

Figure 6.7 Services Plan

6.6.6 Access and Car Parking

While the site has road frontages to the Illawarra Highway and Tongarra Road, site access is restricted to Tongarra Road due to an RTA road reserve which runs along the site's frontage to the Illawarra Highway. Furthermore environmental constraints restrict the ability to develop land along the parts of the Illawarra Road frontage not affected by the road reserve. It is noted that the site does not have, due to property ownership restrictions, the ability to provide access to Croome Lane.

Vehicle access between the site and the surrounding road network is restricted to Tongarra Road. It is proposed that the site access intersection would be signalised and include the following design elements:

- left turn and right turn bays along Tongarra Road approaches; and
- pedestrian crossing facilities on all approaches.

The details of the design and operation of the intersection are included in the Traffic Study in Appendix 17. The design has been based on the assumption that there will be up to 1650 full time employees on the site when it is fully developed.

It is proposed that the Shellharbour Parking Policy Development Control Plan will be adopted for the provision of car parking on the site. This provides parking rates for the various uses which might establish on the site.

6.6.7 Signage

It is intended that there should be a coordinated signage system for the public areas within the Business Park and that the signage on the individual sites will be regulated. Signs will be limited to 20m² in area and no sign will be higher than 8m above the ground. Signs are not to project above the parapet lines or roof eave lines and freestanding signs will not be permitted on individual sites. The visual appearance of signs will need to be addressed in any applications.

6.6.8 Accessibility Objectives

The following accessibility objectives have been adopted for the development:

- To provide access to all buildings and sites and facilities
- To provide access through all public areas

These objectives will be met by implementation of that those parts of the Building Code of Australia (BCA) which

incorporate Australian Standard 1428.1 - 1988 Design for Access and Mobility Part 1: General Requirements of Access - Buildings (AS 1428.1). Australian Standard 1428.2 - 1992 Design for Access and Mobility Part 2: Enhanced and Additional Requirements Buildings and Facilities (AS 1428.2) shall be the preferred standard for new buildings and developments.

6.6.9 Landscape

A detailed Landscape Management Plan (Appendix 5) has been prepared for the site and this will be implemented through the development applications for the individual sites.

The proposed planting strategy has been formulated in order to implement the following aims:

(a) Prevention of bird strike to aircraft

Because of the location of the Business Park adjacent to the airport, a decision has been made to select trees, shrubs and groundcover plants, for the Business Park, that minimize the production of flowers and fruit which can be utilized by birds and bats, and therefore minimize the bird and bat population within the environs of the airport. Flight safety for aircraft, taking-off and landing, will be increased by reducing the number of birds in the area.

(b) Height of trees

Aircraft flight patterns dictate the height of structures and trees within the environs of an airport. Generally street trees can be 15.0 metres tall except for the following zones

- End of runway; and
- That part of the street northern side of run way, where the street follows boundary line.

(c) Street trees

Street trees are an important landscape component to any urban precinct. Street trees associated with the Business Park will reflect the fact that the proposed development is an industrial precinct. It is proposed to plant street trees at 30m intervals and Jacarandas are the preferred tree for the Business Park.

(d) Amenity tree and shrub planting on the individual sites

Amenity tree and shrub planting along side and rear boundary lines to each allotment is a very important landscape element, in this development, Species need to be hardy and well suited to the site environment, maintenance needs to be minimised and because bird strike to aircraft is a potential hazard, the plants, for this

development, must also minimize the provision to attract birds and bats.

(e) Mass planted garden beds along the internal streets
Mass planted garden beds using shrubs, groundcover plants and grasses in order to;

- Visually soften truck and car parking areas;
- Enhance visual presentation of the buildings

This will be achieved by establishing mass planted strips of planting along the internal road system. A 3.5 metre planting strip will also be established along internal roads to frame views to the buildings and combine with the street trees to visually soften the built form and highlight pedestrian and vehicular access points.

6.6.10 Heritage

The Heritage Report (Appendix 19) has looked at the cultural heritage issues associated with the site and has made certain recommendations in relation to the development proposal.

