

## 5.0 ENVIRONMENTAL ISSUES AND BENEFITS

### 5.1 Overview

As noted above, there are a number of significant environmental and other issues concerned with the project. This section deals with the opportunities and constraints of the project and builds upon matter raised in the previous Information Request. It considers the existing situation, what will occur, and the resultant issues and benefits for each issue.

### 5.2 Flooding

Substantial portions of the subject site are currently subject to flooding. The Caboolture Shire Council has been consulted in this regard by the proponent and Parsons Brinkerhoff. The latter has subsequently undertaken preliminary flood modelling for the proposal, with the outcomes having been assessed against the Councils' two main floodplain management conditions, namely:

- No net loss of flood storage across the development site; and
- No resultant increase in flood levels over adjoining properties.

Parsons Brinkerhoff have presented two models as part of their preliminary reporting to date. These are:

- The Base Case – which determines the existing peak flood levels throughout the floodplain. Model verification was undertaken by comparing flood levels against Council's adopted 100 year flood and 10 and 50 year events; and
- The Development Case – which represents the proposal with flood mitigation works. The Development Case acknowledges that there are two main flood storage areas within the site boundaries that increase the conveyance of flood water through the site. The largest of these is situated in the north of the site, whilst the other is located towards the eastern boundary. Both of the areas have dual purposes. The first is to provide increased flood conveyance and the second, to provide locations for stormwater treatment.

On the basis of the modelling thus far, it has been concluded that there was a good correlation between the base case and Councils' adopted flood levels and flood extents. In addition, the development case meets Councils' floodplain management conditions and it has been demonstrated that it is possible to meet Council's objectives. Overall, there will be a net benefit to the community.

That is, there will be a net increase in flood storage on the site and peak flood levels increases will occur only within the site boundary or at locations immediately adjoining the development where existing infrastructure will not be impacted. A concept plan of development showing the Q100 line is included as *Appendix C*.

### 5.3 Stormwater and Water Quality

Caboolture is experiencing rapid urbanisation and as a result, increased stormwater and sewage discharges have boosted the sediment and nutrient loads flowing into the Caboolture River.

Caboolture Shire Councils' Environmental Monitoring Program reviewed five sites within the section of the river adjacent to the site in 2001. The data indicates that the overall water quality of the site adjacent to the river is poor. The result is primarily due to a combination of poor concentrations of

dissolved oxygen, turbidity and nutrient levels. The SEQ Environmental Health Monitoring Program has also produced a 'report card' for the river. Since 2001, the river has scored C, C- and most recently D+. This being the case, it is obvious that a prime objective of the subject proposal is to improve stormwater quality management and ultimately, reduce pollutant loads.

With this background in mind, Parsons Brinkerhoff have undertaken preliminary Stormwater Management Reporting (via means of a MUSIC water quality model). As a basis for the reporting, the environmental values for the waterway were determined and the Water Quality Objectives identified. The legislative basis for determining water quality management has accordingly, been reviewed. The *Environmental Protection (Water) Policy 1998*, the *Queensland Water Quality Guidelines* and particularly, the Queensland Water Quality Guidelines for the Caboolture River have been addressed. In particular, it is to be noted that Caboolture Shire Council seeks – by way of its Caboolture Shire Plan Stormwater Code (Specific Outcome 4) – to ensure that permanent water quality control measures achieve the following minimum reductions in annual mean load generated by the development site:

- a.) 80% for suspended sediment;
- b.) 45% for total phosphorus;
- c.) 45% for total nitrogen.

The above have been utilised as the benchmark for preliminary stormwater treatment design for the proposal.

The Parsons Brinkerhoff investigations to date provide for two levels of management plans, being:

- An overarching framework for water quality management for the entire site; and
- Catchment water quality management plans for the first stage of development of each catchment (of which there are eight).

An important component of the above has been the adoption of design criteria (eg water harvesting, maintenance of buffers to waterways, contribution to and utilisation of open space areas) which mould the nature and form of the proposal. The main theme from the design criteria is that the proposed development will protect and enhance riparian and wetland vegetation. As a result, a 100 metre wide buffer to the Caboolture River and 40 metre wide buffer to Raft Creek will be utilised, together with a large portion of the subject site being provided as open space. Moreover, the overall stormwater management objective is to preserve natural flows to the waterways and to decrease overall nutrient and pollutant loads in the Caboolture River.

Treatment trains (a series of stormwater treatment measures designed to remove stormwater pollutants) will be further researched and incorporated into the Stormwater Management planning. Such measures will include (but are not limited to) grass swales, bio-retention, gross pollutant traps and constructed wetlands in the low-lying flood plains. The incorporation of water sensitive urban design is integral to the design philosophy. The impact of treatment measures on heavy metals, faecal coliforms, hydrocarbons and litter in runoff will also be assessed.

To meet water quality objectives, substantial reductions in current pollutant loads are therefore required. A reduction in nutrient and sediment loads will be of benefit to the health of the larger ecosystem. These will be reviewed in further detail as part of the design process.

## 5.4 Acid Sulfate Soils

The subject land includes land mapped below 5m AHD. *State Planning Policy 2/02: Planning and Managing Development Involving Acid Sulfate Soils* is applicable and is required to be addressed.

Preliminary reports have indicated some level of Acid Sulphate Soils (ASS), either low or moderate. Potential for ASS was intermittent; however it is likely that ASS will be encountered during the cut to fill earthworks.

The proposal will address the SPP (in conjunction with *SPP 2/02 Guideline: Acid Sulfate Soils*) given the extent of excavation and filling required. Details of the excavations including volumes, existing (and finished) ground levels, depth of excavations and fill will be provided.

Extensive testing of soils will be undertaken as part of the EIS and an Acid Sulfate Soil Management Plan (ASSMP) will be prepared to deal with these soils when encountered, based on current Queensland government and EPA guidelines.

## 5.5 Coastal Designations

The riparian zone of the site is largely clear of marine vegetation due to past farming practices. However, there are limited areas of riparian vegetation remaining such as mangroves and saltwater couch. Downstream of the site (leading to Deception Bay) there are substantial areas of wetlands declared as 'Significant Coastal Wetlands' under the draft SEQ Coastal Management Plan on Maps 6,7 and 8.

The mapped wetlands only note a small 'finger' of significant coastal wetlands on Lot 24. Site surveys have revealed that this consists of a very narrow channel supporting a narrow band of mangroves, with saltwater couch fringing both sides, partly traversed by a well established vehicle track.

**Figure 6** denotes the major marine designations relevant to the development. These include:

- The Moreton Bay Marine Park Habitat Zone which, ends at the north-eastern boundary of the site;
- Fish Habitat Area, Category A (Fisheries Act, 1994)
- Ramsar Wetlands
- Significant Coastal Wetlands (Draft SEQ Qld Regional Coastal Plan)
- Wader Bird Sites

The lack of significant riparian vegetation on the subject site has been identified as being a major impediment to the ecological health of the river and riparian ecology, particularly in terms of erosion, water quality and habitat. Accordingly, the proposal has indicated that a 100 metre wide riparian zone will be rehabilitated for approximately the 8 kilometre length of the site's river frontage. This program is intended to provide the following key benefits:

- The creation of significant habitat areas enhancing wildlife corridors on site and to adjoining habitat areas;
- Bank stabilisation, reducing erosion potential and providing a buffer for any natural physical processes which may occur such as erosion and accretion, flood mitigation, climate change and the greenhouse effect;
- A physical separation distance and/or barrier between adjacent uses;
- Filtration of pollutants from terrestrial stormwater as well as river flows, improving water quality; and
- Provision of appropriate human access and economic benefit.

## 5.6 Dredging

The construction of the proposed marina will require capital dredging works in the order of 1,500,000m<sup>3</sup>. A proportion of the resultant fill is intended to be used on site, with some required to be exported to other properties in the proponent's portfolio. The management of such large-scale earthworks in close proximity to the Caboolture River - and the necessary disturbance associated with the break through of the marina into the Caboolture River - will require careful planning and management to prevent impacts on water quality. These potential impacts can be adequately defined at the assessment stage and management measures proposed for the prevention and control of impacts will need to be defined prior to the commencement of works.

