

Structure Plan and Land Use Review Clark Street Precinct

Prepared for: Ballina Shire Council
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Introduction

1.1 The Project

GeoLINK and design team ink have been engaged by Ballina Shire Council to undertake a land use planning assessment and prepare a structure plan for land at Ballina known as the Clark Street Precinct. The primary objective of the project is to recommend appropriate future land uses for the precinct.

More specifically, Council's brief outlines that the project should:

- Assess the potential development of the area as a 'business incubator', 'innovation centre' or the like, including (but not limited to) a SWOT analysis (of Strengths, Weaknesses, Opportunities and Threats) of the site for this purpose.
- Consider a range of potential future land uses, including offices, light industrial, warehousing, transportation, recreation, creative arts, civic uses, environmental education and service industries and make recommendations for Council's consideration in relation to the zoning and planning provisions applicable to the land.
- Respond to the environmental character of the land, including the (potential) presence of land contamination and ecological values.
- Have regard to the potential implications of predicted sea level rise associated with climate change on the future use of the land.
- Support the management of potential land use conflicts within the study area as well as with the adjoining interface areas.
- Provide recommendations for future land use options that are consistent with the shire's land use planning framework, including the Ballina Shire Growth Management Strategy, the Ballina Local Environmental Plan 2012 and the Ballina Shire Development Control Plan 2012.

1.2 The Precinct

As shown in **Illustration 1.1**, the precinct includes the existing Clark Street light industrial estate, land adjacent to North Creek Canal, Little Fishery Creek, areas of public reserve and a number of Crown land parcels.

As can be seen in **Illustration 1.1**, the precinct comprises the following distinct parts:

- The existing Clark Street light industry estate.
- The Council depot site, located between the industrial estate and the canal.
- Vegetated open space either side of the Clark Street entrance along the Bangalow Road Frontage.
- Vegetated land (mangroves) in the north-east and east of the precinct, much of which was created as compensatory planting associated with the construction of Angels Beach Drive.
- A vacant grassed piece of land located immediately south-east of the Bangalow Rad roundabout.

The Council depot site was previously used as a landfill site and night soil disposal location. More recently, Council has used the site for storage and as a works depot.

Council are currently in the process of vacating this part of the land, although no timetable has yet been set for this to occur.

The precinct is located close to the Kerr Street retail precinct, which contains the Ballina Fair and Ballina Central shopping centres. It is bounded by Bangalow Road and Tamarind Drive to the south-east and Angels Beach Drive to the east.

Two important intersections are located on the boundaries of the site, the signalised Kerr Street/ Bangalow Road/ Tamarind Drive intersection and the Angels Beach Drive/ Bangalow Road roundabout, which also provides access into the Ballina Central Shopping Centre.

Clark Street provides the primary access into the precinct, being the only access into the existing light industrial estate. A driveway crossing off Tamarind Drive currently services the Council depot site.

A State Emergency Services (SES) office/ depot is located on the eastern edge of the precinct, with direct access to Angels Beach Drive. It is the only property within the precinct with direct access to this road.

1.3 Methodology and Consultation

1.3.1 Project Tasks

The following methodology was used to meet the requirements of Council's brief:

Investigation

Economic Overview

- Research business incubators/ innovation centres.
- Desk-top review of existing and likely future business needs/ demands in the Ballina area and in the region.
- Desk-top research looking at likely future trends.

Detailed Background Review

- Review relevant flood studies.
- Review relevant traffic studies.
- Undertake modelling of the existing Clark Street intersection (SIDRA) to quantify the existing level of service and anticipated future capacity of this intersection.
- Review contamination assessments (desk-top only).
- Review GIS constraints layers (provided by Council).

Site Assessment

- Site visits to understand the existing character.
- Site land use audit to document the existing range of uses.
- Identification and assessment of the interplay of site opportunities and constraints.

Structure Planning

- Based on the review and assessment above, and with input gained from consultation undertaken (see below), develop potential land use options.
- Assess the relative merits of the options.
- Recommend a preferred Structure Plan for the future of the precinct.

1.3.2 Consultation

The following stages of consultation were undertaken.

Preliminary Contact

Letters were sent to all land owners advising of the project and its aims, and inviting input. Letters were also sent to relevant State authorities and agencies. **Table 1.1** provides a summary of the responses received.

Table 1.1 Land Owner Response to Preliminary Contact

Landholder/ Stakeholder	Type	Details
<p><i>Landowners:</i> Lot 33 DP706854</p>	<p>Email</p>	<p>Initial response: Landholder requested clarification on the implications of the area becoming a 'business incubator' or 'innovation centre'. What do these terms mean and what is the likely nature of any future development if this occurs? Clarification was provided by GeoLINK.</p> <hr/> <p>Second response suggested:</p> <ul style="list-style-type: none"> ▪ Permissible uses could be expanded to include retail outlets, given the close proximity to Ballina Central and Ballina Fair shopping centres and its accessibility to public transport, footpaths and cycle paths. ▪ Existing open space surrounding the estate should be retained, with the old council depot/tip site rehabilitated.
<p><i>Landowner:</i> Lot 22 DP240895</p>	<p>Phone</p>	<p>Owner wanted clarification of the project, particularly regarding business incubator/innovation centres. Owner also expressed concerns:</p> <ul style="list-style-type: none"> ▪ Relating to impacts a business incubator operating within the Clark Street precinct might have on other businesses within the precinct. ▪ Financial insecurity relating to Council's strategic direction for the site as a result of the investigation.
<p><i>Landowner:</i> Lot 26 DP240895</p>	<p>Email</p>	<p>Owners/ operators of the Buslines Group provided the following comments:</p> <ul style="list-style-type: none"> ▪ It is very important to the bus business that the depot be centrally located in Ballina. Any additional travelling distance results in significant operating costs through km costs (diesel, tyres, repairs and maintenance) and wage costs for drivers, to the operation. ▪ Access to/ from the Sheather Street depot is extremely important for the current 80+ bus movements per day. This will increase over time as the increased demand for bus services in the Ballina area grows. The current access/ egress from Clark Street to Bangalow Road is sufficient for the current levels of use. ▪ Any development of the Council depot site should be provided with separate access/ egress to Tamarind Drive, as additional traffic on the Clark Street intersection would have impacts on bus movements. ▪ Current land use in the Clark St/ Hogan St/ Sheather St precinct works harmoniously.

Landholder/ Stakeholder	Type	Details
<p><i>Landowners:</i> Lot 17 DP563852</p>	<p>Email</p>	<p>The owners provided the following comments:</p> <ul style="list-style-type: none"> ▪ To reduce traffic bottlenecks off Bangalow Road, re-open Sheather St exit onto Angels Beach Drive, providing left turn access to Lennox Head and East Ballina and left turn entry into Sheather St. ▪ Business incubators could also include arts, craft, music, Indigenous and cultural initiatives, to build on and complement similar opportunities to those in Byron Shire and support our local but growing arts and music festivals. ▪ Future heavy industry, transport and manufacturing could be encouraged to move further out from this estate to more suitable land with complementary heavy industries. ▪ The old council depot site could be opened up for small boat building and marine industry development as it has direct access to North Creek canal.
<p><i>Landowner:</i> Lot 38 DP590312 Lot 12 DP240895 Lot 37 DP590312</p>	<p>Email</p>	<p>The owners provided the following comments/ suggestions:</p> <ul style="list-style-type: none"> ▪ Rezone the Clarke street precinct to either B5 Business Development zoning or B6 Enterprise Corridor zoning. ▪ Business zoning will encourage new businesses into Ballina that would not be suited to the Tamar and River Street business precincts due to the size of premises required and the parking requirements for these businesses. ▪ Technology is driving new businesses (and will increasingly do so). By creating a Business zoning in the Clark Street precinct, new technology businesses will look at Ballina as a town to locate to. The rollout of broadband services via the NBN will enhance the feasibility of this style of business. ▪ The type of businesses that would be attracted to this precinct if zoning allowed would include: <ul style="list-style-type: none"> - Satellite centres for national and international business. There are examples of “back of house” functions being moved from cities to regional locations for cost and lifestyle reasons (particularly locations well serviced by air travel as Ballina is). - Data centres and technology service providers. - Virtual offices and shared office facilities (similar to a business incubator concept). ▪ In relation to the old Council depot site, the land lends itself perfectly to becoming an entertainment precinct (providing cultural, community, entertainment and indoor sporting facilities), because: <ul style="list-style-type: none"> - There is limited conflict between residents and this land (important when attracting music and other type of events which Ballina could be competing for). - The entertainment centre uses are predominately out of hours (weekends and nights) meaning traffic flows would not conflict with the traffic flows of the Clark Street business park.

Landholder/ Stakeholder	Type	Details
		<ul style="list-style-type: none"> - There is no loss of passive recreational opportunities (which there will be if an indoor sporting facility is developed on Kingsford Smith Park). Additionally, an entertainment facility in this precinct will not have to deal with the conflict of users that Kingsford Smith Park has to regularly deal with. - The recreational opportunities presented by opening up Fishery Creek are significant. - The main entry into Ballina (either by car or if travelling from the airport) will not be blighted by having a disused depot as one of the first sights visitors are greeted with on arrival into town. <p>The importance of re-zoning this precinct is significant as opportunities to re-zone do not present often and by limiting uses in this precinct will not allow Ballina to expand as it could. Technology will drive new business and innovation and Ballina needs to be positioned to be able to compete for this new business which is why a having a precinct such as Clark Street appropriately zoned is important.</p>
SCU and TAFE	Phone	Neither TAFE nor SCU have any strategic plans for expansion into new sites. Both have sufficient land for their requirements and future growth will be achieved via online enrolments.
Ballina Chamber of Commerce	Phone	<p>Chamber supportive of any initiative that helps promote local business.</p> <p>Indicated that Chamber is supportive of Council proposal to provide a sport and recreation precinct at Kingsford Smith Park and therefore urged that such uses not be considered at Clark Street precinct, as they could jeopardise the current strategy.</p>
NSW Roads and Maritime Services (Northern Region)	Email	<p>The roads in the vicinity of the Clark Street industrial area carry significant daily traffic volumes. As population and activity in Ballina increase, the volume of traffic using these roads will also increase. Any intensification of land use activity in the Clark Street industrial area has the potential to reduce the safety and efficiency of these important roads in the Ballina road network.</p> <p>Any economic development analysis should include a traffic impact analysis that examines access to the industrial area. The traffic analysis should ideally include some assessment of likely community costs associated with traffic increases.</p> <p>Any intensification of use will create additional vehicle and pedestrian interaction between the industrial area and adjoining streets. This interaction will create conflicts and cause delay. Access to the Clark Street area needs to be designed and located to balance delay for priority movements, while maintaining safety.</p>

Crown Lands Discussions

Given that large parts of the precinct are Crown Land, a meeting was held with representatives of NSW Trade and Investment, Crown Land, on 7 November.

