ADW JOHNSON PTY LIMITED
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Response to Submissions relating to Modification to MP06-0309 (Mod 5)

Trinity Point Marina and Mixed Use Development

Property:
Primarily relating to Lot 31 DP 1117408
Lots 32 & 34 DP 1117408 (Public Reserve)
Crown Land (the lake)

No 71. Trinity Point Drive
Trinity Point, Morisset Park

Applicant:
Johnson Property Group Pty Ltd

Date:
April 2015

trinity point
LAKE MACQUARIE

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Executive Summary

The purpose of the proposed modification (as updated by this report) is to maintain and reinforce the vision of the approved concept plan, to create a premier mixed use development, a successful and vibrant place and a world class destination.

The proposed modification seeks to provide a built form more consistent with a tourist resort and that improves public access and view corridors throughout the site. In particular the proposed modifications provide for an architectural style that is by far more coherent in the content of the natural setting of the lake and foreshore environment.

The modification is to ensure that the proposal as conceived and approved can be delivered, and presents an alternative approach to achieving the approved principles and objectives. To that end it has been clearly established that there is a critical mass and synergy of land uses that if not achieved will mean the project cannot be delivered. Accordingly the proposal incorporates additional short term accommodation that is necessary to support the function centre and other hospitality ad on site uses. It has also been necessary to provide for an increase in permanent accommodation such that the uses are able to be sustained at times when the tourism components of the site are otherwise not operating or not in peak times. Perhaps more importantly to maintain the appropriate ratio of long term residents to ensure vibrancy, activity and a sense of place and community is created.

This report acknowledges the public submissions made to the modification and notes that the submissions present a balance between support and objection to the proposal (with both sides well represented by the local and surrounding community). A summary of the key issues raised in both support and objection to the modification is provided, along with a response.

The modification has been enhanced by welcomed refinements that have been identified through a design review process with the Lake Macquarie SEPP 65 Design Panel and additional context and site analysis, justification and design analysis work undertaken as part of that process. These are summarised within this report and its attachments.

In addition to the supplementary urban design and visual analysis and justifications, the modification has been further supported by information and comparative analysis between the approved concept and modified concept on a range of technical considerations including stormwater, flooding, air quality, geotechnical and other matters identified by Department of Planning and Environment (DPE) as required. Additional information has been provided in response to government agency requests, with a response to Roads and Maritime Services (RMS) to be provided under separate cover.

It is considered that the modified concept does not present significantly greater environmental consequences than the approved concept, noting that there is ample power to readily take account of any concerns or impact identified through assessment. It is considered that the modification falls well within the scope of section 75W.

1.0 Purpose of Report

This report is prepared to as a Response to Submissions (RTS) as requested by DPE under Section 75H of the *Environmental Planning and Assessment Act 1979* (EP&A Act), relating to application to modify the concept approval of Major Project 06_0309 – Trinity Point Marina and Mixed Use Development at Trinity Point Drive, Morisset Park in the Lake Macquarie LGA.

This report supplements the *Environmental Assessment Report – Modification 5 (October 2014),* and provides:

- Summary of and response to key issues raised during public exhibition by the general public and community groups;
- Summary of and response to key issues and/or information requested from a review by the Department of Planning and Environment; and
- Summary of and response to key issues and/or information raised by Lake Macquarie City Council and other government agencies.

The Environmental Assessment Report (October 2014) provides information relating to the site, overview of the current environment and planning controls and development matters, which are not reproduced within this report.

2.0 Summary of Submissions

2.1 PUBLIC EXHIBITION

Modification 5 was placed on public exhibition by DPE until 19 December 2014. Based on information available from the Departments web based tracking system, submissions were received as follows:

- Fifty five (55) signatures/names to a petition supporting the modification;
- Forty seven (47) individual submissions supporting the modification;
- Four (4) community groups objecting to the modification (being Bonnells Bay Progress Association, Sunshine Progress Association, Morisset Park and District Action Group (MPDAG) and South Lake Macquarie Amateur Sailing Club;
- Three (3) aboriginal groups commenting on the modification (being Awabakal Traditional Owners Aboriginal Corporation, Awabakal Descendants Traditional Owners Aboriginal Corporation and Guringai Tribal Link Aboriginal Corporation); and
- Seventy Nine (79) individual submissions objecting to the modification.

