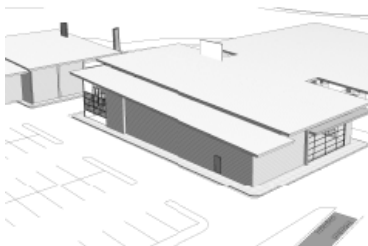


Environmental Interactions

This section of the report expands on the contextual description of the physical environment given in Section 2, and undertakes an analysis of environmental interactions (particularly those aspects of S.79C (1) (b) and (c) relevant in the circumstances) applicable to the proposed development with specific reference to the site planning objectives specified in Section 3.1. Further, this section reviews a range of comprehensive environmental management measures, again aimed at specifically addressing adopted site planning objectives.

5.1 Context, Setting and Site Layout



Objective

Acknowledge the sites proximity to the Pacific Highway Bypass and its potential to serve motorists.

The Far North Coast Regional Strategy, Draft LEP and Ministerial Direction *Commercial and Retail Development along the Pacific Highway, North Coast* (which identifies the “Ballina: Teven Road interchange” as a highway service centre that “can proceed”) all acknowledge the locality as a preferred location for a “highway service centre”. The subject site is strategically located to meet this need.

The site has appropriate scenic qualities and the character and amenity of the development proposal will be such as to provide a signature entry statement to Ballina.

5.2 Flora and Fauna

Objective

To maintain the ecological integrity of the site.

The Ecological Assessment Report (EAR), which is included in **Appendix B, Attachment A**, and which assesses the “biodiversity and conservation values of the site and the potential impacts of the proposed plan of development on these natural values”.

The EAR is underpinned by previous work carried out on the site by Peter Parker Environmental Consultants Pty Ltd.

The EAR provides that the assessment of the site’s ecological values has been carried out for a number of purposes, including:

- to document the ecological values of the site and specific areas thereof;
- to identify constraints to site development associated with the presence of areas and aspects of ecological significance as defined by reference to relevant State and Commonwealth government regulations; and
- to assess the degree of compliance that the proposed plan of development achieves with the requirements of the local planning scheme and relevant Commonwealth and State government legislation with a biodiversity conservation focus.

The EAR provides the following conclusions:

"1. The site is highly disturbed with the majority of the land supporting canefields. Several drainage lines traverse the site and support a mix of exotic weeds and native species with the central drainage line supporting a small number of mangroves.

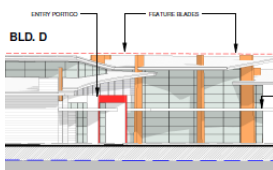
2. No flora or fauna species of significance pursuant to the EPBC Act or TSC Act were recorded on the site during field surveys. Given the relatively small size of the site, the highly disturbed nature of the site and its location adjacent to a major transport corridor, the site is not considered to represent habitat critical to the survival of any threatened species. An assessment of the proposed plan of development against the significant impact criteria given in the EPBC Act and TSC Act, has determined that the proposal is unlikely to have a significant effect on any listed species.

3. The Native Vegetation Act regulates the clearing of native vegetation in non-urban areas. The clearing of native vegetation in non-urban sectors of the site will be constrained by the provisions of this Act, however permitted clearing under Part 3 of the Act includes clearing for routine agriculture management activities and clearing of non-protected native regrowth. Therefore the clearing of certain sectors of native vegetation, such as that within drainage lines or that which constitutes regrowth vegetation may be permitted. Notwithstanding the above, if the development for commercial purposes (i.e. urban or industrial purposes) is approved and the zoning is amended to reflect this land use, the clearing of native vegetation within the site would be exempt from the provisions of the Native Vegetation Act.

4. The southern sector of a drainage line that traverses the site supports a small number of Grey mangroves. Marine vegetation, including mangroves, are protected under the provisions of the Fisheries Management Act within protected areas. As the definition provided within the Act for a "protected area" does not include private land, the proposed development of the site is not constrained by the provisions of the Fisheries Management Act.

5. Policy Statement 9 - Vegetation Management of the Ballina Shire CDCP provides for the protection of native vegetation within the Shire. In this respect consent from Council is required to clear, destroy or remove native vegetation. Although the majority of the site supports canefields, native vegetation does occur within the site and as such consent from the Council will be required."

5.3 Waste



Objective

To ensure waste storage areas are available for each proposed building, and that these areas are readily accessible to waste contractors for servicing.