Relevant information from that meeting is summarised below:

- Given the history of land in the precinct, Native Title rights have been extinguished on part of the Crown land, but not on all of it. In particular, Native Title rights have not been extinguished over Lots 203 and 284, despite previous use of these areas by Council.
- Future land uses would therefore be predicated on the resolution of Native Title issues.
- In the early 1980s, the Department commissioned a subdivision design for an extension of the existing light industrial estate. The design was completed, but the Department did not proceed to pursuing the proposal, primarily due to the costs associated with filling the land.
- Angels Beach Drive is located within the Crown land parcel (Lot 456), and Council has not yet created a road reserve for it. The Department has previously advised that they raise no objection to appropriation by Council for part of the Crown parcel to create the road reserve and that they waive any claim to payment of compensation for that land.
- The Department remains interested in the project and any recommendations for future land uses. Previously, in relation to Council examining the site for a multifunction recreation centre, the Department advised Council that they would expect Council to acquire the site. Options for partnering in future development remain available, and would need to be discussed further based on recommendations from this Study.

Stakeholders Workshop

To further explore land use options, a stakeholders workshop was held at Council on 14 November 2013. It was attended by three land owners, including a representative of Buslines.


Three plans were presented, suggesting a mix of future land uses. The three schemes were presented as 'conversation starters', deliberately aimed at stimulating thought, discussion and ideas.

Some comments, suggestions and ideas that were discussed included:

- Strong support from one land owners for a 'business park'/ technology centre – suggestion was to look further into the future to position the precinct as a place for 'high tech' industries/ businesses.
- Some support for residential uses, but owners urged caution regarding potential conflict issues.
- Concern also expressed about 'affordable housing' and potential for negative impacts on values.
- Land owner suggested that the vacant Crown land (old Council depot site) is very suitable for an entertainment centre and/ or mixed use recreational facility.
- A suggestion was made that part of the site could be an emergency services hub.
- It was suggested that a flexible zoning approach might be the best option.



LEGEND

 Study area



0 100



2.1 Economic Assessment

2.1.1 Literature Review

The following literature review targets the strategic framework relevant to the study area at a local and region scale; specifically focusing on the strategic economic importance of Ballina on a regional scale and the strategic direction for the study area at a local scale.

2.1.1.1 Regional Industry and Economic Plan 2005 (RIEP)

Northern Rivers Regional Development Board

The Regional Industry and Economic Plan (RIEP) for the Northern Rivers was prepared to provide guidance for development of regional strategies and actions; to develop a sustainable and robust regional economy which responds to emerging global economic forces and capitalises upon existing and emerging opportunities specific to the Northern Rivers. The purpose of the RIEP is, in part, to compliment the outcomes and actions of the Far North Coast Regional Strategy.

According to the RIEP, the Northern Rivers is one of Australia's fastest growing regions, and by all accounts, the high rates of population growth are set to continue; primarily due to the lifestyle opportunities offered by the region and sophisticated and well-connected regional economy. Additionally, a shortage of employment-generating land in SEQ has potential to generate demand for commercial/ industrial land within the Northern Rivers; further driving potential for population growth within in the region. The RIEP anticipates that population growth within the region would generate demand for an addition 49,500 full time positions and approximately 18,500 additional jobs over a 25 year period, to maintain a healthy level of employment participation and a relatively high level of job self-containment within the region.

Ballina is identified as being an important contributor to the economic viability of the region, through the accessibility it offers to regional, national and international markets via accessibility to key transport nodes including Ballina/ Byron Gateway Airport, Coolangatta Airport, the Pacific Highway and Bruxner Highway.

The RIEP identified the following as key industry sectors with growth opportunities within the Northern Rivers:

- Tourism.
- Education.
- Creative industries.
- Horticulture.
- Health.
- Aquaculture.
- Residential development and construction.
- Forestry.
- Meat and dairy.
- Transport.

Key RIEP actions and objectives of relevance to the project include:

- To foster both large and small business creation.
- In light of industrial land pressures in South East Queensland and growing investor interest in the Northern Rivers region; ensure that the existing major employment nodes throughout the region have sufficient industrial land to accommodate growth and expansion of its basic industry sectors.
- Capitalise on the potential growth of key economic sectors with strong links to SEQ (refer to **Section 2.1.3** below).

2.1.1.2 Overview of Economic Implications of South East Queensland on the Northern Rivers Region (2005) Northern Rivers Regional Development Board

This discussion paper was prepared to inform the Draft RIEP and details the geographic significance of the Northern Rivers in relation to the South East Queensland (SEQ) regional economic market and how economic trends in the Northern Rivers are driven by activities emanating from SEQ.

The discussion paper details the significance of upgrades to the Pacific Highway and Coolangatta Airport for improved connectivity of the Northern Rivers to broader economic markets at regional, national and international levels. Additionally, the Ballina/ Byron Gateway Airport provides connectivity to significant metropolitan centres including Newcastle, Sydney and Melbourne.

The following economic trends and prospects within SEQ are identified as being relevant to the Northern Rivers:

- **Tourism:** Derived from increased capacity of the Coolangatta Airport; opportunity to attract 'spill-over' tourism generated from the Gold Coast into the Northern Rivers.
- **Creative Industries:** Development of the 'creative class' profile of the Northern Rivers and integration (skills transfer/ supply input) into SEQ and broader markets e.g. integration into critical mass talent and experience of film industry located on the Gold Coast (Warner Bros.).
- **Manufacturing:** Spin-offs from growth in food and beverage manufacturing and boat building industries in SEQ.
- **Knowledge Economy:** Innovation is accepted as the key driver for long-term economic growth of a region. The growth of SEQ 'knowledge economy' will be particularly important for the Northern Rivers via:
 - Access for all business sectors within the Northern Rivers to advanced business services in SEQ.
 - Potential for advanced business services to locate in the Northern Rivers and travel to other markets (regional, national and international).

Additionally, land affordability, attractive '*lifestyle region status*' and shortage of employment-generating land in SEQ will continue to drive economic development opportunities within the Northern Rivers in the future.

2.1.1.3 Far North Coast Regional Strategy 2006 NSW Department of Planning and Infrastructure

The Regional Strategy represents the agreed NSW government position on the future of the Far North Coast. The document provides an overriding strategic plan for the region and has been prepared to complement and inform other relevant State and local planning instruments. The Regional Strategy provides for economic opportunities within the region by ensuring adequate provision for development of land for employment and industry to meet the needs of the region's population over a 25 year period.

A central aim of the Regional Strategy includes:

'Ensure the provision of adequate land for new business and industry that is well linked to transport and services, takes advantage of the opportunities arising from the upgrading of the Pacific Highway and which will support the creation of the projected additional 32 500 jobs needed in the Region.'

At the time the strategy was prepared, employment opportunities within the North Coast region were considered greatest in the following industries:

- Retail.
- Hospitality and tourism.
- Education and health sectors.
- Agriculture.
- Forestry.
- Fishing.

There was also an under-representation of jobs in:

- Property and business services.
- Finance and insurance.

Ballina is identified within the Regional Strategy as a '*developing major regional centre*' due to its proximity to the Pacific Highway, regional airport, extent of land release area (Cumbalum and Lennox Head) and strength of existing retail and tourism sectors. The Strategy also states that major commercial development will be located within large centres; implying Ballina should accommodate large commercial developments at a regional scale.

The Strategy acknowledges that a significant challenge for the region is the ageing of the population and its impact on housing demand and supply. The region is anticipated to experience a doubling of the population aged 65+ years and a declining proportion of young people (aged between 0 and 14 years). This will increase the demand for seniors living housing as well as for local services and amenities such as public transport, health care and recreational facilities.

2.1.1.4 Ballina Shire Retail Strategy 2003

Ballina Shire Council

The Ballina Shire Retail Strategy identifies a retail centre hierarchy for the shire. The hierarchy identifies Kerr Street Retailing Precinct (adjacent to the Clark Street precinct) as part of the primary retail centre for Ballina Shire.

The Southern Cross Industrial Estate serves as the primary industrial area on the coast, with areas such as the Clark Street precinct providing additional industrial sites in Ballina.

The Clark Street site was also identified within the strategy for redevelopment potential as a precinct for bulky goods retailing in the longer term. The strategy suggests the viability for industrial activities in the longer term is doubtful due to the proximity of the site to arterial roads and the Ballina Fair/ Coles/ Kmart retail area; adding pressures for its conversion into quasi-retail activities.

2.1.1.5 Ballina Shire Commercial/Industrial Land Demand Assessment 2008

Ballina Shire Council

Lawrence Consulting undertook an assessment of future demand for commercial and industrial land in the Ballina Shire over a 20 year timeframe (i.e. through to 2028), with the potential to provide interim targets (i.e. by 2018).

The demand modelling formed part of a broader review of industrial and commercial land use in the shire, conducted by GeoLINK on behalf of Ballina Shire Council.

The demand modelling considered changes to market conditions, social patterns, technology and infrastructure that will define the growth of Ballina Shire and the Northern Rivers region over the period to 2028.

The assessment identified four employment sectors that will be the key determinant for land demands, including:

- Industrial land, manufacturing, construction, wholesale trade, electricity, gas and water supply and transport and storage.
- Commercial land, which includes retail, communications, restaurants, entertainment and personal services.
- Special use land for schools.
- Other employment land, which includes Government use of commercial premises, health care and defence.

Based on the assessment undertaken by Lawrence Consulting, **Table 2.1** summarises employment land demand for Ballina Shire to both 2018 and 2028 (identified by major land use type).

Table 2.1 Employment Land Demand

Employment Land Demand by Land Use Type, Ballina Shire, 2008-28		
Land Use Type	Additional Employment Area (ha)	
	2008-18	2008-28
Industrial	8.5	16.7
Commercial	8.6	16.8
Special use - schools	3.8	8.1
Special use - other	2.4	3.7
Total	23.4	45.3

Source: Lawrence Consulting

Factors that may impact variation of projected employment land demand (presented in the above table) beyond predicted population growth include:

- Dependency rate.
- Participation rate.
- Employment growth.
- Containment rate (i.e. proportions of the workforce not commuting).
- Market attraction of the region – through marketing of the region.
- Internal growth of local employers.
- Changes in size distribution of enterprises.
- Shifts in distribution of business sector employment.

2.1.1.6 Ballina Shire Industrial and Commercial Land Use Review 2008

Ballina Shire Council

GeoLINK was engaged by Ballina Shire Council to undertake a review of industrial and commercial land use in the shire, to provide an input to the development of the Ballina Shire Local Environmental Plan 2012 (Ballina LEP 2012). The objective of the review was to measure industrial and commercial land use demand against supply in the shire for the forthcoming planning period.

A supply audit of existing zoned land was undertaken, which examined all land within the shire zoned either 3 Business or 4 Industrial under the Ballina Local Environmental Plan 1987; to determine supply of zoned land for industrial or commercial purposes.

