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Planning

Working Beyond Expectations

Section 75 Modification (MP 06_0309 MOD 3)

Environmental Assessment Report

Proposed Trinity Point Helipad

Property:
Pt Reserve 10121129 Crown Land (Lake Macquarie)
Adjoins Part Lot 32 DP 1117408

Adjoins No 71. Trinity Point Drive,
Trinity Point, Morisset Park

Applicant:
Johnson Property Group Pty Ltd

Date:
November 2016

TRINITY POINT
LAKE MACQUARIE

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Document Control Sheet

Issue No.	Amendment	Date	Prepared By	Checked By
A	Draft	20/10/2016	Mat Radnidge	Sandra Hutton
B	Review	25/10/2016	Mat Radnidge	Sandra Hutton
C	Review	28/10/2016	Mat Radnidge	Sandra Hutton
D	Review	31/10/2016	Mat Radnidge	Sandra Hutton
E	Review	7/11/2016	Mat Radnidge	Sandra Hutton
F	Final	10/11/2016	Mat Radnidge	Sandra Hutton

TRINITY POINT
LAKE MACQUARIE

Marina Industries Association Member

Author Certification

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Applicant Address:	PO Box A1308 Sydney South, NSW 1235
Project:	Proposed Trinity Point Helipad
Subject Land:	Part Reserve 10121129 Crown Land (Lake Macquarie) Adjoins Part Lot 32 DP 1117408 Adjoins No. 71 Trinity Point Drive, Trinity Point, Morisset Park

Environmental Assessment Certificate:

I certify that I have prepared the content of this Environmental Assessment and to the best of my knowledge:

- It is consistent with Section 75F of the Environmental Planning and Assessment Act 1979;
- The statement contains all available information that is relevant to the environmental assessment of the development to which the assessment relates; and
- The information contained in the Environmental Assessment is not false or misleading.

Signature: .....
Mathew Radnidge

Date: 10 November 2016

Executive Summary

Introduction & Concept Plan Approval 06_0309

This Environmental Assessment (EA) has been prepared by ADW Johnson Pty Ltd on behalf of Johnson Property Group Pty Ltd (JPG) for the Modification of Concept Approval 06_0309 (MOD 3) to allow a helipad to be integrated into the approved marina design.

The Trinity Point Marina and Mixed Use Development Concept Approval (06_0309) was granted by the NSW Minister for Planning on 5 September 2009 and as modified currently includes the following:

- 188 berth marina and associated facilities;
- 315 accommodation units (no more than 50 percent may be used for residential purposes);
- Restaurant (200 seats and outdoor dining), café, function centre (300 seats), shops and office; and
- Parking and landscaping.

Figure 1 includes the current Concept Plan Summary Figure, from the approved Urban Design Guidelines under MP 06_0309, with the proposed helipad position as proposed by this modification overlaid.

Figure 1 - Concept Plan Summary Figure, with addition of a proposed Helipad – this application (October 2016).

To date, development consents have been issued for the Stage 1 marina consisting of 94 berths, the whole of the northern tourist precinct (being 65 room hotel, 300 seat function centre, 200 seat restaurant, café and other uses) and 127 accommodation units (being 93 tourist units and 34 residential apartments). The Stage 1 marina is currently under construction.

It is acknowledged that a helipad land use formed part of the original application for concept plan approval in 2008. The proposal, including the helipad component, generated significant public interest. Issues relating to the helipad included questions on the need for it combined with impacts on acoustic amenity of the locality. Assessment prior to the Preferred Project Report (PPR) challenged the justification and stated that compliance with acoustic did not mean support, and summarised that the helipad component as proposed at that time was not supported. Whilst detailed assessment and review of the aviation and acoustic impacts of the helipad continued (and were heading towards a positive acoustic assessment conclusion), JPG elected to withdraw the helipad from the concept plan prior to final assessment and determination. It is understood that at that time JPG informally indicated to the Department of Planning that it intended on coming back to revisit the introduction of a helipad at a later stage.

Following the global financial crisis, and re-engagement by JPG on the Trinity Point project, JPG reviewed the concept approval, and over the course of the past three years, has sought merits assessment of a range of modifications to the concept approval, many of which re-visited issues that generated significant public interest in the original concept plan assessment. In 2013, JPG advised the Department of Planning, local Council and the community of their desire for the inclusion of a helipad to be reconsidered. The project resources across 2013-2015 were focused on resolving the marina and land based tourist destination land uses. With the approval of Mod 2 and the Stage 1 marina (and announcement of a marina operator), and the approval of Mod 5 and the tourism and hospitality uses and more than half of the accommodation (and announcement of hotel operator, being Accor under their "Pullman" brand), investigations have been turned back to the helipad across 2016.

Now more than ever, JPG have identified that a helipad, integrated into the regional tourist destination they are creating, can contribute to the success of the project. The success of any tourism project is the ability to offer the broadest range of experiences possible. Without the approved land and lake based tourism facility, there would be no need for the helipad. The addition of a helipad will add to Trinity Points 'specialness' and 'prestige', will add to activity and vitality to the precinct and enables fast and convenient access to significant markets including Sydney and international visitors. Importantly it builds status as a destination and diversifies linkages across the region (wine region, cruise industry, daily charter industry), both being aspirations identified in regional and NSW tourism strategies and regional planning strategies. The success of the destination itself and its linkages across the region (ie Hunter Valley wine region, Newcastle Harbour cruise ship) are critical to encouraging new and repeat visitation, and capture parts of the visitor economy that will not otherwise be captured.

A Section 75W modification application (MOD 3) relating to the Part 3A Concept Plan (06_0309) is currently before the NSW Department of Planning and Environment (DPE), seeking the addition of the proposed helipad. Secretary's Environmental Assessment Requirements (SEARs) for the MOD 3 application were received on 6 July 2016. This EA has been prepared in accordance with these SEARs in support of the MOD 3 application.

In addition to the Concept Plan modification, separate development consent is required to be obtained under Part 4 of the Environmental Planning & Assessment Act 1979 for the construction and operation of the proposed helipad. This is the subject of a separate Development Application that has been lodged with Lake Macquarie City Council (LMCC) (DA 1176/2014).

That application is deemed to be a Designated Development pursuant to Schedule 3 Part 1 Section 2 (Aircraft Facilities) of the Environmental Planning & Assessment Regulation 2000 and the NSW DPE has advised their Secretary's Environmental Assessment Requirements for the Environmental Impact Statement (SEAR 846). It is intended that the EIS will be lodged with LMCC (including any amended particulars) following determination of the MOD 3 application. NSW DPE and LMCC has been consulted with and is aware of this process.

The preparation of this EA has been undertaken in accordance with the following:

- Secretary's Environmental Assessment Requirements (Ref: MP 06_0309 MOD 3);
- In consultation with Government Agencies and following community consultation; and
- With reference to Concept Plan Approval 06_0309.

The Site

The subject site is located within part of Lake Macquarie (Crown Land Reserve 10121129) (refer to **Figures 2 and 3**) in Bardens Bay. The helipad is proposed to be integrated into the approved Stage 1 marina and will be physically connected to the south eastern side of the outer breakwater of the marina (under construction). The area is closest to Morisset Park and Windermere Park to west and northwest, and across Bardens Bay to Brightwaters. These areas are predominantly detached residential development around the Bay, to the north and west and on most parts of the shore to the south, south east and east. A school is also sited to the north of Bardens Bay.

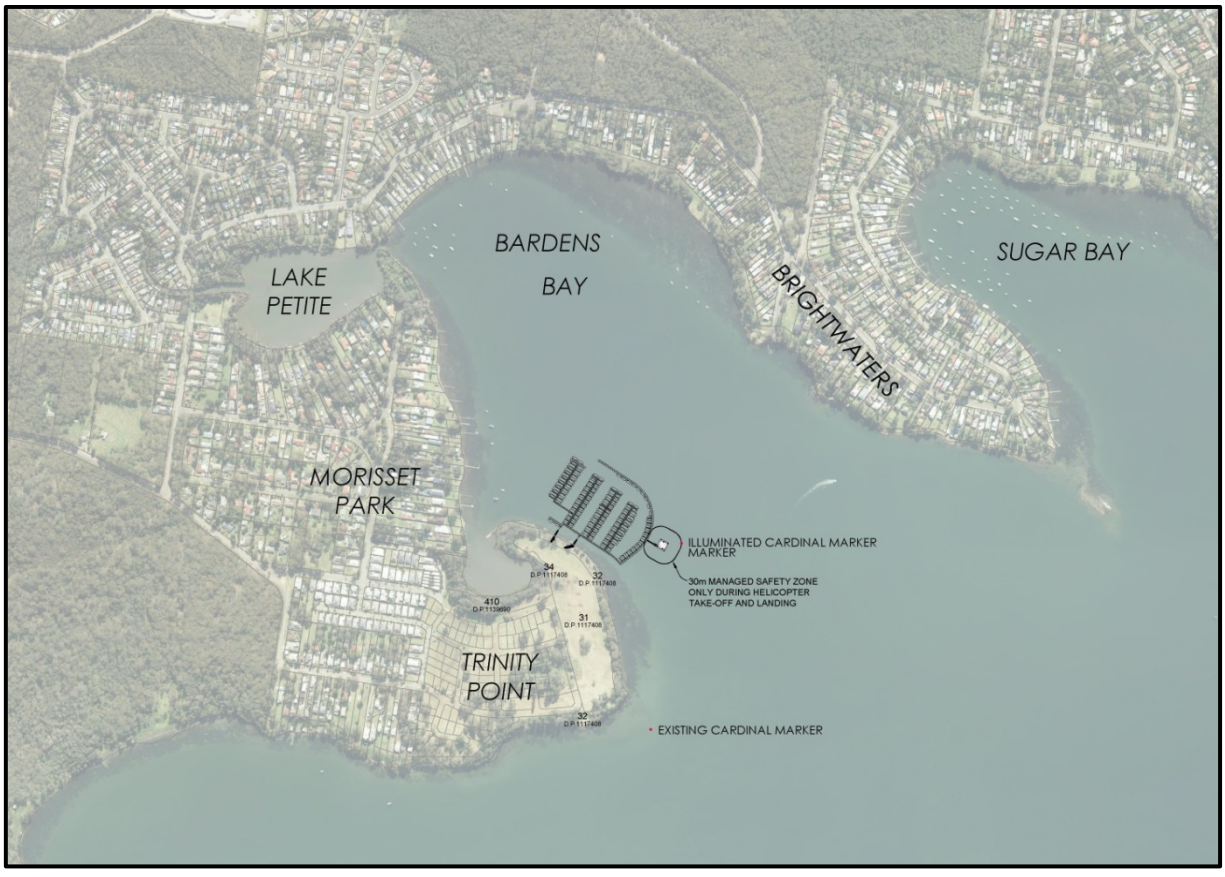

Figure 2 - Locality Plan.

The site subject to this application is bound by the waters of Lake Macquarie (Bardens Bay) to the east and south. The approved marina is located to the north and west. Further west is Part Lot 32 DP 1117408 (Public Reserve) and Lot 31 DP 1117408 which contains approval for:

- A marina office, chandlery and associated buildings; car parking; landscaping; and stormwater infrastructure (under DA 1503/2014);
- 65 room hotel, 200 seat restaurant, 300 seat function centre and other uses (under DA 1731/2014); and
- 4 buildings consisting of 34 residential apartments and 93 tourist apartments (under DA 496/2015).

The remaining part of Lot 31 is subject to future Development Applications under the approved Concept Plan, as modified, for the remaining on site accommodation.

Land to the west of Lot 31 is being progressively developed by JPG under a range of separate development consents as a residential subdivision, with terrace housing on key development lots.

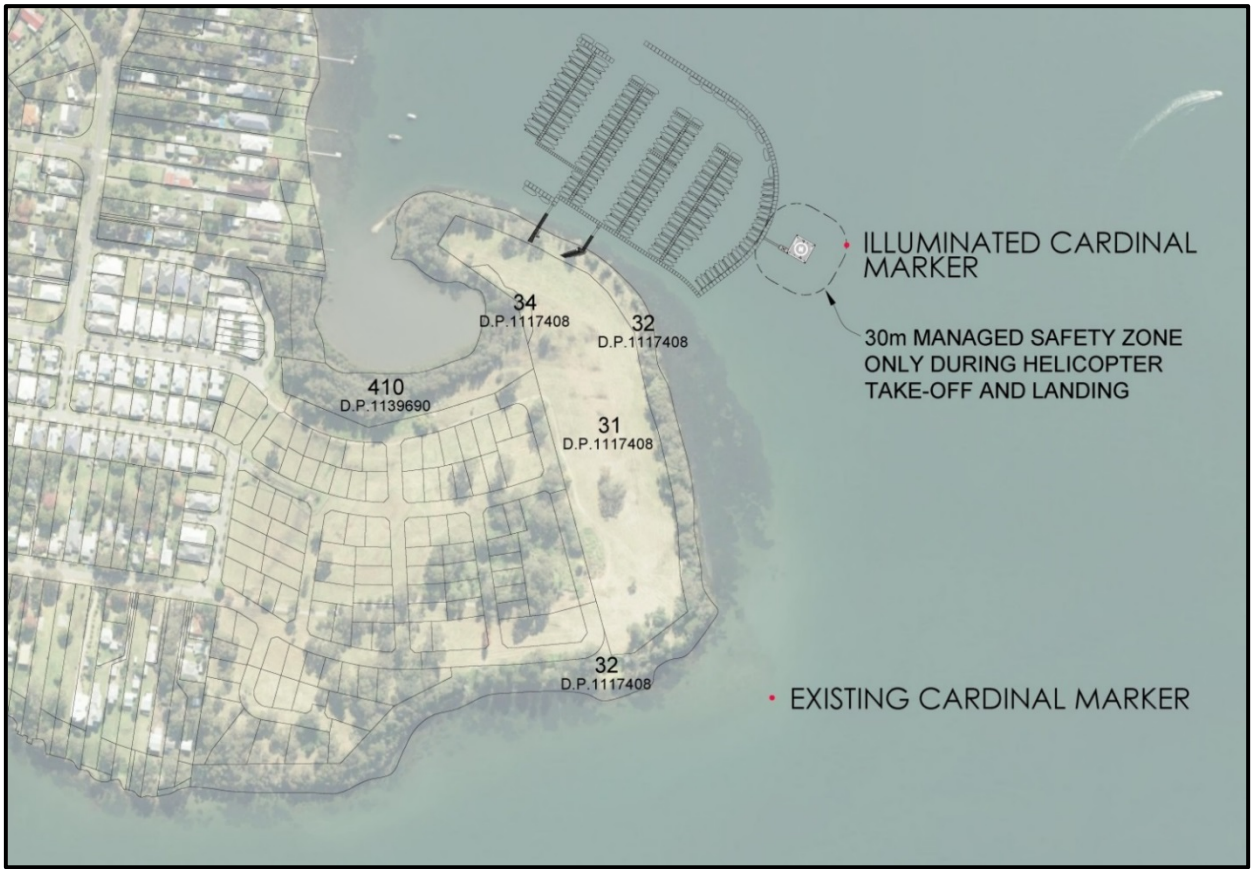

Figure 3 - Site Plan showing 188 berth marina (concept approved) with addition of proposed helipad (this application).

The Proposed Development

Full construction, design and operational detail of the proposed helipad will be contained within an Environmental Impact Statement to accompany DA 1176/2014 (previously lodged with LMCC and currently undetermined). As noted above, this EIS will be lodged with LMCC following determination of the MOD 3 application to amend Concept Approval 06_0309.

Proposed Helipad Concept Design

The proposed helipad has been designed to form an integrated component of the marina. The key concept details of the proposed helipad are shown in **Figures 4-6** below and are described below. Whilst the modification may not need to approve these specific plans and details, they have been developed to inform various assessments required to be considered in determining the merits of a helipad forming part of the concept plan.

- A 20m x 20m pontoon with 4 x corner telescopic piles. The corner telescopic piles are anticipated to be 600mm diameter. The piles will not extend above the pontoon so as not to present a safety hazard during helicopter movement, and their installation does not require dredging.

- The pontoon will be connected to the marina by a 1.5m wide x 17m long gangway and three, 3m x 4m pontoons, with one pile. In accordance with Civil Aviation Safety Authority (CASA) guidelines, the pontoons will not contain a handrail.

- The pontoon will be constructed of concrete to match the design of the marina breakwater structure. The gangway will be a hinged aluminium gangway.

- The helipad pontoon will sit in the water similar to the marina outer breakwater structure. Preliminary engineering identifies that the helipad will sit 700mm above water level with 600mm draught below water level.

- Helipad marking will be consistent with Civil Aviation Safety Authority (CASA) guidelines.

- Water quality measures will be implemented including:

    - Bunding of the helipad to prevent runoff from directly entering the lake;
    - Provision of readily accessible oil / fuel spill kits and containment boom; and
    - First flush treatment for the deck of the pontoon structure.

- The marina is connected to services, which will, where necessary, also service the helipad.

- Provision of two (2) 9kg fire extinguishers in red cabinets on the marina breakwater.

- A wind indicator will be attached to a marina pole as required.

- A bollard and chain will be installed on the marina at the gangway connection to restrict access to the helipad. Similarly, two (2) bollards will be installed on the marina gangway either side of the managed safety zone (refer operational details below) so that access is physically restricted within the managed safety zone on the marina breakwater during helicopter take-off and landing movements. Access to this part of the breakwater is security gate controlled from the land, so the control will be for berth owners, or any public utilising the causal berthing further along the breakwater.

- Two (2) flashing lights will be installed to marina pillars for use when a helicopter take-off or landing is occurring.

- An eastern cardinal marker will be located 30m east of the helipad pontoon.

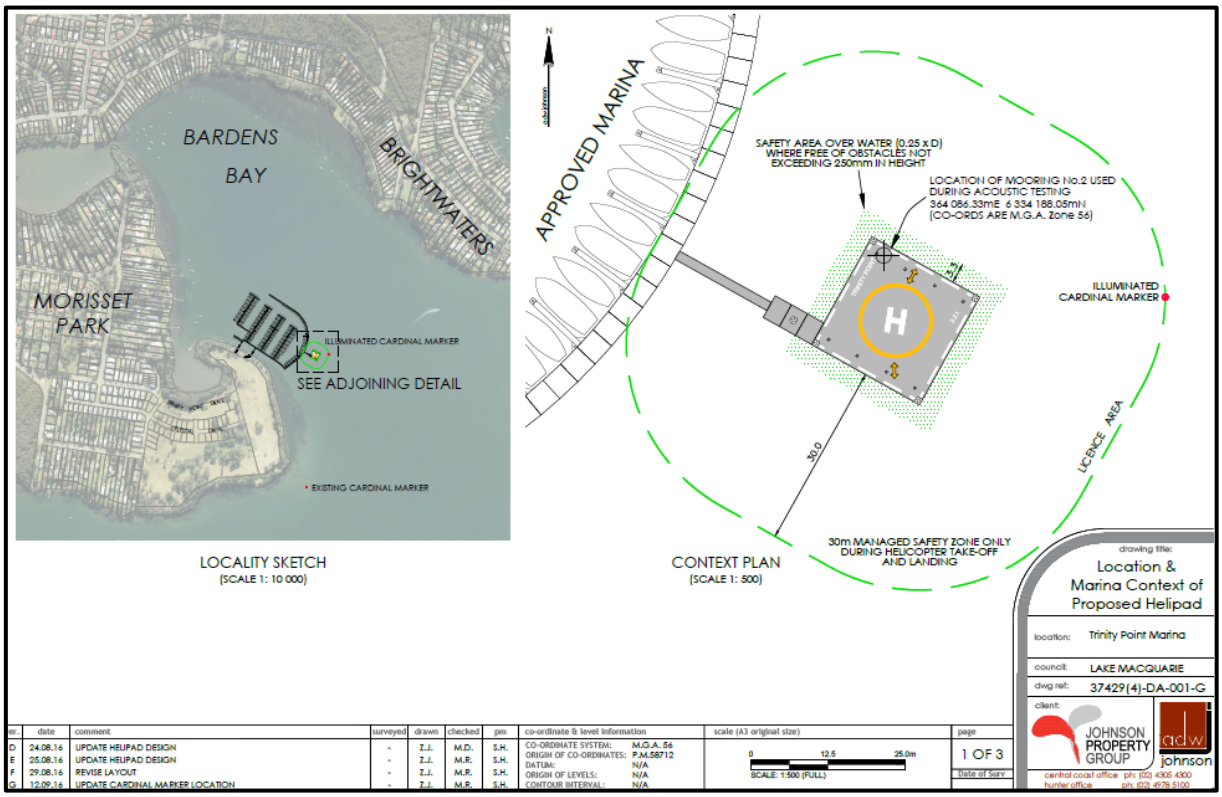

Figure 4 - Proposed Helipad.

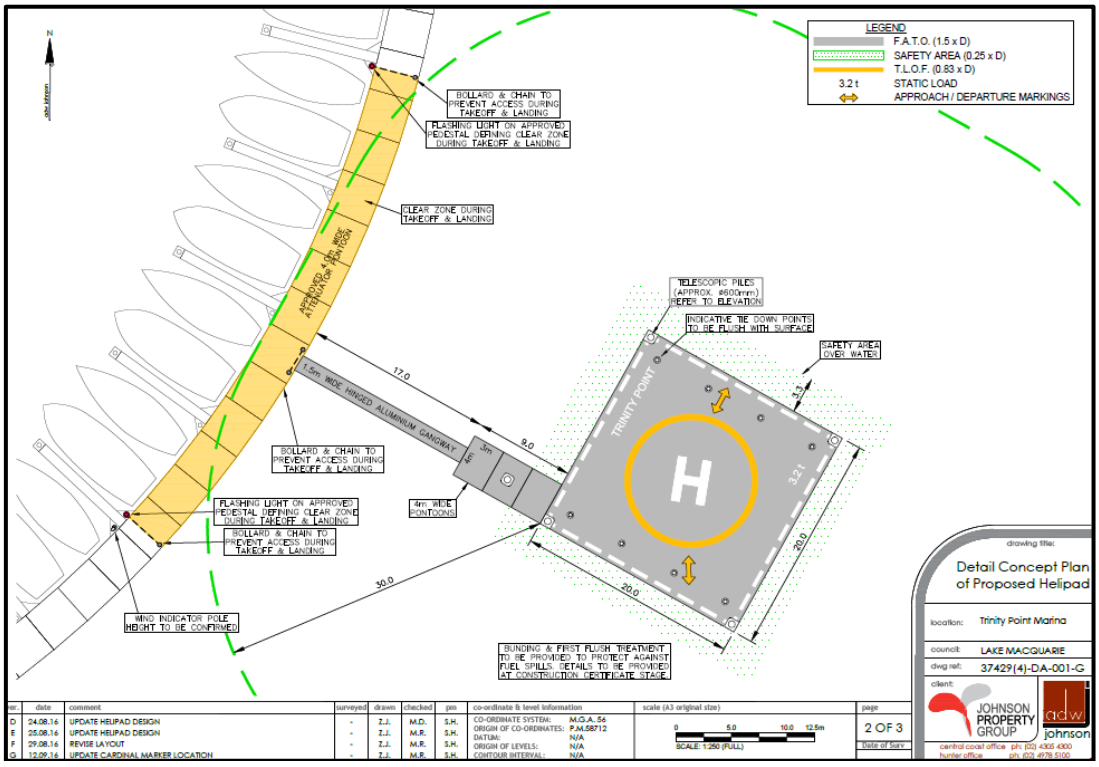

Figure 5 - Concept Proposed Helipad Design.

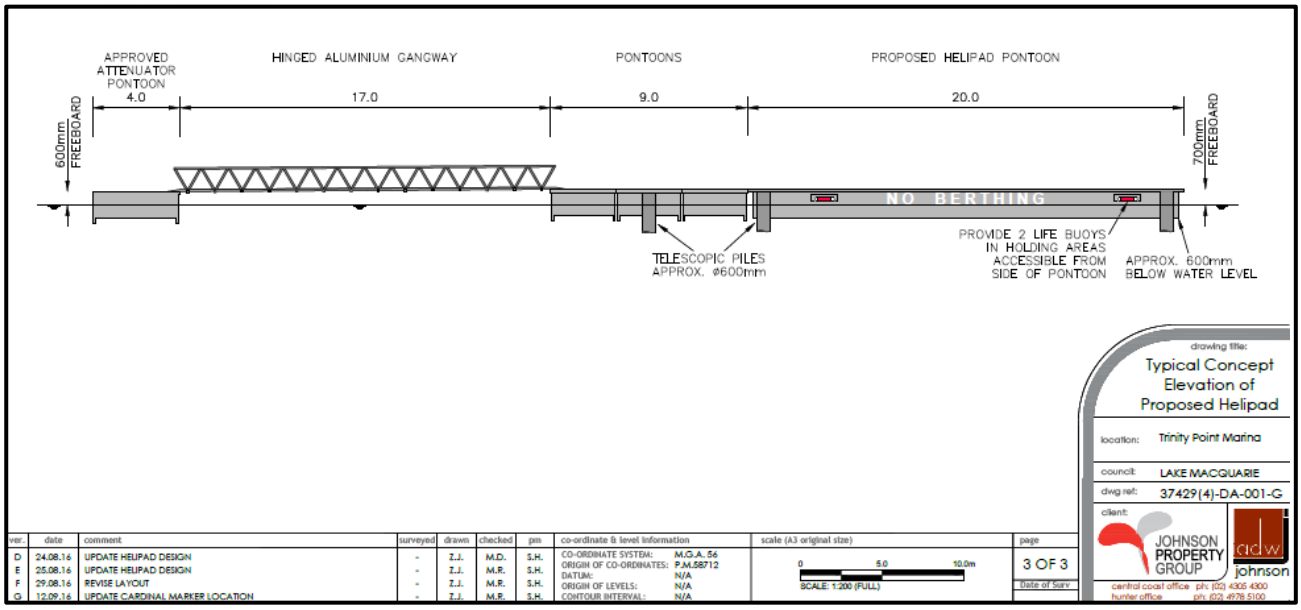

Figure 6 - Concept Proposed Helipad Elevation.

Proposed Helipad Operation

The key concept operational details for the proposed helipad are as follows:

- A maximum of eight (8) movements per day (ie. 4 landings and 4 departures).
- A maximum of 38 movements per week (ie. 19 landings and 19 departures).
- Operating hours from 8am (Mon-Sat) and from 9am (Sun and public holidays), through to end of daylight (with time seasonally variable), with no night time use.
- A 30 metre wide managed safety zone (during helicopter landing and take-off only) measured from the edge of the helipad will be implemented during take off and landing movements. The safety zone will be managed by appropriately qualified marina staff in accordance with an operations manual. This includes two areas – access control on the marina breakwater structure (via use of bollards and chains) and exclusion of persons and craft from within the waters that form part of the safety zone.

  The 30m wide managed safety zone will not apply during times when no helicopters are arriving at or departing the site. The helipad will however remain off limits to the general public at all times and this will be controlled by a bollard and chain on the marina breakwater where it connects with the gangway access to the helipad.

- Preferred flight paths have been acoustically tested and designed to cater to different wind directions. The preferred flight paths are shown in **Figure 7** below and are as follows:
  - Path A which involves approaching the helipad from the south (over water) and exits the helipad to the south (over water) in a clockwise direction. This flight path is suitable when no prevailing winds, in all calm conditions and when the wind is from the north, north east, north west and east.
  - Path B1 which involves approaching the helipad from the south (over water) and exits the helipad to the south (over water) in an anti clockwise direction. This flight path is suitable when the wind is from the north west, west and south west.

  - Path B2 which involves approaching the helipad from the south (over water) and exits the helipad to the south (over water) in an anti clockwise direction. This flight path is designed for helicopter landing and take off in a strong southerly wind. The flight path is suitable when the wind is from the south, south east and south west.
  - Path C which involves approaching from the north and exiting to the south (over water). This path also provides an option for a helicopter, having departed to the south to conduct a turn movement that allows it to travel north, if desired. This flight path is suitable when the wind is from the south west, south and south east.

- A 'prior permission' protocol is intended. This will enable information to be communicated and agreed to by users of the helipad, including type of helicopter that can land, fly neighbourhly procedures and avoid areas, preferred flight paths, operating hours, and can be used as part of registering and demonstrating compliance with maximum daily and weekly movements.

- The proposed helipad has been designed and assessed to be suitable for use by small turbine engine helicopters, with occassionally medium sized helicopters, and includes the following helicopter types:

  - Bell 407
  - Bell 206B
  - Bell 206L
  - McDonnell Douglas MD 500 C/D/E
  - Airbus H125 (formally Ecureuil AS350)
  - Airbus 120
  - Airbus 130
  - Airbus 135
  - Agusta Westland AW109.

  The specifications of each of the above helicopters is provided within the Helicopter Landing Site Analysis prepared by AviPro in **Appendix D**. Acoustic testing undertaken has considered usage of the helipad by the above range of helicopters. Additionally, to limit use by inexperienced pilots, Robinson R22/44 are precluded. Joyflights are also precluded.

- No refuelling of helicopters is proposed.

- No maintenance of helicopters is proposed.

- A draft Helipad Operations Manual has been prepared by AviPro and is provided within **Appendix D** of this EA. This illustrates the type of operational control intended and consider critical to the the successful co-existence of the helipad with the marina and tourist destination, boat owners, pilots and helicopter operators, visitors arriving and departing by helicopter, the public that lives around Bardens Bay and recreational users of the waters around Bardens Bay.

Figure 7a - Preferred Approach & Departure Path A (AviPro).

Figure 7b - Preferred Approach & Departure Path B1 (AviPro).

Figure 7c - Preferred Approach & Departure Path B2 (AviPro).

Figure 7d - Preferred Approach & Departure Path C (AviPro).

Application Process

On 1 October 2011, Part 3A of the *Environmental Planning & Assessment Act 1979 (as amended)* was repealed by the *Environmental Planning & Assessment Act (Part 3A Repeal) Act 2011 No. 22.* Despite this, Part 3A continues to apply to this modification application (MOD 3) on the transitional provisions identified within Clauses 2 and 3 of Schedule 6A of the EP&A Act 1979. Section 75W (modification of concept plans) continues to apply.

Accordingly, the proposed modification to approved Concept Plan 06_0309 to include a helipad can be assessed as a Section 75W application. No provisions of Section 75W prohibit or restrict the proposed modification to the Concept Plan approval. It is considered that the addition of a helipad into the broader land uses and regional tourist destination being established under the concept plan, and integrated into the marina operation, does not represent a radical transformation, and can be subject to merits assessment. A merits assessment can progress notwithstanding the permissibility considerations between the current local environmental plan, and the one that applies to the related helipad DA (under LEP transitional provisions).

Consultation

In establishing the environmental parameters and scope of this project, consultation was undertaken by the proponent with key public authorities including the NSW Department of Planning & Environment; NSW Office of Environment and Heritage, NSW Environment Protection Authority; NSW Department of Primary Industries (NSW Office of Water and Crown Lands); NSW Roads and Maritime Services; Commonwealth Civil Aviation Safety Authority; Commonwealth Department of Environment and Lake Macquarie City Council.

The proponent has also consulted with the Lake Macquarie Estuary & Coastal Management Committee; the Lake Macquarie Aquatic Services Committee; and all Registered Aboriginal Parties. The proponent also briefed the local Mayor and elected Councillors.

Furthermore, consultation has been undertaken with the local community, including business groups, including information prior to the acoustic testing and through an open community information session once preliminary acoustic results were available.

Consultation was undertaken in accordance with Secretary's Environmental Assessment Requirements.

In summary, key issues raised by the community consultation included lack of justification for helipad, uneconomic business proposition, not in the public interest, prohibited by the current lake zoning, noise impacts, inability to control flight paths and pilots, safety concerns, mistrust in JPG, DPE and LMCC, mistrust in the process and any commitments with concern that frequency, helicopter types and operation will increase, use of public land for use by a privileged few with impacts unfairly felt by the existing community.

Further opportunity for involvement of both government authorities and the community will occur during the public exhibition phase of the assessment. JPG are in the process of establishing a website with links to information, as well as for dissemination of key fact sheets and frequently asked questions sheets.

Key Environmental Investigations

The benefits of the proposed helipad to the overall tourism facility must be balanced against impacts. In particular, the receiving environment should be considered in detail to determine if the arrival and departure of helicopters would have significant adverse impacts.

Detailed investigations of the existing environment and the potential impacts of the proposed addition of a helipad have been undertaken in the context of the environmental consequences of that addition. Specialist consultant reports were commissioned where necessary. The following is a summary of the key matters investigated:

- Strategic context and justification for the proposal;
- Helipad design and flight paths;
- Acoustic amenity;
- Public access, marine safety and navigation;
- Coastal processes;
- Hydrology (including hydrodynamics) and water quality management;
- Aquatic and terrestrial ecology; and
- Visual amenity.

Separately to any helicopters that overfly Bardens Bay, the arrival and departure of helicopters to the proposed helipad will add a new spectrum of sound to the existing noise environment during such helicopter movements.

Relative to receivers, use of the helipad generates noise at:

(a) a static location (when the noise source occurs with the helicopter at the pontoon, for hover, touchdown, shutdown, power up, hover); and

(b) at variable locations along the flight track (as the noise source, the helicopter, moves through its approach and departure to and from the pontoon, with varying distances to the receiver locations).

The acoustic report provides an assessment of all of these components together, based on worse case scenarios and based on proposed frequency of use and different helicopter types, over time, and demonstrates acoustic acceptability of the noise generated taking into account the acoustic environment at Bardens Bay (including at the closest residential receiver).

Typically the entire landing operation of a helicopter movement of leaving cruise altitude, descent, hover, land and shut down, is audible for between 2 ½ - 4 ½ minutes (depending upon the receiver location and the flight path being used). A take-off movement to power up, hover, take off and ascend to cruise altitude occurs over a similar time period.

If the proposed maximum of 8 movements on any given day occurs, then that represents an audible noise source across each day of approximately 20 - 36 minutes.

The maximum noise level experienced at any one moment in time is called L_{Amax}, and acceptability criteria for $L_{Amax,(Hel)}$ relative to helicopters in residential areas is identified to be 85dB(A) during the day and 80 dB(A) during the night. The analysis and assessment in Appendix E establishes that a maximum noise level for all proposed helicopter types (as determined using logarithmic averaged results across the multiple test results, refer Appendix E4 & E5 of the acoustic report, as provided for under AS2363) sits below that maximum criteria, both when the helicopter (noise source) is at the HLS pontoon, and during the approach and departure.

Of more relevance to the noise generated by helicopter operations and consideration of impacts to acoustic amenity is the total noise exposure assessed over time. The energy average noise level (L_{eq}) and the number of helicopter movements per day are combined to determine the total helicopter noise exposure. It is for that reason that L_{eq} rather than $L_{Amax,(Hel)}$ is a more relevant consideration, and is reported on in detail in the acoustic assessment. The analysis and assessment in **Appendix E** establishes that the highest contribution for helicopter noise for all helicopter types is 49.5L_{Aeq24}, which sits below the unacceptable level of 60dB(A), and sits well within the range of acceptable noise ranges established under ASA Environmental Principles. Additionally, it sits below the acceptability criteria for residential areas identified under AS 2363-1990 of 60dB(A) daytime and 50dB(A) night time, as well as modified daytime of 55-59dB(A) that factors in an ambient based calculation. It also sits well within the ANEF 20 criteria.

In summary, the investigations have not identified any environmental consequences of significance that would warrant refusal of including a helipad into the concept plan. Actual impacts are predicted, within acceptable limits and are managed.

Structure of the Environmental Assessment

The Environmental Assessment is structured in accordance with, and contains the information required by the Secretary's Environmental Assessment Requirements. The EA contains descriptive and summarised text with appropriate comment, while the appendices provide the detailed specialist assessment reporting.

Sections 1 & 2 – Provides an introduction and background to the proposed modification, including an overview to the Trinity Point Marina and Mixed Use Development Concept Approval (06_0309) and development history.

Section 3 – Provides a description of the proposed helipad.

Section 4 – Provides the property description as well a detailed site analysis and overview of the existing environment.

Section 5 – Provides the planning context for the proposed modification, including the relevant Commonwealth, State, Regional and local legislation and planning controls.

Section 6 – Details consultation undertaken and how the project team identified the key issues associated with the modification.

Section 7 – Investigates and assesses key environmental issues associated with the site and proposed modification. This section generally summarises the findings of specialist environmental reporting which is provided within the appendices to the report.

Section 8 – Provides a justification of the proposal, taking into consideration the environmental consequences of the modification, the suitability of the site and consideration of the public interest.

Section 9 – Conclusion.

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1.0 Introduction

1.1 INTRODUCTION

ADW Johnson Pty Ltd has been commissioned by Johnson Property Group Pty Ltd (JPG) to prepare a Section 75W Modification and accompanying Environmental Assessment (EA) for the addition of a helipad to the approved marina and mixed use development at Trinity Point, Morisset Park.

The proposed helipad development has an estimated construction cost of approximately $750,000.

The proposed helipad will contribute towards the JPG vision to create a world class land and water based destination development that forms part of an experience and interaction with Lake Macquarie. The proposal will complement the Trinity Point Marina and Mixed Use Development Concept Approval (06_0309), which was granted by the NSW Minister for Planning on 5 September 2009 and currently includes the following (as modified):

- 188 berth marina and associated facilities;
- 315 accommodation units (no more than 50 percent may be used for residential purposes);
- Restaurant (200 seats and outdoor dining), café, function centre (300 seats), shops and office; and
- Parking and landscaping.

1.2 SECTION 75 MODIFICATION DETAILS

Environmental Assessment Prepared by	
Name:	ADW Johnson Pty Ltd Unit 7, 335 Hillsborough Road WARNERS BAY NSW 2282
Contact:	Mat Radnidge Senior Town Planner Ph: (02) 4978 5100 Email: mathewr@adwjohnson.com.au Website: www.adwjohnson.com.au
Section 75 Modification:	Addition of Helipad to Concept Plan Approval 06_0309
Applicant Name:	Johnson Property Group Pty Ltd Bryan Garland Planning Director Email: bryang@johnsonpropertygroup.com.au Ph: 8023 8888

Applicant Address:	PO Box A1308 South Sydney NSW 1235
Property Description:	Pt Reserve 10121129 Crown Land (Lake Macquarie) Adjoins Part Lot 32 DP 1117408
Project Description:	Helipad to be Integrated into Approved Marina

1.3 PURPOSE OF THE REPORT

This Environmental Assessment (EA) has been prepared to:

- Describe the proposed modification;
- Identify and summarise the relevant controls which guide assessment;
- Provide information on the site and its context; and
- Review key issues associated with the modification to aid in assessment by the Consent Authority and other relevant authorities.

Consideration has been given to the full range of relevant legislation and development controls.

1.4 COMPLIANCE WITH SECRETARY'S ENVIRONMENTAL ASSESSMENT REQUIREMENTS

A copy of the Secretary's Environmental Assessment Requirements (Ref: 06_0309 MOD 3) is provided within **Appendix B** of this report.

Appendix B also includes a table which outlines where the Secretary's Environmental Assessment Requirements for the project have been addressed in this EA and its appendices. It is considered that the Secretary's Environmental Assessment Requirements have been addressed within this EA and the annexed specialist reports. **Section 7** of this EA addresses key SEARs requirements and headings.

1.5 DOCUMENTATION

The following documentation has been provided to support the proposed development and includes the following:

- Certificate of Titles, Deposited Plans & Level Surveys – **Appendix A.**
- Secretary's Environmental Assessment Requirements & Compliance Table – **Appendix B.**
- Concept Plans of Proposed Helipad – **Appendix C.**
- Helicopter Landing Site Report – **Appendix D.**
- Acoustic Assessment – **Appendix E.**
- Aquatic and Terrestrial Ecology Assessment – **Appendix F.**

- Visual Impact Assessment – **Appendix G.**
- Coastal Processes and Hydrodynamic Investigations Review – **Appendix H.**
- Social Impact Assessment – **Appendix I.**
- Consultation Log – **Appendix J.**
- Quantity Surveyor's Certificate – **Appendix K.**
- Modified Summary Concept Plan including Helipad and Draft Principle for Helipad – **Appendix L.**

2.0 Background & Concept Plan Approval 06_0309

On 5 September 2009, the Minister for Planning granted Concept Approval (06_0309) to the Trinity Point Marina and Mixed Use Development.

The current Concept Approval (as amended) includes:

- 188 berth marina and associated facilities;
- 315 accommodation units (no more than 50 percent may be used for residential purposes);
- Restaurant (200 seat), café, function centre (300 seat), shops and office; and
- Parking and landscaping.

Figure 8 includes the current Concept Plan Summary Figure, from the approved Urban Design Guidelines under MP 06_0309, with the helipad position as proposed by this modification overlaid.

Figure 8 - Concept Plan Summary Figure, with Addition of a proposed Helipad – this Application (October 2016).

The Concept Approval includes a range of land uses, buildings and site planning outcomes, approval conditions, approved concept plan principles and statement of commitments.

The proposed helipad will be attached to Stage 1 of the marina, which is currently under construction and represents the first development under the Trinity Point Concept Plan Approval (refer below for details on other development approvals arising from the Concept Plan).

In consultation with the NSW DPE, it has been established that the Concept Plan Approval is a transitional Part 3A project under the provisions of Schedule 6A of the Environmental Planning & Assessment Act 1979 (EP&A Act). As such Part 3A (as in force immediately prior to repeal of Part 3A) continues to apply to the Concept Approval.

A number of Section 75W Modification (MOD) approvals have been granted since 2009, including:

- MOD 1 (approved 1 April 2014) & MOD 4 (Approved 26 August 2014) – Extended the lapse date of the Concept Plan approval to align with Schedule 6A(11)(3) of the EP&A Act 1979 (which is 5 years after the repeal of Part 3A resulting in a modified lapse date of 1 October 2016). Development was commenced prior to that lapse date.

- MOD 2 (approved by Planning Assessment Commission (PAC) on 9 April 2015) – The application staged the marina, modified public access associated with the marina, removed the boat lift and maintenance facility and modified the timing of several condition requirements. Prior to the determination of MOD 2, Term B1 of the Concept Approval was satisfied to the satisfaction of NSW DPE in July 2014. The term required that a marina design review be undertaken with the aim of improving the environmental performance of the conceptual marina layout. This review was undertaken and agreed to, and largely involved modification to the type, shape and location of the marina breakwater. The MOD 2 approval incorporated those design amendments (and a range of other modifications).

- MOD 3 (this application) – Was submitted to the NSW DPE in October 2013 for the addition of a helipad to the Concept Plan approval. The NSW DPE confirmed in December 2013 that the original Trinity Point Concept Plan April 2008 Environmental Assessment Requirements as they relate to the helipad are to guide the preparation of an EA. Revised and specifically targeted (for the helipad) Secretary's Environmental Assessment Requirements (SEARs) were issued by the NSW DPE in July 2016 (refer to **Appendix B**). This EA has been prepared in accordance with the July 2016 SEARs.

- MOD 5 (Approved by PAC on 25 November 2015) – Amended details for the land based component of the project being to the northern tourism and hospitality precinct and to the central/southern accommodation precinct to support and reinforce the scale of tourist and hospitality uses and 'destination' outcome desired. Amendments included changes to site planning, increase in the number of accommodation units (from 150 to 315), change in building form, setbacks and heights with an increase in FSR to 0.8:1, siting and enhancement of public access linkages and interfaces through and around the site, updates to access and on site parking and updates to flood planning levels. Mod 5 included approval for modified urban design controls (guidelines), which were confirmed by NSW DPE to meet the requirements of Term B5 in December 2015.

- Mod 6 (Approved 15 December 2015) – Provided approval for rewording of Condition C22B to allow for the installation of the heritage interpretation devices to occur prior to the issue of an Occupation Certificate.

As a result of the Part 3A repeal (and given that no specific development within the Trinity Point Concept Approval is triggered as a State Significant Development under SEPP State and Regional Development 2011), NSW DPE have confirmed that future applications are to be subject to Part 4 of the EP&A Act 1979.

The following Development Applications have been approved by the Joint Regional Planning Panel (JRPP), following assessment by Lake Macquarie City Council (LMCC):

- DA 1503/2014 (approved 22 June 2015). Consent was granted for the Stage 1 Marina (94 berths) and associated building, car parking, landscaping and stormwater infrastructure works. Construction of the marina commenced in February 2016.

- DA 1731/2015 (approval 5 May 2016) for tourism and hospitality. Consent was granted for a 65 room hotel, restaurant and function centre.

- DA 496/2015 (approved 5 May 2016) for serviced and residential apartments. Consent was granted for 4 buildings consisting of 34 residential apartments and 93 tourist apartments.

The following Development Applications have been submitted to Lake Macquarie City Council, but are as yet undetermined:

- DA 1176/2014 (lodged July 2014) for a proposed helipad. In addition to the MOD 3 Concept Plan modification, separate development consent is required to be obtained under Part 4 of the Environmental Planning & Assessment Act 1979 for the construction and operation of the proposed helipad. This is the subject of a separate Development Application that has been lodged with Lake Macquarie City Council (DA 1176/2014). This application is deemed to be a Designated Development pursuant to Schedule 3 Part 1 Section 2 (Aircraft Facilities) of the Environmental Planning & Assessment Regulation 2000 and the NSW DPE has advised their Secretary's Environmental Assessment Requirements for the Environmental Impact Statement (SEAR 846 issued July 2016).

  Assessment of this application is on hold, pending determination of MOD 3 by the NSW DPE. Following determination of MOD 3, it is intended that an Environmental Impact Statement (EIS) will be submitted to accompany the Development Application. NSW DPE and LMCC has been consulted with and are aware of this process.

- DA 1046/2016 (lodged in July 2016) to establish the overarching titling structure for the land based project site.

3.0 Proposed Modification

3.1 OBJECTIVES

The key objectives of the proposed modification are as follows:

- To modify Concept Approval 06_0309 for the inclusion of a proposed helipad. The proposed helipad is to be integrated into the approved marina design.
- To provide a helipad facility, which will support the operation of a five star resort within a regional tourist destination on the western side of Lake Macquarie.
- The proposed helipad will offer an alternate transportation means for visitors accessing the Trinity Point Marina and Mixed Use development.
- Subject to separate Development Application (inclusive of an Environmental Impact Statement), allow the construction and operation of a helipad attached to the approved and under construction Trinity Point marina.