The proposed buildings have ample room for waste storage located near their loading/unloading areas, and ample manoeuvring area through the site to permit access by waste contractors.

Waste areas and means of storage will differ slightly depending on the requirements of each particular tenant.

5.4 Acoustics

Objective

Ensure the acoustic impact of the Service Centre does not unduly impact on sensitive receivers.

The Acoustic Assessment (**Appendix B, Attachment G**) of the proposed development, has as its main aims, to:

- measure the existing ambient noise levels at the development site;
- predict the likely changes to the existing traffic noise levels as a result of the proposed strategic roads upgrade (nominally 2026);
- assess the predicted traffic noise levels in accordance with the acoustic objectives recommended by the Department of Environment and Climate Change incorporating the Environmental Protection Authority (EPA);
- predict the likely changes from introduction of a commercial enterprise on the anticipated acoustic amenity (both construction and operational noise); and
- consider and recommend ameliorative noise controls to satisfy EPA acoustic objectives.

The Assessment was undertaken in accordance with following relevant EPA publications in the absence of any noise assessment related policy held by BSC:

- NSW Industrial Noise Policy;
- Noise Guide for Local Government; and

- Environmental Criteria for Road Traffic Noise.

The Assessment includes the quantification of potential noise impacts from adjacent traffic on the proposed development and qualitatively assesses impacts from the proposed development on existing sensitive places. The Assessment involved the following:

- Review of road upgrade and the like in the locality;
- Determination of applicable acoustic quality objectives in accordance with relevant publications;
- Measuring background sound pressure levels (SPLs); and
- Modelling of predicted future traffic noise at the site.

The Assessment provides a number of recommendations in relation to traffic impacts, construction noise and industrial noise. These recommendations include:

Traffic Impacts

The traffic noise reduction to limit acoustic impacts internal of buildings can be achieved using noise attenuation measures in the building design and construction in accordance with Australia Standard 3671-1989. Having regard to the individual buildings within the proposed development, the construction category for each are recommended as follows:

Building	Construction Category
A	1
B	1
C	1
D	2
E	2
F	2
G	1

The Assessment also recommends the following conditions of consent.

For Buildings A-C and J:

“The predicted long term traffic noise levels are expected to cause environmental nuisance. To minimise intrusion of traffic noise into buildings, areas having an external facade directly exposed to traffic noise emanating from the Ballina Bypass, Pacific Highway and/or Western Arterial should be designed to category 1 construction standards as defined in Australian Standard 3671-1989”.

For proposed Buildings G-H.

“The predicted long term traffic noise levels are expected to cause environmental nuisance. To minimise intrusion of traffic noise into buildings, areas having an external facade directly

exposed to traffic noise emanating from the Ballina Bypass, Pacific Highway and/or Western Arterial should be designed to category 2 construction standards as defined in Australian Standard 3671-1989”.

Construction Noise

“To minimise noise generated by construction activities of the Ballina Highway Service Centre on existing sensitive places, a Construction Environmental Management Plan (CEMP) must encompass the following noise abatement measures:

- *the establishment of construction noise and vibration control plan;*
- *the selection of plant and equipment where practical on acoustic performance;*
- *the use of plant and equipment to minimise noise impacts;*
- *the implementation of a noise monitoring program to ensure that noise levels are being controlled and that best possible practices are being implemented; and*
- *to initiate information program to inform local residents of the construction program and time periods when noise levels could exceed the recommended assessment guidelines.”*

Industrial Noise

“To aid in minimising noise from service vehicles, the dominant noise source from the development’s operations, the following measures are recommended.



- a) All delivery vehicle companies and their respective drivers are to be instructed to operate delivery vehicles in as quiet a manner as possible whilst on site. Such measures include:*
- i. travel at low speeds;*
 - ii. minimise use of excessive engine revving and no rapid acceleration;*
 - iii. do not use exhaust breaks whilst on site; and*
 - iv. do not park external to a loading dock with engines running for extended periods of time.*



- b) The operator shall erect appropriate on-site signage in the service vehicle roadways and loading dock areas advising of the necessity to minimise noise so as to protect neighbouring residents’ amenity.*
- c) Staff will be instructed to minimise noise by careful work practices (i.e. no dropping of pallets).*
- d) Institute a complaint response procedure to be used in the instance of complaints regarding noise from site activities.”*

5.5 Visual Environment

Objective

Enhance the visual appearance of the proposed development through contemporary design and landscape planting.