The results of the supply audit demonstrated there is:

- Approximately 66 hectares of available industrial land.
- Approximately 16 hectares of available commercial land, without consideration of potential second storey expansion within the Ballina CBD and the town centres of Alstonville, Wollongbar and Lennox Head.
- Approximately 21 hectares of available commercial land considering a realistic estimation of additional floor space that can be provided by way of second storey additions in existing zoned commercial areas.

The supply audit undertaken by GeoLINK was measured against the demand audit undertaken by Lawrence Consulting (refer to **Table 2.1**) to determine adequacy of commercial and industrial land provision within the shire.

Findings of the review demonstrated there is:

- Considerable projected oversupply of industrial land within the shire.
- Sufficient supply of commercial land within the shire.

The review recommended that Council continue to monitor both supply and uptake of employment land so that proactive actions can be taken when trends emerge.

2.1.1.7 Ballina Shire Bulky Goods Retailing Investigation 2011

Ballina Shire Council

Hill PDA was commissioned by Ballina Shire Council to undertake the Ballina Bulky Goods Retailing Investigation, to assess demand for bulky goods and Large Format Retail (LFR) premises in Ballina Shire over the 2011 to 2026 period. The investigation informed retail provisions within the drafting of the Ballina LEP 2012.

Assessment of the Clark Street precinct to accommodate bulky goods and LFR floorspace in the future demonstrated the precinct as being the least favourable of the eight options considered as part of the investigation, due to:

- Restricted visibility from setback to Bangalow Road and extensive vegetation.
- Small allotments in fragmented ownership.
- Limited vacant allotments (the depot site was not included in the assessment).

Consultation with landowners within the Clark Street precinct was undertaken as part of the investigation. The landowners stated that the precinct's strategic use should incorporate commercial business park/ campus style commercial uses and bulky goods rather than traditional industrial uses. Additionally the landowners also suggested that land immediately west of the ten pin bowls (public land), currently used by Council for depot purposes provides an opportunity for a large anchor retailer to inject stimulus to the precinct and catalyse further redevelopment.

It is important to note that Council has rezoned land in the Southern Cross Industrial Estate, adjacent to the Harvey Normal Complex, specifically to accommodate bulky goods development. This rezoning is consistent with recommendations of the Hill PDA report, provides for the strategic clustering of bulky goods retailing and has the capacity to cater for a significant proportion of future bulky goods retailing demand.

2.1.1.8 Ballina Shire Growth Management Strategy 2012

Ballina Shire Council

The purpose of the Ballina Shire Growth Management Strategy is, in part to provide the framework for commercial and industrial development opportunities, over the planning period of 2012-2031. Information presented within the strategy includes an audit of commercial and industrial lands within the shire undertaken by Council. The results of the audit confirmed the previous assessment undertaken in 2008 (see **Section 2.1.7**), indicating that:

- The supply of zoned commercial land (21.4 hectares) is just sufficient to meet projected demand for commercial land (20.5 hectares).
- The supply of zoned industrial land (60.2 hectares) is more than sufficient to meet projected demand for industrial land (16.7 hectares).
- An additional 3.0 hectares of land is required to accommodate projected demand for Large Format Retail (LFR) and 'Bulky Goods' retailing.

The Principles outlined in the strategy that are of relevance to the potential establishment of business incubators at the Clark Street site include:

Enable professional services activities within appropriate commercial areas and establish defined professional services precincts within the shire.

Enables flexibility in the establishment of professional services whilst also encouraging co-location over time.

This approach also supports mixed-use outcomes in commercial areas.

Provide for diversity and mixed uses in commercial areas, including residential.

Mixed-use and diverse land use outcomes support variety and flexibility and have potential to contribute to the establishment of vibrant areas with a sense of place and identity. Diversity and mixed-uses also support the concept of multi-functional town and village centres advocated by the FNCRS.

The variety associated with mixed-use areas may also reduce reliance on particular sectors of the economy through provision of workforce and consumer choice.

Establish industry cluster areas.

Provides for the co-location of like industries to enhance opportunity for resource and infrastructure efficiencies. May also reduce land use conflict and establish destination areas for certain industry activities or encourage new industry sectors to the shire.

This would not be to the exclusion of mixed-uses in industrial areas. Rather, clustering would involve co-location of like activities within a broader area supporting a variety of uses or clusters.

The Clark Street site is identified within the strategy as being located within the urban locality of Ballina Island. The Locality Vision/ Character Statement for Ballina Island under the strategy includes:

'to operate as the primary business and civic centre for Ballina Shire, providing a range of commercial and civic facilities and services including 'higher-order' retail, banking and office services and key community facilities such as civic, recreation, cultural, health and justice services.'

Key strategic actions for the Ballina Island locality include:

- Investigate the potential of the Clark Street Industrial Estate for development as a business incubator.
- Investigate the appropriate land uses for land adjacent to Clark Street Industrial Estate (Old Depot).

This project directly responds to these key strategic actions of the strategy.

The strategy also identifies the availability of residential land for projected population growth within the shire. By 2031, Ballina Shire is projected to have a population of 54,000. The strategy demonstrates there is sufficient land within the shire to accommodate future demand for residential land in the long term.

The major demographic trends impacting population growth within the shire include:

- Inflow of older migrants to lifestyle (particularly coastal).
- Outflow of younger migrants to metropolitan regions.
- Aging of the population: the transition of baby boomers into retirement.

The main future growth areas within the shire are the localities of Cumbalum, Lennox Head and Wollongbar. The projected supply of residential land does not, however, reflect availability of 'appropriate housing'. An aging population requires diversity of housing mix whereas the current housing mix is predominantly single detached housing.

2.1.1.9 Affordable Housing Strategy 2010

Ballina Shire Council

The purpose of the strategy is to outline a range of initiatives that Council and others may pursue to improve housing affordability in Ballina Shire. The Strategy also provides key demographic information and identifies housing issues relating to changing demographic profiles of the Ballina Shire.

Population projections for the shire indicate a significant ageing of the population and a significant increase in single-person households and couples without children. Three-bedroom detached housing is the most prevalent housing type in the Shire (45%). Population aging and projected higher rates of family dissolution is expected to result in continued falling average household size.

Housing need changes projected over the next 20 years include:

- Alternative housing forms for young people moving out of home.
- Downsizing of housing for households where children have left the home and the existing home is greater than the family need.
- Anticipated growth of single-person households, seeking appropriate types of housing such as villas, units and townhouses.

An aging population requires a range of accommodation types, from independent seniors living establishments to full-care facilities; based on mobility and health needs. Housing design catering for the needs of seniors changes over time. Retrofitting existing dwellings is an option, however it is less costly to provide basic accessible features when dwellings are constructed. Finding appropriate seniors housing within the person's community can also provide a major challenge during a personally difficult period in a person's life. Ideally, seniors housing should be located close to key services and infrastructure to maximise opportunities to access and use such facilities.

The strategy recommends that future housing development should seek to be appropriate to the needs of both existing and future residents.

2.1.1.10 Conclusions

The key points coming from the literature review include:

- Sufficient land exists for anticipated commercial, industrial and residential land.
- Sufficient land exists within the shire to accommodate future demand for residential land in the long term. However, measures will need to be considered in the delivery of that land to ensure that a range of housing forms are provided, particularly in relation to affordable housing and housing suitable for seniors.

2.1.2 Land Use Analysis

Table 2.2 provides an overview of properties within the precinct. The properties are shown in Illustration 2.1.

Table 2.2 Properties within the Precinct

Lot	DP	Area (m ²)	Ownership	Current Land Use
1	240895	7,311	Public (Ballina Shire Council)	Vacant – vegetated buffer
2	240895	7,150	Public (Ballina Shire Council)	Vacant – vegetated buffer
491	729381	16,894	Public (Crown)	Council Depot (in process of decommissioning)
284	755684	42,608	Public (Crown)	Council Depot (in process of decommissioning)
7043	1095792	105	Public (Crown)	Ballina Angling Club
203	755684	9,203	Public (Crown)	Council Depot (in process of decommissioning)
456	729144	147,367	Public (Crown)	Vacant – mangrove areas, partly compensatory planting associated with Angels Beach Drive construction Angels Beach Drive located within the lot
452	720427	1,396	Public (Crown)	SES
11	240895	2,359	Private	Freight transport facility
12	240895	2,359	Private	Professional offices Self-storage units
38	590312	1,180	Private	Self-storage units
37	590312	1,180	Private	Vehicle repair station
39	591457	1,180	Private	Business incubator
40	591457	1,180	Private	Bulky goods retail
41	607329	1,134	Private	Self-storage units
42	607329	1,133	Private	Office premises
161	788077	1,211	Private	Self-storage units
162	788077	2,847	Private	Recreation facility
17	563852	1,594	Private	Retail premises
18	563852	621	Private	Office premises
40	827376	8,119	Private	Hardware and building supplies
22	240895	1,429	Private	Retail premises
23	240895	968	Private	Hardware and building supplies
24	240895	1,941	Private	General industrial
25	240895	1,518	Private	General industrial
26	240895	1,973	Private	Transport depot (buses)
10	240895	1,821	Private	Vehicle body repair shop
29	244892	1,003	Private	Warehouse or distribution centre
30	244892	1,003	Private	Freight transport facility
31	244892	1,003	Private	Vacant land
32	244892	1,003	Private	Depot

Lot	DP	Area (m ²)	Ownership	Current Land Use
33	706854	1,120	Private	Hardware and building supplies
34	706854	1,679	Private	Bulky goods retail
1	810524	1,880	Private	Industrial retail outlet
3	240895	2,068	Private	Bulky goods retail Retail premises
4	240895	2,030	Private	General industrial Retail premises

The summary above demonstrates that there is a diversity of existing uses within the precinct.



2.1.3 Business Incubators

A review of case studies within a regional setting was undertaken to help define the parameters of a successful 'business incubator/ innovation centre'. The case studies excluded metropolitan examples as it is considered that such case studies would not represent challenges faced in regional areas, such as proximity to economic markets, transport and population levels etc.

Additionally, the review focused on NSW examples, so that all cases were operating under generally the same NSW planning and economic framework.

The review incorporated a desktop review and discussions with management staff relating to the various case studies. An overview of each case study is provided below.

