PRINCIPLE - Within environmental and interference constraints, the management of groundwater access should provide business flexibility for existing users through carryover and borrowing provision on annual entitlements.	N/A - the proposal will not cause a decline in groundwater quantity, thus will not require an access licence.
THIRTEENTH PRINCIPLE - Approvals must be obtained before any groundwater access licence can be activated at a particular location.	N/A - the proposal will not cause a decline in groundwater quantity, thus will not require an access licence.
FOURTEENTH PRINCIPLE - All activities or works that intersect an aquifer, and are not for the primary purpose of extracting groundwater, need an aquifer interference approval.	Any aquifer interference approval that may be required for construction activities will be sought.

Table 11 Compliance with the principles of the New South Wales State Groundwater Policy Framework Document

Principles	Proposal/Comment
<p>FIRST PRINCIPLE - An ethos for the sustainable management of groundwater resources should be encouraged in all agencies, communities and individuals who own, manage or use these resources, and its practical application facilitated.</p> <p><i>The excavation of coastal sand aquifer to expose the watertable and extend the brackish / saline water into what is a freshwater aquifer of high quality is viewed as being in conflict with Principle 1 of the NSW Groundwater Policy Framework Document Principles.</i></p>	<p>An Integrated Water Cycle Management Report (Cardno, 2011), including an assessment of impacts on groundwater is provided in <i>Volume 3</i>.</p> <p>An updated preliminary groundwater assessment study has been prepared by Martens & Associates Pty Ltd (December 2011) (refer to <i>Volume 3</i>).</p>
<p>SECOND PRINCIPLE - Non-sustainable resource uses should be phased out.</p> <p><i>The excavation of the aquifer physically removes a portion of the functioning aquifer depleting the total storage of the resource and flow path. Similarly, the direct contact between surface water bodies and groundwater permits direct contamination of a high quality groundwater resource. The lining of any new excavations coupled with not extending the brackish lake will mitigate the potential for direct groundwater contamination.</i></p>	<p>As above.</p>
<p>THIRD PRINCIPLE - Significant environmental and/or social values dependent on groundwater should be accorded special protection.</p> <p><i>An important SEPP 14 - Coastal Wetland lies along the eastern boundary. The excavations will act as drainage features both lowering the watertable within the wetlands and altering the flow paths. The lining of any new excavations coupled with not extending the brackish lake will mitigate to some degree some of the flow loss and drawdown.</i></p>	<p>An Integrated Water Cycle Management Report (Cardno, 2011), including an assessment of impacts on groundwater is provided in <i>Volume 3</i>.</p> <p>An updated preliminary groundwater assessment study has been prepared by Martens & Associates Pty Ltd (December 2011) (refer to <i>Volume 3</i>).</p>
<p>FOURTH PRINCIPLE - Environmentally degrading processes and practices should be replaced with more efficient and ecologically sustainable alternatives.</p> <p><i>The proposed open water bodies created for the purpose of removing contaminants from surface water will permit direct contamination of the good quality groundwater resource. Alternatives such as a greater use of grass swales constructed above the water table and lined excavations would be viewed as a better management practice.</i></p>	<p>An Integrated Water Cycle Management Report (Cardno, 2011), including an assessment of impacts on groundwater is provided in <i>Volume 3</i>.</p> <p>An updated preliminary groundwater assessment study has been prepared by Martens & Associates Pty Ltd (December 2011) (refer to <i>Volume 3</i>).</p>