This represents a total of approximately 188 submissions (inclusive of the petition) or 133 submissions (plus the petition).

A summary of these submissions is attached as ***Appendix A***, including a summary response to those.

Key issues raised in the public submissions supporting the modification include:

- Will address lack of tourist and leisure facilities in western Lake Macquarie;
- Positive economic and lifestyle benefits;
- Employment, support other small business and good for tourism;
- Destination for tourist and local community, and access to improved services;
- Superior to what was approved;
- Source of pride and identity for Lake Macquarie; and
- Public access delivered.

Key issues raised in the public submissions objecting to the modification include:

- Process;
- Traffic, External Road Network and Standard and Carparking;
- Overdevelopment, objection to mix of uses and amount of accommodation and concern on viability;
- Design Quality, Visual Impact and Amenity;
- Noise & Amenity;
- Open Space, Public Access & Facilities; and
- Water quality impacts.

In addition to the above list, many of the public submissions also objected to issues that are not directly relevant to the modification as sought – being the marina and helipad concepts and their impacts. The modifications to the marina are assessed separately in Modification 2 (marina), which has recently been approved on 9th April 2015 (refer MOD 2 Instrument of Modification). Modifications relating to a helipad are to be assessed and reported on separately in Modification 3.

2.2 LAKE MACQUARIE CITY COUNCIL

Prior to lodgement of Modification 5, the proponent met with Lake Macquarie City Council (LMCC) staff and the local Lake Macquarie City SEPP 65 Panel.

During public exhibition of Modification 5, the proponent met again with the local Lake Macquarie City Council (LMCC) SEPP 65 Panel and identified a range of additional information, justifications and revisions that could be incorporated into Modification 5 to address numerous items identified by the Panel. The information and revisions were received well by the Panel and were deemed to generally address previous concerns.

LMCC has provided comments on the modification to DPE, drawing largely on the most recent input from the local SEPP 65 Panel. LMCC supports the Panels comments as expressed in the 10 December 2014 minutes. Those comments include the following views of the Panel:

- The proposal is an improvement over the previously approved design and now represents an appropriate response to its context;
- A reduction in building footprint over that provided in the previous approval has been achieved, as has an increase in soft landscaping area. Crucially, survey certified photographs modelling the development as viewed from key viewing points confirmed

that the development will be viewed largely below the upper section of the tree canopy. The Panel therefore is of the view that the proposed scale is acceptable;

- Density appears appropriate based on information provided, noting that the information requires further confirmation. Appropriate density to also be confirmed through traffic and parking analysis;

- Generally comfortable with design development of built form, with specific support of increased setback between buildings E & H;

- Accepts better definition of public and semi-public space and more appropriate orientation of buildings is a reasonable offset for protrusion of eastern end of blocks into area approved as setback. Identifies need as designs are developed to clearly define private open space for dwellings and ongoing refinement between public and private space; and

- Landscape scheme should be reflective of local landscape character, with tropical planting not appropriate. Opportunities to be explored for setdowns in slab to accommodate larger trees between buildings where possible.

LMCC request the opportunity to further review the modification once the offered revisions are formally incorporated into the modification. This further opportunity is a decision for DPE.

This report formally incorporates the additional information, justifications and revisions to the Modification 5 concept as offered through the local SEPP 65 Panel process. These are outlined in Sections 3.1 and 3.3 of this RTS report.