Refer to **Section 8.0** which expands on the justification for the modification.

3.2 DESCRIPTION OF THE PROPOSED HELIPAD

Full construction, design and operational detail of the proposed helipad will be contained within an Environmental Impact Statement to accompany DA 1176/2014 (previously lodged with LMCC and currently undetermined). The EIS will be lodged with LMCC following determination of this MOD 3 request.

Concept development plans of the proposed helipad are provided within **Appendix C** of this EA.

3.2.1 Concept Proposed Helipad Design

The proposed helipad has been designed to form an integrated component of the marina. The key concept details of the proposed helipad are shown in **Figures 9-11** below and are described below. Whilst the modification may not need to approve these specific plans and details, they have been developed to inform various assessments required to be considered in determining the merits of a helipad forming part of the concept plan

- A 20m x 20m pontoon with 4 x corner telescopic piles. The corner telescopic piles are anticipated to be 600mm diameter. The piles will not extend above the pontoon so as not to present a safety hazard during helicopter movement, and their installation does not require dredging.
- The pontoon will be connected to the marina by a 1.5m wide x 17m long gangway and three, 3m x 4m pontoons, with one pile. In accordance with Civil Aviation Safety Authority (CASA) guidelines, the pontoons will not contain a handrail.
- The pontoon will be constructed of concrete to match the design of the marina breakwater structure. The gangway will be a hinged aluminium gangway.

- The helipad pontoon will sit in the water similar to the marina outer breakwater structure. Preliminary engineering identifies that the helipad will sit 700mm above water level with 600mm draught below water level.

- Helipad marking will be consistent with Civil Aviation Safety Authority (CASA) guidelines.

- Water quality measures will be implemented including:

    - Bunding of the helipad to prevent runoff from directly entering the lake;
    - Provision of readily accessible oil / fuel spill kits and containment boom; and
    - First flush treatment for the deck of the pontoon structure.

- The marina is connected to services, which will, where necessary, also service the helipad.

- Provision of two (2) 9kg fire extinguishers in red cabinets on the marina breakwater.

- A wind indicator will be attached to a marina pole as required.

- A bollard and chain will be installed on the marina at the gangway connection to restrict access to the helipad. Similarly, two (2) bollards will be installed on the marina gangway either side of the managed safety zone (refer operational details below) so that access is physically restricted within the managed safety zone on the marina breakwater during helicopter take-off and landing movements. Access to this part of the breakwater is security gate controlled from the land, so the control will be for berth owners, or any public utilising the causal berthing further along the breakwater.

- Two (2) flashing lights will be installed to marina pillars for use when a helicopter take-off or landing is occurring.

- An eastern cardinal marker will be located 30m east of the helipad pontoon.

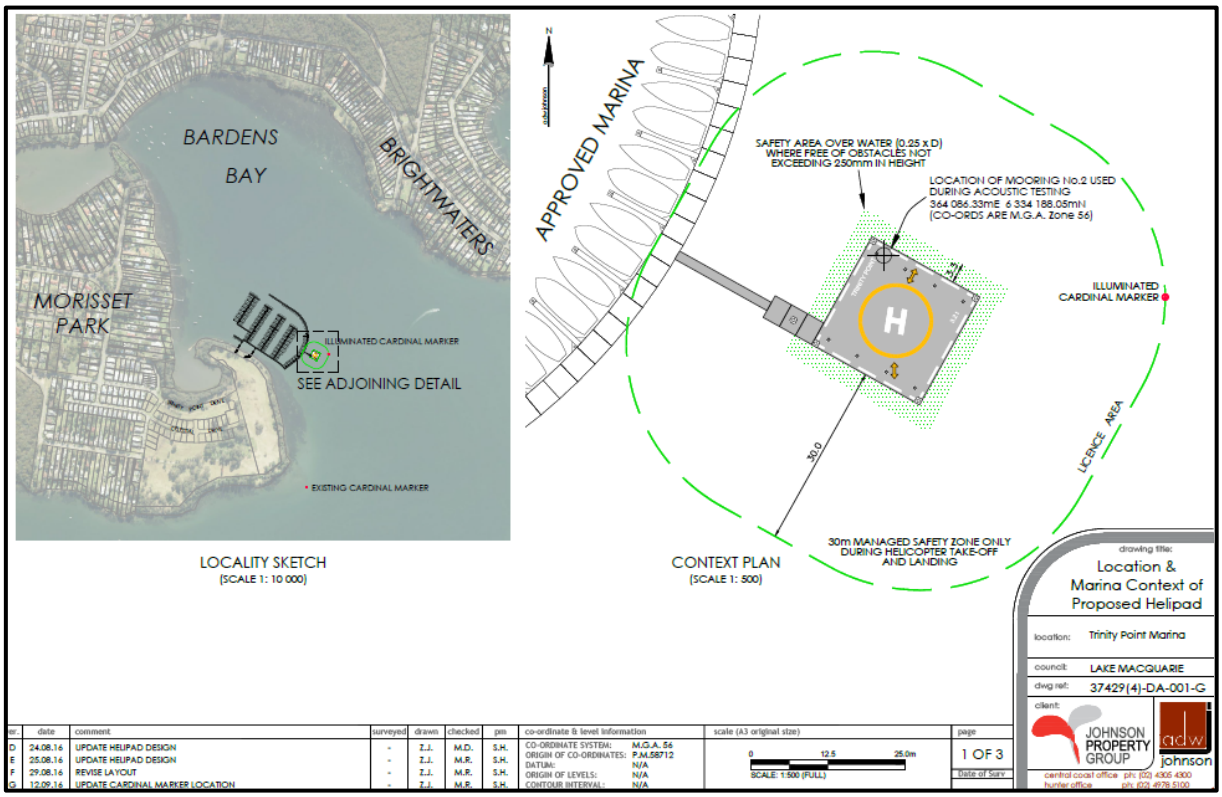


Figure 9 - Proposed Helipad.

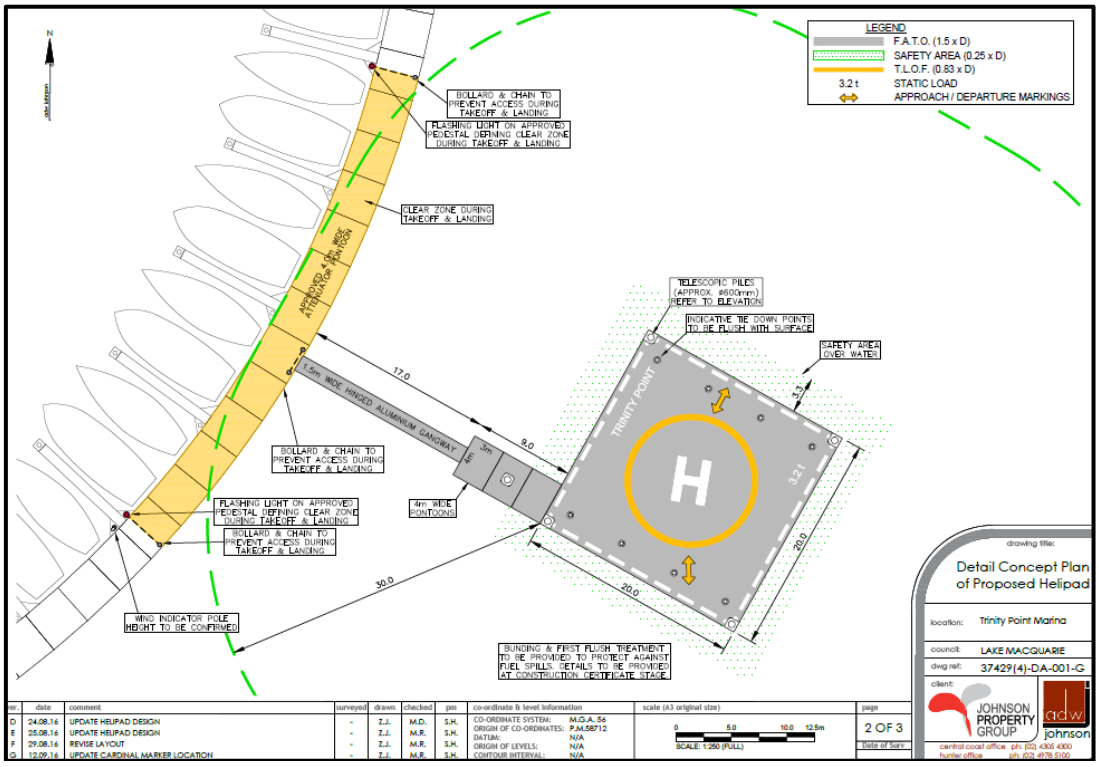


Figure 10 - Concept Proposed Helipad Design.

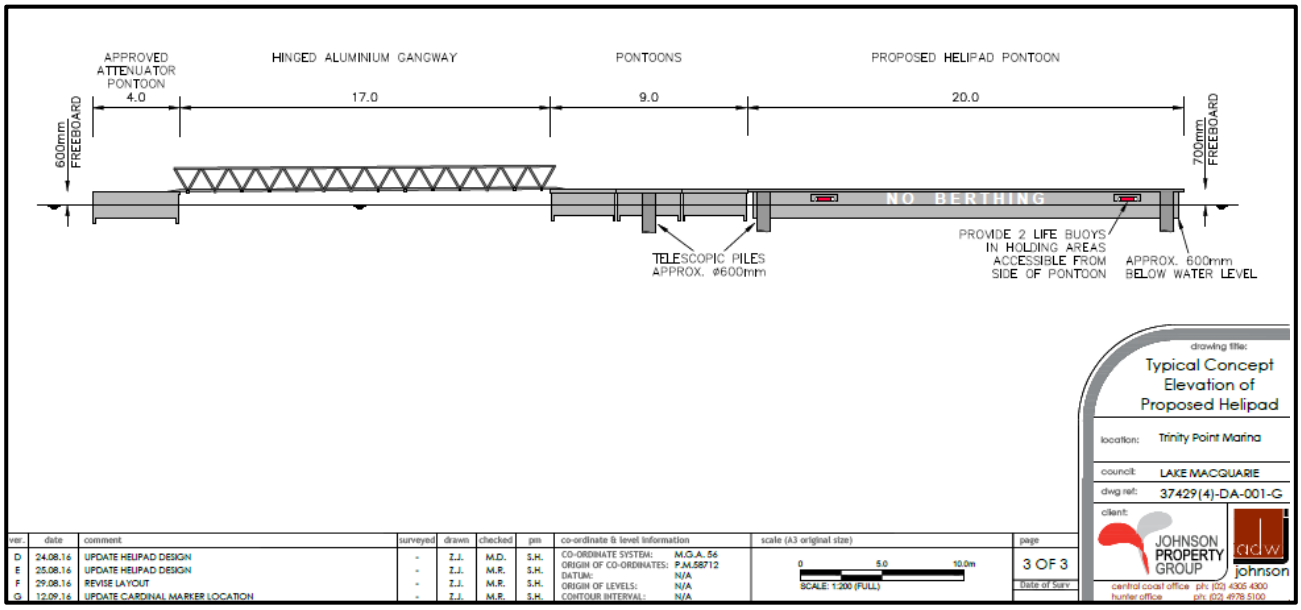


Figure 11 - Concept Proposed Helipad Elevation.

3.2.2 Proposed Helipad Operation

The key concept operational details for the proposed helipad are as follows:

- A maximum of eight (8) movements per day (ie. 4 landings and 4 departures).
- A maximum of 38 movements per week (ie. 19 landings and 19 departures).
- Operating hours from 8am (Mon-Sat) and from 9am (Sun and public holidays), through to end of daylight (with time seasonally variable), with no night time use.
- A 30 metre wide managed safety zone (during helicopter landing and take-off only) measured from the edge of the helipad will be implemented during take off and landing movements. The safety zone will be managed by appropriately qualified marina staff in accordance with an operations manual. This includes two areas – access control on the marina breakwater structure (via use of bollards and chains) and exclusion of persons and craft from within the waters that form part of the safety zone.

  The 30m wide managed safety zone will not apply during times when no helicopters are arriving at or departing the site. The helipad will however remain off limits to the general public at all times and this will be controlled by a bollard and chain on the marina breakwater where it connects with the gangway access to the helipad.

- Preferred flight paths have been acoustically tested and designed to cater to different wind directions. The preferred flight paths are shown in **Figure 12** below and are as follows:
  - Path A which involves approaching the helipad from the south (over water) and exits the helipad to the south (over water) in a clockwise direction. This flight path is suitable when no prevailing winds, in all calm conditions and when the wind is from the north, north east, north west and east.
  - Path B1 which involves approaching the helipad from the south (over water) and exits the helipad to the south (over water) in an anti clockwise direction. This flight path is suitable when the wind is from the north west, west and south west.

- Path B2 which involves approaching the helipad from the south (over water) and exits the helipad to the south (over water) in an anti clockwise direction. This flight path is designed for helicopter landing and take off in a strong southerly wind. The flight path is suitable when the wind is from the south, south east and south west.
- Path C which involves approaching from the north and exiting to the south (over water). This path also provides an option for a helicopter, having departed to the south to conduct a turn movement that allows it to travel north, if desired. This flight path is suitable when the wind is from the south west, south and south east.

- A 'prior permission' protocol is intended. This will enable information to be communicated and agreed to by users of the helipad, including type of helicopter that can land, fly neighbourhly procedures and avoid areas, preferred flight paths, operating hours, and can be used as part of registering and demonstrating compliance with maximum daily and weekly movements.

- The proposed helipad has been designed and assessed to be suitable for use by small turbine engine helicopters, with occassionally medium sized helicopters, and includes the following helicopter types:

  - Bell 407
  - Bell 206B
  - Bell 206L
  - McDonnell Douglas MD 500 C/D/E
  - Airbus H125 (formally Ecureuil AS350)
  - Airbus 120
  - Airbus 130
  - Airbus 135
  - Agusta Westland AW109.

  The specifications of each of the above helicopters is provided within the Helicopter Landing Site Analysis prepared by AviPro in **Appendix D**. Acoustic testing undertaken has considered usage of the helipad by the above range of helicopters. Additionally, to limit use by inexperienced pilots, Robinson R22/44 are precluded. Joyflights are also precluded.

- No refuelling of helicopters is proposed.

- No maintenance of helicopters is proposed.

- A draft Helipad Operations Manual has been prepared by AviPro and is provided within **Appendix D** of this EA. This illustrates the type of operational control intended and consider critical to the the successful co-existence of the helipad with the marina and tourist destination, boat owners, pilots and helicopter operators, visitors arriving and departing by helicopter, the public that lives around Bardens Bay and recreational users of the waters around Bardens Bay.

Figure 12a - Preferred Approach & Departure Path A (AviPro). **Figure 12b - Preferred Approach & Departure Path B1 (AviPro).**

Figure 12c - Preferred Approach & Departure Path B2 (AviPro). **Figure 12d - Preferred Approach & Departure Path C (AviPro).**

3.3 CHANGES SOUGHT TO CONCEPT PLAN APPROVAL

This application seeks that MP 06_0309 be updated to enable a helipad, connected to the approved marina, to be included within the concept plan.

This EA report provides a range of considerations for the proposed helipad, which have been incorporated at this concept plan stage in order to minimise the impact of the use on others, and provide for operational parameters that have been relied upon in the technical assessments.

In addition to incorporating that land use and updating development descriptions within any updated terms of concept plan approval, NSW DPE and the determining authority may choose to apply specific development parameters and requirements that apply to any application for a helipad. This may arise from their review of the environmental assessment and consideration of the SEARs, and outcomes from public exhibition and assessment. Where relevant, those would then sit within the modified concept approval and consistency with those will be required for subsequent construction and operation of the use.

The structure of MP 06_0309 currently includes a set of Urban Design Guidelines (UDG) that has most recently been approved by NSW DPE in December 2015, under the requirements of Term B5 of the approval. That includes an indicative summary figure, and a set of principles on key land uses and aspects of the concept plan.

Figures 1 and 8 earlier overlays the addition of a proposed helipad onto the approved concept plan. This is supplied as an A3 plan in **Appendix L**. It is requested that this updated plan be incorporated into the approved documentation.

Additionally, noting the structure of the approved UDG (Nov 2015), it may be appropriate to consolidate the critical aspects of the proposed land use into a single new principle relating to the proposed helipad, similar to the principle that exists for the marina. A draft of the content for a principle has been prepared for consideration as part of the modification application (refer also **Appendix L**).

It is not intended to provide any new Statement of Commitments associated with this modification, noting that key commitments associated with the proposed use are included within the draft helipad principle.

3.4 DEVELOPMENT OPTIONS

The helipad is proposed to be integrated into the concept approved tourist and marina destination. The location of the proposed helipad is considered suitable based on physical environmental characteristics such as:

- Integration into approved marina structures, access and operations, and part of an active marina precinct;
- Well clear of established sea grass;
- Adequate water depth with limited implications; and
- Adequate hydrological, coastal and water quality conditions.

It is noted that as part of previous assessments for the marina, the foreshore edge of the Trinity Point site was assessed for site suitability based on the following criteria:

- Consideration of sensitive vegetation (ie. seagrass); and
- Bathymetry of near shore water area.

The proposed location of the helipad is logical from an access, operational and environmental management point of view. The helipad will require no dredging, has negligible impact on sensitive vegetation, and accordingly the location of the proposed helipad is suitable.

It is noted that Trinity Point is a unique site on Lake Macquarie as it is one of very few edges of the lake that are zoned for the purpose of tourism and one of a few that also has the capacity and approval for a marina supplemented by a helipad that can be constructed without significant environmental impacts such as loss of vegetation, loss of sea grass or impacts associated with dredging activity.

3.4.1 Alternate Locations within the LGA

During public consultation undertaken, two alternate locations for arrival and departure by helicopter were suggested for consideration. These locations included the Lake Macquarie Airport (also known as Pelican or Belmont Airport) and the Morisset Showground. These locations are shown in **Figure 13** below.

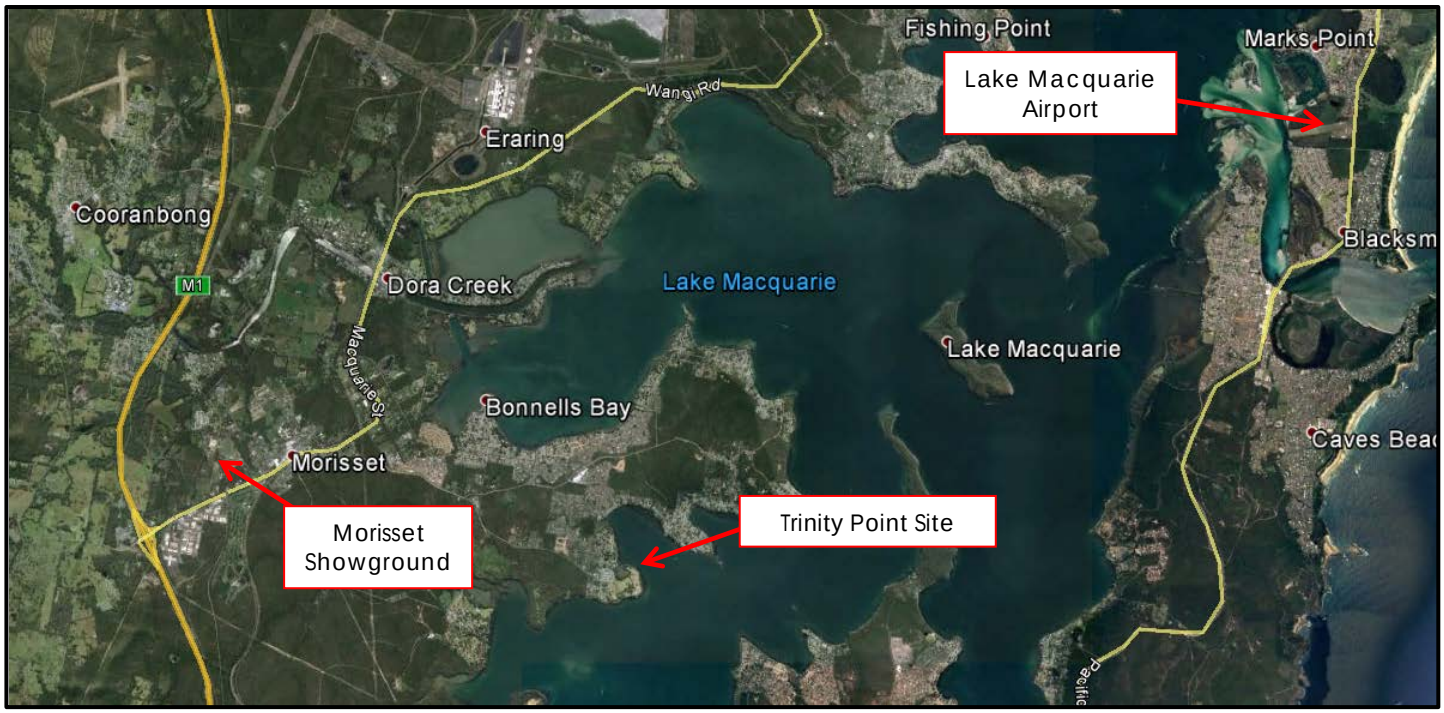


Figure 13 - Alternate Locations Considered.

The key benefit of the helipad proposal is that it will allow visitors to directly access the Trinity Point site, providing great convenience and time saving when compared with travel by road or boat, adding to the 'destination' and sense of arrival at the Trinity Point site. For example, travel time from Sydney Airport to the site by helicopter is approximately 35 minutes. Relocating the helipad away from the Trinity Point development, whether north east across Lake Macquarie to the airport or west to the Morisset showground (were these available) will see those benefits lost.

The following is noted in relation to the two alternate options identified:

Lake Macquarie Airport

This alternative would involve visitors arriving or departing by helicopter from the Lake Macquarie Airport and then ferried to / from the Trinity Point site by a boat.

This option would require a visitor to undertake the following process for a return two way trip:

1. A helicopter would land at Lake Macquarie Airport.
2. The visitor would then be required to exit the helicopter and catch a taxi or pre-arranged transfer shuttle to a nearby jetty for boat transport to the site (it is noted that there is no jetty within walking distance from the airport). It is estimated that this process would take approximately 20 minutes.
3. Boat transport to the Trinity Point Marina. It is anticipated that this trip would take approximately 20 minutes.
4. Alternatively, a taxi or shuttle service directly to the site (by road) from Lake Macquarie Airport would involve an approximate 53 minute trip.

The above steps would be reversed for departure.

Based on the above estimates, it can be seen that a return trip to the Trinity Point site using this option would result in a visitor accruing approximately 1hour 30 minutes in transfer / travel time, once a helicopter is local. Such timing constraints and lack of convenience is not aligned to the justification for the facility.

This option would also preclude other uses of the helipad in supporting destination charters from facilities linked onto other trips (ie. Cruise Industry, Hunter Valley).

This option is not considered practical or feasible in this instance as it would remove the time benefit and attraction of being able to land and depart directly from the Trinity Point site.

By establishing the proposed helipad attached to the marina (as proposed), Trinity Point will have full control of all helipad operations. This has substantial benefits in terms of management, safety and control. If the helipad was located at Lake Macquarie Airport, JPG will have no operational control.

Based on the above, the Lake Macquarie Airport alternate was discounted by the proponent as it will not achieve objectives.

Morisset Showground

This alternate option would involve visitors arriving or departing by helicopter from the Morisset Showground (at Ourimbah Street, Morisset) and then transported to / from the Trinity Point site by a vehicle transfer.

This option would require a visitor to Trinity Point to undertake the following process:

1. A helicopter would land at Morisset Showground.
2. The visitor would then be required to exit the helicopter and catch a taxi or pre-arranged transfer shuttle to the Trinity Point site. It is estimated that this transfer process would take approximately 20 minutes.

The above steps would be reversed for departure.

Based on the above timing estimates, a return transfer would result in a tourist accruing approximately 40 minutes in transfer time.

Similar to the above, this option would remove the time benefit and attraction of being able to be land and depart directly from the Trinity Point site. The following is also noted:

- The Morisset Showground is zoned RE1 and a 'helipad' is prohibited in this zone.
- No acoustic assessment has demonstrated this site would be suitable relative to residential areas (to the north, east and south east) and would not facilitate approach and departure over water rather land as proposed.
- It is considered that establishing helipad connected to the Trinity Point Marina (on the water) is a superior outcome to locating a helipad close to the centre of Morisset.
- JPG does not have permission to establish a helipad on the community owned showground, and conflict with showground uses and events are likely.

Based on the above, the Morisset Showground alternate was also discounted by the proponent.

3.4.2 Alternate Locations Integrated with Trinity Point Development

JPG considered three (3) alternate options for the integration of the proposed helipad into the broader Marina and Mixed Use Development site. These included two (2) locations attached to the marina and a land based option.

Water Based Location Options

Earlier versions included a wider marina extending further out into Bardens Bay, a larger helipad pontoon that was sited closer to the opposite shoreline of Bardens Bay.

Provided below is a plan that shows two (2) alternate helipad locations that were considered and assessed during more recent acoustic and aviation investigations. The red 'proposed helipad' is the location that has been selected by JPG and forms the basis of this EA. Whilst able to satisfy acoustic and aviation criteria, the blue 'alternate helipad' was discounted for a number of reasons and is discussed below.

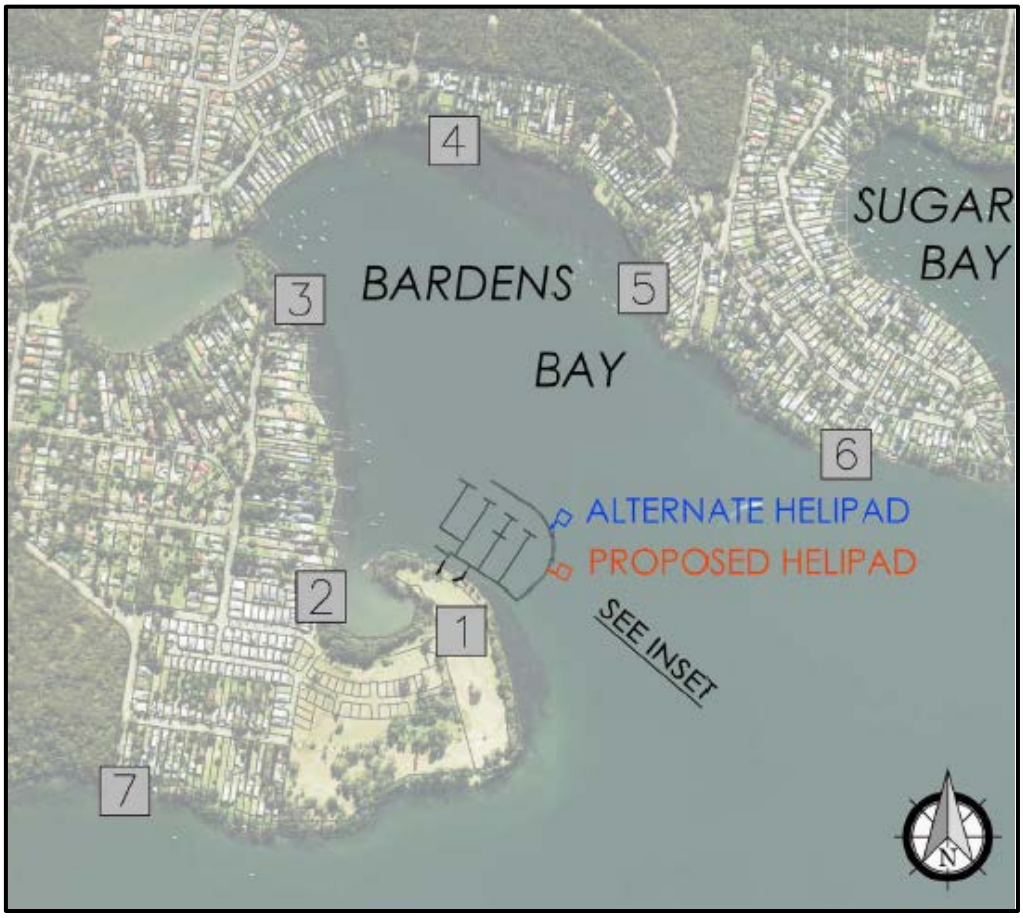


Figure 14 - Alternate Proposed Helipad Locations Considered Integrated into Approved Marina.

Condition B1 of the Concept Approval required a review of the concept marina design to ensure that environmental performance is optimised and to be accepted by the DPE Secretary (formerly the Director – General) prior to lodgement of the development application for a marina. The proponent commissioned the services of marina expert Royal Haskoning DHV to undertake the concept design review and on 9 July 2014 the NSW DPE confirmed that the marina design review was acceptable and that Condition B1 of the Concept Approval has been satisfied.

This process facilitated the marina design as ultimately approved (and now under construction), being the optimal outcome. Among a number of benefits (ecological, visual, hydrodynamics, water quality and protection from southerly weather patterns) one of the key changes made to the design included a reduction in the extent to which the marina footprint extended into Bardens Bay and elongating the footprint to the south. For comparison, provided below is the original Concept Approved marina design (**Figure 15**) and a comparison of the original concept approved and modified concept marina layouts (**Figure 16** below shows the original approved concept in grey and the approved modified marina design in red). The following plans illustrate the ultimate 188 berth capacity, noting the marina that has development consent and is under construction is for the first 94 berths only (plus causal public berthing).

Figure 15 - Original Concept Approved 188 Berth Marina Layout.

Figure 16 - Comparison between Concept Approved (Grey) & Modified Approved Marina Design under Terms of Condition B1 and Mod 2.

(Red) Note: The Stage 1 Marina Consent is for the First 94 berths

Based on the above comparison, it can be seen that the approved marina resulted in a reduced intrusion of approximately 35m into Bardens Bay when compared with the Concept Approved marina. If the proposed helipad (which incorporates a 16m gangway and 3 x 3m long x 4m wide pontoons (ie. total combined gangway and pontoon length of 26m) connected to a 20m x 20m helipad), was proposed in the blue 'alternate' location (as shown in **Figure 16** above) the positive benefit of reducing the intrusion into Bardens Bay as a result of the Condition B1 design review would be partially lost.

Additionally, the proposed helipad location sits closer to the Trinity Point site which is beneficial in terms of physical access (ie. walking distance to and from the helipad from the Trinity Point site for visitors and for improved operational management). Aviation and acoustic consultants confirmed that appropriate approach and departure paths to avoid the marina and to largely operate over water and achieve acoustic compliance were available at both locations.

Based on the above, the 'preferred' location was selected by JPG instead of the 'alternate' location.

Land Based Option

Previously JPG considered the option of siting a helipad on Lot 31 DP 1117408 (which contains the land based components of the Trinity Point Marina and Mixed Use Development) being on the land or a rooftop.

The primary benefit of locating the proposed helipad attached to the marina (as proposed) allows the large majority of helicopter movements (both arrival and departure) to occur over the water. This largely reduces the need for any helicopter movements to occur over existing or future residential areas when below the 1000ft cruising altitude.

Additionally, the option of locating a helipad on Lot 31 was not considered feasible because it would substantially impact the ability of the full intent of the land based components of the Concept Approved development to be achieved due to:

- Underutilisation of scarce tourist zoned land, at the expense of the approved and justified scale of uses for the destination;
- Site size and building requirements to achieve densities as specified by the Concept Approval (as modified); and
- Helipad operational and management requirements such as the need for a 30m managed safety zone during helicopter arrival and departure and urban design and site planning implications.

3.4.3 Consequences of Not Proceeding

The impact of not proceeding with the proposed helipad will have the following impacts:

- A reduced range of land use and activities that work in synergy to ensure the success of the overall tourist destination;
- Loss of a fast and convenient access to the site with a consequential loss of market, including the ability to compete in the same market where operators offer helicopter services;
- A reduction in employment opportunities during construction of the helipad and also operationally; and
- Reduced (but mitigated) noise impact to nearby residents for approximately 30 minutes per day.

4.0 Site Analysis

This section provides the property description and owner's details, as well as a detailed site analysis and an overview of the affected environment.

4.1 PROPERTY DESCRIPTION

The area subject to the proposal is described as Part Reserve 10121129 Crown Land (Lake Macquarie). The proposed helipad site adjoins Part Lot 32 DP 1117408.

Figures 17 and **18** below shows the extent of the site.

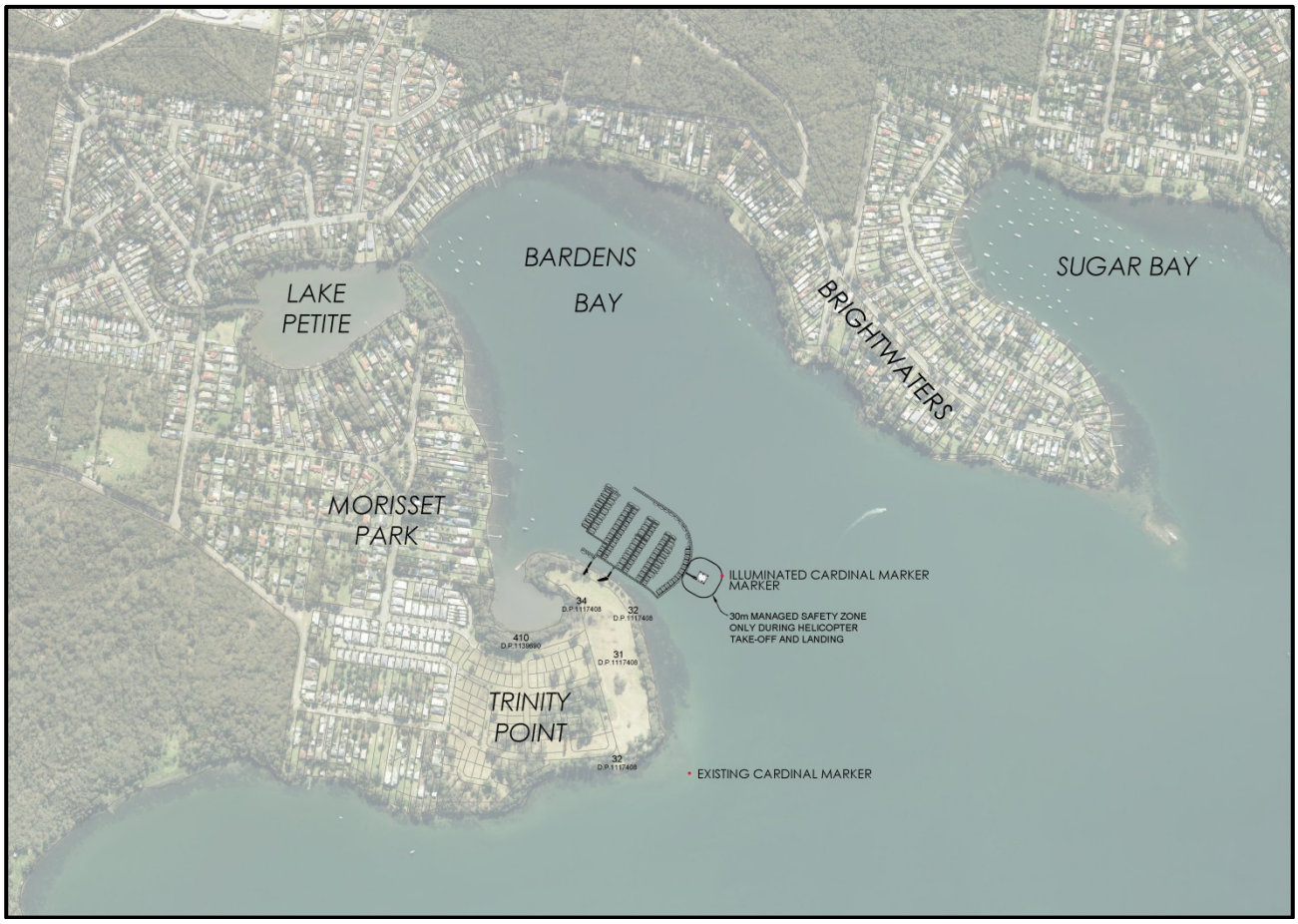


Figure 17 - Site Locality Plan.

Figure 18 - Aerial Image of Subject Site.

Figure 19 - Recent aerial photo looking east across MP06_0309 site and Lake Macquarie

Figure 20 - Recent aerial photo looking northwards across Bardens Bay.

A number of easements were established over Part Lot 32 under DP 1117408 (Public Reserve), intended to facilitate the construction, use and maintenance of structures to connect the marina on the lake through Lot 32 to the land based marina facilities on Lot 31 DP 1117408. Copies of the Deposited Plans and Certificate of Titles for these lands are provided within **Appendix A**.

4.2 THE LOCALITY

Trinity Point is located on the south western shores of Lake Macquarie in the southern area of Lake Macquarie. Lake Macquarie is one of the largest salt water lakes in Eastern Australia, some 125km north of Sydney. The lake has a water surface area of approximately 110km^2 and 170km of foreshore, and extends about 22km north to south, with a maximum width of about 10km. The lake is connected to the ocean through a narrow and shallow entrance channel located approximately midway along the lake extent at Swansea.

Trinity Point is located approximately 125km north of Sydney and the site is 5km east of the Morisset town centre within the Lake Macquarie Local Government Area (LGA) (refer **Figure 21**). Morisset has been identified in the Hunter Regional Plan 2036 as a 'Growth Area' and the Lower Hunter Regional Strategy as an 'Emerging Major Regional Centre', which is reinforced within the NSW 2021 Hunter Regional Action Plan. Morisset is well connected to the passenger rail network, the M1 motorway and the sub-arterial road that connects through the western side of Lake Macquarie.

Trinity Point is located on the Morisset Peninsula, an area of relatively low density residential neighbourhoods interspersed with bushland. The site is located on the foreshore of Bardens Bay, a sheltered bay on the southern side of Morisset Peninsula.

Further sections of this report outline other characteristics of the locality, the site and its context.

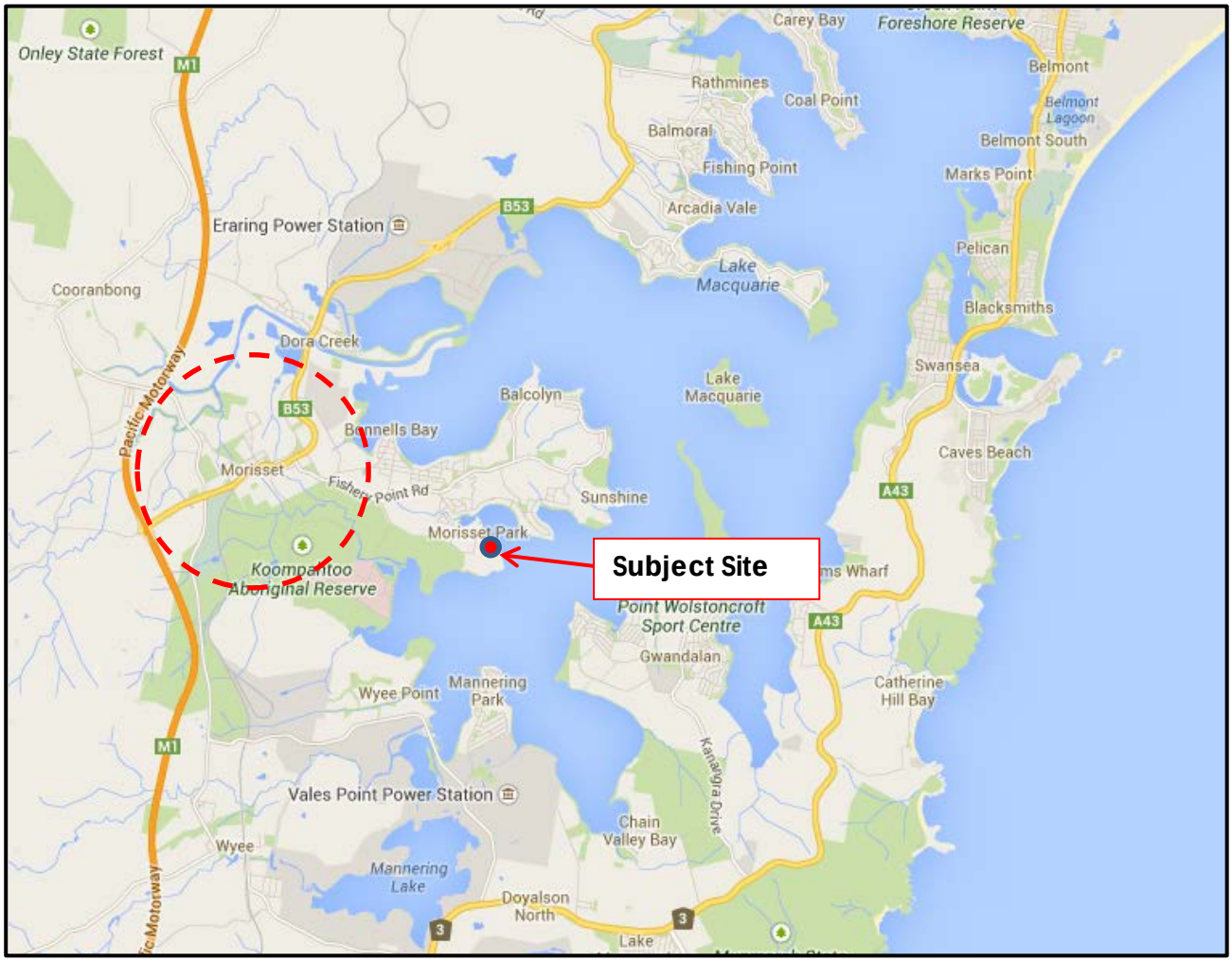


Figure 21 - Locality Plan.

4.3 CURRENT & HISTORICAL USES OF THE SUBJECT SITE

The subject site is located within part of Lake Macquarie (Crown Land Reserve 10121129) in Bardens Bay. The helipad is proposed to be integrated into the approved marina and will be physically connected to the south eastern side of the outer breakwater of the marina.

As previously noted, in 2009 the proponent received Part 3A Concept Approval for (as amended) a marina and mixed use development comprised of a 188 berth (staged) marina and associated facilities; 315 accommodation units (no more than 50 percent may be used for residential purposes); restaurant, café, function centre, shops & office; and parking and landscaping.

Since granting of the Concept Approval, a number of Modification Applications have been made and also a number of Development Applications have been approved to allow development of the Trinity Point Marina and Mixed Use development to progress. Section 2 of this EA describes these Modification and Development Applications. Stage 1 of the marina is currently under construction.
Prior to the Concept Approval, the tourist site adjoining the lake has had six distinct phases

of occupation over its history as follows:

1. Aboriginal occupation – use of the site by traditional owners of the area;
2. Early historic settlement (1875 – 1908);
3. Gorrick family (1908 – 1913) – credited with the construction of the first house on the site;
4. Bailey family (1913 – 1934) – a well-known figure of the early Australian film industry;
5. Little Sisters of Mary (1934 – 1947) – founders and caretakers of the St Joseph's Convalescents Home for Priests; and
6. Brothers of St John of God (1947 – 2005) – founders and custodians of 'Kendall Grange' school and children's home.

4.4 ADJOINING LANDS

The following is noted in relation to lands immediately adjoining the site subject of this helipad application (refer **Figure 17** above):

- The site is bound by the waters of Lake Macquarie (Bardens Bay) to the east and south;
- The approved marina is located to the north and west. Further west is Part Lot 32 DP 1117408 (Public Reserve) and Lot 31 DP 1117408 which contains the abovementioned approvals; and
- Land to the west of Lot 31 is being progressively developed by JPG under a range of separate development consents for residential subdivision and terrace housing.

A description of the broader surrounding land uses and visual environment is included in **Section 4.14** of this EA.

4.5 TERRESTRIAL & AQUATIC ECOLOGY

Comprehensive terrestrial and aquatic flora and fauna surveys and assessments were undertaken and informed the Concept Approval and the marina Development Application processes, and form part of the Concept Approval and Marina Approvals respectively. As part of the marina assessment, updated vegetation community mapping was undertaken by terrestrial ecologists and a verification of seagrass mapping was undertaken by aquatic ecologists, with composite mapping produced.

Seagrass has been extensively mapped and verified (refer to **Appendix F**) and includes a narrow largely continuous fringing bed almost entirely of *Zostera* seagrass (and mostly very dense) with widths of 11-16m, which further south of the approved marina site becomes progressively more patchy, fragmented and mixed with *Halophila* and mussel clumps in a broadened bed. There is sparse and very patchy distribution of *Zostera* throughout the unnamed inlet to the west of the site. This inlet is capable of supporting this seagrass with its distribution normally variable.
The seagrass beds were judged to be good with some area of light epiphytic algae cover,

but generally with no epiphytic algae growth. The declared noxious marine algae *Caulerpa taxiflora* has not been recorded during any macro algae assessment around Trinity Point between 2008-2014.

Provided below is a figure demonstrating the locality of the mapped seagrass extracted from the Baseline Verification Report that accompanied the marina EIS. **Figure 2** of this EA also provides a site plan which shows the extent of the seagrass adjacent to the foreshore of Lot 32 relative to the proposed helipad location. There is no seagrass bed within the footprint of the helipad, with separation of some 107m further south west.

During seagrass surveys, searches for syngnathids (seahorses, pipefish and the like) were undertaken.

Figure 22 - Seagrass Mapping.

Lot 31 (the main development site) is generally devoid of vegetation in the area of development. Very small areas of casuarina regrowth now extend into parts of Lot 31 along its western boundary with a juvenile casuarina patch also within Lot 31. A dense patch of Lantana is sited in the western corner of Lot 31. These are to be removed under DA 1503/2014.

The unnamed bay to the west (and the public reserve, Lot 32) include fringing mangrove and saltmarsh communities and casuarina forest community. Three saltmarsh community variants exist, and despite the number of weed species recorded, the overall areas of weed cover are small and the saltmarsh communities are judged to be in good health, with the community around the northern tip of the site in very good condition. Casuarina forest also extends around the northern tip of the reserve, with the casuarina forest extending also along part of the eastern foreshore reserve. There are additional casuarina trees and two eucalypt trees spotted around the eastern foreshore adjacent to the northern end of the hotel accommodation/marina building. Individual trees continue to be more sparsely sited parts of the eastern foreshore reserve. The eastern foreshore vegetation then transitions back into casuarina forest near the southern edge of the marina area, and then further south transitions into eucalyptus and angophora open forest through to Bluff Point.