Dredging is also required in the navigable section of the lower Caboolture River. This dredging achieves two primary purposes:

- Provision of a safe navigable entrance to the river at all tides facilitating marine traffic for the marina, and addressing an existing safety concern whereby the safe passage of larger vessels currently restricted to top of tide navigation are not compromised in adverse weather conditions;
- Dredging of the river entrance increases the outfall of water flows in flood events, providing substantial flood mitigation upstream.

Proposed dredging of the existing navigation channel at the river entrance is likely to require a channel approximately 3.4km long and 70 metres wide at the base to adequately meet these objectives. Such dredging will occur within the defined navigation channel, and hence is outside the declared Fish Habitat Area. The environmental studies produced for the assessment of the proposal will define the areas and volume of dredging required within the navigation channel, and also the nature of the dredged material.

The operation of the proposed marina will also require periodic maintenance dredging of both the marina basin and the navigation channel. Detailed modelling of the expected siltation rates will be undertaken to define the expected frequency of dredging and the volume of material to be removed. The management of the resultant dredge spoil will be defined following the confirmation of expected volumes, and relevant considerations are:

- spoil disposal locations;
- monitoring and testing of spoil for contaminants and acid sulfate materials; and
- handling and management of spoil, including spoil treatment if required.

## 5.7 Fish Habitat Area

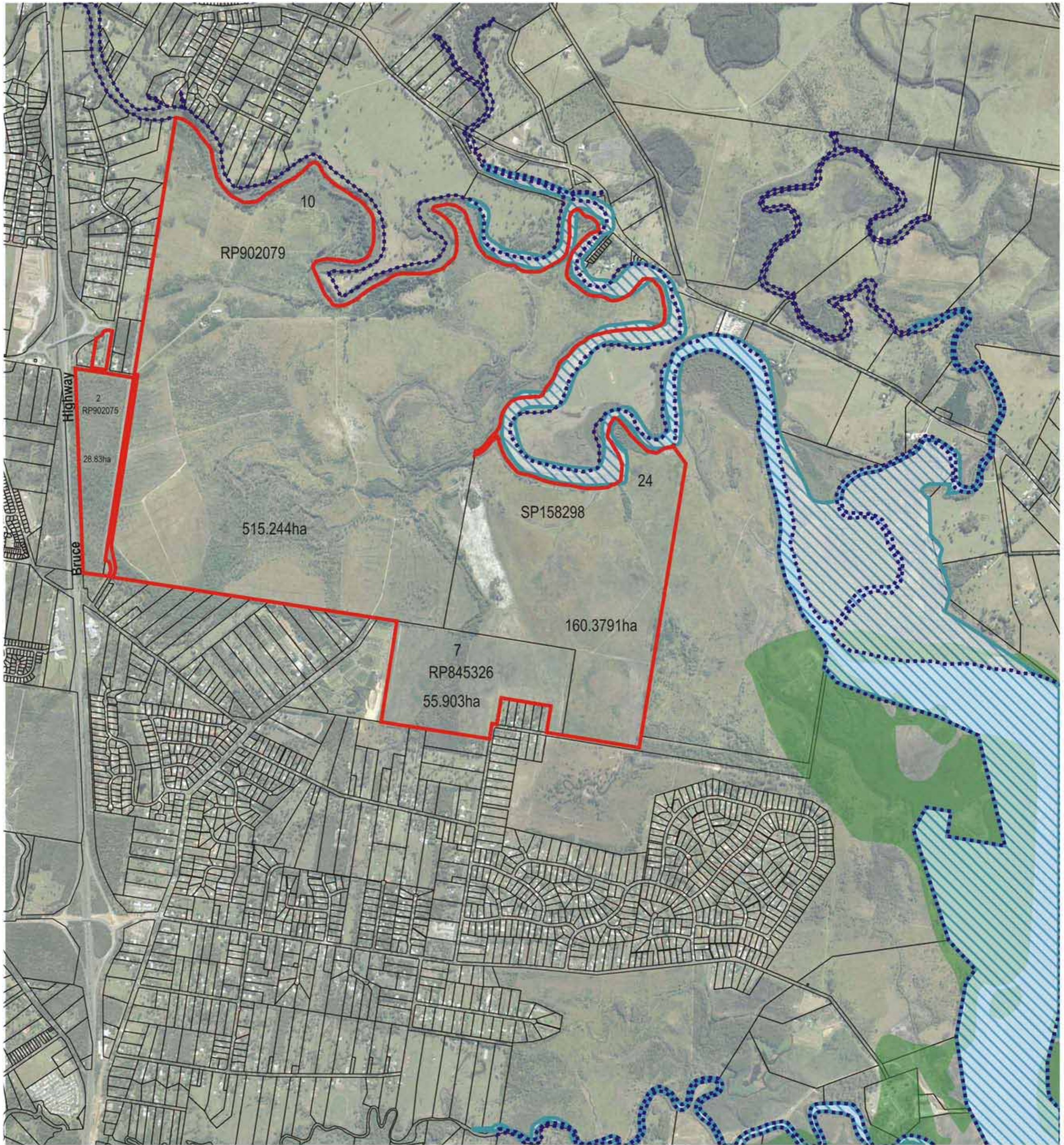
The subject site abuts the Caboolture River which is part of a declared Fish Habitat Area (Deception Bay). Within the subject site, a 100 metre rehabilitated riparian buffer would be provided to the Fish Habitat Area (FHA) along the site's frontage to the Caboolture River, except for a 100 metre break in the section of the bank, required to facilitate the entrance to the marina.

It is noted that the proposal would require revocation of a part of the declared Deception Bay FHA and that permits would be required under the Fisheries Act 1994. The EIS will address such considerations in a detailed manner.

The marina entrance location has been selected in an area which has very limited riparian or other vegetation. The marina itself is located outside the declared FHA, and will actually increase the Fish Habitat area.

# Major Marine Designations

Northeast Business Park - Figure 6



## Legend

-  Site Boundary
-  Fish Habitat Areas Category A (Source: DPI)
-  Ramsar Wetlands (Source: DEH)
-  Wader Bird Sites S.E.Q. (Source: DPI)
-  Moreton Bay Marine Park Boundary (Source: QLD Government)

Designation boundaries are approximate only.

Notes: 1. Coastal management district & erosion prone area are not mapped in the locality, however are defined as 40m landward of mean high water spring tide or highest astronomical tide, whichever is greater.

2. Refer also to Maps 6, 7 & 8 of Draft SEQ Regional Coastal Plan - Significant coastal wetlands to east of site to Deception Bay.

The provision of riparian vegetation along such a massive river frontage comprehensively compensates the minimal loss of habitat required for the marina entrance. Moreover the provision of 100m wide vegetated buffer where none currently exist will provide:

- long term protection of fish habitats by benefits and retains biological and physical processes, and protects habitat from human impacts;
- managed public access to fisheries resource, mitigating adverse effects from currently unmanaged public access;
- long term insurance against possible natural erosion processes and/or greenhouse impacts; and
- improve water quality, increase food and habitat for fish species, and protect against vegetation loss, bank erosion, reduce nutrients and pollution, all aiding the increase of fish stocks

Additionally, the provision of best practice environmental solutions for boat maintenance, harbouring and repair will replace less well managed or uncontrolled practices which may have adverse effects on aquatic environments and fish stocks.

In summary, the proposed development offers significant potential to improve existing fish habitat conditions and increase the physical extent of potential fish habitats.

#### 5.7.1 Tidal Prism

The construction of a 27 hectare marina on the site has the potential to affect the tidal regime of the upper tidal reaches of the Caboolture River and tidal tributaries of the Caboolture River that flow through the site. Namely, by slightly altering the flow characteristics and amplitude of tidal flows of these watercourses. Alterations in the tidal prism could potentially impact on estuarine communities in these areas.

It will need to be demonstrated that tidal communities, in particular the tidal creeks within the site, will not be unduly impacted by any changes in tidal prism resulting from the proposal.

#### 5.7.2 Erosion

The proposal will result in the creation of a marina complex a considerable distance from the mouth of the Caboolture River. A significant amount of boat traffic will be generated on the Caboolture River downstream of the site.