2.1.3.1 Case Study 1 - BALLINA

Criteria	Detail
Location	42 Clark Street, Ballina. Clark Street Industrial area.
Management	NORTEC Small Business Support Services.
Incubator unit	12 units, each around 40 m ² in size.
Leasing arrangement	Easy, in/out leases - no long term lease commitment.
Accessible resources	A business advisory team provides business advice to tenants when required. Access is provided to supportive business mentoring programs and seminars.
Local accessibility	Located off Bangalow Road, adjacent to Kerr Street (primary retail precinct) and close to CBD and Southern Cross Drive Industrial Area (primary industrial precinct).
Regional accessibility	2.5 km from the Ballina/ Byron Gateway Airport (Sydney, Melbourne and Newcastle), 5 km from the Pacific Highway.
Commercial viability (including demand)	The incubator was established via financial input from Government funding (Australian Industry Grants), NORTEC and a private investor. NORTEC now owns the site outright and has no outstanding loans relating to its operation/ownership. Management indicate existence of demand for more incubator space; particularly during improved economic climate.
Overview of current incubator businesses	Webster Surfboards. Marks Mobile Welding. Kitchen Renovation Professionals. Duraford Pty Ltd. Future Health Ballina - Personal Training and Weightloss. Macleay Fire Protection Services. Phils Fluid Foils (manufacture and sales of surfboards and surfboard fins). David Crozier Plumbing. Majala Manufacturing. Phil Way Massage.
Zoning	IN1

Criteria	Detail	
SWOT	<p>Strengths:</p> <ul style="list-style-type: none"> ▪ Located close to primary commercial areas. ▪ Management owns site outright (not rented and no loan responsibility) - financially secure. ▪ Reduced overheads via minimal use of centre infrastructure – no joint reception/ offices. ▪ Proximity to regional/ interstate and national transport routes (Pacific Highway, Bruxner Highway and airport). ▪ Tenancy not specific in terms of business type; is open to a variety of professions. 	<p>Weaknesses:</p> <ul style="list-style-type: none"> ▪ Minimal shared resources; free training rooms available Byron/ Lismore. ▪ Limited advice, training and mentoring available. ▪ Not operated in conjunction with external partnerships (limited access to expertise). ▪ No government funding available to support operations. ▪ Current economic climate.
	<p>Opportunities:</p> <ul style="list-style-type: none"> ▪ Site redesign to accommodate new demand e.g. surf industry incubator. ▪ Establishment of virtual office; small unstaffed administration space available for tenants and also general public (via booking and fee). 	<p>Threats:</p> <ul style="list-style-type: none"> ▪ None identified.
Comments	<p>The Ballina site is the first incubator established by NORTEC. Its operation has since paid off all financial obligations relating to establishing the incubator and as such occupancy rates do not impact the viability of the operation.</p> <p>The incubator site serves a variety of business types and it was commented that demand for services was moving away from light industry into varied business types, including health practitioners and professional/ trades services.</p> <p>NORTEC operates additional incubators out of Lismore, Mullumbimby and Byron Bay. Management stated that each site has established its own unique site business culture; Byron (creative industry), Ballina (mixed industry), Mullumbimby (knowledge/ IT based), Lismore (knowledge/ professional).</p> <p>Management also recommended that it would be beneficial for any new Ballina incubator to be flexible to accept a range of business types and that tenant entry and progression be closely monitored/ supported; to ensure the financial viability of the operation during the fledgling period.</p> <p>At present there are no forms of Government funding available to private entities such as NORTEC to fund the operation of a business incubator. Recent experience relating to establishment of an incubator in Lismore is that financial concessions may be available from Council via reduced developer contributions (if privately developed)</p>	

2.1.3.2 Case Study 2 - LISMORE

Criteria	Detail	
Location	8 Slade Street (cnr Centenary Drive) Goonellabah NSW.	
Management	NORTEC Small Business Support Services.	
Incubator unit	15 office spaces are available for professional services businesses.	
Leasing arrangement	Easy, in/ out leases - no long term lease commitment.	
Accessible resources	A business advisory team provides business advice to tenants when required. Access to supportive business mentoring programs and seminars. Large conference or training room.	
Local accessibility	Located close to Lismore CBD (8 km).	
Regional accessibility	11 km to Lismore Regional Airport (Sydney). 20 km from Pacific Highway (Ballina).	
Commercial viability (including demand)	Reliance on Government Funding.	
Overview of current incubator businesses	Experience Plus Consulting. Gary Garbutt – Computer Training and Repairs. Mettle Designs – Art/ Jewellery/ Accessories Production and Workshop. Osteopaths – Stephen Dullard and Mark Goethes.	
Zoning	IN1	
SWOT	Strengths: <ul style="list-style-type: none"> ▪ Located within proximity to primary commercial areas. ▪ Reduced overheads via minimal use of centre infrastructure – no joint reception/offices. ▪ Proximity to regional and national transport routes (Bruxner Highway and airport). 	Weaknesses: <ul style="list-style-type: none"> ▪ Operation not fully financially viable; not fully tenanted.
	Opportunities: <ul style="list-style-type: none"> ▪ More tenants. 	Threats: <ul style="list-style-type: none"> ▪ None identified.
Comments	Same comments as per Ballina Case study.	

2.1.3.3 Case Study 3 - OURIMBAH

Criteria	Detail
Location	Central Coast Campus of the University of Newcastle, Chittaway Road, Ourimbah.
Management	Regional Development Australia (RDA) Central Coast NSW.
Incubator unit	16 units available for office based businesses: approximately 30 m ²
Leasing arrangement	Flexible – no long term commitment.
Accessible resources	Range of services and facilities (reception area, kitchen, toilets, meeting and conference room) in support of enterprise and training. Shared reception is provided. Table/ desks/ chairs supplied as part of the space and tenant required to pay for own internet/ printing costs.
Local accessibility	Approximately 7.5 km from Gosford.
Regional accessibility	Approximately 1 hour drive to both Sydney and Newcastle. 2 km from the Pacific Highway.

Criteria	Detail	
Commercial viability (including demand)	The site is run by RDA and therefore receives some financial support from Government. Viability based on occupancy levels. The site is currently fully tenanted.	
Overview of current incubator businesses	Fisheries Compliance Management. MEGT Apprenticeship. Australian Restaurant Marketing Systems. Tennis NSW. Women on Boards. Booth Learning Development Centre. Central Coast Business College. Arts - Regional Community Creative Producer. Central Coast Innovation.	
Zoning	5a Special uses	
SWOT	Strengths: <ul style="list-style-type: none"> Shared facilities. Fully tenanted. Run by Government body providing additional financial support. 	Weaknesses: <ul style="list-style-type: none"> Start-up business failures – not financially secure – loss of income gained from rents etc.
	Opportunities: <ul style="list-style-type: none"> None identified. 	Threats: <ul style="list-style-type: none"> Continuation dependent on University's need for the space.
Comments	<p>The site is run by a RDA (government agency) and supplies office space for business start-ups and small Government agencies. RDA leases the site from the University. Continuation of the operation is dependent on the University's decision regarding future need of the site.</p> <p>No other business incubators operator within the region.</p> <p>The population of the Central Coast region is significantly larger than the Northern Rivers and according to the RDA, small business operations (1-3 persons) provide around 85% of employment for the region; demonstrating suitability of the area for successful operating of a business incubator.</p>	

2.1.3.4 Case Study 4 – KURRI KURRI

Criteria	Detail
Location	Cnr Barton & Merthyr Streets KURRI KURRI NSW.
Management	Hunter Region Business Enterprise Centre, Inc.
Incubator unit	32 serviced office and light industrial workspaces ranging 10.5 m ² to 42 m ² .
Leasing arrangement	Month-by-month up to 3 years.
Accessible resources	Practical business assistance and mentoring. Meeting, training and function rooms.
Local accessibility	15 minutes to Maitland, Cessnock and Hunter Wine Country.
Regional accessibility	45 km to Newcastle, 90 km to the Central Coast and 140 km to Sydney. 15 km from the Pacific Highway. 45 km from Newcastle International Airport.
Commercial viability (including demand)	No funding available.

Criteria	Detail	
Overview of current incubator businesses	Jim Knowles Group. NCAP. AEDO. Xperienced Mining & Control Vend. Urban Living Solutions. Brookes Australia. Sue Murphy Pty Ltd. Lower Hunter Wonnarrua Cultural Services. Advance Personnel Management & Causley Psychology. Bannister and Hunter T/A Trehy Ingold Neate. All Class Training. ANS Inspection Services. Macquarie Knight Construction. JobFind. A-Z Book Keeping.	
Zoning	B4 Mixed Use.	
SWOT	Strengths: <ul style="list-style-type: none"> ▪ Shared facilities. ▪ Fully tenanted. ▪ Business assistance and mentoring. 	Weaknesses: <ul style="list-style-type: none"> ▪ Absence of funding assistance.
	Opportunities: <ul style="list-style-type: none"> ▪ None identified. 	Threats: <ul style="list-style-type: none"> ▪ None identified.
Comments	<p>The site is run by the Hunter Region Business Enterprise Centre, a community-based organisation established as part an initiative from local companies, Cessnock City Council and Maitland City Council working in a partnership to assist in local economic development.</p> <p>The organisation assists in establishment of new small business enterprises and assists existing small enterprises who are experiencing issues, want to grow, or just want to be better.</p> <p>Success of the site relates to the financial stability of the fledgling businesses and determining when the businesses need to be 'moved on'. The business incubator model is designed to assist new businesses grow and after a period of approximately 3 years the business should be able to succeed without the support structures of the incubator. Mentoring and close monitoring of each business is required to ensure successful graduation of the business.</p> <p>Anchor businesses (not new businesses) are used to provide a platform of financial stability for running of the site; that is ensuring a constant reliable income flow for the site e.g. Jobfind.</p>	

2.1.3.5 Case Study 5 – COFFS HARBOUR

Criteria	Detail
Location	Coffs Harbour Campus (Southern Cross University), Hogbin Drive, Coffs Harbour NSW.
Management	The Coffs Harbour Technology Park Ltd Board of Directors and the Coffs Harbour Innovation Centre Management.
Incubator unit	496 m ² with 296 m ² of lettable space. Fit out office space in four separate modules – approx. 80 m ² . Flexible space from 10 m ² up to 61 m ² .

Criteria	Detail	
Accessible resources	Business and marketing planning assistance, grant and funding support and business mentoring. Access to a wide range of facilities available at the Coffs Harbour Education Campus. Reception service – acts as the first point of contact for enquiries. Provide photocopying services (at cost). Provided facsimile services (at cost). Provide general management, administrative and secretarial services. Provide support for tenants, including the reporting and rectification of defects. Provide a Board Room booking service in cooperation with CHEC staff. Electricity, telephone and internet services are at cost to the tenant.	
Local accessibility	Located 3 km from Coffs Harbour CBD and Pacific Highway.	
Regional accessibility	Located centrally between Brisbane and Sydney. 2 km to Coffs Harbour Regional Airport (connecting to Sydney, Brisbane and Melbourne).	
Commercial viability (including demand)	Reliance on Government Funding.	
Overview of current incubator businesses	AFL NSW/ACT Northern NSW. Arts Mid North Coast. Avide Pty Ltd. Ecotoons. Green Synergy. Saltwater Freshwater. Youth Directions. 400 Management.	
Zoning	SP1 Education Establishment (draft LEP).	
SWOT	Strengths: <ul style="list-style-type: none"> ▪ Shared facilities. ▪ Fully tenanted. ▪ Business and funding assistance. ▪ Access to University campus. 	Weaknesses: <ul style="list-style-type: none"> ▪ Reliance on government funding.
	Opportunities: <ul style="list-style-type: none"> ▪ None identified. 	Threats: <ul style="list-style-type: none"> ▪ Limitations on government funding.

