

subdivision to the west of the Concept Plan site. The cultural tree plantings extend into the Concept Plan site area.

European and Aboriginal heritage are discussed as part of the Environmental Assessment presented later in more detail and in the report prepared by Insite Heritage located at **Appendix AD**.

## 2.7 SITE IMPROVEMENTS AND SITE PHOTOGRAPHS

The site is currently vacant (other than including a temporary structure for the sales office associated with Trinity Point). The following aerial photographs provide a good visual appreciation of the site:



*Photo 3: North Aerial view over Trinity Point.*



*Photo 4: West landward view over Trinity Point.*



*Photo 5: Aerial south view over Trinity Point. Note that the site is cleared of structures, however the footprints can be clearly seen.*

## 2.8 TOPOGRAPHY, FLOODING AND DRAINAGE

The subject site slopes from Bluff Point in the south (8.5m AHD) to Bardens Bay in north (0.9m). The northern part of the site comprises flat low-lying lands with part of the site subject to flooding. The current 1:100 year flood level is 1.38m AHD (still water). A copy of the site survey is located at **Appendix E**.

Site runoff currently drains towards Bardens Bay, with no formed watercourse evident on site. There is little external catchment draining into the site.

These features are described in more detail in the stormwater and flooding report located at **Appendix W**.

Water depths vary from zero at the shoreline to approximately 6.8m near the eastern corner of the Concept Plan site area. Water depths increase from zero to 3m within approximately 30m of the shoreline. A copy of the hydrographic survey of the water area is located at **Appendix E**.

## 2.9 TERRESTRIAL AND AQUATIC ECOLOGY

A few remnant trees occur across the main part of the site, see photo 4 above and tree survey included in **Appendix E**. The site is otherwise grassed. The remnant trees include cultural plantings near Bluff Point in the south and three forest red gums in the centre of the site. Part of the site which extends across the foreshore land includes vegetation.

Vegetation communities identified and mapped for the site and immediate adjoining area (excluding approved residential subdivision area to the west) are shown in **Figure 7**.



**Figure 7: Vegetation Map.**

This illustrates no vegetation communities within the land based Concept Plan site, other than a small area of *Casuarina glauca* Open Forest where the site extends out into the foreshore in the north, and that community and *Eucalyptus tereticornis*/*Angophora floribunda* Open Forest where the site extend out into the eastern foreshore. These vegetation communities, which also extend through the foreshore land are Endangered Ecological Communities.

Vegetation along the foreshore area of the shallow unnamed bay comprises mangroves and Endangered Ecological Communities (EEC), being Coastal Saltmarsh (several varieties) and *Casuarina glauca* Open Forest.

Seagrass beds are the main aquatic habitat, occurring within the shallow unnamed inlet, fringing around the northern foreshore and then expanding into a larger bed off the south-eastern foreshore. These are mapped in **Figure 8**.



**Figure 8: Seagrass Map.**

Detailed descriptions of the terrestrial and aquatic vegetations, extent, quality, habitat value and consideration of fauna are addressed in Terrestrial Ecology Report (**Appendix S**) and Aquatic Ecology Report (**Appendix R**).

## 2.10 GEOTECHNICAL

### 2.10.1 Mining

The site is located within a declared mine subsidence area.

### 2.10.2 Geotechnical

Reference to the 1:100,000 Newcastle Coalfield Geological series sheet indicates that the site is underlain by the Narabeen Group of rocks. The Narabeen Group includes both the Terrigal Formation and the Clifton Subgroup. The Terrigal Formation typically includes sandstone and siltstone, while the Clifton Subgroup typically includes conglomerate, sandstone, siltstone and claystone.

Douglas Partners provide the following information in relation to the site following their investigations (a copy of their report is located at **Appendix F**).

#### Marina Area (off shore)

In general, the lake bed sediments comprise a mixture of sand, silt and clay in varying proportions. The over water bores encountered soft lake sediment which ranged in thickness from about 1.7m to 3.0m. The underlying soils generally comprise clay, gravelly clay and clayey sand, which are in turn underlain by bedrock at depths which range from 5.8m to 7.9m below the lake bed.

#### Marina Village Area (on shore)

Sandy soils with variable proportions of clay, silt and gravel, to depths of 5m were encountered. Sandy soils are underlain by clay, sandy clay and gravelly clay. Rock was encountered at depths of 12.8m and 11.4m

#### Remainder of Site

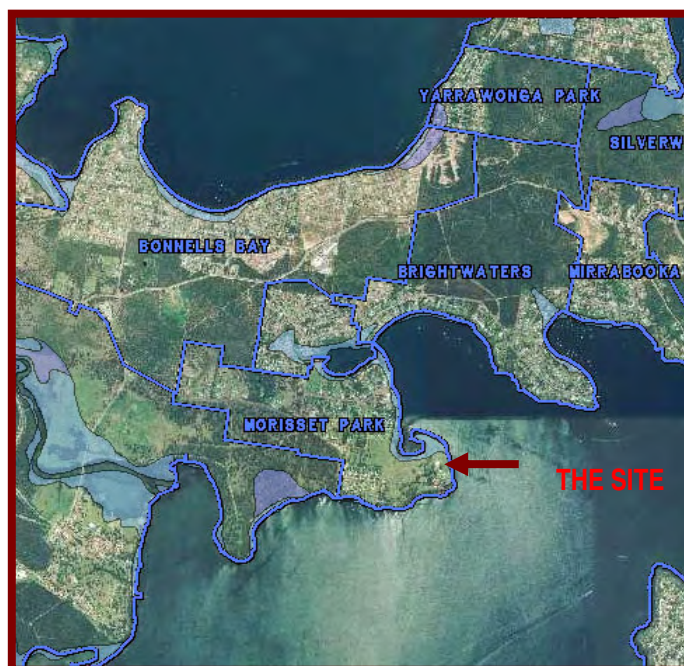
Filling generally encountered to 1.15m over generally sandy and clayey soils. Clay in Pit 309 graded to clayey sand/extremely weathered sandstone below about 1.0m, and backhoe refusal was encountered at 1.8m depth. Rock was also encountered in Bores 104 and 105 with pebbly sandstone encountered below 4.2m in Bore 104, and residual clay grading to an extremely low strength conglomerate below 4m in Bore 105.

### 2.10.3 Groundwater

Groundwater was encountered at depths as shallow as 0.4m in the northern part of the site.

### 2.10.4 Acid Sulphate Soils

The site is partly located within a zone with a high probability of acid sulphate soil within 1m of the ground level, under the *Swansea Acid Sulphate Soil Risk Map* (Ed. 2). **Figure 9** shows Acid Sulphate Soils in the Locality.



**Figure 9: Acid Sulphate Soil Map.**

Douglas Partners investigated the site for acid sulphate soils and advise that the results of detailed laboratory testing indicate the presence of actual and potential sulphate soils at the site (see report at **Appendix H**).

#### **2.10.5 Contamination**

The larger Trinity Point site has been subject to contamination assessments and audits as part of earlier planning processes and involving Lake Macquarie City Council. A copy of the validation report by David Lane & Associates, dated August 2007, is located at **Appendix I**, and a Site Audit Report by JBS Environmental Pty Ltd September 2007 is located at **Appendix J**. For the purposes of this Environmental Assessment, the validation and audit implies that the land is suitable for the proposed most sensitive land use (residential) and that no further assessment of contamination is necessary.

#### **2.10.6 Geochemical**

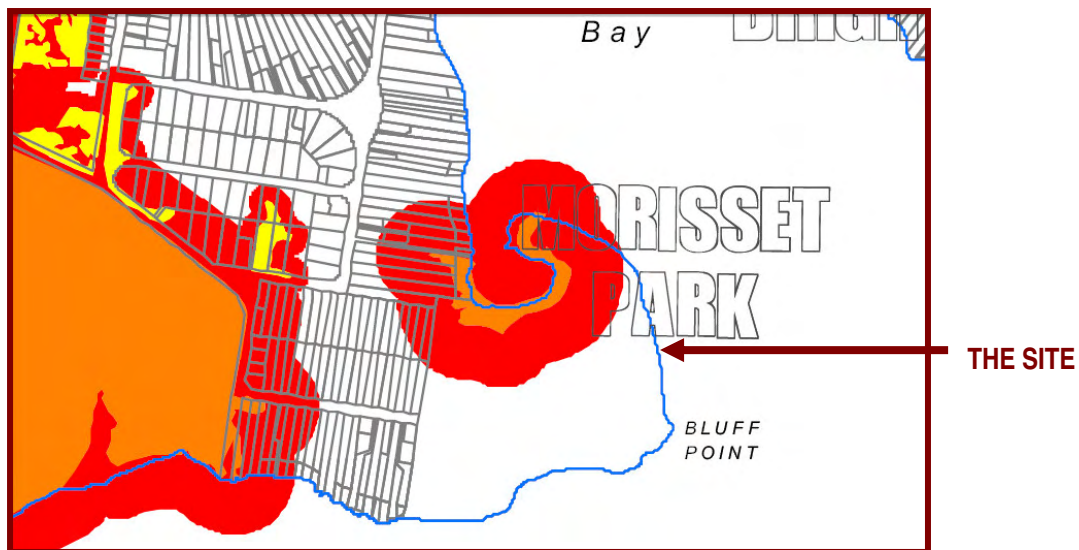
Douglas Partners have carried out testing of sediment from the lake bed and a copy of their report is located at **Appendix G**.

The statistical analysis of the laboratory results for the lake bed sediment shows that while individual results exceed the trigger levels for both Arsenic and Cadmium, the calculated 95% UCL for each of these analytes was below the ANZECC ISQC-Low trigger values. All results were below the ISQG-High values.

None of the results for the individual species of the PAHs exceeded the ISQG - Low trigger values. All of the results for OCP's , OPPs, and PCPs returned values below the respective detection limits and similarly do not exceed the ISQG - Low trigger values.

## 2.11 BUSHFIRE

The subject site is in a bushfire prone area based on the Bushfire Prone Land Map, see **Figure 10**:



**Figure 10: Bushfire Prone Land Map.**

## 2.12 UTILITIES

Service infrastructure, in terms of reticulated water and sewer, is available to the site as well as electricity, gas and telecommunications.

## 2.13 OBSERVATIONS FROM ANALYSIS OF SITE AND CONTEXT

Trinity Point is well located for the purpose of a mixed use tourism development and marina. The broader site attributes of not being visually prominent, its location on the water in an area that requires no dredging and minimal disturbance to sea grass as well as its relative position to Morisset Town Centre (identified for future growth) with good access to road and rail make it a good choice for a mixed use tourism development.

The zoning of the land for Tourism under the LEP supports the context for development.

The broader supporting context for the proposed development is further supported by analysis of the site itself, particularly noting that the site is substantially cleared and has previously supported a development outcome. The site constraints including flooding, heritage, coastal processes, flora and fauna, topography and geotechnical are not prohibitive to development but like most development sites do require careful management.

The site opportunities from being located on the water are well understood and some of the constraints are also able to be utilised as opportunities, including the celebration of the site's history both Aboriginal and European.

The Concept Plan document provides a good visual understanding of the site context, constraints and opportunities as described in words in this section. The document also provides a more succinct summary of the constraints and opportunities.

## 3.0 The Proposed Concept

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### 3.1 BACKGROUND TO CONCEPT

JPG historically lodged a rezoning application with LMCC to rezone all lands of the former “St John of God” site (which includes the subject land and lands to the west that have subsequently been approved for 194 residential lots) for residential use. However, during the assessment of the Local Environmental Plan amendment application, Council identified the potential to incorporate a component of tourism on the land. Whilst JPG were determined to retain the land entirely for residential purposes, Council’s preference was for a predominately tourism-based outcome. Both Council and JPG ultimately agreed on the area of land to be zoned for tourism.

As part of the Council resolution, it was required that a masterplan be prepared for the site, prior to development occurring. In preparing the masterplan for the site, JPG advise that Council were initially proposing to allow the masterplan to address the residential component only. However, at the last moments of finalising the plan, Council requested that JPG alter the masterplan to include development direction for the tourism zone also. As JPG’s main focus was the development of the residential component on the site, and as the tourism outcome was not part of their core business plan, the draft masterplan was amended to include a small-scale tourist outcome to facilitate approval of the masterplan, thereby enabling immediate commencement of the residential subdivision which was their main focus.

In 2005, LMCC approved the Kendall Grange Masterplan. A copy of an extract of the plan is located at **Appendix C**.

Until now JPG has not had time or resources to determine the viability of the proposed tourism outcome accepted by Council under the masterplan. With the benefit of market research, it is now apparent that the hastily prepared proposal for a small-scale tourist outcome as accepted by Council is not viable, and unlikely to attract investors. Accordingly the tourism outcomes sought by Council would not be realised. JPG is now committed to providing a world-class tourist outcome. To create the vibrant destination required to achieve this, a departure from the outcomes (but not many of the principles) of the masterplan is required (see Section 6.19 of this report for more detailed consideration of the Kendall Grange Masterplan).

At the recent request of the applicant, Council initiated investigations into developing the tourist zone at Trinity Point for a mix of permanent and temporary residential occupancies (it being noted that permanent residential occupancy was prohibited within the current zoning of the land). A Section 54 Notification has been issued in this regard. A copy of the current submission to Council, seeking an amendment to the LEP and providing strategic justification for a mix of permanent and non-permanent residential accommodation is located at **Appendix D**.

The proposed Concept Plan, for which approval is now sought, is an opportunity to revisit the premise for the Masterplan as it relates to that part of the site that is the subject of this EAR. Particularly important is the further research undertaken by JPG to establish the appropriate development mix for a viable development outcome. This includes the resultant inclusion of a marina and variation in built form and site layout requirements that such a mix of land uses requires.

It is considered that the Concept Plan now proposed will provide a first-class outcome that will serve as a reference and catalyst for Council to attract further tourism opportunities to the LGA.

## 3.2 THE CONCEPT

### 3.2.1 Overview

JPG seek to create a premiere development outcome for Trinity Point and Lake Macquarie. The company has a strong desire to **create a successful, viable and vibrant destination, forming an experience and interaction with the largest asset of the locality, the lake itself**. The applicant believes that this project will become a mechanism to increase the tourism profile of Lake Macquarie, a direction Council sought during detailed strategic planning of the LGA, and in particular this site. This is consistent with the NSW State Plan for “Growing Prosperity”.

**Public access around and through the site will be provided, and it is considered that this is essential to maintain vibrancy and to enhance community access to Lake Macquarie.**

The success of the project lies in its ability to provide a range of activities to create interaction and synergy. It will create a compelling destination, of sufficient attraction to draw people from all walks of life, from locals to people from far away, including overseas visitors.

LMCC and JPG have recognised that the site needs to be opened up to the community, and should not be exclusive (or gated, only for tourists). The Kendall Grange Masterplan (discussed in detail later in this report) sought to make community interaction spaces available to residents of the site and surrounding areas. Public (not just tourist) activity and access around the foreshore edge of the site, through the site, and to the site’s facilities, are essential design principles for the viability of the proposal. Day visitation to the site and its facilities is expected. Trinity Point’s facilities are likely to attract the component of the Hunter Region tourist market that stay with relatives and friends, or who are residents of the region themselves, who enjoy participation in general site seeing and eating out experiences etc. This would be in addition to the overnight tourist market for the accommodation linked to business tourism, weekend tourism, and luxury tourism.

This proposal offers an urban based tourism outcome, afforded through appropriate density and mix of uses.

The State’s Towards 2020 Tourism Masterplan acknowledges that tourism’s major return to the community is the creation of employment opportunities throughout the state, and the provision of tourism experiences. Employment envisaged in Towards 2020 will not happen as a matter of course. In regard to this, the strategy acknowledges that a sustained effort is required in order to achieve market conditions to fulfil employment potential.

A mixed use development, encompassing tourist and residential occupants within the tourist site (in conjunction with the importance of strata (or similar) subdivision) would be a positive response to the challenges facing tourism development.

It is well documented that issues of profitability and establishment costs, and challenges to investment in tourist development are significant. The following extract from Towards 2020 lays testament to this:

*“lack of a positive climate for investment is hindering the potential of the tourism industry and will continue to do so. Towards 2020 acknowledges the need to lift private investment in the tourism sector to physically improved tourism product including accommodation, attractions and tours. Government will help to promote and facilitate a climate conducive to enhancing investor perceptions, industry image and a positive business environment. The industry, however, needs to deliver consistent profitability and a commercial return on funds invested” (pg 8).*

Towards 2020 identifies that a major trend limiting growth of tourism and tourism investment potential - other sectors of the economy have been outperforming tourism in terms of competing investment dollars. In addition, tourism is not an asset class that banks are necessarily optimistic in financing and they adopt conservative positions and limitations. Their end considerations in deciding to finance a project are typically number and value of presales and impact on risk profile rather than the fabric of the development itself. Financiers attribute a greater risk profile to tourism apartments than to residential. Prospective buyers may find that banks will also attribute greater risk for lending purposes to a tourism apartment compared to residential accommodation. Consequently, a mix of stock is important.

The ability to secure investment, to draw and hold potential visitor markets, and secure financing for tourism developments, is acknowledged as a greater challenge outside Sydney. In regard to this, incentive to bring these opportunities on stream is required.

A core strategic direction of Lake Macquarie Council's Lifestyle 2020 strategy is employing mixed uses to reinforce and strengthen centres, provide dynamics and vibrancy, surveillance and security and economic support. This strategic approach is an equally valid application to achieving the same outcomes within a tourist node such as Trinity Point.

At the outset it is critical to emphasise JPG's commitment to deliver a high quality, world class tourist outcome on this site.

### **3.2.2 Design Evolution**

With the clear objective to create a successful mix of interacting uses, a destination and a place, the appointed architects HB0+EMTB were engaged to derive a Concept Plan.

The final Concept has evolved from its starting base of sketch ideas drawing from initial context, site and vision analysis, iterative development of the layers of information and opinions (technical and subjective) and ongoing testing and refinement of the important principles. The project is ideally suited to Concept Planning, to enable the broad development ideas to be developed and debated prior to the necessary detail that comes with being granted approval to actually commence development.

Part A of the Concept Plan document includes a summary description of the Design Evolution, and that is not repeated here.

What is clearly articulated in those pages is the fact that there were essential vision components formulated early in the design process (such as the mix of uses, creation of destination, provision of high quality public access and community interaction space) and a number of elements that became immediately clear (obvious marina siting, taller buildings and reduced building footprint, the siting of taller buildings, the importance of vegetation surrounding the site, the importance of Bluff Point).

The Architects responded to issues raised in a positive environment, continually producing alternatives and design details to address issues, or to evolve the design. An Architects summary of the evolved design, the indicative outcome concept and vision words and images conclude the Design Evolution component of the document.

### **3.2.3 The Concept Plan**

The resultant Concept Plan is not one plan, but a document (Part B – Principles, Objectives and Urban Design Guidelines) that identifies initial broad structure principles for the site and provides nineteen principles (with objectives and guidelines), which describe the elements for which Concept Approval is sought. This is not reproduced in full within this report. **Appendix N** includes two plans which are Indicative Outcome Plans of the type of development that may result from the Concept Plan elements.

The following is a simplified summary of the elements for which Concept Approval is sought, and which will form the basis against which future Project Applications will be assessed.