The following heritage items were identified in or in the vicinity of the study area:

- One Aboriginal archaeological site, consisting of a stone flake possibly redeposited on the bank of Frazers Creek through dredging activity;
- Archaeological evidence at the original site of Wanalama homestead; and
- The heritage-listed Ravensthorpe and associated buildings and curtilage.

The single recorded stone flake has in all likelihood been redeposited and is consequently out of original context. No associated archaeological evidence was apparent. This artefact, on its own, has low scientific value. However, as ground visibility for much of the surface area was low owing to lush pasture growth, recognition must be made of the possibility of further Aboriginal sites within the study area.

The Moreton Bay fig trees on the original site of Wanalama homestead will be retained and consequently no ground disturbance is planned in this immediate area. Additionally, while the potential exists for historical archaeological evidence of nineteenth century homestead activity at the original homestead site, the integrity of this evidence is open to question given the scale of building removal and construction works carried out at and near the site in the early 1940s.

While no impacts to the fabric of Ravensthorpe will be

associated with the development, there will be impacts on views to and from the homestead and associated cottages. If building height in this area of the business park exceeds 7 m then any such buildings will be visible above the tree screening when looking out from the rear boundary of Ravensthorpe, while a view into the rear of the property would be afforded from the upper levels of the buildings. Perhaps more significant would be the impact on the vista from Tongarra Road. Buildings exceeding the height of the rear tree screening would be visible above the roofline of Ravensthorpe, presenting a potentially adverse impact on the aesthetic value of this property.

The identified artefact should be collected by an appropriate Aboriginal representative and professional archaeologist before the onset of works. Discussions between the proponent and Aboriginal communities will be undertaken prior to the collection of artefacts to identify an appropriate "keeping place". Archaeological excavation will be undertaken in the area in the immediate vicinity of this artefact find to verify whether or not further subsurface evidence is present.

The area around the Moreton Bay fig trees has been noted in the Site Analysis Plan for investigation of the original site of Wanalama homestead. Consideration will be given to future action in relation to this site.

Appropriate measures have been adopted in the concept plan to mitigate impacts caused by building construction and landscaping on the vista and aesthetic value of Ravensthorpe. However, this is contingent on these buildings not exceeding the height of the planned tree screening. If building height along the rear boundary of the Ravensthorpe property is to exceed approximately 7 m then consideration will be given to taller plantings (if practicable) or appropriate architectural design to minimise detracting of the view to and from the rear of this property.

Should Aboriginal skeletal remains be found, work must cease and consultation with the DEC, NSW Police, NSW Coroners Office and Aboriginal communities be initiated to come to agreement on the most appropriate course of action. Actions might include either 1) the preservation of the remains in situ, or 2) the detailed recording and recovery of the remains by qualified personnel in conjunction with Aboriginal community representatives. The latter should also seek agreement on the subsequent location and/or re-burial of the remains prior to their removal. Should Aboriginal objects and/or historical relics be found during development, the relevant authorities should be contacted and the appropriate steps undertaken. These steps

may include the detailed documentation, recording and collection of objects/relics prior to continuing development in the immediate location in question; and all contractors will be made aware of these matters prior to commencing site works.

6.6.11 Water Cycle Management

A water cycle management system for the site has been developed which involves a highly equitable sharing of the responsibility to treat and manage stormwater between the lot owners and Shellharbour Council. The system is fully described in the Water Cycle Management Plan in Appendix 4.

The objective of the treatment and management strategy is to shift the responsibility for water quality and use to the lot owners. This will be shared with the community by having Council responsible for the management of road run off only. The strategy is to provide a highly effective water and re use management practice that builds on the opportunity to improve the water quality in the existing degrade waterways.

The system will be modelled using an estate trunk drainage line that is to service the roads and individual lots. The system will convey water from the road and lot areas to four outlet points located along the banks of Frazer's Creek.