2.3 DEPARTMENT OF PLANNING AND ENVIRONMENT

Department of Planning and Environment (DPE) have identified a range of points requiring further information and documentation to be provided across eight items as summarised in **Table 1** below:

Table 1: DPE Information Request

ITEM	REQUEST	RESPONSE
Urban Design	GFA comparison across mix of uses between approved and modified concept with justification	Refer Section 3.3.3.1 and Comparison Doc (Appendix B)
	Compliance of the modified concept against SEPP 65 Design Principles and associated Codes	Refer Section 3.3.3.2 and Appendix E
	Outline modification to pool locations, with justification	Refer Section 3.3.3.4
	Quantify amount & distribution of open space between approved and modified concept, with justification	Refer Section 3.3.3.3 and Comparison Doc (Appendix B)
	Detail how open space will be activated	Refer Section 3.3.3.3

ITEM	REQUEST	RESPONSE
		and Comparison Doc (Appendix B)
	Detail public access within site and public foreshore between approved and modified concept, with justification	Refer Section 3.3.3.3 and Comparison Doc (Appendix B)
	Provide shadow diagrams and shadow impact assessment	Refer Section 3.3.3.5 and Comparison Doc (Appendix B)
Stormwater and Flooding	Revise report to include level of detail similar to 2008 report to enable direct comparison between approved and proposed concept	Refer Section 3.4 and 3.5 and Appendix F
	Update 2008 flood plan and provide any required revisions to approved flood mitigation measures	Refer Section 3.5n and Appendix F
Noise	Revise report to include level of detail similar to 2008 report construction noise and traffic noise (based on updated requirements), including predictions of construction and traffic noise, identify mitigation measures.	Refer Section 3.6
	Provide comparison between predicted noise impact of approved and proposed concept	Refer Section 3.6
	Assess cumulative impact to include residential subdivision to west	Refer Section 3.6
Air Quality	Provide updated air quality assessment to include level of detail similar to 2008 report	Refer Section 3.7 and Appendix G
	Provide comparison between predicted air quality impact of approved and proposed concept	Refer Section 3.7 and Appendix G
Acid Sulphate Soils	Provide comparison between ASS disturbance between approved and proposed concept and any management measures	Refer Section 3.8 and Appendix H
Visual	Update Visual Impact Assessment to provide comparison between approved and proposed concept	Refer Section 3.3.4 and Appendix D
	Label location of photomontage locations	Refer Section 3.3.4 and Appendices B and D
Traffic	Confirm cumulative traffic impact inclusive of residential subdivision	Refer Section 3.11.1
Other	Outline stages and proposed construction duration	Refer Section 3.10 and Appendix J
	Detail how pedestrian links will be maintained during construction	Refer Section 3.10
	Provide comparison between excavation, impacts to groundwater and dewatering between approved and proposed concept and mitigation measures required	Refer Section 3.8 and Appendix H
	Confirm maintenance of certain heritage items	Refer Section 3.11.2
	Clarify and justify any changes to site boundary	Refer Section 3.3.1
	Provide clear figures	Refer Section 3.11.3
	Outline case for modification	Refer Section 4.0
	Update Urban Design Principles to reflect RTS	Refer Appendix K

By way of summary the information requested by DPE on urban design and visual items largely reflects information also requested and presented to the local SEPP 65 Panel. This report incorporates additional information, comparative analysis between approved and proposed concept and justifications on urban design and visual matters (refer Section 3.1 and 3.3 and Appendices B, C, D and E).

Additionally, response to DPE requests on other points is included in Sections 3.3 – 3.11 of this RTS report, and accompanied by updated replacement reports and/or new attachments as necessary.

It is noted that a key focus of the DPE requests is additional comparisons on key issues between the approved concept plan and the modifications proposed, beyond the qualitative, graphic and opinion based comparisons provided in the environmental assessment as submitted. It is highlighted that there is limited detailed information or technical reports available that relate specifically to the approved concept plan (the concept plan was approved in 2009 as a set of principles without DPE requiring updated technical reports, with available technical reports from 2008 relating to a different and large concept than approved). Accepting this limitation, this RTS seeks where requested to quantify the approved concept based on interpretation and assumptions, in order to then provide a comparison position. This RTS acknowledges the recent DPE approval of Modification 2 (marina related), and that assessment of modification 5 should not seek to revisit merits or impacts of the marina component of the project.