#### Land Use

Concept approval is sought for a mix of land uses including:

- Staged 308 berth marina, including workshop and maintenance facility and hardstand area with boat lift, small marina lounge, chandlery, marina operations/management/administration area and site managers residence);
- Limited use helipad;
- Marina/Tourist village (incorporating public village square, function rooms (up to 300 seat), restaurant (up to 200 seat), café (30 seats), serviced meeting rooms, ancillary uses such as convenience store, gym/fitness, beauty, tourism operators, tourism operations/management and administration area);
- Tourist accommodation (up to 75 units);
- Residential accommodation (up to 75 units); and
- Associated public, communal and private domain, car parking, landscaping, servicing and infrastructure.

Concept approval is also sought to locate residential land use in the central and southern part of the site, and the remaining mix of uses in the northern part of the site.

#### Building Setbacks

Concept approval is sought for key building setbacks to the lake edge (min 25m generally 30m to lake edge excluding the marina/village component, and the creation of a 2000m<sup>2</sup> village square) to the lake edge at Bluff Point south (65m), to the western site boundary (4m) and to identified 'through site' linkages (15m), as specified in the Building Setback Principle.

Concept approval is sought 25m building separation across internal residential courtyards.

### Building Heights

Concept approval is sought for building heights of generally 2 – 5 storeys (limited 5 storey) in the central and southern parts of the site (2 storeys adjacent foreshore/boardwalk (east), 2-4 storey adjacent the public road (west) and 3-5 storeys mid block), with taller buildings of 5 and 6 storeys above an elevated village square in parts of the northern part of the site. Approval for the allocation of heights across the site, north to south, and east to west, in maximum AHD heights is specifically sought.

### Public Access and Open Space

Concept approval is sought for the key public access principles included in the Concept Plan document, to guide provision of access and space, and its quality, within the Concept Plan site. This includes a 2000m<sup>2</sup> village square, open space at Bluff Point, a boardwalk around the southern and eastern edge of the built form, public access at key through site linkages and public access to the breakwater. The principles also importantly identify that design detail is not to preclude works that Council may seek in the future in the foreshore land.

### Built Form

Concept approval is sought for key built form principles included in the Concept Plan document, to guide appropriate built form within the Concept Plan site. This includes type of form around the village square, sculptural and iconic built form at the village square and remaining tourist accommodation and residential built form of modular and variable perimeter block/open court form.

### FSR & Building Site Coverage

Concept approval is sought for an FSR of 0.65:1 and a building site coverage of 35%.

### Building Materials and Colours

Concept approval is sought for key building materials and colours principles included in the Concept Plan document. These seek to respond to the surrounding environment and create interest and pattern. Importantly, approval is sought for the choice and use of materials for the iconic high built forms within the proposal.

### Vegetation

Concept approval is sought to remove a small area of endangered ecological community (Casuarina glauca Open Forest) and replace that with reinstatement of the same or greater area, and additional assisted rehabilitation of that community adjoining the Concept Plan site, as detailed in the Concept Plan document.

### Landscape

Concept approval is sought for key landscape principles included in the Concept Plan document, to guide appropriate landscape within the Concept Plan site. This includes guidelines for the various components of the site, linked to an overall design rationale. This includes the development of a public art strategy and interpretation policy.

### Roads, Vehicular Access and Parking

Concept approval is sought for key access and parking principles included in the Concept Plan document. This includes changes to the approved external road network, site access principles, parking provision and parking management.

### Water Management

Concept approval is sought for key water management principles included in the Concept Plan document. This includes water sensitive urban design approach and features to be provided and incorporated to management stormwater runoff and its impacts on the receiving environment.

### Flooding

Concept approval is sought for minimum flood planning levels for various components of the proposal, and requirement for flood mitigation, taking into account potential climate change impacts.

### Services and Waste Management

Concept approval is sought for key services and waste management principles included in the Concept Plan document.

### Marina

Concept approval is sought for marina design, features and usage as included in the Concept Plan document. This includes siting of marina, staging of berths, design of breakwater and pontoons (and connections to land) to limit impact and maximise utility, provision of associated services and utilities (including fuel, sewage pump out and oily bilge pump out), land based facilities and necessary construction and operational management plans.

### Helipad

Concept approval is sought for helipad design, features and usage as included in the Concept Plan document. This includes limitations on usage (number of movements, hours of movements, types of helicopters), design features, necessary access control and a facility manual.

### Acoustics

Concept approval is sought for further acoustic assessment and management of acoustic impacts.

### Sustainable Development

Concept approval is sought to require development to adopt various sustainability assessments and measures, including energy and water efficiency, solar access and greenhouse gas minimisation.

### Indigenous and European Heritage

Concept approval is sought to listed measures and requirements for indigenous and European heritage.

### Staging

Concept approval is sought to specific staging triggers for the marina, and principles associated with staging the remainder of development.

## 4.0 Planning and Related Statutory Provisions

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The Marina and Mixed Use Development will need to consider a range of planning and related legislation and controls across local, regional, state and Commonwealth levels. The following is an overview of those relevant to the proposed development.

Many of the planning controls, such as Lake Macquarie DCP 1 have a significant number of standards that are designed to assess development and/or project applications. These documents are not typically suited in many circumstances to assessing the broader nature of a Concept Plan. In this regard we have given a broad consideration to the controls, to ensure they are identified and understood and that the Concept Plan does not preclude future compliance. However it will not be until a project and/or a development application is lodged that full compliance will be able to be determined.

### 4.1 LOCAL LEGISLATIVE FRAMEWORK

#### 4.1.1 *Lifestyle 2020*

Lifestyle 2020 is Lake Macquarie Council's primary Strategic Planning document, setting out city wide core values and strategic directions. It establishes four core values, being sustainability, equity, efficiency and liveability.

Acknowledging the role of Lifestyle 2020 in strategic decision making, it is addressed in a Table commenting on relevant aims and strategic directions as they relate to the proposed development at **Appendix L**.

#### 4.1.2 *Lake Macquarie LEP 2004*

The proposed development is predominantly situated on land zoned 6 (2) Tourism and Recreation under Lake Macquarie Local Environmental Plan 2004.

The proposed development is generally permissible within the zone, with the exception of permanent residential occupancy, and complementary business uses, such as serviced meeting rooms, that intend to provide services beyond the usual needs of tourists.

Objectives of that zone are:

- (a) To provide land primarily for commercial recreation and tourist uses, and
- (b) To encourage good quality design within the zone, and
- (c) To provide land for good quality tourist development, and
- (d) To provide land for function and entertainment centres, and
- (e) To encourage tourism development that is sensitively designed to complement its location and minimise any adverse impacts on the environment, and
- (f) To provide for sustainable water cycle management.

The proposed development, in the main, is consistent with the objectives of the zone. The proposal provides for commercial, recreation and tourist uses, and will be of quality design and appearance. The proposed development has taken into account potential environmental impacts. In addition water cycle management has been addressed. The proposed permanent residential occupation and some of the commercial aspects of the site are inconsistent with the existing zone and objectives, however it is consistent with the proposed LEP amendment.

LMCC has identified a need to review the range of tourist accommodation types provided for within the LMLEP 2004, in order to encourage tourism. Separate to that, the recommendations of the LMCC City Strategy Committee meeting held on 4 June 2007, were to investigate allowing mixed use (residential and commercial development) as a component of an integrated tourism development at Trinity Point. This matter has already been to the Section 54 Panel, and general support has been received. This issue is addressed in more detail in Section 6.1 of this report.

The proposed marina and helipad are uses permitted on the lake, which is zoned 11 Lakes and Waterways Zone. The objectives of the Lakes and Waterways Zone are to:

- (a) recognise the importance of Lake Macquarie and its waterways as an environmental asset, not only to Lake Macquarie City, but to the Hunter and Central Coast Regions, and
- (b) ensure that development of the Lake and its waterways occurs in a manner that is consistent with the principles of ecologically sustainable development, and
- (c) ensure development does not adversely affect the ecology, scenic values or navigability of the Lake or its waterways, and
- (d) ensure that aquatic and terrestrial habitats and their interface are protected and enhanced and are not adversely affected by the recreational use of the Lake or its waterways, and
- (e) provide for sustainable and viable economic use of the Lake and its waterways, and
- (f) provide for sustainable water cycle management.

The proposal is consistent with the zone objectives rating proposed measures to protect the lake as detailed in the submission. In addition the proposal is a viable and economic use of the Waterway. Sustainable Water Cycle Management has been considered as part of the development proposal.

The associated facilities, providing access between the water and the subject site, pass through the 6(1) Open Space Zone along the edge of the site and such facilities being for the Marina operations or ancillary thereto are permitted within this zone. A small part of the site at the entrance to the site is also zoned 6(1) Open Space. The proposed entry road located in this zone is also a permitted use. The objectives of the 6(1) Zone are to:

- (a) provide community owned land or land intended to be owned by the community that is suitable for the passive and active recreation needs of the community, and

- (b) provide for a variety of facilities necessary to support use of this land including barbeque facilities, toilet facilities, sports administration and changing rooms, clubhouses, cycle ways, seating, lighting and the like, and
- (c) facilitate preservation of the environmental qualities of land identified in this plan for public ownership, and
- (d) provide for the use of public land leased from the Council where community benefit can be established and the use of the land is appropriate for its location, and
- (e) provide for sustainable water cycle management.

Upon LMCC acquiring the 6(1) Zoned Land from the proponent the community ownership objectives of the zone will be met.

The environmental qualities of the land will not be impacted adversely by the proposed development. Access to this land through the development site will enhance its use by the public. The proposed development provides for sustainable Water Cycle Management.

A small part of the site at the entry to the site is zoned 2(1) Residential. The objectives of the residential zone are:

- (a) permit development of neighbourhoods of low-density housing, and
- (b) provide for general stores, community service activities or development that includes home business whilst maintaining and enhancing the residential amenity of the surrounding area, and
- (c) ensure that housing development respects the character of surrounding development and is of good quality design, and
- (d) provide for sustainable water cycle management.

Within this zone is located part of the access road to the site. Roads are a permissible use within the zone and this would not compromise the objectives of the zone as outlined above.

The table located at **Appendix L** also addresses the relevant parts of LMLEP 2004.

The proposed development is situated within the Trinity Point master-planned site, a 194 lot lakefront residential community, being developed by the applicant. A Masterplan for the entire Trinity Point site, including the subject site was adopted by LMCC in 2005 and is known as the Kendall Grange Masterplan. Clause 42, Schedule 8 of the Lake Macquarie Local Environmental Plan (LM LEP) 2004, prescribes that such a Masterplan is required, although the LMLEP 2004 makes no specific reference to the Kendall Grange Masterplan. As such, the document is a stand-alone plan.

An assessment of the proposed concept plan relative to the Kendall Grange Masterplan has been made as part of the Environmental Assessment in **Section 6** of this report.

#### **4.1.3 DCP 1**

DCP 1 is a comprehensive city wide DCP, and will be a consideration in the assessment of the proposed development. Many of the requirements of the DCP are details to be addressed as part of future project applications for the development. However, an overview of the DCP has been undertaken at this concept stage to ensure the objectives of the DCP can be met. This overview is presented as part of the table located at **Appendix L**.

#### **4.1.4 Lake Macquarie Estuary Management Plan**

The Lake Macquarie Estuary Management Plan defines a series of actions which if implemented, will help maintain and improve Lake Macquarie's environmental and socio-economic values and develop a greater awareness and understanding of the benefits of lake management actions within the community, in turn aiming to enhance recreation, tourism, community attitudes, commercial opportunities and the general well-being of the Lake.

The objectives of the Lake Macquarie Estuary Management Plan are:

- On the basis of the assessments presented in the Estuary Management Study (WNM, 1997), define management strategies and select actions which will help maintain and improve the estuary's environmental values;
- Describe and justify selected actions;
- Prioritise selected actions in terms of their need and the practical limitations of their implementation;
- Provide indicative cost estimates for each action and summarise these costs; and
- Identify potential funding sources.

This Plan is addressed further in the Volume 2 report by Worley Parsons.

#### **4.1.5 Lake Macquarie Mooring Management Plan**

Given the level of existing urbanisation in the Lake Macquarie area, the planned future growth and consequent demand for moorings within the Lake, the aim of this plan is to ensure that future mooring management practices support the Waterways Authority's marine safety and environmental sustainability goals.

The purposes of this plan are to ensure the following:

- Integrated decision making by the Waterways Authority, State and Local government agencies, particularly to ensure the appropriate location of moorings and appropriate land-based infrastructure to service them;
- Fair and equitable access to the Lake for all user groups within the region;

- An increased level of public participation in the decision making processes for which the Waterways Authority is responsible which would include any revision to the Plan; and
- A strategic plan is in place in anticipation of further urbanisation likely to bring an increased demand for moorings.

This Plan is addressed further in the Volume 2 report by Worley Parsons.

#### **4.1.6 Lake Macquarie Foreshore Stabilisation & Rehabilitation Guidelines**

This Guideline is intended to assist landowners and managers to determine which foreshore stabilisation treatment and construction techniques suit their situation. The Guidelines are a support document to LEP 2004 and DCP No. 1, specifically in relation to Section 3.1.1 – Development Adjoining the Lake and Waterways Zone.

The general aim of the Guidelines is to assist in re-establishing a 'stable', and preferably a natural, foreshore around the lake and along its tributaries.

This Guideline is addressed further in the Volume 2 report by Worley Parsons.

#### **4.1.7 Section 94 Contributions Plan**

The residential component of the project (up to 75 apartments) will be subject to contributions in line with Council's City Wide Section 94 Contributions Plan.

### **4.2 REGIONAL LEGISLATIVE FRAMEWORK**

#### **4.2.1 Hunter Regional Environmental Plan (HREP) 1989**

Lake Macquarie local government area is covered by the Hunter Regional Environmental Plan (HREP) 1989.

The aims of the HREP are:

- (a) to promote the balanced development of the region, the improvement of its urban and rural environments and the orderly and economic development and optimum use of its land and other resources, consistent with conservation of natural and man-made features and so as to meet the needs and aspirations of the community;*
- (b) to coordinate activities related to development in the region so there is optimum social and economic benefit to the community; and*
- (c) to continue a regional planning process that will serve as a framework for identifying priorities for further investigations to be carried out by the Department and other agencies.*

The HREP contains provisions applying to planning strategies, rezoning and the approval of development. Provisions relating to economic development (tourist), social development, natural resources, environment

protection and conservation are likely to be relevant. A number of these provisions are incorporated within legislative frameworks.

The following are the key aspects of relevance to the proposed Trinity Point development.

- Part 2 (Social Development), Division 1 (Housing). This requires a public authority to be satisfied adequate health, education and other community facilities and services can be provided. This issue is considered as part of the creation of additional residential development throughout Morisset Peninsula, and the emerging growth of Morisset as a regional centre. The report prepared by Key Insights, and located at **Appendix O**, establishes that there is adequate social infrastructure to cater for the proposed additional residents on the subject site;
- Part 3 (Economic Development), Division 2 (Commercial Development). This requires a public authority to be satisfied that the development will have no detrimental impact on the existing or potential function of regional, subregional or district centres. The proposed commercial use is small-scale and capable of servicing tourism and local needs. It is complementary to the mix of uses proposed at the resort, without impacting on the higher order commercial roles of Morisset Regional Centre or the commercial-zoned land at Morisset Peninsula. The economic assessment prepared by Key Insights and located at **Appendix O** demonstrates that the existing Morisset town centre will benefit from the proposed development; and
- Part 3 (Economic Development), Division 3 (Tourism) is relevant to the Trinity Point Marina and Mixed Use Resort. Generally, the objectives of the HREP seek to co-ordinate development of the region as a tourist destination area; to encourage appropriate developments; to recognise natural/heritage values and improve opportunities; and to encourage the adoption of planning controls containing incentives and flexibility for tourism development. The proposed Concept Plan is entirely consistent with the aims for a tourism outcome.

The HREP also includes requirements for the provision of access, bus transport, parking, control of bicycle and pedestrian movement, traffic impact controls, water quality and quantity controls, flood, bushfire and mine subsidence hazard controls, foreshore accessibility and management procedures and protections for the amenity of the lake. These issues are all considered as part of the proposed development, and the Environmental Assessment section of this report discusses these in more detail.

Trinity Point Marina and Mixed Use Resort is capable of providing a balanced development outcome. It will facilitate orderly and economic development within a recognised tourist zone, while maintaining and conserving the natural and built environment.

#### **4.2.2 Lower Hunter Regional Strategy**

The Lower Hunter Regional Strategy was released in October 2006. Overall, the strategy provides a broad framework that underpins future planning of the Lower Hunter direction.

The Strategy aims:

To promote Newcastle as the regional city, with a hierarchy of urban centres;

To provide for a forecast population increase of 160,000 persons by 2031;

To identify new release areas;

To ensure an adequate supply of employment land;

To focus a higher proportion of new housing in centres which will reduce pressure on existing established suburbs;

To enable the release of rural land for a series of new communities and extensions to existing urban areas;

To ensure that greenfield land is released in a coordinated way, with improved neighbourhood design and more efficient use of infrastructure; and

To ensure the protection of biodiversity through a Regional Conservation Plan.

The proposed development is consistent with the aims of the strategy, providing for increasing population and employment within a single location.

The Lower Hunter Regional Strategy seeks to provide some 66,000 new jobs and dwellings for an additional 160,000 residents over the next 25 years. The strategy deals broadly with population and housing, the economy and the environment. Due to its broad scope, it does not make specific references to tourism as a land use.

Of particular note to the strategic context of Trinity Point, nearby Morisset is identified as an emerging Major Regional Centre, and Lake Macquarie is recognised as Australia's largest saltwater lake. The proposed Marina and Mixed Use Resort development would not be inconsistent with the LHRS.

The proposed development is consistent with the principles of promoting development within the existing urban fabric.

The Strategy is considered in further detail in Section 6.1 of this report discussing issues relevant to the rezoning.

## **4.3 STATE LEGISLATIVE FRAMEWORK**

### **4.3.1 *Environmental Planning & Assessment Act 1979***

The EP&A Act is the principle planning legislation in NSW, and sets out the process for assessment of development proposals such as the Trinity Point Marina and Mixed Use Resort Project.

The proposed Concept Plan is a matter for determination by the Minister under Part 3A of the Act.

This Environmental Assessment Report has been prepared with regard to the Director General Requirements. A summary of the requirements and a compliance table is located at **Appendix M**.

#### **4.3.2 Objects of the EP& A Act**

*Consideration has been given to the agents of the Act and these are addressed below:*

*a) To encourage:*

- I. The proper management, development and conservation of natural and artificial resources, including agricultural land, natural areas, forests, minerals, water, cities, towns and villages for the purpose of promoting the social and economic welfare of the community and a better environment,*

The proposed development will help to boost the social and economic welfare of the community by providing additional sites of social attraction, increased employment opportunities, and increased housing choice. The site is ideally located for this purpose.

The proposed development protects the environment through the employment of appropriate measures.

- II. The promotion and co-ordination of the orderly and economic use and development of land,*

The proposed development is entirely consistent with this object. The proposal relies on a simple extension of existing utilities and services. The proposed development ensures the economic use of land, promoting the principles of highest and best use.

- III. The protection, provision and co-ordination of communication and utility services,*

The proposal will meet this object.

- IV. The provision of land for public purposes,*

The design of the proposed development encourages public access to the foreshore and utilisation of the various tourist facilities by the public. The immediate foreshore will be acquired by LMCC for ownership and use by the public.