Each of the native vegetation communities (mangroves, saltmarsh and casuarina forest) mapped is representative of Endangered Ecological Communities (EEC). Previous assessments did not consider the communities to be groundwater dependent ecosystems given they exist in areas where groundwater is controlled by water levels in Lake Macquarie.

Provided below as **Figures 23 and 24** is the updated vegetation community mapping of the site prepared by RPS.

The land is otherwise covered by kikuyu grass through to the water's edge, including along the eastern foreshore edge of the marina and helipad site.

Figure 23 - Vegetation Community Mapping (Original).

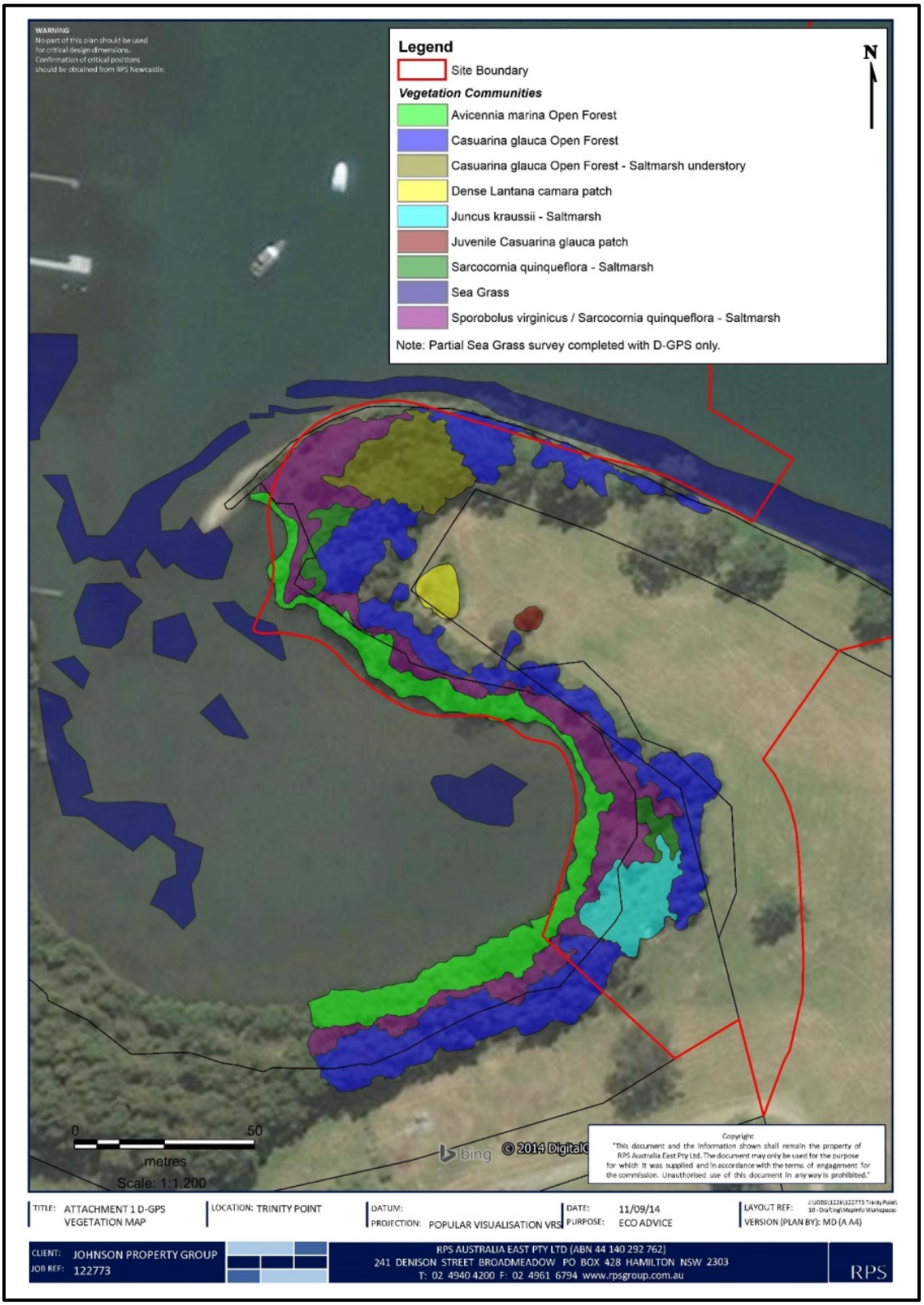


Figure 24 - Vegetation Community Mapping (Updated).

Aquatic and terrestrial ecology are addressed in **Section 7.6** of this EA and in **Appendix F.**

4.6 MARINE ENVIRONMENT

Detailed assessment of the marine environment was undertaken as part of the marina development approval. Assessment of the proposed helipad relevant to the marine environment is provided within **Section 7.5** of this EA.

4.6.1 Water Depths

Water depths of Bardens Bay, within proximity to the proposed helipad site (being the marina site), vary from zero at the shoreline to a maximum of approximately 5.8m below AHD (-5.75 AHD) near the eastern corner of the proposed helipad. Water depths increase from zero to 3m below AHD within approximately 30m of the shoreline (refer water depth survey included in **Appendix A)**. Anecdotal evidence reported by one long-time resident of the area suggests that dredging may have occurred at the site in the early 1900's which shaped the bathymetry in this way.

A confined shallow unnamed bay is located to the north-west of the site.

4.6.2 Hydrodynamics

Comprehensive identification and baseline observations of hydrodynamic processes within Bardens Bay and the approved marina site were undertaken and informed the Concept Approval process, and have more recently been subject to additional data collection, analysis and verification (including of the 3D hydrodynamic model) for baseline purposes undertaken as part of the Stage 1 Marina EIS.

The 3D hydrodynamic model has been verified against available and new data sets, and used to simulate circulation patterns in the south western portion of Lake Macquarie due to the effects of tide and wind, for a range of average conditions under existing (no marina conditions).

Tidal Hydraulics

The tidal hydraulics of Lake Macquarie has been well documented, and the tidal driven currents of Bardens Bay have very small (negligible) magnitude. Swansea Channel, the ocean inlet to the lake, is some 4km long, narrow and shallow, thereby constricting conveyance of astronomical tide into the lake, resulting in relatively small tidal variation in the lake. The characteristics of the tidal hydraulics of Lake Macquarie were described in the Lake Macquarie Estuary Processes Study (AWACS, 1995). In this study it was found that maximum spring tidal ranges within the lake typically reached about 0.2m.

The mean lake level is typically super elevated 0.07m above mean sea level. It has been estimated that only 1% of the lake volume exchanges with ocean waters during an average tidal cycle. Notwithstanding this characteristic of the lake, hydrodynamic modelling completed includes a full description of tidal hydraulics. When incorporated into the model, tidal currents are less than 0.01m/s during typical spring tide conditions, with tidal current in the main channel of the south western lake of 0.05m/s not penetrating into Bardens Bay.

Wind Driven Circulation

The dominant mechanism driving circulation within Bardens Bay is wind driven currents.

The weakest annual average wind conditions (generally mild winds and variable) are during autumn, with the strongest during summer (variable with afternoon sea breezes from the east to south east relatively consistent feature). Winter has persistent westerly and north westerly wind.

Both measured and modelled currents suggest that the site has a very low energy current environment.

Due to the general shape and bathymetry of Bardens Bay and south western Lake Macquarie, circulation between the Lake and the Bay is greatest under east to south wind directions. Under these conditions, surface flows enter across much of the Bays entrance generally in the direction of the wind. Along the eastern and western shorelines, significant intensification of the surface current occurs (0.1m/s compared to 0.03m/s or less in the middle of the Bays entrance), due to accumulation of surface currents due to shoreline alignment to wind direction, fetch length and water depths. The east to south winds promote a counter clockwise current at depth in the northern part of the Bay, with a return current in deeper layers recirculating water back to the lake (current speeds 0.03/s).

The persistent winds that commonly occur from the west through north west directions (whilst with lower current speeds and weaker circulation compared to the above described east to south winds) are the most significant in the net flushing regime of the Bay (as they occur on a more regular basis and the most persistent wind direction for all seasons except summer).

The existing flushing times (defined in terms of e-folding times) for Bardens Bay are within generally acceptable flushing limits for maintaining good water quality (modelled as 4.73 days during autumn and 2.27 days during summer, when as a generally rule flushing times of less than 7-10 days are generally acceptable).

Wind driven currents also transport sea grass wrack throughout the south western part of Lake Macquarie.

Waves

The sources of wave activity contributing to the wave climate at the site comprise local wind generated waves and boat wake. Ocean swell does not penetrate to the main body of Lake Macquarie. Wave climate data collected at the approved marina site has been used to inform wave climate design decisions for the concept marina structures by the marina builder.

4.6.3 Water Quality

Baseline surface water quality conditions at the approved marina site have been established.

Table 1 provides a summary of the water quality parameters and water quality profile measurements that form the baseline data.

Table 1 - Water Quality Baseline

Water Quality Parameters	Water Quality Profile Measurements
• Total Metals (As, Cd, Cr, Co, Cu, Pb, Mn, Mo, Ni, Ag, Sn, Zn); • Dissolved Metals (Cd, Cr, Cu, Sn, Zn); • Liable Copper • Tributyltin (TBT) • Mercury (total) • Total Suspended Solids • Ammonia as N	• Depth • Salinity • Electrical Conductivity (EC) • Dissolved Oxygen (DO) • pH • ORP • Turbidity

Water Quality Parameters	Water Quality Profile Measurements
• Total Nitrogen (inc NOx, TKN, TON) • Dissolved Oxygen Nitrogen • Total Phosphorous as P • Dissolved Organic Phosphorous • Ortho Phosphorous; • Faecal (thermo tolerant coliforms); • Silica – reactive	• Temperature • Total Dissolved Solids (TDS)

Water quality parameter results obtained during the baseline data and verification programs were generally very low compared to the relevant ANZECC trigger values, with the majority of samples having contaminant concentrations below the relevant Limit of Reporting (LOR) values. The subject site is slightly to moderately disturbed, with copper and zinc concentrations exceeding the ANZECC Guideline 95% trigger value for marine waters. The majority of other metal concentrations fall below the ANZECC 95% trigger value for marine waters.

The water quality investigations previously undertaken across the lake concluded that Lake Macquarie is a highly modified water body with respect to copper concentrations. Moderate to high background levels were recorded with the 90% or 95% trigger values being exceeded at each location.

Faecal coliform sampling was undertaken by Royal Haskoning DHV on six occasions between 8 May 2014 and 12 June 2014 for comparison against the ANZECC Guidelines thresholds for primary and secondary recreational contact. Recorded levels were very low or negligible. The results were significantly lower than the ANZECC threshold values for primary and secondary contact recreation. It is also noted that faecal coliform results obtained throughout the SMEC baseline monitoring period were similarly low.

Physico-chemical water quality data collected using hand held instrumentation obtained during the SMEC and Royal Haskoning DHV baseline monitoring indicate that the water quality conditions in the study area during the baseline monitoring period to date are indicative of a typical estuary.

4.6.4 Sediment Quality

Baseline sediment quality conditions at the approved marina site have been established.

Table 2 provides a summary of the sediment quality parameters that form the baseline data.

Table 2 - Sediment Quality Baseline

Sediment Quality Parameters
• Moisture Content • Total Metals (Sd, Cd, Cr, Cu, Pb, Hg, Ni, Ag, Zn, Se, As, Al); • Tributyltin (TBT) • Total Organic Carbon (TOC) • Particle size distribution analysis

Douglas Partners previously undertook a comprehensive geochemical investigation in

2007 for the proposed marina development as part of the Concept Approval 06_0309 process. Sediment samples from 15 locations within the marina footprint (as per the Concept Application) were collected.

Results of the Douglas Partners investigation were generally considered to be representative of the baseline sediment quality conditions for the approved marina site. To confirm this, in 2012, SMEC undertook one-off surface sediment sampling within Bardens Bay and the results indicated that the lake bed sediments at the sampling sites were not contaminated, and it was inferred that the baseline sediment conditions established by Douglas Partners were confirmed.

As noted in Sections 2 and 3 of this EA, the location of the proposed marina has been amended from the original proposed location, therefore additional sediment sampling and analysis was undertaken by Royal Haskoning DHV in May 2014 (as part of the approved Marina EIS).

The Royal Haskoning DHV assessment confirmed that the sediment quality results collected by Douglas Partners in 2007 and SMEC in 2012 are representative of current conditions. Furthermore, it was confirmed that the lake bed sediments at the subject site are generally not contaminated (by comparison to ANZECC Interim Sediment Quality Guidelines, where available, for the baseline parameter). With the exception of arsenic and cadmium, all metal and TBT concentrations were below low trigger values. All cadmium concentrations were well below high trigger values and all cadmium concentration from 2012 and 2014 samples were below low trigger values. All arsenic concentrations were well below the high trigger values, and the concentrations have remained relatively consistent between 2007–2014.

4.6.5 Seabed, Shoreline Stability & Sediment Movements

Sediment is transported from the foreshore areas north of Bluff Point in a northward direction and is deposited at the end of the recurved spit coastal plan formation, on which the site is situated, in the small bay to the west of the site. Shoreline recession, as a result of this net loss of sediments from the foreshore areas, was previously estimated by Patterson Britton & Partners to be in the range of 0.15 – 0.25m/yr.

The presence of sea grass beds in the nearshore zone indicate that this sediment transport is limited to the sub aerial (above mean lake level) portion of the foreshore.

The *Lake Macquarie Estuary Processes Study* (AWACS, 1995) reports that sedimentation in areas of the lake away from the direct influence of creek outlets to be about 1mm/year. The site of the proposed marina development at Trinity Point is situated well away from any fluvial delta at the outlet of an urban creek catchment. Accordingly, mechanisms of sediment movement and deposition in such areas do not currently affect the site and would not be expected to do so for a highly extended period of time (ie. well beyond the life of the approved marina and proposed helipad facilities).

Based on the above it can be expected that sedimentation rates at the site are very low. This is supported by the existence of seagrass, the preservation of steep slopes from historical dredging (anecdotal evidence), and diver observations which have indicated a lack of any sign of large scale bed movement. Average sedimentation rates in the vicinity of the proposed floating marina would be expected to be in the order of 1.0mm/year.

4.7 GEOTECHNICAL

4.7.1 Mine Subsidence

The site is located in a mine subsidence district and consultation has been undertaken with the Mine Subsidence Board (MSB).

MSB have confirmed that there are unlikely to be any issues with the proposed helipad and design parameters will be in line with the approved marina. The approved marina parameters are:

- Subsidence: 150mm;
- Strains: +/- 2mm/m; and
- Tilt: 2mm/m.

Like the marina, these can be readily incorporated into detailed design of the proposed helipad structure.

4.7.2 Geotechnical

As part of the overall Concept Approval, the Environmental Assessment Report contained a Geotechnical Assessment prepared by Douglas Partners. This reporting remains current.

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.

Specifically, in relation to the location of the proposed helipad (attached to the approved marina), the following is noted:

- 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.

Geotechnical considerations are unlikely to adversely impact the proposed helipad development. This matter will be considered in detail in the future EIS for the helipad.

4.8 ACID SULPHATE SOILS

The site is identified as being within 'Class 1' acid sulphate soils, requiring development consent for any works undertaken below ground surface.

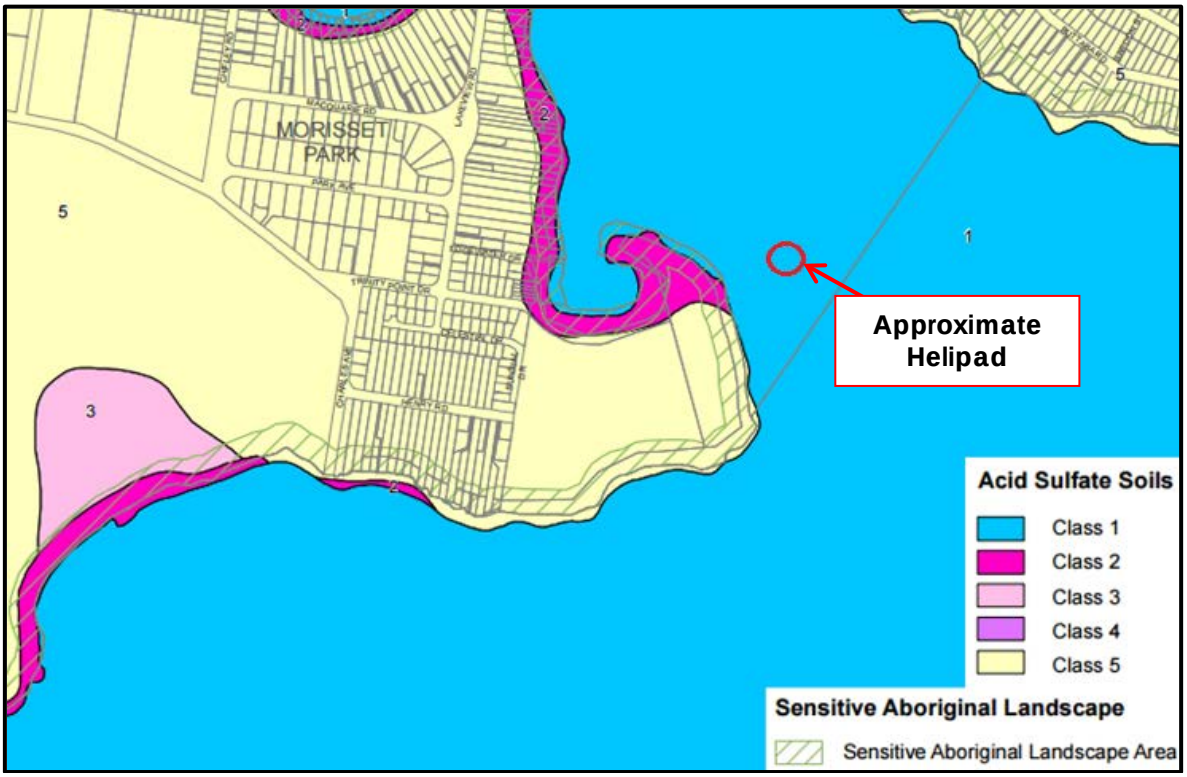


Figure 25 - Acid Sulphate Soils Map from LEP 2014.

The proposed development will not affect acid sulphate soils.

4.9 TRAFFIC, ACCESS & ROAD NETWORK

The purpose of the proposed helipad is to offer an alternate means of access to the site that is not reliant on the road network.

Notwithstanding, the broader Trinity Point marina and mixed use development will obtain its access from the road network being progressively constructed in the adjoining Trinity Point residential subdivision. Ultimately that will include the extension of Trinity Point Drive and Celestial Drive, which connect through to Trinity Point Drive and Morisset Park Road. The intersection of the local road system to Morisset Park Road has now been upgraded as part of the residential subdivision.

Trinity Point Drive will loop through the residential subdivision to connect to Morisset Park Road and to Henry Road (in both directions). Trinity Point Drive is a designated bus route with a bus layby constructed in the current stage of the residential subdivision.

Morisset Park Road provides a single lane of travel in both directions and is a local road providing access to the existing residential development in the locality of the subject site.

Morisset Park Road connects to Fishery Point Road, which is a local road providing single lane of travel in both directions.

Fishery Point Road connects with Macquarie Street via a 3-way give way controlled intersection which features additional turn lanes to reduce the delays and congestion for road users. Macquarie Street is the major road through the locality, which forms part of the regional road network and extends along the western side of Lake Macquarie.

It provides a connection to the south to the M1 Motorway that provides a connection between Sydney and Newcastle. Macquarie Street continues to run north along the western side of Lake Macquarie, connecting through major centres such as Toronto through the western suburbs of Newcastle. The Concept Approval provides for a monetary contribution towards the intersection to Macquarie Street.

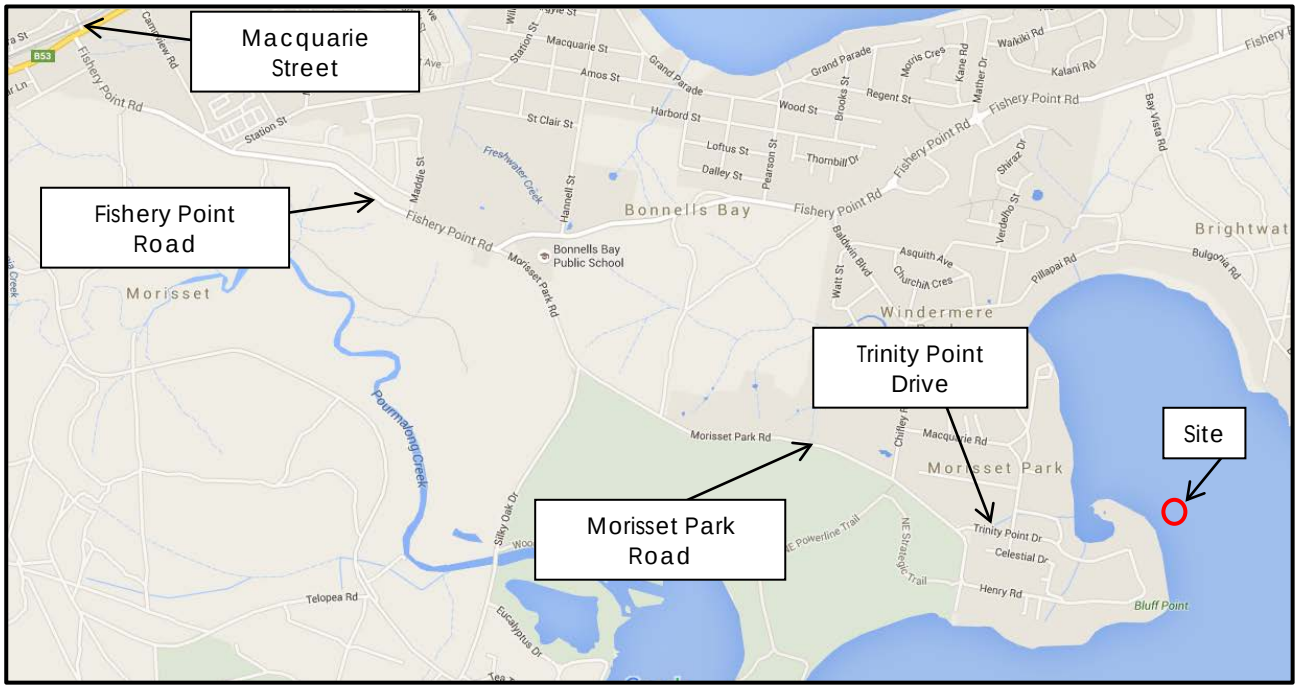


Figure 26 - Road Network Plan.

4.10 WATERWAY USE AND RECREATIONAL BOATING

A Recreational Boating Study was undertaken as part of the Stage 1 Marina approval (in accordance with Term C29 of the Trinity Point Concept Approval (06_0309). The survey was carried out on Easter Saturday 2014 (19 April 2014) between 7am and 5pm and analysis of satellite mapping between 2010 and 2014 as well as discussions with NSW Maritime, NSW Water Police and on water conversations with the boating community was undertaken. A further survey was carried out on 4 October 2014 in line with Concept Approval Term C29.

The study was undertaken to provide a 'snapshot' analysis of existing patterns of usage of the southern end of Lake Macquarie. The analysis included consideration of regular patterns of usage (ie. sailing clubs) and also developed a methodology to record 'irregular' usage patterns (ie. unorganised boating activities such as recreational fishing).

The assessment covered an area south of an imaginary line, west to east from Wangi Point to Swansea Flats, to the southern extremities of the water body of Lake Macquarie. The survey considered recreational usage of NSW Maritime mooring bays, boat ramps, on water activities and Aquatic License events.

The assessment noted the following in relation to existing usage patterns on southern Lake Macquarie:

Boat Ramps

- Within the study area there are 18 boat ramp locations giving access to trailerable vessels of various lengths;
- The majority of boat ramps were not heavily utilised; and
- Three sites, Dora Creek, Boyd's Hole (Swansea Flats), and the larger of the two at Frying Pan Bay were the heaviest utilised. These three service larger populated areas and are close to popular fishing areas.

Mooring Areas

- There are 22 mooring bays within the study area which are managed by NSW Maritime; and
- From the 22 mooring bays, there are 751 mooring allocations. Of these, during the survey, 73.2% were occupied in the AM, and 75.2% were occupied in the PM.

Vessel Survey Data

- During the surveys on 19 April 2014 and 4 October 2014, the number of vessels observed at anchor or moving was as shown in **Tables 3** and **4**; and

Table 3 - Vessel Observations – 19 April 2014

VESSEL	AM	PM
Fishing Boat	52	28
Dive	1	-
Cruiser	13	36
Houseboat	1	-
Kayak	3	2
Personal Water Craft	5	6
Ski Boat	13	11
Wakeboard	1	1
Yacht	16	56
Tinny Runabout	28	30
TOTAL:	**133**	**170**

Table 4 - Vessel Observations – 4 October 2014

VESSEL	AM	PM
Fishing Boat	49	54
Dive	0	0
Cruiser	22	28
Houseboat	1	0
Kayak	0	3
Personal Water Craft	7	7
Ski Boat	5	20
Wakeboard	0	2
Yacht	31	64
Tinny Runabout	2	6
TOTAL:	**117**	**184**

- Whilst there is a cross section of vessel activity the two major uses of the waterway are fishing and yachting. Fishing is predominantly limited to popular fishing areas (ie. North of Pulbah Island, Dora Creek entrance, and Gwandalan South).

  Yachting, whilst observed throughout the majority of the south Lake Macquarie waterway, was predominantly vessels transiting from the north end of the lake and were either day cruises utilising either Pulbah Island as a rounding mark or undertaking a day cruise to the southern end of the lake.

Aquatic License Holders

- There are six organisations with annual licenses granted to undertake organised events in southern Lake Macquarie. Of these, three are located within the study area and are primarily focused on small sailing vessel events with course layouts dependent on the weather patterns of the day; and

- Observations of all the approved aquatic licenses for south Lake Macquarie were that there were no events which included the Bardens Bay area as a destination.

Infrastructure

- Marine infrastructure in the southern end of the lake is very restricted with limited refueling available at Wyee Bay Marina and sewage pump out facilities at four locations being Frying Pan Bay, Dobell Park, Sunshine jetty, and Wangi Wangi Workers Club.

The following conclusions were drawn based on the above:

- The demonstrated vessel usage and numbers of southern Lake Macquarie do not show any significant usage pattern or vessel numbers which would restrict the community from accessing or utilising the waterway;

- The number of vessels observed on the waterway is too small a number to gather relevant data and impact of increased vessel traffic as a result of new marine infrastructure is not considered to be high;

- The southern area of Lake Macquarie is not significantly utilised and there have been no significant environmental or vessel incidents; and

- The 4 October 2014 survey supported the findings of the 19 April 2014 survey.

4.11 BUSHFIRE

The site is identified on Lake Macquarie Council's online mapping system as being Lake which is not or within close proximity to bushfire prone land.

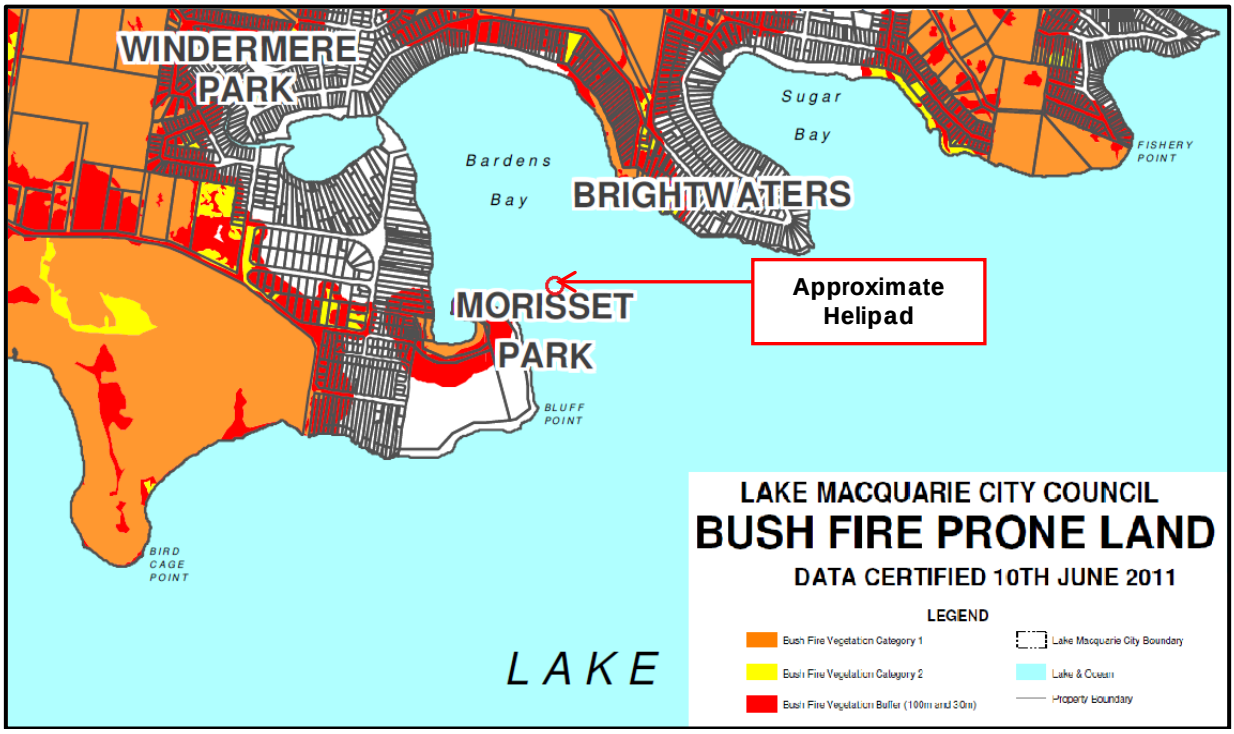


Figure 27 - Bushfire Prone Land Map.

4.12 ABORIGINAL ARCHAEOLOGY & CULTURAL HERITAGE

The proposed helipad will be located on the lake and accordingly no impact on items of Aboriginal Heritage Significance will occur.

The broader Trinity Point site and surrounding area are known to contain items of Aboriginal Heritage significance. In accordance with Term 22 of the Concept Approval, as part of the marina development application, Insite Heritage prepared a Cultural Heritage Management Plan (CHMP) and Interpretation Policy (IP) for the entire Trinity Point site subject to the Concept Approval and also a whole of site Interpretation Plan has also been approved.

In accordance with the CHMP and IP, consultation with registered aboriginal parties is currently ongoing.

Provided below is an extract from the Cultural Heritage Management Plan that shows the locations of registered archaeological sites in the locality (**Figure 28**). It should be noted that the below figure was produced during the Cultural Heritage Reporting that formed part of Concept Approval 06_0309. It should be noted that the proposed helipad falls within the area protected via Native Title legislation and is not a constraint to proposed piling works.

The figure below demonstrates the location of the registered archaeological sites.

Figure 28 - Location of Registered Archaeological Sites.

A range of AHIP's have been granted under other development controls and works undertaken including salvage excavations. These do not inform the water based helipad proposal.

Given that the proposed helipad will be located on the water of Lake Macquarie attached to the approved marina, no impact on any registered Aboriginal sites will occur. No AHIP requirement is anticipated.

The helipad proposal was an agenda item of the Trinity Point Registered Aboriginal Parties Aboriginal Advisory Committee meeting on 6 May 2016 (refer to the consultation log provided within **Appendix J**). All parties were briefed prior to the meeting and invited to comment on the proposal at the meeting. Details of the meeting are outlined within **Section 6** of this EA.

4.13 EUROPEAN HERITAGE

The European Heritage of the broader Trinity Point site (subject to Concept Approval 06_0309) has been significantly reported on and assessed during earlier planning processes. As part of the Stage 1 Marina approval, Insite Heritage prepared a Cultural Heritage Management Plan (CHMP) and Interpretation Policy (IP). The documentation covers both Aboriginal and European heritage.

The following is noted in relation to the European heritage of the broader Trinity Point site (subject to Concept Approval 06_0309):

- The original main buildings that existed on site were constructed by Mr Bert Bailey and used for private purposes and agricultural activity. The agricultural activity is unlikely to have been intense as Mr Bailey used the property as a retreat rather than an income producing farm. The early films 'Dad and Dave' and 'On My Selection' may have been filmed on the site;

- The site was passed onto religious organisations on Mr Bailey's death. A group of Sisters first used the site as a rehabilitation and retirement centre for clergy;

- The site was subsequently taken over by The Brothers and eventually became a school for children with disabilities (known as St John of God Special School);

- The school focus then changed to assisting / educating children with behavioural disabilities, until its closure in 2000; and

- All buildings have since been demolished and the site is currently vacant. An archival photographic folio was prepared prior to demolition, and archaeological excavations of the Bailey residence were undertaken and reported on in 2006-2007. These excavations revealed low levels of archaeological integrity.

Some features remain of historical European association including a grotto and stone base of a sundial, a lake bathing area and cultural tree plantings, all located to the south of the approved marina site in proximity to Bluff Point.

The site is not listed on the Lake Macquarie LEP 2004 (or LEP 2014), National Trust or State Heritage Register as an item of significance, however an assessment of the site based on the standard evaluation criteria defined in the ICOMOS Burra Charter (adopted by the Heritage Council of NSW) was undertaken.

4.14 SURROUNDING VISUAL ENVIRONMENT

The subject site is located on the western side of Lake Macquarie, south west of the Swansea Channel. The Lake is conventionally considered to be separated into a north and a south basin by the channel. The southern section of the Lake is less intensely urbanised than the north. The site is closest to Morisset Park and Windemere Park to its west and northwest respectively and is visible across Bardens Bay from the margins of the suburb of Brightwaters, which is adjacent to the north. Morisset is the nearest urban centre and is located to the north west of the site. There is no visual contact between Morisset and the site.

The southern basin of the Lake has a predominantly urbanised residential foreshore north of the site, with urban settlements and a higher proportion of rural and open space land of various kinds to the south and the east. There are no major commercial centres on the western or southern shoreline in the vicinity. The region also has an active and prominent coal extractive industry and a series of coal fired power stations are located behind and between town centres. There are two power stations that can be seen from the site, located at Vales Point and Eraring (both visible from the site).

The local geomorphology is that of a drowned valley landscape, which is being in-filled by alluvial deposition, which is more prominent in the southern basin. The topography of the area is generally characterised by low ridges, minor promontories and low scale shoreline features developed on soft sandstone and shaly sedimentary rocks of the Triassic Narrabeen and Upper Permian Newcastle Coal Measures geology. Flat alluvial and depositional landscapes and flood plains are associated with creeks and bays. Wide, shallow inter tidal areas, sand and mud flats characterise the waterway margins.

There are no significant maritime developments on the western or southern shoreline in the vicinity, other than the approved marina under construction.

There is predominantly detached residential development in the vicinity of the site to the north and west and on most parts of the shore to the south, southeast and east. The foreshores to residential areas are generally a mix of mostly manicured and/or cleared and privatised and publicly accessible foreshore reserves with residential development at their rear. There is a housing development immediately west of the site, which is presently under construction by the proponent.

There are a number of areas of a treed or natural appearance in the local context including Point Wolstoncroft State Recreation Area (SRA) to the east, Bird Cage Point in the Lake Macquarie SRA to the southwest and the Morisset Hospital site.

The site has some discontinuous remnant foreshore vegetation within the foreshore reserve that helps give the site a natural appearance in views from across the Lake. The Lake is generally visible in outward views, through the foreshore vegetation which mainly consists of casuarinas. The area of thickest remnant vegetation surrounds an area of salt marsh west of the northern tip of the site.

A Visual Impact Assessment for the proposed helipad has been prepared by Richard Lamb & Associates and is provided within **Appendix G**. The findings of the assessment are discussed in **Section 7.7** of this EA.

4.15 COASTAL ZONE

The subject site is identified as being located within a prescribed coastal zone (refer **Figure 29** below).

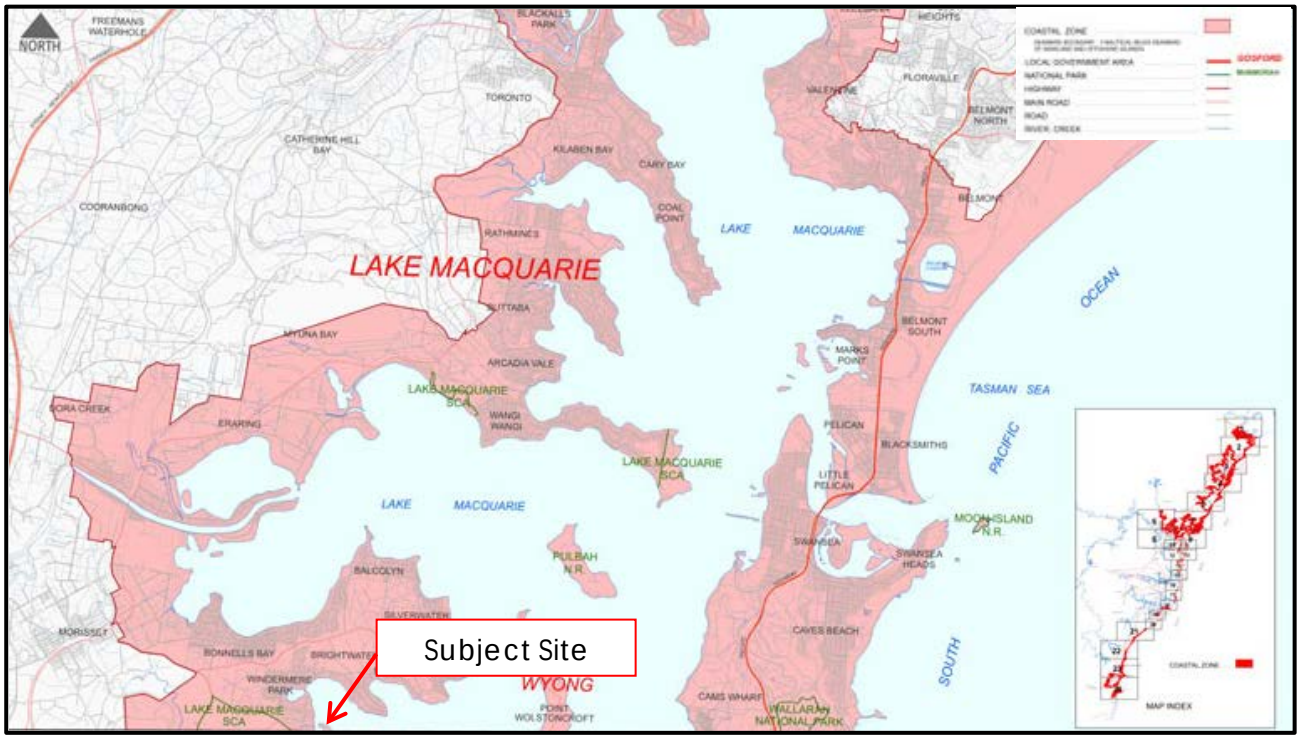


Figure 29 - Extract from Coastal Protection Map.

Coastal protection is discussed further in **Section 7.4** of this report.

4.16 ACOUSTIC ENVIRONMENT

The Acoustic Group have prepared an overall acoustic assessment for the proposed helipad. This is provided in **Appendix E** and the findings of the assessment are discussed in **Section 7.2** of this EA.

The following is noted in relation to the existing acoustical amenity of the site and surrounds:

To establish understanding of the background acoustic amenity of the site and surrounds, The Acoustic Group undertook unattended and attended noise monitoring to establish ambient noise levels in July and August 2014.

Unattended noise loggers were located in three locations at 7 Lake View Avenue, Brightwater; 57A Lake View Road, Morisset Park; and south of the marina site on Lot 31 DP 1117408 (land subject to the mixed use component of Concept Approval 06_0309). The location of The Acoustic Group loggers as well as the loggers used by ARUP in 2007 are shown in the below figure (**Figure 30**).

Figure 30 - Unattended Noise Logger Locations.

The measured ambient noise levels are summarised in **Table 5** (for completeness the ARUP reporting results are also included in the table):

Table 5 - Measured Ambient Noise Levels

		Time of Day		
Logger	**Noise Descriptor**	**Day (7am-6pm)**	**Evening (6pm – 10pm)**	**Night (10pm – 7am)**
3	Rating Background Noise Level (dB(A) L_{90})	35	34	33
	Ambient Noise Level Db(A) $L_{eq(Period)*}$	46	42	39
4	Rating Background Noise Level (dB(A) L_{90})	32	32	30
	Ambient Noise Level Db(A) $L_{eq(Period)*}$	49	44	43
5	Rating Background Noise Level (dB(A) L_{90})	37	33	32
	Ambient Noise Level Db(A) $L_{eq(Period)*}$	45	40	42
ARUP	Rating Background Noise Level (dB(A) L_{90})	34	34	30
	Ambient Noise Level Db(A) $L_{eq(Period)*}$	47	38	35

Note: Loggers 3, 4 and 5 noted in the above table were renumbered to 5, 2 and 1 respectively in the current acoustic assessment (refer to **Figure 41** and **Appendix E**).

The recorded background levels indicate the following in comparison to the 2007 ARUP findings for background amenity:

- In the vicinity of the subject site (logger 5) there are higher background levels during the day, similar background levels in the evening and marginally higher background levels at night;
- With respect to the existing residential premises in proximity to the subject site (logger 4), results are consistent with the ARUP 2007 measurements;
- For properties to the east of the site (logger 3), the day and evening levels are similar and the night time levels are marginally higher; and
- With respect to ambient L_{eq} noise levels (being the cumulative average noise level), a similar pattern exists for the day and evening periods between the ARUP 2007 results and the 2014 Acoustic Group results, whereas the night time ambient L_{eq} is higher for the night-time results.

To supplement the logger data and ascertain the acoustic environment of the area, attended noise monitoring was undertaken in July 2014. The results agreed with the findings of the unattended logger results.

The 2014 ambient noise levels were supplied to Council as part of the proposed helipad acoustic methodology, and Council were satisfied the results were suitable for helipad assessment.

Overall, the ambient data suggests that locality is generally quiet in nature.

4.17 UTILITY SERVICES

Any required servicing infrastructure can be made available to the proposed helipad via the marina.

4.18 OBSERVATIONS FROM THE SITE CHARACTERISTICS & LOCALITY

Since the time of Concept Approval, the proponent has continued to investigate and study both the land and water characteristics of the Trinity Point site and it is considered that the site is suitable to accommodate the proposed helipad attached to the south eastern outer breakwater of the approved marina.

The Trinity Point Marina and Mixed Use Development will create a regional tourist destination on the western side of Lake Macquarie. A justification for the proposed uses is included elsewhere.

The receiving environment's most sensitive consideration for the proposed modification is the existing residential areas which surround Bardens Bay, (including impact to local amenity, particularly noise, as well as consideration of public access to those areas and the lake), health and safety risks and environmental.

Comprehensive acoustic testing, analysis and assessment has been undertaken which demonstrates that the proposed helipad can operate with respect to existing residences and other sensitive land uses surrounding Bardens Bay and proposed flight paths have

been specifically proposed to occur primarily over the waters of Lake Macquarie.

Bardens Bay, and in fact the broader southern area of Lake Macquarie has been demonstrated to be an area of low public usage and the proposed helipad will not adversely restrict the community from accessing or using Bardens Bay.

Substantial data collection and analysis has been undertaken to:

- Verify baseline conditions of water conditions including hydrodynamics (tidal, winds, currents, flushing), water quality, sediment quality and aquatic ecology; and

- Reaffirm site attributes, constraints and opportunities (including updates to the current acoustic & visual environments and updates to current aquatic & terrestrial ecology considerations.

Improvements were previously made to the design of the marina structure within the water to improve the marinas environmental performance and siting and the proposed helipad is consistent with these design improvements.

5.0 Planning Controls

5.1 ENVIRONMENT PROTECTION & BIODIVERSITY CONSERVATION ACT 1999

This Act (EPBC Act) was introduced in 1999 and aims to protect seven matters of national environmental significance being:

- World Heritage properties;
- National heritage places;
- Wetlands of international importance (Ramsar wetlands);
- Threatened species and ecological communities;
- Migratory species;
- Commonwealth marine areas; and
- Nuclear actions (including uranium mining).

The proposed development, as established with advice from specialist consultants, does not impact on matters referenced by the EPBC Act 1999 (refer to **Section 7.6** and **Appendix F** of this EA). Accordingly, a referral to the Australian Government Department of the Environment is not required. This is consistent with advices received at time of concept plan application and the marina EIS.

5.2 ENVIRONMENTAL PLANNING & ASSESSMENT ACT 1979 & REGULATION 2000

The EP&A Act 1979 and the EP&A Regulation 2000 constitute the principle planning legislation in NSW and provide the statutory framework for the assessment of the proposed helipad.

Consideration has been given to the objectives of the EP&A Act 1979 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 remains consistent with this objective based on the following:

- The proposal will create a helipad facility (off the approved Stage 1 Trinity Point Marina) on the south western side of Lake Macquarie. The helipad will complement the Trinity Point development in becoming a five star regional tourist destination. Creation of a five star tourist destination on the western side of Lake Macquarie promotes a wide range of positive social and economic considerations; and
- The numerous environmental studies that have been undertaken in the preparation of this EA confirm that the proposal can proceed in respect to important environmental

considerations. Ongoing helipad management will further ensure that the proposed helipad is acceptable from an environmental perspective.

(ii) The promotion and co-ordination of the orderly and economic use and development of land,

The proposed development is not inconsistent with this objective. The proposed helipad has been designed to form an integrated part of the approved marina.