2.1.3.6 Conclusions

The case studies indicate that there are a variety of models operating in the management of business incubators. Some common factors include:

- Small individual unit sizes.
- Flexible, short term lease arrangements.
- Single-entity management.
- Some shared facilities and/ or access to expertise.

Anecdotally, it was suggested that a mix of uses is valuable and that there should be clearly understood arrangements in place to allow businesses to grow and eventually depart the incubator.

Access to ongoing funding and business support/ expertise seems to be important in assisting the growth of small businesses. As such, those incubators operated by semi-government bodies appear to offer a greater range of assistance services.

2.2 Ballina Local Environmental Plan

Illustration 2.2 shows the zoning of land within the precinct; pursuant to Ballina Local Environmental Plan 2012 and Ballina Local Environmental Plan 1987 [*LEP 1987 applies to 'deferred land' under the 2012 LEP, pending the State Government's review of Environmental Zones*].

As shown, the primary zones are:

- IN1 General Industrial (LEP 2012) – covering the existing Clark Street light industrial estate.
- RU2 Rural Landscape (LEP 2012) – covering the Council depot site.
- RE1 Public Recreation (LEP 2012) – covering a small part of the vacant Crown land (including a section of Angels Beach Drive).
- 1(b) Rural (Secondary Agricultural Land) (LEP 1987) – covering the riparian area bordering the canal.
- 4 Industrial (LEP 1987) – covering an area immediately north of the existing Clark Street light industrial estate.
- 7(a) Environmental Protection (Wetlands) (LEP 1987) – covering the remaining vegetated part of the wider Crown land.

Under the LEP 2012, the following uses are permissible with consent in the IN1 zone:

Depots; Freight transport facilities; Garden centres; General industries; Hardware and building supplies; Hospitals; Industrial training facilities; Landscaping material supplies; Light industries; Liquid fuel depots; Neighbourhood shops; Plant nurseries; Roads; Rural supplies; Take away food and drink premises; Timber yards; Vehicle sales or hire premises; Warehouse or distribution centres; Any other development not specified in item 2 or 4.

In terms of some of the ideas and suggestions that have been made in relation to the precinct, the IN1 zone prohibits:

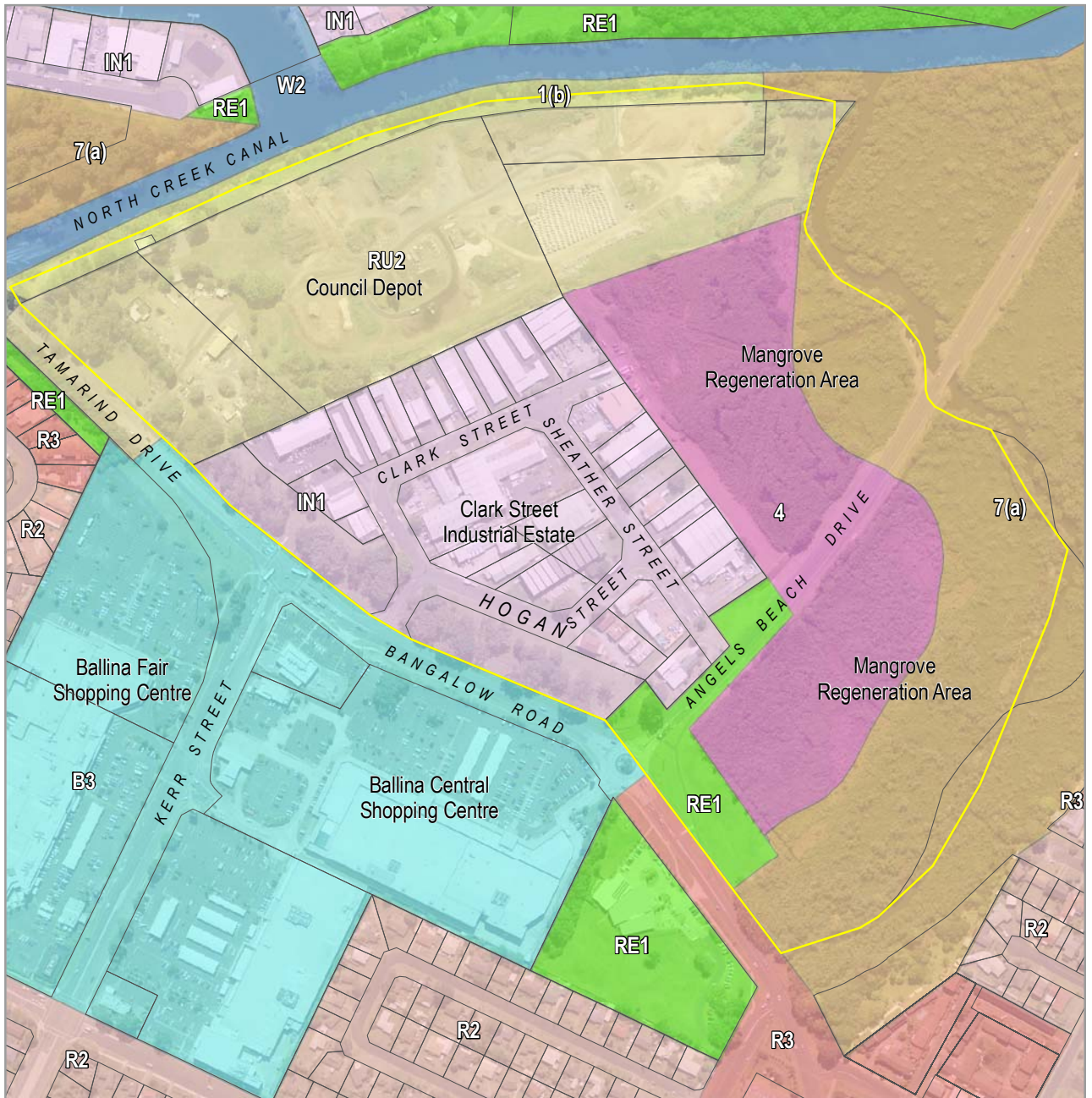
Commercial premises (which includes business premises, office premises and retail premises); Function centres; Health service facilities; and Residential accommodation (which includes all types of residential development).

The RU2 zone is a rural zone, so it is not suitable for the range of potential future uses being examined.

The area of land that currently remains zoned 4 Industrial under the Ballina LEP 1987 was proposed to be zoned for environmental protection, given that it is vegetated. The State government is currently reviewing proposed environmental zones in North Coast LEPs.

The remaining part of the vegetated Crown land, zoned 7(a) Environmental Protection, is vegetated predominantly with mangroves. The environmental protection zoning obviously restricts development opportunities, although there is no suggestion that mangroves should be removed for future development.

The current LEP does not have a definition for business incubator. It might best fit into the definition of *business premises*, but this would be somewhat dependant on the range of and type of individual uses being undertaken within the incubator. Some uses might better be defined as *light industry*, or more specifically as *high technology industry*.



LEGEND

- Study area
- BBLEP 1987**
- 1(b) Rural (Secondary Agricultural Land)
- 4 Industrial
- 7(a) Environmental Protection wetlands
- BBLEP 2012**
- B3 Commercial Core
- IN1 General Industrial
- R2 Low Density Residential
- R3 Medium Density Residential
- RE1 Public Recreation
- RU2 Rural Landscape
- W2 Waterway



0 100



Site Analysis

3.1 Character/ Land Uses

In terms of character, the study area is effectively in three parts:

- The existing developed Clark Street light industry estate, with a distinct urban character.
- The Council depot site, a cleared, largely vacant, flat area.
- The vegetated Crown land, including the mangrove compensatory planting area and the canal riparian area.



Plate 3.1 Clark Street urban character



Plate 3.2 Council Depot site character

3.2 Biophysical Environment

3.2.1 Soils

The site is located close to a geological boundary, between alluvial sediments and coastal and estuarine plain deposits (Morand, 1994). Typical sediments in these settings include sand, silt, clay, gravel and organic clays.

The natural soils at the site include mostly sands, sandy clays and clays, consistent with the regional geology expected.

Review of soil landscapes map for the area (Morand, 1994) indicates that the old depot part of the site is part of the disturbed terrain and has been greatly disturbed by human activity to a depth of at least 100 cm. In this area, the original soil has been removed, greatly disturbed or buried.

Within the vegetated (mangrove) parts of the land, the soil landscape map indicates Burns Point soils of the estuarine landscape, consisting of marine and fluvial sediments generally being waterlogged siliceous sands.

3.2.2 Vegetation

A large portion of the vacant Crown land (Lot 456) contains mangroves, most of which were planted/rehabilitated as part of compensatory environmental works undertaken with the construction of Angels Beach Drive. These mangrove areas have relatively dense coverage on both sides of Angels Beach Drive.

The northern section of this mangrove area, fringing Little Fishery Creek, is also mapped as a State Significant Wetland under State Environmental Planning Policy No. 14 – Coastal Wetlands.

Mangroves are also located along the riparian zone of the Ballina canal.

3.3 Environmental Risks

3.3.1 Flooding

Currently, controls regarding development on the floodplain in Ballina are contained in Chapter 2b of the Ballina Development Control Plan 2012. In accordance with those requirements, there would be two minimum fill levels set for the site:

- 2.0 m AHD within the existing Clark Street industrial estate.
- 2.5 m AHD for the Council depot site.

The higher level required for the depot site is because that land is currently zoned rural.

Council is in the process of updating its floodplain planning provisions, and a draft updated chapter of the DCP was exhibited in May 2012. Under this draft plan, the minimum fill levels will not change. However, the draft introduces risk categories across the floodplain, which provides a control for the type of development that may be allowed.

For the study area, the draft risk mapping shows the land directly adjacent to the Ballina Canal and to Fisheries Creek as being high hazard, with the remainder of the site being low or medium hazard.

In relation to these hazard categories the draft chapter indicates:

- High risk – *'filling or development would not normally be acceptable'*.
- Medium risk – *'the cumulative impacts associated with filling of land have been assessed and found to not result in unacceptable impacts across the broader floodplain'*.
- Low risk – *'the likelihood of damages is low for most land uses'*.

Based on this draft policy, which has factored in climate change scenarios, filling and development of the parts of the precinct characterised as low or medium hazard is potentially acceptable, subject to more detailed flood analysis and design at the time of development.

3.3.2 Acid Sulfate Soils

Based on Council's acid sulfate soils risk mapping, the whole of the study area is Class 2. As such, Development Consent would be required for any works below the natural surface area, or works by which the watertable is likely to be lowered.

This same risk class applies to virtually the whole of the Ballina Island. Standard investigation/ management measures are likely to be sufficient to address any acid sulfate risk for development.