- V. The provision and co-ordination of community services and facilities, and*

The report prepared by Key Insights confirms that the proposal will comply with this object.

- VI. The protection of the environment, including the protection and conservation of native animals and plants, including threatened species, populations and ecological communities, and their habitats, and*

The ecological reports included confirm that the proposed development is consistent with this object.

- VII. Ecologically sustainable development, and*

The proposed Concept Plan has been developed to provide for ESD principles. In addition, throughout the construction and operation of the proposed development ESD principles and guidelines will be implemented and adhered to.

*VIII. The provision and maintenance of affordable housing, and*

The proposed development allows for a mix of housing choice to cater for different socio-economic positions.

- b) To promote the sharing of the responsibility for environmental planning between the different levels of government in the State, and*

The proposal is consistent with this object.

- c) To provide increased opportunity for public involvement and participation in environmental planning and assessment.*

The Part 3A process under which this development is being considered allows extensive public involvement.

Accordingly, the proposed development is consistent with all of the objects of the EP & A Act.

#### **4.3.3 State Environmental Planning Policies**

A review of all State Environmental Planning Policies (SEPP) indicates that the following SEPP's are of relevance to the proposed development.

##### ***SEPP 19 – Bushland in Urban Areas***

Existing vegetation located within the adjoining open space zone along the lakes edge will be protected and preserved other than as identified in this assessment, in order to maintain the natural heritage of the area for recreational, educational and scientific purposes. The proposed development is generally consistent with the SEPP.

##### ***SEPP 33 – Hazardous and Offensive Development***

Fuel storage for boats will be proposed as part of project applications at a later date at which time the provisions of SEPP 33 will need to be considered.

##### ***SEPP 44 – Koala Habitat Protection***

Encourages the conservation and management of natural vegetation areas that provide habitat for koalas to ensure permanent free-living populations will be maintained over their present range. The policy applies to 107 local government areas. Local councils cannot approve development in an area affected by the policy without an investigation of core koala habitat. The policy provides the state-wide approach needed to enable appropriate development to continue, while ensuring there is ongoing protection of koalas and their habitat.

The relevance of the SEPP and impacts are addressed within the flora and fauna report located at **Appendix S**.

#### ***SEPP 55 – Remediation of Land***

The object of this Policy is to provide for a State wide planning approach to the remediation of contaminated land.

The site, as identified in Section 2 has been the subject of contamination, however, as also reported has already been remediated to the appropriate standard for the purpose of the proposed development. Reports located at **Appendix I and J** demonstrate this.

#### ***SEPP 64 – Advertising Signage***

Given that the main focus of the proposed development is on marina and tourist related activity, advertising signage will be required. This will need to adequately convey effective tourist and directional information to the public. All signage will be tastefully designed and compatible with the desired amenity and visual character of an area. Signage will be erected in suitable locations, and be of high quality design and finish. Signage will be dealt with as part of project applications for future development.

#### ***SEPP 65 – Design Quality of Residential Flat Buildings***

This SEPP aims to raise the design quality of residential flat development across the state through the application of a series of design principles. At project application stage it will be necessary to submit a design statement, and for the Architect to certify that the proposal complies with the requirements of the SEPP. Broad consideration has been given to the design principles by the Architects and incorporated into their analysis and design evolution. The need for future compliance with the Policy has been noted within the Concept Plan document.

#### ***DRAFT SEPP 66 – Integration of Land Use and Transport***

Draft SEPP 66 is designed to ensure adequate consideration is given to the relationship between development and transport options. The SEPP has been a draft now for around 7 years and it is not clear if it is intended to be formally adopted. Clause 14 of the transitional provisions of the Draft SEPP advise that the Draft SEPP does not apply to “a development application that has been made but not finally determined before the commencement of this policy”. It is quite likely that even if this Draft SEPP was on the agenda to be adopted in the near future that it would not apply having regard to this transitional provision. In addition we note that Planning Circular PS 08-13 issued by the Department of Planning 13 November 2008 indicates that from 1 March 2009 Draft Environmental Planning instruments which have not been made in three years from exhibition are no longer to be considered (except in the circumstances of preparing a comprehensive LEP). Clause 7 of the Guiding Provisions of the Draft SEPP outline the development types that the Draft SEPP is intended to address. There is no reference in that clause to tourism or marinas and the residential triggers of 300 units or 500 are not reached by the proposed development.

Notwithstanding that the Draft SEPP is not currently adopted, is not likely to be and is most likely not intended to deal with this type of development consideration has been given to its principles.

Clause 9 of the SEPP outlines the considerations for assessment of Development Applications (we have assumed for the purpose of this exercise they are also applicable to a Concept Plan).

- a) Whether carrying out the development will further the aims and the planning objectives of this policy.

The proposed development will contribute to demand for public transport within an existing urban area. The site is indeed a simple extension of the adjoining residential subdivision for which Council would have deemed appropriate with regard to Draft SEPP 66 when it granted approval. The increased demand for transport will assist to support and/or improve the existing bus service to the locality.

- b) Whether the development is consistent with the policy on location of specific land uses and the general policies in the Integrated Land Use and Transport Policy Package or complies with Clause 10.

The location specific guidelines do not cover mixed used tourism facilities. In this instance the site is a destination site and is on purpose located in this unique position on the lake. The site is zoned to cater for tourism. The site has adequate access to bus and then rail at Morisset relative to the type of use proposed and its location.

The Integrated Land Use and Transport Policy Package identifies 10 principles for consideration and these are addressed below:

#### *Concentrate in Centres*

It is not possible to locate the proposed development within a centre. It is a specific land use that relies on being on the lake edge. Adequate access to centres from the site is available.

#### *Mix Uses in Centres*

Not applicable to the proposed development. Although the mix of uses within the site will enhance the viability of the Morisset Town Centre.

#### *Align Centres within Corridors*

Not applicable to the proposed development.

#### *Link Public Transport with Landuse Strategies.*

No specific land uses Strategy is being developed.

#### *Connect Streets*

The proposed development incorporates the principles of connectivity.

#### *Improve Pedestrian Access*

The proposed development makes appropriate allowance for pedestrian access.

#### *Manage Parking Supply*

Proposed on site parking will be managed to cater for the proposed demand.

#### *Improve Road Management*

The proposed development does not detract from the management of roads.

#### *Implement Good Urban Design*

The proposed concept plan and design outcome will result in a high quality outcome. Site amenity will be significant given the available walking space, public access and connectivity to the approved adjoining residential area.

- c) Whether adequate consultation with the Director General of Transport NSW and any appropriate planning agency, transport agency and transport provider takes place in accordance with Clause 11.

It is considered that adequate consultation of relevant government authorities has occurred as part of the process of the Director General Requirements being prepared and issued.

- d) Whether the transport implications are considered in accordance with clause 12

A traffic and parking analysis has been prepared by Better Transport Futures and is attached as **Appendix T**. The analysis outlines the impacts of the proposed development and identifies necessary works. The study concludes that the proposed development is appropriate and that the existing road system with the proposed works as recommended can cater for the proposed use.

- e) Whether the proposed development incorporates travel demand management mechanisms and features that will minimise the demand for travel and the use of cars including the following:

- (i) An urban form and structure that encourage walking cycling and public transport use.

The proposed development incorporates opportunities for walking and cycling, including good access to the available public transport.

- (ii) Parking requirements designed to discourage car use in areas with good public transport access.

The subject site is a destination point and a substantial number of people will continue to want to use the car for access to the site. Nonetheless opportunity

exists for visitor to travel by bus to the site or from further afield by train to Morisset and then from Morisset by bus if they choose.

- (iii) Provision of adequate trip end facilities for cyclists such as secure bicycle storage.

The site has more than adequate capacity to incorporate storage of cycles.

- (iv) Residential densities that will help achieve a passenger threshold for viable public transport services especially in accordance with clause 13 for new residential release areas.

The proposed development achieves a good balance of residential density and consideration of the full range of site opportunities and constraints and environmental impacts.

- (v) Employment or floorspace densities in commercial or employment areas that reflect the accessibility of the area by suitable public transport services and facilities.

The site is not located in an area designated as an employment area.

- (vi) Suitable provision for taxis.

Opportunity exists on site for taxis to access the site.

Overall, the proposed development, as an extension of the existing urban development, is consistent with the principles of the SEPP. In particular the proposal provides for access to public transport, and incorporates cycling opportunities.

### **SEPP 71 – Coastal Protection**

The land is subject to this SEPP, which has the following aims.

- (a) *to protect and manage the natural, cultural, recreational and economic attributes of the New South Wales coast, and*
- (b) *to protect and improve existing public access to and along coastal foreshores to the extent that this is compatible with the natural attributes of the coastal foreshore, and*
- (c) *to ensure that new opportunities for public access to and along coastal foreshores are identified and realised to the extent that this is compatible with the natural attributes of the coastal foreshore, and*
- (d) *to protect and preserve Aboriginal cultural heritage, and Aboriginal places, values, customs, beliefs and traditional knowledge, and*
- (e) *to ensure that the visual amenity of the coast is protected, and*

- (f) *to protect and preserve beach environments and beach amenity, and*
- (g) *to protect and preserve native coastal vegetation, and*
- (h) *to protect and preserve the marine environment of New South Wales, and*
- (i) *to protect and preserve rock platforms, and*
- (j) *to manage the coastal zone in accordance with the principles of ecologically sustainable development (within the meaning of section 6 (2) of the Protection of the Environment Administration Act 1991), and*
- (k) *to ensure that the type, bulk, scale and size of development is appropriate for the location and protects and improves the natural scenic quality of the surrounding area, and*
- (l) *to encourage a strategic approach to coastal management.*

In addition to the aims, Clause 8 of the Policy advises of the following matters, which must be considered by the Consent Authority when assessing the development (we have provided comment in relation to each of them):

- (a) *the aims of this Policy set out in clause 2,*

The proposed Concept Plan is consistent with the aims of the SEPP, protecting and promoting public access to the coast, and protecting the environment.

- (b) *existing public access to and along the coastal foreshore for pedestrians or persons with a disability should be retained and, where possible, public access to and along the coastal foreshore for pedestrians or persons with a disability should be improved,*

There is currently no physical public access to the coastal foreshore via the subject site. The proposed development will provide public access, representing a significant community benefit. Access is explained in detail as part of the Concept Plan documentation.

- (c) *opportunities to provide new public access to and along the coastal foreshore for pedestrians or persons with a disability,*

See comment above.

- (d) *the suitability of development given its type, location and design and its relationship with the surrounding area,*

The proposed development is well suited to the site and locality. The site is unique in that it can cater for a marina development without the need for dredging and its associated potential impacts. The proposed built form is substantially screened by the existing vegetation along the foreshore. The built form outcome reflects the intended use of the site for tourism and residential.

- (e) *any detrimental impact that development may have on the amenity of the coastal foreshore, including any significant overshadowing of the coastal foreshore and any significant loss of views from a public place to the coastal foreshore,*

The proposed development, with the incorporation of environmental management measures, will have no significant adverse impact. The proposal will not result in significant adverse overshadowing of the coastal foreshore and no views from public places will be lost.

- (f) *the scenic qualities of the New South Wales coast, and means to protect and improve these qualities,*

The proposed development, with the retention of vegetation along the foreshore, and limited visual catchment, is considered to have no unreasonable visual impact. This issue is addressed as part of the environmental assessment and within specifically the visual impact assessment prepared by Dr. Richard Lamb, and attached at **Appendix K**.

- (g) *measures to conserve animals (within the meaning of the Threatened Species Conservation Act 1995) and plants (within the meaning of that Act), and their habitats,*

The proposed development will have no significant impact on threatened species. This is addressed in detail as part of the Environmental Assessment.

- (h) *measures to conserve fish (within the meaning of Part 7A of the Fisheries Management Act 1994) and marine vegetation (within the meaning of that Part), and their habitats,*

The proposed development will retain, and have minimal impact on sea grass along the foreshore, and this has been addressed as part of the environmental assessment. Fish populations are not expected to be impacted by the proposed development.

- (i) *existing wildlife corridors and the impact of development on these corridors,*

The proposed development will not impact on any corridor.

- (j) *the likely impact of coastal processes and coastal hazards on development and any likely impacts of development on coastal processes and coastal hazards,*

The proposed development will not be adversely impacted by coastal hazards and the proposed development will not impact on them.

- (k) *measures to reduce the potential for conflict between land-based and water-based coastal activities,*

The proposed development will restrict access to the sensitive areas of the coast.

- (l) *measures to protect the cultural places, values, customs, beliefs and traditional knowledge of Aboriginals,*

Opportunity for aboriginal relics to be collected will be made. The issues are discussed in detail as part of the environmental assessment.

- (m) *likely impacts of development on the water quality of coastal water bodies,*

Water quality has been addressed as part of the environmental assessment and a system of water quality measures will be incorporated.

- (n) *the conservation and preservation of items of heritage, archaeological or historic significance,*

The proposed development retains the important heritage features of the site, and these will be enhanced through increased public access and interpretative measures.

- (o) *only in cases in which a council prepares a draft local environmental plan that applies to land to which this Policy applies, the means to encourage compact towns and cities,*

The proposed development is not inconsistent with this objective, supporting the Morisset town centre. The proposed residential component is required in order to make viable the tourism outcome desired for the site.

- (p) *only in cases in which a development application in relation to proposed development is determined:*

- (i) the cumulative impacts of the proposed development on the environment, and*

- (ii) measures to ensure that water and energy usage by the proposed development is efficient.*

The proposed development is not expected to have a significant cumulative impact. The proposal will incorporate efficient water and energy efficient features.

The proposed use of the site is entirely appropriate within the coastal zone and will allow increased public access to the lakes edge. At the same time appropriate environmental controls will be incorporated to ensure no significant adverse impacts.

### ***SEPP (Building Sustainability Index: BASIX) 2004 (applicable to any residential component)***

SEPP – BASIX is applicable to the development of the Trinity Point Marina and Mix Use Development in terms of the project application for the residential built form components. The policy was created to ensure that new residential developments are designed and built to minimise water and energy usage by 40% and 35% respectively.

Various components of the proposed development will require Basix Certificates as part of future Project Application submissions.

### ***SEPP (Infrastructure) 2007***

Trinity Point Marina and Mixed Use Development will require referral to the RTA. The RTA will assess the proposal in terms of the impacts from the development on Macquarie Street, which is a State Road. A traffic report assessing the impacts of the proposed development is located at **Appendix J**.

### ***SEPP (Major Projects) 2005***

The aims of the SEPP are:

- To identify development to which the development assessment and approval process under Part 3A of the Act applies;
- To identify any such development that is critical an infrastructure project for the purposes of Part 3A of the Act;
- To facilitate the development, redevelopment or protection of important urban, coastal and regional sites of economic, environmental or social significance to the State so as to facilitate the orderly use, development or conservation of those State significant sites for the benefit of the State;
- To facilitate service delivery outcomes for a range of public services and to provide for the development of major sites for a public purpose or redevelopment of major sites no longer appropriate or suitable for public purposes; and
- To rationalise and clarify the provisions making the Minister the approval authority for development and sites of State Significance, and to keep those provisions under review so that the approval process is devolved to councils when State planning objectives have been achieved.

The proposal will facilitate the development of a marina and mixed use resort on the foreshore of Lake Macquarie. Trinity Point is a coastal site of economic, environmental and social significance to the State and will provide marina, small-scale business, tourist and community facilities at a local and broader regional scale.

The proposed development is a major project under the SEPP, a determination already made by the Minister and the Concept Plan is a matter to be determined under Part 3A of the EP&A Act by the Minister.

#### **4.3.4 117 Directions**

As part of the rezoning of the site to permit the permanent residential & business use components it is necessary to address the relevant 117 Directions. This refers to Section 117 of the Environmental Planning & Assessment Act where the matters for consideration are set out.

Rezoning of the site is discussed in Section 6.1 of this report.

#### **4.3.5 Ancillary Legislation**

##### **NSW THREATENED SPECIES CONSERVATION ACT 1995**

An ecological survey of site was undertaken to determine if the Trinity Point development proposal will have a significant effect on threatened species, threatened populations or endangered ecological communities.

Ecological issues are discussed in Section 6. A flora and fauna report has been prepared and is located at **Appendix S and Appendix R**.

##### **PROTECTION OF THE ENVIRONMENT OPERATIONS ACT 1997**

The purpose of this Act is to control pollution and set up a licence regime. It is possible that filling of the site will require a licence depending on the type and quantity of fill. This issue will need to be addressed as part of the project application submission. Trinity Point Marina and Mixed Use Development will require licensing in accordance with Schedule 1 of the Act, given the marina and boat repair facilities associated with the development.

##### **NSW COASTAL POLICY AND NSW COASTAL DESIGN GUIDELINES**

The NSW Coastal Policy and the NSW Coastal Design Guidelines have been considered as part of the design process and discussed further below.

Trinity Point is located about 9km from what would commonly be understood as the NSW Coastline. However, it is coastal in the sense that it is situated on a coastal lake.

The Coastal Policy 1997 is an attempt by government to better co-ordinate the management of the coast by identifying, in a single document, the State's various management policies, programs and standards as they apply to a defined coastal zone. These policies, programs and standards frequently obtain their legitimacy from other legislation. To this end the Coastal Policy predominantly identifies issues and assigns responsibility for their management or resolution rather than provide specific advice about individual development sites, although appendix C of the policy provides broader development guidelines. **Appendix L** includes a table that identifies the various goals of the coastal policy and the responsibilities for their achievement as well as addresses the appendix c controls.

The Coastal Design Guidelines for NSW set about providing a structure for consideration of development on the NSW Coast. In doing so it identifies a broad hierarchy: Coastal Cities, Coastal Towns, Coastal Villages, new coastal neighbourhoods (hamlets and villages) and isolated coastal dwellings. This hierarchy is a tool to assist in achieving appropriate development outcomes.

In reviewing the guidelines the site is considered to be a suburb of a Town. Morisset Town Centre is located a short distance from the site. Morisset is important in providing for increased population growth and is clearly identified as one of only two emerging major regional centres under the Lower Hunter Regional Strategy. Trinity Point functions as a suburb of Morisset.

Section 1.2 of the Coastal Design Guidelines identifies the typical building forms and heights for Coastal Towns. In relation to building form a 4 storey building in a town centre is considered appropriate whilst in

suburban areas heights of two storey buildings are considered appropriate. However in determining specific heights for individual sites the guidelines advise that heights are subject to place-specific urban design guidelines. New development is to be appropriate to the predominant form and scale of surrounding development (either present or future), surrounding landforms and the visual setting of the settlement.

The proposed concept plan (through its consideration of context, opportunities and constraints) provides the basis for determining the appropriate building forms and height and setting them as “place-specific urban design guidelines” as envisaged by the Coastal Design Guidelines. The following comments are provided to assist in understanding the basis of the considerations in developing the concept plan, in particular the built form and building heights proposed.

- The context and setting of the site in its broadest and local sense has been considered. The site is located some 9km from what would commonly be referred to as the coastline. Whilst this does not diminish the need to consider the site in its coastal context it is clear that the site is not prominently positioned on the NSW Coast such as other locations such as Nobbys Headland, the eastern point of Eden (Twofold Bay) and Scotts Head. The site is however a Point (Trinity Point) on the edge of a coastal lake and so warrants careful consideration.
- The topography of the setting and the site itself is quite flat and of very low elevations (the site elevation does rise in the south but in a broad context is still of relatively low elevations). The site in terms of topography is not prominently located.
- The visual catchment of the site, as identified in the Visual Impact Analysis prepared by Dr Richard Lamb (see **Appendix K**) is low.
- The site whilst predominantly clear of trees is bounded by a substantial tree edge adjoining the lake. This has the effect of substantially screening the site.