The wash created by boat traffic has the potential to impact on the integrity of the banks of the Caboolture River, in particular, where natural protection in the form of coastal vegetation is not present. Currently, erosion is prevalent in areas with limited riparian vegetation, whilst minimal erosion can be expected where substantial vegetation is present.

An assessment of the potential erosion impacts resulting from the additional boat traffic generated from the proposal will be required. This study will consider any physical or operational mitigation measures that are proposed. These will include the proposed rehabilitation of foreshore areas on the site, boating speed limits, number of boat movements and the like.

### **5.8 Aquatic Ecology**

The Ecology Lab (ecological consultants) has undertaken preliminary investigations in this regard. They have identified the following features:

- Three species of fish, three species of marine mammals, five species of marine reptiles and ten species of birds in the endangered, vulnerable, rare or migratory schedules of the Nature Conservation Act 1992 and EPBC Act 1999 may occur within the area (eg Moreton Bay Marine Park) but are unlikely within the site;
- The site comprises several areas of aquatic habitat. The most significant is Raft Creek and areas of mangroves and salt marshes fringing the site boundary and Caboolture River. The tidal portion of Raft Creek is included in the Fish Habitat Area;
- The proposed entrance to the marina is to be situated in a section of the river that is subject to erosion and which contains few aquatic plants. There are several small, mangrove-lined channels to the east of the proposed entrance;
- The weir on the Caboolture River (location approximately 19 kilometres from the mouth) forms a major barrier to fish passage and significantly effects the distribution of aquatic plants and water chemistry;
- Aside from the weir, the river has been altered by human activities (Monty's marina and slipway further downstream, near Goong Creek are foreshore and bank works, two Wastewater Treatment Plants discharging downstream of the weir and near the river entrance);
- Parts of the Caboolture River shoreline exhibit erosion and areas prone to erosion due to clearing of vegetation to the bank, unauthorised access (by vehicles) or from boating impacts;
- Water quality is poor due to supersaturation of oxygen in surface waters, depletion of oxygen at the bottom and high levels of turbidity. Nutrients and contaminant levels are also an issue.
- The proposal will provide for foreshore buffering – aside from the marina basin (which will be constructed on the disused farmland).

## 5.9 Terrestrial Ecology

Initial investigations regarding the terrestrial ecology values of the site and the associated regulatory environment have been undertaken by Cardno.

The subject site is largely clear of original vegetation and is generally in a highly disturbed state. This situation is due to previous land clearing on the site for the former uses, being plantation forestry purposes and previously, sugar cane farming over generations.

Much of the site is now dominated by large expanses of disturbed grassland, scattered groves of trees, paperbark forest and various types of marine vegetation in specific areas subject to periodic tidal inundation. There are also a number of significant weed species including prickly pear, groundsel bush, water hyacinth, lantana and others.

Most of the subject is considered to have a limited capacity to provide suitable, functional habitat resources for native fauna species.

There are however, a number of areas of intact vegetation together with riparian and drainage lines, which provide the highest potential to provide habitat for native fauna species, discussed briefly below.

### 5.9.1 Remnant Vegetation

Not of Concern and Endangered Regional Ecosystem (RE) types are recorded across approximately half of Lot 2 and in the south western corner of Lot 10 on the 2003 Regional Ecosystem mapping. The remainder of the site is mapped as either non-remnant vegetation or plantation forest. This area provides potential habitat resources for the Grey-headed Flying-fox which is a listed threatened fauna species pursuant to the EPBC Act. The relevant Regional Ecosystem Map is included as *Appendix D*.

### 5.9.2 Marine Vegetation

Marine plants are recorded in various areas of the site in Lots 24 and 10, including mangroves and saltwater couch. Marine plants are identified as fisheries habitat pursuant to the *Fisheries Act 1994*, and an approval is therefore required from the Department of Primary Industries and Fisheries if disturbance of, harm to or removal of marine plants is proposed.

### 5.9.3 Endangered Species

Initial investigations reveal the site does not provide habitat critical to the survival of any wildlife species of recognised conservation significance pursuant to the *Nature Conservation Act (NC Act)*. As such, development of the site would not be constrained by the provisions of the *NC Act*.

Detailed ecological assessments will be undertaken as part of the EIS process to confirm the presence or absence of flora or fauna species that are listed under the *NC Act* or otherwise ecologically significant. Such an assessment would also include an analysis of the potential impacts associated with the proposed plan of development, and recommended mitigation measures to avoid, minimise or manage potential impacts, as well as identifying opportunities for habitat rehabilitation.

## **6.0 SOCIAL AND CULTURAL ISSUES**

### **6.1 Social Characterisation**

The research undertaken by Core Economics has revealed that residents within the Caboolture Shire have relatively low disposable incomes based on a comparison of average weekly household incomes (\$894, compared with \$1,080 for the Brisbane SD). The Shire contains predominantly low density housing and has a higher than average number of persons per dwelling (2.75, as compared with the Brisbane SD average of 2.61). This is reflective of a higher concentration of families. In addition, approximately 68.3% of dwellings in Caboolture Shire are being purchased or fully owned – as compared with the Brisbane SD average of 64.6%. Accordingly, this reflects that Caboolture Shire is a 'mortgage area' where residents are working to pay off their homes.

In short, Caboolture Shire is a 'family area' with residents residing in the area based on affordability in terms of housing and living costs.

### **6.2 Urban Design**

Quality urban design is integral to the vision of Northeast Business Park. Leading mixed-use employment precincts such as Norwest Business Park in Sydney and Metroplex on Gateway have demonstrated the value of urban design in attracting substantial businesses, trending to a growing prevalence of clean, efficient industries, and relying on an increasing knowledge base in order to gain competitive advantage.



The creation of a functional and attractive employment precinct is seen as fundamental to attracting owners, tenants, employees and visitors, all of which are essential to the vitality and viability of the precinct. The rehabilitated natural riverfront setting, marina precinct, golf course and open spaces afforded by Northeast Business Park provides a desirable context for the setting of progressive design standards throughout all aspects of the development.

Precincts based on compatible and complementary land uses will be created, matched to topography, location and demand for uses. Clustering of complementary uses will be encouraged and facilitated to increase knowledge and/or resource flows between businesses. A range of commercial uses will cluster in activity centres.

Substantial landscaping is proposed throughout the development, with activity centres and parkland and open space areas linked by pedestrian and cycle paths.

### 6.2.1 Built environment

A clear focus on requiring and facilitating high quality built form is essential in achieving the urban design vision for Northeast Business Park. Examples of some indicative design approaches are included at *Figure 7*.

Progressive and functional design guidelines tailored to uses and underpinned by sustainability principles will be provided to purchasers for incorporation into building concepts. These will be subject to a design review process to encourage and facilitate quality, efficient design.

Core sustainability principles will include:

- Energy efficiency;
- Water efficiency including use of recycled water;
- Material and construction efficiency;
- Attractive and functional aesthetic;
- Building location and streetscapes
- Landscaping and Water Sensitive Urban Design.

### 6.2.2 Tenure

The land comprising the elements of the Northeast Business Park project is held in **freehold title** by Northeast Business Park Pty Ltd.

It is proposed that the Northeast Business Park development will utilise the Body Corporate Community Management Act 1997 to produce various land interests for sale over the life of the development period. The *Body Corporate Community Management Act 1997* will enable the creation of various interests in a controlled development program.

The Act will facilitate the creation of a number of supporting instruments to:

- Ensure the Architectural themes incorporated into the various precincts are maintained across the development in accordance with development approvals.
- Ensure the Landscape themes incorporated into the various precincts are maintained across the development in accordance with development approvals.

# Indicative Images

Northeast Business Park - Figure 7



The contents of this plan are conceptual only, for discussion purposes. All areas and dimensions are approximate, subject to relevant studies, Survey, Engineering, and Council approvals.

20430 - 08 date: May 2006 scale: NTS



- Ensure the ongoing maintenance of all open space, environmental areas, environmental infrastructure and public precincts across the development are maintained to a standard of excellence in keeping with the expectation of the community who live work and enjoy the natural environment at no cost to Government or the community of Caboolture.