As such, the acid sulfate risk is not considered to be a significant constraint to future development.

3.3.3 Land Contamination

A limited environmental site assessment was undertaken of the depot site by Environmental Earth Sciences in February 2013. The assessment involved a desktop study and a site intrusive investigation, undertaken to assess the extent to which soil contamination, if present, might present a constraint to the future development of the land.

The site was formerly used as a Council depot and, earlier than that, a landfill site and a site for the disposal of night soil.

The field investigation consisted of 32 testpits and eight surface samples, from which select samples were analysed by the laboratory for potential chemicals of concern.

Results of the field investigation, including field observations and laboratory analyses, showed that contamination on the eastern portion of the site is limited to the presence of waste material with no analytes detected exceeded guideline values. Petroleum hydrocarbons (C10-C36) were detected in the vicinity of the wash-down area on the depot.

These exceeded sensitive landuse guidelines, but are not considered to present a risk to site workers or the environment, based on the current site zoning (rural) and landuse as a depot and storage space.

If a land use more sensitive to land contamination is sought, this area would require further assessment.

This preliminary assessment did not detect gross contamination concentrations that would preclude consideration of the site for future urban uses. However, further assessment and consideration of matters not limited to, but including subsidence, landfill waste management (including cap integrity), groundwater quality, potential gas and leachate generation, infrastructure positioning and site access will be required to determine the suitability of the site for redevelopment based on specific land use options.

3.4 Traffic and Access

Currently, Clark Street provides the only vehicular access into the existing light industrial estate. Traffic modelling has been undertaken to assess the capacity of this intersection to handle additional traffic in the future.

The illustrations below present a summary of the modelling, expressed in terms of Level of Service (LOS) for the turning movements into and out of Clark Street.

LOS is a qualitative measure defined in terms of service measures such as speed and travel time, freedom to manoeuvre, traffic interruptions, comfort and convenience. The practical application of LOS to different road environments takes into account factors such as volume/ capacity ratios, terrain types, proportion of heavy vehicles and road gradients.

In general, there are six levels of service, designated A to F, with level of service A representing the best operating condition (i.e. free-flow) and level of service F the worst (i.e. forced or breakdown flow). Each of the six LOS represents a range of operating conditions and the driver's perception of those conditions, and can generally be described as:

- **LOS A** is a condition of free flow in which individual drivers are virtually unaffected by the presence of others in the traffic stream. Freedom to select desired speeds and to manoeuvre within the traffic stream is extremely high, and the general level of comfort and convenience provided is excellent.
- **LOS B** is in the zone of stable flow and drivers still have reasonable freedom to select their desired speed and to manoeuvre within the traffic stream, although the general level of comfort and convenience is a little less than with level of service A.
- **LOS C** is also in the zone of stable flow, but most drivers are restricted to some extent in their freedom to select their desired speed and to manoeuvre within the traffic stream. The general level of comfort and convenience declines noticeably at this level.
- **LOS D** is close to the limit of stable flow and is approaching unstable flow. All drivers are severely restricted in their freedom to select their desired speed and to manoeuvre within the traffic stream. The general level of comfort and convenience is poor, and small increases in traffic flow will generally cause operational problems.
- **LOS E** occurs when traffic volumes are at or close to capacity, and there is virtually no freedom to select desired speeds and to manoeuvre within the traffic stream. Flow is unstable and minor disturbances within the traffic stream will cause flow breakdown.
- **LOS F** is in the zone of forced flow. With it, the amount of traffic approaching the point under consideration exceeds that which can pass it. Flow breakdown occurs, and queuing and delays result.

Road authorities generally prefer to design new rural road projects for LOS A or B at opening and LOS C – D in the design year. However, some rural projects and most urban projects will have practical and financial limits on the extent of work that can be achieved and consequently the performance criteria will have to be negotiated throughout the traffic analysis process. In this regard an analysis of the existing level of service on the road network provides a useful benchmark by which to assess changes as a result of development.

From Austroads Guide to Traffic Management Part 12: Traffic Impacts of Development (Austroads 2009).

Illustration 3.1 shows the results of modelling for the current traffic scenario, based on traffic volume data provided by Council. It indicates free-flowing traffic in all lanes, except the right turn out of Clark Street, which is currently operating well below satisfactory levels.

For further modelling scenarios, therefore, it was assumed that only left turns would continue out of Clark Street.

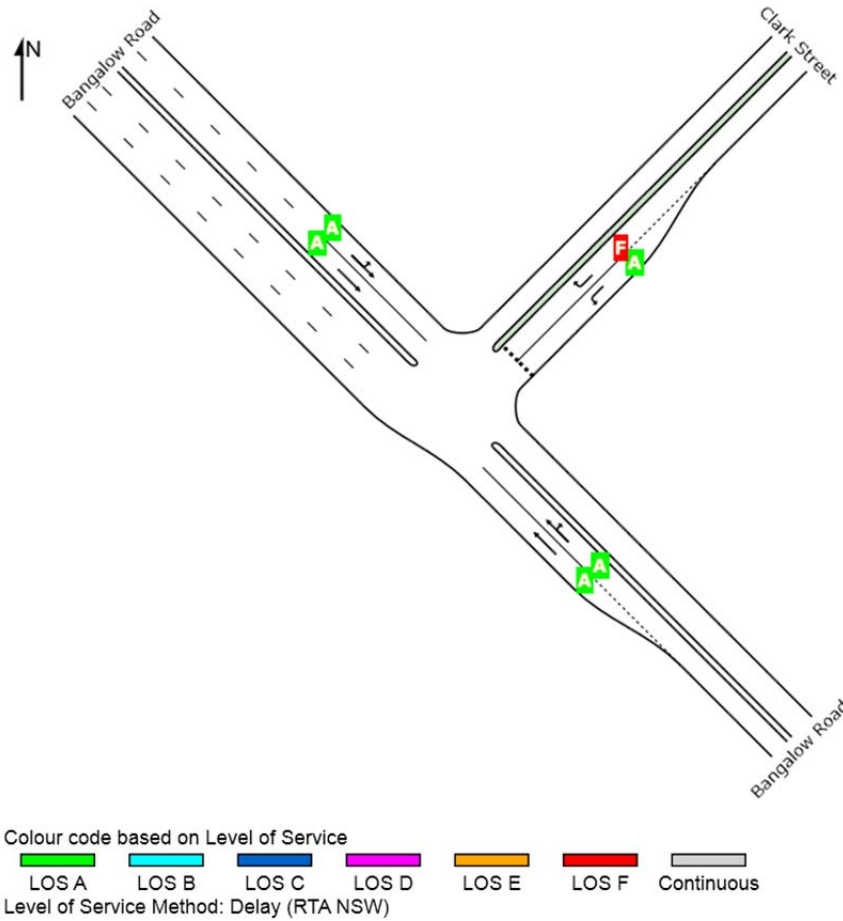


Illustration 3.1 Clark Street and Bangalow Road Intersection 2013 (existing)

Illustration 3.2 looks at the 20 year scenario, based on no additional new development within the precinct, and an assumed 3% per annum 'general' growth in local traffic. It assumes that Clark Street would be restricted to a left turn out only.

It shows that the level of service for both the turn-out of Clark Street and the right turn in would reduce to LOS C.

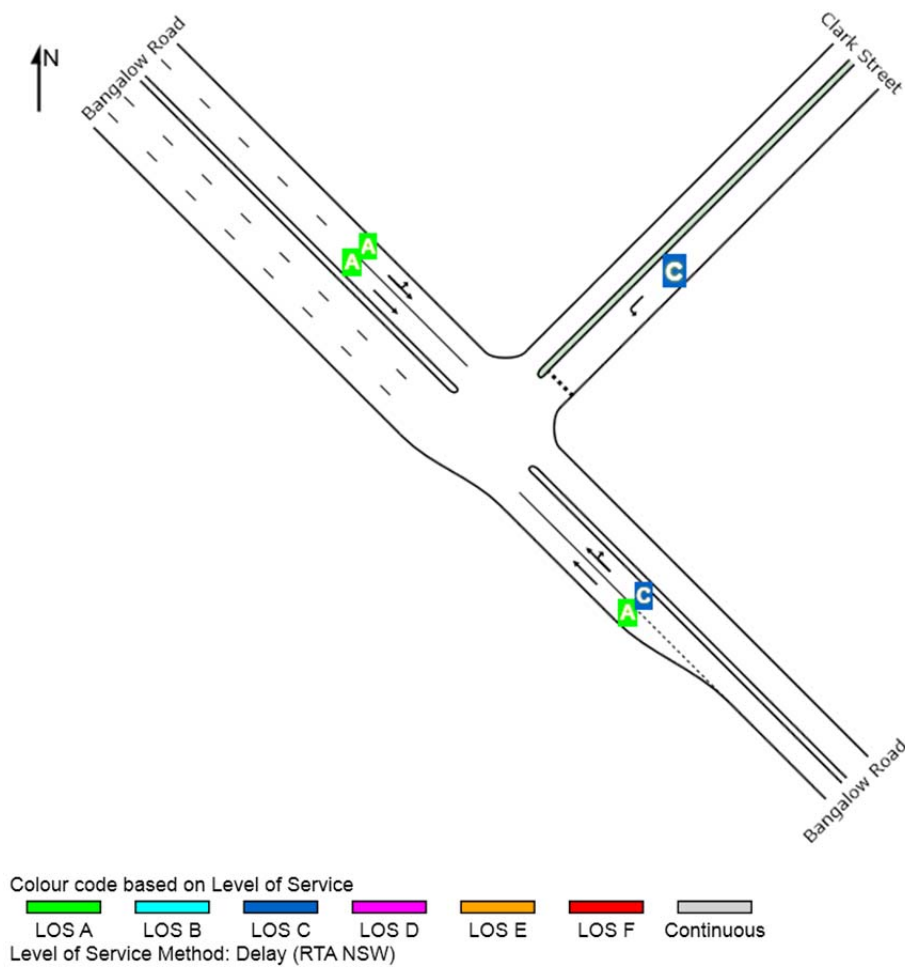


Illustration 3.2 Clark Street and Bangalow Road Intersection 2033 (+20 years, low growth)

Illustration 3.3 models the 20 year scenario assuming the 3% annual traffic growth, but with the addition of a 5% increase in traffic accessing the industrial estate over the first 5 years (i.e. additional 'new' development).

It shows a further deterioration for the turn-out of Clark Street to LOS D. The right turn-in from Bangalow Road, however, does not deteriorate further.

If a 10% increase in traffic accessing the industrial estate is used, after around 15 years, the left turn out of Clark Street will fall to a LOS F (i.e. unsatisfactory).