The proposal is considered appropriate in terms of economic considerations based on the following:

- A helipad will contribute towards establishing Trinity Point as a five star regional tourist destination. The proposed helipad will complement and support the tourist component of the broader Trinity Point development;

- The Trinity Point development will have positive flow on effects to the Morisset town centre (located a short distance away from the subject site), which is identified in the Hunter Regional Plan 2036 as a 'Growth Area' and the Lower Hunter Regional Strategy as an emerging Major Regional Centre. The proposal will contribute to the intent of these strategies, will promote tourism opportunities and support vibrancy of the wide Lake Macquarie locality; and

- The proposal will create an alternate means of access to the site, which will complement establishing Trinity Point as a regional tourist destination, diversifying growing tourism and linkages across the region by the helipad provides an opportunity to capture the potential to increase the visitor economy and connect tourism gateways and attractions. Trinity Point, including with a helipad, can contribute to the Hunter's visitor economy, including 'experience creation' and intentions for the Hunter to double visitor expenditure by 2020.

(iii) The protection, provision and co-ordination of communication and utility services,

The proposal is not inconsistent with this objective.

(iv) The provision of land for public purposes,

The use of a very small surface area of part of the lake for the operation of a proposed helipad (integrated into the approved marina) is an efficient spatial area take up, and ideal in consolidating environmental controls, safety and security with the approved marina. The proposed helipad will have no impact on public access to and along the public foreshore of the Trinity Point site, with shared pathway facilities approved as part of the marina development. Whilst not relevant to this application, the marina itself provides in excess of 120m of floating pontoon boardwalk and land based jetty connections to a lineal shared public pathway system. This public access outcome is a first for Lake Macquarie on a privately funded, leased and managed, marine structure. The matter of footprint of the helipad on the lake is addressed further in **Section 7.3** of this EA.

(v) The provision and co-ordination of community services and facilities, and

The proposal is not inconsistent with this objective.

(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 proposal is consistent with this objective. The ecological reporting undertaken as part of this EA confirms that the proposal is acceptable in relation to flora and fauna considerations. This matter is addressed within **Section 7.6** of this report.

(vii) Ecologically sustainable development, and

The proposed helipad will be integrated into the approved marina, which will be developed to provide for ESD principles. Throughout the construction and operation of the helipad, ESD principles will be adhered to.

The proposed development is consistent with principles of ecologically sustainable development, as addressed below:

- **The precautionary principle**
  The proposed helipad development and its impacts are fully understood through study and can be appropriately mitigated and managed.
- **Intergenerational equity**
  Compliance with the design and management measures will ensure that the proposed development does not significantly impact on the protection of the environment for future generations.
- **Conservation**
  The proposed development does not adversely impact on the conservation of biological diversity and ecological integrity.
- **Improved valuation of environmental resources**
  The proposed development does not degrade environmental resources.

(viii) The provision and maintenance of affordable housing, and

This objective is not applicable.

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

The proposal is not inconsistent with this objective.

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

The Section 75W Modification process allows for public involvement and participation. In addition, public consultation was undertaken by the proponent in preparing the EA (refer to **Section 6** of this EA), and will be continued.

5.2.1 Development Application Process

On 1 October 2011, Part 3A of the Environmental Planning & Assessment Act 1979 (as amended) was repealed by the Environmental Planning & Assessment Act (Part 3A Repeal) Act 2011 No. 22. Despite this, Part 3A continues to apply (as in force immediately prior to repeal of Part 3A) to this modification application (MOD 3) on the transitional provisions identified within Clauses 2 and 3 of Schedule 6A of the EP&A Act 1979 as follows:

2 Transitional Part 3A projects

*(1) The following are, subject to this Schedule, **transitional Part 3A projects**:*

(b) a project that is the subject of an approved concept plan (whether approved before or after the repeal of Part 3A),

(5) A transitional Part 3A project extends to the project as varied by changes to the Part 3A project or concept plan application, to the concept plan approval or to the project approval, whether made before or after the repeal of Part 3A.

Clause 3 of Schedule 6A of the EP&A Act 1979 states that Part 3A (as in force immediately prior to repeal) continues to apply to a transitional Part 3A Project as well as the provisions of any State Environmental Planning Policy (SEPP) implemented under Part 3A:

3 Continuation of Part 3A—transitional Part 3A projects

(1) Part 3A of this Act (as in force immediately before the repeal of that Part and as modified under this Schedule after that repeal) continues to apply to and in respect of a transitional Part 3A project.

(2) For that purpose:

(a) any State environmental planning policy or other instrument made under or for the purposes of Part 3A, as in force on the repeal of that Part and as amended after that repeal, continues to apply to and in respect of a transitional Part 3A project, and

(b) declarations, orders, directions, determinations or other decisions with respect to a transitional Part 3A project continue to have effect and may continue to be made under Part 3A (including for the purpose of the application or continued application of Part 4 or 5 or other provisions of this Act in relation to the project).

Clause 3C of Schedule 6A of the EP&A Act 1979 confirms that Section 75W continues to apply for the purpose of the modification of an approved Concept Plan as follows:

3C Modification of concept plans

(1) Section 75W continues to apply for the purpose of the modification of a concept plan approved before or after the repeal of Part 3A, whether or not the project or any stage of the project is or was a transitional Part 3A project.

(2) This clause applies despite anything to the contrary in this Schedule (other than provisions relating to approval for the carrying out of a project or stage of a project that is given in connection with an approval to modify a concept plan).

Based on the above legislation, it is established that the proposed modification to the approved Concept Plan for the introduction of a helipad can be assessed as a Section 75W application. Section 75W of the EP&A Act states:

75W Modification of Minister's approval

(1) In this section:

***Minister's approval** means an approval to carry out a project under this Part, and includes an approval of a concept plan.*

***modification of approval** means changing the terms of a Minister's approval, including:*

(a) revoking or varying a condition of the approval or imposing an additional condition of the approval, and

(b) changing the terms of any determination made by the Minister under Division 3 in connection with the approval.

(2) The proponent may request the Minister to modify the Minister's approval for a project. The Minister's approval for a modification is not required if the project as modified will be consistent with the existing approval under this Part.

(3) The request for the Minister's approval is to be lodged with the Director-General. The Director-General may notify the proponent of environmental assessment requirements with respect to the proposed modification that the proponent must comply with before the matter will be considered by the Minister.

(4) The Minister may modify the approval (with or without conditions) or disapprove of the modification.

(5) The proponent of a project to which section 75K applies who is dissatisfied with the determination of a request under this section with respect to the project (or with the failure of the Minister to determine the request within 40 days after it is made) may, within the time prescribed by the regulations, appeal to the Court. The Court may determine any such appeal.

(6) Subsection (5) does not apply to a request to modify:

(a) an approval granted by or as directed by the Court on appeal, or

(b) a determination made by the Minister under Division 3 in connection with the approval of a concept plan.

(7) This section does not limit the circumstances in which the Minister may modify a determination made by the Minister under Division 3 in connection with the approval of a concept plan.

No provisions of Section 75W prohibit or restrict the proposed modifications to the Concept Plan approval. It is considered that the proposed modification to introduce a helipad into the Concept Approval remains consistent with this section of the EP&A Act 1979.

The Secretary's Environmental Assessment Requirements (Ref: MP 06_0309 MOD 3)) were produced by the NSW DPE on 6 July 2016 for the preparation of an EA and this document has been prepared in accordance with these requirements (refer to **Appendix B**).

5.2.2 General Consistency with Terms of Approval of Concept Plan

This Section 75W Modification application seeks to introduce a helipad to the Concept Approved development. It is noted that if modification approval is granted, any future development applications for aspects of the Concept Approval will be required to have regard for Section 75P(2)(a) of the Act, which has the effect that development applications are to be generally consistent with the terms of the approval of the concept plan. Clause 75P(2)(a) of the EP&A Act states:

> *"75P(2) If the Minister determines that approval to carry out the project or any particular stage of the project is to be subject to the other provisions of this Act, the following provisions apply:*
> *(a) the determination of a development application for the project or that stage of the project under Part 4 is to be generally consistent with the terms of the approval of the concept plan."*

5.3 STATE ENVIRONMENTAL PLANNING POLICIES

5.3.1 SEPP 33 – Hazardous and Offensive Development

SEPP 33 aims to identify potentially hazardous or offensive industry and ensure that adequate measures are implemented to reduce the impact of such development.

The proposed helipad does not include a fuel facility or storage of any potentially hazardous or offensive materials. As such the provisions of the SEPP are not triggered and a Preliminary Hazard Analysis is not required to be prepared.

5.3.2 SEPP 71 – Coastal Protection

This SEPP has been made under the Environmental Planning & Assessment Act 1979 to ensure that development in the NSW coastal zone is appropriate and suitably located, to ensure that there is a consistent and strategic approach to coastal planning and management and to ensure there is a clear development assessment framework for the coastal zone.

SEPP 71 is applicable to this application.

The SEPP requires that the consent authority consider the matters outlined in Clause 8 - Matters for Consideration of the SEPP, which is addressed below.

Clause 8 – Matters for Consideration

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

The proposed development is consistent with the aims of the Policy which are generally to protect and manage the natural, cultural, recreational, and economic attributes, vegetation and visual amenity of the NSW Coast as it applies to the site.

(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,

The subject site does not currently provide any public access to the coastal foreshore, other than as waters of the lake. The approved and currently under construction Stage 1 marina will provide new public access to the foreshore and on water via the boardwalk, which will result in a significant community benefit. The helipad proposal will have no impact on the public access to be provided as part of the marina approval. The footprint of the helipad on the lake is addressed elsewhere.

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

As noted above, the approved marina will provide new public access to the foreshore and onto the lake. This will encourage public visitation to site and foreshore and represents a significant community benefit. The proposed helipad will have no impact on the public access to be provided as part of the marina.

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

The site is suitable for the proposed helipad and this suitability is evident from the assessment presented in this report, particularly within the helicopter landing site assessment (**Section 7.1** of this EA) and noise impact assessment (**Section 7.2** of this EA). The site is unique in that it can cater for the proposed helipad through integration and management within the approved marina development and support a tourist destination.

(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 helipad will not interfere with designated view corridors and is visually integrated into the approved marina. No overshadowing of the coastal foreshore areas will result.

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

The proposed helipad will be integrated into the approved marina development and is considered not to have any unreasonable visual impact. This issue is addressed within **Section 7.7** of this EA and within the Visual Impact Assessment prepared by Dr Richard Lamb and Associates provided within **Appendix G**.

(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 proposal is consistent with the aims of this policy and will have no adverse impact on flora and fauna. This is addressed in detail in **Section 7.6** of this EA.

(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 helipad will be located well clear of sea grass along the foreshore. Fish or marine life, marine vegetation or marine habitats will not be impacted by the proposal.

This matter is addressed in **Section 7.6** of this EA and within the Aquatic Ecology Assessment provided within **Appendix F**.

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

The proposal is consistent with the aims of this policy and 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 helipad will not be adversely impacted by coastal processes or hazards nor will the proposed helipad affect any coastal processes and hazards. This matter is addressed in **Section 7.4** of this EA and within advice prepared by Royal Haskoning DHV in **Appendix H**.

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

The proposed development will minimise potential for conflict between land-based and water-based coastal activities and this is evident from the assessment presented in **Section 7.3** of this EA. The proposal is consistent with the aims of this policy.

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

The proposed helipad has been discussed with the Registered Aboriginal Parties. The proposal will not adversely impact on any Aboriginal places, values, customs, beliefs and traditional knowledge.

(*m) Likely impacts of development on the water quality of coastal waterbodies.*

The proposed helipad will be designed to ensure protection of water quality runoff. This matter is detailed within **Section 7.5** of this EA. The proposal remains consistent with this objective.

(n) The conservation and preservation of items of heritage, archaeological or historic significance.

The proposal will not impact on any items of significance.

(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.

Not applicable.

(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.

No cumulative effects have been identified or are likely.

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

Not applicable.

Overall it is considered the proposal is appropriate within the coastal zone.

5.3.3 SEPP (Infrastructure) 2007

The aim of this Policy is to facilitate the effective delivery of infrastructure across the State of NSW. The proposed helipad does not trigger Clause 104 – Traffic Generating Development of this SEPP given that it does not accommodate 200 or more vehicles (the proposed helipad would fall under the category of 'any other purpose' prescribed by the SEPP).

Traffic and access has previously been addressed as part of the marina and land based components of the broader Trinity Point development.

5.4 OTHER STATE LEGISLATION & STATE POLICIES

5.4.1 Threatened Species Conservation (TSC) Act 1995

The TSC Act 1995 provides a framework for the listing and declaration of threatened species, populations, endangered ecological communities, key threatening processes and critical habitat. It also provides a framework for the preparation and implementation of recovery plans and threat abatement plans and for licensing.

Flora and fauna is addressed in detail in **Section 7.6** and **Appendix F** of this EA.

5.4.2 Coastal Protection Act 1979

The Coastal Protection Act provides for the protection of the coastal environment of the State for the benefit of both present and future generations.

5.4.3 NSW National Parks & Wildlife Act 1974

The objects of this Act are the conservation of nature and objects, places or features of cultural value within the landscape. The Act also has controls that apply to Aboriginal relics and sites. The Minister can issue stop work orders in relation to an action that may detrimentally affect an Aboriginal object or place.

Aboriginal Archaeology is addressed in **Section 4.12** of this EA. No AHIP will be required.

5.4.4 Protection of the Environment Operations Act 1997

This Act is relevant to the project as it contains requirements relating to the prevention of the pollution of waters.

Given that the proposal will involve more than thirty (30) flight movements per week (the proposal seeks approval for 38 movements) and the helipad will be located within 1km of a dwelling not associated with the activity, the proposal will meet the 'helicopter-related activity' Scheduled Activity threshold criteria as specified within Schedule 1 of the PoEO Act 1997.

The proponent has consulted with the NSW EPA in relation to this matter (refer to **Appendix J**) and it has been confirmed that if the helipad is approved the Environmental Protection License (EPL) for the Marina (EPL 20631) will need to be amended to include provisions for the helipad.

5.4.5 Water Management Act 2000 & Water Act 1912

The Water Management Act contains provisions relating to management of works affecting the banks or bed of a water body. However, an approval under Section 91 of the Water Management Act is not required because the proposed helipad is not an 'integrated development' under Section 91 of the EP&A Act 1979.

5.4.6 Fisheries Management Act 1994

The Fisheries Management Act aims to conserve, develop and share the fishery resources of the state of NSW for the benefit of present and future generations. The Act seeks to:

- Conserve fish stocks and key habitats;
- Conserve threatened species, populations and ecological communities of fish and marine vegetation;
- Promote ecologically sustainable development;
- Promote viable commercial fishing and aquaculture industries;
- Promote quality recreational fishing opportunities;
- Appropriate share fisheries resources between the users of the resources;
- Provide social and economic benefits for the wider community of NSW; and
- To recognise the spiritual, social and customary significance to Aboriginal persons of fisheries resources and to protect and promote the continuation of Aboriginal, cultural fishing.

Section 7.6 and **Appendix F** (Aquatic Impact Assessment) and **Section 4.12** (Aboriginal Heritage) address the relevant objectives of the Fisheries Management Act.

5.4.7 Crown Lands Act 1989

The principles of Crown land management, as set out in Section 11 of the *Crown Lands Act 1989*, are as follows:

(a) Environmental protection principles be observed in relation to the management and administration of Crown land;
(b) The natural resources of Crown land (including water, soil, flora, fauna and scenic quality) be conserved wherever possible;
(c) Public use and enjoyment of appropriate Crown land be encouraged;
(d) Where appropriate, multiple use of Crown land be encouraged;
(e) Where appropriate, Crown land should be used and managed in such a way that both the land and its resources are sustained in perpetuity; and
(f) Crown land be occupied, used, sold, leased, licensed or otherwise dealt with in the best interests of the State consistent with the above principles.

The proposed helipad development remains consistent with the principles of the Crown Lands Act. The matters described in **Section 4 and 7** of this EA confirm that all important environmental considerations (including coastal processes and hydrodynamics) can be managed by the proposed development and that the proposal will provide a helipad integrated into a quality marina facility that will encourage public access and visitation.

5.4.8 NSW Coastal Policy 1997

The NSW Coastal Policy has been considered as part of the helipad concept design process and discussed further below.

Trinity Point is located approximately 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 has been implemented by the government to better co-ordinate the management of the coast by identifying 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 NSW legislation.

Nine goals were adopted for the Coastal Policy including recognizing and accommodating the natural processes of the coastal zone. The policy notes that the impacts of natural coastal processes and hazards (including sea level rise) are to be addressed in coastline and estuary management plans.

Wave climate, sediment movements and climate change (including sea level rise) are discussed in **Section 7.5** of this EA and within the Coastal Processes and Hydrodynamics advice provided within **Appendix H**.

It is considered that the proposed development remains consistent with the Coastal Policy.

5.4.9 NSW State Rivers and Estuaries Policy 1993

The intent of the State Rivers and Estuaries Policy is to encourage the sustainable management of the natural resources of the State's rivers, estuaries, wetlands and adjacent riverine plains so as to reduce or halt impacts such as declining water quality and damage to river banks and channels. Means for achieving the policy objectives include adoption of the best available management practices and appropriate safeguards.

The policy lists a number of component policies including the Estuary Management Policy and Wetlands Policy.

NSW Estuary Management Policy

The general goal of the Estuary Management Policy is to achieve an integrated, balanced, responsible and ecologically sustainable use of the State's estuaries. Specific objectives include the protection of estuarine habitats and ecosystems and maintenance of the necessary hydrology regime. The sustainable use of estuarine resources includes commercial and recreational uses as appropriate.

NSW Wetlands Policy

The general goal of the Wetlands Policy is the ecologically sustainable use, management and conservation of wetlands in NSW for the benefit of present and future generations. To assist in achieving this, a number of principles were adopted including that water entering natural wetlands will be of sufficient quality so as not to degrade the wetlands.

The policy document also notes the importance of wetland vegetation in protecting foreshores from erosion. Land use and management practices that maintain or rehabilitate wetland habitats and processes are encouraged under the policy.

The proposed helipad will not adversely affect coastal processes or water quality. This is addressed within **Sections 7.4 and 7.5** of this EA and within **Appendix H.**

5.5 REGIONAL PLANNING CONTROLS

5.5.1 Hunter Regional Plan 2036

The NSW Government has developed the Hunter Regional Plan 2036 as an overarching framework to guide land use planning priorities and infrastructure funding decisions in the Hunter region over the next 20 years.

The Plan sets priorities and provides a direction for regional planning decisions. It focuses on new housing and jobs, and targets growth in strategic centres and renewal corridors close to transport to deliver social and economic benefits. It sets in place line-of-sight land use planning for the region, regional districts like the Greater Newcastle metropolitan area and each Council area.

The vision of the Hunter Regional Plan 2036 is for the Hunter to be the leading regional economy in Australia with a vibrant new metropolitan city at its heart. To achieve this vision, the NSW Government has acknowledged the growing importance of Greater Newcastle and set the following regionally focused goals:

- The leading regional economy in Australia;
- A biodiversity-rich natural environment;
- Thriving communities; and
- Greater housing choice and jobs.

The Greater Newcastle area comprises the closely connected urban areas of Cessnock, Lake Macquarie, Maitland, Newcastle and Port Stephens local government areas.

Figure 31 provides the indicative boundaries of the Greater Newcastle area and identifies the location of the subject site within the Greater Newcastle area.

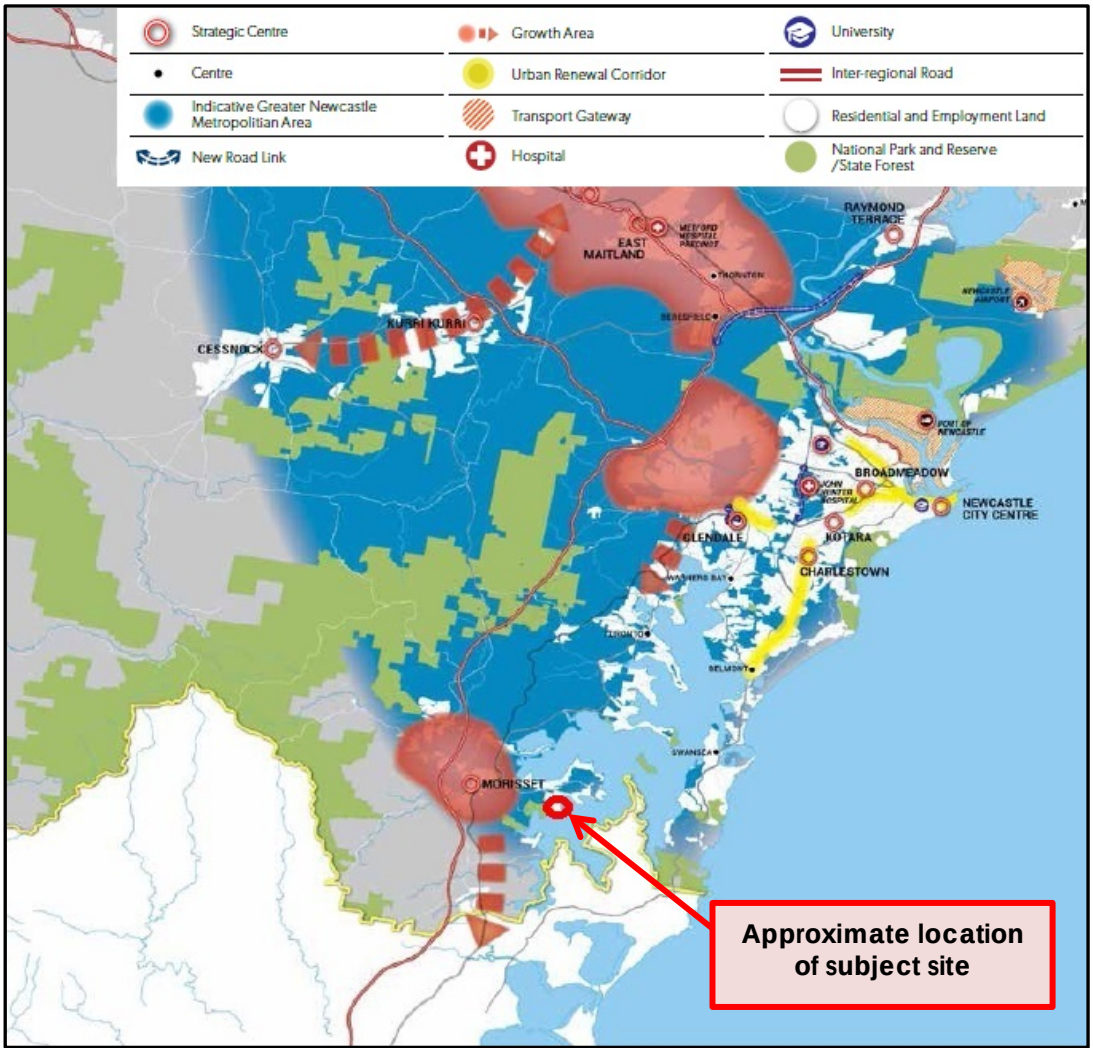


Figure 31 - Locality of subject site within context of Greater Newcastle 2036 area.

The subject site is located within close proximity to the identified growth area of Morisset. The Plan aims to strengthen the region's economic resilience, protect its well-established economic and employment bases and build on its existing strengths to foster greater market and industry diversification.

The Hunter is identified as being strategically situated to leverage proximity to Asia and the region's growing agricultural, health, education and tourism sectors to supply developing Asian economies with resources and products.

The Plan acknowledges that there is a huge potential for the Hunter to increase the number of nights visitors spend in the region from an annual $8.8 million, and seeks to enable investment in infrastructure to expand the tourism industry, including connections to tourism gateways and attractions. In particular the Plan identifies a $12.7 million investment to build a new 3,000 square metre multi-purpose cruise ship terminal in Newcastle Harbour, giving the region the opportunity to compete for the growing east coast tourism trade. The proposed helipad will complement this investment in tourism and connections to tourism gateways and attractions.

Residents and visitors are fortunate to have ready access to many of the region's natural areas and an array of unique experiences, which contribute to the region's identity and the health of its communities. These areas are also important for recreational and tourism activities, as a focus for investment and a factor in where people choose to live.

The proposed helipad development is consistent with the above aims of the Plan. In particular, the overall Trinity Point development has been designed as a world class land and water based destination development that will form part of an experience and interaction with the areas greatest quality – the lake itself. The proposed helipad contributes to a world class regional tourist destination.

The proposed helipad will not only contribute to local and national residents and tourists visiting the development, Lake Macquarie, and the wider Hunter Region, but will also be a vital element to drawing international tourists.

The proposed helipad forms an integral part of the overall Trinity Point development which aims to reinforce the profile of Lake Macquarie for tourism, hospitality, functions, boating, recreation and lifestyle. The growth of the tourism, hospitality, and recreation sectors within Lake Macquarie and the wider Hunter Region will provide a significant economic investment to the area, and increased employment opportunities.

5.5.2 Lower Hunter Regional Strategy

The Lower Hunter Regional Strategy was released as a final document in October 2006. In summary, the purpose of the strategy is to provide broad guidance to future planning for the Lower Hunter, with the following general 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 cater for a projected 66,000 new jobs;
- 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.

Figure 32 is an extract from the Lower Hunter Regional Strategy.

Figure 32 - Extract from Lower Hunter Regional Strategy.

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 development will promote tourism that takes advantage of the lake and the subject site's lake frontage. The proposal will form an integral part of the overall Trinity Point tourist development, being an essential component of a regional world class tourist destination.

The proposal has been well designed to ensure that there will be no adverse environmental impacts as a result of the construction and operation of the proposed helipad.

It is considered that the proposed helipad remains entirely consistent with the Lower Hunter Regional Strategy.

5.6 LOCAL PLANNING CONTROLS

5.6.1 Lake Macquarie Local Environmental Plan 2014 and Local Environmental Plan 2004 Permissibility and Zoning Objectives

Under the provisions of the Lake Macquarie Local Environmental Plan 2014 (LEP 2014) the subject property is zoned W1 Natural Waterways, and adjoins land zoned SP3 Tourist (which contains the land based components of the broader Trinity Point Marina and Mixed Use Development), and the Council reserve zoned RE1 Public Recreation.

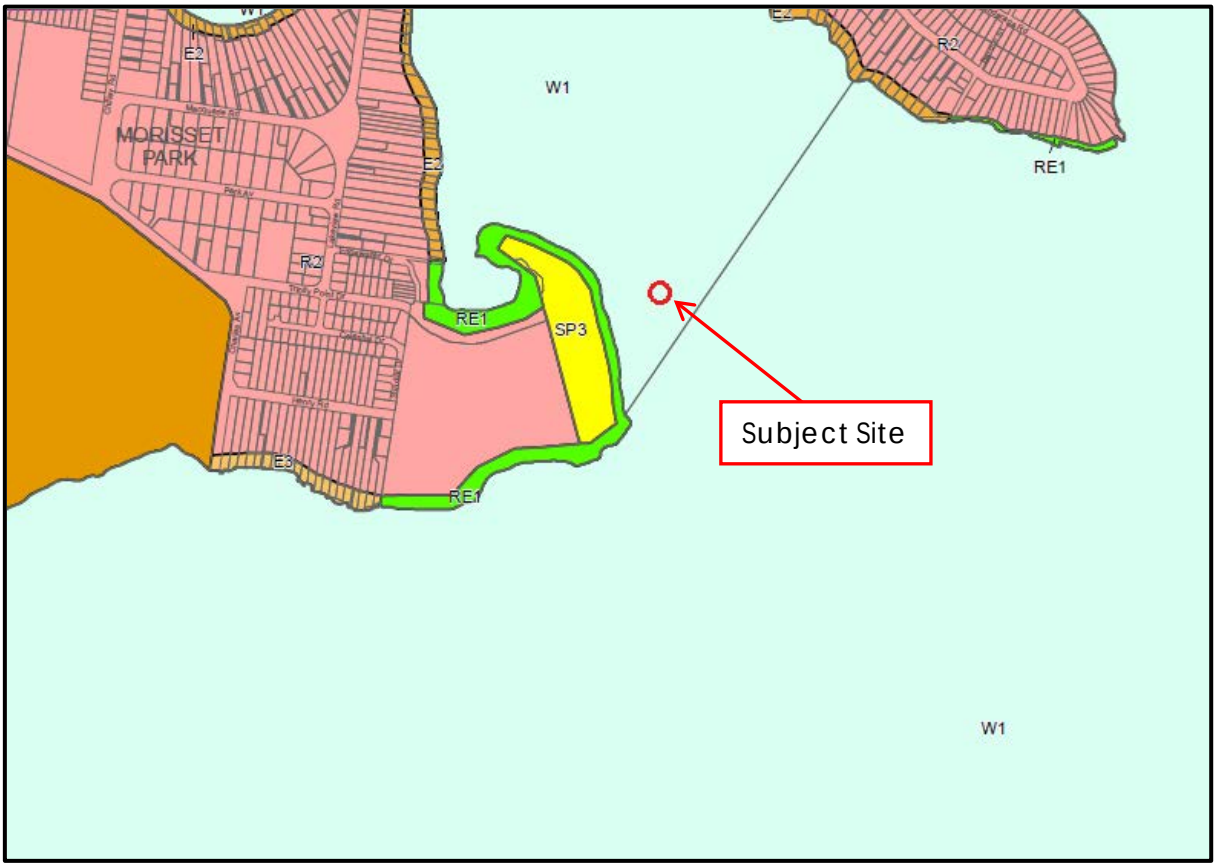


Figure 33 - Zoning Plan Extract from LMCC LEP 2014.

At the time of Development Application lodgement for the proposed helipad (DA 1176/2014) the lake upon which the proposed development is situated was zoned 11 Lake and Waterways Zone under Lake Macquarie Local Environmental Plan 2004 (LEP 2004) (refer **Figure 32**).

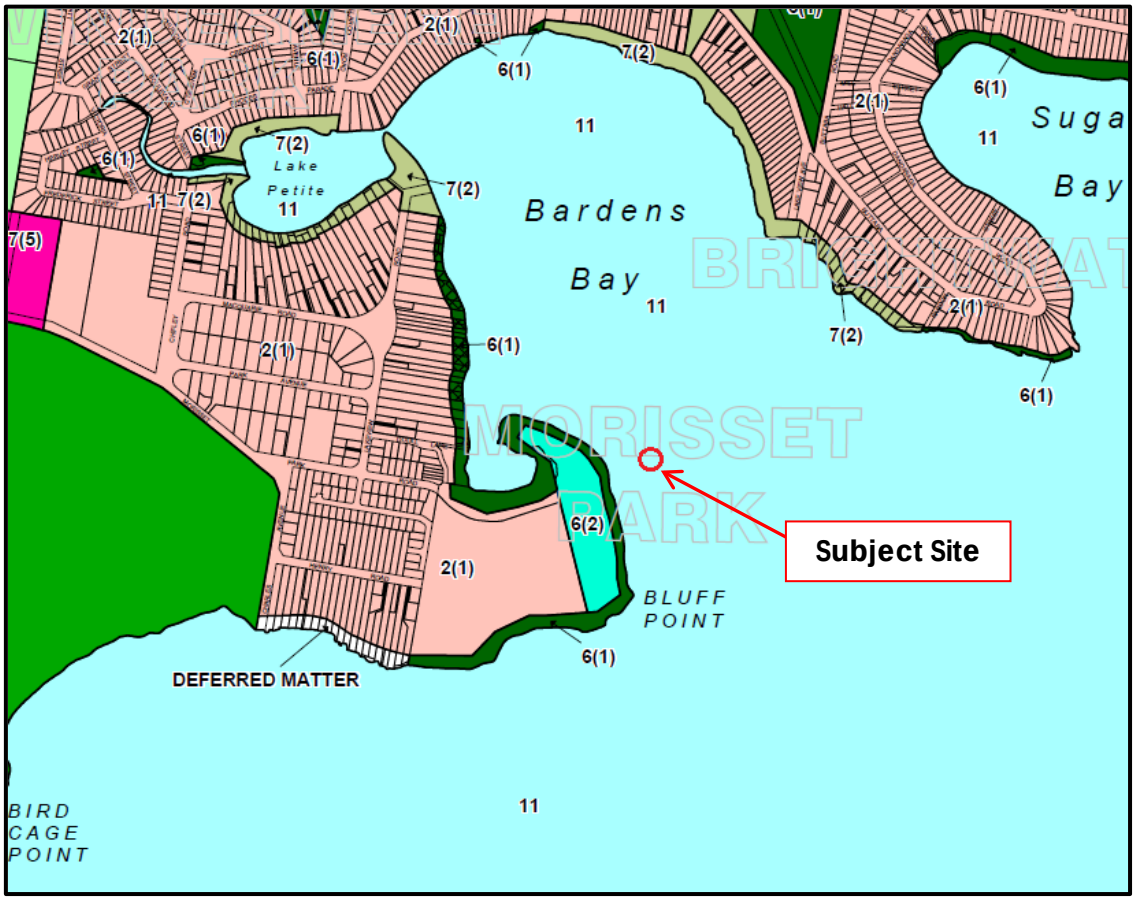


Figure 34 - Zoning Plan Extract from LEP 2004.

Within the 11 Lakes and Waterways Zone no development is prohibited. Whilst it is not necessary to define the proposed development given that no development is prohibited, as established below, it can be seen from the LEP 2004 dictionary that the proposed development is defined as a 'helipad'.

Below are extracts from the LMCC LEP 2004 of the relevant land use definitions (including for comparison the definition of heliport) as well as the relevant land use table (the proposal would not be defined as a heliport given that that the facility is not to be licensed by the Commonwealth and does not include terminal buildings and facilities for the service and repair of helicopters). Commentary has also been provided relative to consistency of the proposal with each of the zone objectives.

> ***helipad*** *means an area or place, whether or not open to public use, set apart for the taking off and landing of helicopters.*
>
> ***heliport*** *means an area or place open to public use that is licensed by the Commonwealth for the taking off and landing of helicopters and includes terminal buildings and facilities for the parking, servicing and repair of helicopters.*

Zone 11 Lakes and Waterways Zone

1 Objectives of zone

The objectives of this 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

The proposed development is consistent with this objective. The proposal to allow people greater access to the lake locality will assist with increased recognition of its significance.

(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

The proposed development is consistent with this objective. The proposed development involves minimal disturbance to the lake and lake bed and upon completion will have no ongoing impacts.

(c) ensure development does not adversely affect the ecology, scenic values or navigability of the Lake or its waterways, and

The proposed development is consistent with this objective, the proposal will not adversely affect the ecology, scenic values or navigation of the lake.

(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

The proposed development is consistent with this objective. The objective recognises the recreational use of the lake and requires that such activity does not impact on aquatic and terrestrial habitats. The proposal is an ancillary component to the recreational use of the lake providing access to the marina and shore based activities and will be delivered in a manner that does not impact on habitats.

(e) provide for sustainable and viable economic use of the Lake and its waterways, and

The proposed development is consistent with this objective. The proposal is a sustainable and economical viable use of the lake.

(f) provide for sustainable water cycle management.

The proposed development is consistent with this objective, incorporating measures to ensure protection of water from potential pollution.

2 Without development consent

Exempt development as provided in Schedule 1.

Development for the purpose of:

aids to navigation required by the Maritime Authority of NSW.

moorings, except commercial moorings, if in accordance with a Mooring Management Plan approved by the Maritime Authority of NSW.

3 Only with development consent

Any development not listed in item 2.

4 Prohibited

Nil.

On 12 September 2014 the Lake Macquarie LEP 2014 (LEP 2014) was published on the NSW Legislation Website and commenced 28 days after publishing. This had the effect of rezoning the lake upon which the proposed helipad is situated to W1 Natural Waterways (refer **Figure 31**). New definitions and zone structure consistent with the NSW template LEP were introduced. Below are extracts from the LEP 2014 of the definition of helipad and heliport as well as the land use table. Both helipad and heliport are prohibited. Given that the proposed facility is not open to the public and that landing is only via approval of the facility operator it is considered that the proposal would be defined as a helipad under LEP 2014. Commentary has also been made below in relation to the zone objectives.

> ***helipad*** *means a place not open to the public used for the taking off and landing of helicopters.*
>
> ***heliport*** *means a place open to the public that is used for the taking off and landing of helicopters, whether or not it includes:*
>
> *(a) a terminal building, or*
>
> *(b) facilities for the parking, storage or repair of helicopters.*
>
> ***Note.*** *Heliports are a type of* ***air transport facility****—see the definition of that term in this Dictionary.*

Zone W1 Natural Waterways

1 Objectives of zone

- *To protect the ecological and scenic values of natural waterways.*

  The proposed helipad presents no significant impact to ecology and or scenic values.

- *To prevent development that would have an adverse effect on the natural values of waterways in this zone.*

  The proposed helipad presets no significant impact on natural values of waterways.

- *To provide for sustainable fishing industries and recreational fishing.*

  The proposed development does not impact on the opportunity for sustainable fishing and promotes the opportunity for recreational fishing by providing greater access to the lake.

- *To provide for the recreational use of Lake Macquarie and its waterways as an important environmental, social and economic asset, including maintenance or enhancement of public navigation channels to a depth suitable for yachting and other boating activities.*

  The proposed helipad is consistent with the objectives of the zone by providing increased access to the lake for recreational use noting its importance as environmental, social and economic asset.

2 Permitted without consent

Nil

3 Permitted with consent

Aquaculture; Boat building and repair facilities; Boat launching ramps; Boat sheds; Building identification signs; Business identification signs; Charter and tourism boating facilities; Community facilities; Emergency services facilities; Environmental facilities; Environmental protection works; Flood mitigation works; Jetties; Marinas; Mooring pens; Passenger transport facilities; Recreation areas; Recreation facilities (outdoor); Registered clubs; Roads; Water recreation structures; Wharf or boating facilities.

4 Prohibited

Business premises; Hotel or motel accommodation; Industries; Multi dwelling housing; Recreation facilities (major); Residential flat buildings; Restricted premises; Retail premises; Seniors housing; Service stations; Warehouse or distribution centres; Any other development not specified in item 2 or 3.

Whilst the proposed development has become prohibited under the LEP 2014, Clause 1.8A of the LEP 2014 (see below) provides transitional provisions that confirm that the proposed development is to be assessed and determined on the basis of the former LEP 2004.

1.8A Savings provision relating to development applications

If a development application has been made before the commencement of this Plan in relation to land to which this Plan applies and the application has not been finally determined before that commencement, the application must be determined as if this Plan had not commenced.

Whilst the proposed development has become prohibited under LEP 2014 (and notwithstanding that the proposal will be determined on the basis of the former LEP 2004 noting Clause 1.8A) we make the following observations:

- The proposed development is not for a standalone helipad, it is for a helipad directly related to providing access to the marina to which it is attached and the adjoining land based tourism facilities (and to the overall recreational use of the lake). It is directly related or ancillary to approved development that is permissible. The primary purpose of the helipad is to provide direct and improved access to the facilities.

- The helipad whilst not listed as a permitted use is consistent with the zone objectives of LEP 2014, in particular providing access to the recreational use of the lake.

Johnson Property Group on the 6 September 2013 objected to the proposed rezoning of the lake (as part of conversion from the 2004 LEP to the template LEP). The objection was made on the basis that the zoning originally permitted a helipad and that the intended zone would not and thus represented a more restrictive zoning which was inconsistent with the principles of an LEP conversion. On the 17 September 2013 Council responded by firstly identifying that the intended zone was the best fit (i.e. from the available choice of zones from the template LEP) and secondly that a helipad should not generally be permitted anywhere on the lake given the potential for impacts. In the same response, Council also advised that any intention for a helipad *"would be preferable to deal with a proposal on its merits, and for an amendment to the LEP to be considered by Council subject to the normal rezoning process inclusive of extensive community consultation. Alternatively, the helipad could be located within the Trinity Point marina development site, which is proposed to be zoned SP3 Tourist, a helipad is a use permitted with consent in this zone."*

Notwithstanding that the proposal is benefited by the transitional provisions of the LEP and is therefore permissible it is considered that the current process in any event satisfies the general preferred approach of the proposed development to be considered on its merits. The proposed amendment to the concept plan is consistent with this approach.

We note that Council at the time did not discount the idea of a helipad in association with the tourism facility alluding to the fact that it would be permissible on the land itself. It is the proponent's position that whether the helipad was on the same land as the tourism facility (some 145 – 200m to the west) or on the water attached to the marina would make little difference to the consideration of impacts and that on balance in this circumstance would likely have a reduced impact located on the water. The helipad is proposed to be integrated into the approved marina and does not significantly interfere with the use or protection of the ecology of the lake. The proposed helipad on the tourist zoned land would have the effect of eroding the capacity of the development to deliver the desired scale of a regional tourist destination to the locality as approved by the concept plan by a reduction in available land. The location of the proposed helipad landward would also more likely impact on access to the Council owned public foreshore.

In summary the following is noted:

- The proposal to amend the Concept Plan to include the helipad is consistent with Council's preferred approach for it to be considered at a strategic merits level.

- The proposed Helipad is not a standalone development but is part of or ancillary to the overall approved tourism and marina facility and is consistent with the objectives of the former and current zones by providing increased access to tourism.

- The helipad DA as lodged with Council (DA 1176/2014) benefits from transitional provisions of the current LEP and is therefore permissible.

5.6.2 Lake Macquarie Local Environmental Plan 2014 Specific Clauses for Consideration

These clauses will be most relevant as part of assessment of a proposal to construct and operate the proposed helipad via a development application if relevant. For thoroughness, preliminary comments are provided.

Clause 5.5 Development within the Coastal Zone

As outlined in Section 4, the subject site is identified as being located in the coastal zone.

Subclause 2 outlines matters for consideration, which have been addressed in **Section 5.3.2** above (relative to SEPP 71).

Subclause 3 outlines matters an application must satisfy prior to the granting of consent. These matters are addressed below.

(3) Development consent must not be granted to development on land that is wholly or partly within the coastal zone unless the consent authority is satisfied that:

> ***(a) the proposed development will not impede or diminish, where practicable the physical, land – based right of access of the public to or along the coastal foreshore, and***
>
> The subject site presently does not provide constructed public access to the Lake Macquarie waterfront. The approved marina development will create a quality pedestrian access way for use by the general public. This is expected to result in increased public activity and usage of the Trinity Point foreshore. The proposed helipad subject to this application will not impede or diminish this access.
>
> ***(b) if effluent from the development is disposed of by a non-reticulated system, it will not have a negative effect on the water quality of the sea, or any beach, estuary, coastal lake, coastal creek or other similar body of water, or a rock platform, and***
>
> Not applicable.
>
> ***(c) the proposed development will not discharge untreated stormwater into the sea, or any beach, estuary, coastal lake, coastal creek or other similar body of water or a rock platform, and***
>
> The proposed development will not discharge untreated stormwater into Lake Macquarie. This matter is addressed within **Section 7.5** and **Appendix H** of this EA.
>
> ***(d) the proposed development will not:***
> ***(i) be significantly affected by coastal hazards, or***
> ***(ii) have a significant impact on coastal hazards, or***
> ***(iii) increase the risk of coastal hazards in relation to any other land.***

The proposed development will not impact or be impacted upon by any coastal hazards. This matter is addressed within **Section 7.4 and Appendix H** of this EA.

Clause 5.7 – Development Below Mean High Water Mark

This clause ensures that appropriate environmental assessment of development is undertaken for development carried out on land covered by tidal waters. This clause also confirms that development consent is required to carry out development on any land below the mean high water mark of any body of water subject to tidal influence (including the bed of any such water).

Section 7 of this EA provides an environmental assessment of the proposed helipad development and it is confirmed that the proposal is acceptable and can proceed.

Clause 5.9 – Preservation of Trees or Vegetation

The objective of this clause is to preserve the amenity of the area, including biodiversity values, through the preservation of trees and other vegetation.

The proposal will have negligible impact on existing vegetation. Flora and fauna is addressed within **Section 7.6** of this EA and **Appendix F.**

Clause 5.10 – Heritage Conservation

The objectives of this clause are to conserve the environmental heritage of Lake Macquarie, conserve the heritage significance of heritage items and heritage conservation areas, conserve archaeological sites, and to conserve Aboriginal objects and Aboriginal places of heritage significance.

The proposal will have no adverse impact of any items of cultural heritage significance or European heritage. This is addressed within **Sections 4.12** and **4.13** of this EA.

Clause 7.3 – Flood Planning

The objectives of this Clause are to minimise the flood risk to life and property associated with the use of land; to allow development on land that is compatible with the land's flood hazard, taking into account projected changes as a result of climate change; and to avoid significant adverse impacts on flood behaviour and the environment.

The subject site is identified as being within the flood planning area on the Flood Planning Map.

The proposed helipad will be a floating structure attached to the approved marina development. Flooding will not impact the proposed helipad. This matter is addressed within **Section 7.4** of this EA.

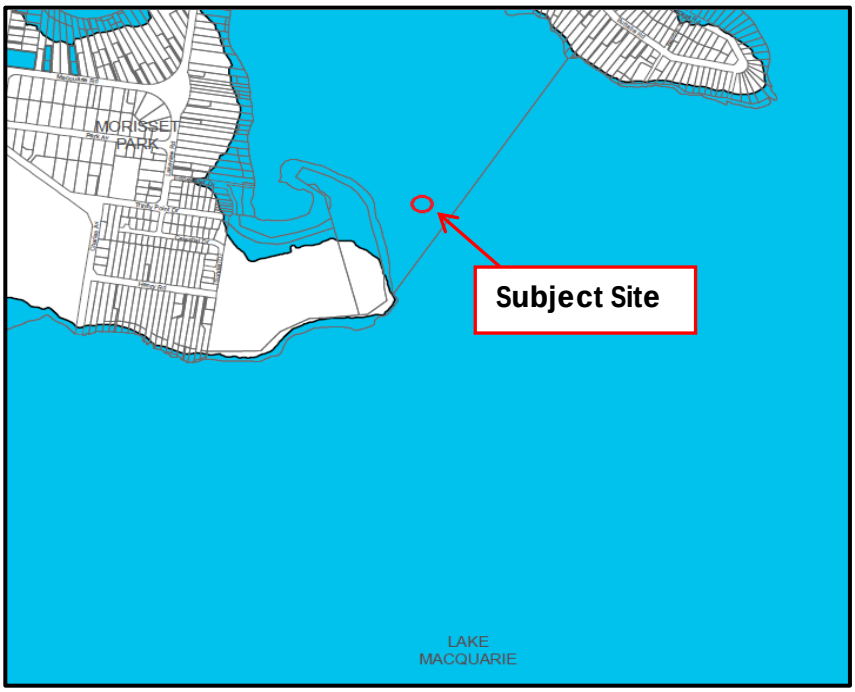


Figure 35 - LEP 2014 Flood Planning Map.