The topography of the site and surrounding area is virtually flat, limiting views. Other than Emigrant Creek opposite the site (across the existing Pacific Highway), there are no noteworthy views or vistas.

The proposed development will eventually be visible from the Pacific Highway Bypass; the existing Pacific Highway; boat ramp and Sunmaid Village Caravan Park to the south; and, 'Riverbend' to the east.



View of Sunmaid Caravan Park and boat ramp looking east from boat ramp across road

The design of proposed buildings will provide for simple, contemporary structures, which use detailing and colours to effectively break down their size into smaller components. This is further achieved through the use of separate structures for entries and corners, with awnings and overhangs providing protection for travellers.

The variety of architectural façade treatments will ensure each building has its own character and interest.

Overall, the proposed buildings will collectively provide for a development which relates well to the surrounding locality, and which contributes to the establishment of a 'gateway' or 'entry' into the southern outskirts of Ballina.

The appearance of the proposed development is also to be augmented via a significant amount of landscaping, as depicted in the Landscape Plan included in the **Plan Set**. Relevant objectives of the intended landscaping include:

- use of local indigenous species to provide a visual reflection of Ballina and its surrounding landscapes;
- distinguish key vehicular routes within the HSC;
- define the significance of the Regional Expo Centre component;
- provide separation to vehicle routes and parking areas while maintaining sightlines for vehicles and pedestrians (acknowledging the need to promote safety and security);
- comprise a limited amount of species so as to create a strong and distinct character;
- adopt a planting layout and selection of species that is appropriate to the function of the site and maintains sightlines for both vehicular and pedestrian circulation; and
- recognise that different areas of the HSC have different functions – with landscape responses to reinforce these differences.

The Landscape Plans included in the **Plan Set** shows the extent of planting to the perimeter of the proposed development, which is likely to be augmented by planting within the adjacent road reserve.

5.6 Services

Objective

Provide for public utilities to the site, including reticulated water and sewer, electricity and telecommunications.

Water Supply and Sewerage

The Water Supply and Sewerage Analysis prepared by Cardno and included in **Appendix B, Attachment I**, has been undertaken to determine any augmentation that maybe required to service the proposed development.

The Analysis identifies a 200mm water main along the frontage of the site (to the existing Pacific Highway) as having the potential to service the proposed development, as well as a future 300mm diameter main augmentation along the Ballina Highway Bypass.

In relation to reticulated sewer, it provides that a number of options are available in terms of provision, including connection to the sewage pump station located in front of the Coastline Ford Car Yard approximately 1.5km from the site long the existing Pacific Highway, or otherwise to the existing sewer system located within 'Riverbend'.

Electricity and Telecommunications

Electricity and telecommunications are preset in the locality, and connection of the proposed development to these is considered achievable.

5.7 Traffic and Access

Objective

Ensure that traffic movements from the development do not unduly impact on the efficiency of the surrounding road network, or its safety.

Ensure that traffic movement within the site is both efficient and safe.

Provide a development which is easily accessible and therefore convenient.

The proposed development seeks to capitalise on the site's unique position, which will eventually have it fronting the Pacific Highway Bypass and the existing Pacific Highway. In addition, the site may, in the future, have constructed in close proximity the Ballina Western Bypass to the east.

It is proposed to construct an access to the site from the southbound off ramp of the Pacific Highway Bypass, providing direct access to the HSC, with a further signalised intersection to the existing Pacific Highway in the south of the site.



The Traffic Impact Assessment included in **Appendix B, Attachment F** reviews “the traffic and car parking impacts of the proposed development of the highway service centre.”

In carrying out this review, the Assessment has considered the following:

- a review of car parking provision and layout;
- service vehicle requirements and manoeuvrability of service vehicles within the site;
- an estimation of the developments traffic generation; and
- the form and operational capacity of the proposed access intersections.

The Assessment includes the following conclusions:

“The internal layout of the development caters for sufficient service vehicle manoeuvrability, accessibility of heavy vehicle parking facilities and pedestrian connectivity to the individual buildings.

The development provides on-site car, trailer, coach, semi-trailer and B-double parking facilities sufficient to cater for the estimated parking requirements.

The design of the slip lane access from the Ballina Bypass off-ramp provides for sufficient vehicle diverge and deceleration prior to entering the site. The design of the signalised access provides for a minimum Level of Service of C at the 10 year development design horizon.”