2.4 OTHER GOVERNMENT AGENCIES

Reponses have been received from four (4) other government agencies.

2.4.1 Office of Environment and Heritage

Office of Environment and Heritage (OEH) advise that the modification poses no additional impacts to aboriginal cultural heritage and has no additional comments or recommendations.

No further response is required.

2.4.2 Department of Primary Industries Office of Water

NSW Office of Water (NOW) requests further information to enable assessment on potential impacts on groundwater resources (particularly due to extensive basement parking) and waterfront land, as summarised in **Table 2**:

Table 2: NOW Information Request

ITEM	REQUEST	RESPONSE
Groundwater	Details requested where groundwater is expected to be intercepted or impacted: Works likely to intercept; Proposed extraction purpose, location and details of all bores and expected extraction volumes; Description of watertable and groundwater pressure configuration, flow directions, rates and characteristics and baseline monitoring; Predicted impacts on groundwater regime, existing groundwater users, groundwater quality, potential for groundwater contamination; Measures to protect groundwater quality and preventing groundwater pollution and protect any groundwater dependent ecosystems (GDEs); Methods of disposal of waste water Results of any models or predictive tools used. Identify limits to level of impact and contingency measures including monitoring programs, reporting procedures, any sterilisation from future use as water supply, thresholds where remedial measures/contingency plans would be initiated, description of such measures/plans and funding assurances.	Refer Section 3.8 and Appendix H
Waterfront Land	Scaled plans (site boundary, footprint, existing riparian vegetation to be protected and removed) A detailed description of all potential impacts on waterfront land and Design features and measures to be incorporated to mitigate potential impacts, taking into consideration NSW Guidelines for Controlled Activities on Waterfront Land (NOW, 2012).	Refer Section 3.9 and Appendix I

2.4.3 Roads and Maritime Services

Roads and Maritime Services (RMS) acknowledge a range of agreements that exist with others to contribute towards upgrades to the Macquarie Street / Fishery Point Road intersection (which was understood to obligate RMS to construct traffic lights at that intersection by 2019). The intersection is identified by Seca Solutions as currently failing on safety grounds in pm peak, without Trinity Point Mixed Use development.

RMS identifies a likely shortfall in funding (and change in likely upgrade costs since agreements with others) and object to the proposed modification until satisfactory arrangements are in place for the development to provide a fair and equitable contribution to the intersection upgrade. RMS identify that the developer will be required to enter into a Deed Containing Agreement prior to RMS releasing its objection to the modification.

Response to RMS objection is included in Section 3.11.1of this RTS report.

2.4.4 Rural Fire Service (RFS)

RFS raise no concerns or issues in relation to bushfire.

No further response required.

3.0 Summary of Updates to Modification 5

This section provides a summary of the updates proposed to Modification 5 as part of the Response to Submissions, including design refinements to the modification itself, as well as targeted additional information, analysis and justification.

3.1 REVISIONS TO THE MODIFICATION PROPOSAL

Section 2.0 of the submitted EA provides an outline of the proposed modifications. The key objectives of the modifications are maintained and the overall descriptions of the proposed modifications are largely unchanged, other than as outlined below.

3.1.1 Revisions to Positioning and Orientation of Accommodation Buildings

Numerous revisions are proposed within this RTS to the positioning and orientation of accommodation buildings in the central and southern precincts within the site. These revisions arise from the additional analysis undertaken in response to local SEPP 65 Panel comments and from the design review process undertaken with the local SEPP 65 Panel.