(The above characteristics are unique to the site and are dissimilar to other more prominent coastal locations such as Nobbys Headland and other locations as depicted in the Coastal Design Guidelines. In summary the site is not prominently located, does not have a large visual catchment and is substantially screened.)

- In acknowledgment of the above characteristics it could be seen that the site had capacity for taller buildings without significant adverse impacts. In addition the project team had a strong desire not to develop a substantial footprint and a preference to maintain large setbacks and provide substantial areas of open space. The proposed height shown in the concept plan are considered to be a marriage of the site opportunities and project team desires for open space as well as achieving the necessary building volume to ensure a viable and successful project.
- Parts of the development (the marina and village buildings located in the north of the site) are not screened by the treed edge of the lake and so are exposed albeit to a limited viewing catchment. This is considered justified, not only because of the unique site locality of relatively flat topography, low elevations and limited visual catchment but also in consideration of overall planning objectives to secure a tourism outcome. In order to make the project viable it is necessary to achieve the extent of built form proposed. In addition the proposed taller buildings that are more visible (which have been modeled to provide a not just a functional form but a highly artistic form with visual interest and quality finishes) provide an attraction to the site in

themselves and are part of the reason to visit the site. The creation of a destination with a combination of incentives to visit the site (including visual incentives expressed in the built form) is critical to the overall success of the project. In summary the exposed parts of the site, not screened by the treed edge are considered acceptable for taller built forms (located in area of low topography, low elevation and limited visual catchment) and indeed present an opportunity for the development to express itself and to provide a point visual interest in the locality.

- The subject site is zoned for tourism unlike the lands surrounding which are zoned for residential purposes. It is reasonable to expect that a site zoned different from that of a residential zone will result in a different built form expression. However it is also reasonable to expect consideration to be given to the interface with the adjoining residential zone. The proposed development is a different form to that of low scale housing, this is because it is catering for a different land use, one that combines a mix of tourism, housing and commercial activities. It is considered that as a person arrives at the site along Trinity Point Drive the contrast from the lower scale residential area to the more moderately scaled mixed use development is a reasonable expectation and that the obvious change in form and design will distinguish between the two. This however does not mean that a transition should not occur and indeed the proposed development responds to this with some lower scale two storey buildings along its western extent.

In addition to the above comments that explain the proposed building height/form in context of informing the concept plan, which is an appropriate process for establishing height controls for specific sites as envisaged by the Coastal Design Guidelines additional consideration has been given to the more specific guidelines “NSW Design Guidelines for Appropriate Buildings in a Coastal Context”. This is contained in the table presented at **Appendix L**.

## **WATER ACT 1912**

The Water Act is relevant to the proposed development with regard to the protection of groundwater. Under Part 5 of the Water Act a groundwater application will need to be lodged with DWE to cover any on-site dewatering activities prior to construction.

## **4.4 COMMONWEALTH LEGISLATIVE FRAMEWORK**

### **4.4.1 *Environment Protection and Biodiversity Conservation Act 1999***

The objects of this Act are:

- To provide for the protection of the environment, especially those aspects of the environment that are matters of national environmental significance; and
- To promote ecologically sustainable development through the conservation and ecologically sustainable use of natural resources; and
- To promote the conservation of biodiversity; and
- To promote a co-operative approach to the protection and management of the environment involving governments, the community, land-holders and Indigenous peoples; and

- e) To assist in the co-operative implementation of Australia's international environmental responsibilities; and
- f) To recognise the role of Indigenous people in the conservation and ecologically sustainable use of Australia's biodiversity; and
- g) To promote the use of Indigenous peoples' knowledge of biodiversity with the involvement of, and in co-operation with, the owners of the knowledge.

The proposed development, as established in the consultant reports, does not impact on matters referenced by the EPBC Act. Specifically, the proposed development does not impact on migrating species, RAMSAR wetlands and species listed under Section 18 & 18A of the EPBC Act. The proposal does not impact on any World Heritage area or places listed under the National Heritage list. Accordingly, a referral to Department of the Environment, Water, Heritage & the Arts is not required.

## 5.0 Stakeholders Consultation

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Johnson Property Group has advised of the following consultation position and information.

Consultation is considered to be an important component in the development of the proposed Concept Plan. Johnson Property Group takes this issue seriously, and has employed a full-time public relations manager to coordinate and liaise with the local communities. Contact is encouraged and freely available during extended business hours, including weekend enquiries. Feedback is conveyed to the design team and ultimately passed on to the Department of Planning assessing officer as required.

Johnson Property Group has adopted the following policy in all its dealings:

*“To encourage and facilitate community access to the development process throughout design, concept, submission and approval until the final stages of implementation of all projects in a timely and transparent manner.”*

The Director General Requirements provide for authority and community consultation.

### 5.1 GOVERNMENT AUTHORITY CONSULTATION

The Government Authority consultation is outlined below:

- Commonwealth Department of Environment, Water, Heritage and the Arts.

Contact with the Department indicated that referral to them was only required if the proposed development was likely to have an impact on Commonwealth listed matters under the EPBC Act. It has been determined in the relevant consultant reports that a referral under the EPBC Act is not required.

- Department of Water and Energy

See table of contact with this authority below.

- Department of Environment and Climate Change

See table of contact with this authority below.

- Department of Planning Hunter Regional Office, Newcastle

See table of contact with this authority below.

- Department of Primary Industries

See table of contact with this authority below.

- Department of Lands

See table of contact with this authority below

- Heritage Council

As part of the heritage assessment Insite Heritage were in contact with the Heritage Council to ensure the appropriate methodologies were adopted. A copy of their report is included as an Appendix to the EAR.

- Mine Subsidence Board

See table of contact with this authority below.

- Aboriginal Land Council

The report prepared by Insite Heritage addresses the relevant consultation requirements. A copy of their report is included as an Appendix to the EAR.

- NSW RTA

See table of contact with this authority below.

- Commonwealth Civil Aviation Authority

See table of contact with this authority below.

- Lake Macquarie City Council

See table of contact with this authority below.

- NSW Maritime Authority

The Authority was consulted as part of the work carried out by Worley Parsons as discussed in Volume 2 of the overall EAR.

- Hunter Water Corporation

The Authority was consulted as part of the investigations into utilities as detailed in the report prepared by Worley Parsons and located at **Appendix AF**.

- Energy Australia

The Authority was consulted as part of the investigations into utilities as detailed in the report prepared by Worley Parsons and located at **Appendix AF**.

- Tourism NSW

See table of contact with this authority below.

## Trinity Point Marina & Mixed Use Development

### Government and Public Consultation

**2006 - 2008**

Date	Agency	Government Attendees
29.11.06	Department of Planning (Sydney)	Heather Warton, David Mutton, Eng-Joo Ong
11.12.06	Mine Subsidence Board	Greg Coal-Clarke, Paul Gray
13.12.06	Department of Planning (Newcastle)	Gary Freeland
13.12.06	Department of Natural Resources	Mark Mignanelli, Peter Johns
14.12.06	Lake Macquarie City Council	Presentation to Council Executive and Senior Staff
18.12.06	Roads and Traffic Authority	David Young, Brad Parkes
18.12.06	NSW Maritime	Charlie Dunkley (Regional Manager – Hunter)
18.12.06	Hunter Water Corporation	Brett Lewis, Malcolm Withers
19.12.06	Department of Lands	Graham Harding, Steven Francis, Anthony Signor, Andrew McAnespie
06.02.07	Department of Lands	Graham Harding, Steven Francis, Anthony Signor, Andrew McAnespie
16.02.07	Mine Subsidence Board	Greg Coal-Clarke, Paul Gray
7.03.07	Lake Macquarie City Council	Presentation to LMCC Estuary Committee (incl representatives from LM Project Management Committee and Office of Lake Macquarie & Catchment Coordinator)
29.03.07	Lake Macquarie City Council	Site inspection with Council Rezoning Panel members
3.04.07	Lake Macquarie City Council	Presentation to LMCC Rezoning Project

		Trinity Marina Residential
30.04.07	NSW Maritime	Charlie Dunkley
30.05.07	Department of Lands	Simone Collins
04.06.07	Lake Macquarie City Council	Public Access at Council meeting re rezoning
10.07.07	Department of Lands	Graham Harding
23.07.07	Lake Macquarie City Council	Councillor Briefing session
25.07.07	Morisset Peninsular Precinct Community	General Meeting
07.08.07	Department of Planning	Heather Warton, David Mutton
23.08.07	Department of Planning and Lake Macquarie City Council	Site inspection with numerous Dept Planning staff and Council officers.
14.09.07	Department of Lands	Graham Harding, Steven Francis, Stewart Veitch
19.09.07	Department of Planning and Lake Macquarie City Council	Heather Warton, Margaret Petro, Tony Farrell, Greg Field, John Andrews, Wade Morris
27.09.07	Department of Planning and Lake Macquarie City Council	Chris Wilson, Heather Warton, Margaret Petro, Tony Farrell, Greg Field, John Andrews, Wade Morris
09.10.07	Department of Planning	Chris Wilson, Heather Warton
11.10.07	Department of Environment and Climate Change	Brian Dooley
25.10.07	Department of Planning	Heather Warton, David Mutton
31.10.07	Mine Subsidence Board	Greg Coal-Clark, Paul Gray
06.11.07	Aboriginal Land Council Representatives	Site walkover
25.01.08	Department of Lands	Graham Harding

10.03.08	Department of Lands	Brett Phillips, Stewart Vietch
02.04.08	Department of Lands	Brett Phillips, Stewart Vietch
02.05.08	Department of Primary Industries	Scott Carter
05.05.08	Lake Macquarie City Council	Kirrily Vincer, John Andrews
07.05.08	Roads and Traffic Authority and Lake Macquarie City Council	David Young, Ken Freeston
13.05.08	Aboriginal Land Council Representatives	Site walkover
14.05.08	SEPP 65 Design Panel and Lake Macquarie City Council	SEPP 65 members, Tony Farrell, John Andrews, Kirrily Vincer
16.05.08	Department of Environment and Climate Change	Bill George, Peter Hughes
21.05.08	NSW Land Council	Jason Field
27.05.08	Civil Aviation Safety Authority	Leonard Yates
02.07.08	Lake Macquarie City Council	Presentation to LMCC Estuary Committee (incl representatives from LM Project Management Committee and Office of Lake Macquarie & Catchment Coordinator)
16.07.08	Lake Macquarie City Council	Presentation to LMCC Aquatic Services Committee
03.11.08	Department of Environment and Climate Change	Peter Jamieson and Robert Gibson

In addition to the above, JPG and their consultant team has conducted regular liaison with Lake Macquarie City Council planners since June 2008 following the Director-General's delegation of the assessment to Council officers.

## 5.2 PUBLIC CONSULTATION

The following public consultation was undertaken:

Direct contact with community group leaders of the following groups:

- Southlakes Business Chamber and Community Alliance

Meeting held on 22.11.07

- Central Coast Community Environment Network

Meeting held on 22.11.07

- Morisset Park & District Action Group.

Meeting held on 22.11.07

- Bonnells Bay and Sunshine Progress Association

Executive members meeting 22.1.08

Public Meeting 5.2.08

- Cooranbong Chamber of Commerce (Brief overview of Trinity Point Project (as precursor to presentation of North Cooranbong development)

Meeting held 8.07.08

- Advancing Lake Macquarie Association

Meeting held 16.07.08

- Toronto Rotary Club

Meeting held 4.08.08

- Lake Macquarie Tourism Board

Meeting held 5.08.08

- Southlakes Business Chamber

Meeting held 5.08.08

The results of consultation with these Groups are contained in the Social & Economic report attached at **Appendix O**.

Consultation was also undertaken with relevant Aboriginal groups and the results of this are detailed in the heritage report at **Appendix AD**.

Other community groups who were approached but who declined were:

- Bonnells Bay Precinct Committee;

- Lake Macquarie Tourism; and
- Hunter Economic Development Corporation.

JPG also approached the Toronto Chamber of Commerce to conduct a presentation to members in October 2008, however, due to other priorities this presentation had to be delayed until early 2009.

From Tuesday 20 November 2007 to Thursday 22 November 2007, Johnson Property Group's Public Relations officer doorknocked approximately 150 homes in Lakeview Road, Edgewater Road, Park Avenue, Buttaba Road and Henry Road. Approximately 50 residents were consulted during this exercise. Feedback from this doorknocking exercise is attached as part of the Social and Economic Report at **Appendix O**.

In addition to meeting with the Community Group leaders, a Community Consultation Day was held on-site on Sunday 25<sup>th</sup> November 2007. All of the Consulting Team were available on the day to answer questions, and a display, incorporating visuals of the proposed concept and all reports was made available. The day was well attended by the public, and it was estimated some 200 people visited. The public were also offered the opportunity to walk around the site if they desired.

A survey sheet was available for completion, and this was well utilised. The results of the survey have been tabulated and presented in the Social & Economic report attached at **Appendix O**.

The following key outcomes can be noted from the survey (49 respondents):

- 80% of people believe that the proposed development is of benefit, with the majority believing the main benefits are related to economics and employment.
- 20% of people have no concern with the proposed development. The main concerns of the remainder being helicopter noise, scale of built form, and scale of Marina.
- A measure of overall attitude towards the development resulted in 52% of people being positive, very positive or neutral about the proposed development and 43% being negative or very negative about the proposed development.

Issues and concerns from all consultation have been considered and addressed as part of the Environmental Assessment.

Over the last two years Johnson Property Group have regularly updated the local and regional media outlets on issues pertaining to the process and progress of the Trinity Point development and its approval status.

In addition, a website with an up to date and comprehensive online Community Portal ([www.trinitypoint.com.au](http://www.trinitypoint.com.au)) for local information on the developing Trinity Point Community has been established. The website includes a Community Feedback Portal for proposals at Trinity Point.

Johnson Property Group will continue to liaise with all community groups and authorities as required.

## 6.0 Environmental Assessment

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This section of the report assesses the key environmental impacts of the proposed development, as guided by the Director General's Requirements. In addition, an environmental risk rating is provided where relevant.

### 6.1 STRATEGIC PLANNING AND REZONING

The proposal is justified with reference to local, regional and state planning strategies as outlined in Section 4.0. That Section includes discussion of the proposal in terms of consistency with and/or justifications where any significant inconsistencies are identified.

The early inconsistency acknowledged related to the current zoning of land relative to the land use mix envisaged under Principle 1 of the Concept Plan.

A request to LMCC to rezone the relevant portion of the site by an amendment to LMLEP 2004 was initiated by JPG to facilitate permissibility for commercial and residential activities. The majority of the subject site is zoned 6(2) Tourist and Recreational Zone in pursuance to the provisions of LMLEP 2004. Within the 6(2) Zone, tourist marina and associated activities are permissible uses in the zone, with LMCC consent. Residential and business related development is prohibited. In order to optimise development potential and viability, JPG requested LMCC to investigate amending the LMLEP 2004 to enable a mixed use resort development comprising a 50/50 mix of tourist and permanent occupation at Trinity Point. JPG also sought permissibility for a small-scale business centre catering for the requirements of both tourist and local area trade.

LMCC recognised that supporting opportunities for Tourism is important to the Lake Macquarie LGA, in order to enhance and generate a greater tourism profile over the long-term. Trinity Point is a site Council have identified to be part of the tourism profile and experience for Lake Macquarie, backing onto an emerging regional growth area. The benefits of providing residential and commercial components as part of the overall site development are considerable.

LMCC initiated an amendment to the LMLEP 2004, pursuant to the provisions of the EP&A Act, to investigate residential and commercial development as components of development at Trinity Point. A Section 54 Notification has been issued. Located at **Appendix D**, is a copy of the LEP amendment submission, detailing the relevant strategic issues. The amendment submission, together with this Environmental Assessment and attached sub consultant reports, is considered to provide the necessary justification for the rezoning of the land to allow for the full range of uses proposed.

The report located at **Appendix D** particularly addresses the Lower Hunter Regional Strategy as well as the relevant Section 117 Directions.

Given that the proposed zoning amendment has been tailored for the proposed development, the development is consistent with the LEP amendment. The draft LEP amendment and the Concept Plan with Environmental Assessments will be concurrently placed on public exhibition.

## 6.2 DESIGN AND VISUAL AMENITY IMPACTS

### 6.2.1 Context

The context of the site has been outlined in detail in Section 2 and within the Concept Plan document. The site is located on a peninsula on Lake Macquarie, with a substantial frontage to the foreshore edge of the lake. Development of the site requires careful consideration of this special location, along with the relevant site-specific physical and environmental constraints.

### 6.2.2 Visual

As with any development on the lake's edge the site is located in an area requiring careful consideration. However, the site is not prominent by way of its topography, not being situated on a sensitive ridge line or the like. Indeed the visual catchment of the site is limited to isolated parts of the urban foreshores of surrounding settlements in the southern basin of Lake Macquarie, parts of the Lake and the eastern and southern foreshores, as detailed in the Visual Impact Assessment prepared by Dr. Richard Lamb located at **Appendix K**.

In addition to the limited visual catchment, the site is substantially screened from that catchment by the existing vegetation along the shoreline, as can be seen from the photomontages included in the report.

The Kendall Grange Masterplan suggests that any development on the site is to be “predominantly” screened and below the tree line. It can be seen that this objective has been achieved for the majority of the built form. (Note: The Kendall Grange Masterplan is assessed in detail later in Section 6.19 of this report).

There are components of the proposed development that will not be screened from the visual catchment, including views of the taller building elements adjacent to the Marina, and the vessels berthed within the Marina itself. The impact resulting from being able to view these features is subject to a somewhat subjective assessment. People comfortable with viewing these components will read them as being consistent with the site's location on the lake and its use for water-based tourism, while others may prefer a more natural setting. The subjective nature of visual impact assessment is detailed in the report by Dr Richard Lamb.

The following extract from Dr Lamb's conclusions provides an appropriate summary of the outcomes of his detailed assessment of visual impact:

*“The southern basin of Lake Macquarie has generally low public accessibility, including low accessibility from the waterway, as identified in the LMCCSQG. The locality is of moderate scenic quality and varied integrity. The subject site therefore has a significant capacity to absorb the development proposed without visual effects which would be perceived by large numbers of viewers from sensitive public domain locations. The subject site itself possesses minimal scenic resources.*

*There are sensitive public domain locations such as those in the Lake Macquarie SRA at Point Wolstoncroft and Bird Cage Point, from which the development would potentially be visible. The former provides distant views that would be minimally affected, while the latter does not provide views of any significant proportion of the site. Our analysis shows that most land based sensitive viewing places are medium range to distant and would not experience significant visual effects or impacts.....*

*Taken overall, it is our opinion that while there would be significant changes to the character of the site and the immediate waterway, predominantly to viewers in the private domain, that those changes are acceptable. They are acceptable in the context of the zoning of the land, the intention to create a destination development, tourism attraction and a level of accommodation capable of delivering the extent of, character and quality of the public domain proposed. We consider that the public domain benefits of the development and the contrast they will provide to the generally privatised foreshores of the Lake in the vicinity are major compensatory factors in considering the marina component of the proposal, which has a higher level of effect on visual character than the built form. The benefits will flow to high numbers of people, not only those within the subject site, but from elsewhere in the locality and the region."*

In addition to views of the site having been addressed, the proposed Concept Plan ensures views from, and through, the site have been provided for. In particular, view corridors have been provided for along an extension of the existing street pattern. Views outward have been maximised through building orientation.