All too often the cost of ongoing maintenance of the natural environmental elements of this type of development is transferred to Local Government or the State. In this instance, the Northeast Business Park project intends to break new ground, ensuring that the natural environmental components so important to the “clean, green, serene” theme of the development are not only preserved, but also nurtured for the life of the community.

### 6.3 Cultural Heritage

Previous investigations on the site have revealed the presence of both indigenous and non-indigenous cultural heritage items and areas of significance.

A Cultural Heritage Investigation was undertaken over lots 10 and 2 with assistance from SEQUITO North and the Gubbi Gubbi people, as part of the original Business Park application. A number of non-indigenous artefacts were located on the site including remnants of the ‘Morayfield’ farm complex (eg, homestead staircase, steam boiler, exotic plantings and a headstone). The previous utilisation of the site as a pine plantation has limited the possibility of finding major indigenous artefacts, although some artefacts were located during investigations – and sites of significance noted.

It is to be noted that the Information Request for the Caboolture City Marina site requires the preparation of a Cultural Heritage Management Plan. The plan will proceed along similar lines to the one previously completed by Davies Heritage consultants for the Business Park site. Eve Fesl is the Gubbi Gubbi representative for the area, and, particularly under the *Aboriginal Cultural Heritage Act 2003*, is the key party for consultation. Eve Fesl was consulted for the previous study and is a Burpengary resident. Ms Fesl has subsequently been contacted regarding the preparation of this further study.

It is also noted that the marina application includes use of the bed and banks of Caboolture River which is owned by the Crown, and therefore has some potential to invoke native title interest, which cannot occur over freehold land. This is to be addressed as part of the cultural heritage study.

As noted above, that site also has some significant western site history which was largely reported in the previous study undertaken for the Business Park. This can be built upon to add richness to the potential historical precinct and interpretation centre within the proposed rehabilitated parklands and garden precinct. An interpretive centre could also increase cultural and environmental awareness.

### 6.4 Communications Strategy

The community and stakeholder engagement process is integral to the proponent’s approach to the development. A respected community relations firm, Three Plus has been engaged to provide the Community Engagement Plan (CEP) methodology for Northeast Business Park. The basic methodology is intended to be the same as that used successfully by Three Plus for the Westgate precinct project and Gold Coast National Seaway project, both managed by the Office of Coordinator-General. The community consultation program will include:

- development and implementation of a public consultation program

- effective community engagement and management during the public consultation, including public display of the EIS
- production and distribution of documentation
- advice on emerging issues
- assistance with negotiations with interested parties
- provision of a consultation report

Three Plus proposes a consultation method that provides opportunities for presenting the project to local communities, identifies community and environmental issues, seeks input and advice from interested/affected locals, and enables the proponent and project team to design a sustainable project model.

The CEP will identify the stakeholders who comprise the community of interest for the development:

- geographic (residential, commercial, business clients)
- local interest groups
- elected representatives (federal, state and council)
- relevant government agencies
- the media

The CEP will identify potential issues and key messages for each stakeholder group including:

- local community attitudes assessment
- media and political issues identification
- environmental impacts/flora and fauna and aquatic habitat implications

The plan will identify engagement techniques appropriate for each stakeholder group and the timing of implementation of those techniques or tools, including a community information day/s. Information gathered at the community information day/s will be fed back to the community and the Project Team as a matrix of issues/concerns. The matrix will be investigated by the Project Team, which will respond to each issue raised by the community.

A community feedback meeting is then proposed, to enable the project team to speak to the issues and their responses. This will provide a clear demonstration that the Project Team has taken seriously its engagement with the community, and has informed the project through the community raising issues and concerns.

## 7.0 BENEFITS SUMMARY

### 7.1 Potential benefits to local, state and national economies

**Core Economics** has undertaken an assessment of the overall development proposal whilst the Pacific Southwest Strategy Group has assessed the marina and related components (for Lot 24 on SP158298 and Lot 7 on RP 845326). The findings of Core Economics are addressed first, below.

The Core Economics assessment has indicated that an initial investment of **\$872.4 to \$887.4 million** to develop the overall proposal will generate an economic benefit to Caboolture and the broader area economy of approximately **\$1.429 billion to \$1.461 billion**. This includes the initial investments and output in the local economy.

Caboolture Shire Council aims to have two out of three workers living and working in the Shire within 20 years. In order to do so, an additional **30,100 jobs** need to be created in the Shire over this period. The proposal has the ability to provide almost one third of these jobs within a specialised and integrated marine and related cluster.

The overall future workforce of **6,700 to 9,550 people** (based on a rate of 40 to 60 workers per hectare) will collect between **\$450 million and \$500 million** per year in wages and salaries. The majority of this will be diverted into the local economy in the form of housing payments, retail expenditure and leisure activities.

Given that wages and salaries will represent in the order of 50% of the expenditure of businesses in the area, it is estimated that the combined turnover of businesses located on site at completion will be approximately **\$900 million to \$1 billion** per annum. As a comparison, Caboolture Shire currently contributes an estimated **\$2.6 billion** (or 3%) to the region's Gross Domestic Product of **\$86 billion**.

The proposal has the potential to increase the Shire's current economy by **over one third**.

#### 7.1.1 Marina and Marine Industries

Pacific Southwest Strategy Groups' (PSSG) assessment of the marina and related components only has addressed matters such as boat registration, marina and berth requirements, undersupply, population growth and opportunities for industry.

The review of boat registrations and marina and berth places has demonstrated that there is a clear demand for further facilities. For Southeast Queensland alone, boat registrations are anticipated to rise from approximately 102,000 in 2005 to 130,000 by 2010 (+27.5%) and to 212,000 by 2020. Further, in Southeast Queensland there are 21 marina/marine precincts. They have a total capacity of 4,910 wet berths and all of these are either occupied or set aside for visitors.

The Boating Industry Association Queensland have advised that in January of 2005, in Queensland there was a total waiting list of 1,480 for marina berths (comprising 795 wanting to purchase and a further 685 wishing to lease). By extrapolating the future demand for boat registrations versus the demand for berths, it is estimated that by 2010, there will be a need for a further 1,789 berths in Southeast Queensland. The market undersupply will continue unless addressed.

Following consideration of the above and issues affecting the Queensland marine industry, PSSG considered that the marine precinct provides opportunities in:

- Marina berths;
- Dry boat storage;
- Boat building ( a prime focus of the project);
- Aviation (due to the proximity of the nearby airport); and
- General marine business.

PSSG also considered the Southeast Queensland marine industry and concluded there is:

- Strong demand for marina berths and storage;
- Major shortage of marina berths/dry storage;
- Competition for boat builders/manufacturers and suppliers from existing precincts on the Gold Coast, Brisbane (big industrial, commercial and recreational), Redcliffe and the Sunshine Coast (for small/medium enterprises);
- Increasing competition from manufacturers from China for mould and partial fit out; and
- Potential for more imports from the USA resulting from the Free Trade Agreement.

It was also noted that the Caboolture region has:

- Little industrial land available;
- A limited supply of commercial land; and
- Very high demand for all types of land and built sites.

In view of the above, PSSG considered a precinct demand model. Whilst the marine precinct may have a manufacturing element, it is considered that the major focus should be a consumer/retail precinct with the following elements:

- Moorings and dry boat storage;
- Cafes and bars;
- Boat sales and service;
- Residential;
- Hotel;
- Offices and associated commercial;
- Sports/health, business/clubs; and
- Option of industry.

The above model, based on current national and employment trends, will provide more jobs and benefits for Caboolture than manufacturing alone. When translated to elements within the marine precinct (based on typical site coverage requirements), a total development area of approximately 292 hectares was estimated to be required. The marine precinct would be undertaken in six stages.

Based on the above elements for the marine-based precinct only, PSSG estimated the preliminary capital expenditure budget (i.e. land development and building construction) based on industry average unit costs. The total capital cost for the component is therefore **\$687.4 million** (exclusive of GST and land value).