The review process identified the need to reinforce and strengthen primary and secondary vistas/views and pedestrian links and permeability, from the adjoining public road system, through the central and southern precinct, towards the lakeside pathway and the foreshore edge. These revisions to the modification are described overpage and are graphically presented in Figure 14 of the Design, Justification & Comparison Document (**Appendix B**), with Figure 14 reproduced overpage as **Figure 1**.

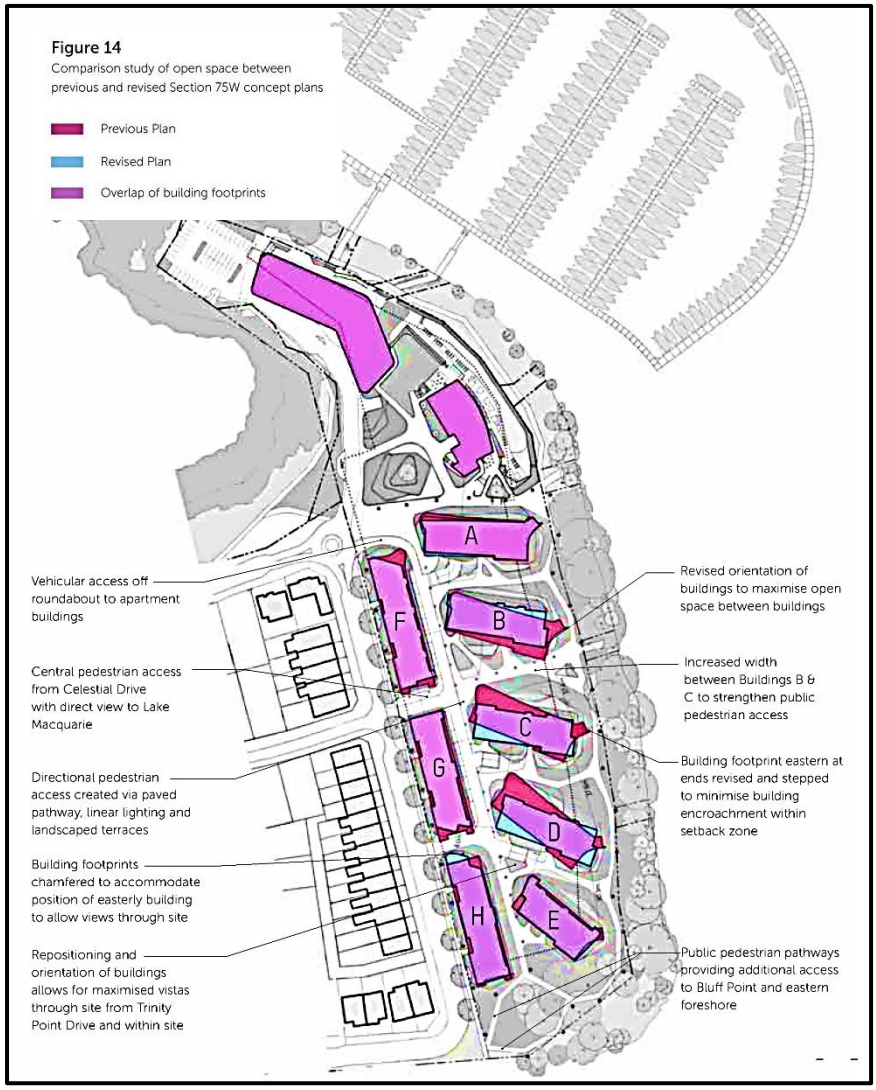

Figure 1 - Proposed and Revised Modification to building positioning and orientation.

This revision includes:

- Reinforcement of primary vista and pedestrian connection from Trinity Point Drive at primary site entry (roundabout), by widening the space between the forecourt/restaurant/function building and the two accommodation buildings to the south of the connection including:

  - Shift in orientation and minor reduction in building mass of building A to widen the proposed vista from Trinity Point Drive; and

  - Reduction in building mass by shortening and angling the edge of building F to provide an improved angle towards internal vistas.