### **6.2.3 Urban Design Guidelines**

The overall approach to design has been to consider in detail the site opportunities and constraints and determine the appropriate response. The Concept Plan document clearly identifies the relevant opportunities and constraints. In addition, the design was undertaken with a clear vision to create a quality development that included areas of open space and significant foreshore setbacks.

The Concept Plan document includes a range of site and urban design principles to ensure a quality development that considers the environment, character and amenity of the locality. The following discusses those that are more specific to aspects of urban design.

#### Land Uses

The Concept Plan provides a mix of uses to generate vibrancy, social interaction, activity and surveillance and locates building uses to achieve the greatest level of synergy between them. The mix of uses will contribute to the creation of a destination and provide social and economic opportunities. The mix of uses is considered critical to the success of the project.

It is highlighted that the concept plan shows separation between permanent residential housing and tourist accommodation. This separation is sufficient to ensure no unacceptable conflicts, yet still ensure the design provides opportunity for interaction in and around the open spaces of the site.

#### Setbacks

##### *Lake Edge*

Proposed setbacks have been identified on the proposed Concept Plan. Large setbacks from the lake edge were determined as being desirable to ensure the creation of large areas of open space adjoining the lake. To this end setbacks are generally 30m (minimum 25m). However only a relatively small amount of built form is located at these setbacks, the majority is setback more substantial distances.

Buildings in the north associated with the village centre and the marina are located closer to the lake edge to promote interaction and connection with the lake. However a substantial setback from the lake edge of 20m is retained (being the open space zoned land generally).

### *Cultural Area*

A number of cultural items have been identified in the south of the site near Bluff Point, including Aboriginal cultural items, tree plantings, sundial and grotto. These items in combination with the fact that Bluff Point is the highest part of the site, providing good views of the lake provided an opportunity for the establishment of a larger open space area. Accordingly setbacks in the range 65m – 95m have been provided.

### *Trinity Point Drive*

A minimum 4m setback is proposed to Trinity Point Drive, running along the western side of the site. This setback, when combined with proposed height and arrangement of buildings will define the street edge and sit comfortably with the approved development on the west side of the street (approved as part of stage 9 adjoining subdivision).

### *Between Buildings Groups*

A 15m building separation along three, thru site, pedestrian alignments is proposed (visual extensions of the approved adjoining street system). These will create vistas from the western residential estate through to the lake and horizon, aligned with public roads, include pedestrian pathways and also provide for daylight access and a break in built form running north/south along the site (greater setbacks may be necessary to achieve compliance with SEPP 65 and this would be determined as part of future project applications).

The proposed building separation also promotes good connectivity and integration with the adjoining approved residential estate.

### Heights

Residential buildings are predominantly a mix of 2, 3 & 4 storey with some parts extending to 5 storeys in strategic locations. Buildings located on the southern most part of the site, where the topography is higher, have been kept to predominantly 2 and 3 storeys in height. Generally, the height breaks down from mid-block to the foreshore (east) and to Trinity Point Drive (west). Tourist buildings in the north of the site are between 3 & 6 storey in height. The proposed building heights are shown on the submitted concept plans.

The proposed building heights are considered appropriate having regard to the general site principles outlined in the Concept Plan document. The proposed building heights have been determined having regard to the following:

- The principal that a taller built form to provide for the volume of development required to make the proposed development economically viable is more appropriate as it ensures a greater amount of open space, landscaping and public access opportunity verses that of a lower scale development occupying a greater footprint.

- An acknowledgement that some of the heights proposed within the development are greater than those found within the locality but remain appropriate having regard to the above and the following points.
- That the height of the development assists to provide a development of scale and interest that will attract tourists to the site, a key objective of the zoning of the land.
- An acknowledgement that a transition in height from the lower built form on the adjoining land to the west also being developed by Johnson Property Group to an increased height on the subject site is an appropriate manner in which to delineate land use (the tourist site from the adjoining residential site).
- That the height of the development should generally be kept to that of the tree heights of the foreshore landscaped edge to minimise impact on the visual catchment and is consistent with the scale of the trees (see visual impact assessment prepared by Dr Richard Lamb at **Appendix K**).

Whilst the height for the majority of the development is screened by the trees along the foreshore the height of the tourist buildings in the north will not and have purposefully been designed to be taller in this location due the lower site elevations and the association with the marina and the lake itself. These buildings have been designed such that they are of artistic form and will contribute to the locality as points of visual interest. Given the height and visibility (albeit to a limited visual catchment) quality of the form and finishes is considered to be very important and guidelines ensuring this outcome have been included in the concept plan documentation.

- That the site is adequately separated from the older established neighbourhood that the proposed height does not impact on their expectations for the area and that the proposed height has no unreasonable off site impacts (see visual impact assessment prepared by Dr Richard Lamb at **Appendix K**). Johnson Property Group have taken significant efforts to advise potential purchasers of the adjoining residential subdivision (owned and being developed by JPG) of the proposed development to ensure people are aware of the development.
- That the height responds to the future development of the adjoining residential land to the west, also being developed by Johnson Property Group.
- That the proposed height does not generate excessive shadowing.

### Public Access and Open Space

See Discussion in Section 6.3

### Built Form

The built form has been arranged in consideration of the building use, height, setbacks and overall site opportunities and constraints and in particular orientation to maximise views out and for compliance with the SEPP 65 Design Principles for residential flat buildings. The U shape forms (or variation thereof) of the residential apartments directly responds to these considerations and allow for the establishment of private/communal open space within the court.

The establishment of a Village Centre with a mix of uses and of quality design and appearance in proximity to the marina was considered important to the success of the overall project.

The establishment of high quality buildings with artistic forms and finishes with the desired effect to create a visually impressive outcome to attract tourists and to ensure when viewed from offsite (albeit a limited visual catchment) that they are highly aesthetic.

#### FSR and Building Site Coverage

The FSR guideline of 0.65:1 and Building Site Coverage of 35% are provided to guide density of development of the site to achieve the desire to maximise public access, pedestrian linkages, vistas, foreshore setbacks, open space and landscaping opportunities. The controls are considered to be very modest for a combined mixed-use resort and residential outcome.

The proposed FSR and site coverage guidelines were developed by overlaying the appropriate heights, building arrangements, setbacks and open space which were established in consideration of the site constraints, including topography, tree heights, and the important site features such as Bluff Point. The Concept Plan documentation provides further detail in this regard.

#### Building Materials and Colours

The Concept Plan document includes guidelines for use of colours and materials, ensuring they are appropriate to the locality and contribute to the Trinity Point experience. In particular the taller artistic formed tourist buildings have been nominated for specific use of glass, steel, timber and copper ensuring a quality outcome.

#### Landscaping

Landscaping of the site is considered to be as important as the built environment and for this reason has been considered throughout the design process to ensure its appropriate integration.

Terras Landscape has prepared a landscape concept plan and report and these are attached at **Appendix AE**. Retention of the existing landscape edge around the lake is of importance to the overall approach to landscaping. Landscape works shall consist of public domain, streetscape, courtyard, way finding, revegetation and remediation works. The landscape design concept shall draw on a strong graphic form within the courtyard areas, blending into native bands on the outer eastern and southern areas and edges. Landscape works will generally involve a balance of social passive and active spaces, stormwater treatment requirements and access to the foreshore.

The site will comprise three themes used to address aesthetics, function and materials, they are:

- Cultural themes – including indigenous heritage, former agrarian uses, the site's association with prominent local figures, the association with the Catholic Church usage and a more general interpretation of the former uses of the site;
- Lake Macquarie – drawing on the most iconic element of the site and how the site's materiality shall sympathise with the character of the lake; and

- Indigenous vegetation communities – highlighting the unique qualities of various remnant indigenous plant communities present across the site.

The Concept Plan includes objectives and strategies to guide landscaping of the site in future Project Applications, for foreshore zone, boardwalk & lineal passive recreation zone, east-west pedestrian links, internal courts of buildings and materials and hard landscape. It also outlines public art and site interpretation and public domain improvement principles.

### **6.3 PUBLIC ACCESS**

The Concept Plan provides specific objectives and principles for public access – that includes the village square, boardwalk extending along eastern and southern edge of built form (in conjunction with lineal passive spaces), cultural plantings/sundial/Bluff Point area, along breakwater, multiple public pathways through the site from west to east, and a footpath to Trinity Point Drive.

The proposed development will not be a “gated community” and embraces the objective of achieving a high level of public access (spatial and quality). Indeed the success of the project is premised on a high level of interaction between community and development.

Currently the site provides no public access through it with the land being wholly within private ownership. A 20-30m variable foreshore area is to be acquired by Council for public purposes. Site analysis and constraints/opportunity planning identified the opportunity for that edge to remain natural and sought to provide an alternative access network within the site. In this way public access can be delivered as a component of this project without the need for Council to undertake improvement works in their future lands.

The proposed development will provide public access through the majority of the site, with restrictions being applied to only those areas where security or safety require them, such as private parking and private open space associated with dwellings and access to the repair workshop areas.

Public access will be available along the southern and eastern lake frontage (within the site) on a boardwalk. The land immediately adjoining the water proposed to be acquired by Council will not be environmentally impacted by the proposed development in terms of access. Restrictions would only be temporary and occasional use for example a boat is taken from the water to the Shore based facilities for safety purposes or designed to not preclude access (such as breakwater and marina arm crossings of the 6(1) lands). Public access will be available along the break wall of the Marina, and provision has been made for public berthing for visitors to the site by boat.

Public access to environmentally sensitive parts of the site will be controlled by the use of landscape edges and signage. No lineal access path is proposed by this Concept Plan along the open space zoned edge or within the unnamed shallow bay. Such outcomes whilst not proposed are not to be precluded should Council choose to pursue this and undertake their own impact assessment.

Project applications will need to detail how public access is secured legally over relevant parts of the site.

The environmental risk rating associated with public access to the site is high. That is, without the development of the site, general public access from the site to the lake's edge will not be available.

## **6.4 WATER CYCLE MANAGEMENT**

### **6.4.1 Flooding & Catchment**

The low-lying northern part of the site is subject to flooding. This is addressed in detail in the report by Worley Parsons located at **Appendix W**. The proposed development will be located appropriately above the flood level. Consideration has been given to climate change impacts, with various minimum flood planning levels established, and flood mitigation measures documented and included within the Concept Plan.

### **6.4.2 Stormwater and Water Quality**

The sensitive receiving environment, including the lake and the associated ecology, including that surrounding Bardens Bay require appropriate consideration to ensure that the proposal has no significant adverse impacts. This includes the potential impacts of stormwater from buildings, hardstands and the site generally, and particularly from boat and work areas associated with the marina. The disposal of sewage from boats is also an important consideration.

These issues are addressed in detail by Worley Parsons in Volume 2 of this Environmental Assessment, and within their report located at **Appendix W**. The Concept Plan also provides water management principles and strategies.

The environmental risks associated with the various components of water cycle management are considered to be moderate to high. This is because the receiving environment will be sensitive to any contamination from the proposed development. Accordingly, measures to protect the environment and minimise impacts have been incorporated in the Concept Plan draft Statement of Commitments and project reporting.

## **6.5 WASTE MANAGEMENT**

Waste Management associated with the Marina is discussed in Volume 2, other waste generated by Shore based facilities is discussed below.

### **Construction Phase**

Waste from the construction phase will be predominantly be from construction materials but will also include garbage both recyclable and non recyclable.

### **Operational Phase**

Waste from operations will be predominantly household garbage however there will be additional food waste associated with the village centre including waste cooking oil.

All waste to be generated will be subject to the following principles. Avoid waste where ever possible. Where ever waste is generated opportunity for recycling is to be provided for relevant materials. Disposal of waste to landfill will be the last resort.

As part of the future project applications a Waste Management Plan will be required and that requirement is incorporated in the Concept Plan and draft Statement of Commitments.

## 6.6 GROUNDWATER PROTECTION

The geotechnical report by Douglas Partners located at **Appendix H**, advises that groundwater is relatively shallow, as is to be expected in this location, with depths as shallow as 0.4m below ground surface in the northern part of the site. These depths can fluctuate, to bring ground water to the surface during heavy storm events.

The shallow ground water depths will require special consideration in terms of construction and engineering issues. It is possible that dewatering will be required during the construction phase. In this situation, the presence of Acid Sulphate Soils will need to be taken into consideration, in accordance with the reports prepared by Douglas Partners and located at **Appendix H**, to ensure protection of the environment.

The Concept Plan provides simple statements relating to groundwater and acid sulphate soils implications for consideration in detailed planning and construction management.

The environmental risk rating for impact on groundwater is considered to be moderate, and accordingly a management plan has been prepared.

## 6.7 INFRASTRUCTURE PROVISION

Worley Parsons have addressed infrastructure and utilities in their report at **Appendix AF**. All utilities are available to the site. The Concept Plan includes a simple statement requiring utilities to be provided.

## 6.8 NOISE IMPACT

The noise impacts associated with construction and operational phases of the proposed development have been considered in detail including all components of the on shore facilities, construction noise, ship repair noise and road traffic noise. The acoustic issues are addressed by ARUP in their report located at **Appendix (P)**. Helicopter noise is separately considered under the heading Establishment of Helipad and Helicopter Noise Impacts.

The proposed development at Trinity Point has been assessed against the acoustic requirements set out in the Director General requirements, appropriate DECC Policy, relevant Australian Standards and Lake Macquarie City Council DCP 1.

ARUP have undertaken background measurements to determine the current noise environment.

### Internal Noise levels

Recommended satisfactory and maximum internal noise levels and reverberation times for various types of building occupancy are given in AS2107. ARUP recommend designing the building envelope with sufficient sound insulation so that noise internal noise levels are appropriate.

### Construction Noise

The predicted construction noise levels from the first stage of the marina construction of the Trinity Point development are predicted to exceed the ENCM construction noise criteria by up to 11 dB(A), and either

comply with the DECC Draft Guideline criteria or exceed by up to 6 dB(A). Construction of the travel lift/hardstand area is predicted to have the highest noise levels at the nearest residential receiver.

The noise impact of Stages 2, 3 and 4 of the marina construction is expected to be reduced compared to Stage 1 due to the smaller scope of construction activities, but may still exceed the construction noise criteria. This is likely to also be the case for other land based construction stages.

In part, the construction noise impact is increased by the existing low background noise levels surrounding the site, which mean that a given level of construction noise will be more intrusive than in a site with higher background noise levels.

Indeed the level of construction noise from the various construction activities is predicted by ARUP to be between 40 - 50 dB(A) at the nearest receivers, which is not considered to be excessive in absolute terms, and the predicted levels are significantly below the “highly noise affected level” of 75 dB(A) given in the DECC Draft Guideline. A noise level of 40-50 dB(A) is approximately the same as the background noise level in a typical open-plan office space.

The ENCM provides no guidance on procedures to mitigate exceedances of construction noise; however, the DECC Draft Guideline provides a methodology for mitigating the construction noise impact from a project, and gives details of recommended noise control measures to minimise the noise impact. AS2346 and BS5228 also provide guidelines for controlling the construction noise impact from the development.

It will be critical to give full and proper consideration at project application stage to construction methodologies to reduce predicted exceedances and provide for noise mitigation management and monitoring. The ARUP report provides a range of examples of what that may include.

In accordance with the requirements of Lake Macquarie City Council's DCP No.1, the construction works for Stage 1 require a Noise Management Plan to be filed, as the construction period is in excess of 26 weeks duration. This Noise Management Plan should be prepared by an accredited acoustic consultant. The management measures contained in the ARUP report should be considered for inclusion in the noise management plan. Given the close proximity of the nearest noise sensitive receivers to the construction works, it is recommended that a noise management plan to be prepared for all stages of the project.

During these stages, internal receivers within the Trinity Point development will be sensitive to noise from the construction works, and therefore the construction noise management plan should consider minimising the construction noise impact for internal as well as external receivers.

All stages of construction works should incorporate all feasible and reasonable noise mitigation measures in order to control the noise impact of the development on the surrounding noise sensitive receivers.

### Boat Repair Noise

Predicted noise levels from the boat repair operations show that the maintenance operations on the hardstand and the repair operations in the workshop are likely to comply with the industrial noise criteria.

Noise levels at Block A of the Trinity Point development are predicted to exceed the criteria by 1 dB(A), however this is a marginal exceedance and a difference of 1 dB(A) in noise level is considered to be imperceptible. There is also scope to reduce noise levels from the hardstand maintenance activities by using portable acoustic screens around areas where maintenance activities occur.

Noise from the travel lift was predicted to comply with the noise limits at all receivers, for both power plant options being considered (diesel engine with high-performance exhaust mufflers; and electric motor).

Care should be taken during selection of the boat repair equipment with consideration to the noise emission of the selected equipment. This is especially important for the travel lift engine, which should be selected to minimise noise emissions, regardless of whether diesel or electric drive is used.

### Entertainment Venue Event Noise

.Event noise from entertainment venues, including the function room, is required to comply with the Casino, Liquor and Gaming Control Authority (CLGCA) noise criteria at the nearest residential receiver. The nearest residential receiver is Block A of the Trinity Point development, which is approximately 10-20 m away from the function room.

During detailed design of the Trinity Point entertainment venue(s), the building envelope design will be reviewed by a suitably qualified acoustic consultant to control noise emission from the function room and appropriate maximum sound levels for function room events will be established.

Appropriate management of events held in the entertainment venue(s) will also assist in controlling the noise impact of the venue(s). This may consist of measures such as restricting hours of events, limiting the noise output of audiovisual equipment or other measures as required.

### Mechanical Plant Noise

The mechanical services of the Trinity Point development have not been designed at this stage. Noise control treatments will be incorporated into the design of the mechanical systems so that the 35 dB LAeq, 15min industrial noise criterion is met at all noise sensitive receivers.

During detailed design of these systems, noise control measures, such as acoustic enclosures or louvres and attenuation, will be incorporated where necessary to ensure that the industrial noise criteria for noise from these systems are met.

### Road Traffic Noise

The predicted road traffic noise levels on Trinity Point Drive resulting from traffic generated from the Trinity Point site are 63 dB LAeq(1h), which is 3 dB(A) in excess of the 60 dB LAeq(1h) noise target. Therefore, in accordance with the ECRTN, “feasible and reasonable” mitigation measures are required to be applied to reduce the traffic noise impact for residential receivers on Trinity Point Drive.

Traffic noise levels on Henry Road are predicted to be 54 dB LAeq(1h), which is 6 dB(A) below the 60 dB LAeq(1h) noise target. Therefore, no further mitigation measures are considered necessary for Henry Road.

It should be noted that the predicted noise levels are likely to be conservative, and therefore noise levels may be less than predicted.

The predicted noise levels are increased by the presence of heavy vehicles in the peak traffic flows, and therefore reducing heavy vehicle movements in peak periods may assist in reducing the traffic noise impact. Where possible, ARUP identify that deliveries and other heavy vehicle movements to site should be rescheduled to occur outside peak traffic periods.