In addition, PSSG determined an indicative operating income. Once fully operational, the estimated operating income for the project will be **\$68.8 million**. An assessment of the likely impact of the marine precinct on the local and regional economy was also undertaken by PSSG based on an 'input-output' methodology (or multiplier calculation). This information is tabulated below for ease of understanding:

a.) During the construction phase

Input	Value (millions)
Local value add from the construction	\$165.9
Total flow-on effect resulting from the initial construction cost	\$187.7
Total value add to the regional economy (Gross Regional Product) during the total construction period, including the second-round flow-on effects.	<b>\$353.6</b>

There will be a multiplier of 2.1.

b.) Once fully operational

Input	Value (millions)
Likely initial benefit to the Caboolture economy from the continued operation	\$27.02
Likely flow-on benefit to the Caboolture economy from the continued operation	\$31.36
Total in value-add terms	<b>\$58.38</b>

There will be a multiplier of 2.2.

## 7.2 Potential costs and benefits to natural and social environments

The key potential 'net benefits' are described below:

### 7.3 Environmental

- Provision and rehabilitation of large areas of Open Space within the development, both on the river and connecting inland.
- Catalyse connection and potential rehabilitation of important habitat areas, particularly to the east and northwest (across the river).
- Use of treated water from Caboolture River Sewage Treatment Plant.
- Alternatively, catalyse upgrade of Uhlmann Road Sewerage Treatment Plant and use its treated water (potentially greater impact on net water quality improvement in Fish Habitat and Moreton Bay – however would require significant State and Council investment).
- Use of Water Sensitive Design methods to polish and denitrify stormwater flowing through site from external catchments, contributing to better river water quality.
- Contribute to increased biodiversity and fauna populations, particularly fish and birdlife – via improved water quality and vegetation rehabilitation.
- Dedication of a large conservation and nature-based recreation precinct based around the rehabilitated riparian zone, heritage park and open space areas.

- In succinct terms, the proposal aims to safeguard the existing environmental values and improve the existing environment.

## 7.4 Potential Employment benefits

**Core Economics** have determined that the following are the key employment multiplier effects that will accrue during the construction phase of the Industry/Business Park only:

- The initial investment in the construction of the Industry/Business Park will generate approximately **1,800 to 1,960** jobs. The jobs will be generated from Caboolture and the surrounding area.
- Industrial support effect will generate approximately **888 to 960** jobs for Caboolture and the broader area.
- Consumption induced effect will generate approximately **851 to 920** jobs in Caboolture and the broader area.
- The construction of the Industry/Business Park only will generate an overall effect (initial and flow-on) of approximately **3,500 to 3,840** jobs in Caboolture and the broader area.

**Pacific Southwest Strategy Group (PSSG)** have determined that an estimated **10,905** 'full time equivalent' positions will be created during the construction phase of the marina precinct. This represents **5,154** initially and **5,751** as a flow on. There is a multiplier of **2.1**. PSSG have also calculated that there will be approximately **1,021** 'full time equivalent' positions created during the operations phase (i.e. approximately **437** initially and a further **584** as a flow on). There will be a multiplier of **2.3**. The employment multipliers are based on the construction of the Industry/Business Park and marine precinct. It does not include jobs created by businesses locating on-site, nor flow-on employment created from those businesses hiring suppliers and other related workers.

In summary, the proposal will generate an estimated **6,950 to 7,110** full time equivalent (FTE) jobs during construction (14,405 to 14,745 FTE jobs including subsequent secondary flow on effects) and **6,137 to 8997** FTE jobs during the operations. The local employment and economic injection is a critical component of meeting Caboolture Shire Council's *Corporate Plan 2005-2009* target of achieving 2 out of 3 workers living and working within the Shire within the next 20 years.

In all, the employment impacts will be positive as there will be additional jobs, a broadened skills base and most importantly, Caboolture-based employment in line with Council's long term goals. In addition, the project addresses and supports State Government initiatives for broadening the employment base and strengthening the economy (as enunciated in policy documents such as the SEQRP).

## 7.5 Social Environment

In short, the proposed Industry/Business Park, marine precinct and marina will enhance the local residents' way of life. It will create local and regional employment through the construction phase and the ongoing operation of businesses that locate to the site, as well as the marina.

The proposed marina on the site and the supporting amenities and facilities will enhance community interaction and cohesion. The proposal will provide opportunities to better (and appropriately) access the waterway and environmental areas, whilst also providing a marine-based hub for businesses and local and regional recreational opportunities for residents and tourists.

The development, along with Caboolture and Morayfield, will create a robust trio of centres collectively fulfilling the regional role of Principal Activity Centre. Moreover, it will create additional vitality and



prosperity for the region and all three centres, whilst enhancing recreational and housing choice. This trio of centres will be underpinned by the creation of a public transport route efficiently linking the centres and connecting to existing rail and bus networks.

The development unlocks extensive frontages to the Caboolture River, previously inaccessible to Caboolture residents due to private ownership. It also creates a recreational and leisure precinct centred around the river, marina, golf course and open spaces providing a desirable addition to the social fabric, leisure choices and identity of the region.

The residential development areas proposed for the precinct provide an increased range of housing and accommodation choice for the region providing the local population necessary to underpin the viability and vitality of the precinct, such that the development can provide a business and social heart for Burpengary and add to the social choices for the region.

This approach is considered to encapsulate the SEQRP's core philosophy of co-locating business, recreational and residential uses in order to 'live work and play' in discrete precincts with an individual character, separated by green, open spaces.

## 8.0 CONCLUSION

The development of the Northeast Business Park is seen as a landmark development, providing a unique opportunity to provide and stimulate substantial economic, environmental and social benefits to Caboolture and South East Queensland. The development will herald a new phase in the strengthening regional role of Caboolture as a Principal Centre in the northern corridor of South East Queensland.

The proponent's 'net benefit' approach and commitment to stakeholder engagement and mutual benefit provides a sound basis to approach the design, approval and development of a project of this nature. Such an approach is an intrinsic component necessary to achieve the sustainability and design objectives of the development including; water quality improvements, energy and resource efficiency, accessibility, ecological rehabilitation, flood mitigation, social vitality and economic prosperity. The addition of highly desirable social and recreational opportunities will be of clear benefit to the region.

The development provides for the co-location of two key development precincts. Namely, the mixed industry business park, and a marina and marine industries precinct (complemented by an array of other uses). The construction of the marina precinct in particular will help address a substantial unmet demand for marine facilities, thereby relieving the subsequent restriction on related economic investment opportunities. Collectively, the development will generate an estimated **6,950 to 7,110** full time equivalent (FTE) jobs during construction (14,405 to 14,745 FTE jobs including subsequent secondary flow on effects) and **6,137 to 8,997** FTE jobs during the operations.

The economic injection and employment benefits are consistent with state government priorities of broadening the economic and employment base, as enunciated in the SEQRP. The local employment and economic injection is also a critical component of meeting Caboolture Shire Council's *Corporate Plan 2005-2009* target of achieving 2 out of 3 workers living and working within the Shire within the next 20 years.

The extent of environmental issues relevant to the proposal are significant in areas and detailed studies and measures will be incorporated into the design, construction and operation of the development in order to protect sensitive areas.

Some common environmental issues however, are mitigated by the current degraded state of the landholding, relatively poor water quality in the Caboolture River, and limited riparian zone vegetation. Accordingly, core environmental concern for the locality has to focus on effective means of achieving rehabilitation and improvement of environmental conditions, in addition to protection of sensitive ecologies. The Northeast Business Park proposal has accordingly been framed to provide net environmental benefits.

Northeast Business Park presents an opportunity for private industry to demonstrate proactive stewardship of the natural and aquatic environment, whilst improving social and economic conditions. Northeast Business Park aims to be a benchmark development for future globally competitive business parks and/or marinas in environmentally sensitive locations.

The confluence of visionary need and opportunity resulting in a proposal of this magnitude and strategic significance is considered unique in the region, and addresses a multitude of initiatives of the Caboolture Shire Council, State Government policy documents and the SEQRP. The Northeast Business Park proposal is of strategic significance to the Caboolture Shire and to the State of Queensland.

*Appendix A*

*Letters of Support*

TO WHOM IT MAY CONCERN

*"Expression of Support"*

Northeast Business Park Pty Ltd. proposal to construct a world class Business Park and Marine Industry precinct on freehold land adjoining the Caboolture River.