- Reinforcement of primary vista and pedestrian connection from Trinity Point Drive/Celestial Drive by widening and straightening the space between built form including:

- between accommodation buildings F and G, by minor shortening of building F (to provide 15m building separation); and

- between accommodation buildings B and C (to provide 30m+ building separation widening towards foreshore), by shift in orientation and mass of buildings B and C.

- Reinforcement of other vista and pedestrian connections leading from Trinity Point Drive including:

  - Angling edge of building F and shift in orientation of building B (to provide angled 12m widening to 19.5m then 26m building separation between accommodation buildings A and B); and

  - Angling edges of buildings G and H and shift in orientation of building D (to provide angled 8m, widening to 15m, then 30m building separation).

- Reinforcement of visual and pedestrian experience along eastern perimeter shared pathway by reducing extent of eastern building footprint of buildings B, C, D and E. Some built form is maintained within the approved 20m setback, offset by the provision of additional space behind the 20m setback to form part of vistas, pedestrian links and public and semi-public space. The eastern extent of Building A has been varied but retains a north facing picture window that frames prominent views across the marina and the bay. Building A addresses the active waterfront east of the tourism and hospitality precinct and the strong architectural expression is considered appropriate as it flags the accommodation precinct and provides a visual punctuation mark between the two precincts. Design development will ensure an appropriate amenity is provided to the perimeter shared pathway which extends southwards from the node created by the intersection immediately to the north of the primary east/west pedestrian link and the north-south shared pathway system, which once past Building A return back into the development site; and

- Inclusion of additional access way connections by joining the two internal access ways (to provide a combined single north-south access way) and including an entry (only) connection from the north at the proposed roundabout on Trinity Point Drive. This reduces the need to accommodate internal larger occasional vehicle turning movements and to maximise landscaping, pedestrian and parking opportunities as part of the accessway and ground plane. The connections provide flexibility to consider one way or two way arrangements as part of further design development as part of development applications. Additionally, the concept includes a refined basement extent that removes a second level basement in the southern precinct from that shown in the modification application whilst maintaining (and in some locations increasing) deep soil and landscaping zones at the ground plane. Concept basement footprint has been updated within the documentation to reflect current design development.

These revisions do not alter the proposed overall land use mix as sought by the modification. These revisions do not alter any of the proposed site planning and built form of the northern precinct as described in the submitted environmental assessment report.

The resulting vistas, inclusive of the revisions in this RTS are shown in **Figure 2**.

Figure 2 – Proposed Vistas and Public Access inclusive of RTS revisions (*Appendix B* includes larger versions of these figures).

Overpage as **Figure 3** are extracts of figures that illustrate comparison between the approved concept plan (left hand side) and revised modified concept plan (as updated with this submission) (right hand side) on building separation and vistas.

APPROVED CONCEPT:

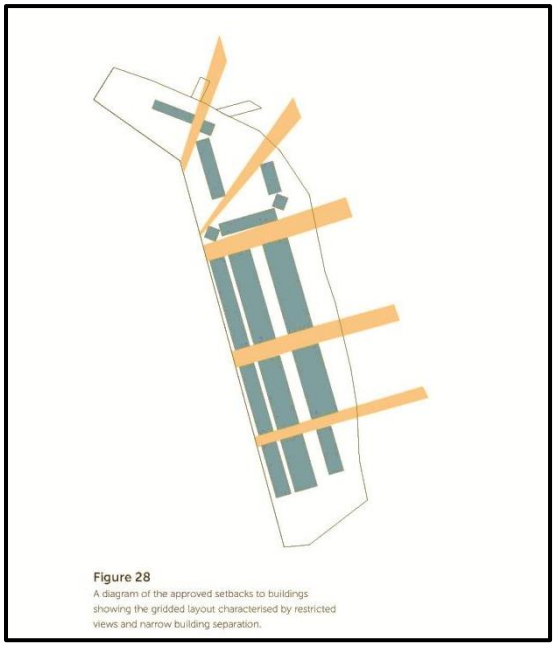

Figure 28
A diagram of the approved setbacks to buildings showing the gridded layout characterised by restricted views and narrow building separation.