Lot Treatment

To meet the principles of Water Saving Urban Design (WSUD) on site detention (OSD) and on site retention (OSR) will be required on individual lots. The OSD will limit the discharge from the site to that which is equal to or less than the flow before the development. The OSR will provide a source of non potable water that can be used on site for toilet flushing and irrigation, limiting the demand for town water. Each lot will provide its own water quality treatment which will consist of oil and grease separation, gross pollutant and nutrient retention. Stormwater treatment on individual lots will include the following:

- Grated inlet pits
- A gross pollutant trap
- A combined OSD and OSR tank

Road Treatment

The treatment of stormwater run off is to include at source treatment through the use of a vegetated swale located centrally in the road and through the use of in line filtration consisting of gross pollutant traps located in specific locations along the drainage network.

Outlet Treatment

Outlet treatment is to include the use of energy dissipaters located at the end of pipe outlets and the use of rock armouring of the creek banks. This will significantly reduce the flow velocities leaving the pipe ensuring erosion of the creek banks does not occur.

Maintenance

Maintenance routines include cleaning every 6 to 12 months depending on initial monitoring results of captured pollutants.

The subsequent development of the business park will also involve the implementation of specific measures (related to the use of each allotment) to collect and treat any contamination or other possible discharges from each allotment. In addition, the runoff collection process will ensure that there is a detailed mechanism in place to deal with accidental spills of contaminants or pollutants.

6.7 Arrangements for the Environmental Management Area

6.7.1 Subdivision

It is proposed that the Environmental Management Area will be subdivided from the site into a separate title.

6.7.2 Ownership

The Environmental Management Area lot (which will coincide with the zoning boundary) will be dedicated to Shellharbour Council free of charge by Delmo Albion Park once the subdivision of the land has been approved.

6.7.3 Ongoing Management

It is intended that Shellharbour Council will undertake the ongoing management and maintenance of the Environmental Management Area at the cost of the owners of the Business Park in accordance with an agreed mechanism to ensure that cost recovery is fair and reasonable. This proposal will be given effect by the registration of a positive covenant. Shellharbour Council can impose the covenant under the provisions of s88E of the Conveyancing Act 1919 and Delmo as the original owner and signatory to the deed will impose the covenant on all successors in title of the Business Park. The covenant would impose on the Business Park obligations requiring the provision of maintenance services on, or to, the Environmental Management Area. The services would be contracted to Shellharbour Council and the owners in

the Business Park would pay or reimburse Shellharbour Council for the services. A copy of the draft agreement is included in Appendix 7.

6.8 Vegetation Management Plan

A Vegetation Management Plan (VMP) has been prepared for the site and is included in Appendix 6. Specific principles contained within the VMP include:

- the protection of all retained vegetation on the subject site;
- the collection of vegetative material from areas which are to be disturbed or affected by construction activities;
- the removal of stock from the subject site;
- the control of introduced weeds and all introduced plants within the Environmental Management Area;
- implementation of a substantial program of plantings and seed propagation of native species throughout the Environmental Management Area;
- an ongoing program of maintenance of new plantings and improvement of natural vegetation; and
- a monitoring, reporting and response program to deal with the ongoing management of the site and the implementation of any measures which are required to deal with breaches or damage to the Environmental Management Area.

6.9 Construction

A comprehensive Construction Management Plan (CMP) will be prepared for the site prior to the submission of the project application for the Stage 1 subdivision works on the site. All subsequent development applications will also be required to produce a Construction Management Plan and a Construction Waste Management Plan. Notwithstanding the disturbed and modified condition of most of the site, it will be of critical importance that any earthworks and construction activities are undertaken in a manner which avoids the imposition of adverse impacts upon the adjoining natural environment. In particular, it is crucial to avoid damage to, or disturbance of the major wetland and the habitats along Frazers Creek

(notwithstanding their disturbed and modified condition).