On behalf of the Directors of the Boating Industry Association Queensland, I write to record an "Expression of Support" for the proposed development by Northeast Business Park Pty Ltd, which is a current financial member of this association.

The Boating Industry Association Queensland (BIAQ) regularly surveys its Marina Division members in relation to waiting lists for marina berths. Over the past eighteen months the waiting list has varied between 1500 x 1600 throughout Queensland, heavily weighted to the south-east corner.

With net migration into south-east Queensland predicted to average 60,000 people per annum, a strong desire for on water lifestyle will continue to increase demand for the limited number of berths currently available.

The BIAQ therefore commends the proponents North East Business Park Pty Ltd for its development concept, the estimated \$353 million contribution to the Caboolture economy & the planned creation of more than 10,000 jobs during the course of the construction period.

Building the Marine Industry precinct incorporating some 600 to 800 marina berths will go a long way to alleviating part of the paucity of marina berths in the south-east corner.

The marine industry in Queensland has been experiencing unprecedented, experiencing 5-6% growth each year over the past 10 years, which is approximately twice the population growth.

As at 31 March 2006 there were 201,157 registered vessels in Queensland and the prediction is that by 2015, assuming the growth rate is maintained, there will be 300,000 registered vessels.

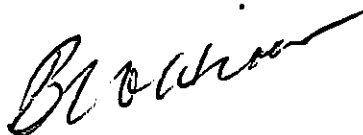
Another Milestone for recreational boating in Queensland is that there is now in excess of 500,000 licences on issue.

To summarise, BIAQ would like to offer the highest level of support to Northeast Business Park Pty Ltd in its pursuit for development approval for this particular project which will inject wealth into the local community, create additional employment and go some way to easing the demand on marina berth which currently has become a roadblock for further development of the Marine Industry in this state.

Yours sincerely

Barry Hibberd  
General Manager

Boating Industry Association of Queensland




Boating Industry  
Association of  
Queensland

**OFFICE**

Unit 2/54 Riverside Place  
Morningside  
Queensland 4170

**POST**

P.O. Box 3305  
Tingalpa DC  
Queensland 4173

P 617 3899 3333

F 617 3899 3051

E [biaq@biaq.com](mailto:biaq@biaq.com)

W [www.biaq.com](http://www.biaq.com)

**Member**

Australian Marine  
Industry Federation  
(AMIF)

**Divisions**

- Queensland Marine Association
- Queensland Marine Brokers Association
- Queensland Small Craft Council
- Marine Retailers Division
- Manufacturers Division



9<sup>th</sup> May 2006

The Manager  
Port Binnli Pty Ltd  
Water Street  
**FORTITUDE VALLEY QLD 4006**

Facsimile: 3257 1203  
Attention: Mr Jeff Smith

Royal Queensland  
Yacht Squadron Ltd

ABN:  
25 053 989 272

Mail Address:  
PO Box 5021  
MANLY QLD 4179

Location:  
578 Royal Esplanade  
Manly, Brisbane,  
Qld. Australia

Telephone:  
(07) 3396 8666  
international:  
+61 7 3396 8666

Facsimile:  
(07) 3393 4100  
international:  
+61 7 3393 4100

Email:  
mail@rqys.com.au

Website:  
www.rqys.com.au

**Dear Sir**

This organisation is involved in all facets of marine related recreational activities and our, almost, three thousand members own and operate all type of water craft, from small dinghies up to vessels of twenty five metres and more in length and both power and sail.

There is an increasing lack of berthing and hardstand facilities in SE Queensland for recreational and commercial vessels. This is having a noticeable effect on an ever widening range of activities in recreational, business and commercial areas.

We have a waiting list of people who want to buy or rent berths in our Marina. For in excess of three years we have, so far unsuccessfully, been attempting to establish further berths at our Marina in the Manly Boat Harbour.

On 21<sup>st</sup> February 2006 we hosted a seminar organised by the Department of State Development Trade and Innovation titled "Marina Needs and Understanding the Marina Approval Processes" which was attended by 48 people from Government (State and Federal) and Industry. The need for marine infrastructure was graphically evident from what transpired at the Seminar.

We wish you every success with your Northeast Business Park and Marina project on the Caboolture River. If anyone wishes to contact me, please invite them to do so on 0408 73 1155 or 3262 6693.

Yours faithfully

  
W G Kirby  
Commodore



## CABOOLTURE

13A KING STREET  
CABOOLTURE QLD 4510  
PO BOX 1470  
CABOOLTURE QLD 4510  
T. 07 5495 2992  
F. 07 5428 1279  
E. CABOOLTURE@REALWAY.COM.AU

### **Port Binnli's vision for North West Business Park I know will rival anything in the country.**

The Proposed Marine Industry Precinct will rival that of Coomera Waters and allow for the development and containment of a burgeoning industry that is overflowing from aircraft hangers at the Aerodrome to construction in sheds kilometres from the water, and two marinas that are already overflowing and cannot accommodate storage, repairs and manufacturing facilities.

As the President of the Caboolture C.B.D. retailers and traders association, naturally I am in favour of any plans for retention and expansion of our industry base.

As a Real Estate agent who has lived for 50 years in Melbourne and 10 years in Sydney, I see the potential for development, and the need to provide work for young families moving into our area at a rate that defies reality, is an obligation that we have to meet to realize this State's promise.

As a resident of the area, I believe:

- A development of this nature will give Caboolture Shire the identity it needs and deserves. The care with which this company has proceeded in regards to environment has been exemplary.
- The consensus of council and the community is empowering.
- The promise of involvement for professionals like myself to participate from planning to fruition with this company in view of their "Far Northern" successes proves that this Shire has come of age and is more than capable of ensuring the success of this proposal.

This gives Queensland the chance to take a northern suburb that has been a "sleeper" and perceived as a "high welfare area", and turn it into the jewel of South East Queensland.

REAL ESTATE AGENTS  
AUCTIONEERS  
PROPERTY MANAGEMENT  
INVESTMENT PROPERTY

WWW.REALWAY.COM.AU



## CABOOLTURE

13A KING STREET  
CABOOLTURE QLD 4510  
PO BOX 1470  
CABOOLTURE QLD 4510  
T. 07 5495 2992  
F. 07 5428 1279  
E. CABOOLTURE@REALWAY.COM.AU

Our marketing slogan for Caboolture:

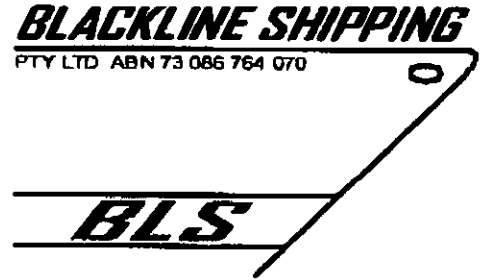
**THE GATEWAY TO PARADISE - HALF WAY BETWEEN  
THE MOUNTAINS AND THE SEA.**

This project allows the shire to run with a dream that grows from a vision to a project to a reality, allowing workers, visitors and residents alike the opportunity to work live and play in the underutilised reaches of Moreton Bay and the Pumicestone Passage, our greatest attraction.

TERRY GOLLANT  
Principal RealWay Property Consultants Caboolture  
President C.B.D.Traders and Retailers Association Caboolture

REAL ESTATE AGENTS  
AUCTIONEERS  
PROPERTY MANAGEMENT  
INVESTMENT PROPERTY

WWW.REALWAY.COM.AU



**RE: MARINE INDUSTRY SOUTH EAST QUEENSLAND**

The Marine Industry in South East Queensland is an example of a specialist "Smart" Industry, progressing and emerging as a major contributor to exports for Australia. The Industry sees the "clustering" of new manufacturers in the region as an essential ingredient to sustained innovation and hence survival long term.

The Industry thrives on the emerging skills of its neighbours. It does not see the business next door as a competitor but as a colleague who will also attract international customers to the region.

***The Industry needs to "Showcase" to its customers.***

South East Queensland is also a beautiful destination so customers and agents tend to stay a little longer. But more importantly they want to return on a regular basis. This activity drives local tourism.

One of the major problems facing the Industry is this critical shortage of marina facilities and new areas to encourage other boat builders and other service Industry to emerge in areas adjacent to the water.