Clause 7.6 – Limited Development on Foreshore Area

This clause seeks to ensure that development in the foreshore area will not impact on natural foreshore processes or affect the significance and amenity of the area. The proposed helipad does not involve development in the foreshore area and this clause is not applicable.

Notwithstanding, below is a consideration of the Sub clause (3) matters that a consent authority must consider, including:

(a) The development will contribute to achieving the objectives for the zone in which the land is located; and

Comment

As noted above, the proposed helipad development is consistent with the objectives of the W1 Natural Waterways, SP3 Tourist, and the RE1 Public Recreation Zone.

(b) The appearance of any proposed structure, from both the waterway and adjacent foreshore areas, will be compatible with the surrounding area, and

Comment

The proposed helipad development will form part of the approved marina development. Visual appearance of the proposed helipad is discussed in **Section 7.7** and **Appendix G** of this EA.

(c) The development will not cause environmental harm, such as:

(i) Pollution or siltation of the waterway, or

(ii) An adverse effect on the surrounding uses, marine habitat, wetland areas, flora or fauna habitats, or

(iii) An adverse effect of drainage patterns, and

Comment

The proposed helipad has been designed to ensure that there are no adverse impacts in relation to: pollution of Lake Macquarie; marine habitat, flora and fauna or drainage patterns.

These matters are discussed within **Sections 7.5** and **7.6** of this EA.

(d) The development will not cause congestion of, or generate conflicts between, people using open space areas or the waterway, and

Comment

Southern Lake Macquarie and in particular Bardens Bay have been demonstrated to be an area of very low usage by recreational boat users. This matter is discussed in **Section 4.10** of this EA.

The proposed helipad will include the implementation of a 30m wide managed safety zone from the edge of the helipad during helicopter take-off and landing movements only. Marina management will implement a Helipad Operations Manual (refer to **Appendix D**) to ensure that any potential for land use conflict is minimised and safely managed.

(e) Opportunities to provide continuous public access along the foreshore and to the waterway will not be compromised, and

Comment

The approved marina development which the proposed helipad will be located off will establish new public access to and along parts of the foreshore. The proposed helipad will have no impact on this public access.

(f) Any historic, scientific, cultural, social, archaeological, natural or aesthetic significance of the land on which the development is to be carried out and of surrounding land will be maintained, and

Comment

The proposal will have no adverse impact on any matters of cultural heritage significance. This matter is addressed within **Sections 4.12** and **4.13** of this EA.

(g) In the case of development for the alteration or rebuilding of an existing building wholly or partly in the foreshore area, the alteration or rebuilding will not have an adverse impact on the amenity or aesthetic appearance of the foreshore, and

Comment

Not applicable.

(h) Sea level rise or change of flooding patterns as a result of climate change have been considered.

Comment

The design of the proposed helipad has taken into account flooding and sea level rise. The proposed helipad will be a floating structure connected to the marina and will not be affected by flooding. This matter is addressed within **Section 7.4** and **Appendix H** of this EA.

Clause 7.7 – Development on Sensitive Aboriginal Landscape Areas

This clause identifies sensitive Aboriginal landscape areas and ensures that they are recognised. The proposed helipad will not impact any sensitive Aboriginal landscape areas.

Aboriginal Archaeology is addressed within **Section 4.12** of this EA.

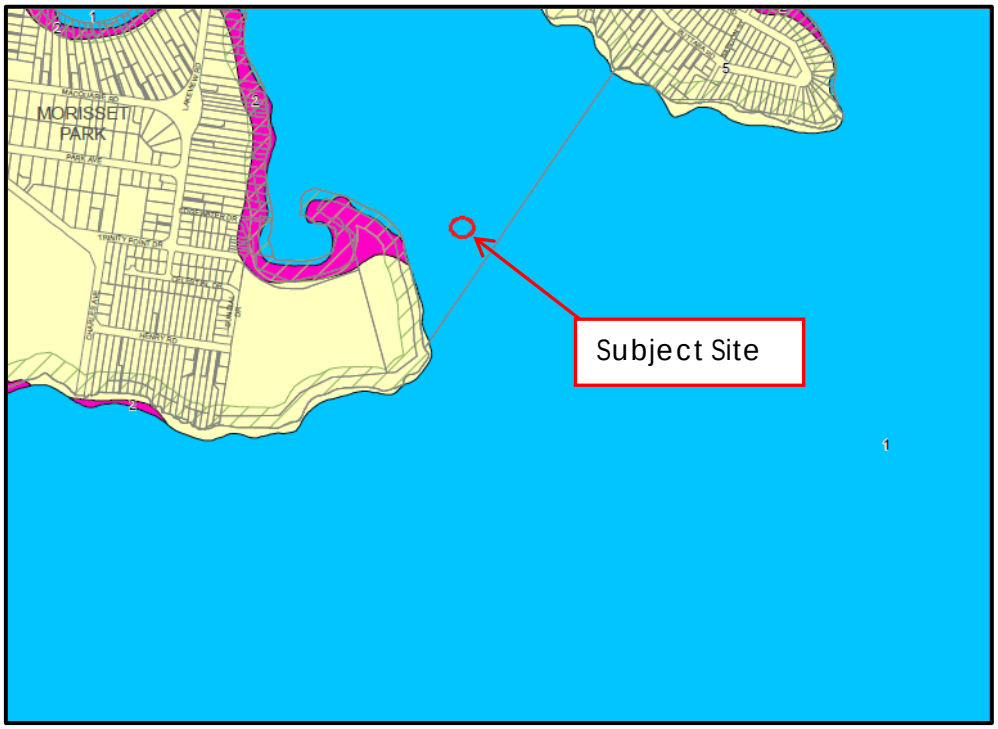


Figure 36 - Draft LEP 2014 Sensitive Aboriginal Landscape Areas Map.

Clause 7.17 – Use of Certain Land at Trinity Point, Morisset Park

This clause provides permissibility (with consent) and restrictions to land identified as 'Morisset Park Area 1' on the LEP Additional Permitted Uses map (see below figure). These uses relate to the Concept Plan approval 06_0309. The uses include dwellings, residential flat buildings and commercial premises as part of a facility for tourists. This clause is not relevant to the proposed helipad.

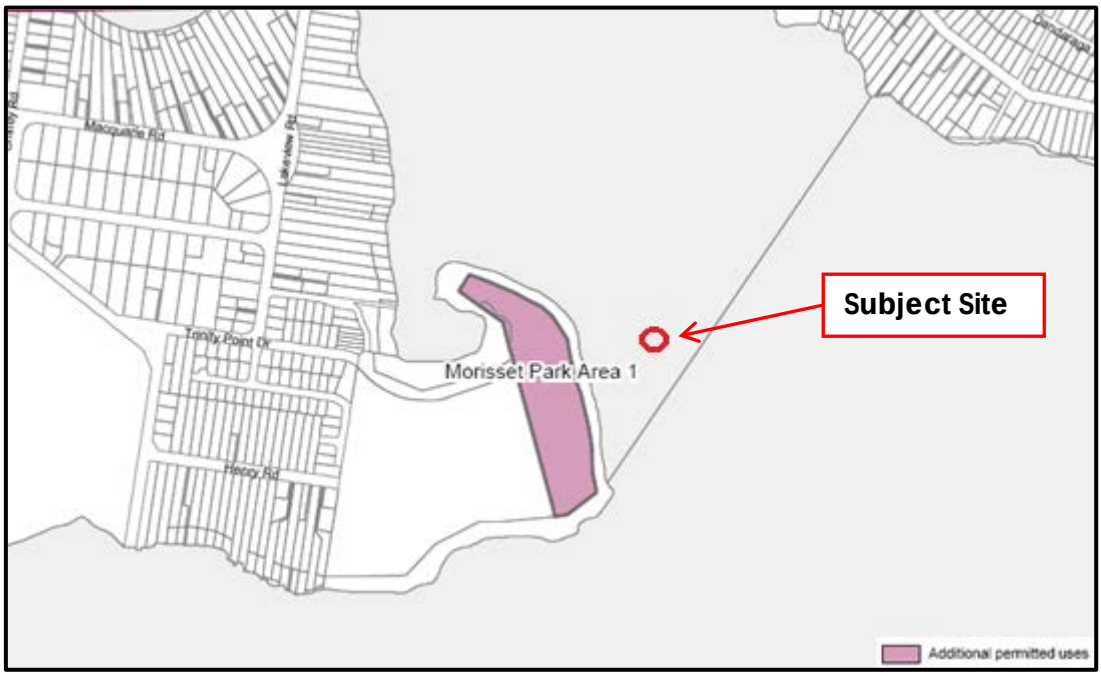


Figure 37 - LEP 2014 Additional Permitted Uses Map.

Clause 7.22 – Essential Services

Any required servicing infrastructure can be made available to the proposed helipad via the marina.

5.6.3 Lake Macquarie Local Environmental Plan 2004 Specific Clauses for Consideration

As outlined, these clauses are more relevant to Development Application for the construction and operation of the marina, but are briefly addressed.

Part 1 – Preliminary

Clause 3 – Objective of Plan

The objective of this plan is to achieve development of land to which this plan applies that is in accordance with the principles of ecologically sustainable development by:
(a) promoting balanced development of that land, and
(b) implementing the Lifestyle 2020 Strategy adopted by Council on 27 March 2000.

Comment

The proposed development provides for a balanced outcome between the environment, the community, employment creation and is consistent with ESD principles.

The proposed helipad will contribute to the establishment of a world class regional tourist destination, which is what the broader Trinity Point development will create.

The proposed helipad will reinforce and complement the marina, tourist and mixed use outcome at Trinity Point by providing the option for an alternate means of transport to the site for clientele. The provision of this facility, in combination with that already approved for Trinity Point, reinforces local employment opportunities (particularly in the hospitality and accommodation sector) and promotes economic activity in the Lake Macquarie LGA. The helipad itself does not generate but supports employment.

Acoustic amenity is acknowledged as a critical determining factor for the proposed helipad and the surrounding community values. Whilst forming a small part of an overall marina footprint, environmental assessment of the helipad construction and operation has confirmed that sensitivities can be appropriately mitigated and managed.

It is noted that the Lifestyle 2020 Strategy has been replaced by Council's Lifestyle 2030 Strategy adopted in March 2013. Council's Lifestyle 2030 Strategy is addressed within **Section 5.8.1** of this EA. Notwithstanding, the proposal remains consistent with the principles of the Lifestyle 2020 Strategy.

Part 2 Lifestyle 2020 Strategy – ***Clauses 12 (Vision), 13 (Values) & 14 (Aims)***

As above.

Part 3 – General Controls for Land Within Zones

Clause 15 – General Controls for Land Within Zones

As noted above, the proposal remains consistent with the zone objectives of the 11 Lakes and Waterways; 6(2) Tourism and Recreation, and 6(1) Open Space zones.

Part 4 – Special Provisions Applying to All Land

Clause 17 – Provision of Essential Infrastructure

Essential services will be provided to the proposed helipad facility as required in consultation with relevant service providers.

Part 5 – Special Controls for the Protection of the Environment or for Particular Land

Clause 30 – Control of Pollution

Clause 30 states:

> *'Consent must not be granted to development unless the consent authority is satisfied that all reasonable and practicable control measures will be implemented to minimise pollution likely to arise from carrying out that development.*
>
> ***Note.*** *Pollution may be of air, noise or water. Water pollution includes nutrient and sediment loading.'*

Comment

The proposed development remains entirely consistent with this clause. The proposed helipad has been designed with regard to important environmental considerations, which will be mitigated and managed throughout the construction and operation of the helipad. **Section 7** of this EA provides detailed consideration of all key environmental matters.

Clause 32 – Flood Prone Land

Clause 32 states:

(1) Despite any other provision of this plan, a person must not erect a structure or carry out a work on flood prone land without development consent.

(2) Before granting consent required by this clause, the consent authority must:

(a) consider the contents of any flood management plan or development control plan applying to the land that has been prepared in accordance with the principles contained in the flood management manual, which is available from the office of the Council, and

(b) be satisfied that to carry out the development in accordance with the consent would be consistent with flood hazard and levels of risk that are acceptable to the community.

(3) The consent authority may, by a condition of consent to the carrying out of development referred to in subclause (1), require all floors or levels of the structure or work to be at a height sufficient, in the opinion of the consent authority, to prevent or reduce the incidence of flooding of that structure or work, or of adjoining land.

Comment

The proposed development has been designed with consideration given to flooding. The helipad will be a floating structure attached to the approved marina and flooding will not impact the proposal. This matter is addressed in **Section 7.4** of this EA.

Part 6 – Heritage Provisions

Part 6 of the LEP provides objectives and controls for the protection and management of Aboriginal and European items / areas of heritage significance. The following clauses require consideration by the proposed development:

43 – Objective;
44 – Protection of heritage items and heritage conservation areas;
47 – Assessment of heritage significance;
48 – Development requiring notification;
50 – Development affecting places or sites of known or potential Aboriginal heritage significance;
51 – Development affecting known or potential archaeological sites or relics of European heritage significance; and
52 – Development in vicinity of a heritage item.

Comment

Through the Concept Plan approval process and approval processes for land based development and the marina (as outlined within **Section 2** of this EA), an excellent understanding of the Aboriginal and European heritage significance of the Trinity Point site and surrounding area has been achieved.

The proposal development will have no impact on any items of Aboriginal or European Heritage. Aboriginal Archaeology is addressed in **Section 4.12** of this EA and European Heritage is addressed in **Section 4.13** of this EA.

Schedule 8 – Land Subject to Special Development Requirements

Item No. 2 – Land at Morisset Park, being Lot 1, DP 1107753, Lots 31, 32 and 34, DP 1117408, Lot 410, DP 1139690 and Lot 5, DP 1143366.

The special development requirements of Item 2 are as follows:

'A master plan must have been adopted by the Council before consent is granted for any development. This master plan must include recommendations about the following:

(a) measures to assess, support, manage and conserve places and items of cultural heritage,
(b) measures to deliver a diversity of social and economic opportunities including employment,
(c) a strategy for the staged delivery of social infrastructure and services,
(d) measures that will achieve a balance between ecological, visual, scenic, cultural and heritage values and site sensitive development,
(e) the application of ESD principles,
(f) principles and a detailed strategy for the management of natural features, foreshore processes and hazards,
(g) measures to achieve development that is complementary to and reflects the character of surrounding urban developments,
(h) the location and design of development in a manner that complements the on-site and surrounding natural environment, including recommendations for the retention of vegetation,
(i) the precise location of development within different parts of the site to allow detailed site planning to achieve the most appropriate configuration of buildings, roads and other works to minimise potential environmental and visual impacts,
(j) providing for a diversity of built form that considers building height, form, massing, materials, colour and reflectivity, among others, in the design process with the intent of minimising impacts with surrounding developments and the lakeshore environment,
(k) meeting the objectives of the NSW Coastal Policy in planning and design across the site,
(l) retaining the natural form of the foreshore of Lake Macquarie and providing for public access links to the adjoining Lake Macquarie State Recreation Area,
(m) an urban form and structure that encourages walking, cycling and public transport use,
(n) the location and design of roads and pedestrian/cycleway systems to maximise the opportunity for public access to foreshore areas.'

Comment

The Kendall Grange Masterplan was adopted prior to the lodgement of the Concept Plan application (Application 06_0309). Each of the above matters were comprehensively addressed throughout the Masterplan and Concept Approval processes.

Item No. 3 – Land at Morisset Park in Zone 2(1), being Lot 1, DP 1107753, Lots 31, 32 and 34, DP 1117408, Lot 410, DP 1139690 and Lot 5, DP 1143366.

The special development requirements of Item 3 are as follows:

'For all land described opposite, the master plan referred to in item 2 above must include recommendations about the following additional matters:

(a) location and design of development in a manner that allows site sensitive residential development that responds to existing vegetation values, ecological values and visual aspects of this part of the site,
(b) location and design of developments in a manner that complements the on-site and surrounding natural environment, including retention of existing vegetation,
(c) measures to locate and design development within this part of the site to conserve and enhance the visual, ecological and environmental values of the site, including recommendations for the retention of vegetation,
(d) measures to provide for a diversity of built form that considers building height, form, massing, variable roof forms, materials, colour and reflectivity, among others, in the design and process and complements surrounding developments and the lakeshore environment,
(e) measures to site, consolidate and/or cluster buildings to create built forms that maintain existing vegetation cover and minimise potential environmental and visual impacts.'

Comment

The proposed helipad is not inconsistent with the above clause.

It is noted that the MOD 3 application seeks to include a helipad to Concept Approval 06_0309.

5.7 DEVELOPMENT CONTROL PLANS

5.7.1 Lake Macquarie Development Control Plan 2014

The Lake Macquarie Development Control Plan 2014 has been prepared to implement Council's Lifestyle 2030 Strategy and the LEP 2014. The DCP 2014 was adopted by Council in February 2014.

Provided below is a consideration of the relevant sections of the DCP with respect to the proposed helipad development.

DCP Section	Relevance	Comment
Part 6 – Development in Recreation and Tourist Zones	N/A	This Section of the DCP applies to all development within the RE1, RE2, and SP1 zones. It is noted that the subject site is within the W1 Natural Waterways Zone and therefore this component of the DCP is not applicable. Notwithstanding, the proposed helipad is ancillary to the marina and broader Trinity Point development which is contained over the adjoining RE1 and SP3 zones. This EA addresses all relevant considerations as outlined by this section of the DCP as follows: • Site Analysis – Section 4. • Scenic Values – Section 7.7 and **Appendix G**. • Geotechnical – Section 4.7. • Mine Subsidence – Section 4.7.1. • Stormwater & Flood Management – Section 7.4 & **Appendix H**. • Flora & Fauna – Section 7.6 & **Appendix F**. • Aboriginal & European Heritage – Sections 4.12 and 4.13. • Social Impact – Section 7.8 and **Appendix I**. • Design – Concept design is outlined in Section 3.0 & **Appendix C**. • Non-discriminatory Access – Addressed in DCP No 1 comments below. • Safer by Design – Addressed in DCP No 1 comments below. • Operational Management – A draft helipad operation manual is supplied within **Appendix D** of this EA. • Waste Management – A construction waste management plan will be supplied as part of the EIS to accompany DA 1176/2014. • Erosion & Sediment Control – Coastal erosion is addressed within Section 7.4 and **Appendix H** of this EA. • Noise – Section 7.2 & **Appendix E**.
Part 9.7 – Specific Land Uses • Foreshore and Waterway Development	N/A	This section of the DCP is not applicable as it only applies to development within the 'Foreshore Area' which is defined as the area between the foreshore building line and mean high water mark. Notwithstanding, this EA addresses all relevant considerations as outlined by this section of the DCP as follows: • Visual Impact – Section 7.7 & **Appendix G**. • Foreshore Stabilisation – Section and **Appendix H**.
Part 12.13 – Precinct Area Plans • Lake Macquarie Coastline	N/A	Not applicable as the land does not fall within the 'Coastal Risk Area' identified on the Coastal Risk Map within the draft LEP 2014. Notwithstanding, it is noted that the proposed development remains consistent with the provisions of SEPP 71 Coastal Protection (refer to Section 5.3.2 of this EA).

5.7.2 Lake Macquarie Development Control Plan No. 1

As Development Application 1176/2014 is subject to the provisions of the LEP 2004, it is also subject to former DCP No. 1.

Provided below is a consideration of the proposed helipad development against the relevant provisions of LMCC's DCP No.1. This will be more relevant as considerations for assessment at development application phase.

Part 1 – Introduction and Instructions

Section 1.4 – Objectives of Plan

The objectives of this Plan are to implement the Lifestyle 2020 Strategy (the strategy) by facilitating ecologically sustainable development.

The objectives of this Plan support the core values of the strategy of sustainability, equity, efficiency and, liveability to:

- *Promote environmentally sustainable and quality development in the City.*
- *Provide detailed guidance to prospective applicants of Council's requirements for building, subdivision, and land development.*
- *Elaborate on the requirements of the Lake Macquarie Local Environmental Plan (LEP) 2004, as a key tool in the LEP's implementation.*
- *Provide detailed criteria to assist Council in assessing Development Applications (as required by Section 79C(1)(a) of the Environmental Planning and Assessment Act).*

Comment

The Lifestyle 2020 Strategy has been replaced by Council's Lifestyle 2030 Strategy adopted in March 2013. Council's Lifestyle 2030 Strategy is addressed within **Section 5.8.1** of this EA. Notwithstanding, the proposal remains consistent with the principles of the Lifestyle 2020 Strategy.

The proposal remains consistent with the objectives of the DCP.

Part 2 – General Principles of Development

Section 2.1 Environmental Responsibility and Land Capability

ENVIRONMENTAL RESPONSIBILITY & LAND CAPABILITY		
PRINCIPLE	**RELEVANCE**	**WHERE ADDRESSED BY EA**
2.1.1 Ecological Values	Yes	Aquatic and terrestrial ecology are addressed in detail in Section 7.4 and **Appendix F** of this EA.
2.1.2 Ecological Corridors	N/A	
2.1.3 Scenic Values	Yes	The site is located within the lake and will be attached to the approved Marina development. A Visual Impact Assessment of the proposed helipad has been prepared and discussed Section 7.7 and **Appendix G** of this EA.

2.1.4 Tree Preservation & Management	N/A	
2.1.5 Bushfire Risk	N/A	
2.1.6 Water bodies, Waterways and Wetlands	Yes	The site is located on the lake attached to the approved marina. Water cycle management is addressed in Section 7.5 and **Appendix H** of this EA. Construction and operational management will be addressed as part of the EIS to be submitted (post determination of the MOD 3 application) as part of DA 1176/2014. A draft helipad operations manual is supplied within **Appendix D** of this EA.
2.1.7 Flood Management	N/A	The proposed helipad has been designed to float on top of the water, rising and falling with changing water levels (as per the design of the approved marina), and has taken into account potential impacts from lake flood. Flooding is addressed in detail in Section 7.4 of this EA.
2.1.8 Development on Flood Prone Land at Dora Creek	N/A	
2.1.9 Sloping Land & Soils	N/A	
2.1.10 Acid Sulphate Soils	N/A	
2.1.11 Erosion Prevention and Sediment Control	N/A	Coastal erosion and sediment control is addressed within Section 7.4 of this EA.
2.1.12 Mine Subsidence	Yes	The site is located in a mine subsidence district and consultation has been undertaken with the Mine Subsidence Board (MSB). MSB have confirmed that there are unlikely to be any issues with the proposed helipad and design parameters will be in line with the approved marina. The approved marina parameters are: • Subsidence: 150mm; • Strains: +/- 2mm/m; and • Tilt: 2mm/m. Mine subsidence will not impact the proposed helipad.
2.1.13 Contaminated Land Management	N/A	
2.1.14 Energy Efficiency	N/A	

2.1.15 Noise and Vibration	Yes	A Noise Impact Assessment has been prepared to accompany this EA. The assessment is discussed in Section 7.2 of this EA and provided in full within **Appendix E**.
2.1.16 Air Quality and Odour	Yes	Construction management will occur as per condition requirements and as outlined with a Construction Management Plan to be provided within the EIS to accompany DA 1176/2014. The proposed development will have no adverse operational air quality or odour impacts.
2.1.17 Building Waste Management	N/A	A construction Waste Management Plan will be prepared as part of the EIS to accompany DA 1776/2014.

Section 2.2 Social Impact & 2.3 Economic Impact

A Social Impact Assessment has been prepared by Key Insights to accompany this EA. This matter is discussed in **Section 7.8** of this EA and is provided in full in **Appendix I**.

The proposal remains consistent with this element of the DCP.

Section 2.4 Heritage

HERITAGE		
PRINCIPLE	**RELEVANCE**	**WHERE ADDRESSED BY EIS**
2.4.1 European Heritage Items	Yes	The European Heritage of the site and surrounding area is well known. This matter is discussed in detail in Section 4.13 of this EA.
2.4.2 Catherine Hill Bay Heritage Conservation Area	N/A	
2.4.3 Aboriginal Heritage Items	Yes	Aboriginal Archaeology is addressed in detail in Section 4.12 of this EA.
2.4.4 Natural Heritage Items	N/A	

Section 2.5 Stormwater Management, Infrastructure and On-Site Services

STORMWATER, INFRASTRUCTURE & SERVICES		
PRINCIPLE	**RELEVANCE**	**WHERE ADDRESSED BY EIS**
2.5.1 Essential infrastructure	Yes	The proposed helipad will be serviced with electrical and other essential infrastructure needed to service the helipad. This will be undertaken via service conduits incorporated into the gangway and pontoon design. Arrangements will be made with relevant service providers.
2.5.2 On-site Wastewater Treatment	N/A	
2.5.3 Stormwater Management (Drainage System Design)	Yes	Stormwater management measures will be implemented including: o Bunding of the helipad to prevent runoff from directly entering the lake; o Provision of readily accessible oil / fuel spill kits and containment boom; and o First flush treatment for the deck of the pontoon structure. This matter is discussed further in Section 7.5 and **Appendix H** of this EA.
2.5.4 On-site Stormwater Harvesting (Source Controls)	N/A	
2.5.5 Waste Management for Multi-Unit Dwellings	N/A	

Section 2.6 Transport, Parking, Access and Servicing

The purpose of the proposed helipad is to provide an alternate means of transport to the site that is not reliant on the road network.

TRANSPORT, ACCESS, PARKING & SERVICING		
PRINCIPLE	**RELEVANCE**	**WHERE ADDRESSED BY EIS**
2.6.1 Movement System	N/A	N/A
2.6.2 Traffic Generating Development	N/A	As previously noted, the proposed development is not a traffic generating development as defined by Schedule 3 of SEPP (Infrastructure) 2007.
2.6.3 Road Design	N/A	
2.6.4 Pedestrian & Cycle Paths	N/A	The proposed helipad is integrated into the marina design and will not affect pedestrian access and cycle paths approved within the broader Trinity Point development.

2.6.5 Public Transport	N/A	
2.6.6 Vehicle Parking Provision	N/A	
2.6.7 Car Parking Area and Structures	N/A	
2.6.8 Vehicle Access	N/A	
2.6.9 Access to Bushfire Risk Area	N/A	
Servicing Areas	N/A	
On-site Bicycle Facilities	N/A	
Non-Discriminatory Access & Use	Yes	Access to the helipad will be from the approved marina via a 1.5m wide gangway and three 4 x 3m pontoons. The design is compliant with non-discriminatory access and this detail will be confirmed within the EIS to accompany DA 1176/2014.

Section 2.7 Streetscape and Public Realm

STREETSCAPE & PUBLIC REALM		
PRINCIPLE	**RELEVANCE**	**WHERE ADDRESSED BY EIS**
2.7.1 Streetscape & Local Character	N/A	
2.7.2 Landscape	N/A	
2.7.3 Public Open Space	Yes	Promotion of foreshore land usage by the general public via pedestrian linkages around the site forms an integral part of the approved Trinity Point marina and land based design. The proposed development will have no impact on pedestrian networks and foreshore land usage.
2.7.4 Pedestrian Networks & Places	Yes	
2.7.5 Light, Glare & Reflection	N/A	
2.7.6 Views	Yes	A Visual Impact Assessment has been prepared to accompany this EA and is detailed within Section 7.7 and **Appendix G**.
2.7.7 Signs	N/A	
2.7.8 Fences	N/A	
2.7.9 Safety & Security	Yes	A bollard and chain will be installed on the marina at the gangway connection to restrict access to the helipad. Similarly, two (2) bollards will be installed on the marina

		gangway either side of the managed safety zone (refer to the concept plans provided within **Appendix C**) so that access is restricted within the managed safety zone on the marina breakwater during helicopter take off and landing movements. The helipad will form part of a marina that will be managed by an experienced marina operator with appropriate qualification in helipad operation management. A draft helipad operations manual is supplied within **Appendix D** of this EA. The proposed helipad will not constitute an increased crime risk to the subject site or broader Trinity Point development.

Part 3 – Specific Principles of Development

Section 3.1 Lake, Waterway and Coastline Development

LAKE, WATERWAY & COASTLINE DEVELOPMENT		
PRINCIPLE	**RELEVANCE**	**WHERE ADDRESSED BY EIS**
3.1.1 Development Adjoining the Lake and Waterways Zone	Yes	All key and relevant matters raised by this section of the DCP are addressed by the following sections of this EA: • Ecology – Section 7.6 and **Appendix F**. • Foreshore stabilisation / integrity – Section 7.4 and **Appendix H** of this EA. • Visual Amenity – Section 7.7 and **Appendix G** of this EA.
3.1.2 Development in or adjoining the coastal zone	Yes	SEPP 71 and its matters for consideration have been addressed in Section 5.3.2 of this EA.

5.8 OTHER LOCAL POLICIES AND CONTROLS

5.8.1 Lifestyle 2030 Strategy

Lifestyle 2030 Strategy was adopted by Council in March 2013 to replace Lifestyle 2020. The Lifestyle 2030 Strategy is a Strategic Plan that provides the long term direction for the overall development of the city and describes Council's high level policies for managing private and public development in Lake Macquarie. The 2030 Strategy is encapsulated in a series of strategic directions that convey envisaged outcomes for future land use patterns in the city.

Following are the key city visions as outlined within the 2030 strategy:

'The vision for the City, held by Council and the community, is that it is a place:
- *Where the environment is protected and enhanced;*
- *Where the scenic, ecological, recreational, and commercial values and opportunities of the Lake and coastline are promoted and protected;*

- *With a prosperous economy and a supportive attitude to a balanced growth, managed in a way to enhance quality of life and satisfy the employment and environmental aims of the community;*
- *That recognises, encourages, develops its diverse cultural life and talents, protects and promotes its heritage;*
- *That encourages community spirit, promotes a fulfilling lifestyle, enhances health and social well-being, encourages lifestyle choices and has opportunities to encourage participation in sport and recreation;*
- *That promotes equal access to all services and facilities and enables all citizens to contribute to and participate in the City's economic and social development; and*
- *That promotes affordable housing.*

The proposed helipad will be integrated into the approved marina, and will contribute to the establishment of a five star regional tourist destination. Accordingly, the proposal remains entirely consistent with the key city visions as outlined above. In particular, the following is noted:

- The proposed helipad has been designed with regard to important environmental considerations, noting the sensitive environment and surrounding locality that will accommodate the helipad. **Section 7** of this EA details a range of environmental investigations that have been undertaken to ensure that any potential impacts are appropriately minimised, mitigated and managed during construction and operation of the helipad;

- The proposed helipad has been designed to co-exist with the approved marina. The helipad design will respect the scenic, ecological and recreational value of Lake Macquarie and will promote local and tourist visitation to the site; and

- The proposal will represent further investment into Lake Macquarie.

The 2030 Strategy provides four core values being sustainability; equity; efficiency and liveability, and based on the above key outcomes associated with the proposal, the proposed helipad development will remain consistent with these core values.

The 2030 Strategy also includes a number of aims, which are identified and discussed below:

2030 Strategy Aims	Comment
Provide the community with realistic expectations about the future development patterns of the LGA, while retaining flexibility for land use decision making in the longer term.	The proposed helipad will be incorporated into the approved marina. The proposal remains consistent with this aim of the strategy.
Reinforce and strengthen centres so that a wide range of commercial and community services may be provided in a timely and accessible manner.	The proposed development will support the Morisset Town Centre, which is identified in the Hunter Regional Plan 2036 as a Growth Area and Lower Hunter Regional Strategy and 2030 Strategy as an 'Emerging Major Regional Centre'.
Provide local employment opportunities	The proposed helipad, whilst not generating

2030 Strategy Aims	Comment
for residents and to promote economic development consistent with the LGA's natural, locational and community resources.	additional specific jobs, will provide additional investment into the LGA and will support local employment in the broader marina and land based tourist development, by strengthening those jobs.
Guide the development of urban communities that are compact, distinct and diverse and include a range of housing types and activities.	This aim is not relevant to the proposed helipad development. Notwithstanding, it is considered that the overall Trinity Point development subject to Concept Approval 06_0309 (as sought to be modified) is consistent with this aim of the 2030 strategy.
Achieve a strong sense of positive community identity, through the development of local communities that are safe and liveable and offer a diversity of use, economic opportunity, and ready access to services, while minimising the use of private motor vehicles.	Refer to Social Impact Assessment in **Appendix I**.
Develop attractive and liveable urban centres in the LGA which reflect its physical and natural environment, and visual character.	The proposed helipad has been designed to form part of the approved marina, which reflects the natural environmental features of the site and respect the site's visual character.
Manage the City's natural environment so that its ecological functions and biological diversity are conserved and enhanced, and contribute to the City's overall well being and amenity.	The proposed helipad has been designed to ensure that any potential ecological impacts are minimised and managed. This is outlined in **Section 7.6** and **Appendix F** of this EA.
Manage the City's heritage and economic resources, in a way that protects the value of these resources and enhances the City's character.	The proposed helipad will have no impact on the heritage value of the site (both indigenous and non-indigenous). Refer to **Sections 4.12 and 4.13** of this EA. The broader Trinity Point Site includes a Cultural Heritage Management Plan and Interpretation Policy that will be implemented throughout the site. The proposal will represent additional investment into the LGA and is an essential component of a five star regional tourist destination.
Integrate land use with the efficient provision of public and private movement systems.	The proposed helipad will provide an alternate means of access to the site that is not reliant upon the road network.

Further to the above, to achieve the aims, values and vision, a number of strategic

directions are described within the 2030 strategy. These include:

- Strategic Direction 1 – A city responsive to the environment;
- Strategic Direction 2 – A city that makes equitable contribution to global sustainability;
- Strategic Direction 3 – A well designed adaptable and liveable city;
- Strategic Direction 4 – A well serviced and equitable city;
- Strategic Direction 5 – A city of progress and prosperity;
- Strategic Direction 6 – A city responsive to the wellbeing of its residents; and
- Strategic Direction 7 – A city that practices participatory democracy and is well organised.

The proposed helipad development, based on the above discussion addressing the values and aims of the 2030 strategy, remains consistent with the Strategic Directions of the 2030 Strategy.

The final section of the 2030 strategy provides a range of maps and intent statements. Relevant to the subject site, and consistent with the Lower Hunter Regional Strategy, Morisset is identified as an 'Emerging Major Regional Centre' and an area identified for growth and expansion. This is also supported in the recently adopted Hunter Regional Plan 2036 which identifies Morisset as a 'Growth Area'. The proposed helipad will contribute to Morisset emerging as a major retail centre and growth area given that it will allow a five star tourist facility to be created.

Lifestyle 2030 is also considered within the Social Impact Assessment in **Appendix I**.

Overall, the proposed development remains consistent with the provisions of the Lifestyle 2030 Strategy.

5.8.2 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 mooring management practices support the Waterway's Authorities 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.

The plan sets out a number of general conditions for the location of moorings, protection of the environment and provision of boating infrastructure including:

- The provision of an appropriate level of vessel shelter from severe wind and waves;
- Adequate swing spacing between moorings to prevent vessel damage;
- Minimal interference to passive and/or other competing uses for the surrounding waterway(s);
- A fairway in bays through moorings to link public wharves/commercial marinas/yacht clubs etc to the open navigation areas;
- Adequate space between the shoreline and/or structure (wharves, or jetties) adjacent to public and private lands;
- Safe boating requirements such as speed restrictions, navigation marks and no wash areas for vessels using waterways in or adjacent to designated mooring areas; and
- Protection of key fish habitats and promotion of ecologically sustainable development.

With regard to Bardens Bay, the following is noted in the Mooring Management Plan:

- The bay is very popular for a range of boating activities and the majority of the area has been left free of moorings;
- A small group of moorings will be permitted on the southern side of the bay, and the majority on the western and northern shores. These moorings will be permitted two or possibly three wide in these areas;
- Existing moorings already define the proposed limits of moorings within this bay; and
- The area contains two shallow lagoons into which moorings won't be placed.

The proposed helipad remains consistent with the Mooring Management Plan, in particular noting that it has been designed to form an integrated part of the approved marina, which has been approved

Any passive / competing use conflicts associated with helicopter landing and take-off movements will be managed through the implementation of a 30m safety management zone. A draft helipad operation manual is provided within **Appendix D** of this EA.

The proposal will include the installation of an illuminated cardinal marker located 30m east of the proposed helipad to assist with safe navigation.

Protection of aquatic habitat is addressed within **Section 7.6** and **Appendix F** of this EA.

5.8.3 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:

- Maintain or improve existing water quality in Lake Macquarie consistent with expected waterway use;
- Maintain or improve the ecological status of Lake Macquarie; and
- Maintain or enhance the foreshores of Lake Macquarie to protect the ecological, recreational and visual amenities.

Management Plan actions relevant to new foreshore development and boating facilities are as follows:

- Rigorously enforce sediment and erosion control requirements on construction sites;
- Require water sensitive urban design techniques in new development areas and infill development;
- Provide more boat sewage discharge facilities around the lake;
- Liaise with relevant government agencies and boat owners to ensure that all new moorings are of a type that would not damage seagrasses;
- Create riparian buffer zones; and
- Enhance and maintain foreshore vegetation.

The proposed helipad remains consistent with the objectives of the Estuary Management Plan. In relation to the relevant actions for new development, the following is noted:

- Water management is addressed in **Section 7.5** and **Appendix H** of this EA;
- The proposed helipad has been located to ensure no impact on seagrasses. This is detailed in **Section 7.6** and **Appendix F** of this EA; and
- The proposal will have no impact on foreshore vegetation.

5.8.4 Lake Macquarie Foreshore Stabilisation and Rehabilitation Guidelines

The purpose of the guideline is to assist landowners to determine which foreshore stabilisation treatment and construction techniques to implement when undertaking development on the foreshore. The guidelines were initially adopted by Council in 2004 as a support document to the LEP 2004 and DCP No. 1, however in 2013 the document was revised to reference Council's LEP and DCP 2014.

The guidelines note that 'soft' options (e.g. creation of beaches) are the preferred option to address foreshore erosion and suit most conditions in Lake Macquarie. Reinstatement or rehabilitation of foreshore vegetation is also encouraged.

Additional foreshore stabilisation measures are not proposed.

5.9 OTHER RELEVANT POLICY & GUIDELINES

5.9.1 Environmental Action for Marinas, Boatsheds and Slipways

The purpose of this guide is to assist marina operators to understand environmental risks and take action to improve environmental risks. The approved marina has been designed in accordance with this guide. Noting that the helipad will form part of the approved marina, following is a consideration of the relevant issues:

- Water pollution caused by allowing any other material other than rainwater to enter waterways – This matter is addressed in **Section 7.5** and **Appendix H** of this EA;
- Handling of goods such as fuel – No refueling facility is proposed; and
- Noise affecting the amenity of the surrounding community – This matter is addressed within **Section 7.2** and **Appendix E** of this EA.

It is considered that the proposed helipad development remains consistent with this guide.

6.0 Consultation & Identification of Issues

6.1 INTRODUCTION

This section describes how the project team identified the key issues associated with the proposal and the specialist studies undertaken to support this EA.

6.2 OVERVIEW OF METHODOLOGY

The key issues associated with the proposed development are well understood by the proponent, given the Concept Approval and subsequent MOD processes that have been undertaken for the broader Trinity Point site as well as subsequent development approval processes that have been undertaken for water and land based components of the Concept Approved Trinity Point development. These processes have been undertaken by the proponent since 2007.

The methodology used to identify key issues associated with the project and guide the preparation of this EA includes the following:

- Consideration and compliance with the Secretary's Environmental Assessment Requirements (MP 06_0309 MOD 3);
- Detail review of all applicable legislation as confirmed in **Section 5** of this EA; and
- Consultation with key public authorities, stakeholders and the community.

6.3 CONSULTATION

In establishing parameters and design for the project, consultation was carried out with key authorities and stakeholders. **Appendix J** includes a detailed consultation log.

Of particular importance to the development process, during consultations, JPG originally communicated an intent for a concurrent state and local planning process, being the Environmental Assessment for the modification to the Concept Approval (MOD 3) and, at the same time, for the Environmental Impact Statement (for the Development Application). JPG received feedback from the community expressing confusion about running the state and local planning process concurrently with each other. This matter was discussed with the NSW DPE and Lake Macquarie City Council staff. Whilst JPG are entitled to submit the two applications concurrently, JPG considered the planning process matters raised and agreed to submit documentation in a two stage process as follows:

1. Firstly, lodge the EA to the NSW DPE for the Modification (MOD 3) to the Concept Approval for public exhibition, assessment and determination; and
2. Secondly, lodge the EIS to LMCC as additional information to accompany DA 1176/2014 (assessment of which will remain ceased until MOD 3 is determined).

In preparing the EA, contact was made with key public authorities as listed in the SEARs including:

- NSW Department of Planning;

- Lake Macquarie City Council;
- Lake Macquarie City Council and LMCC Estuary and Coastal Management Committee and LMCC Aquatic Services Committee;
- NSW Environment Protection Authority;
- NSW Roads and Maritime Services (NSW Maritime);
- Office of Environment and Heritage (OEH);
- Commonwealth Department of Environment;
- Department of Planning & Environment – Hunter Regional Office, Newcastle;
- Department of Primary Industries (DPI) (NSW Office of Water, Crown Lands and Fisheries);
- Commonwealth Civil Aviation Safety Authority;
- Mine Subsidence Board;
- Registered Aboriginal Parties;
- Hunter Water; and
- Ausgrid.

All of the government agencies were aware of and familiar with the broader Trinity Point Concept Approval (and its terms of approval) and the approved Stage 1 Marina and other land based approvals (and their terms of approval). The outcomes of the majority of the government agency contact was either acknowledgement of the project briefing without any specific additional comment, re-affirmation of the matters to be addressed by the SEARs, limited identification of new issues and in some instances, a preference to consider the project more fully once an application had been submitted and all available information was supplied. Full details of key issues identified are provided in **Appendix J**.

Consultation with Registered Aboriginal Parties (RAP) was undertaken by Insite Heritage at the RAP meeting on 6 May 2016. The registered parties raised three items for consideration in the EA:

- Will the wind generated by the helicopter blades blow bird nests from trees?

  JPG Response – No, the proposed helipad is located approximately 145m from the edge of the lake. This distance will ensure that no bird nests are dislodged from shoreline trees. Aquatic and terrestrial ecology assessment has been undertaken as part of this EA, and it is demonstrated that the proposal is suitable. These matters are discussed further in **Section 7.6** of this EA.

- Will marine life be adversely impacted by helicopter movements?

  JPG Response – An aquatic ecology assessment has been undertaken as part of this EA. The assessment confirms that the proposal can be undertaken in terms of aquatic ecology considerations and this is confirmed in **Section 7.6** and **Appendix J** of this EA.

- Is the helipad floating or will it be piled into the lake bed?

  JPG Response – The proposed helipad is a floating structure supported by four (4) telescopic piles on each corner of the helipad driven into the lake bed. The helipad will be attached to the marina by a 17m long gangway and three 4m x 3m pontoons supported by an additional pile. The telescopic piles will allow the proposed helipad to float in the same way as the design of the marina. Refer to **Section 3** of this EA for details on the helipad design.

Full details of key matters discussed are provided in **Appendix J**.

JPG made presentations to the Lake Macquarie Aquatic Services Committee (18 May 2016) and the Lake Macquarie Estuary and Coastal Management Committee (1 June 2016). The presentation to both committees included a power point presentation briefing on the project; video footage taken from the acoustic test day showing the helicopter movement tested from the south (in an anticlockwise approach/depart direction); and a question and answer session between committee members, Bryan Garland of JPG and Les Binkin (Marina Operator). The Mayor and elected Councillors have also been briefed during the preparation of this EA.

The matters raised by the respective committees are summarised in **Tables 6** and **7** below and outlined in full in **Appendix J**.

Table 6 - Lake Macquarie City Council Aquatic Services Committee Briefing

Matter Raised	Response
Does the helicopter make waves?	Rotor downwash is addressed within Section 7.1 and **Appendix D** of this EA. The proposed helipad would not significantly influence the local wave environment in a manner that increases coastal erosion hazard at Bardens Bay. This matter is addressed within Section 7.5 of this EA.
How much fuel does the helicopter require and without a refuelling facility, where will helicopters refuel?	No helicopter refuelling facility is proposed. Helicopters that use the helipad are anticipated to arrive from Sydney or the Hunter Valley Vineyards District and have enough fuel to complete a return trip. Pilots using the helipad will be advised that a refuelling facility is not available. It is noted that alternative refuelling facilities are available within Newcastle.
Where is the marina fuel wharf?	Whilst not relevant to the helipad proposal, the marina fuel wharf is located on the western corner of the marina structure.

Matter Raised	Response
What is the distance to the closest existing residence?	The distance to the closest existing residence (not associated with the Trinity Point development) is in excess of 475m to the west.
Who will monitor compliance with the 8 (daily) / 38 (weekly) max movements?	The maximum daily and weekly movements would form a condition of development consent and a condition of the Environment Protection Licence and be monitored and reported accordingly.
Are there other considerations or just noise impact assessment?	There are a range of other considerations as confirmed by the SEARs for the MOD 3 application and the SEARs for the EIS / Designated Development Application. These include matters relating to helipad design; public access / recreational amenity; coastal processes; hydrodynamic processes; ecology (both aquatic & terrestrial) and visual impact.
A member of the committee confirmed that their next door neighbour on one side uses a lawn mower with a sound release of up to 75dB and a neighbour on the opposite side uses a Harley Davidson motorcycle with a sound generation of approximately 95dB. In perspective the helipad will generate less noise than these uses.	Noted.
The committee thanked JPG for the presentation, confirming that it was very informative and well presented.	Noted.