Specific measures to be implemented pursuant to the CMP during the excavation, filling and other earthworks activities on the subject site at Albion Park will include:

- marking the outer extent of fill and batter slopes using star pickets and orange safety mesh fencing to clearly identify the extent of acceptable physical disturbance;
- the placement of silt fences at the base of the exclusion fencing. Silt fences are to be installed at every location where there is the potential for sediment movement into the wetlands or watercourses, with a second supplementary silt fence (or fences) provided where the risk of sediment transport is highest (subject to advice of the project ecologist);
- the installation of protection fencing around that portion of the paperbark swamp forest in the southeastern corner of the subject site which is to be retained and protected, with a silt fence applied at the bottom of the fence;
- the collection of plant material and propagules from both the paperbark swamp forest and the northern wetlands, and along Frazers Creek (other than that portion of the Creek which is to be removed) prior to earthworks or clearing activities. The collection of material, its propagation and maintenance, and its subsequent re-use will be undertaken by a bush regeneration contractor pursuant to the details contained in the Vegetation Management Plan.
- the provision of signage at 50m intervals along the protective fencing to ensure that earthworks and construction workers are alerted to the protection required within the Environmental Management Area on the subject site; and
- the conduct of induction programs for all contractors prior to the commencement of works on the subject site.

In addition, the period of earthworks, excavation and fill placement on the site will involve the appointment of, and monitoring by, an environmental officer to monitor the effects of the works, identify issues or problems, and implement solutions where difficulties or breaches arise.

An array of additional measures will be required during the subsequent development of individual allotments within the subdivision and during the construction of the access roads and the placement of infrastructure. In addition to requirements to prevent sediment discharge from the fill areas, particular issues which will need to be addressed during the construction of individual industrial facilities within the project including:

- measures to prevent the discharge of pollutants or contaminants during construction activities;
- the identification of specific locations for waste materials, building materials, rubble and other physical items; and
- measures to ensure that construction workers are cognizant of the relevant issues and the need to undertake construction activities in an appropriate manner.

6.10 Staging

The development of the site will be carried out in 5 stages as follows:

Stage 1

Stage 1 will involve the subdivision of the site and works in the area of the Business Park south of the airport east west runway and part of the Environmental Management Area. The works carried out Stage 1 will include subdivision, subdivision works, demolition of existing buildings, cut and fill and any contamination works required. Work will also be commenced within the Riparian Buffer area to clean up the existing vegetation in this area.

Stage 2

During this stage, core drainage will be implemented and services and infrastructure installed on the southern section of the site. Work will also commence on the rehabilitation of the wetlands, creek and Riparian Buffer area.

Stage 3

The roads will be built in the southern section of the site and the subdivision of the eastern section will be undertaken and development of buildings may commence in this area. Work will be completed in the Environmental Management Area on the southern section of the site

Stage 4

The subdivision of the entire southern section of the site will be completed and development of buildings

undertaken on sites.

Stage 5

This stage will see the complete development and rehabilitation of the northern section of the Business Park and the Environmental Management Area.

6.11 Subdivision

6.11.1 General

The subdivision of the site involves the creation of 63 lots one of which is the land within the Environmental Management Zone and one is the road reservation area. The actual Business Park area comprises 61 lots ranging in size from 32600m² to 200m². A break down of the lots is as follows:

Up to 2000m ²	15
2000m ² to 5000m ²	12
5000m ² to 10000m ²	24
Over 10000m ²	10

The lots occupy the entire Business Park area and some include sections of the Riparian Buffer area. Two of the allotments within the Business Park will not be able to be developed for environmental reasons and these are the retained woodland area adjacent to the entry and the wetland area on the north of the site.