Further noise control measures for traffic noise from the Trinity Point development are limited due to the nature and scope of the development and surrounding area.

The mitigation measures considered for traffic on Trinity Point Drive are to schedule delivery vehicle movements outside of peak hours. Under this scenario, the predicted noise level at the receivers on Trinity Point Drive is 60 dB LAeq(1hr), which is equal to the ECRTN target. This should be documented and managed as part of the day-to-day operation of the development.

Further noise reduction, if desired, could be achieved by implementing traffic calming devices on Trinity Point Drive or by changing the posted speed limit; however the additional benefit of these measures is only predicted to be 1 dB(A), which is a marginal benefit.

#### Marine Vessel Traffic Noise

See Volume 2 Report by Worley Parsons and ARUP.

In summary, operational noise levels from the Trinity Point site are generally expected to meet the criteria, however, some noise control measures may be necessary as part of the detailed design of the development and the final selection of equipment.

Traffic noise impacts from road traffic and marine vessel traffic are expected to be satisfactorily controlled by suitable management of traffic movements within the site.

The environmental risk rating for acoustic impacts resulting from the operations and construction is considered to be moderate. The operations will need to be conducted in accordance with the report and future management plans will be required.

The report by ARUP makes the following summary recommendations in relation to the control of noise impacts from all noise sources:

- The acoustic consultant engaged for the detailed design phase of the project will review all plant and equipment selections so that the noise levels comply with the appropriate noise criteria.
- Noise control measures will be employed during the detailed design of the travel lift (treating diesel engine with residential grade exhaust silencer; substitution of diesel engine with electric motor; or other appropriate measures as determined by the acoustic consultant engaged for the detailed design phase).
- The building envelope of the proposed function room will be reviewed by the acoustic consultant engaged for detailed design, and a noise management plan for the operation of the function room will be prepared.

- A construction noise management plan will be prepared for the construction of the marina and development, incorporating work practices that will be followed to minimize noise from the construction works.
- Community correspondence and liaison should be conducted to mitigate construction noise impact.
- Best-practice construction methods will be adopted to minimise construction noise emissions from site.
- A noise management plan for the marina will be prepared, including speed restrictions and/or no-wash zones for vessels within the marina. Consideration should be made into incorporating a 'code of conduct' for marina users, with the need to minimise the noise impact on surrounding residents emphasised.
- Design of the development will be conducted to control the noise intrusion of external noise sources, including traffic and operational noise, in accordance with the internal design criteria specified in this Arup Acoustics report and relevant Australian Standards, including AS202128, AS210729 and AS367130.
- Design of the development will achieve the sound insulation requirements of the Building Code of Australia (BCA).

## 6.9 TRAFFIC AND ACCESS

Better Transport Futures Pty Ltd have considered traffic and parking impacts associated with the proposed development. A copy of their report is located at **Appendix T**.

The following extract from the report provides a summary and conclusion of their findings:

1. The proposed development is to provide a marina village development with associated facilities and tourist as well as residential units. This assessment has been completed for the full development of the marina and village. Parking for the development will be provided within the site.
2. The site is located to the east of Morisset, on the peninsula. Access is provided via Fishery Point Road and Morisset Park Road. As part of this study, a traffic survey has been completed at the critical intersection and the current peak hour flows are relatively high at the western end of Fishery Point Road but within acceptable limits for these classifications of roads.
3. It has been assumed that the standard rates for residential developments from the RTA Guide to Traffic Generating Developments will apply, resulting in an additional traffic volume of approximately 211 vehicles per hour two-way, during the AM and PM peak hours.
4. It is considered that some 80% of the traffic from the development will access Macquarie Street, to gain access to all areas to the north and south of the site. Some 80% of the flows will head south along Macquarie Street.
5. It has been previously been determined by RTA and LMCC that the intersection of Macquarie Street and Fishery Point Road is required to be upgraded from a priority control to a signal controlled

intersection. It is understood that this upgrading work has been programmed to be implemented and for the purpose of this analysis it is assumed that this work has been carried out.

6. The analysis completed for the study shows that the proposed signal upgrade will have adequate capacity to cater for the flows associated with the development of the subject site. The analysis has allowed for the development of adjacent sites as well as other potential sites identified by Lake Macquarie City Council.
7. Previous work completed by Better Transport Futures for the intersection of Fishery Point Road and Station Street has shown that this intersection needs to be upgraded and the road authorities require a signal control intersection at this location. This upgrading will be implemented as works required for another development (but it is recognised that the upgrade is not fully attributable to that other development). For the purpose of this report it is assumed that this work has been carried out. The future controlled intersection has been analysed with Sidra and the future intersection control can accommodate the flows associated with the proposed development.
8. A review of the operation of the intersection of Fishery Point Road and Morisset Park Road shows that the current intersection suffers from delays, due to the high right turn demand from the side road in the morning peak. With the additional traffic associated with the subject development, the current intersection may not provide an acceptable level for service for road users.
9. It is considered that the intersection of Fishery Point Road and Morisset Park Road will need to be upgraded to provide a 3-way roundabout control. The Sidra analysis for a 3-way single lane roundabout indicates that the roundabout would have adequate capacity to cater for the additional flows associated with the development. A review of the traffic numbers indicates that the additional traffic associated with the subject development will increase the flows at this intersection by approximately 20%.
10. Existing pedestrian and cyclists facilities within the locality of the site are considered adequate. A network of on-road and off-road footway/cycleways will be provided to service the new development in addition to a public boardwalk through the subject site.
11. A bus stop will be provided to the immediate west of this development on Trinity Point Drive to allow for an extension of the existing bus route from Morisset to service the site. This bus stop can also be used by tourist buses associated with the proposed development.
12. The vehicle access to the site is proposed via the approved extension to Henry Road and Trinity Point Drive, as part of the 194 lot residential development adjacent to the site. The main site access will be via this approved extension at a new roundabout at the eastern end of Trinity Point Drive. Access to the residential basement parking will be via up to three driveway access points off the approved north-south extension of Trinity Point Drive.
13. Vehicle access from this development site to nearby attractions on the peninsula have been assessed and it is considered that the existing road network has capacity to accept these additional minor traffic flows.

From the study, it is concluded that the existing road system is able to cater for the traffic demands of the proposed development subject to the intersection upgrades as detailed.

The parking provisions for the likely development, has been assessed using the requirements of Lake Macquarie City Council's DCP as well as AS 3962-2001 (Guidelines for the Design of Marinas). All parking will be accommodated on site with no impact on the adjacent road network.

The Concept Plan provides for objectives and principles on key access and parking requirements.

## 6.10 ABORIGINAL AND CULTURAL HERITAGE

It has been identified that the subject site has both Indigenous and non-Indigenous heritage that requires consideration. An assessment of potential impacts has been made by Insite Heritage Pty Ltd and a copy of their report is located at **Appendix AD**.

The following extracts from the report provides a summary of the assessment and recommendations:

During the zoning process, and as part of the adjoining residential subdivision, a range of indigenous and non-indigenous assessments have been conducted. Insite Heritage has drawn on the knowledge obtained from those assessments since 1999 in undertaking this assessment. That has also included s87 artefact testing and salvage excavations associated with Stages 1-4 of the residential subdivision (note: salvage excavation of Stages 5-9 has been approved but is yet to commence). It is relevant to note that there has been limited archaeological investigation throughout Morisset Peninsula, and little sub-surface testing carried out in other foreshore landscapes of Lake Macquarie.

### Indigenous Assessment

The area subject to the Concept Plan will impact upon:

- registered Aboriginal site (AHIMS no. 45-7-0228), that originally comprised an isolated stone artefact but was subsequently upgraded as a result of s87 testing (TA2) to include sub surface artefact deposits in low densities, confined to the Wyong soil landscape. This is sited in the northern lower lying part of the Concept Plan site. There is potential to conserve in-situ deposits in parts of the lake shore area.

Other potential sites that will be impacted upon have been identified:

- registered Aboriginal site (AHIMS no. 45-7-0244) which comprises sub surface artefact deposits and Anadara trapezia shell. This site extends from the Trinity Point residential subdivision (where permits with salvage have been granted) into the Doyalson soil landscape component of the concept plan site that forms the southern part of the development area. The deposits in the Doyalson soil landscape have been truncated by the former buildings and infrastructure from historical development of the site, so the area and continuity of them are diminished.
- Potential sub-surface and fragmented deposits associated with midden deposits on Bluff Point (see below) which may extend into the tourism zoned site. These deposits are likely to form the eastern boundary of site 45-7-0244, as the ratio of artefact to shell decrease to the east.

These registered sites are considered to be of low significance-moderate significance on a scientific basis. The sites are of high significance as assessed on a cultural basis by the community. The Trinity Point area is of high cultural significance to the Aboriginal community as a cultural landscape, and of high public significance given the opportunities for public education and interpretation.

Inspections have also revealed various features in the adjacent lake shore land and tidal edge, including 2 sets of grinding groove sites at the base of Bluff Point (underwater at high tide), lenses of Anadara trapezia in low sand beach deposits, a midden deposit in profile above the rock platform and a lens of midden deposit on top of Bluff Point (exposed by recent cliff erosion). Site cards for these have been lodged.

Taking into account the consultation, assessment, impacts and mitigation measures suggested by the Aboriginal community, this report recommends the following measures:

- The ongoing consultation and involvement with the development of the project shall be carried out with the Aboriginal community as represented by the Koombahtoo and Bahtahbah Local Aboriginal Land Councils and the Awabakal Descendants Traditional Owner Aboriginal Corporation and the Awabakal Traditional Owner Aboriginal Corporation as primary stakeholders. Additional stakeholders may be availed of information as requested, and their opinions documented in the Aboriginal Heritage Management Plan.
- The Concept Plan should include a requirement to have an Aboriginal Cultural Heritage Management Plan and Interpretation Policy prepared. It is to be developed in conjunction with the Aboriginal community and be based on historical data, cultural knowledge and archaeological evidence specific to Trinity Point. The interpretation policy is to provide a framework for interpretation of the Aboriginal values and heritage of the site to the general public, for incorporation into overall site interpretation and into development details. This may be presented in different ways include, interpretation/history boards, display of artefacts in secure cases near the Village Square and local Aboriginal art included within the development's public art/interpretation/landscaping strategies.
- That the proposed boardwalk for public access sited within the tourism zoned land and setback from the lake shore is supported and should be retained within the Concept Plan. This is an appropriate method of providing for controlled public access away from the more sensitive south-eastern lake shore where sensitive aboriginal features have been observed and can remain in-situ without development impact. This also addresses community concern about impacts of increased visitation to the sensitive foreshore edge. Should the Aboriginal community seek to organise public education talks, the public boardwalk may offer a suitable venue.
- That the proposed setback of buildings within the tourism zoned land from the edge of Bluff Point is supported and should be retained within the Concept Plan. This space enables some preservation of in-situ deposits, and an increased space for interpretation.
- Whilst outside the scope of this study, boats should be excluded from the seagrass beds around Bluff Point and boat speed controls around the marina be instigated to ensure limited impact on the lake shore by boat wave wash.
- Whilst outside the scope of this study, the proposed marina site is supported on the basis that it is located to preclude the need for dredging and is clear of larger seagrass beds. In addition, the marina design and proposed piling construction method is supported on the basis that the impacts to the seabed are minimal.

- Lake Macquarie City Council, in its future management and use of the lake shore land at Trinity Point, is to take into account the Aboriginal Heritage Values and features of that land. Any proposals in the future for that land (such as alternative public access paths) outside those included in the Concept Plan are to assess the heritage values and identify appropriate measures to preserve them.
- The Concept Plan should include a requirement for salvage excavations where there is potential for intact deposits to remain and where development footprint is to occur. This to be limited to an additional 50m<sup>2</sup> in two x 25m<sup>2</sup> excavation areas. Whilst the deposits will not be stratified, the analysis of those excavations in combination with others in the adjoining residential subdivision can provide a landscape analysis of the site for use in the recommended Interpretation Policy. It will add valuable information to the archaeological record of the Lake Macquarie Area.
- The Concept Plan should include a requirement for monitoring of earthworks (top soil stripping earthworks only) to be undertaken by the Aboriginal community. Any artefacts found during this monitoring and in the salvage excavations are to be recovered for relocation by the Aboriginal community in accordance with DECC guidelines.
- Notwithstanding LMCC future ownership and management of the lake shore land, Johnson Property Group to include precautions within the development proposal to ensure the recorded sites in the lake shore area are not impacted, destroyed or damaged by JPG construction works.
- That the idea of sourcing local plant species for landscaping works where that is suitable from the K2 local indigenous plant nursery operated by Koompahtoo LALC near Eraring be included in the Concept Plan.
- That the idea of Aboriginal employment and training be considered by JPG as part of their Apprenticeship First Scheme.

### Non Indigenous Assessment

The European Heritage of the larger Trinity Point site has been significantly reported on and assessed during earlier planning processes. Demolition was approved and undertaken on site, with an archival photographic folio prepared prior to that. Features retained included a grotto below Bluff Point and a sundial from the Bailey occupation period. Recommendations were also made for the retention of cultural landscaping (figs, palms + Norfolk Island pine).

Archaeological excavations of the Bailey residence were undertaken in August 2006, and reported on by Insite Heritage in 2007, which revealed low levels in archaeological integrity.

Given the extent of assessments undertaken previously, the remaining relevance of those and hence recommendations of this report are:

- That the Concept Plan include a requirement for monitoring of particular earthworks in the southern part of the site in the general area of the Bailey residence to record any peripheral infrastructure.
- The Concept Plan should include a requirement to have an Interpretation Policy prepared, drawing from the information in past historic research and heritage/archaeological assessments and investigations. The interpretation policy is to provide a framework for interpretation of the European use of the site to the general public, for incorporation into overall site interpretation and into development details.

- Retain and manage the existing cultural plantings near Bluff Point, and incorporate interpretation of those into the Interpretation Policy.
- Lake Macquarie City Council, in its future management and use of the lake shore land at Trinity Point, is to include measures for in-situ conservation and management of the grotto and the stone base sundial near Bluff Point, and consider interpretation of these features in their management strategies.

All of the recommends of the Insite Heritage report for Indigenous and Non-Indigenous Heritage have been incorporated into either the Concept Plan and/or the draft Statement of Commitments.

#### Summary of Native Title application

Johnson Property Group Pty Ltd and Kendall Grange Properties Pty Ltd have made a Non Claimant Application to the Federal Court of Australia under the Native Title Act 1993. The application was necessary as the bed of Lake Macquarie is an area to which Native Title claims can apply.

Section 24FC of the Native Title Act 1993 applies. Based on the fact that mediation with those aboriginal groups who submitted their interest in this proposal during the exhibition period has occurred, the applicant has advised they are now at liberty to negotiate the lease of submerged lands with Department of Lands.

### **6.11 FLORA & FAUNA**

Given the lack of extensive flora on site, the results of the detailed Terrestrial Flora and Fauna Assessment prepared by RPS HSO (see report in **Appendix S**) indicate that the proposal will have minimal impact were within expectations. The following is an extract from RPS HSO report, providing a conclusion of their findings, together with recommendations.

The subject site was found to consist largely of cleared country with scattered remnant or ornamental trees. Disturbed remnant vegetation remained on the fringes of Lake Macquarie, largely outside of the proposed development footprint.

Two threatened fauna species were recorded within the study area (Eastern Freetail Bat and Large-footed Myotis) and a further six threatened fauna species were considered likely to occur within the subject site on at least an occasional basis. No threatened flora species were recorded or considered likely to occur within the subject site.

Since the threatened species recorded or considered likely to occur within the subject site are all highly mobile, potential impacts are largely restricted to the removal or modification of a negligible proportion of foraging habitat available to the species in the local area. Potential breeding/nesting/roosting habitat was found for Osprey within mature trees within the subject site, however no evidence of nesting was observed during site investigations.

It was found that the potential impacts arising from the proposed Trinity Point Marina on threatened fauna species recorded or considered likely to occur within the subject site are of small scale and magnitude. As such the proposal is considered unlikely to occur within the subject site.

Two EECs were recorded within the subject site but were highly disturbed consisting of isolated trees with no associated understorey. While a small area of SOFF EEC would be removed as part of the proposed development, it is considered that the impact would be offset by the retention of areas of EEC, which contain understorey and their enhancement through revegetation and landscaping.

The potential impacts arising from the proposed Trinity Point Marina on threatened species, populations and/or endangered ecological communities listed under TSC Act and/or EPBC Act, are considered to be minimal. However, a number of mitigation measures could be implemented to further reduce potential impacts. Recommended mitigation measures are:

- Minimise potential impacts associated with erosion and sedimentation on adjacent sensitive communities (ie Saltmarsh and riparian vegetation) and Lake Macquarie during construction through the inclusion of appropriate erosion and sediment controls.
- Adopt recommendations made by The Ecology Lab to minimise impacts on the aquatic environment and associated communities (ie mangroves and Saltmarsh).
- Minimise potential impacts arising from stormwater runoff into adjacent riparian areas (Coastal Saltmarsh, River-flat Eucalypt Forest and Swamp Oak Floodplain Forest EEC's) and Lake Macquarie by designing and installing appropriate stormwater detention and/or filtering devices.
- Prepare a vegetation management plan under the Statement of Commitments for the retained areas of vegetation along the foreshore within the study area for continued monitoring and weed control. This plan will compliment the Vegetation Management Plan which has previously been prepared for the estuarine vegetation communities within the study area (RPS HSO 2008).
- Under the aforementioned VMP undertake Assisted Rehabilitation and Re-instatement of SOFF and extant vegetation in keeping with the improve and maintain principles for offsetting the removal of 0.04ha of SOFF EEC, in line with offset recommendations.

An aquatic ecology assessment has also been undertaken by the Ecology Lab (**Appendix R**). The following is an extract from that report.

During the surveys of the development site, it was concluded that the condition of the three main aquatic vegetation types was generally very good. Although some areas of seagrasses had large epiphytic loads, the overall health of each vegetation type was good. This was reflected in the numbers of benthic invertebrates and juvenile fish, many of which are of economic importance, which were observed within and around the proposed development site.

From information gathered during the assessment of impacts, the proposed location of the marina is considered to be in the most suitable position to minimise damage to aquatic vegetation within the area. The marina and breakwater jetties will have aluminium mesh decking which will minimise any shading issues. The steel slipway of the travel lift will create a shading footprint of approximately 50 – 75m<sup>2</sup>. The

installation of wooden jetty piles (250 – 300 mm diameter) and hollow steel travel lift piles (457 mm diameter) will result in the loss of no greater than 10m<sup>2</sup> of seagrass (*Zostera*). Considering the extent of the *Zostera* along the area of this northern shoreline, the impacts on seagrass from direct disturbance as a result of piling and shading are considered to be minimal. No seagrass beds will be fragmented and the area of direct disturbance is a very small proportion of the seagrass bed. The consideration and operation of the marina development is unlikely to have any long term impacts upon the seagrass habitats.

The proposed marina works are unlikely to affect listed threatened and protected species of fish, marine and reptiles that occur in, or encroach upon, the study area.

It is intended to adopt the recommendations of both ecology reports, and appropriate principles have been incorporated in the Concept Plan report.

The environmental risk rating for potential flora and fauna impacts is low, for the reasons outlined above, and in the report by RPS HSO and The Ecology Lab.