Table 7 - Lake Macquarie Estuary and Coastal Management Committee Briefing

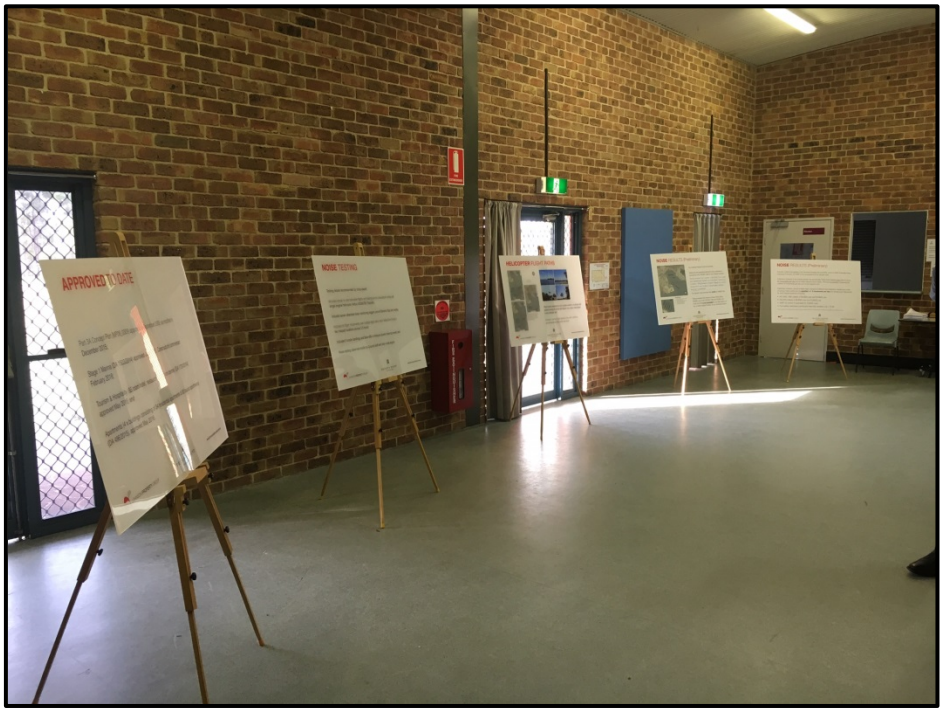
Matter Raised	Response
Will the helipad impact seagrass?	The proposed helipad is located well clear of seagrass including zostera. This matter is discussed in Section 7.6 of this EA.
Has JPG explored the option of running a boat shuttle service between Pelican Airport to transport tourists arriving/departing by helicopter?	Yes, however as outlined in Section 3.4.1 of this EA, this option is not considered a practical outcome that would achieve the objectives.
How does noise from a helicopter compare to noise from a large power boat?	The proposal is acceptable in terms of noise considerations. Noise impact addressed within **Section 7.2** of this EA and **Appendix E**.
Where will the helicopter be housed? Do JPG own the helicopter to be used?	The proposed helipad is for use by guests that arrive with prior permission only. There are no helicopter housing requirements. A Trinity Point (or JPG) helicopter is not provided as part of the development.

Matter Raised	Response
Will JPG apply time limits for helipad operation?	Yes, time limits for helipad operation are proposed in accordance with acoustic recommendations. The helipad will be used in daylight hours only (seasonal dependant).
Will the EIS consider cumulative impacts, in particular considering the operations of the Westpac Rescue Helicopter which will shortly relocate to Pelican Airport?	The EA is accompanied by an acoustic impact assessment as specified by the respective SEARs (refer to **Appendix E**.
Was background noise considered? What is the difference between background noise and recorded noise?	Yes. This matter is confirmed in Section 7.2 and **Appendix E** of this EA.
What weather conditions occurred when testing was undertaken? Will modelling consider a range of weather conditions?	This matter is confirmed in Section 7.2 and **Appendix E** of this EA.
Is a helipad permissible in the zone?	Development Application 1176/2014 was lodged with Lake Macquarie Council in July 2014. At the time of lodgement, a helipad is a permissible use in the '11 Lakes and Waterways Zone' under the provisions of the Lake Macquarie Local Environmental Plan 2004, and the DA is permissible under transitional provisions (refer Section 5.6.1 of this EA).
Will an exclusion zone be required to be established for the operation of the helipad?	A 30m managed safety zone during helicopter take-off and landing will be applied. This is outlined within the HLS Report **Appendix D**.
How will safety of recreational users of Bardens Bay be ensured? In particular, children may be attracted to helicopters landing and taking off. What happens in the event that a sail boat with a tall mast is anchored in close proximity to the helipad when a movement is needed?	A Helipad Operations Manual will be implemented and is discussed in Section 7.1 of this EA and a draft provided in **Appendix D**. The manual outlines procedures for management of pedestrians & marina users as well as management of persons and craft within the 30m managed safety area when helicopter movements occur. Trinity Point Marina personnel responsible for the Helicopter Landing Site (HLS) will be appropriately trained to implement the manual for safe HLS operation in respect of recreational and marina users within Bardens Bay. Additionally, pilots approaching and departing will take due care.
Which noise logger was furthest south?	Noise logger locations were determined by The Acoustic Group in consultation with LMCC. The southernmost noise logger was located at the southern end of Charles Avenue, Morisset Park.

Matter Raised	Response
Bardens Bay is a public recreational area. There is community concern regarding commercialisation of this area.	JPG entered into an agreement with Crown Lands following Concept Plan Approval in 2010. Design modifications were undertaken to the marina (required by condition B1 of the Concept Approval and formalised through the MOD 2 approval) which in part reduced the distance that the marina extends into Bardens Bay. The marina combined with the helipad will require a lease area of 6.207ha, which is less than the originally agreed area with NSW Crown Lands of some 6.88ha with the safety management zone also included, the area is still less than the original agreement.
Will JPG reinstate the old dilapidated swimming enclosure on the southern side of the bluff?	Reinstatement of the dilapidated swimming enclosure on the southern side of the bluff does not form part of this application. This matter is subject to separate negotiations between JPG, Crown Lands and LMCC.

JPG held a community 'drop in' information open session on 31 May 2016 in relation to the preliminary helipad proposal. The session was notified to surrounding residents and known community associations, and included the provision of summary boards of the preliminary proposal and attendance by representatives of JPG, The Acoustic Group and ADW Johnson. A total of 6,533 invitations to the session were issued by mail to residents of Balcolyn, Brightwaters, Mannering Park, Mirrabooka, Morisset Park, Summerland Point, Sunshine, Windermere Park, Yarrawonga Park, Bonnells Bay, Silverwater, Wyee and Wyee Point as well as a Public Notice within the Lakes Mail newspaper on 26 May 2016.

Invitations were also issued to the Mayor, elected Councillors, State Member, Council staff, NSW DPE, NSW EPA, and DPI Crown Lands.



Photograph of Summary Boards Available at Community Open Day Session

Photograph of Community Open Day Session

The session was well attended by 101 people over three hours and provided the opportunity for members of the public to directly discuss, question and share opinions on the proposal. The session was largely attended by persons opposing the project, with some people offering quiet support and neutral opinions. Many practical and rationale questions were put to JPG, The Acoustic Group and ADW Johnson representatives in attendance, and the majority of questions were matters raised with the SEARs for the EA Report (MOD 3) and the separate SEARs for the Development Application EIS (SEAR 846) and already being investigated and addressed through the environmental assessment.

As identified above there was some confusion over the state and local planning process and their relationship. As confirmed above and contrary to information provided at the session, these processes have been agreed to be separated into two steps being lodgement of this EA with the NSW DPE to support the MOD 3 application first for exhibition, assessment and determination; followed by lodgement of an EIS (to support DA 1176/2014) to Lake Macquarie City Council for exhibition, assessment and determination.

Of the issues of concern raised, the matters could be grouped into the following considerations:

- Adverse acoustic and vibration impact;
- Methodology of acoustic assessment, including test day weather conditions; time of day; type of helicopter used; and noise logger locations. Were Council afforded the opportunity to have input on the methodology and did Council staff attend the test day?
- Number of movements proposed and how the maximum movements proposed (8 per day and 38 per week) will be monitored and enforced;
- Hours of operation;

- Flight paths proposed and how flight paths will be regulated;
- Preference of the flight paths to and from the south over the water;
- Will the helipad be available for emergency services?
- Will the helipad be operated privately or commercially? Are joy flights proposed?
- Lack of trust in JPG, NSW DPE and LMCC;
- Potential for JPG to obtain approval, and then make further application to intensify helipad operation;
- Adverse impact on aquatic ecology and flora and fauna;
- There is no justification for a helipad. Why is a helipad needed at Trinity Point?
- The proposal will benefit a small number of tourists whilst affecting the amenity of existing residents;
- The alternate option of using Lake Macquarie Airport with a boat shuttle service to and from Trinity Point is a more suitable alternative;
- Permissibility of a helipad;
- Implications of helipad to public use of Bardens Bay waters;
- Safety of recreational lake users within Bardens Bay;
- Environmental impacts including impacts to water movement through the helipad, general water quality (construction and operation), and operational management of the helipad including oil and fuel spills;
- Adverse visual impact;
- How will the helipad operate safely in respect of the marina?
- What emergency procedures will be put in place?
- Many residents were not notified of the acoustic test day or community 'drop in' information session. Accordingly the test day should be re-taken.

It is understood that a subsequent separate public meeting was called by local community groups and JPG were not in attendance.

6.4 OUTCOME OF ISSUE IDENTIFICATION

As a result of detailed consideration of the Secretary's Environmental Assessment Requirements, Concept Approval 06_0309, and key legislation as well as consultation with the NSW Department of Planning & Environment, Lake Macquarie City Council, other regulatory authorities and other key stakeholders including local Registered Aboriginal Parties and the local community, a comprehensive list of key issues for consideration by the proposed helipad Modification Application (MOD 3) was determined. **Section 7** of this EA (and other parts of the EA) addresses these issues in detail.

Johnson Property Group welcome the involvement of government agencies and the community during the assessment of this proposal, and are committed to responding and resolving any matters which arise during the assessment, consultation and determination phase.

JPG are in the process of establishing a website with links to information, as well as for dissemination of key fact sheets and frequently asked questions sheets.

7.0 Environmental Assessment

7.1 ESTABLISHMENT OF HELICOPTER LANDING SITE

7.1.1 Background

The Civil Aviation Safety Authority (CASA) have published 'Guidelines for the establishment and operation of onshore Helicopter Landing Sites' CAAP 92-2(2), February 2014 (CASA Guidelines). They provide guidance, interpretation and explanation to the aviation industry, including setting out factors that may be used to determine the suitability of a place for the landing and taking-off of helicopters. The CASA Guidelines rely on the pilot in command to have sound piloting skills and sound airmanship, and that visual meteorological conditions exist for flight.

Avipro, a specialist aviation and safety consultancy, was engaged to assist in identifying the likely helicopters to use the Trinity Point helicopter landing site (HLS), review wind conditions and confirm helicopter approach and departure flight paths to the proposed HLS (in conjunction with the acoustic specialist) and to assess compliance of the HLS against the CASA Guidelines. Additionally, Avipro was also engaged to prepare a draft Operations Procedure Manual, to include key operational management requirements for the HLS. **Appendix D** includes the Avipro assessment and attachments.

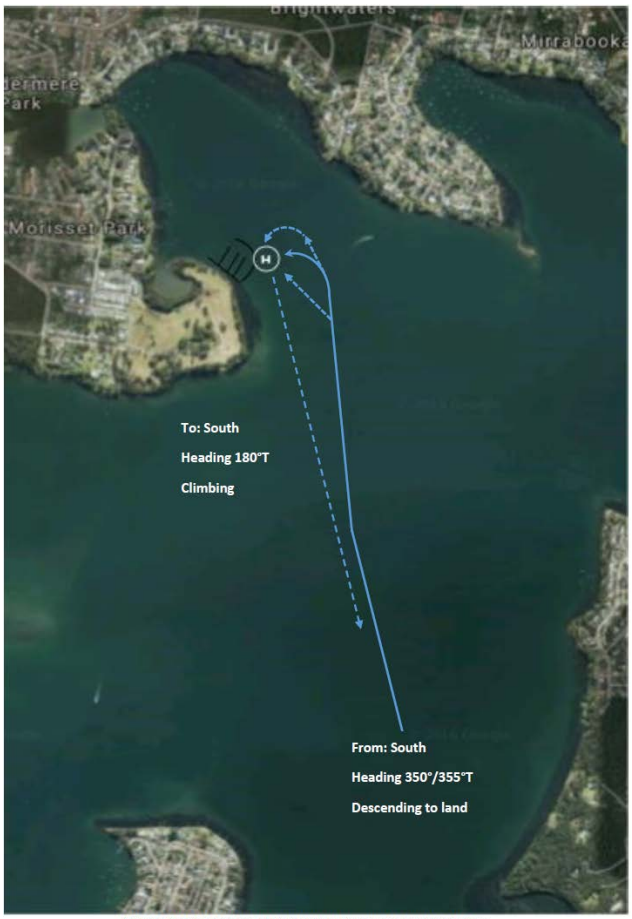
7.1.2 Considerations Informing Review against CASA Guidelines

Avipro were briefed on the priority of the proponent to propose a HLS to support the marina and tourist destination whilst minimising the impact of helicopter noise generated by use of the facility. They contributed within the multi-disciplinary team that has informed decisions on typical helicopters that would use the HLS, preferred flight paths to cater for wind directions and operational procedures and practices that contribute to minimising noise impact (refer **Section 7.2** of this report), whilst also including a fundamental consideration on aviation needs and safety.

Based on the likely helicopters to use the Trinity Point HLS (bring primarily small turbine engine helicopters with occasional medium sized helicopters) – generally as per the list included in **Appendix D,** Avipro identified that for the purpose of designing the pontoon and addressing the CASA Guidelines, the largest helicopter should be selected as the 'design helicopter'. Avipro recommended this to be the Agusta Westland AW109 which is the heaviest (2,850kg) and longest (13.04m) helicopter from the list of identified likely helicopters to use the HLS.

Based on the helicopter tracks flown on the acoustic test day, which took into account the approved marina to the north and surrounding residential areas around Bardens Bay, Avipro reviewed and endorsed preferred flight paths for approach and departure to the HLS (refer **Appendix D and Figure 38** below) as catering for different wind conditions, aligning with 'fly neighbourly' principles, and with appropriate obstacle free surfaces and safety in mind. Generally, when no prevailing wind, calm conditions and for all winds other than S/SE, preferred flight paths are to the south and operate over water. In S/SE winds, flight paths can either be to and from the south (with an approach turn) or come from the north.

Approach Path A to meet Calm conditions, North, North East, North West and East winds.



Approach Path B1 to meet North West, West and South West winds.

Approach Path B2 designed to meet South East, South, South West winds.

Alternate Approach Path C for South West, South, South East winds. This is an Alternate to Path B2.

Figure 38 - Preferred Approach and Departure Paths (AviPro).

7.1.3 Compliance against CASA Requirements

Avipro has identified that the proposed HLS is most appropriately categorised as a 'Secondary HLS' under the CASA Guidelines, rather than a 'Basic HLS', noting however that night use is specifically precluded, and no refuelling or ground maintenance is proposed. The HLS is not an elevated HLS (as it doesn't sit 2.5m or higher above the water surface around the pontoon), and nor is it a helideck (as it is not considered to be 'offshore').

Avipro has reviewed the siting of the proposed HLS and the approach and departure paths, and support the concept siting and approach/departure to the HLS, confirming they meet separation, slope and surface width requirements including sufficient obstacle free approach and departure gradients clear of the marina.

Based on the design helicopter (refer **Section 7.1.2** above), Avipro has further identified the basic building blocks of the HLS and the required physical attributes and markings from the CASA Guidelines. These have been incorporated into a concept plan, which is provided to demonstrate that compliance can be readily achieved (and to inform environmental assessment on other considerations such as operational management).

Components of the proposed concept plan for the HLS itself (refer plans in **Appendix C** and as included as **Figure 39** below), relative to the CASA Guidelines, include:

- The floating pontoon is shown as a compliant size and design to function as the Final Approach and Take-Off Area (FATO), being 20m x 20m (1.5 x length of the design helicopter, being 13.04m), providing ground effect and with future design for sufficient structural integrity to accept the static load of the design helicopter, being 3.2t and a dynamic load bearing capacity of approximately 10.4t. As required by the CASA Guidelines, the pontoon can readily include required HLS markings including the HLS identification marking, edge of FATO marking, approach and departure path markings and maximum operational helicopter markings, and these are shown on the concept plan. The pontoon is required to be clear of all objects and animals likely to be a hazard to the helicopter, and this is provided for in the concept plan;

- The surface of the floating pontoon is also shown with a compliant Touchdown and Lift Off Area (TLOF), being 11m (0.83 x length of design helicopter) – generally shown as yellow circle with 'H' marking in centre;

- An additional 3.3m wide area (0.25 x length of design helicopter) is identified around the edge of the floating pontoon. As required by the CASA Guidelines, this 'safety area' does not need to be a marked area or solid surface, but is to be free of objects that exceed a height of 25cm. In order to connect the pontoon to the approved marina breakwater, whilst comply with the obstacle restrictions, a length of additional pontoons are shown (of suitable width to exclude the need for handrails), with a standard gangway with handrails sited further outside the defined safety area.

- The floating pontoon has been sited, relative to the approved marina, to provide an area of 30m from the edge of the pontoon in which, during actual landing and take-off only, no person (other than associated with the safe conduct of the helicopter operation and who is trained in safety procedures) is to be within. This is not a permanent exclusion zone, but simply a management zone for safety reasons during the movement of helicopters approaching and departing the HLS.

It will be managed by the helicopter landing officer associated with the marina, with pilots ultimately responsible to ensure the helicopter (and its rotor downwash) will not constitute a hazard to persons or objects. In a design sense, the zone sits over the marina breakwater and over water (with access control). This zone has been a key determinant in the final siting of the pontoon and the length of the connection between the pontoon and the marina breakwater.

- Other physical and ancillary considerations can be readily incorporated into the HLS concept, including fire protection, wind indicator and personnel access routes (noting Avipro recommend the inclusion of life buoys on the side of the pontoon for any extreme case where the primary access route provided by the gangway). This is shown on concept sections below.

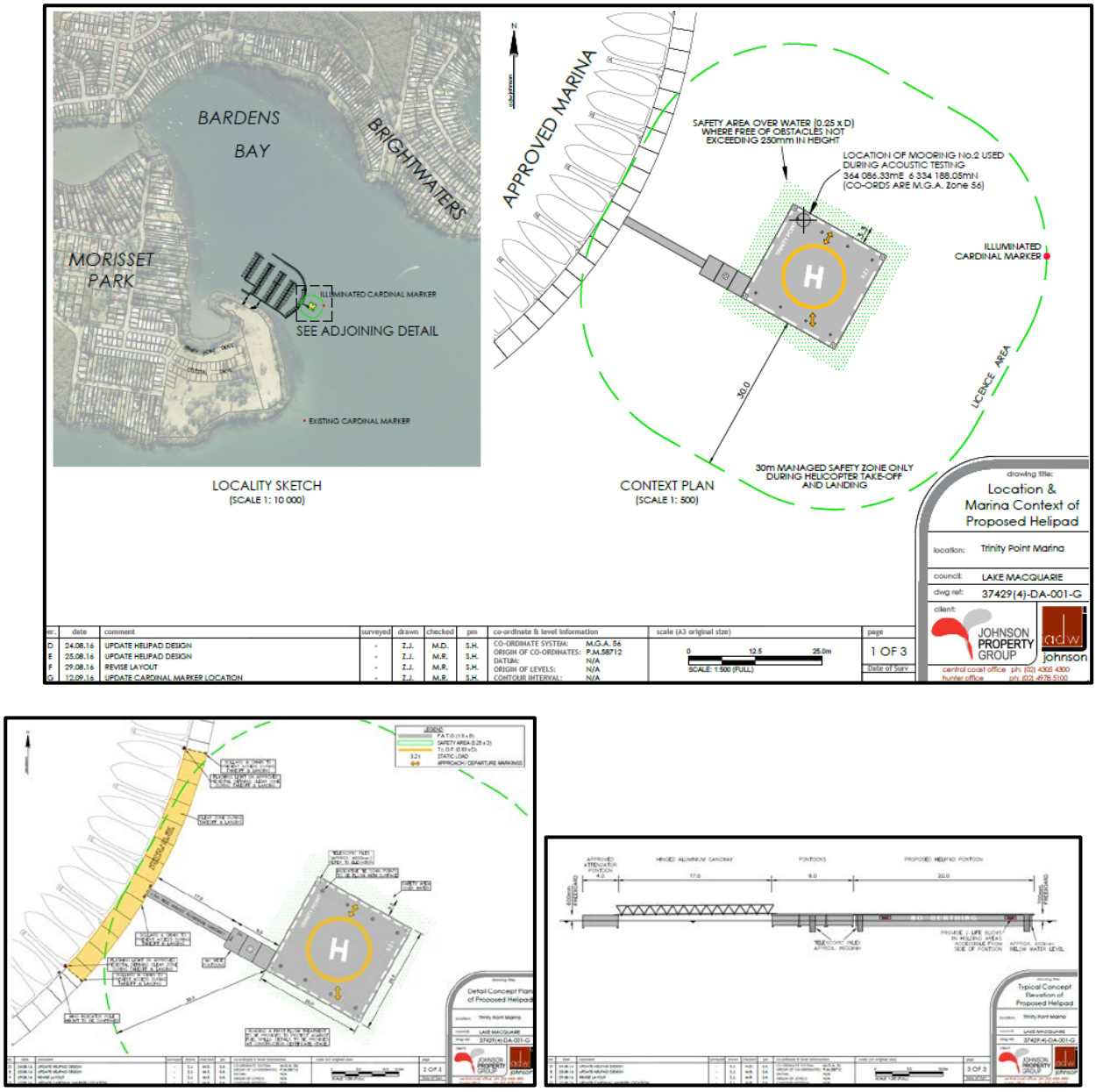


Figure 39 - HLS proposed concept plans illustrating key CASA Guideline provisions.
(refer A3 sized plans in **Appendix C**)

Avipro has reported that the Trinity Point HLS concept shows full compliance against the criteria within the CASA Guidelines, which confirms the suitability of the proposed HLS for the landing and taking off of helicopters in safety. That suitability includes approach and departure paths, concept design of the HLS, provision of the required defined areas such as FATO and TLOF, other physical attributes including HLS markings, safety management areas during landing and take-off, suitable fire protection and personnel access routes.

7.1.4 Draft Operational Procedures

The CASA Guidelines identifies that risk can be reduced when the size and design of the HLS is compliant, when visual information, cues and positional markings are present and when the pilot in command has access to accurate, up-to-date information about the site, in a suitable and easily interpretable form.

Section 7.1.3 above confirms compliance with size and design requirements and visual information markings. To supplement the proposed physical HLS, Avipro has prepared a draft Operational Procedures Manual for the HLS. This is also provided to illustrate the type of operational control that can be anticipated, noting this was a key focus from initial community consultation.

As the HLS will be attached to an operational marina, it is intended that the operation of the proposed helipad will be an integral part of the marina operation. It is considered that operational controls are critical to the successful operation of the HLS for the marina and tourist destination, boat owners, pilots and helicopter operators, guests arriving and departing by the HLS, the public that lives around Bardens Bay and recreational users of the waters around Bardens Bay.

The draft Manual sets out information for pilots and helicopter operators that:

- That the HLS can only be used under a 'prior permission' process;
- That the HLS is committed to Fly Neighbourly procedures and Fly Neighbourly Avoid areas;
- That the HLS has preferred approach and departure paths;
- That the HLS is available only during daylight hours with certain operating hours, and has no refuelling facilities;
- That the HLS is designed for a maximum weight and helicopter size; and
- That the pilot will need to ensure their flight-path is clear of potential objects, small craft, masts and public, in conjunction with the duty HLS officer.

The draft Manual sets out additional information (in addition to above) for the marina operator, including:

- Staff Training;
- Prior Permission procedure;
- Daily inspection requirements;
- Pre-arrival inspection requirements;
- Duties to ensure persons and craft are clear of, and objects secure, within the 30m management zone for landing and take-off;
- Helicopter Reception/Dispatch procedures; and
- Provision of emergency procedures, integrated into marina emergency procedures.

The 'prior permission procedure' will enable management of the HLS to not only communicate important information to users of the HLS relating to types of helicopters, fly neighbourly procedures, preferred flight paths, operating hours and other information, but also to comply with maximum daily and weekly movements and any other operational requirements of approvals and licences.

7.2 NOISE IMPACT ASSESSMENT

7.2.1 Background

The Acoustic Group (TAG) was engaged to recommend the helicopter noise assessment methodology and techniques, identify relevant acoustic criteria, and undertake the acoustic assessment inclusive of fieldwork, analysis and assessment. The comprehensive Acoustic Assessment by TAG is included in **Appendix E.**

Prior to this current application, TAG completed an acoustic criteria report relating to the existing acoustic environment and an acoustic criteria report for the overall Trinity Point Concept Plan (MP 06_0309) as sought to be modified via Mod 5 (approved). TAG also completed acoustic assessments for Development Applications at Trinity Point, including DA 1503/2014 (Stage 1 Marina), DA 1731/2014 (Tourism and Hospitality) and DA 496/2015 (Tourism and Residential Accommodation), all of which have been granted development consent. TAG has significant and specific experience in helicopter noise assessment across Australia. It is noted that previous acoustic assessments relating to a helipad at Trinity Point were undertaken by ARUP across 2007 and 2008.

7.2.2 Considerations Informing Helicopter Noise Impact

The proponent's goal is to establish a proposed helicopter landing site (HLS) that supports the marina and tourist destination that is approved at Trinity Point, while minimising the impact of helicopter noise generated by the use of the facility.

Steve Cooper from TAG has contributed to the multi-disciplinary team that has informed decisions about typical helicopters that would use the proposed HLS based on its location and intended use, preferred flight paths to cater for wind direction, daily and weekly frequency of use, times of operation and operational procedures and practices that contribute to minimising noise impact. These decisions have occurred iteratively prior to and through the acoustic test and assessment process.

Importantly the following operational decisions relevant to the assessment of helicopter noise impact have been made:

- The typical helicopter type was identified to be a general turbine helicopter accommodating 2-5 passengers (+pilot) (or less passengers if includes luggage), most commonly likely to be small turbine engine helicopters, with the ability to fly from/to Sydney without the need to refuel, with occasionally medium sized helicopters. It was agreed from the outset that no joy flights (e.g. up and down local scenic flights across 15-30minute timeframe) should occur, and Robinson R22/44 helicopters would be excluded (to encourage use of HLS by experienced pilots).

- The preferred flight paths were developed to provide for approach and departure of helicopters to occur over water (rather than over residential areas) in all wind directions.

- The time of operation will start in the morning from 8am, rather than 7am (Monday to Saturday), and from 9am on Sundays and public holidays. The operation is proposed to extend to 7pm or to daylight hours (to account for seasonal variation and daylight saving).

- The frequency of use was selected, after preliminary acoustic results were available, to provide a maximum of 8 movements per day (ie 4 flights in, 4 fights out), spread across daylight hours only, with a maximum of 38 movements in any week. This number of movements is not high and will not result in a constant noise across any given day. Equally this maximum number of movements is not kept so low that it avoids a threshold that provides for the helipad to be subject to an Environmental Protection Licence and the added reporting and accountability that comes with that.

- To provide for operational management of the HLS aligned to its intended use (number of movements, helicopter types, hours of operation and use of preferred flight paths), it was agreed early on that use of the HLS would be by "prior permission" protocol only, to effectively communicate and make transparent the use of the HLS and the 'fly neighbourly' requirements, and provide a process for records to be kept.

7.2.3 Ambient Noise

As described in **Section 4.16**, a series of ambient monitoring measurements were conducted previously by TAG using attended and unattended measurements. These were reviewed by Lake Macquarie City Council and agreed to be appropriate for use in the noise assessment.

7.2.4 Helicopter Acoustic Test

TAG recommended that, unlike previous assessments, the most transparent mechanism for determining noise levels associated with the proposal is to identify the likely most common helicopter to be used, bring that helicopter to site and undertake a number of movements (including hover above water at HLS location/s), with measurements conducted at a number of relevant locations, along with the transit of the helicopter onto land for on ground measurements. Analysis and assessment of the impact of helicopter noise using the proposed HLS can then be undertaken using those results.

7.2.4.1 Helicopter Used in Acoustic Test

The helicopter chosen and used for the acoustic test is the Airbus H125 (formerly identified as Eurocopter A350), which met the criteria of the most likely class of helicopter to commonly use the helipad. The helicopter, refer photo in **Figure 40**, is a single engine helicopter, with capacity for a pilot and up to 4 passengers, a maximum weight of 2,250kg with a fuel capacity of 540L.

Figure 40 - Helicopter used in Acoustic Test Airbus H125.

7.2.4.2 Proposed Helipad Locations

The proponents, in discussion with the marina operator, identified two potential helipad locations for flight path and acoustic testing. One location (helipad 1) was sited off the marina breakwater, extending into Bardens Bay in a north-east direction. A second location (helipad 2) was sited off the marina breakwater in a south-east direction, closer to the Trinity Point site. Both locations formed part of the acoustic test day and were identified by buoys installed in each of the HLS locations, to aid the pilot in the hover (refer **Figure 41**).

7.2.4.3 Flights Paths identified for Acoustic Test

The pilots for the acoustic test day, locally based in Lake Macquarie, identified primary flight paths to the HLS, taking into account the location of the approved marina and surrounding residential areas around Bardens Bay. The flight paths involved approach and departure to and from a southerly direction, over the large expanse of water, which in the pilot's opinion would cater for most wind directions. The pilots also nominated a flight path option to and from the north (refer **Section 7.2.4.5** and **Figure 42** below).

7.2.4.4 Measurement Locations

TAG identified five locations for measurement around Bardens Bay, with a further two locations added at the request of the local Council. The seven measurement locations are illustrated in **Figure 41** below, which also illustrates the two helipad locations. The location, set up and calibration of monitoring equipment was undertaken by TAG engineers, and each measurement location was attended during the test procedure.

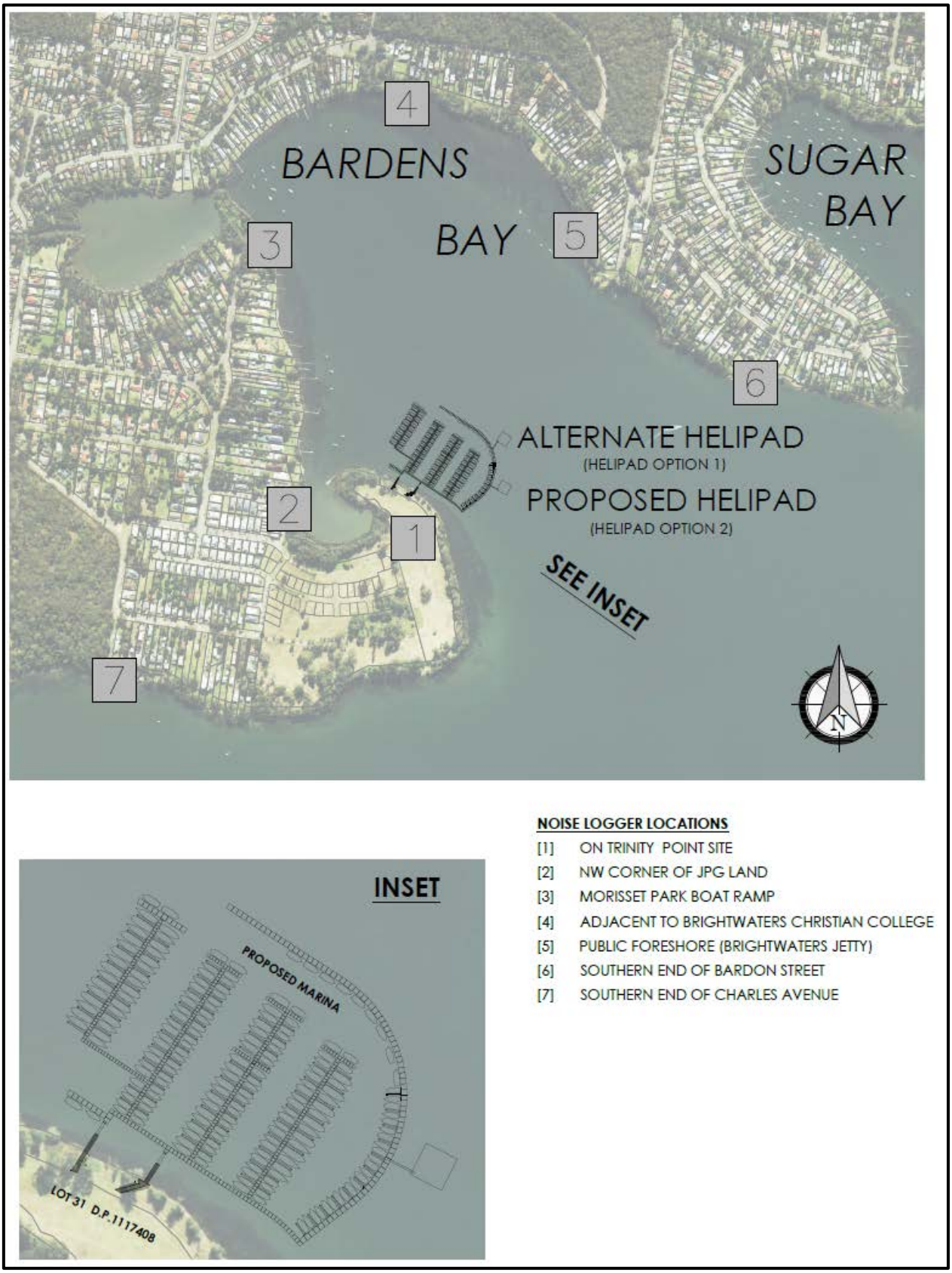


Figure 41 - Proposed Helipad Test Locations and Noise Measurement Locations.

7.2.4.5 Test Day Procedure

The procedure for helicopter testing is set out in Australian Standard AS2363. A pre-briefing of the procedure was undertaken with Council staff and their consultant.

Choice of Test Day - TAG advised that is was appropriate to undertake the test day in calm weather (so that all flights could be flown on the same day and meet the requirements under AS 2363-1999 for testing to occur in calm air or in no more than light wind conditions). TAG also identified that ambient noise results indicate a lower ambient noise level in the morning, compared to the afternoon, and recommended that the acoustic tests occur on a calm morning period. For note, the construction of the adjoining residential subdivision had machinery stood down during the acoustic test as recommended.

Number of Movements – AS2363 requires measurements for each movement to be taken at least four times. TAG proposed five movements per flight path in case of extraneous noise. As such, each approach and departure (and direction), to each of the two HLS locations, were flown at least five times, resulting in approximately 64 dedicated movements over multiple paths (as well as some overflight and landing/takeoff on the adjoining land), condensed into a three hour test period. This high number of movements, in a condensed time period, is unrepresentative of the acoustic environment that will arise from the proposed operation of the HLS, which only proposes 8 movements per day (maximum). The proponent notified Lake Macquarie City Council, NSW Department of Planning, EPA and the surrounding local community (by publication in the local newspaper and by letter box drop) of the intended acoustic test day and high number of movements. Local Council officers observed the test day. AS2363 requires that the test results across each movement (provided in Appendix E1 of Appendix E acoustic report) are energy averaged (or logarithmic averaged) to give a test result for that movement. It is the log average results that are used as results for assessment purposes. Those results are shown in Appendix E4 and E5 of Appendix E acoustic report.

Figure 42 illustrates the GPS tracks from the helicopter illustrating the movements flown in plan view. Video and still photography was also captured on the test day, a selection of photos are included below in **Figure 43,** with a DVD of one of the tests included as **Appendix M**.

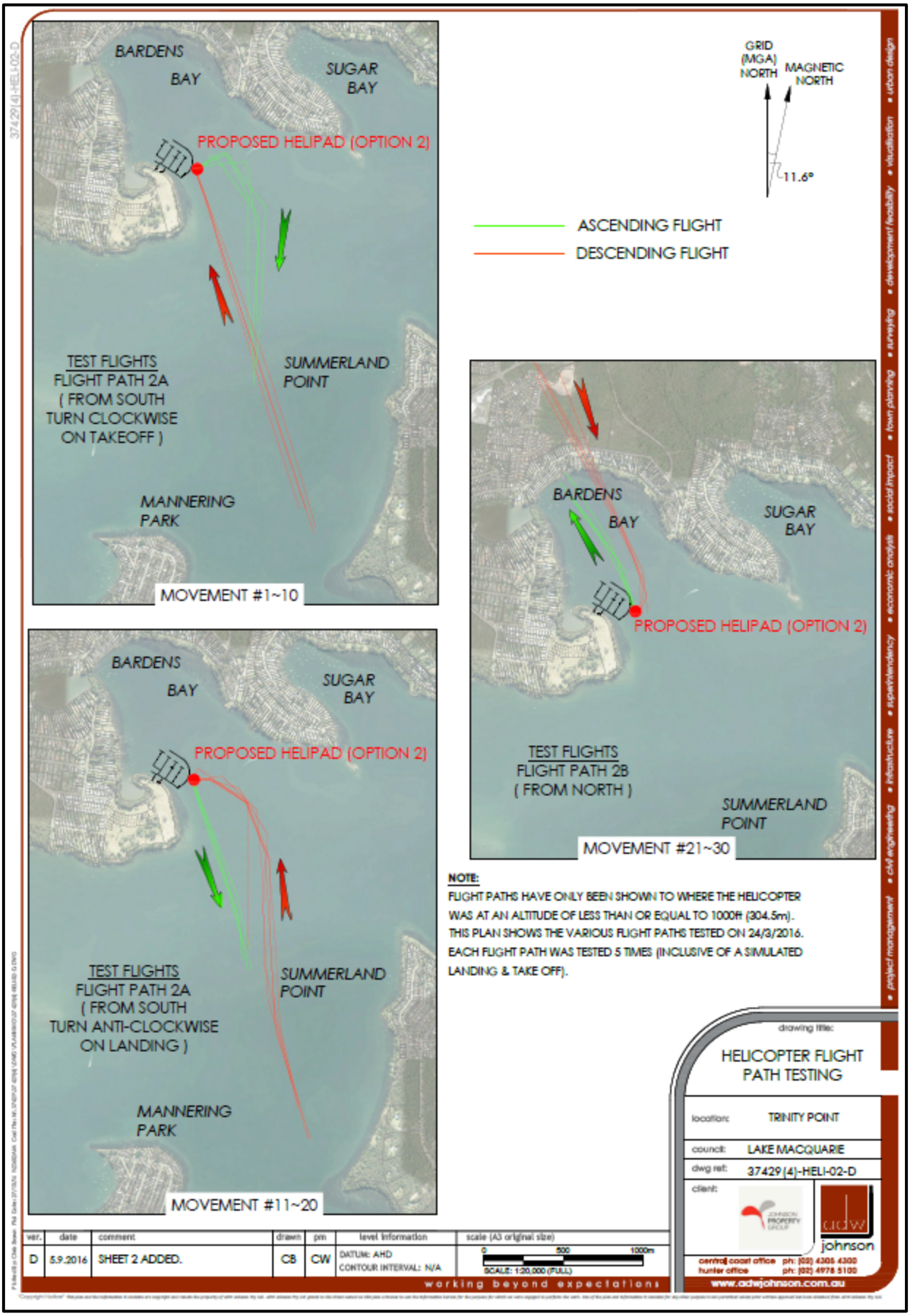


Figure 42a - GPS of Helicopter Tracks from Acoustic Test from Helipad Option 2 (Preferred).

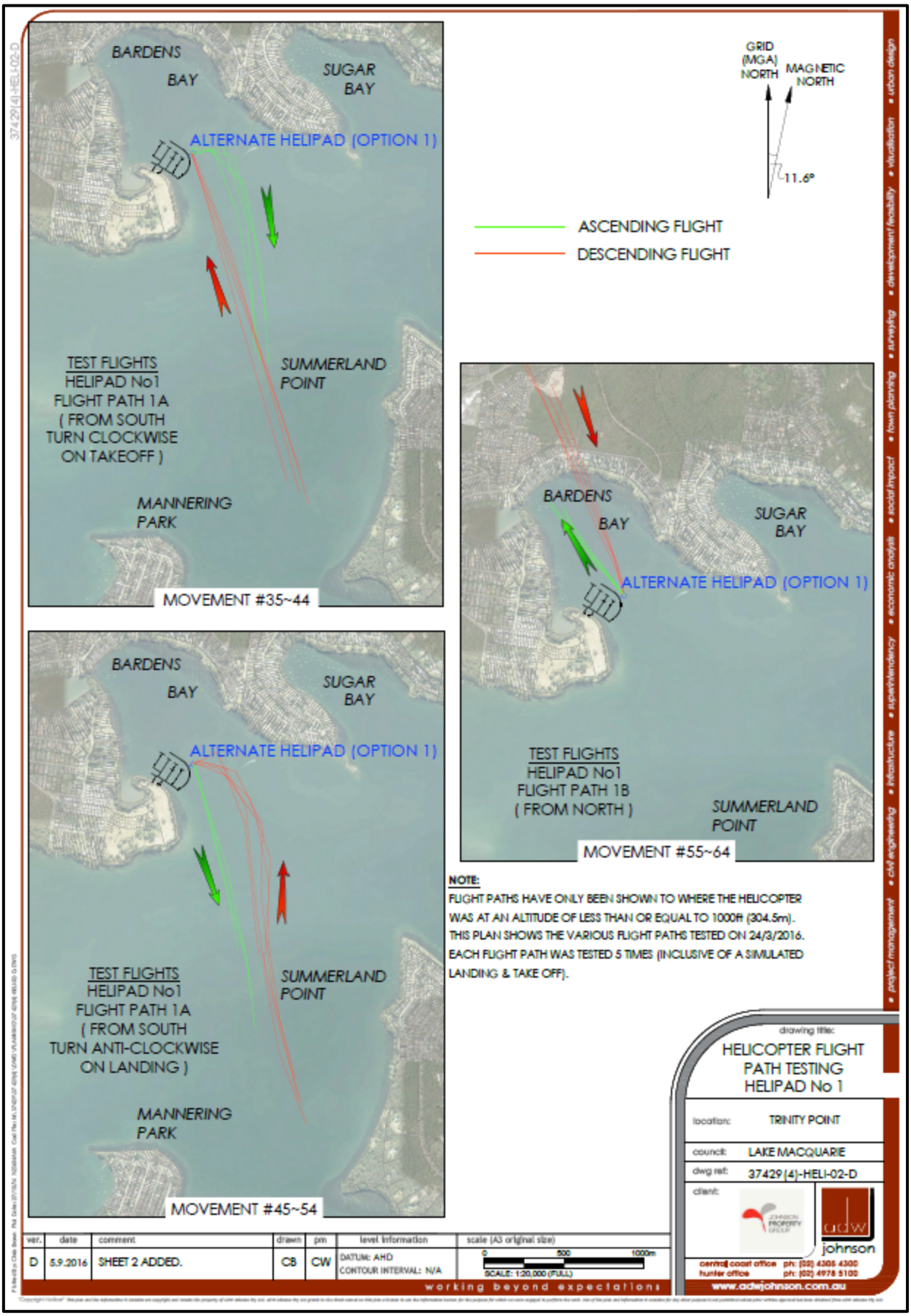


Figure 42b - GPS of Helicopter Tracks from Acoustic Test from Helipad Option 1 (Alternate).

Figure 43 - Photos from Acoustic Test.

Without a helipad pontoon, the test flights required the helicopter to hover elevated above the water, which generates a greater level of noise than would occur if it hovered above a pontoon and landed (with the benefit of air cushion), as would be the case once operational.

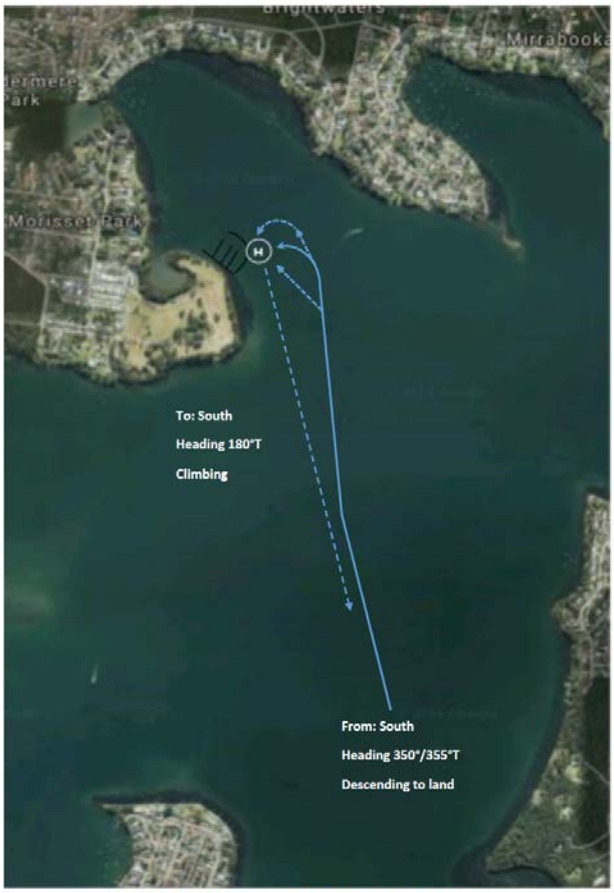
7.2.5 Preliminary Results and Choice of Helipad

Following the acoustic test day, TAG provided a set of preliminary acoustic results and analysis which revealed that there was not a significant acoustic difference between the two helipad locations overall, and that it was likely that both would be able to achieve acoustic compliance based on preliminary review. This enabled the proponents to identify the helipad site that was preferred (being helipad location 2, closer to the Trinity Point site and not extending outwards in north easterly direction to Bardens Bay).

TAG also participated in a community information briefing to outline the acoustic test day and discuss preliminary acoustic results and analysis and field any questions, before progressing into detailed analysis of results, assessment and reporting of the preferred helipad, being helipad location 2.

The aviation consultants, in consultation with the acoustic consultant, finalised preferred flight paths with respect to wind direction, generally reflective of the acoustic test day tracks (refer **Section 7.1** of this assessment and **Appendix D** and **Figure 44**). Generally, when there is no prevailing wind, conditions are calm or where the wind direction is other than S/SE, preferred flight paths are to the south and operate totally over water. In S/SE winds, flight paths can either be to and from the south (with an approach turn) or come from the north. A northern flight path has been identified and tested for this reason.