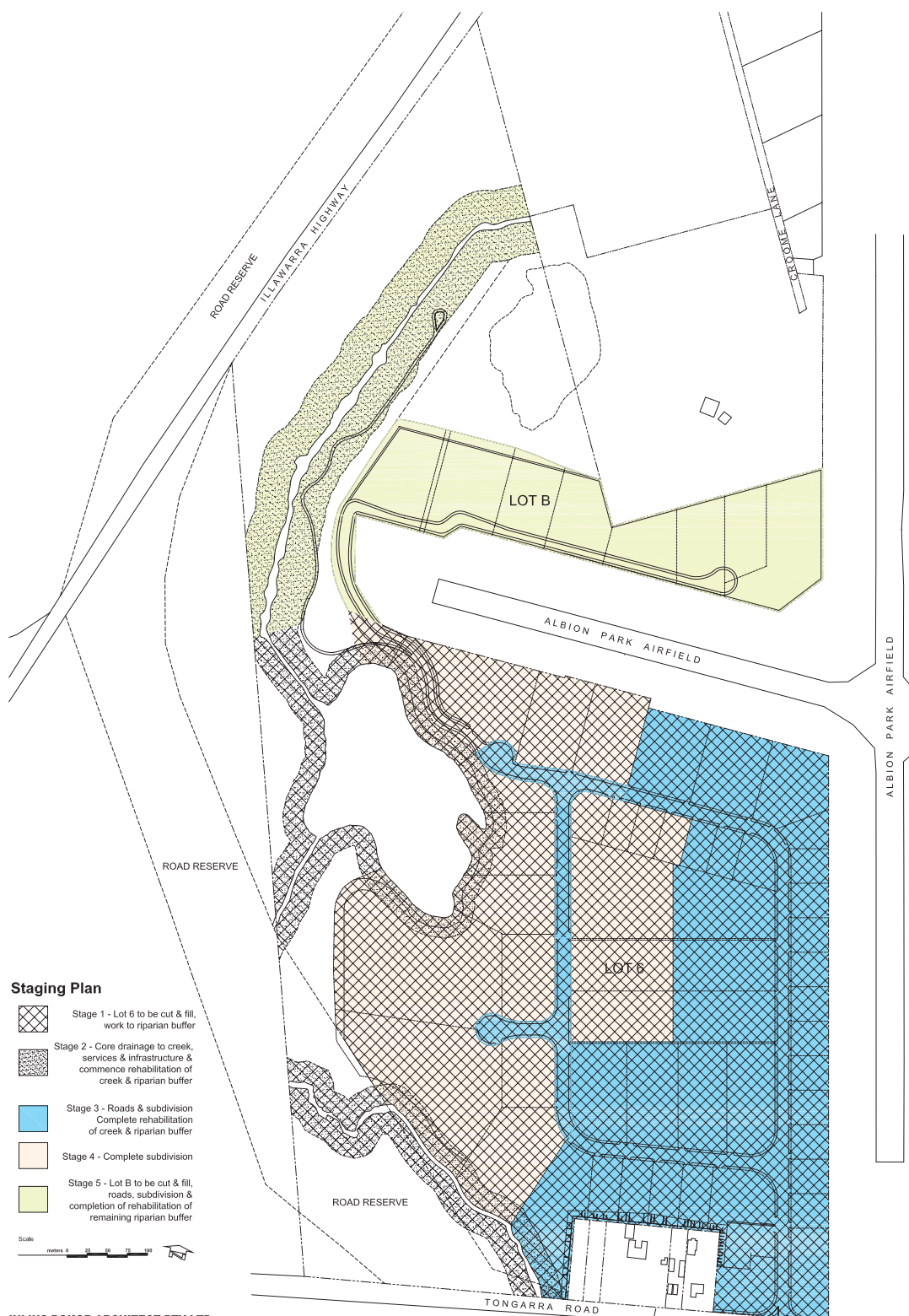
The lots vary in size to satisfy a need for various industrial and business lots in the area.

The subdivision of the land allows for the provision of the Riparian Buffer area to Frazer's Creek with pedestrian access for recreational use and a Riparian Buffer 25m wide within all allotments having rear access to Frazer's Creek and the designated wetland on the site. This 25 m buffer is for the protection and management of the creek and wetland areas within it.

Access to the subdivision is restricted to a primary access point off Tongarra Road with all roads within the main part of the subdivision to be 20m wide and dedicated upon completion as public roads. Access to the allotments on the northern side of the airfield will be by way of a private reciprocal all weather right of carriageway not less than 13m wide with each allotment having ownership of that part of the carriageway within its parcel. A reciprocal easement to provide all services will also be created over part of the allotments fronting this access way.