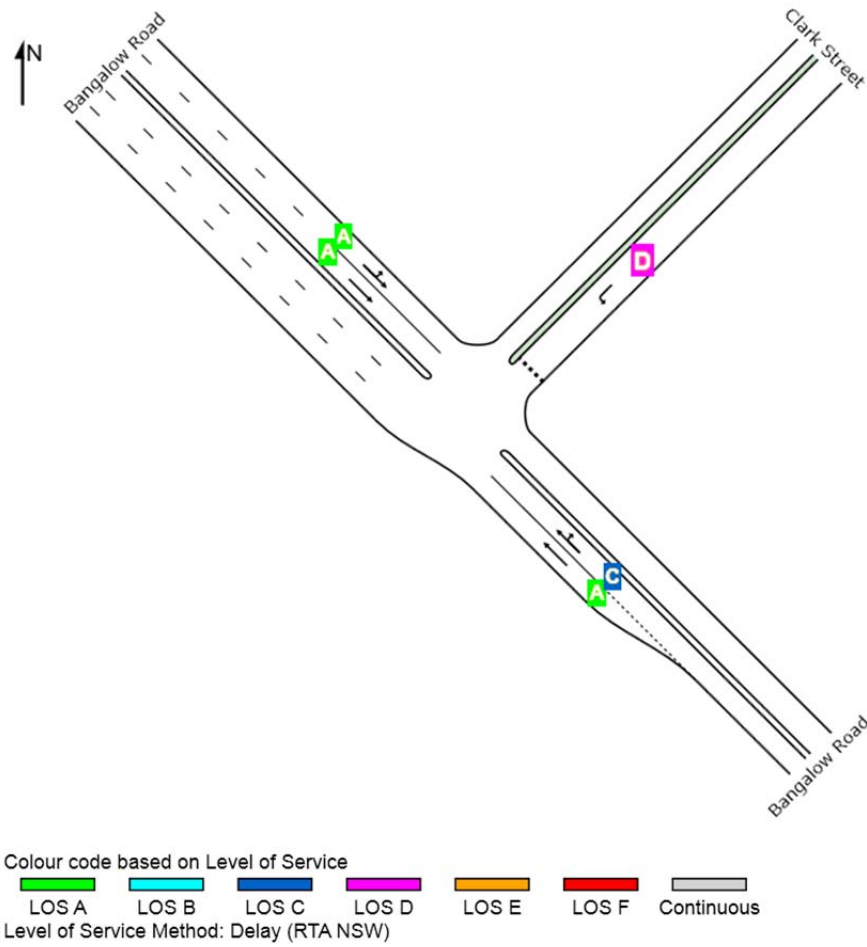


Illustration 3.3 Clark Street and Bangalow Road Intersection 2033 (+20 years, moderate growth)

Given the modelling results, it is clear that additional access options will be needed if additional development is to occur within the precinct.

The options might be:

- Addition to the existing signalised Kerr Street/ Tamarind Drive/ Bangalow Road intersection to provide a fourth 'leg' into the precinct.
- Left-out egress from Clark Street onto Angels Beach Drive.
- New road into the depot site off Tamarind Drive.

Of these options, the addition of a fourth leg off the signalised intersection appears to be optimal for resolving ongoing traffic management issues. Conceptually, given the geometry of the land in that vicinity, this option would also appear to be the most feasible. A new road off Tamarind Drive may have issues associated with sight distance and proximity to the signalised intersection.

The left-out onto Angels Beach Drive is definitely feasible, but it would not, by itself, provide sufficient capacity or efficiency.

3.5 Opportunities and Constraints

Based on all of the above, the table below provides a summary of the key opportunities and constraints.

Table 3.1 Opportunities and Constraints

Opportunities:

- New technologies.
- Affordable housing.
- Seniors housing.
- Health services.
- Bush regeneration/ ecological improvements.
- Parklands.
- Mixed uses.
- Visual improvements.

Constraints:

- Access:
 - One entry.
 - Impact of new development on existing road networks.
- Environmental: flooding, ASS, ecological, heritage, contamination.
- Small allotments with fragmented ownership in existing developed area.

Structure Plan

Three Structure Plan options are presented in this report. The literary review did not reveal a high local or regional demand for any particular type of use, each of these options seeks to conserve areas of ecological or recreational value whilst providing a diversity of land use types, which will complement the existing business precinct as well as the nearby Southern Cross industrial area. Given the lack of demand for any particular land use there is also the 'no change' option; whereby the site maintains its current form.

In addition to the business function, future redevelopment of the precinct presents an opportunity to create a strong and distinctive character, driven by the physical layout and built form as well as by the clustering of thematically similar land use types.

Themes and synergies at the site should be relevant to the context (Ballina region), be Ballina-centric or locally distinctive. These themes and synergies might include:

- Wetlands, wildlife and natural systems.
- Clean or sustainable technologies and small-scale advanced environmental manufacturing.
- Creative industries – with a particular focus on new media and digital content industries, design, publishing, computer games, advertising, architecture and the arts.
- Health – scientific research, biotechnologies, health informatics, health or aged care type products.
- Marine – boating, fishing, water sports, caravan and boat storage.

4.1 Land Use Types

The following land use types are featured in the Structure Plan options.

Conventional Light Industry

(May be themed, e.g. natural systems, clean or sustainable technologies, creative industries, health, marine.)

- Storage.
- Transport.
- Warehouses.
- Small scale manufacturing.

Small Light Industrial Workshops and Studios

(May be themed e.g. natural systems, clean or sustainable technologies, creative industries, health, marine.)

- Light industrial workshop/laboratory space (about 50 m² each).

Light Industrial Live-Work

- Light industrial workshop/ studio or laboratory space (about 30-50 m² each).
- One bedroom residential loft above (about 50-60 m²).

Transport

- Transport base/ hub.
- Public transport transit centre including secure bicycle storage.

Business Incubator/ Technology Centre

There is presently a small business incubator at the site. Large business incubators are usually supported by an anchor tenant or partnership such as with an education or research institute.

- Affordable office space (10-60 m²).
- Flexible and adaptable spaces.
- Shared resources:
 - Centre management.
 - Reception facilities.
 - Board room.
 - Conference room (seat up to 40 people).
 - Small learning rooms.
 - Kitchen.
 - Bicycle parking.
 - Amenities and showers.

Entertainment

- Small function centre (complementing the existing Angling Club).

Residential

- One to two bedroom apartments suitable for single parent, student or retired person/ couple (two storey).

Boat and Caravan Storage

- Rental storage sheds particularly focusing on boat and caravan storage supporting any residential uses at the site.

Recreation/ Rehabilitation

- Rehabilitation and recreation focused services such as an indoor therapy pool, gymnasium or bowling.

Recreation and Open Space

- Waterway foreshore areas supporting passive recreation uses (fishing, picnicking, walking, men's shed, boat ramp etc).
- Tamarind Drive and Bangalow Road frontage open space.

Rehabilitation, Conservation and Green Corridors

- Wetland and foreshore areas and buffers.
- Angels Beach Drive green buffer.

Wetland Education Centre

- Wetland education centre opposite the community centre.
- Boardwalk links from the education centre to Hunter Street and Cawarra Streets in the opposite residential area.
- Bird hide.
- Wetland arboretum.
- Interpretative trail.

4.2 Key Site Planning Principles

Environmental

1. Conserves and protects existing wetlands.
2. Incorporates measures to address sea level rise.
3. Incorporates passive stormwater management systems.
4. Achieves a lot orientation that maximises opportunities for solar electricity generation and passive solar building design.
5. Promotes the natural amenity of the site by improving biodiversity and contributing to ecological sustainability.
6. Maintains adequate buffers to bushfire hazards.
7. Utilises the existing wetlands for habitat and stormwater cleansing.

Social

1. Provides safe access that considers the increase in vehicle movements generated by proposed uses.
2. Provides significant riverfront open space areas for passive recreation.
3. Ensures the maintenance, creation and enhancement of significant public views to and from waterways.
4. Maintains public access to Fishery Creek.
5. Supports community building and a strong community identity by providing spaces for community projects such as wetland plant nursery, interpretative or education trails and outdoor class room spaces.
6. Provides places for people to meet and gather and hold small functions and events.

Economic

1. Achieves a diversity of landuse types.
2. Themes and synergies at the site should be relevant to the context (Ballina region), be Ballina-centric or locally distinctive. These themes and synergies might include:
 - Wetlands or wildlife.
 - Natural systems.
 - Clean or sustainable technologies.
 - Health – scientific research, health or aged care type products.
 - Recreation – health training, fitness, boating, fishing, water sports.
3. Allows for efficient use of land.
4. Complements the existing function of the adjacent business area as well as the Ballina Central Business Area.
5. Facilitates diverse, affordable and adaptable built forms.
6. Provide uses which are in demand locally or regionally and responds to new market opportunities.
7. Presents a design that is realistic and achievable in economic terms and within budgetary constraints.

4.3 Structure Plan Options

The Structure Plan Options presented below are schematic only and subject to further investigation and feasibility assessment. The road layout is indicative only and subject to a full traffic assessment. There is also a 'no change' option.

4.3.1 Option 1 – No Change

The first option to consider is essentially to 'do nothing'. The analysis outlined in this report indicates that there is currently no strong demand for land uses that are not already adequately catered for.

Demand may change in the future, particularly as existing zoned land is taken up and contemporary technologies evolve into new markets. Making no change to the current zoning of the land would effectively leave open options for the future use of this land, particularly the large depot site, providing an opportunity for those demand/ supply issues to clarify over time.

In terms of traffic, the current intersection provides for adequate levels of service for existing development for all but the right-turn out of Clark Street. Subject to a minor change (i.e. left-out only from Clark Street), the intersection could accommodate the expected levels of growth within the existing light industrial area for at least 10-15 years.

It is suggested that this turning movement restriction could be implemented in the immediate to short term.

Positives:

- No change to existing businesses.
- Continues to allow range of light industries.
- Allows time for demand/ supply issues to evolve as new technologies advance.

Challenges:

- Minimal future use of large area of depot site.

Zoning Implications:

- No change to existing zones.

Traffic Issues:

- Right-turn out of Clark Street should be restricted in the short-term.
- Subject to that restriction, existing intersection can adequately accommodate anticipated future growth.

4.3.2 Option 2 – The Path of Least Resistance

The Clark Street Precinct will gradually evolve into an eclectic and modern business hub, which incorporates existing uses with a diversity of new light industrial and business land use types, within a peripheral setting dominated by wetland conservation and public open space.

Positives:

- Minimal change to existing businesses.
- Continues to allow range of light industries.
- Provides some options for smaller start-ups.

Challenges:

- Minimal future use of large area of depot site.

Zoning Implications:

- Current IN1 zoning would be retained over existing estate.
- IN1 could be expanded over development area in Council depot site.
- To ensure that a business incubator or innovation centre could set up in the precinct, it would be beneficial to include *business premises* and *high technology industry* as uses permitted with consent. The alternative would be to investigate the opportunity to add a new definition to the LEP – *business incubator* or the like. This would minimise the potential to draw other business types away from existing commercial areas.
- Area proposed for wetland education centre would be defined as an *environmental facility*. Environmental protection zoning for this area should be drafted to allow this as a permissible use (common to all three options).