## **6.12 NATURAL HAZARDS**

### **6.12.1 Mining**

It was previously identified that the subject site is located within a mine subsidence area. Notwithstanding that the site is not actually undermined, the potential for future mining and therefore for subsidence must be considered.

The report prepared by Douglas Partners and located at **Appendix F** includes a letter from the Mine Subsidence Board, advising that although the current proposal exceeds surface development guidelines, they would consider development of structures up to seven storeys in height (including basement). The MSB will require submission of final structural design drawings prior to construction, and also a structural engineer's work as executed certification on completion.

### **6.12.2 Geotechnical Conditions**

The general geotechnical conditions of the site have already been outlined. The report by Douglas Partners (**Appendix F**) identifies technical parameters associated with excavations (not likely), Site Preparation, Engineered Filling, Pavements, Material Quality and Compaction Requirements and sub-grade preparation. These issues are essentially constructional matters and will be addressed at the detail design stage.

It has been previously identified that the site has actual and potential acid sulphate soils. A copy of the assessment by Douglas Partners is located at **Appendix H**.

Accordingly the proposed development will need to consider the presence of acid sulphate soils, particularly in the low-lying portions of the on-land marina village.

Four of the eight on-land soil samples tested exceed the action criteria for the situation where less than 1000 tonnes of soil is excavated. If however, the results are compared to the criteria for when more than 1000 tonnes of soil is excavated, then the number of samples exceeding the action criteria increases to six of the eight samples.

Therefore, all excavations within the Marina Area have the potential to disturb acid sulphate soils, and should be undertaken with specific reference to an Acid Sulphate Soil Management Plan. Treatment typically includes neutralising the soil by mixing with lime.

It is understood that dredging is not proposed in the marina area, and that driven piles will be utilised. Therefore the proposal does not suggest that lake bed sediments will be exposed to oxidising conditions during construction.

Dewatering of excavations, if required, also has the potential to oxidise acid sulphate soils, and will also need to be undertaken with reference to an Acid Sulphate Management Plan.

It is considered possible that some excavations within the Concept Plan Application portion of the site could also encounter acid sulphate soils, eg the basement excavation to RL 0.15 for Block E. The risk is likely to diminish as surface elevations increase to the south. However, it is recommended that additional targeted acid sulphate soil investigations be undertaken during the design stage and/or Project Application stage of the portion of the site for which Concept Plan application is currently being sought, to further delineate the presence of acid sulphate soils.

An Acid Sulphate Soils Management Plan has been prepared by Douglas Partners and this is located at **Appendix H**.

Previous site contamination has been outlined in Section 3 and it has been established that the site is suitable for the intended development having been remediated to the appropriate standard to allow for the proposed development. Copies of the relevant site audit and validation reports are located at **Appendix I & J**.

Other natural hazards associated with coastal processes are dealt with by Worley Parsons in **Volume 2** of this Environmental Assessment.

### **6.13 MARINA DEVELOPMENT & POTENTIAL IMPACTS**

The marina design layout was influenced by a number of primary factors including:

- The direct and indirect impacts on seagrass beds;
- The existing available water depths to ensure that no dredging is required;
- The retention of navigation access within Barden's Bay;
- The exposure to wind-generated waves, particularly from the south west quadrant;
- The visual impacts of the proposal; and
- The minimum dimensions for berths, channels and fairways set out in Australian Standards AS3962-2001.

The inclusion of breakwater protection in the form of a floating pontoon around the eastern and southern boundaries of the marina will attenuate wave energy. Marina berths are designed with larger boats

situated in deep water positions on the outer edge of the pontoon arms. Smaller boats will be positioned closer to shore. The floating style of the design and the draft of the travel lift will require no dredging of the lake.

In order to minimise visual impact and provide greater convenience to users, a floating berth system has been used, as opposed to fixed jetties. Regulatory authorities consider that floating systems reduce visual impacts.

For fire safety and hazard risk mitigation, fire fighting equipment will be provided, in accordance with AS3962-2001 and the requirements of relevant authorities.

The floating marina and breakwater structure will be available to the public at all times. Security gates will be installed at the gangways leading to the marina berths and will be locked at night to provide security and deter vandalism and theft.

Repair and maintenance facilities will be located on the western side of the site.

A full assessment of the impacts of the Marina and associated operational buildings has been undertaken by Worley Parsons, and this is presented in their report, which is **Volume 2** of the overall Environmental Assessment. The Concept Plan includes objectives and summary strategies on marina design.

The environmental risk rating for marina operations is considered moderate to high, and accordingly it will be necessary to employ appropriate controls to prevent unacceptable impacts.

Future project applications that include fuel storage will need to consider this the provisions of SEPP 33. If necessary, preparation of a preliminary hazard analysis will be required. This would be addressed as part of a Project Application for the Marina.

## **6.14 ESTABLISHMENT OF HELICOPTER AND HELICOPTER NOISE IMPACTS**

### **6.14.1 Helipad Design and Operations**

In order to ensure that the proposed Helipad was designed in accordance with relevant standards and to determine the best location of the helipad for safe operations, Heli-Consultants Pty Limited was engaged. A copy of their report is located at **Appendix AA**. The Concept Plan includes simple statements relating to the siting and operation of the proposed helipad including limits that have been determined from acoustic assessment.

Four locations were considered as part of the design process, and the advantages and disadvantages of each are outlined in the design and acoustic reports. Ultimately the location shown on the submitted concept plan was determined to be superior having regard to helicopter types, the presence of marine craft and people within the vicinity, final approach and take off area, ground effect area, landing and lift-off area, flight paths and relevant design criteria and compliance standards.

It is intended that the helipad will be constructed in accordance with the criteria in the report.

To ensure safety in operations a draft Procedures Manual has been prepared by Heli-Consultants Pty Ltd and included with their report.

### **6.14.2 Acoustic Impacts from Helicopter Operations**

#### **Impact on Locality**

The helicopter noise levels predicted comply with the AirServices Australia helicopter noise criteria and the INP industrial noise criteria at all receivers. At Receiver 5, 28 Pillapai Road, Windermere Park, which is the most-affected residential receiver for helicopter noise, the  $L_{Aeq,24h}$  noise level complies with the criterion of 50 dB(A).

The noise impact on residential acoustic amenity resulting from the helipad operations at Trinity Point is within the guidelines of AirServices Australia. However, due to the low background levels in the area helicopter noise is likely to be clearly audible above the ambient noise environment.

To minimise the noise impact of helicopter operations, it is recommended that the types of helicopter and the number of helicopter movements per day be restricted so that no more than two helicopter landings are allowed in one day, except under emergency conditions. This is predicted to result in  $L_{Aeq,24hr}$  values at all receivers within the recommended range given by AirServices Australia.

The proposed noise criteria include restrictions on helicopter movements outside the hours of 8 am – 6 pm except for emergency flights. However, as the Trinity Point development is not a medical facility, it is anticipated that emergency helicopter movements would only occur in the event of an emergency either within the development or in the immediate area, and are likely to be infrequent, isolated events.

Based on noise certification levels, the following helicopter types are expected to be suitable for use at the Trinity Point helipad (generally single engine helicopters) without exceeding the noise criteria:

- Agusta A109 A/C/E
- Agusta A119
- Eurocopter AS350
- Eurocopter AS355
- Eurocopter BO105
- Eurocopter EC120
- Eurocopter EC135
- Robinson R22/R44
- Schweizer 300
- Enstrom EF28/EF280
- Bell 206/206-L

- Bell 407
- Bell 427

If it is intended to allow access by future or different helicopter types not included in the above list at the Trinity Point Marina helipad, then the party proposing to use the different type should be required to provide the FAA Part 36 Appendix H (or ICAO Technical Annex 16) certification noise data for that helicopter type to the marina operator.

If the noise levels thus submitted are equal to or less than those published for the Bell 407, then that new helicopter type should be added to the list and allowed to operate at that site.

If any of the certification levels for the new type exceed the respective levels published for the Bell 407, then supplementary acoustic testing should be conducted to measure the noise levels and determine whether that new type can be operated at Trinity Point - and, if so, whether a reduced number of daily movements for the new types may be required to ensure continued compliance with the noise acceptability criteria.

The Director-General of the Department of Planning's requirements for the Trinity Point development also require an assessment of the noise impact of helicopter operations on land and aquatic fauna and on aquatic flora. Those assessments are included in the ARUP report.

### **Impact on Land Fauna**

Studies of the impact of aircraft noise on land fauna, and of helicopter noise in particular, have not been conclusive in establishing numerical levels at which damage to land fauna may occur. However, studies have concluded that high levels of aircraft noise can have a detrimental effect on the health of animals, through a combination of direct physical damage, masking crucial audible information such as mating calls or predators, and by causing high levels of stress and/or behavioural changes.

Most studies have involved very high noise levels or extended continuous exposure to high levels of noise, at noise levels which human receivers would likely find distressing or offensive. Therefore, it is difficult to conclude from the available research the levels at which noise-related damage to land fauna occurs.

This is compounded by the fact that most research has been conducted on overseas species of animals, and that the findings from one species may not be able to be extrapolated to another species, even if closely related.

However, the US Department of the Interior, in conjunction with the US Air Force, has presented a summary of the effects of aircraft noise on wildlife<sup>23</sup>, which suggests that airborne sound levels above 90 dB(A) are "likely to be adverse to mammals".

As an initial assessment, it is considered appropriate to set an assessment level of 90 dB  $L_{Amax}$  as a noise guideline for noise from helicopters at areas of sensitive habitat.

The maximum predicted noise level from the helicopter operations over land is 82 dB(A), occurring at Receiver 5 (82 Pillipai Road, Windermere Park) which is situated in a residential area and is directly under

the proposed helicopter flightpath. The noise levels at all other land locations within the study area are less than this 82 dB(A) maximum level, including areas within the Lake Macquarie State Conservation Area located to the west of the Trinity Point site. All locations are therefore expected to experience noise levels below the 90 dB(A) fauna noise guideline.

### Impact on Aquatic Flora and Fauna

Underwater noise levels resulting from airborne noise levels are typically negligible, and therefore no significant noise impact on aquatic flora or fauna is expected.

The air-water interface is a very good reflector of acoustic energy. The acoustic impedance of water is approximately 3600 times the acoustic impedance of air, and therefore at the airwater interface 99% of the acoustic energy contained in an incident sound will be reflected and only 1% transmitted to the water.

The maximum noise level at water level is predicted to occur in the immediate vicinity of the helipad on Bardens Bay, and is approximately 107 dB  $L_{Amax}$ .

When converted to an underwater sound level, this is approximately 134 dB re 1µPa (just under the surface). Note that the reference sound level underwater is 1µPa, as opposed to 20µPa in air, and therefore underwater sound levels cannot be directly compared with airborne sound levels.

Studies of underwater impacts of human-generated (anthropogenic) noise have not produced firm conclusions as to the levels at which damage to underwater species will occur. Additionally, the auditory characteristics of different underwater species can be quite variable, with different species of fish having substantially different hearing characteristics.

Some species of fish (such as trout) are only sensitive to low-frequency sound, whereas other species have extensive high-frequency hearing. Similarly for airborne noise, when underwater sound exceeds 90 dB above the hearing threshold of the species (i.e. 90 dB<sub>ht (Species)</sub>, expressed using the dB<sub>ht (Species)</sub> metric, which weights noise levels according to the hearing characteristics of the species – analogous to the dB(A) metric for humans), it is “likely to cause significant behavioural effects and in particular avoidance”<sup>24</sup>.

Therefore, adopting a criterion of 90 dB<sub>ht (Species)</sub> is likely to result in no significant behavioural impacts or damage to species.

Other research<sup>25</sup> has also adopted a 90 dB<sub>ht (Species)</sub> criterion as a threshold above which adverse behavioural effects or hearing damage may occur, and therefore adopting this criterion is considered reasonable.

The thresholds of hearing for fish have been investigated by several researchers, although only a few species have been studied. The hearing thresholds for several fish species<sup>26</sup> ranged from approximately 60 dB re 1µPa to approximately 110 dB re 1µPa, and were most sensitive to low-frequency noise (below approximately 400 Hz). This results in the lowest expected limit to avoid adverse to marine life to be approximately 150 dB re 1µPa (based on a hearing threshold of ~60 dB re 1µPa).

Based on the available research on the sensitivity of fish to anthropogenic noise, it is considered likely that the underwater helicopter noise levels of approximately 120 - 130 dB re 1µPa will be audible to fish.

This is expected to be at least 20 dB below the most stringent 90 dB<sub>ht(Species)</sub> criterion (based on a hearing threshold of ~60 dB re 1µPa), and are therefore not considered likely to cause adverse noise impact to fish.

Additionally, measurements of underwater noise levels from boats have obtained underwater sound pressure levels from boats in excess of 140 dB re 1µPa at a distance of 1 m<sup>27</sup>. The existing noise exposure for underwater life in Bardens Bay from boating activities is therefore likely to consist of underwater noise levels of similar or higher magnitude than the underwater noise levels from helicopter movements.

Considering that helicopter operations will be restricted to only 4 movements per day, the additional underwater noise impact of helicopter operations is anticipated to be low.

The environmental risk rating for impacts resulting from the operations of the helicopter are considered to be moderate. Accordingly the operations will need to be conducted in accordance with the report. A range of helipad principles have been included within the Concept Plan.

## 6.15 ENERGY EFFICIENCY

Energy efficiency is important to the overall economics of the proposed development as well as important to minimise the environmental impact associated with energy supply and use. It is proposed to adopt the energy efficiency principles outlined under councils DCP 1 – volume 1 – Energy Efficiency for Residential and Commercial Buildings.

Energy efficiency will be achieved through a range of measures including:

- Orientation and siting of buildings for solar access and ventilation.
- Choice of building materials including consideration of thermal mass and insulation.
- Use of energy efficient lighting and equipment.
- Consideration of energy types.

In addition to the above it is proposed to introduce water efficiency measures as detailed in Volume 2.

The proposed development will meet the requirements of Section J of the Building Code of Australia. The proposed development will comply with BASIX requirements. The general measures referenced above will assist meeting BASIX requirements, including greenhouse gas reductions.

## 6.16 AIR QUALITY

The range of potential impacts on air quality has been consistent in detail by Arup notwithstanding that the proposal overall could be considered as unlikely to have an impact. A copy of ARUP's report can be found at **Appendix Q**.

Arup determined that the air quality impact to sensitive receptors as a result of the Marina operations is likely to be low due to:

- The predicted negligence the impact of the air pollution sources;
- The dispersion conditions; and
- The mitigation measures proposed.

Furthermore the relatively good air quality in the vicinity of the site means that no new criteria exceedances are likely to occur at the sensitive receptors.

## 6.17 CPTED ASSESSMENT

Harris Crime Prevention Services have conducted a detailed Crime Risk and Security Design Review for the likely proposed development of the site. In carrying out their assessment they have identified four key objectives, being:

- Compliance with regulatory and/or planning instruments;
- Minimising broader community crime risks;
- Creating safe space (design); and
- Future security management objectives and outcomes.

A copy of the consultants report is located at **Appendix U**. The proposed development, with the incorporation of the appropriate design and management measures, will operate so as to maximise crime prevention. It is intended to incorporate the recommended measures into the proposed development including the adoption of a whole of site security management plan.

The environmental risk rating associated with this issue is regarded as low. The principles of Safer by Design are well understood and will be incorporated into the designs submitted with the future project applications.

## 6.18 SOCIAL & ECONOMIC IMPACTS

The need to consider potential social and economic impacts was identified, and Key Insights Pty Ltd was engaged to carry out an assessment. A copy of their report is located at **Appendix O** and the following is a summary of their overall findings.

*“On balance, the analysis informing this report concludes that the Trinity Point proposal has the potential to deliver net social and economic benefit ( this includes provision of substantial employment opportunity) to the Morisset District, Lake Macquarie LGA and the Lower Hunter Region. Benefits will be delivered primarily at District, LGA and regional level and include economic, recreational and tourism related impacts. Potential negative impacts are likely to be limited primarily to the immediate local area, and relate generally to potential community perceptions relating to changes in amenity, character and identity of the area. It is anticipated that there will be strong local opinion that what is proposed represents a significant overdevelopment of the site.*

*Population related pressures on social infrastructure, such as schools and health services are not considered a significant issue specific to the proposal, but will need to be included in regional population planning associated with cumulative district wide-growth. On balance, social infrastructure needs emerging from the new population are likely to be balanced by the provision of high-end recreational, commercial and tourism infrastructure.”*

It is considered that there are no social or economic reasons as to why the proposed development should not proceed, indeed employment and investment are a significant positive outcome.

## **6.19 KENDALL GRANGE MASTERPLAN**

### **6.19.1 Background**

As previously indicated, LMLEP 2004 requires (Clause 42, Schedule 8) a Masterplan in relation to the Trinity Point locality. The Kendall Grange Masterplan was prepared to guide development of the whole of Trinity Point including the 194 lot residential subdivision and site the subject of this Concept Plan application. Whilst the LEP calls for a Masterplan it does not specifically refer to the Kendall Grange Masterplan or require that the development comply with it. In this regard, the document is considered to be a guideline. Notwithstanding this, the principles of the plan have been given careful consideration and analysis in preparing the Concept Plan for the site.

It is considered that the Masterplan has been a successful document in the manner in which it has guided the existing residential development to date. The quality of the built form constructed to this point is to a high standard.

As previously indicated Johnson Property Group first lodged a rezoning application with Lake Macquarie Council to rezone the land from its former use to a completely residential use. However, during the assessment of the Local Environmental Plan amendment, Council recognized the potential to incorporate a component of tourism on the land. Whilst Johnson Property Group fought hard to keep the land entirely for residential purposes, and Council fought hard for the land to be predominately tourism, both Council and JPG ultimately agreed on the area of land to be zoned for tourism.

As part of the Council resolution, they required that a Masterplan be prepared for the site prior to development occurring. In developing the Masterplan for the site Johnson Property Group advise that Council initially were proposing to allow the Masterplan to only deal with the residential component initially, however, at the last moments of finalizing the plan, Council requested that Johnson Property Group alter the Masterplan to include development direction for the tourism zone. As Johnson Property Group was focused on developing the residential component of the site and as a tourism outcome was not one of their core business strengths, they amended the draft Masterplan to include a small scale tourist outcome which they knew would easily allow the masterplan to be approved, thereby allowing immediate commencement of the residential subdivision.

Until now Johnson Property Group has never had the opportunity of time or resources to determine the viability of the tourism outcome that Council accepted under the Masterplan. Now with the benefit of market research it is apparent that the small scale tourist outcome accepted by Council under the Masterplan (only after having been pulled together in a very quick timeframe) was not viable and would not attract investors.

### 6.19.2 Assessment of Proposed Concept Plan against Masterplan

The main guidelines contained within the Masterplan are located within that part of the plan entitled Urban Design Principles, starting at page 22. The plan is premised on consideration of the sites opportunities and constraints, including views, vegetation, topography, zoning, access and the foreshore. These have all been taken into account in formulating the Concept Plan that has been submitted.

The following plan, extracted from the Masterplan, shows the general structure as envisaged. The numbers on the plan refer to specific key design principles. Those specifically relevant to the proposed Concept Plan are 1, 2, 4, 7, 9 & 12 and these are discussed hereunder.



**Figure 11: Structure Plan**

#### Principle 1

The proposed development is consistent with the retention of assets of cultural significance. The sun dial and grotto will be retained, and Aboriginal items will be respected, with the opportunity provided for salvage of these. It is also intended that interpretive signage will be provided throughout the site, relative to these items.