6.11.2 Easements Restrictions and Positive Covenants

It is intended that each developable allotment will be



JULIUS BOKOR ARCHITECT PTY LTD

Level 1, 88 Foreaux Street, Surr Hills NSW, 2101
t: 02 9212 8898 f: 02 9212 8870 m: 0419 258 432 e: j.bokor@jbusbokor.com.au

Illawarra Regional Business Park for Delmo Albion Park Pty Ltd - 78 Tongarra Road, Albion Park

Figure 6.8 Staging Plan

burdened for the maintenance and upkeep of the Riparian Buffer to Frazers Creek, the adjoining wetland area and the woodland area. Each allotment burdened by the Riparian Buffer of 25m will also maintain the buffer area and its use will be restricted to environmental management only. The allotments which have been wholly or partly filled will be burdened by a restriction on the use of the land.

6.12 Section 94 Matters

6.12.1. Background

The matter of s94 Contributions in relation to the development proposal for the Illawarra Regional Business Park has been considered. Shellharbour Council indicated in their initial correspondence to the Department of Planning the matters which they considered should be considered in relation to s94 and a meeting was held with the Council to discuss these issues. Shellharbour Council has an adopted s94 Contributions Plan (Shellharbour Council Section 94 Contributions Plan 2005) and the requirements in this relating to Industrial and business development have also been considered.

6.12.1 Shellharbour Council Potential Development Requirements

Shellharbour Council indicated, in a letter to the Department of Planning dated 27 October 2006, that the following were potential development requirements related to the proposed project:

1. Contributions to the Albion Park Rail highway bypass
2. Bus service from the train station to the development
3. Contribution to initial repairs then maintenance of roads in the vicinity of and servicing subject development
4. Traffic works including a new intersection at Tongarra Road
5. Flood mitigation works
6. Monitoring wetlands health, water quality to wetlands /creeks
7. Riparian Buffer
8. Reconstruction/enhancement, water quality measures, measures, anything significant flora and fauna report identifies
9. Management and Rehabilitation Plan – enhancement/maintenance of wetlands/open space/flora and fauna
10. Air quality
11. Industrial noise
12. Traffic impact
13. Contamination, remediation

14. New access road
15. Services installation

These matters were discussed at a meeting with the Council and it was agreed that as far as possible these matters would be made part of the project proposal.

6.12.2 Shellharbour Council s94 Plan 2005 Provisions

This plan sets out the Councils requirements in relation to the levying of contributions on development in the Council area and provides for contributions for open space, community facilities, traffic, drainage works and car parking. The site is within the Albion Park Rail Precinct for the purposes of the plan. Contribution rates for this precinct for commercial, retail or industrial development per shop or office are as follows:

City wide facilities: \$231.80

6.12.3 Proposed Contributions

Most of the matters identified by the Council in relation to s94 contributions will be dealt with as part of the proposals for the project as set out in this EAR. A summary of this is as follows:

Flood Mitigation Works

The proposals contained in this EAR and the accompanying Flood Studies include the implementation of flood mitigation works as part of the development proposal. These are detailed in the Post Development Flood Modelling Report in Appendix 10 to this EAR and will be financed as part of the development

Environmental Management Area

It is proposed as part of the development of the site to improve and rehabilitate those areas of the site which have been considered to have environmental significance either because of the vegetation present on them or because of the wetland areas. A Vegetation Management Plan has been developed for these areas and this will be implemented as part of the early stages of the development proposal. These works will be financed as part of the development and the area which it is proposed to zone Environmental Management will be handed over to the Council once it is rehabilitated and a mechanism has been established to ensure the ongoing maintenance of this area at no cost to the Council.