We have examined the proposals put forward by Northeast Business Park Pty Ltd for the Caboolture Marine Industry Park and associated Marina and would like to make it known that we wholly support them with their endeavors.

Regards,

A handwritten signature in black ink that reads "Joe Akacich". The signature is written in a cursive, flowing style.

Joe Akacich  
(Managing Director)



# *Savannah Yachts*

A division of :-  
**SAVANNAH GLOBAL PTY LTD**  
PO Box 224,  
Noosa Heads,  
Queensland, 4567  
**AUSTRALIA**

ABN 20 104 593 535



Jeff Smith

10<sup>th</sup> May 2006

Executive Manager

Port Binnli Pty Ltd

PO Box 1001, Spring Hill, QLD 4004

Dear Jeff

This letter is to offer you my full support in your endeavour to develop the North Eastern Business Park on the Caboolture River. I understand that the focus of this development is to establish a marine precinct for the boating industry of SE Qld and a service centre for boats cruising the South Pacific. There are few remaining sites with ocean access available for large boats such as the modern wide catamaran. I have searched the Sunshine Coast as far as Tin Can Bay and there are virtually no boat ramps with street access clear enough to take a boat similar to the Savannah 1650, a boat that Savannah Yachts launched in 2005.

I am looking for premises to continue building this type of large modern sailing and motor catamaran as I have clients wishing to have boats built. The problem, however, is the transport and launching of these vessels. Your proposed development has the potential to supply boat building facilities which would have good access to open water.

The Caboolture River is navigable well past your site with navigation marks already in place. The site is protected from strong storm or cyclonic events.

The proposed site is close enough to Brisbane and Gold Coast suppliers that no excess freight costs would be incurred. It is also close enough to the labour pool in the northern suburbs of Brisbane.

SE Queensland has been developing as a major manufacturing area for the new type of ocean going sailing and motor vessel, however it is restricted in respect to the wide bodied catamaran that is becoming popular. Your site has the potential to provide facilities for these boats. I look forward to your development going ahead.

Yours faithfully,

A handwritten signature in black ink that reads "David Heckendorf". The signature is written in a cursive style with a large, prominent "D" and "H".

David Heckendorf,

Managing Director, Savannah Yachts.

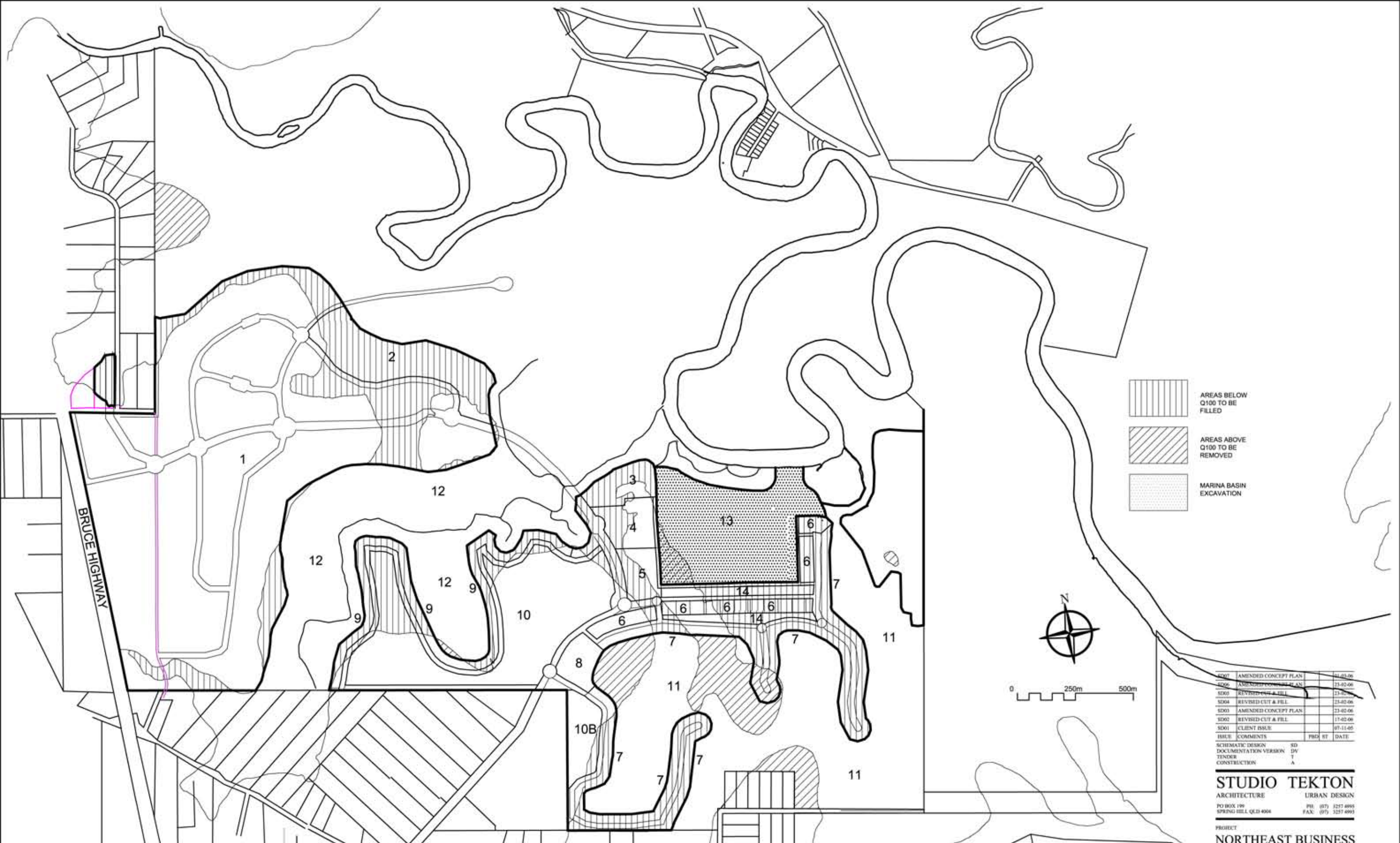
## *Appendix B*




### List of major sources

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- Caboolture Shire Council, *Caboolture Shire Plan*, Caboolture shire council, 2005.
- Cardno QLD Pty Ltd, *Draft Terrestrial Ecological Assessment Report*, a technical paper prepared for North East Business Park, 5 May 2006.
- Core Economics, *Economic Benefit Assessment*, a technical report prepared for North East Business Park, 22 March 2006.
- Davies Heritage Consulting Pty Ltd, *Cultural Heritage Assessment – Lot 10 RP902079 and Lot 2 RP902075*, a technical paper prepared for the Lensworth Group, October 2003.
- J. E. Sieman Pty Ltd, *Geological Report on Caboolture Marina Site*, technical report prepared for Port Binnli Pty Ltd, September 2005.
- Pacific Southwest Strategy Group Pty Ltd, *Caboolture City Marina Study*, a technical report prepared for North East Business Park Pty Ltd, 14 March 2006, North East Business Park.
- Parsons Brinkerhoff, *Caboolture River MIKE21 Flood Study*, a technical report prepared for North East Business Park, April 2006.
- Parson Brinkerhoff, *Stormwater Management Plan North East Business Park*, a technical report prepared for North East Business Park, May 2006.
- Queensland Government – Office of Urban Management, *South East Queensland Regional Plan 2005-2026*, Queensland Government, 2005.
- The Ecology Lab Pty Ltd, *Preliminary Assessment of Aquatic Ecology*, a technical report prepared for North East Business Park, April 2006.