#### Principle 2

The proposed development provides for a substantial proposal on the north-eastern shore of the site for social and economic opportunities via the proposed marina and complimentary shore-based facilities.

#### Principle 4

The proposed development provides an extension to the interconnected street system from the adjoining network by way of vistas created by building separations and the inclusion of pedestrian pathways.

#### Principle 7

The proposed development will retain and enhance the existing vegetation buffer area along the northern edge and also the mangrove /salt marsh area of Bardens Bay. Access to hazards will be restricted.

#### Principle 9

The proposed development has been designed to optimise views from the site.

#### Principle 12

The proposed development will maintain and enhance visual and access links to the water and open spaces within the site and provide social and economic opportunities, including employment, community and meeting facilities.

The Masterplan identifies a number of key features including the subject site as a tourism area. The following plan extracted from the Masterplan shows how it was envisaged the site would be set out for development:



**Figure 12: Development of the Tourism Area.**

### **Northern Tourism Zone**

The proposed Concept Plan remains consistent with the objectives for this area, providing for a large range of activities that the public can partake of. The proposed concept plan differs from the Masterplan in that accommodation has been incorporated into this area. It is considered that this is required to provide a mix of uses that will translate to a viable and vibrant village centre.

### **Central (Accommodation) Zone**

The proposed development remains consistent with the objective to provide for accommodation.

The proposed concept plan is clearly inconsistent with the envisaged built form outcome for this area, of two storey buildings attached and detached. This is a reflection of the fact that the project is not viable with buildings restricted to this scale and having regard to the undesirable large footprint that low scale building form creates, leaving limited opportunity for open space, landscaping, access and opportunity for social interaction.

It is considered that the carefully positioned medium-scaled buildings, with a greater amount of open space surrounding them will create a more appealing environment than the alternative. This should not be at the expense of due consideration of the impacts of a taller built form. In this regard, the photo montages prepared and submitted together with the plans show that the proposal can sit comfortably amongst the existing tree edge to the lake, screening much of the built form. This is supported by the visual analysis prepared by Dr Richard Lamb (see **Appendix K**), determining that the proposed development would not have a significant adverse visual impact.

Whilst the proposed built form does not meet the suggested two storey height limit, it is considered that the proposed development complies with the principle of the plan set out under the heading Views From The Water on page 32, viz:

*“The existing trees located along the foreshore will predominantly screen views from the water of the development in the tourism zone. Development in this zone will be restricted to a maximum of two storeys, ensuring the buildings predominantly sit below the line of these trees. Additionally, a significant setback from the foreshore will contribute to buildings appearing recessive in the view shed.”*

The proposed development will be predominantly screened by the tree line and therefore meet the objective (other than the taller buildings within the Marina Village area which is addressed in detail in the report by Dr Richard Lamb).

### **Southern (Open Space Zone)**

In the southern part of the tourism area the Masterplan calls for an open-space area centred around the bluff. The Concept Plan responds to this, providing a significant area of open space.

In addition to the above, the Masterplan also sets out a range of general and residential guidelines, including those specific to the tourism area. The proposed development will meet the principles of those guidelines, which are essentially elements of detail that would be assessed at project application stage (for example compliance with BASIX). The exception to this compliance, being the building height, which has

already been discussed above. The other exception is a reference to building footprints, to comply with that shown on the Masterplan. Building footprints are shown on the landscape masterplan below:



Figure 13: Building Footprints.

The derived building footprints relate to the principle of a two storey height. Based on the alternative heights proposed by the Concept Plan the footprints are not appropriate. The Concept Plan provides for a reduced footprint and greater open space surrounding buildings. The walk along the foreshore as envisaged under the proposed Concept Plan rather than the Masterplan will be one of landscaped wide open spaces rather than one with a strong lineal built edge which would feel more enclosing.

In summary, it is considered that the proposed Concept Plan responds to the principals and intention of the Master Plan. The Concept Plan purposefully departs from the Master Plan in order to create a vibrant and viable integrated facility, with significant open space, for access by all. The Concept Plan creates a destination that will attract tourists from afar, and provide this part of the lake with a genuine world-class facility, injecting funds to the region, supporting the Morisset town-centre and creating jobs.

## 7.0 Draft Statement of Commitments

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### 7.1 INTRODUCTION

In accordance with the Director General Environmental Assessment Requirements, the applicant is required to include a Draft Statement of Commitments in respect of environmental management and mitigation measures for the project.

The following is a draft Statement of Commitments which the proponent is willing to offer. The draft Commitments are broad, whole of site and limited in their extent at this stage to reflect three aspects:

- Part B of the Concept Plan document, which is sought to become the Concept Plan approval, includes a whole range of principles and guidelines which effectively include commitments commensurate and appropriate with this level of site planning. It is not sought to repeat these specifically within the draft Statement of Commitments, however Section 7.2 provides a general summary of these. It is anticipated that these may be refined or modified as a result of Concept Plan assessment.
- The current proposal is for Concept Plan approval only, and as such, it is too early in a detail sense to be committing to a list of specific environmental measures. Many of the elements sought to form part of the Concept Plan approval are urban design and built form elements (land uses, building setbacks, building heights, density controls, built form, materials and colours, landscaping), which in combination seek to create environmental outcomes for the site and the ultimate development.
- Further and more detailed Commitments will be given at Project Application stage, as is relevant to the works to be included within each stage/application.

### 7.2 SUMMARY OF COMMITMENTS CONTAINED WITHIN CONCEPT PLAN DOCUMENT

- **Public Access and Open Space** – Principle 4 outlines a commitment to provide secured and long term public access rights over key public access features within the site (main boardwalk, pedestrian through site links and the Village Square) and any associated spaces and to manage public safety where features cross future public lands;
- **Vegetation** – Principle 8 outlines a commitment to reinstate 0.5ha of *Casuarina glauca* Open Forest and additional assisted rehabilitation within a nominated area of the 6(1) zoned lands adjoining the site, plus weed control and infill planting of vegetation in other edges of 6(1) zoned lands. It includes the preparation of a Vegetation Management Plan, and completion of works outlined within that plan;
- **Roads, Vehicular Access and Parking** – Principle 10 outlines a commitment for agreement to be reached with relevant road authorities regarding external intersections. Principle 10 also outlines modifications to the approved road network, provision of on site parking, a Parking Management Strategy and provision for service vehicles;

- **Water Management** – Principle 11 outlines a commitment to adopt water sensitive urban design approach to the site, providing rainwater harvesting, permeable paving and bio-filtration swales as part of water management, incorporation of a range of preventative, containment and treatment water management for workshop and hardstand area, oily waste recycling tanks, design of fuel storage tanks, a construction and operation water quality monitoring programs, erosion and sediment controls, acid sulphate soils management and groundwater management.
- **Flooding** – Principle 12 provides minimum flood planning levels which are committed to, to include potential climate change implications, along with flood mitigation measures.
- **Services and Waste Management** – Principle 13 provides for commitment to provision of utility infrastructure and waste management, including the preparation of waste management plans for construction and operation;
- **Marina** – Principle 14 outlines a commitment to the style and design of the marina structure to limit environmental impact (floating pontoons, design of crossing of fringing seagrass, breakwater design with partial depth and open in critical points to prevent seagrass wrack accumulation, piling technique to limit impact on seabed, provision of public access along breakwater, provision of public day berthing area, provision of fuel, sewage pump out and oily bilge pump out facilities to environmental standards, stormwater management of the hardstand and boat repair facility, a water quality monitoring program for construction and operation phases, a construction environmental management plan (acid sulphate, erosion and sediment control, noise and the like) and operational environmental and management plans.
- **Helipad** – Principle 15 outlines a commitment to restricting number and times of helicopter movements and types of helicopters, design of the helipad, and the preparation of a facility manual.
- **Acoustics** – Principle 16 outlines a commitment to further detailed acoustic reports for all aspects of the proposal, and cross reference to an ARUP technical report that incorporates a range of commitments such as restrictions to number and times of helicopter movements and to types of helicopters, preparation of Construction Noise Management Plans, Management of the site precluding delivery vehicles in peak traffic hours and the like.
- **Sustainable Development** – Principle 17 outlines a commitment to comply with sustainable development legislative requirements such as SEPP 65, BASIX, Section J and stormwater harvesting components of LMCC DCP 1, and also the preparation of Greenhouse Gas Assessments with each Project Application.
- **Indigenous Heritage** - Principle 18 outlines a commitment to ongoing consultation and involvement with the Aboriginal community, the preparation of an Aboriginal Heritage Management Plan and Interpretation Policy, Salvage excavations, monitoring of top soil stripping earthworks and precautions to ensure recorded sites in the adjoining foreshore are not impacted on by JPG works.

- **European Heritage** – Principle 19 outlines a commitment to monitoring of certain earthworks to record any Bailey residence peripheral infrastructure, preparation of a European Interpretation Policy and retention of existing cultural plantings within the site.
- **Titling, Operation and Management of Site** - Principle 19 outlines the need for future applications to provide management of potential conflicts between site uses and operational aspects such as marina operation, noise management, public domain management and maintenance.

### 7.3 ADDITIONAL DRAFT COMMITMENTS

Impact / Issue	Nature of Potential Impact	Mitigation Measures
<b>Compliance with applicable planning requirements</b>	Project non compliance with relevant standards	The detail design of the project is to comply with relevant legislation and planning controls. Any departures are to be appropriately justified in terms of an improved outcome with future project applications.
<b>Compliance with Concept Plan</b>	Project non compliance with Concept Plan	All future project applications are to demonstrate compliance with the Concept Plan. Any departures are to be justified in terms of an improved outcome.
<b>Built Form</b>	Need to ensure design is consistent with Concept Plan outcomes and community expectations.	The proposed built form will generally adhere to that shown on the submitted concept plans in terms of Building Heights, Floor space ratios, general arrangement of buildings and setbacks.
<b>Flooding</b>	Need to ensure that development is flood free.	Proposed development will comply with the minimum floor levels established in the flooding report prepared by Worley Parsons including allowance for wave action and climate change.
<b>Water Quality</b>	<p>Possibility of increased levels of nutrients and contaminants in stormwater run off and of groundwater contamination.</p> <p>Possibility of contamination from Marina and associated operations.</p> <p>Possibility of disturbance of</p>	<p>The proposed development will incorporate water quality measures as generally outlined in the stormwater report.</p> <p>Acid Sulphate Soils to be addressed generally in accordance with the reports produced by Douglas Partners.</p> <p>A sully and sewer pump out facility to be</p>

Impact / Issue	Nature of Potential Impact	Mitigation Measures
	<p>Acid Sulphate Soils</p> <p>Possibility of silted &amp; sewerage from boats entering water.</p>	<p>maintained for use by all boats.</p> <p>Full details to be included in with Project Application including an Environmental Management Plan.</p>
<b>Acoustic</b>	Potential impact from excessive noise.	The proposed development is to comply with the established criteria contain in the submitted acoustic report. Detailed acoustic measures demonstrating compliance to be submitted with future Project applications.
<b>Ecologically Sustainable design and water management</b>	Environmental impact.	The detailed design of the development is to demonstrate consistency with the ESD and water sensitive urban design measures consistent with Council's requirements and Basix.
<b>Erosion &amp; Sedimentation</b>	Possibility of soil erosion through construction process and resultant sedimentation of lake.	<p>An erosion and sedimentation plan to be prepared as part of Project Application Construction Management Plan.</p> <p>Landscaping of site to prevent on-going soil erosion and sedimentation.</p>
<b>Public Access</b>	Potential for public access to be denied over time.	The proposed development is to maintain public access through the site and along the lake edge. Public access through the site will be secured by appropriate easement.
<b>Heritage</b>	Need to ensure that the heritage values of the site are protected during construction and in the longer term.	The proposed development will restore, enhance and maintain the identified heritage of the site. An interpretation strategy incorporating Aboriginal and European heritage is so to be prepared and submitted with future project applications.
<b>Public Art</b>	Lack of public amenity	A Public Art Strategy being prepared for the site to incorporate appropriate artworks within the development site. The strategy is to be submitted with future project applications.
<b>Landscaping</b>	Need to ensure the proposed development is enhanced with	A comprehensive landscape plan will be provided with future project applications.

Impact / Issue	Nature of Potential Impact	Mitigation Measures
	appropriate landscaping.	
<b>Crime Prevention</b>	Need to provide site and personal security through design process.	A comprehensive whole of site Security Management Plan consistent with CPTED design principles will be prepared.
<b>Lighting</b>	Impact from light spill	A lighting management plan being prepared and included with future project applications.
<b>Air Quality</b>	Need to minimize air quality impacts.	Options to minimise use of public transport and encourage cycling and walking to be explored.  All equipment associated with operation of the Marina to be maintained in good working order.  All work associated with the repair of boats to be carried out to comply with DECC requirements and to minimise emissions to air.  Construction Management Plan is to address dust control.
<b>Section 94 Contributions</b>	Potential impact on community facilities	Future development is to comply with Council's Section 94 Contributions Plan.
<b>Site infrastructure and services</b>	Environmental and amenity impacts	Future project applications to demonstrate adequate servicing.
<b>Waste Management</b>	Environmental impact	A waste management plan prepared in accordance with DCP 1 is to be included with future Project Applications.
<b>Aquatic Ecology</b>	Provide additional habitat outcome associated with seagrass beds	Proposed development to provide additional seahorse habitat in the manner suggested in the Aquatic Ecology Assessment prepared by The Ecology Lab (November 2008).
<b>Indigenous Heritage</b>	To provide positive involvement of the aboriginal community	In addition to the indigenous heritage principles and guidelines within the Concept Plan, JPG commit to the idea of sourcing local plant species for landscaping and revegetation works where that is suitable from the K2 local indigenous plant nursery operated by Koopahtoo LALC.

Impact / Issue	Nature of Potential Impact	Mitigation Measures
		JPG also commit to exploring the opportunity of aboriginal employment and training as part of their Apprenticeship First Scheme where it applies to the project.
<b>Public Open Space zoned lands</b>	Impact on features within those lands by future management and use decisions of Council	<p>Relative to the open space acquisition lands, JPG commit to share information with Lake Macquarie City Council relating to various values and features sited within those lands, including:</p> <ul style="list-style-type: none"> <li>• recorded indigenous heritage sites;</li> <li>• retained European historical items sited within; and</li> <li>• endangered ecological communities sited within.</li> </ul> <p>JPG commit to discussing management plans for those lands with Lake Macquarie City Council, and to identifying those values within any on site interpretation policy and implemented interpretation outcomes.</p> <p>A Vegetation Management Plan of these lands is specifically to be prepared by JPG for approval and adoption by Council.</p>
<b>Hazard Management</b>	Need to correctly identify and manage hazards	Project Applications to include hazard analysis associated with on site fuel storage and the like as required by the provisions of SEPP 33.
<b>Crime Prevention</b>	Crime opportunity from lack of design consideration	Prepare site security management plan as per CPTED principles.

## 8.0 Project Justification & Conclusion

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The proposed development envisaged in the Concept Plan design by HBO+EMTB has been the subject of extensive study and investigation. Its product is the result of an iterative process, where design and redesign has been undertaken to respond to a detailed site and opportunities constraint analysis, issues arising from the various investigations and in consideration of public and government authority comments.

The following points highlight reasons in support of the Concept Plan.

- The site represents a unique opportunity to develop appropriately zoned land in this part of Lake Macquarie and it is of great importance to seize it, and respond with an appropriate development to meet recreational and tourism needs. It is rare to find such a site that can be developed in conjunction with a Marina that can be constructed with minimum environmental impacts;
- There is a clear direction and support for the establishment of tourism and the desire to promote tourism in Lake Macquarie in strategic planning documents such as Lifestyle 2020, LMCC LEP 2004, the Kendall Grange Masterplan and the Hunter Regional Environmental Plan. This support is further emphasised by the NSW State Plan, where tourism is identified as a means of “Growing Prosperity” and by the State’s Towards 2020 Tourism Masterplan, which acknowledges that tourism’s major return to the community is in the creation of employment opportunities throughout the state, and the provision of tourism experiences;
- It has been reported that in order to create a destination that will draw people to Lake Macquarie, a unique and world class development response is required. This proposal provides viability and vibrancy through a mix of permanent and resort accommodation, complemented by a quality marina of adequate size to meet growing demand, with an associated village-centre comprising meeting rooms, function centre, restaurant and ancillary shops. It is only this mix that is capable of delivering a significant outcome, furnishing Lake Macquarie with a world-class tourist destination designed as a catalyst to further tourism growth in the LGA;
- The proposed development is not contrary to hierarchical planning principles for town centres and it will not compete with the nearby Morisset town centre, which has been identified as an emerging major centre, under the Lower Hunter Regional Strategy. Indeed the opposite is the case, the proposed development will be consistent with the Strategy, adding support to the growth of this emerging centre;
- The proposed development will not have a significant adverse visual impact. The site is not prominently located and its visual catchment is relatively small. Many views of the site will be predominantly screened by the existing lake-edge vegetation. Visual impacts that may arise will affect the private views of few and such levels of impact are considered justified in the context of providing a significant tourism outcome for the region, on a site nominated by Council for this purpose;
- The site currently offers no public access to the extensive lake edge frontage that it occupies. The proposed development will provide significant public access through the site and to the Lake itself. The design has purposefully limited building footprints to maximise public access to provide space for the promotion of social interaction and to provide significant opportunities for

landscaping. The proposal also represents an opportunity for the public to enjoy not only the natural aspects of the lake and surrounds but also the features of the development itself. Enjoying a coffee overlooking the lake, a meal with friends, attending a wedding function, or shopping for a boat bit will enhance the experience of the site and the lake itself;

- The concept plan ensures that indigenous and non-indigenous heritage values are respected and that interpretation of these is available to all. The preservation and restoration of items such as the grotto, sundial and lake baths, together with aboriginal interpretative themes will link the new development with the past and enhance the experience of the site as a destination for all;
- The constraints and sensitive environmental aspects of the site are well understood, as are the potential impacts upon them. These are matters that can be managed with modern best-practice environmental controls;
- The proposed development purposefully varies from the guidelines within the Kendall Grange Masterplan. This is because it reflects a development that was not contemplated at the time of the writing of the Masterplan. This is a proposal that provides for a viable, vibrant destination for all. The proposal remains adherent to the principles of the Masterplan and provides even greater levels of public access and open space. The proposal remains compliant with the principles of the NSW Coastal Policy and the Coastal Design Guidelines, ensuring the NSW Coast is protected from development restricting or limiting public access to the lake or which may impact on the environment through a lack of design response or inappropriate controls; and
- The proposed development will provide substantial initial and ongoing investment to the region, as well as construction employment opportunities and ongoing jobs for the future.

In conclusion, it is considered that the proposed Concept Plan represents a significant advancement in thinking, to provide an outcome that offers many benefits to the public, with very few perceived negative impacts.

The Director General Requirements required an economic feasibility report relating to the scale of development. This has been prepared, focusing on the marina size, by Ernst & Young, and included in **Appendix AG**. It outlines that financial return for the marina (in isolation from the residential and on shore development) will range from 2% for Stage 1 to 9% for Stage 4, with the returns low for private sector investment by comparison. The assessment outlines that the fully staged marina (up to stage 4) provides the largest net benefit for the NSW economy, and it emphasises the important economic role that the onshore accommodation and residential development will play.