Riparian Buffer

The rehabilitation and vegetation of the riparian buffer will be carried out as part of the implementation of the Vegetation Management Plan. This area will be partly within

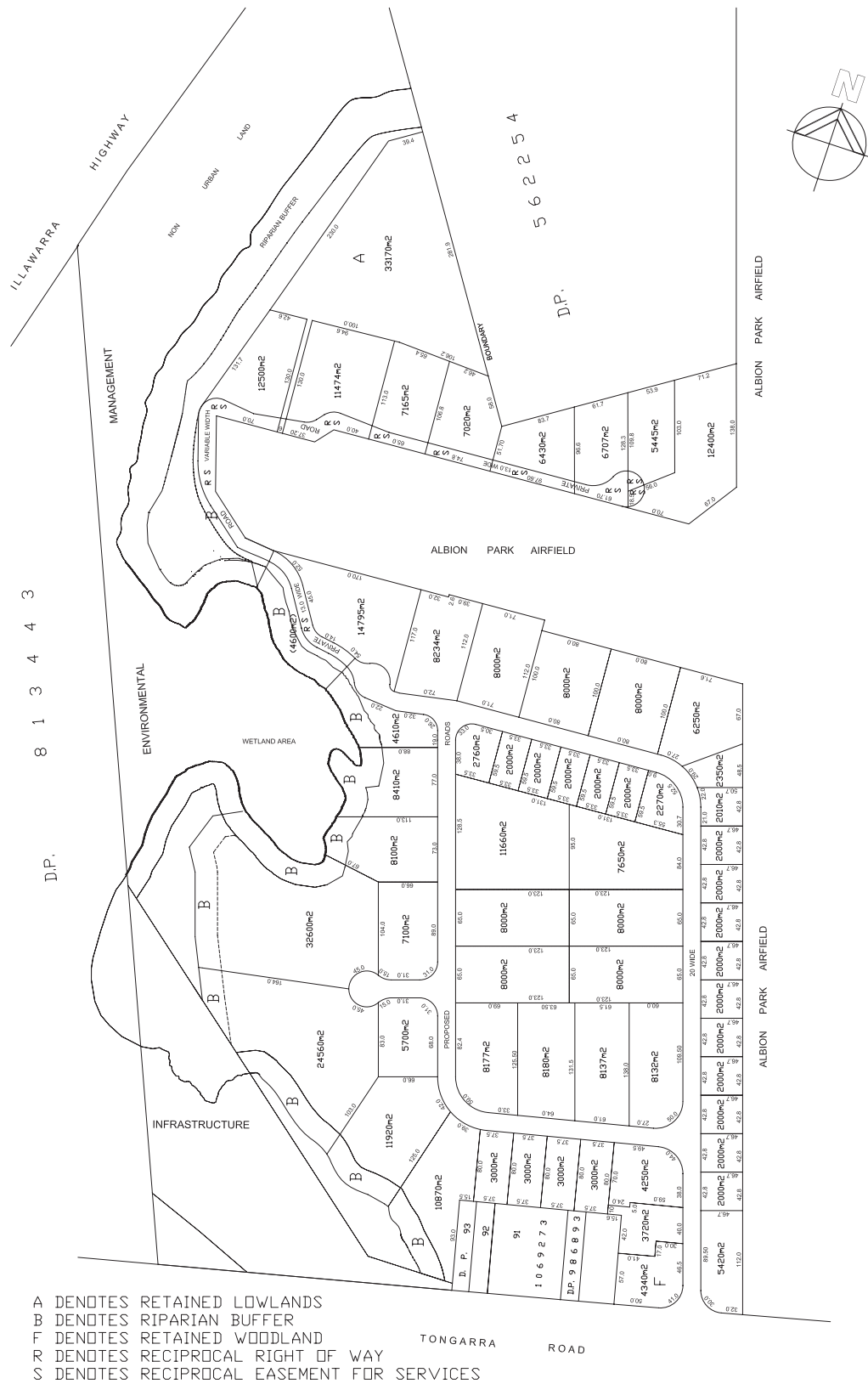


Figure 6.9 Subdivision Plan

the Business Park and partly within the Environmental Management Zone. That area within the Environmental management Zone will be treated as set out above. The area within the Business Park will also be rehabilitated and the ongoing management of this area will be the responsibility of the individual lot owners. There will be covenants on the land titles to ensure that this occurs. As a result the improvement and ongoing maintenance of the riparian buffer will be carried out at the expense of the development and at no cost to the Council.