*Appendix C*

Q100 map



-  AREAS BELOW Q100 TO BE FILLED
-  AREAS ABOVE Q100 TO BE REMOVED
-  MARINA BASIN EXCAVATION

SD07	AMENDED CONCEPT PLAN	01-03-06
SD06	AMENDED CONCEPT PLAN	23-02-06
SD03	REVISED CUT & FILL	23-02-06
SD04	REVISED CUT & FILL	23-02-06
SD03	AMENDED CONCEPT PLAN	23-02-06
SD02	REVISED CUT & FILL	17-02-06
SD01	CLIENT ISSUE	07-11-05
ISSUE	COMMENTS	PHD RT DATE
SCHMATIC DESIGN	SD	
DOCUMENTATION VERSION	DV	
TENDER	T	
CONSTRUCTION	A	

**STUDIO TEKTON**  
 ARCHITECTURE URBAN DESIGN  
 PO BOX 199 SPRING HILL QLD 4004 PH: (07) 3257 4993 FAX: (07) 3257 4993

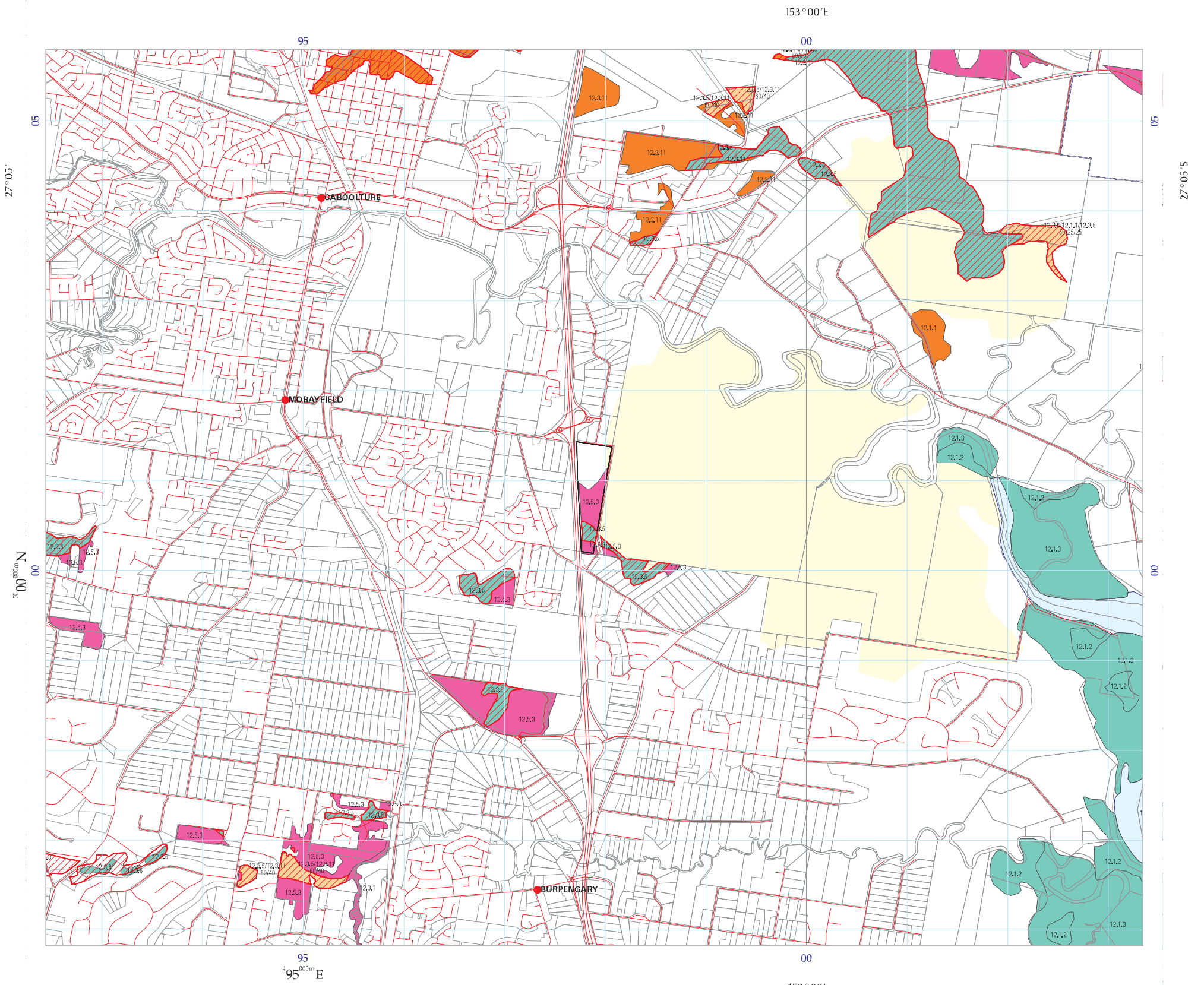
PROJECT  
**NORTHEAST BUSINESS PARK, Caboolture**

DRAWING TITLE  
**MASTER PLAN - AREAS**

SCALE	CHECKED	DATE
		01-03-06
DRAWING NO.	ISSUE	
0304 SK11	SD07	

*Appendix D*

Regional Ecosystem Map



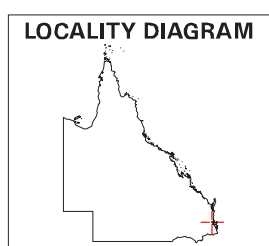
## 2003 REGIONAL ECOSYSTEM MAP

Based on 2003 Landsat TM imagery

Requested By: DAVID.QUINLAN@PORTBINNLI.COM  
Date: 15 Jun 06 Time: 13.44.57

Centered on Lot on Plan:  
2 RP902075

This is a copy of the certified regional ecosystem map defined by the map extent for the purpose of the *Vegetation Management Act 1999*. Areas of property maps of assessable vegetation (PMAVs) are not shown on this map.



1000 0 1000 m

Horizontal Datum: Geocentric Datum of Australia 1994 (GDA94)

Defined map areas are labelled with the regional ecosystem (RE) code along with the percentage breakdown if more than one RE occurs within the area. Detailed definitions of regional ecosystems are available from [www.epa.qld.gov.au/REDD](http://www.epa.qld.gov.au/REDD). Defined map areas smaller than 5ha may not be labelled.

Regional ecosystem linework has been compiled at a scale of 1:100 000, except in designated areas where a compilation scale of 1:50 000 is available. Linework should be used as a guide only. The positional accuracy of RE data mapped at a scale of 1:100 000 is +/-100 metres. The extent of remnant regional ecosystems as of 2003, depicted on this map is based on rectified 2003 Landsat TM imagery (supplied by SLATS, Department of Natural Resources, Mines and Water).

**Disclaimer:**  
While every care is taken to ensure the accuracy of this product, the Department of Natural Resources, Mines and Water, the Environmental Protection Agency and MapInfo Australia Pty Ltd, makes no representations or warranties about its accuracy, reliability, completeness or suitability for any particular purpose and disclaims all responsibility and all liability (including without limitation, liability in negligence) for all expenses, losses, damages (including indirect or consequential damage) and costs which you might incur as a result of the product being inaccurate or incomplete in any way and for any reason.

All datasets are updated as they become available to provide the most current information as of the date shown on this map.

Additional information is required for the purposes of land clearing or assessment of a regional ecosystem map. For further information go to the web site: [www.nrm.qld.gov.au/vegetation](http://www.nrm.qld.gov.au/vegetation) or contact the Department of Natural Resources, Mines and Water.

Digital regional ecosystem data is available in shapefile format, please contact the Queensland Herbarium.  
Email: [regional.ecosystem@epa.qld.gov.au](mailto:regional.ecosystem@epa.qld.gov.au)

© The State of Queensland, 2006

- 2003 Remnant endangered regional ecosystem
- Dominant
- Sub-dominant
- 2003 Remnant of concern regional ecosystem
- Dominant
- Sub-dominant
- 2003 Remnant not of concern regional ecosystem
- Non-remnant
- Plantation Forest
- Dam or Reservoir
- 2003 Remnant Vegetation Cover (RVC)
- Essential Habitat  
Area identified as essential habitat by the EPA for a species of wildlife listed as endangered, vulnerable, near threatened or rare under the *Nature Conservation Act 1992*.
- State Wildlife Corridor  
Areas identified as links between large remnant tracts of vegetation including riparian areas.
- Subject Lot
- Certified Map Amendment area
- Roads  
© MapInfo Australia Pty Ltd 2003
- Bioregion boundary
- National Park, Conservation Area State Forest and other reserves
- Cadastre line  
The maximum spatial error of parcels extracted for this map from the Digital Cadastral Data Base (DCDB) range from: 14m to 251m at a 95% confidence level. Property boundaries shown are provided as a locational aid only.
- Towns