Approach Path A to meet Calm conditions, North, North East, North West and East winds.



Approach Path B1 to meet North West, West and South West winds.

Approach Path B2 designed to meet South East, South, South West winds.

Alternate Approach Path C for South West, South, South East winds. This is an Alternate to Path B2.

Figure 44 - Preferred Approach and Departure Paths (Avipro).

7.2.6 Identification of Acoustic Criteria

The TAG Acoustic Assessment Report reports on the confusion about which noise criteria apply to helipads and helicopters. Given this confusion, it provides a comprehensive background on the application and interpretation of acoustic criteria over the years and establishes, in an open and transparent way, the rationale for the acoustic criteria adopted by TAG for the purposes of the assessment.

7.2.6.1 AirServices Australia Environmental Principles and Procedures for Minimising the Impact of Aircraft Noise

TAG confirms that the AirServices Australia *Environmental Principles and Procedures for Minimising the Impact of Aircraft Noise* (ASA Environmental Principles) were relied on by the Land and Environment Court in 2007 proceedings involving a proposed helipad at Capertee. Although AirServices Australia has advised that it no longer relies on the ASA Environmental Principles, they may still be relevant given they were applied in the most recent Court proceedings involving a helipad proposal (9 years ago).

The ASA Environmental Principles provide upper and lower limits of noise exposure expressed as a 24 hour Leq. The acoustic assessment report assesses whether the proposal complies with this document. TAG confirm that the assessment and design of the helipad complies with Principles 1, 2, 3, 4 and 7. Principle 5 expresses a lower threshold level, under which noise levels will be deemed not to be significant (40LAeq$_{24}$, provided there are less than 50 movements a day). Although the proposal involves less than 50 movements a day, the assessment shows that the noise levels will not be below 40LAeq$_{24}$. As such, it confirms an assessment of the potential noise impact must therefore be undertaken to determine whether the impact will be acceptable.

Principle 6 is relevant to the proposed development and an assessment of the acceptability of the noise impact. That principle provides that no residential area should receive more than 60LAeq$_{24}$. The principle identifies 60 L_{Aeq} is unacceptable for residential housing under AS 2021, that unacceptable limit in AS 2021 is defined as ANEF 25. Under AS 2021 the acceptable limit is 20 ANEF, which becomes 55 L_{Aeq24}.

Principle 7 also provides a "maximum level" criteria, stating that "there should be a current agreed aircraft noise exposure level above which no person should be exposed". Principle 7 indicates that the goal for this maximum level should be 95dB(A).

TAG proposed that taking into account the current background levels and the limits on hours of flights that:

> *"Noise emission from the helicopter when taking off or landing and including operations whilst on the helipad arising from the start up, idle, power up and (in reverse) until shutdown are to not exceed an unacceptable level of aircraft noise impact of 60 dB LAeq, 24hr, and in the circumstances of the acoustic environment of Bardens Bay, should have a noise objective of less than 55 dB LAeq, 24hr"*

7.2.6.2 Aircraft Noise Exposure Forecast (ANEF) System

Although TAG accepts that the ASA Environmental Principles may be relevant, as a result of the detailed analysis of the various criteria and based on TAGs significant expertise with helicopter noise assessments, TAG considers that an assessment in accordance with the AirServices Australia Aircraft Noise Exposure Forecast system (ANEF) under AS2021 incorporating airborne and ground components could also be carried out. AS2021 is referenced within Principle 6 of the ASA Environmental Principles.
TAG specifies that criteria as:

> *"Noise emission from the helicopter when taking off or landing, and including operations whilst on the helipad arising from the start up, idle, power up and (in reverse) until shutdown are to* ***comply with a ANEF 20/$L_{(Aeq,\ 24hr)}$ 55 dB(A)****, assessed in accordance with the procedures set out in A2363-1990."*

7.2.6.3 AS2363-1990 Residential Leq and Max Targets

In addition, as a precautionary measure, TAG has assessed the helicopter operation against the targets set out in AS2363-1990 (not the current version of AS2363, which excludes any criteria). This former criteria provides an opportunity to consider acceptability criteria modified relative to the ambient noise environment of the locality. TAG specifies the criteria as:

> *"Noise emission from the helicopter when taking off or landing, and including operations whilst on the helipad arising from start up, idle, power up and (in reverse) until shutdown are to comply with the 12 hour Leq levels and corresponding maximum levels identified in Table A1 (including note 2) and assessed in accordance with the procedures set out in AS 2363-1990."*

Table 8 provides the maximum noise level (log averaged) identified under AS2363-1990.

Table 8 - Maximum Noise Acceptability Criteria

	Daytime	Night time
L_{Amax} (Hel)	**85**	**80**

AS2363-1990 also specifies L_{Aeq} targets in Table A1. Note 2 to that table provides that the L_{Aeq} targets in residential areas can be replaced with targets which relate to ambient + 10dB(A), if that is lower. TAG have analysed ambient levels, and advised that ambient +10dB(A) results in a lower daytime criteria of between 1-5 dB(A), depending on the specific receiver location. This is summarised in **Table 9**.

Table 9 - Residential L_{eq} Targets under AS 2363

	Daytime		Night time
Residential Location	$L_{Aeq,\ T}$ (Hel)	Alternative* $L_{Aeq,\ T}$(Amb) + 10dB(A)	
1,7	60	**55**	**50**
2	60	**59**	**50**
3,4,5,6	60	**56**	**50**

**In residential areas the lower target can be used*

7.2.6.4 Industrial Noise Policy

As outlined above, assessment under the ASA Environmental Principles, the ANEF 20 criteria and L_{Aeq} criteria under AS2362-1990 includes the 'ground' component of the helicopter movement and all parts of the operational mode. As such, TAG has reported that it is not appropriate or necessary to provide separate assessment of noise from helicopters on the ground (ie the pontoon) and that the Industrial Noise Policy (INP) does not apply.

7.2.7 Results and Analysis

The procedure for analysing noise has been undertaken by TAG in accordance with AS2363, details of which sit within the Acoustic Assessment report and its Appendices. This includes use of log averaged results for assessment purposes as provided in Appendix E4 and E5 of the TAG acoustic assessment. The assessment outlines instances where the methodology used incorporates in-built conservative approaches.

Taking into account the preferred flight paths and wind directions likely to be experienced, TAG derived four worst case scenarios to illustrate a mix of operations. These scenarios are graphically depicted in **Figure 45** below, and have been reviewed by Avipro (aviation and safety specialists), whose opinion was that they are an appropriate set of scenarios for likely wind directions, and all are operationally acceptable. Avipro did express an opinion that in practice, the majority of flights are expected to be to the south and scenario 1 is likely to prevail.

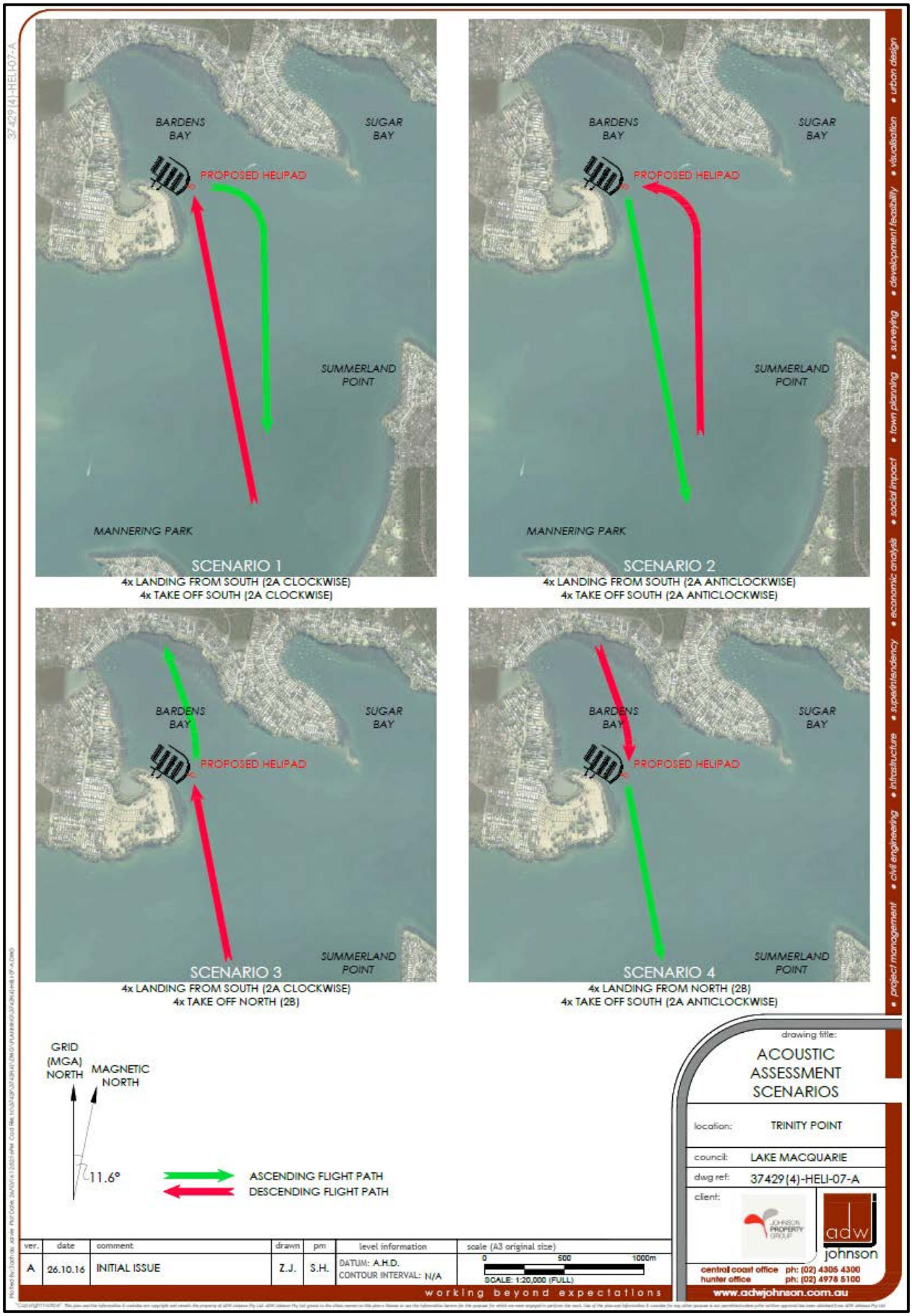


Figure 45 - Acoustic Assessment Scenarios.

7.2.7.1 ASA Environmental Principles and Procedures for Minimising the Impact of Aircraft Noise

Although AirServices Australia has advised that this document is no longer used, the TAG assessment report identified that the proposal would satisfy (and be significantly below) the "unacceptable" limit of Leq 24hr 60 dB(A) as shown in the Table below, and significantly below the maximum level of 95dB(A), satisfying Principles 6 and 7.

Table 10 - 24 Hour Helicopter L_{eq} Contribution for 8 movements

Scenario	Location						
	1	2	3	4	5	6	7
1	45.9	36.7	31.9	32.6	43.7	41.4	29.7
2	44.5	33.6	29.8	31.4	44.6	40.2	27.2
3	45.5	38.7	42.3	43.0	46.5	40.4	29.6
4	45.3	35.4	36.6	44.6	45.2	40.8	25.0
Leq Target	<60	<60	<60	<60	<60	<60	<60

The assessment has been undertaken for 8 movements per day in all flight scenarios and at all locations, including the Trinity Point site. All results show that the likely noise impacts will be below 55 L_{Aeq24} (which aligns with AS2021, ANEF 20 and the lowest ambient + 10dBA considered under AS 2363-1990), and are below 50 L_{Aeq24}. The maximum contribution over all the locations for a worst case scenario of assuming all flights in a day using a single scenario is 46.5 L_{Aeq24}. Additionally, in a number of locations the results produce less than 40 L_{Aeq} (all scenarios at Locations 2 and 7 and the majority of scenarios at Location 3), which according to Principle 5 of the ASA Environmental Principles, that noise is deemed not to be significant.

The assessment against ASA Environmental Principles are consistent with those under the ANEF criteria and consideration of AS2363-1990, and take into account the current background levels, the number of flights and the limits on hours of operation.

The ASA Environmental Principles do not identify any noise weighting for flights between 7pm and 7am if two movements were to occur after 7pm and before last light as proposed, TAG have utilised a conservative approach by assessing the ANEF in accordance with the ANEF weighting for such flights to reveal in their Table 6. The highest ANEF is 13.9 which becomes L_{Aeq24} of 48.9.

It is intended that helicopters other than just the helicopter physically used in the acoustic test day will use the helipad. A suite of helicopters that may use the helipad were identified by Avipro and TAG (refer summary in **Appendix D** and below).

TAG reports that the test day helicopter covers the medium weight (single engine) turbine helicopters including the Bell 206B, 206L, Bell 407, Airbus 120, Airbus 130 and McDonnell Douglas MD500C/D/E helicopters. Based on this and that noise test data for those helicopters reveal similar levels, TAG concludes the use of those helicopters would not alter the matter of acoustic compliance as demonstrated for the Airbus H125 (the helicopter used in the acoustic test and the results used in the analysis and conclusions against ASA Environmental Principles.

The proposal does not limit use of the helipad only to single engine helicopters, however it does limit use by larger/greater capacity helicopters by the design size of the pontoon. Two twin engine helicopters have been identified to potentially use the HLS, being Airbus 135 (twin engine, max passengers 5 + pilot, maximum weight of 2,835kg) and Agusta Westland AW109 (twin engine, max passengers 6 + pilot, maximum weight of 2,850kg). The physical pontoon design has been based on the AW109, which is the largest.

In order to inform acoustic assessment of these two larger helicopters, TAG assessment outlines the helicopter weighting method utilised in the Sydney CBD Pier 9 Pyrmont Helipad Study and Appendix C of the Fly Neighbourly Guide issued by the Helicopter Association of Australia. Utilising that method, TAG has determined that at each of the residential receivers, helicopter noise contributions would, by comparison to ASA Environmental Principles, remain significantly below the "unacceptable" limit of L_{Aeq24}hr 60 dB(A), satisfying Principle 6, and also be below both L_{Aeq24}hr 55 dB(A) and also below 50 L_{Aeq24}.

7.2.7.2 ANEF (24 hour) Consideration

The ANEF level is the aircraft noise contribution, as an average day over all operations in a year and does not include ambient noise. It is a stand-alone index that does not consider maximum level and is not related to any increment above ambient background noise. Whilst ANEF is based on average distribution of flight paths, as this is currently unknown, the TAG assessment has considered a worst-case scenario of having all flights applied to each scenario, a situation that would never occur (meaning that the true ANEF level would be lower than shown). Additionally the ANEF results reported by TAG do not extract out the hover component, meaning that ANEF results would be lower than identified with the pontoon in place.

ANEF Results for Test Helicopter and Proposed Frequency and Operation

Even with the inbuilt conservative inputs identified above, ANEF results (refer **Table 11** below) reveals that for each scenario, assessed at each of the residential receivers, helicopter noise contributions are well under the 20 ANEF aircraft noise level, when all 8 movements per day occur between 8am-7pm.

The proposal includes potential for movements after 7pm (but in daylight hours, such as during daylight savings). TAG advise that any movement after 7pm is taken to be equivalent to the noise generated by 4 daytime movements (arising from a past socio-acoustic study). ANEF results for 2 movements in the evening (refer **Table 11** below), incorporating a required post 7pm penalty, reveal that for each scenario, assessed at each of the residential receivers, helicopter noise contributions remain well under the 20 ANEF aircraft noise level.

Table 11 - Helicopter Noise Contributions (ANEF) for Test Helicopter

8 MOVEMENTS BETWEEN 8AM-7PM ONLY							
Scenario*	**Location****						
	1	**2**	**3**	**4**	**5**	**6**	**7**
1	10.9	1.7	-3.1	-2.4	8.7	6.4	-5.3
2	9.5	-1.5	-5.2	-3.6	9.6	5.2	-7.8
3	10.5	3.7	7.3	8.0	11.5	5.4	-5.4
4	10.3	0.4	1.6	9.6	10.2	5.8	-10
6 MOVEMENTS BETWEEN 8AM-7PM, 2 MOVEMENTS IN EVENING (7PM – END DAYLIGHT)							
Scenario*	**Location****						
	1	**2**	**3**	**4**	**5**	**6**	**7**
1	13.3	4.1	-0.6	2.0	11.2	8.8	-2.9
2	11.9	1.1	-2.9	0.9	12	7.6	-5.4
3	12.9	6.3	9.7	10.4	13.9	7.8	-3.0
4	12.8	4.9	6.0	12.1	12.7	8.2	-7.5

Scenarios are as graphically illustrated in **Figure 5*
***Locations are as identified in **Figure 2**.*

Observations from these ANEF results (inclusive of two movements in the evening with the added noise penalty) include:

- The Trinity Point site (Location 1) experiences the most constant helicopter noise contribution across all scenarios, being ANEF 11.9-13.3 (whilst still well under ANEF 20), with the area off Henry Road (Location 7) experiencing the lowest noise contributions;
- The public foreshore near Brightwaters Jetty (Location 5) also experiences noise contributions across all scenarios, being ANEF 11.2-13.9 (whilst still well under ANEF 20), with it highest contribution under scenario 3 (take off to north), followed by scenario 4 (land from north);
- The southern end of Baron Street (Location 6) experiences noise contributions across all scenarios (being ANEF 7.6-8.8, which are less than locations 1 and 5 and still well under ANEF 20), with its highest contribution from scenario 1 (take off to south, clockwise);
- The foreshore near Brightwaters Christian College (Location 4) experiences their highest helicopter noise contribution under scenario 4 (landing from the north), being ANEF 12.1, still well under ANEF 20;
- Location 3 (Morisset Park boat ramp) experiences the highest helicopter noise contribution under scenario 3 (take off to north) (ANEF 9.7), followed by scenario 4 (land from north) (ANEF 6.0), still well under ANEF 20; and
- Location 2 (north western corner of JPG land west across unnamed bay, off Lakeview Street) experiences the highest helicopter noise contribution under scenario 3 (take off to north) (ANEF 6.3), followed by scenario 4 (land from north) (ANEF 4.9), still well under ANEF 20; and
- In all those instances, the ANEF contributions are well below ANEF 20, including movements in the evening as identified.

ANEF Consideration of Other Helicopter Types

In order to inform acoustic assessment for the two larger helicopters (refer to **Section 7.2.7.1**), TAG assessment outlines a method of helicopter noise weighting (from actual flight profiles including for AW109) developed in 1992 and confirmed by a Commission of Inquiry in 1993.

Utilising that method, TAG has determined that even if all 8 movements per day were by the largest design helicopter for the Trinity HLS (AW109) – a highly unlikely situation – that at each of the residential receivers, helicopter noise contributions would remain well under the 20 ANEF aircraft noise level.

7.2.7.3 AS2363 Assessment

AS2363 Results for Test Helicopter and Proposed Frequency and Operation

The TAG assessment reports that maximum noise levels (log averaged, $L_{Amax,(Hel)}$) recorded for the test measurements satisfy (are less than) the day and night time maximum levels set out in AS 2363-1990 (80-85dB(A)), with log average maximums recorded up to 76dB(A) and assessed up to 79dB(A) for the largest helicopter. As such, maximum noise acceptability criteria is met.

The TAG assessment reports that the calculated LAeq day contributions (which would be lower than reported once the pontoon is installed) to be well under the more conservative ambient + 10dB(A) targets (refer **Table 12** below).

Table 12 - 12 Hour Daytime Helicopter L_{eq} Contribution in dB(A) as per AS2363 for 8 movements

Scenario	Trinity Point	NW Corner of JPG Land Off Lakeview St	Morisset Park Boat Ramp	Brightwaters Christian College	Brightwaters Jetty	Southern End of Bardon Street	Southern End of Charles Street
	1	2	3	4	5	6	7
1	48.9	39.7	34.9	35.6	46.7	44.4	32.7
2	47.5	36.6	32.8	34.4	47.6	43.2	30.2
3	48.5	41.7	45.3	46.0	49.5	43.4	32.6
4	48.3	38.4	39.6	47.6	48.2	43.8	28.0
L_{Aeq} Target (day)*	**55**	**59**	**56**	**56**	**56**	**56**	**55**

being LAeq Ambient + 10 dB(A), which is lower target, refer* ***Section 7.2.5.2.*

Observations from these L_{Aeq} results (and consistent with the ANEF results presented) include:

- Location 5 (Brightwaters Jetty) experiences the highest L_{Aeq} contribution, which still sits some **6.5-9.3 dB(A) below** the lower daytime targets related to ambient noise; and
- Location 1 (Trinity Point site) experiences the second highest L_{Aeq} contribution, which still sits some **6.1-7.5 dB(A) below** the lower daytime targets related to ambient noise.

The TAG assessment report identifies that given the daytime results illustrate L_{Aeq} (12hr) contributions less than 50 dB(A), if two movements were to occur after 7pm and before last light as proposed, the night contribution would be well below the 50 dB(A) criterion.

AS2363-1990 Consideration of Other Helicopter Types

The TAG report identifies the maximum number of helicopter movements that could occur for the different helicopter types overall all of the four scenarios using the helicopter weighting method employed for the Pier 8 Sydney CBD Heliport Study in terms of the 20 ANEF criterion. That analysis reveals a maximum number of movements significantly greater than the maximum of 8 movements per day nominated for the proposal.

7.2.8 Other Considerations

Location 1 as reported in the TAG report (being Lot 31 DP 1117408) is located on the Trinity Point Marina and Mixed Use Development site, and will include the range of land based uses as identified in the approved concept plan. This includes future residential uses. The approved concept plan provides for up to 157 residential apartments in the central and southern precincts of the site. Of the range of development approvals on this land, DA 496/2015 includes 34 residential apartments (integrated with 93 tourist accommodation apartments) in four x four storey buildings. The northern most building sits to the south west of the proposed helipad. Under the approved concept plan, future residential land uses can also be sought, further south of the approved buildings. **Figure 46** labels generally the DA approved and Concept Approved locations for residential receivers on the development site.

Figure 46 - Location of Onsite Residential relative to proposed helipad.

The assessment of Location 1 does not identify any non-compliance against various acoustic criteria arising due to the operation of the helipad under a worst case scenario. With respect to any residential use that sits to the north of Location 1 attended measurement location, the maximum level for arrival would be marginally less, whilst on departing, levels would be expected to be similar to location 1. On an Leq basis, it could be taken that 0-1dB(A) higher.

With respect to any residential use that sits to the south of Location 1 attended measurement location, the maximum levels would be similar or lower, and Leq could be 1-2dB(A) lower. These variances are minor and would not result in impacts to the future residential uses against acoustic considerations.

The arrival and departure of helicopters will be audible to residential receivers of the Trinity Point Development and dependent upon the visual exposure to the helicopter will generate a short term increase in noise similar to or greater than the use of Bardens Bay by various boats. The assessment is compared against the ambient environment for a green field site. With the development of the site that included residential and tourism accommodation, commercial components and the marina, there will be an automatic increase in the prevailing acoustic environment.

The future residents of the Trinity Point Mixed Use site will be co-existing within a tourist facility, including an operational marina, 300 seat function centre, restaurant and dining area, and tourist accommodation. Condition 34 of DA 496/2015 relates to Social Impact Management, and required a Social Impact Management Plan to be lodged with and approved by Lake Macquarie City Council that addresses, amongst other matters, measures to ensure that conflict between user groups of the development (eg tourists and residents) does not occur. One of the mechanisms is to ensure that future residents are well informed on the mix of uses and the nature and scale of those uses.

Any future residential land use established under MP 06_0309 will have disclosure that clearly establishes that they are part of a wider mixed use development project, that highlights the existence of the range of land uses, including function centre, restaurant, tourist accommodation, marina and helipad (as proposed) and associated operations and impacts. Current titling intentions are that any residential unit will form part of a community title scheme (this is subject to a current application before LMCC), which includes a Community Management Statement (CMS). The CMS is part of the titling system, and the existence of the non-residential uses and disclosure can sit within the bylaw that expresses the 'theme of development'. If necessary, a specific bylaw applying to residential apartments can also be added. In addition to the titling, JPG in contracts of sales for residential apartments would include similar disclosure of the mix, nature and scale of uses at Trinity Point, including the marina, function centre, dining and helipad (as proposed).

7.2.9 Conclusion

Prepared by a highly qualified acoustic specialist, the submitted acoustic assessment (**Appendix E**) provides a detailed consideration of acoustic criteria and investigates potential noise impacts associated with helicopters using the proposed helipad. Its focus is primarily on residential areas that surround Bardens Bay including locations identified in consultation with Lake Macquarie City Council. Aquatic and terrestrial ecology consultants, using the acoustic assessment, provide an assessment on impacts on fauna and fauna habitats including noise (refer **Appendix F**). The justification for the facility is presented elsewhere within the environmental assessment.

The acoustic assessment identifies the types of helicopters proposed to be used, preferred flight paths, hours and frequency of operation and noise levels, and adopts best practice for measurement and assessment of noise impacts, against acoustic criteria, including a suite of inbuilt conservative calculations.

Separately to any helicopters that overfly Bardens Bay, the arrival and departure of helicopters to the proposed helipad will add a new spectrum of sound to the existing noise environment during such helicopter movements.

Relative to receivers, use of the helipad generates noise at:

(a) a static location (when the noise source occurs with the helicopter at the pontoon, for hover, touchdown, shutdown, power up, hover); and
(b) at variable locations along the flight track (as the noise source, the helicopter, moves through its approach and departure to and from the pontoon, with varying distances to the receiver locations).

The acoustic report provides an assessment of all of these components together, based on worse case scenarios and based on proposed frequency of use and different helicopter types, over time, and demonstrates acoustic acceptability of the noise generated taking into account the acoustic environment at Bardens Bay (including at the closest residential receiver).

Typically the entire landing operation of a helicopter movement of leaving cruise altitude, descent, hover, land and shut down, is audible for between 2 ½ - 4 ½ minutes (depending upon the receiver location and the flight path being used). A take-off movement to power up, hover, take off and ascend to cruise altitude occurs over a similar time period. If the proposed maximum of 8 movements on any given day occurs, then that represents an audible noise source across each day of approximately 20 - 36 minutes.

The maximum noise level experienced at any one moment in time is called L_{Amax}, and acceptability criteria for $L_{Amax,(Hel)}$ relative to helicopters in residential areas is identified to be 85dB(A) during the day and 80 dB(A) during the night. The analysis and assessment in Appendix E establishes that a maximum noise level for all proposed helicopter types (as determined using logarithmic averaged results, refer Appendix E4 and E5 of Appendix E, as provided for under AS2363) sits below that maximum criteria, both when the helicopter (noise source) is at the HLS pontoon, and during the approach and departure. This is summarised in **Table 13** below and expanded in paragraphs below.

Table 13 - Consideration of Maximum Noise Level (Momentary Peak Level) ($L_{Amax,(Hel)}$ log average)

L_{Amax}, Hel Criteria*	Noise in static location at pontoon, at nearest receiver (Location 1)			Noise during approach and departure		
	Test Helicopter	Other Helicopter Types	Compliance	Test Helicopter	Other Helicopter Types	Compliance
85dB(A) daytime *(for residential areas from AS 2363-1990)*	<70dB(A)	<73dB(A)	Yes	57-76dB(A)	60-79dB(A)	Yes
80dB(A) nightime *(for residential areas from AS2363-1990)*	<70dB(A)	<73dB(A)	Yes	57-76dB(A)	60-79dB(A)	Yes
95dB(A) unacceptable exposure goal *(under ASA Principle 7)*	<70dB(A)	<73dB(A)	Yes	57-76dB(A)	60-79dB(A)	Yes

** $L_{Amax,(Hel)}$ is log averaged results as per AS2363.*

With respect to the noise from the static components of helicopter use at the proposed HLS itself, relative to the nearest receiver (location 1 being onsite at Trinity Point), the maximum noise level (log averaged) experienced at any one moment in time is calculated at less than 70 dB ($L_{Amax,(Hel)}$), for the test helicopter, and would be up to 3 dB(A) higher ($L_{Amax,(Hel)}$) for the largest design helicopter. Start up and shutdown procedures are quieter due to the lower engine settings, however, minimising duration of warm up and cool down periods and not idling for extended periods of time are reasonable noise abatement measures.

With respect to the noise during arrival and departure, the maximum noise level (log averaged) experienced at any one time ($L_{Amax,(Hel)}$) from the test helicopter results across the multiple flight paths (based on log average), and excluding location 7 which was well removed from the helipad and helicopter movements, ranged from 57-76dB(A). Location 5 experienced the highest log averaged maximum noise level, followed by Location 1 (nearest the proposed helipad and part of the JPG development site). The maximum noise level (log averaged) is a momentary peak level and occurs for less than 2 seconds on any movement. These results reside well within the $L_{Amax,(Hel)}$ parameters of 85-95dB(A), with 85dB(A) identified as a maximum acceptable noise for residential areas. It is expected that the $L_{Amax,(Hel)}$ for the largest design helicopter would be 2 – 3 dB(A) higher (ie say 60 – 79dB(A)) which also falls within the $L_{Amax,(Hel)}$ parameters.

Of more relevance to the noise generated by helicopter operations and consideration of impacts to acoustic amenity is the total noise exposure assessed over time. The energy average noise level (L_{eq}) and the number of helicopter movements per day are combined to determine the total helicopter noise exposure. It is for that reason that L_{eq} rather than $L_{Amax,(Hel)}$ is a more relevant consideration, and is reported on in detail in the acoustic assessment. The analysis and assessment in Appendix E establishes that the maximum contribution for helicopter noise for all helicopter types is 49.5L_{Aeq24}, which sits below the unacceptable level of 60dB(A), and sits well within the range of acceptable noise range as established under ASA Environmental Principles. Additionally, it sits below the acceptability criteria for residential areas identified under AS 2363-1990 of 60dB(A) daytime and 50dB(A) night time, as well as modified daytime of 55-59dB(A) that factors in an ambient based calculation. It also sits well within the ANEF 20 criteria.

It supports the proposed helipad on acoustic grounds inclusive of its location, frequency of use (daily and weekly), hours of operation (including up to 2 movements after 7pm to last light when applicable), preferred flights paths catering for different wind directions, and the types of helicopters proposed to utilise it (up to Agusta Westland AW109).

The assessment confirms that the proposal (which has been iteratively informed by acoustic and aviation specialists) will comply with noise targets applied to helipads. The acoustic assessment is inherently conservative and provides robust conclusions, confirming compliance against several different acoustic criteria, including consideration of the context of the existing noise environment of the locality. The report confidently addresses the perceptions about noise impact arising from the proposed operation as expressed by some parts of the community.

Given the reported compliance with acoustic criteria, it is considered that the proposed helipad, inclusive of the types of helicopters to be used, can be introduced without unreasonable or unacceptable acoustic impact to surrounding residential areas, on the basis that a 'prior permission' protocol is implemented using preferred flight paths, the helipad operates during hours as specified, there are no joy flights, and there is a maximum of 8 movements per day and a maximum of 38 movements per week.

No noise will occur from maintenance, as no maintenance is proposed.

7.3 PUBLIC ACCESS

7.3.1 Background

JPG entered into a Project Delivery Agreement (PDA) with Crown Land relating to use of part of Lake Macquarie for the purposes of development associated with a marina and tourist destination facility, which also included consideration for a helipad. The agreement identified a footprint area of some 6.88ha (refer **Figure 47** below), and included provisions for the final location and area to be amended to reflect subsequent development approval/s.

In order to provide flexibility in the siting and design of the water based features of the Trinity Point Concept Plan over time, a larger area was included within the site area for the concept plan (refer also **Figure 47** below).

Approval of the concept plan under MP 06_0309 (for marina) required, via Term B1, review of the marina design and footprint. As part of that review, the extent to which the marina extended into Bardens Bay in a north-easterly direction was reduced further, with a setback from the marina breakwater edge to the opposite side of the Bay increased from 390m to 425m.

Subsequently, the Joint Regional Planning Panel assessed a comprehensive Environmental Impact Statement (EIS) for the first 94 berths for the marina. One of the requirements for the marina application was assessment on the impacts on recreational amenity arising from the loss of public access to areas of the lake.

The EIS included a recreational boating study undertaken as required by Term C29 of MP 06_0309, which provided a snapshot analysis of existing patterns of usage of the southern end of Lake Macquarie, including regular usages and irregular usage patterns (as described in **Section 4.10** of this report).

The EIS concluded that the southern end of Lake Macquarie is not significantly utilised and that the marina approved (stage 1 and future stage 2) would not have a significant impact on existing water navigation or prejudice other lake users to the extent that would warrant refusal. The EIS also identified that the marina proposal provided new public access opportunities to the lake and lake edge by virtue of the publicly accessible landward boardwalk (parallel to the shore and constructed as part of the marina) and public foreshore improvements, as well as support for users of the lake by virtue of boating facilities, fuel wharf and sewer pump out. The stage 1 marina was approved (DA1503/2014), and is currently under construction (with all piling completed and the marina breakwater and pontoons now being installed and connected to the piles).

7.3.2 Area of Lake Impacted by proposed Helipad

It is proposed that the helipad will connect to the approved marina, and be integrated into the overall access, operation and management of the marina.

At the time a helipad was originally proposed, it was intended to sit off the outer edge of the larger marina (at the time 308 berths) in a north-easterly direction, as a 25m x 25m pontoon.

As identified in **Section 3.3** of this Report, the more recent work identified an opportunity to re-site the helipad so that it didn't extend as a structure further outward in a north-easterly direction into Bardens Bay as originally proposed with a reduced impact on the lake, navigation and recreational users of the lake. This alternative was also seen to be more consistent with the outcomes achieved by the marina review under Term B1, and the previously identified desire for the footprint on the lake to also shift southwards (but short of an expanded seagrass bed further south). The new location was identified to sit to the south of the marina breakwater, away from the centre of the bay and closer to the Trinity Point site. This location was reviewed by the aviation specialist (relating to approach and departure paths taking into account the marina and berths and other requirements), acoustic consultant (to confirm that acoustic criteria could be met) and aquatic consultant (relating to being clear of seagrass bed further south and along the shore). Additional consultation was had with NSW Maritime and Crown Lands relating to considerations on leases, licences and navigation. As a result, the proponent confirmed that new location as the proposed location, with a reduced size pontoon (20m x 20m) to meet requirements of the selected design helicopter.

The total surface area of the physical structure of the proposed helipad, as a footprint on the water surface, is approximately 436m^2 (being the pontoon, connecting pontoon and gangway). **Figure 47** provides an overlay of the proposed helipad location relative to the approved marina footprint, and identifies the area of the lake that is impacted in various ways by the inclusion of a helipad. The figure also includes, for information purposes, some of the historical areas referenced in **Section 7.3.1** above. There are two aspects of the addition of a proposed helipad that affects the area of the lake, being physical structure and lease area, and operational requirements for management of the water surface (not the lake bed) only during landing and take-off of helicopters.

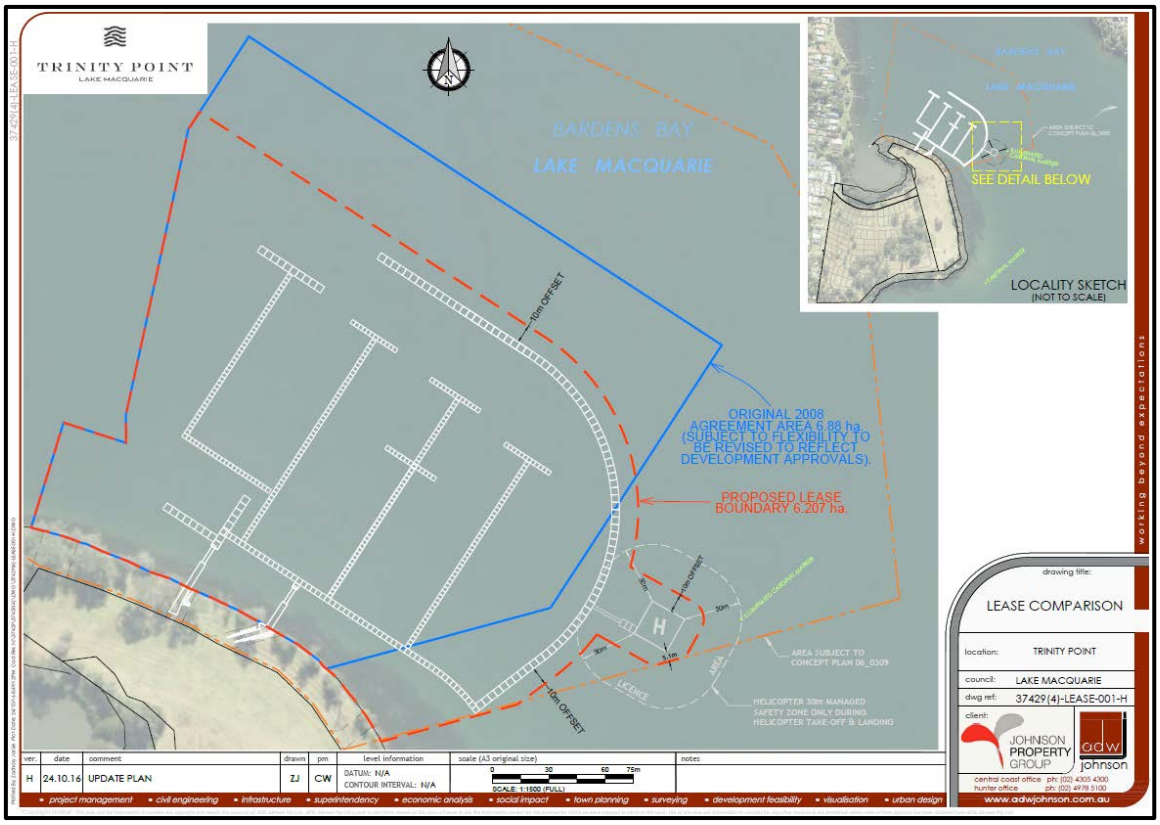


Figure 47 - Approved Marina Layout with addition of proposed Helipad.

Figure 47 shows a draft lease boundary that includes the approved Stage 1 marina (and future Stage 2) as well the proposed helipad structure (and a lease perimeter around those). This shows a total area of some 6.207ha of land, which is some 6730m² less than the footprint from the original agreement with the Crown identified for use as part of the Trinity Point project. Of that 6.207ha, only 1766m² is required to form part of the lease as a result of the inclusion of a helipad (2.8% of the total lease area).

Figure 47 also shows an additional area outside the proposed lease area that surrounds the proposed helipad structure that is identified by CASA Guidelines as requiring to be managed for safety, during the take-off and landing of helicopters only (refer **Section 7.1**), including due to rotor downwash. The part of this area that sits outside the proposed lease, being 3201m², is proposed to form part of a licence from NSW Maritime to provide for that essential public safety management area and enable marina staff to control public and craft over that area for safety reasons, only during the use of the helipad.

Combined, the proposed area of the lease and licence, beyond the area required for lease for the approved marina, is 4,967m².

It has previously been calculated that Lake Macquarie has a waterway area of some 120km², and Bardens Bay has a surface area of 900.8ha.

7.3.3 Public Access to Areas of the Lake, Recreational Impact and Navigation

By comparison, the addition of the helipad into a lease area in conjunction with the marina, takes up only 1,766m² of the lake surface area, which represents a 3% increase from that required by the marina without the helipad, and in combination with the marina lease footprint (to 6.207ha) is less than the area identified in original dealings with the Crown.

The addition of the extra area to be subject to a licence for a safety management area (including for rotor downwash) during helicopter landing and take-off only (for a maximum of 8 movements in any day, being 4 landings and 4 take-offs), takes up only 3,201m² of the lake surface area, and in combination with the marina and helipad lease area (to 6.53ha), is still less than the area identified in original dealings with the Crown. The exclusion of the public during the limited time that a helicopter is coming to land and take off conservatively could be taken to be for 15mins per movement, which would represent a maximum of two hours in any day (likely spread across the day). At other times, and when there is no arrival or departure, public access in the licensed management area outside the lease area is not restricted.

Combined, the additional lease area and management area arising from the addition of the proposed helipad represents 4,967m² of the lake surface area, and accounts for proposed structure and management zones where public use is to be managed including for rotor downwash and safety of the public and the helicopter. It is considered that the proposed addition of the helipad and its management areas, as part of an active marina and boating precinct linked to a tourist destination, is unlikely to impact on the recreational amenity of lake users (including boats, yachts, swing moorings, personal watercraft and lake swimmers) in the local context of Bardens Bay (representing 0.5% of the water surface of Bardens Bay, and in combination with the marina lease area, cumulatively representing 0.72% of the water surface of Bardens Bay) as well as in the wider context of the entire Lake Macquarie waterway (cumulatively, with marina lease, representing 0.05% of the entire waterway).

In order to assist management of the proposed helipad and the immediately surrounding water surface during helicopter arrival and departure, the HLS includes a 'prior permission' requirement, a pre-arrival inspection requirement (including responsibility for ensuring persons and craft are clear of the management zone by both the landing officer and the pilot), a set of lights activated to signal imminent arrival or departure, and a cardinal marker included on the eastern edge of the zone, which aligns with the existing cardinal marker further south and has been discussed with NSW Maritime. No impact is anticipated to existing swing moorings as a result of the proposal, as these are well clear of the proposed HLS site, and the proposed operational measures will provide suitable navigational safety.

It is important to ensure there is adequate space across the lake water body to ensure that there is no unreasonable impact on all users of the lake, not just those utilising the proposed helipad attached to the marina. It is considered that the inclusion of a helipad does not impact on a significant area of the lake, does not unreasonably impact on all users of the lake including recreational users and the boating public and has limited impacts on navigation in and around the approved marina, Bardens Bay and the wider waterbody, with a suite of operational management procedures identified for public, recreational, boating and navigation safety.

7.4 NATURAL HAZARDS – COASTAL PROCESSES

7.4.1 Background

Approval of the concept plan under MP 06_0309 including a marina, and the subsequent assessment and approval of a comprehensive Environmental Impact Statement (EIS) for the first 94 berths for the marina (DA1503/2014), including detailed consideration of natural hazards and coastal processes including wind and wave action, coastal erosion, sea level rise and storms, and consistency with a range of coastal processes policy.

The *NSW Coastline Management Manual* (NSW Government 1990) provides an overview of coastal hazards. Royal Haskoning DHV (RHDHV), who undertook baseline verification works and hydrodynamic investigations for the marina as part of the concept plan and stage 1 marina EIS process, has provided assessment of coastal processes that are relevant to Bardens Bay and for consideration under the helipad proposal (included in **Appendix H**) being coastal erosion, coastal inundation and climate change.

Each of these hazards are addressed below in relation to the proposed helipad development.

7.4.2 Coastal Erosion

RHDHV assess that the proposed helipad would not significantly influence the local wind and wave environment in a manner that increases the coastal erosion hazard at Bardens Bay. This is primarily due to the small size of the proposed helipad, and the relatively shallow draft of it (0.6 m).

7.4.3 Coastal Inundation and Climate Change

RHDHV identify that the proposed pontoon is a floating structure supported by telescopic piles, meaning that the pontoon level would rise and fall in accordance with local water levels, including extreme water levels during significant lake flooding events. There is no risk of inundation of the proposed helipad under normal operating conditions.

Similarly, there is no risk of inundation of the helipad associated with projected sea level rise. The design of the helipad pontoon, in a similar way to design of the marina structure, will consider extreme wind wave conditions that may develop during the design life of the helipad.

7.4.4 Consistency with Coastal Management Policy

RHDHV provide consideration of the proposed helipad for consistency with a range of coastal process legislation and policy (refer **Appendix H**), and do not identify any inconsistencies.

It is considered that the addition of a helipad on the edge of the approved marina, will not adversely affect any coastal processes, nor be impacted upon by coastal processes, and subject to appropriate construction and operational management, is not expected to affect the local hydrology regime within Bardens Bay nor have any impacts on water quality (refer also to **Section 7.5** below).

7.5 HYDROLOGY AND WATER QUALITY ISSUES

7.5.1 Background

The Stage 1 Marina EIS included comprehensive identification and baseline observations of hydrodynamic processes within Bardens Bay and the marina site, included within technical reports prepared by Royal Haskoning DHV (RHDHV) including Baseline Verification Report, Basis of Design Report and Hydrodynamic Model Investigations Report. The existing marine environment (no marina conditions) is well understood and is summarised within **Section 4.6** of this Report drawing on that detailed work, including a description of tidal hydraulics, wind driven circulation, waves, water and sediment quality, seabed shoreline stability and sediment movements. Other than approval and construction of the marina, there has been no change in the existing marine environment.

As part of the Stage 1 marina DA and EIS, the impacts of the marina (being 188 berths) on hydrodynamic processes of Bardens Bay was subject to thorough numerical investigation, including use of a 3D model for the whole lake, the south western lake, Bardens Bay and the marina site. The model simulated 3D lake circulation patterns due to the effects of tide and wind for a range of conditions, undertaken also by RHDHV. The EIS summarised that:

- Tidal currents within Bardens Bay are of negligible magnitude and the marina would have negligible effect on tidal currents;
- The marina would have only a minimal impact on circulation (and hence flushing) of Bardens Bay (with a very localised impact on reducing vertical flow areas by reducing wind stress directly below the floating structures for part of the water column;
- The marina increases flushing times by less than 1% above that of existing conditions, with flushing times within generally acceptable flushing limits for maintaining good water quality, and hence unlikely that marina structures will affected water quality of Bardens Bay as a result of impacts to flushing; and
- The marina has an insignificant influence in the overall distribution of seagrass wrack, and that particles travel either side of the marina and there is no significant shadow (i.e. reduction in particle density) along the western shore of Bardens Bay.

The proposed helipad sits within the immediate vicinity of the approved marina and is connected to the marina.

RHDHV was engaged to review the addition of a helipad in line with concept plans, and provide an assessment of potential impacts of the proposed helipad on hydrodynamic processes within Lake Macquarie and Bardens Bay (refer **Appendix H**).

7.5.2 Seagrass Wrack

RHDHV have reviewed the marina findings and have assessed that the proposed helipad does not represent a different type of barrier to wrack movement at the site nor does it increase footprint to a degree that would necessitate a review of the findings relating to the marina, nor alter them.