Traffic Issues:

- Right-turn out of Clark Street should be restricted in the short-term.
- Subject to that restriction, existing intersection can accommodate anticipated future growth for at least 10-15 years before alternate intersection is warranted.
- Options for a 'fourth leg' at existing Kerr Street/ Tamarind Drive/ Bangalow Road intersection should be investigated in 8-10 years' time.

Possible Land Uses



Possible Zoning



Illustration 4.1 Option 2 – The Path of Least Resistance

4.3.3 Option 3 – Adaptive Reuse

The Clark Street Precinct will evolve into a modern business hub, which incorporates a diversity of light industrial and business uses complemented by waterfront live-work studios. Waterfront parkland and wetland conservation areas provide functional green spaces for the aesthetic, educational and recreational benefit of the broader community.

Positives:

- Provides a greater range of new businesses for the future.
- Introduces residential (ancillary to light industry use).
- Allows a centrally located entertainment/ function area.

Challenges:

- Introduction of residential needs to be carefully designed to avoid land use conflicts.
- Entertainment/ function area needs careful design to avoid traffic issues.

Zoning Implications:

- Current IN1 zoning could be retained over much of the existing estate.
- B6 Enterprise Corridor could be considered over the remainder of the area:
 - Allows wide variety of business and light industry.
 - Allows for a *function centre* although an *entertainment facility* is prohibited.
 - Zone objectives specifically provide for residential use as part of mixed use (but, only as shop top housing; means a dwelling above a ground floor *retail* or *business* premises – might need a different approach to having residential above light industrial use).

Traffic Issues:

- Right-turn out of Clark Street should be restricted in the short-term.
- Subject to that restriction, existing intersection can accommodate anticipated future growth for at least 10-15 years before alternate intersection is warranted.
- Options for a 'fourth leg' at existing Kerr Street/ Tamarind Drive/ Bangalow Road intersection should be investigated associated with Planning Proposal for the B6 Enterprise zoning.

Possible Land Uses



Possible Zoning



Illustration 4.2 Option 3 – Adaptive Reuse

4.3.4 Option 4 – A Transformative Approach

The Clark Street Precinct will be transformed into a contemporary business hub, which innovatively incorporates light industrial workshops, business and recreation uses with studio-style residences. The businesses will occur in strongly themed, complementary industry clusters, driven by modern information and clean technologies. The industry, business and residential uses will satisfy a locally specific demand (such as health or aged services) and waterfront parkland and wetland conservation areas provide functional green spaces for the aesthetic, educational and recreational benefit of the broader community.

Positives:

- Provides a greater range of new businesses for the future.
- Locks-in a central core as a local transport hub, recognising a key current use.
- Provides opportunity for centrally-located housing, preferably as affordable housing, or potentially seniors housing, but concentrating on higher density housing forms.
- Allows a centrally located entertainment/ function/ recreation area.

Challenges:

- Introduction of higher density residential needs to be carefully designed to avoid land use conflicts.
- Entertainment/ recreation/ function area needs careful design to avoid traffic issues, particularly regarding interaction with transport hub.

Zoning Implications:

- Mix of zonings would be required, including medium density residential.
- B6 Enterprise Corridor could be considered over a large part of the area:
 - Allows wide variety of business and light industry.
 - Allows for a *function centre* although an *entertainment facility* is prohibited.
 - Zone objectives specifically provide for residential use as part of mixed use (but, only as shop top housing; means a dwelling above a ground floor *retail* or *business* premises – might need a different approach to having residential above light industrial use).
- IN1 might need to be considered over the transport hub, as B6 zone prohibits a *transport depot*.

Traffic Issues:

- Options for a 'fourth leg' at existing Kerr Street/ Tamarind Drive/ Bangalow Road intersection should be investigated associated with Planning Proposal for the suggested zoning changes.

Possible Land Uses



Possible Zoning

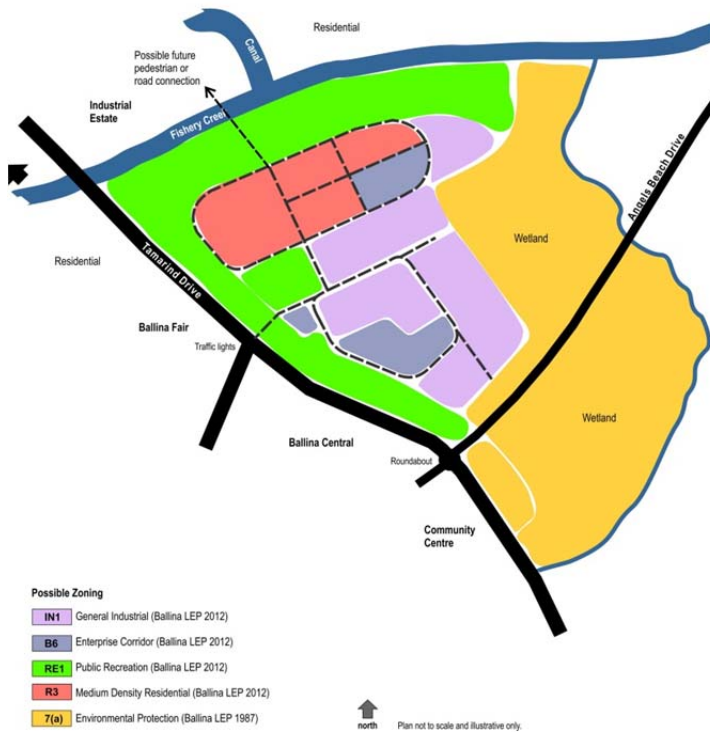


Illustration 4.3 Option 4 – A Transformative Approach

Some examples:



Light Industrial Live-Work

From top:

Live-work studio – culvercity.olx.com

*Live-work studio in Texas by Intexture-
design-milk.com*

Live-work studio – losangeles.olx.com

*Live-work studio –
woodhousedesign.com*



Business Incubator/ Technology Centre

From top:

*Australian Future Fibres Research and
Innovation Centre – woodhead.com.au*

*North Lakes Business Park – photo by
others*

Green technologies – photo by others



Wetland Education Centre

From top:

*Icon innovation centre -
viewpictures.co.uk*

*Rush Wright EcoLinc Science and
Technology Centre – rushwright.com*

4.4 Recommended Structure Plan

In looking at the best options for future use of the precinct, there are a number of key factors:

- Economic assessments have demonstrated that there is already more than enough suitably zoned land to meet Ballina's anticipated future demand for commercial and industrial development.
- While there is also sufficient residential land to meet future demand, the area is slow to respond to changing housing needs, with a distinct lack of diversity in relation to the choice of house types.
- The existing development within the precinct is characterised by a relatively high level of diversity of use. is centrally located, with very good access to Ballina's prime retail precinct, to the Southern Cross industrial estate and to the canal.

4.4.1 Short-term

Given the demand/ supply situation in particular, it would be best for Council to take a longer-term view of the future of the undeveloped part of the precinct.

In the short-term, therefore, it is recommended that Council not pursue any zoning change for the precinct.

In the interim, the current IN1 zoning will continue to allow business to come to the estate, so it will not have any detrimental impact on the existing businesses. It will, however, allow time for existing demand/ supply issues to evolve, as available land is taken up and as market issues like new technologies and housing type/ need change in the next 5-10 years.

Based on this, it is recommended that Council revisit the situation in five years, with a view to implementing potential changes in around 10 years' time (subject to market changes).

4.4.2 Long-term

In the longer-term, high technology industries/ businesses are likely to grow in Ballina and in the region. The precinct is well-placed to be able to attract such business. By their nature, their spatial needs will be different to conventional light industrial models. In particular, the ability to live and work in a shared space will become more valued.

Option 4, therefore, will provide the most flexibility for businesses like these, while also allowing a wider range of uses within the precinct. The introduction of medium density residential development, if well-designed, will allow future residents to take advantage of the central location and proximity to retail/ services. It will also provide land to meet a housing demand that is currently not being well met in Ballina.

As shown above, each of the options propose environmental protection of the mangrove areas and provision of significant areas of passive recreation/ open space along both the street frontages and the Ballina canal. The suggested Wetland Education Centre would provide a good opportunity to utilise the large expanse of natural vegetated area to inform and educate the public.

Traffic/ access options would need further detailed modelling and design, but the preliminary modelling undertaken indicates that there are feasible, achievable options that could be delivered over time as the precinct grows.



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References

Austrroads (2009) Austrroads Guide to Traffic Management Part 12: Traffic Impacts of Development, Austrroads, Sydney NSW.

Ballina Shire Council, (2010) Ballina Shire Affordable Housing Strategy, [Online]. Available: http://www.ballina.nsw.gov.au/cp_themes/default/page.asp?p=DOC-FVO-86-61-42 publisher [Accessed 22 July, 2013].

Ballina Shire Council, (2012) Ballina Shire Growth Management Strategy, [Online]. Available: http://www.ballina.nsw.gov.au/cp_themes/default/page.asp?p=DOC-FVO-86-61-42 publisher [Accessed 22 July, 2013].

Ballina Shire Council, (2011) Ballina Shire Bulky Goods Retailing Investigation, [Online]. Available: http://www.ballina.nsw.gov.au/cp_themes/default/page.asp?p=DOC-FVO-86-61-42 publisher [Accessed 22 July, 2013].

Ballina Shire Council, (2003) Ballina Retail Strategy, [Online]. Available: http://www.ballina.nsw.gov.au/cp_themes/default/page.asp?p=DOC-FVO-86-61-42 publisher [Accessed 22 July, 2013].

Ballina Shire Council, (2010) Ballina Growth Management Strategy 2012, [Online]. Available: http://www.ballina.nsw.gov.au/cp_themes/default/page.asp?p=DOC-FVO-86-61-42 publisher [Accessed 22 July, 2013].

GeoLINK Pty Ltd, (2008) Ballina Shire Industrial and Commercial Land Use Review. August 2008 for Ballina Shire Council.

Lawrence Consulting, (2008) Ballina Shire Commercial/Industrial Land Demand Assessment. August 2008 for Ballina Shire Council.

Northern Rivers Regional Development Board, (2006) Overview of Economic Implications of South East Queensland on the Northern Rivers Region (2005), [Online]. Available: <http://rdanorthernrivers.org.au/our-region/regional-data/regional-industry-and-economic-plan-riep/> [Accessed 22 month, 2013].

Northern Rivers Regional Development Board, (2006) Regional Industry and Economic Plan, [Online]. Available: <http://rdanorthernrivers.org.au/our-region/regional-data/regional-industry-and-economic-plan-riep/> publisher [Accessed 22 month, 2013].

NSW Department of Planning and Infrastructure, (2006). Far North Coast Regional Strategy, [Online]. Available: http://www.planning.nsw.gov.au/plansforaction/pdf/fncrs_strategy_fin.pdf publisher [Accessed 22 month, 2013].



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