**5.8 Stormwater
Drainage and Soils**

Objective

Ensure that construction works are appropriately managed to minimise site erosion and maintain the current quality of water exiting the site, and to ensure the proper management of acid sulfate soils.

Ensure that the quality and quantity of stormwater exiting the site does not adversely affect nearby properties or water bodies (Emigrant Creek) and that existing drainage patterns are not materially altered, and that water sensitive urban design and best practice engineering is employed.

The Preliminary Internal Hydraulic Assessment, Stormwater Quality Management Plan and Erosion and Sediment Control Plan included in **Appendix B, Attachments H, J and B** respectively, collectively address stormwater water quality and quantity issues arising from the proposed development.

The Internal Hydraulic Assessment provides that:

“To avoid impacts on the downstream properties and infrastructure and to maintain the existing peak flow rate of runoff discharging from the developed site for all rainfall events up to and including the local catchment 100 year ARI event, on-site detention is proposed to be incorporated into the development works to control the rate of discharge entering the downstream drainage network off site.”

The Assessment concludes:

“ ... that the critical 100 year ARI event resulted in the greatest detention storage volume requirement. An estimated total storage volume of approximately 4410m³ will be required to detain the increase in the 100 year ARI discharge and maintain the equivalent pre-developed 100 year ARI peak flow discharging off site.

It is proposed to provide the required storage capacity of 4410m³ by the use of rainwater tanks, which will detain runoff from the roofed areas on the site, and detention basins incorporated with in the stormwater drainage network. Overflow from the rainwater tanks will flow into the detention basins. The basins will double as water quality treatment devices and will be suitably designed so as to perform effectively for both tasks ... The stormwater inlet pits located within the development site will only be designed with sufficient capacity to capture the developed condition 10 year ARI runoff, as any excess runoff will flow overland into the detention basin area.”

The Stormwater Quality Management Plan (**Appendix B, Attachment J**) has been prepared having regard to Chapter 13 – Stormwater Management of the Ballina DCP.

The Plan provides a treatment train for the removal of pollutants from stormwater prior to discharge from the site. The proposed treatment train includes rainwater tanks, rubbish bins and bio-retention areas.

This Plan also provides management strategies for monitoring, maintenance and corrective actions to ensure the treatment train meets the intended performance criteria.

The Erosion and Sediment Control Plan (**Appendix B, Attachment B**) addresses the construction phase of the proposed development, including earthworks and civil construction. It proposes a number of measures to treat stormwater runoff during the bulk earthworks and civil construction phases including sediment fences, temporary sediment basins, suitable locations for stockpiles and appropriate stabilised entry/exit points.

The Plan also provides management strategies for monitoring, maintenance and corrective actions to ensure the prevention measures meet the intended performance criteria.

The Plan has been produced having regard to Chapter 13 – Stormwater Management within the Ballina DCP.

Appendix B, Attachment C includes an Acid Sulfate Soil Investigation, which concludes that an acid sulfate soils management plan is necessary. Accordingly, the Investigation includes such a management plan, which describes *“the scope of acid sulfate soil treatment, and the processes of excavation, treatment pad design, neutralisation treatment, validation, reporting, and associated issues required to permit the site to be developed.”*

5.9 Hazards



Objective

Review and mitigate potential site planning hazards with respect to contamination and flooding.

Flooding

The site is flood prone, with levels ranging from RL 0.4m AHD to RL 1.8m AHD and a Q100 + climate change flood level of RL 2.7 m AHD. It will be necessary to fill the site in order to accommodate the proposed development.

A study undertaken by BTM WBM Oceanics (**Appendix D** to this SEE) which examines filling of the site, recommends a development scenario involving the incorporation of a floodway through the site to reduce flood impacts across the flood plain to the north. The floodway described in the WBM report is to be constructed in association with the development of the subject site. It is anticipated that the culverts envisaged by the WBM Oceanics report will be conditioned as part of any Development Application Consent issued for the site.

Site Contamination

The Contamination Assessment included in **Appendix B, Attachment D** identifies that the site is contaminated on account of past and present agricultural land practices.

Notwithstanding, the site is not included on the EPA contaminated land register, nor have there been any registered Cattle Dips on site.

Potential sources for the contamination are from the use and storage of pesticides associated with the current and past use of the site for agricultural purposes, in particular sugar cane cultivation.