Vegetation Management

Management of significant vegetation on the site will be carried out as set out in the Vegetation Management Plan. This will be undertaken at the expense of the development and at no cost to the Council.

Water Cycle Management

A detailed Water Cycle Management Plan has been established for the site and a copy of this is included in Appendix 4 of this EAR. This plan will be implemented as part of the development proposal and by the individual lot owners at no cost to the Council. Lot owners will be required to prepare a Stormwater Management Plan and to implement the provisions contained in the Water Cycle Management Plan as part of their development applications for their individual sites. These measures will be implemented at no cost to the Council.

Contamination and Remediation

A Stage 2 Environmental Site Assessment, complying with EPA Guidelines, will be conducted on the site as recommended in the Stage 1 Environmental Site Assessment contained in Appendix 9 of this EAR before any work commences on the site. Based on the results of the Stage 2 Assessment and as required remediation and validation of any contamination at the site will be undertaken at the expense of the site developers.

Acoustics

An acoustics Report has been prepared (Appendix 18) and the matters recommended in that report will be investigated as planning of the development proceeds and more information becomes available on the operation of the Business Park. If necessary, measures will be taken to deal with any noise impacts.

Traffic Works including New Intersection at Tongarra Road

The Traffic Study contained in Appendix 17 to this EAR has proposed that a signalised intersection be provided at the proposed entry point to the site from Tongarra Road. A design of the intersection is included in the study. This

intersection will be provided, as proposed in the Traffic Study, by the proponent as part of the development proposal at no cost to the Council.

The Traffic Study concludes that the road network surrounding the site, with the exception of the Illawarra Highway/Princes Highway intersection has adequate capacity to accommodate the traffic generated by the Business Park development. It is intended to continue discussions with the RTA in relation to the Princes Highway/Illawarra Highway intersection.

Although not specifically mentioned in Council correspondence in relation to S94, the Traffic Study notes that the Council S94 Plan identifies a number of already constructed and proposed road network improvements. It is considered that the contributions required by the Council S94 Plan will contribute to these works.

It is considered that there are no other traffic works required as a result of this development proposal.

Services Installation

This EAR proposes the installation on the site of all services required for the development at no cost to the Council.

This leaves the following matters and the response is as follows in relation to these matters:

Contributions to Albion Rail By pass

This matter is assumed to be the Illawarra Highway upgrade – Yallah to Oak Flats. The Traffic Study has indicated that, based on discussions with the RTA, no detailed designs have been prepared for the upgrade nor have funding or timing been allocated the project. The project was not listed in the Illawarra Regional Strategy 2006 - 2031 as a future road project.

Bus service to train station

The Traffic Study has indicated that the site is serviced by a number of existing bus routes along Tongarra Road, between Albion Park and the rail station at Albion Park Rail and Oak Flats and then onto Shellharbour. Discussions with the operators of Premier Illawarra bus services indicated that the proposed development would provide additional demand for existing services and thus improve route viability. The operators indicated interest in running bus services particularly in peak periods into the proposed Business Park. This matter will be monitored as the Business Park development proceeds, however, it is considered that the existing bus services will be able to provide a viable service between the site and the train station. The Traffic Study recommends the provision of

bus stops on Tongarra Road near the site access point.

Road Repairs and Maintenance

It is considered that any road repairs and maintenance required as a result of the development will be financed by the s94 contributions under the existing plan and by the ongoing rate payment made by the businesses located within the Business Park.

Air Quality

New businesses locating in the Business Park will be required to meet current New South Wales standards in relation to air quality. Industries, other than light industry will not be permitted within the park so it is unlikely that there will be any impacts on air quality in the area as a result of the development.

Pedestrian and Bicycle

Although not specifically mentioned in Council correspondence in relation to s94, the Traffic Study notes that the Council s94 Plan identifies a number of pedestrian and bicycle facility improvements for Albion Park and the wider Council area. It is considered that the proposed contributions required by the Council s94 Plan will contribute to these facilities.