As such, the proposed helipad, like the approved marina, will not interfere with the movement of seagrass wrack along the foreshore nor have any significant influence in the overall distribution of seagrass wrack, which is transported by wind driven currents.

7.5.3 Wave Energy

RHDHV have reviewed the marina findings and have assessed the proposed helipad at concept plan phase and assessed that the proposed helipad would not significantly influence local wave environment, including deflection and refraction to other locations, due to relatively small size and shallow draft.

As such, the proposed helipad, like the approved marina, will not impact on wave energy nor increase risk of deflection or refraction to other locations.

7.5.4 Water Quality and Lake Bed Sediments

During construction, no dredging or removal of marine sediment is required. Five (5) piles will need to be driven into the lake bed to support the helipad. Most recently, 70 piles have been driven into the lake bed as part of the construction of stage 1 of the marina, with construction occurring under an Environmental Protection Licence (EPL) with appropriate construction environmental management. No formal complaints were received relating to the pile construction, and no environmental incidents occurred, with visual inspections and monitoring as required under the EPL undertaken. RHDHV have assessed that given the small scale of piling activities associated with the helipad construction, there will be negligible impacts on lake bed sediments or the water column.

During operation of the proposed helipad, RHDHV have reviewed potential for impacts on water quality arising from addition of a helipad, and assessment that as a low risk, associated with spills or leaks from helicopters. The likelihood is considered almost negligible as:

- Refuelling of helicopters is not proposed;
- Maintenance of helicopters is not proposed; and
- Helicopters are subject to regular and stringent safety checks, including their fuel containment systems.

Notwithstanding, the risk can be managed by:

- Inclusion of a first flush treatment for the deck of the pontoon structure and/or bunding, to be documented at detailed design phase (and as notated on the concept plans included); and

- Operational management procedures including inspections, and integration of the helipad into the wider marina pollution incident and management systems, including having ready access to spill kits and emergency containment booms.

7.5.5 Hydrodynamic Processes

RHDHV have reviewed the marina hydrodynamic process findings, and considered the proposed helipad, and advised that additional hydrodynamics modelling is not considered necessary. They have advised that the proposed helipad would not significantly alter the hydrodynamic processes at the marina and that the findings of the comprehensive and detailed marina investigation would not be altered. Those findings are:

- Tidal currents within Bardens Bay are of negligible magnitude and the marina would have negligible effect on tidal currents;

- The marina would have only a minimal impact on circulation (and hence flushing) of Bardens Bay (with a very localised impact on reducing vertical flow areas by reducing wind stress directly below the floating structures for part of the water column); and

- The marina increases flushing times by less than 1% above that of existing conditions, with flushing times are within generally acceptable flushing limits for maintaining good water quality, and hence unlikely that marina structures (including helipad) will affect water quality of Bardens Bay as a result of impacts to flushing.

7.6 FLORA AND FAUNA

A detailed description of the current terrestrial and aquatic ecological environment is contained in Section 4.0 of this Report. A substantial body of aquatic ecology assessment work was undertaken as part of the EIS for the Stage 1 marina, which was followed by an aquatic ecology construction environmental management plan and a suite of monitoring, which is currently ongoing as the marina is under construction.

Appendix F includes ecological assessments relating to the proposed helipad.

There is a high level of knowledge and experience about the nature of the aquatic environment in the immediate locality of the proposed helipad, and impacts (or not) that arise from construction within the lake at this location. The proposed helipad is attached to the approved marina breakwater, utilising the approved marina connections and infrastructure that connect the facility to the shore, is in a deeper part of the lake that is well separated from the fringing seagrass to the west along the shore edge and from the expanded seagrass bed situated further south. The marine sediment is not known to be contaminated, no dredging is required and the construction and operational will have minimal disturbance to the lake bed, which is largely free of marine vegetation. There is no need for compensatory habitat. The experience from the marina construction is that the marine sediment resettles quickly and does not generate issues of any concern relating to the water quality of the lake.

It is not anticipated that the construction or operation of the proposed helipad will impact on existing seagrass beds and the habitat they provide to benthic organisms they support. The environmental consequences to seagrass and benthic organisms arising from the addition of a helipad (from a construction and operational perspective) are considered low, subject to typical piling construction methods.

Over 70 piles have been installed during 2016 (for Stage 1 marina). The helipad proposal will involve the installation of up to five piles, and by comparison to the approved concept and construction works undertaken for the approved marina, the environmental consequences of those piling activities in the lake will also be low.

Similarly, it is not expected that water quality impacts arising from construction or operation will be significant, subject to typical lake based construction methods. It is noted that water quality treatment from the pontoon has been identified and will be incorporated and documented at further detailed design stage.

Assessment has been made relating to fish and their habitat, and any impacts on aquatic fauna, including the arrival and departure of helicopters to the proposed helipad. There are no impacts on these, arising from either noise or rotor downwash, that would warrant reporting as an environmental consequence, particularly in comparison with the approved marina and its operation.

In addition, consideration of Matters of National Environmental Significance (MNES) has been undertaken for terrestrial and aquatic ecology, and a detailed report included in **Appendix F**.

The scope of the assessment is to provide an assessment of MNES and advise whether the proposed helipad is likely to impact MNES known from the locality or considered to have habitat within the locality (10km radius from the proposed helipad).

The Commonwealth Protected Matters Search Tool (PMST) was run for a 10km search area of the proposed development site, with the following results:

- 2 Listed Threatened Ecological Communities;
- 67 Listed Threatened Species;
- 60 Listed Migratory Species; and
- 67 Listed Marine Species.

With due consideration of species ecology and habitat coupled with the proposal, the listed species and ecological communities were assessed for the likelihood of occurrence in the project area and likelihood of the proposal impacting each species.

The advice concludes that following completion of a likelihood of occurrence and level of impact assessment taking into consideration the above-mentioned factors coupled with site context and species ecology, that the proposal is unlikely to have an impact on any MNES. On this basis, further assessment via a referral under the EPBC Act 1999 is not considered necessary.

7.7 DESIGN AND VISUAL IMPACT

A Visual Impact Assessment (VIA) has been prepared by Dr Richard Lamb and Associates (RLA) to accompany this EA (refer to **Appendix G**).

The purpose of the report is to assess the visual impacts of the proposed helipad to be integrated into the approved Stage 1 marina at Trinity Point. The assessment has been undertaken to consider visual impacts of the proposed helipad only. RLA have prepared a number of VIA Reports in relation to approved developments at Trinity Point including:

- VIA report for the Trinity Point Concept Plan (MP06_0309) which was approved with amendments (2008);
- VIA report for the approved DA and EIS for Stage 1 of the Marina and ancillary development (2014);
- Section 75W VIA report on proposed amendments to the Concept Approval (2014);
- VIA addendum report to the s75W report (MOD 5) on proposed amendments to the Concept Approval, which were approved by the Planning Assessment Commission (2015);
- VIA Report on the approved DA496/2015 Tourism Accommodation and Residential Flat Buildings precinct (2015); and
- VIA Report for the approved DA 1731/2014 Tourism and Hospitality Precinct (2016).

The methodology adopted in the VIA is similar in concept and logic to the methodology adopted in the VIA reports leading to the MOD 5 approved amendment to the Concept Approval and the approved DA for the Stage 1 Marina and ancillary development.

The reporting confirms that no substantive changes have occurred to the visual context or setting of the subject site of the proposed helipad in the period since the approval of the DA for the Stage 1 Marina and ancillary development. The observations, analysis and assessment remain valid.

RLA confirm that the existing regional and local visual context (as described in the above-mentioned reports), remain current with the exception of further development of adjacent approved residential land by JPG to the west of the proposed helipad site. The have been no significant changes to character, quality or visual accessibility of the site.

No significant changes have occurred in existing scenic resources since approval of the Stage 1 marina, to which the proposed helipad would be attached and in the context of which it would be seen. The proposed helipad, being a floating structure of similar height in elevation to the approved pontoons of the Stage 1 marina, has minimal vertical dimensions and is not capable of causing any significant change to the visibility or character of the background features visible in views toward the Trinity Point site generally, or of the approved marina.

As a result, the future approved character of views toward the site would be largely unchanged if the helipad is approved. The structure is not capable of causing significant view loss or view blocking effects to views for the approved marina, making use of the opportunity for a connection to the existing structure to provide access.

The visual impacts of the proposed helipad were assessed using a methodologically specific to built developments including marina applications and cross checked using the methods in the Lake Macquarie Scenic Management Guidelines (LMSMG).

The major components of the methodology for the VIA included a view analysis; visual effects analysis; visual effects of variable factors; and a visual impact analysis. The assessment methodology was also supplemented with an assessment of the merits and compliance of the proposed development with relevant planning instruments in relation to visual and amenity related considerations.

The key findings of the Visual Impact Assessment include the following:

- The Trinity Point site will be transformed by the existing Concept Approval and the approved Stage 1 marina. This will create contrasts with existing development form in the locality which must be taken into account in determining acceptable visual impacts of the proposed helipad.
- The visual catchment for the proposed helipad development is confined to isolated parts of the urban foreshores to the north east of the site and foreshore of Trinity Point.
- The small scale and minimal vertical dimension of the proposal would significantly limit its visibility.
- The landscape setting of the site is within Bardens Bay and is set in an existing context facilitated to be transformed by the Concept Approval and subsequent individual approvals, including the marina.
- The site is of a moderate scenic quality rating with generally low visual accessibility, as identified in the LMSMG. The southern basin experiences lower usage than the remainder of the lake.
- The landscape has a higher potential to absorb visual impacts than one of high scenic quality and high accessibility.
- The ability of the site to absorb visual impacts of the helipad is significantly increased by the approved marina, to which the helipad is proposed to be attached.
- The site has low visual exposure to the public domain on land to the south, west and north and moderate exposure to part of the waters of the southern basin of Lake Macquarie to the north east and east.
- There are no view places on land in the high sensitivity zone of less than 100m from the site. Sensitivity was rated medium for locations between 100 – 1000m from the site and low for distances greater than 1km.

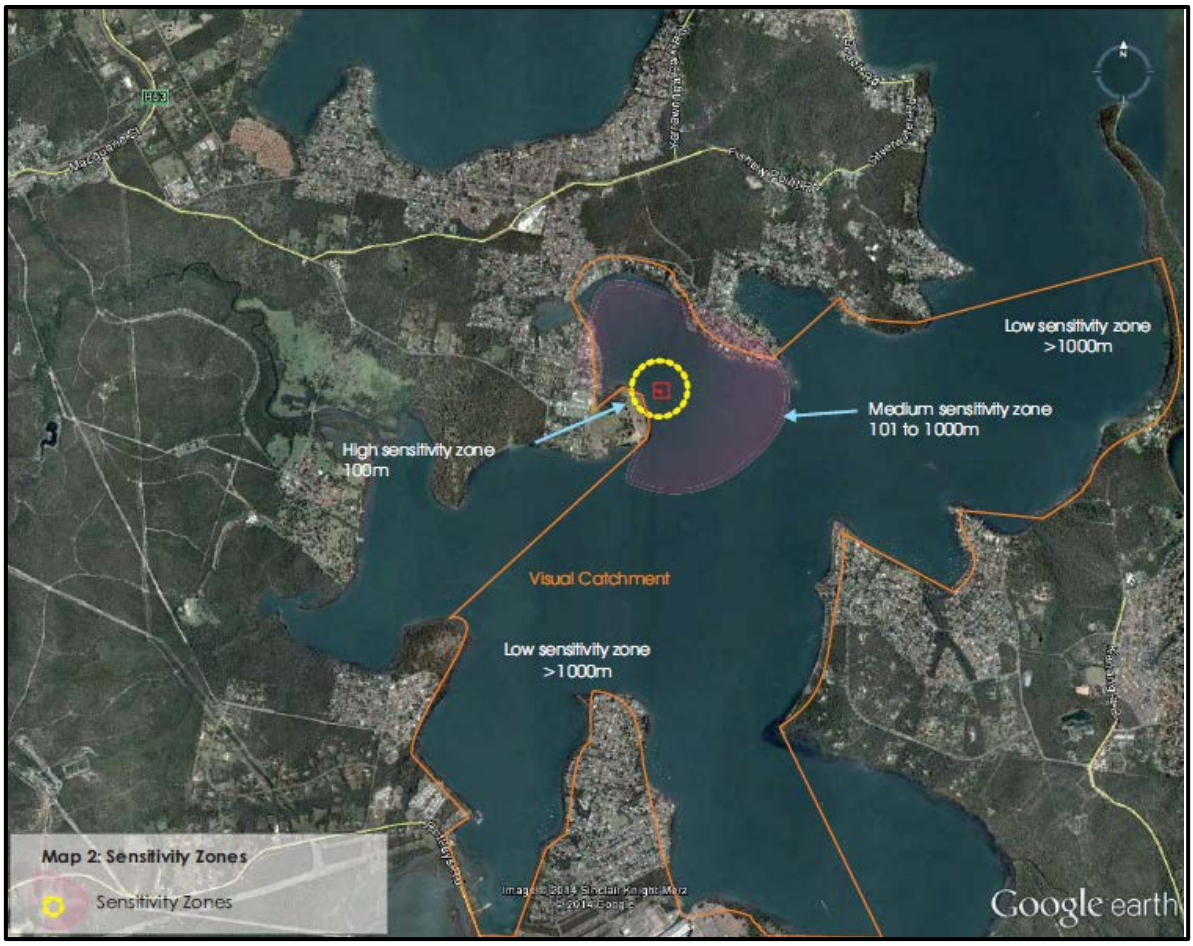


Figure 48 - Visual Sensitivity Zones.

- Few public domain locations on land are affected by visual exposure to the site.
- Most public domain views other than close views from the water and the fringe of future residential development west of the site are in the Low Sensitivity Zone.
- The effect of the proposal on view composition would be minor.
- There is a minor effect of relative viewing level overall; the topography of the visual catchment of the development is relatively flat and most views, including those on the waterway, are on grade with the site.
- Visual effects would be increased for passive users of the immediate foreshore and for frequent users of the immediate waterway. There are no roads which provide sustained views that would include the helipad.
- The proposal would cause no greater impact on view through the site from the waterway and foreshores to the north east than the approved marina and in most views would be masked or totally screened by it.
- The overall rating of the visual effects of the proposed development on its total visual catchment was assessed to be low to medium.
- Medium impacts would be confined to close range views from the waterway and visibility of movement of aircraft associated with the helipad.
- The proposal would not cause significant view loss.
- The Physical Absorption Capacity (PAC) for the proposed helipad was rated high for all viewing locations, as a result of the adjacent approved marina.
- The visual compatibility of the proposal with the Concept Approval and the approved marina was rated to be high.
- The overall effects and impacts rating for the high view sensitivity zone in the public domain were assessed to be medium, reflecting the visibility of change in character when viewed in detail, but only from close range on the waterway.
- The overall visual impact rating of the proposed helipad on its total visual catchment, when all relevant weighting factors were taken into account, was assessed to be low.
- The visual effects and residual impacts of the proposal were assessed as being acceptable in the context of a destination development of distinctive character with a significant tourism component and compatibility with the Concept Approval and approved marina.

The VIA concludes that the proposed helipad is of small scale and low overall visibility in the context of the existing Concept Approval and approved Stage 1 marina. The most evident visual effect of the use of the helipad would be arrival and departure of helicopter aircraft. For the majority of the time, there would be no evidence of this activity. The presence of the helipad would on occasions be marked by the visibility of an aircraft on it.

The proposal is a natural addition to the approved marina and it shares many attributes with it. Accordingly, it was determined that the proposed helipad would be of high compatibility with the marina. It will also benefit from the screening effect on views afforded by the approved marina and its occupation by vessels of various sorts and sizes in views from a significant part of the visual catchment.

It is concluded that on visual grounds the proposed helipad can be supported.

7.8 SOCIAL IMPACT ASSESSMENT

A Social Impact Assessment (SIA) has been prepared by Key Insights to accompany this EA (refer to **Appendix I**).

Social impacts associated with the approved Concept Plan were previously assessed in documentation to inform the approval process, including a comprehensive Social Impact Assessment. Parameters of the current SIA are limited to consideration of the helipad only, with requirements guided by the SEARs and LMCC's Social Planning and Social Impact Assessment practice documents.

The SIA involved the following research / investigations:

7.8.1 Document Review and Issues Scoping

Review of relevant documents, including proposal plans, regional strategy, expert technical reports, media coverage and Council documentation, as well as attendance at key community meetings to understand the context, identify community interests and scope issues specific to the Helipad proposal.

Preliminary scoping, using the above requirements augmented with initial known community concerns, identified the following key issues and opportunities for investigation:

- Impacts to local amenity, especially noise.
- Restrictions of public access to helipad exclusion zones.
- Health and safety risks, such as accident and spray from fuels and gases.
- Impact to environment and wildlife values.
- Impact to schools and learning.
- Concern regarding the sufficiency of the helicopter survey for acoustic study.
- Concern regarding the process for approval (e.g. use of previous LEP).
- Lack of economic benefits or justification (to offset perceived impacts to community).

7.8.2 Community Demographic Snapshot

A snapshot of socio-economic data for the local and regional community surrounding the Helipad site. The key units of community profile analysis undertaken were:

- Morisset Park;
- "Surrounding Suburbs" (Morisset Peninsula plus Summerland Point and Mannering Park);
- Lake Macquarie Local Government Area (LGA); and
- NSW (for comparison).

Table 14 below provides a comparative table of the demographic profile.

Table 14 - Comparative Table of Demographic Profile

	SURROUNDING SUBURBS					
	Morisset Park	Bonnells Bay – Silverwater*	Summerland Point	Mannering Park	Lake Mac	NSW
Residents	617	7,934	2,358	2,398	189,006	6,917,658
Median age	42 years	42 years	44 years	39 years	41 years	38 years
Private dwellings	267	3,646	1,174	1,061	78,697	2.864,531
Average people per household	2.7	2.5	2.5	2.6	2.5	2.6
Median weekly income (household)	$1,346	$1,015	$919	$892	$1,117	$1,237
Median monthly mortgage payments	$1,800	$1.666	$1,517	$1,434	$1,733	$1,993
Median weekly rent	$320	$275	$270	$265	$255	$300
Children (0-14 years)	19.6%	19.3%	20.3%	21.7%	18.6%	19.3%
People over 65 years	16.6%	19.9%	20.8%	16.7%	18.4%	14.7%
Born in Australia	81.8%	83.9%	85.2%	86.5%	86.2%	68.6%
Unemployed	5.4%	6%	8.9%	7.8%	5.3%	5.9%
Most common occupation	Professionals (23.6%) Clerical/admin (17.2%) Technicians /Trades (13.5%) Managers (12.8%) Sales Workers (9.8%)	Professionals (19.4%) Technicians/ trades (15.5%) Clerical/admin (14.7) Labourers (12.1%) Community and Personal Services (10.1%)	Technicians/ trades (19.2%) Professionals (13.1%) Clerical/admin (12.8%) Sales (12.5%) Labourers (11.1%)	Technicians/ trades (18.7%) Labourers (15.4%) Professionals (12.7%) Clerical/admin (12.1%) Sales (11.8%)	Professionals (19%) Technicians/ trades (16.7%) Clerical/admin (15.2%)	Professionals (22%) Clerical/admin (15.1%) Managers 13.3% Technicians/ trades (13.2%) Community and personal services (9.5%)
Residence owned outright	34.1%	39.5%	41.5%	32.5%	38.3%	33.2%
Residence purchasing with mortgage	38.5%	35.4%	32.9%	39.6%	35.3%	33.4%
Renting residence	23.5%	22.3%	22.9%	25.1%	23%	30.1%
Earn less than $600 a week	20.3%	25.8%	31$	32.3%	26.6%	24.2%
Earn, more than $3,000 a week	13.9%	6.9%	4.3%	3.6%	12.3%	12.3%
Housing stress – rent **	6.9%	9.2%	10.6%	11.7%	8.4%	11.6%
Housing stress – mortgage**	12%	9.2%	9.8%	12.7%	8.7%	10.5%
Unoccupied dwellings	15.7%	15.8%	22.3%	13.7%	8.3%	9.7%

Couples without children	39.6%	44.3%	45%	39.7&	39.7%	36.6%
Couples with children	45.6%	36.2%	37.7%	33.9%	41.8%	44.6%
One parent	14.8%	18.8%	16.2%	25.6%	17.3%	15.9%
Family household	77.6^	75.3%	73.2%	75.3%	73.8%	71.9%
Single or lone person household	17.1%	21.8%	24.6%	22.7%	23.9%	24.2%
Average motor vehicles	2	1.8%	1.8	1.7	1.8	1.6

** Includes Balcolyn, Bonnells Bay, Brightwaters, Mirrabooka, Morisset Park, Silverwater, Sunshine, Windermere Park and Yarrawanga park ** Households where mortgage payments are less than 30% of household income*

Consideration of Social Infrastructure

Social Infrastructure Analysis undertaken in SIA for Concept Plan

The original SIA for the Concept Approval made the following conclusions:

1) There are limited services and facilities within close vicinity of the Trinity Point site with the nearest cluster of facilities located at Bonnells Bay;
2) The projected permanent population growth associated with the Marina and Mixed Use development would be insufficient to stress community services and facilities;
3) The inclusion of recreational facilities would offset needs from Trinity Point population growth and also cater to existing Morisset Park and Lake Macquarie population;
4) Population change needed to be viewed also within the cumulative growth for the region.

Social Infrastructure Analysis Associated with Proposed Helipad

There are currently limited services and facilities within close vicinity of the Trinity Point site. The local neighbourhood comprises primarily residential blocks and passive recreational areas, such as parks, playgrounds and lakeside trails. These recreational values will diversify and intensify with the Trinity Point Mixed Use development.

As identified above, the nearest existing commercial, medical and community facilities are located at Bonnells Bay, and there are also commercial and recreation facilities are planned for Trinity Point development. There are several lake side tourist and recreational facilities in the area, including a lake side guesthouse at Mannering Park.

Bonnells Bay Primary School is on the main road from Morisset Park to Morisset, and the nearest high school is in Morisset. Brightwaters Christian School is located on the foreshore at Brightwaters. There are several childcare facilities in the area, including Bonnells Bay and Mirrabooka, and a school and childcare in Mannering Park.

Emergency services are located at Morisset.

Specific Community Services and Facilities of potential specific interest to the helipad proposal (due to location or nature of uses include):

- Trinity Point Community Reserve;
- Bonnells Bay Primary School;
- Brightwater Christian School;
- Bonnells Bay Community Centre;
- Any schools at Summerland Point or Mannering Park; and
- Reserve land on Summerland Point or Mannering Park.

7.8.3 Community Consultation

Review of existing consultation undertaken by JPG and other documentation such as Council submissions, supplemented by media analysis and additional targeted consultation undertaken by Key Insights with stakeholders identified in the issues scoping phase. The analysis of consultation includes discussion of perceived impacts (as identified by the community in consultation, meetings or media coverage) versus likely technical impacts (as identified by expert reports). Following is a summary of the key community perceptions and issues:

Negative perceptions or community concerns:

- Noise impacts on residential amenity;
- Noise impacts on local wildlife and environment;
- Loss of public access to lake from a perceived permanent no-go zone;
- Deficiencies of the helicopter survey (wrong helicopter, wrong weather, didn't land or fully thrust);
- Health impacts from aviation fuels and 'spray';
- Safety risks from accident or fire;
- Potential for disruptions to school lessons, especially for children with special needs;
- Effects of downward thrust on water turbulence and waves;
- Insufficient economic justification for helipad; and
- There are other air transport options easily available that will have less impact on local community amenity (e.g. fly into Belmont Airport).

Positive perceptions or community identified opportunities:

- Looking forward to "action" on the lake;
- Brings different customers or residents into area – "big spenders";
- Increases connections with wider region, e.g. Hunter Valley;
- Expect very little impact compared to Pelican rescue 24 hour helicopter service; and
- Possible use for medical emergencies.

7.8.4 Qualitative Comparative Analysis – Commercial Operators

Interviews with tourist based establishments with helicopter facilities in the Hunter region and helicopter companies who currently operate in the area. Discussions included consideration regarding types of trips, nature of users, noise and safety experiences, impacts to wildlife, relationships with commercial operators, perception's from local community and overall economic contribution to business. Key findings from the consultation included:

- There are a range of passengers, uses and destination – most trips are associated with tours from guests staying at the accommodation – demand is constant with capacity to grow;
- Helicopter landings ranged from 1 a month to 2 a day depending on the establishment;
- Facilities are used primarily by commercial operators who are considered very responsible by tourism staff – there is good communication and pre-planning, minimal disruption and the helicopters are "in and out' very quickly;
- Helicopters are important to business but not the biggest part of the business – difficult to quantify value but would notice if not there;
- Helicopter tourists on commercial services (e.g. lunch tours) don't necessarily spend more, but people with private helicopters tend to spend more money;
- Noise has not been a problem – however some establishments noted they had few neighbours and typically lower density surrounding land uses;
- Many of the establishments had large populations of wildlife on site (kangaroos and water birds) who did not appear concerned about helicopters - "doesn't bother them";
- People with "big white boats" over 20m are most likely to use the helipad – experience from other marinas suggest these owners might also own their own helicopters – they also spend more money;
- Helicopters add a sense of specialness and prestige to the establishment – other guests are interested in the 'comings and goings' and many take photos;
- Noise associated with helicopters is not necessarily equated with the size of the aircraft – the sophistication of the technology is more important, as well as the way the craft is flown (e.g. various methods, speeds or trajectories to take off and land);

- The helicopter used for the JPG survey was selected for a number of reasons, including that it was not the quietest option – there was certainly no intention to cut corners;
- A helipad in that location would open up Lake Macquarie and it would meet tourist demand; and
- It might be difficult to achieve the 8 movements a day due to constraints at landing side, such as limits to one helicopter on pad or limited spaces to stay overnight.

7.8.5 Impact Analysis

A Social Impact Matrix was prepared, based on analysis of the abovementioned inputs. This is provided in **Table 15** below.

Table 15 - Social Impact Matrix

Social Condition	Potential Level of Impact (with mitigation)	Significance / Comments	Recommended Mitigations / Enhancements
Population change	**LOW**	• The helipad will not directly introduce new residents to the area nor change the demographics of the existing local or wider Lake Macquarie residential population. Any population change associated with Trinity Point has been considered as part of wider planning and approval processes.	Nil
Accessibility	**HIGH**	• The helipad will provide an additional and alternative transport option for visitors and	Communication to community around

		residents to Lake Macquarie and increased and diversified connectivity to regional areas, attractions, markets and assets. • There is some concern from the local community regarding the permanent loss of access to a large area of the lake immediately adjacent to the helipad. This contrasts to the actual technical requirements for the proposal which requires a smaller area that is only temporarily restricted (restructured only during take-off and landing). The exclusion zone will be temporary will comprise a 30metre radius area, which includes making sure there are no pedestrians on the Marina walkway during times when helicopters are operating from the helipad site. • The helipad is not considered to impede other forms of transport or decrease accessibility in other modes or areas.	temporary restrictions, including reasons for restrictions (e.g. safety) Clear operational systems and procedures Proactive communication with helicopter pilots to ensure best possible planning around landing times. Clear expectations, and enforcement of rules, for private operators
Local amenity Includes noise	**MID**	• Noise impacts from the helipad have been modelled to be below acceptable levels as measured by the EA acoustic study. However, as the perception and interpretation of noise is a particularly personalised impact, and influenced by a range of subjectivities and sensitivities, it is possible that some people may experience noise as more of a nuisance, and feel more impacted, than others. • There has been considerable community interest in the noise components of the helipad and it will be important that it doesn't divide community members and potentially impact upon local community use of the facility should it be approved. • Brightwater Christian College has reported experiencing a disruption to classrooms during the noise survey – however it is noted that the quantity and quality of the regular helicopter service will be less intense in terms of frequency of movements than that experienced in the survey (less constant noise, fewer flights, and more targeted flight paths). • It is probable that some community concern has been based upon some inaccurate information or misunderstanding around key aspects of the helipad proposal, most notably a considerable difference in the number of flights intended by JPG and the amount of lake space that would be required in an 'exclusion' area, as well as the methodology of the helicopter survey. • Visual impacts have been assessed as low to medium, with medium impacts confined to close range views form the waterway and	Implementation of "Fly Neighbourly" protocol and procedures. Similar to above regarding community communication, operator relationships, attention to flight paths, and expectations around private operators. Further discussion and monitoring with Brightwater Christian College

		visibility of movement of aircraft. The helipad has been found to not cause significant view loss, is not visible from any roads, and is considered compatibility with the approved marina development. • There are not anticipated to be any specific odours associated with the helipad or its uses. • There is not anticipated to be additional road based transport or congestion created by the proposal.	
Crime and Safety	**LOW**	• The HLS study identified risks associated with the aircraft operation to be: helicopter accident, fuel spill, fire/explosion, structural collapse, and deck or locality fire. The study identified the risks as "extremely rare" with risks further decreased by the proposed management mitigations proposed. • Helicopters will not be stored on site or overnight or require additional security measures. • Some community concern has been expressed regarding the potential for a helicopter accident and resulting fire, building damage or loss of resident life. Findings from the HLS indicate that the chances of an accident are reduced by sufficient size of the helipad, appropriate visual context and the pilot's access to accurate, up-to-date information about the site, all of which is addressed in the helipad design and proposed operational guidelines. • There will be a temporary safety management zone (for take off and landing movements only) to protect public safety during take-off and landing, although it is noted that this area will not be permanent or impinge on public access beyond take-off and landing.	Community consultation around temporary restriction zone and best ways to implement for minimal community disruption and risk, Consultation/communication to include reasons for managed safety zone, ways to communicate to community that the managed safety zone needs to be enforced (operational procedures), risks to community (e.g. if management zone is not adequately enforced or people do not adhere to zones), ways of managing zone.
Public Health	**LOW**	• Some community concern has been expressed regarding health impacts of AVGAS and other fuels that might be released by helicopters whilst in flight or on landing. • There will be no fuel stored on-site or re-fuelling undertaken on the helipad. • Some community members have noted the potential for mental health associated with helicopter noise. The impacts of helicopter noise on individuals has been identified as a particularly subjective type of noise, with a range of social and personal contributing to the way in which it is perceived and interpreted. As such, it is possible that some people will find the helicopter noise different degrees of nuisance and annoyance,	

		according to pre-existing subjectivities and sensitivities.	
Community Services and Facilities	**MED**	• The Helipad will not contribute to population growth or demographic change beyond that identified in the approved Concept Plan and is not anticipated to put further stress on existing community services or facilities. • The helipad diversifies the recreational and tourist connectivity options available to visitors and residents. • Potential impacts of the helicopter flight path to impact on sensitive community receivers such as schools and hospitals were assessed, with no impacts identified for specific concern. Brightwaters Christian College is located near the northern flight path and experienced some disruption from the constancy of noise during the helicopter survey, especially for students with learning needs. There will be considerably less flights during operations than there were during the survey exercise. • The helipad will be operated for commercial uses by a private operator and is not intended for use as a community service or facility. However it has potential to be used by emergency services subject to pilot discretion (this is considered unlikely). • The helipad requires a managed safety zone of 30mr radius however this is only temporarily required during take-off and landing and not considered a permanent loss of access to public space in the Bay which might otherwise be used for community and recreational uses (such as fishing). It may however create some nuisance or annoyance, and also has potential for public safety issues should protocol not be able to be duly enforced. • The Trinity Point reserve has recreational and social values that are protected by Management Plan.	Discussion and monitoring at Brightwaters Christian College during planning and operation.
Indigenous Heritage and Issues	**LOW**	• There are significant cultural and heritage values associated with the land at the wider development and wider Marina development has a comprehensive plan of management in place to protect and enhance those places. • There are no sites or impacts relating to Aboriginal or European heritage arising specifically from the Helipad. • Consultation with Aboriginal stakeholders did not identify concerns specific to cultural issues.	
Environmental values	**LOW**	• There will be no dredging or removal of marine sediment required. Minor disturbance to bed	

		sediments may occur during pile driving of the five telescopic piles that will support the helipad, however the sediments are not contaminated. • The helipad represents an approximate 2% increase in the Stage 1 marina footprint, and 1% footprint of the final marina footprint, and sits at a similar level in the water to the approved Marina. As such, the helipad is consistent with the hydrodynamic modelling of the approved marina and there are no identified impacts to water quality • The environmental assessment found that the helipad will not impact fauna or flora during either the construction or operational phase, especially when viewed in context of changes associated with the wider approved marina. The assessment included investigation of potential impacts associated with noise, wind turbidity, shadowing, construction, pollution and downward draft.	
Economic Trends	**MID**	• The helipad will strengthen the overall economic value of the Marina and Mixed Use development by increasing its attractiveness to investors, diversifying its potential customer base, improving access and connectivity to regional assets, and increasing its marketing value as a prestige destination facility, with flow on effects for local and regional employees, business partners and community. • It is not anticipated to create additional specific jobs beyond the 5 projected for delivery by the approved marina, however it is considered to strengthen those jobs by its increased value to investors and leases. • Other impacts may include increased stimulation of high end tourism market by way of increasing prestige property and associated value of the local area.	
Housing	**LOW**	• The helipad will not deliver additional housing or increase the number of people requiring residential housing in the area, and therefore is considered not to impact housing needs or housing supply in the area.	
Groups with particular needs	**LOW**	• The helipad provides wider options for visitors to access Lake Macquarie and the wider region. It also increases the options for permanent residents who may have business in city centres and reside in Lake Macquarie area. It allows options to widen the scope of key note speakers or guests at conferences, business or social events, with benefits for the specific interest groups associated with those	Continue discussions with Brightwater Christian College. Potential school programs around helicopters

		events or activities. • Students with learning needs at Brightwater Christian College have been identified at risk of learning disruption if helicopter noise similar in constancy and intrusion as the helicopter survey – discussions with school will continue as the proposal progresses. • It is possible that the helicopter may increase access for some groups for which driving or other forms of transport might not be available, for example people with a specific disability, although the high cost of this form of transport is noted in terms of impacting affordability.	
Sense of Place Community Identity		• The visual assessment for the proposal found the helipad to be consistent with the changing visual character of the lake and the visual compatibility with the approved marina was found to be high. The helipad was considered acceptable in the context of the "destination development of distinctive character". • The helipad is not expected to impact on local landmarks (it may itself become a landmark). • There is some potential for helicopter noise and increased activity to impact on the 'sense of place'. For some community members and this may be positive or negatively perceived. While some have expressed concern about changes to the local space (letters to the editor, community meetings, objections), others note the helipad with positive anticipation in terms of increased activity, options and stimulation of the local space (JPG face book page). • The helipad needs to be considered in light of the changing character of the local area and increased activation of the local space. • Community values of the Trinity Point Reserve to be considered.	Communication and community programs with community
Community cohesiveness Community and cultural wellbeing		• The helipad has attracted strong community interest and there are strong opinions in both support and objection to the helipad proposal. • While there is considerable support for the helipad within the context of the wider development, and it is considered that misinformation regarding flight numbers and no go zones have contributed to community concern, it is possible that some community dissatisfaction and 'distrust' of JPG will remain regardless of development approval - with a negative social impact for both the development (decreased commercial	Ongoing communication and engagement strategy to ensure community has access to accurate and up to date information, and a clear mechanism by which to clarify questions or concerns.

		viability) and the community (community tension and mistrust). • It is the responsibility of JPG to ensure fair and accurate information, and community representatives to facilitate accurate and representative transferral, so an informed and meaningful discussion can take place.	

7.8.6 Conclusions and Recommendations

The potential positive impacts of the proposed development are currently identified as follows:

- Diversification of client and recreational streams;
- Increased connectivity and access options between the Lake, Sydney and the Hunter;
- Enhanced economic benefits flowing from improved investor confidence in attractiveness and viability development;
- Flow on effects to tourism locally and regionally, with increased connectivity to the Hunter Valley and increased spending from new customers; and
- Economic benefits associated with jobs during the construction stage.

The potential negative social impacts of the proposed development currently identified are as follows:

- Noise during construction and operation, especially for those closest to the site or with homes associated with flight path;
- Potential for disruption of learning at Brightwater Christian Collage;
- Temporary restrictions if a small area of lake to public access during take-off and landing; and
- Potential for ongoing community ill will and poor relationships leading to compromised usage of the facility by local people and associated impacts to development viability, community cohesiveness and economic stimulation.

In order to maximise the potential positive social impacts and mitigate the potential negative social impacts, the following initial recommendations are made:

1. Noise management – including special attention to Brightwater Christian College.
2. Public access and safety – including community input into safety management zones and procedures.
3. Ongoing community consultation and communication strategy (beyond marketing).
4. Enhancement of Social Impact Management plan (earlier condition consent).

Overall, provided that the above recommendations are adopted, it is considered that the proposal is likely to be acceptable in terms of Social Impact Considerations, however, a final response will be prepared following the community engagement that occurs once the details of the environmental assessment become available and are reviewed by the Community and opinions are further expressed.

8.0 Justification for the Proposal

The proposed Helipad whilst separately defined is part and parcel of the shore based and water based tourism facility. The helipad is not designed to operate independently of these facilities and can be viewed as an ancillary land use. Without the approved tourism facilities there would be no need for a helipad in this location as there is no demand otherwise.

The success of tourism facilities rely heavily on the ability to offer a very broad range of services or activities. Such range can sometimes be offered on the one site or be delivered by land uses located in proximity of one another but on different sites and by different providers.

Trinity Point is not located near any other tourism land uses and operators and so must create the destination in its own right and to be competitive in the tourism industry. It must on its own create enough interest that people want to visit. This approach not only encourages visitation but hopefully encourages repeat visitation.

The site as concept approved provides for:

- Residential accommodation;
- Tourism accommodation;
- Infinity pool;
- Spa;
- Marina;
- Water sport;
- Passive recreation and relaxation;
- Functions;
- Retail;
- Dining; and
- Business centre.

Not any one of these facilities would easily survive on their own in this location, however they work in synergy to create a destination, a point of difference and the ability to compete in the tourism market. The proposed helipad adds to this list and further broadens the services offered. Whilst some have argued that the helipad is unnecessary so too arguably are a number of the land uses that are already approved, a pool, spa, retail and business centre. Whilst not essential as individual land uses these are highly desirable and each makes a contribution to a successful and sustainable overall facility.

The proposed helipad allows for fast and convenient access to the site, particularly from Sydney (35 minutes from Sydney Airport). It allows the facility to compete with other operators who also offer a helipad. The identified market includes:

- Hotel guests;
- Public speakers;
- Day trippers to the site as well as linking to the Hunter Valley as part of day out;
- Brides and wedding parties arriving for weddings;
- Permanent residents undertaking business travel to large centres; and
- Private/corporate transfers for a range of uses.

The small number of movements being sought is adequate to cater for this market and make a significant contribution to the success of the overall tourism project. Research has also shown that helicopters add a sense of "specialness and prestige" adding further interest to the site. Other guests are also intrigued by the helicopters and will often watch one arrive and leave and take photographs, adding to the overall sense of vitality and activity of the site.

The benefits of the proposed helipad to the overall tourism facility however must be balanced against impacts. In particular the receiving environment should be considered in detail to determine if the arrival and departure of helicopters would have a significant adverse impacts.

Potential key identified impacts include (including consideration of feedback received through public consultation):

- Impacts to local amenity, particularly noise;
- Restrictions of public access due to helipad safety and rotor downwash management area;
- Health and safety risks; and
- Environmental.

In consideration of noise the small number of flights, proposed flight paths, proposed hours of operation, and selection of helicopters have all been designed to have the least impact possible on the amenity of the locality. Joyflights have been precluded. There is also a high level of control over the proposed helipad because the helipad is not open to any member of the public to arrive, it is by prior arrangement and at the discretion of the operator.

The maximum time across a day that helicopters will be audible to and from the site will be approximately 30-45 minutes (assuming all 8 movements occur in that day). The acoustic report has identified that the receiving environment can comfortably cater for the proposed use. Notwithstanding this the proponent has kept the number of flights to what it requires and has not used the full capacity of the receiving environment. There will be no noise from maintenance, which is precluded.

The proposed helipad itself will be managed during landing and take off to ensure adequate safety is maintained for all persons. A draft procedures manual has been prepared covering the relevant matters. The relatively small area that would be excluded to the public during landing and take off will be actively managed and will only be for very short periods of time either side of the arrival and departure of a helicopter.

The proposed development does not include any fuel storage for the fuelling of helicopters and no fuelling of helicopters will be available. Accordingly there is limited likelihood of fuel spillage or other hazard such as fire or explosion. Given the co-location with an approved marina, any accidental spills can be managed and water quality management of the pontoon can be incorporated into detailed design. The final operations manual will include robust safety and routine procedures.

The proposal requires no dredging and construction of the pad involves minimal disturbance of the lake bed by the provision of telescopic piles. The resultant proposed helipad and marina lease area, and additional licence area is less than the area of the lake identified in agreements with the Crown.

The environmental assessment has found that the proposed helipad and the landing and taking off of helicopters will not impact on flora and fauna including marine ecology.

Trinity Point has been identified for the provision of tourism and related land uses, a long term vision of Council. This is reflected in the zoning of the site, the approved concept plan for the site and multiple development approvals recently received. Tourism forms part of policy objectives at both local (see LMCC lifestyle 2030) and State level (See NSW State Plan). The success of any tourism project is the ability to offer the broadest range of experiences possible. The proposed helipad is part of the overall range of site offerings that when combined will make a valuable contribution to the overall success of Trinity Point, contribute to attracting new visitors to the area and forming part of a regional link (such as with the vineyards and with the new cruiser terminal). Actual impacts are predicted, within acceptable limits and are managed. On balance it is considered that the benefits of the project outweigh the potential negative impacts.

Bryan Garland from JPG has advised:

"Council has for many years sought to achieve a high standard of tourism for Lake Macquarie. With the announcement that Accor Hotels will be the operator of the hotel, under its Pullman Brand, Trinity Point in our opinion will be the pinnacle tourism destination for Lake Macquarie. To be successful the facility needs to be a destination in its own right. To do this we not only need to offer the 5 - star services our competition offers, we need to exceed those. The helipad together with the overall mix of land uses proposed for Trinity Point will maximise this opportunity".

9.0 Conclusion

This proposed Modification under Section 75W of the EP&A Act 1979 includes the addition of a helipad attached to the approved Stage 1 Marina at Trinity Point.

It is JPG's vision that the Trinity Point Marina and Mixed Use Development will be a world class land and water based destination development that forms part of an experience and interaction with Lake Macquarie. The success of the overall tourism facility is the diversity of land uses and activities on offer and the proposed helipad will contribute an important part of this outcome.

JPG have been guided by technical consultants and importantly helicopter landing site and acoustic experts in the preparation of this EA.

The proposed development is permissible with consent under the provisions of the Lake Macquarie LEP 2004. In addition to the Concept Plan Modification proposed (MOD 3), separate development consent is required to be obtained under Part 4 of the Environmental Planning and Assessment Act 1979 for the construction and operation of the proposed helipad. This is the subject of a separate Development Application for Designated Development that has been lodged with Lake Macquarie City Council (DA 1176/2014) under the provisions of the Lake Macquarie LEP 2004. The NSW DPE have advised their Secretary's Environmental Assessment Requirements for the preparation of an Environmental Impact Statement (SEAR 846) to accompany DA 1176/2014. It is intended that the EIS will be lodged with LMCC following determination of the MOD 3 Application. This process was recommended by the NSW DPE and LMCC have been consulted and are aware of this process.

The proposal remains entirely consistent with the zone objectives and special provisions for the site established under both LEP's which promote tourist development and public usage of the Lake Macquarie foreshore whilst ensuring that important environmental matters (given the sensitive nature of the Lake and lake front land) are identified and appropriately avoided, mitigated and managed.

The proposed helipad development remains consistent with strategic planning documentation including the recently released Hunter Regional Plan 2036, the Lower Hunter Regional Plan and LMCC Lifestyle 2030 Strategy and the NSW State Plan as it will promote tourism, employment, environmentally sensitive development and will support the Morisset Town Centre which is identified as a 'Growth Area' and 'Emerging Major Regional Centre'.

JPG have undertaken public and authority consultation which has informed preparation of this EA. A Social Impact Assessment has been prepared to assist in clarifying and understanding community concern.

This EA has identified and addressed the key issues relevant to the proposed helipad development, including those outlined within the Secretary's Environmental Requirements (MP 06_0309 MOD 3):

- Establishment and use of a helicopter landing site;
- Noise impact assessment;
- Public access;
- Natural hazards – coastal processes;

- Hydrology (including hydrodynamics);
- Aquatic and Terrestrial Ecology;
- Visual Amenity; and
- Strategic context and project justification.

Assessment of each of the above has confirmed that the subject site and the receiving environment is appropriate for the proposed helipad.

In summary it is considered that the proposed Trinity Point Helipad will make a positive contribution and will contribute towards establishing Trinity Point as a world class regional tourist destination and is consistent with the intent of key strategic planning documentation whilst appropriately mitigating and managing site constraints and environmental issues.

Appendix A

CERTIFICATE OF TITLE, DEPOSITED PLANS & LEVEL SURVEY

Appendix B

SECRETARY'S ENVIRONMENTAL ASSESSMENT REQUIREMENTS & COMPLIANCE TABLE

Appendix C

CONCEPT PLANS OF PROPOSED HELIPAD

Appendix D

HELICOPTER LANDING SITE REPORT

Appendix E

ACOUSTIC ASSESSMENT

Appendix F

AQUATIC AND TERRESTRIAL ECOLOGY ASSESSMENT

Appendix G

VISUAL IMPACT ASSESSMENT

Appendix H

COASTAL PROCESSES AND HYDROLOGY INVESTIGATIONS REVIEW

Appendix I

SOCIAL IMPACT ASSESSMENT

Appendix J

CONSULTATION LOG

Appendix K

QUANTITY SURVEYOR'S CERTIFICATE

Appendix L

MODIFIED SUMMARY CONCEPT PLAN INCLUDING HELIPAD AND DRAFT PRINCIPLE FOR HELIPAD

Appendix M

VIDEO EXAMPLE OF ACOUSTIC TEST DAY