The Assessment concludes:

“there is no requirement for remediation of contaminants as they were below adopted criteria for the proposed land use”

Technological hazards

The service station component of the proposed development is distant from sensitive land uses (i.e. residential), and combined with its construction to appropriate standards, will pose little risk or hazard to persons or property both on and adjoining the site.

5.10 Social and Economic Considerations

Objective

Provide a development which offers employment opportunities and which has a multiplier effect on the local economy.

Ballina is a fast growing regional centre serving a catchment of over 78 000 people, with the Far North Coast Regional Strategy specifically identifying Ballina as a preferred location for a “highway service centre”. Once the Pacific Highway Bypass is constructed, the site will have the benefit of being located close to main roads, providing ready and convenient access to motorists.

The proposed development will provide both full-time and part-time employment opportunities. In addition, it will produce a further substantial multiplier effect off-site. As a consequence, the proposed development will have a significant positive economic impact for Ballina principally arising through employment opportunities (job creation), and capturing expenditure which might otherwise have been spent outside the locality.

5.11 Safety and Security

Objective

Provide a development which promotes safety and security and which reduces the opportunity for crime

The following Crime Prevention Through Environmental Design (CPTED) principles have influenced the design of the proposed development:

- Surveillance
- Lighting
- Territorial Re-enforcement/Ownership
- Environmental Management
- Access Control
- Space/Activity Management

A CPTED Statement prepared by BN Group Pty Ltd is included as **Appendix E**, which:

“identifies and reviews elements of the design which require special consideration, and outlines proposed measures endeavouring to minimise the risk of a crime being committed within the site, as well as minimising the threat of crime.”

Notable extracts from the Statement include:

“The proposed development is considered to achieve an acceptable level of safety ... principally achieved through its design ... which will be enhanced through lighting and the use of mechanical surveillance (CCTV).

The ... Service Centre ... achieves a good measure of surveillance .. through its focus on the car park areas toward the centre of the site and through the extensive use of glass throughout buildings ...

Lighting to Australian Standards (AS/NZS 1158.3.1:2005) is proposed throughout the Service Centre.

The design of buildings so that their entries are directed to adjacent car parking, will provide for a measure of territorial re-enforcement/ownership of these adjacent (parking) areas.

Given that the site will be negotiated by a mix of motorists and pedestrians, the Service Centre has been designed so as to provide for their safe and separate movement, with good visibility paramount ...

It is only the buildings that are to have some form of access control ... The remainder of the site is relatively open ... it is neither necessary nor practical to attempt to exclude people from certain areas.

The overall management of activities around the site is to be managed by one entity, ensuring that overall maintenance and activities within the Service Centre are managed in a coordinated and consistent fashion.

Overall, it is considered that the layout and level of design detail and services within the Service Centre will provide an environment which is safe for visitors to the site and employees, and will minimise the likelihood of crime. The careful use of landscaping (avoiding thick foliage at ground

level); adequate lighting; and, the installation of CCTV will aid in maintaining this safe environment."

5.12 Cultural Considerations

Objective

Ensure that development does not impact on items of early European or Aboriginal significance.

The site is presently used for cane farming, and has little cultural significance. In addition, it contains no items of heritage value, and has no adverse impact on heritage items in the locality.

5.13 Cumulative Impacts

Objective

Ensure that the cumulative impact of the development is appropriately considered.



Cumulative impact is the effect on the environment that results from the incremental impact of an action or project when added to another past, present or reasonably foreseeable future actions. Some cumulative impacts arise as a result of individually minor but collectively significant actions taking place over a period of time. In the context of the Application the combined effect of more than one development in a single locality is particularly relevant.

Work has commenced on the Pacific Highway Bypass and BSC has adopted a route for the Ballina Western Bypass. These individual decisions have combined to create the effect of isolating the site. In addition, the nomination in the Far North Coast Regional Strategy to designate Ballina as an appropriate location along the Pacific Highway Bypass route for a "highway service centre" (which is also reflected in the Draft LEP), effectively acknowledge that an effect on the environment will result around the locality containing the site. Notwithstanding, the proposed development includes a range of management and mitigation measures to ensure that its impact on the environment is limited, and kept to an acceptable level.

The cumulative decisions of the RTA and BSC in relation to road infrastructure and the strategic decision on the part of the NSW Government in the Far North Coast Strategy have led to a cumulative result which clearly identifies the site as important in terms of establishing the western edge and gateway to Ballina, and as a site ideal for accommodating the HSC.