PROPOSED CONCEPT:

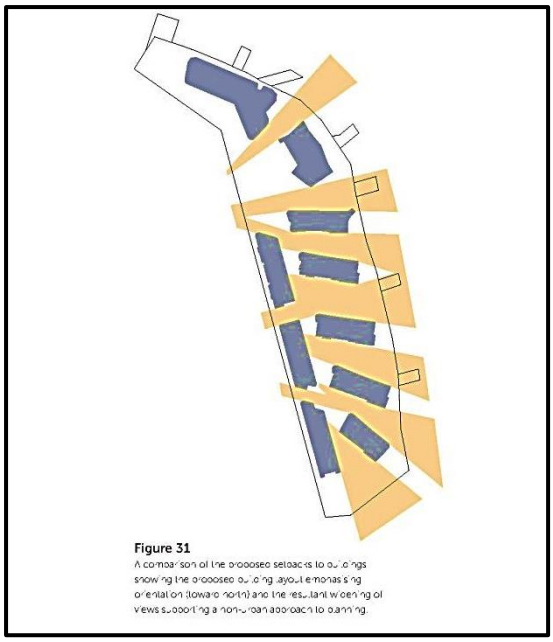

Figure 31
A comparison of the proposed setbacks to buildings showing the proposed building layout emphasising orientation towards north and the resultant widening of views supporting a non-urban approach to planning.

APPROVED CONCEPT:

PROPOSED CONCEPT:

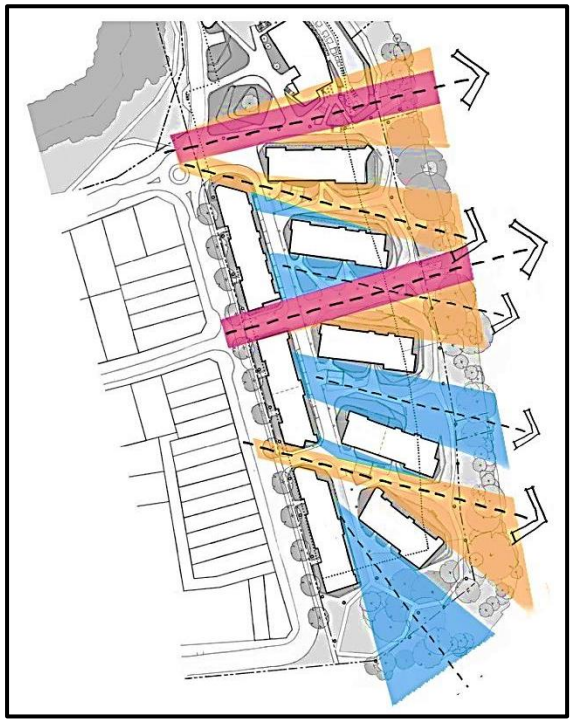

Figure 3 – Comparison on building separations and vistas between approved and revised modified concepts (*Appendix B* includes larger versions of these figures).

3.1.2 Additional Concepts on Public and Private Interface

It was always anticipated that the ongoing design development, beyond the concept plan process, would better define public and semi-public space to encourage public access to, through and around the site. The repositioning of built form within the revised modification provides more defined public and semi-public spaces and their interface with private space and buildings.

Additional detail has been provided within the documentation to define, within the strengthened vistas and links proposed, the intended hierarchy of public, semi-public and private space, and the interface of those spaces, as sought through the SEPP 65 Panel review process. This allocation and hierarchy of space is graphically presented in **Figures 4-8** and **overpage**.

Figure 68
Public access within site.

Figure 69
Future streetscape and public open space.

Figure 4 – Proposed public access and open space (*Appendix B* includes larger versions of these figures).

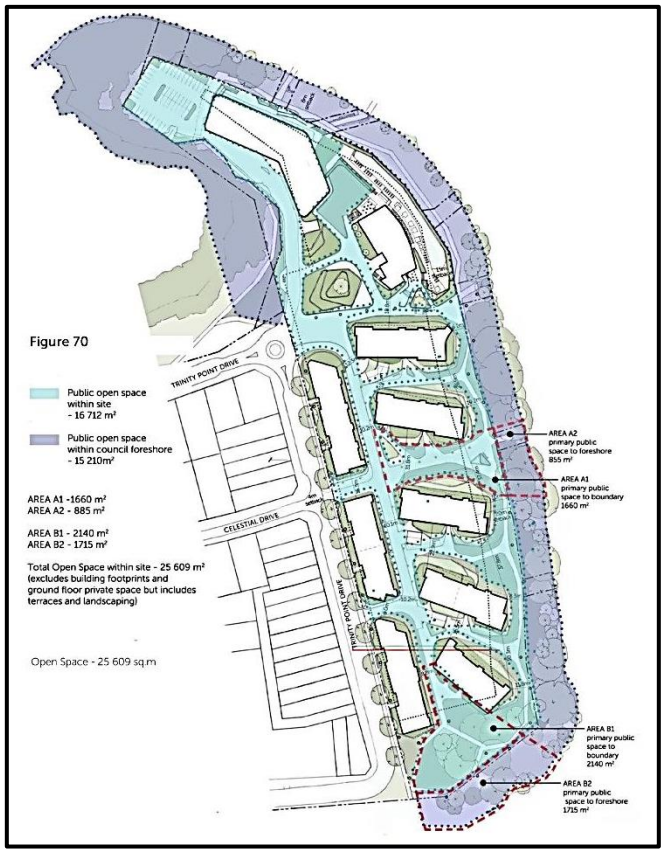

Figure 5 – Open Space (refer to *Appendix B* for larger images).

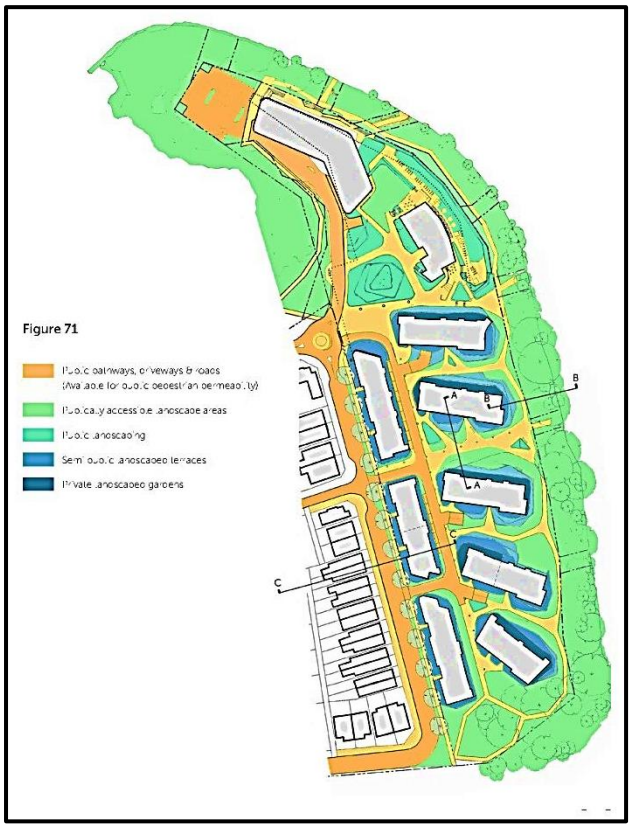

Figure 6 – Public and Private Space Hierarchy and Interface (refer to *Appendix B* for larger images).

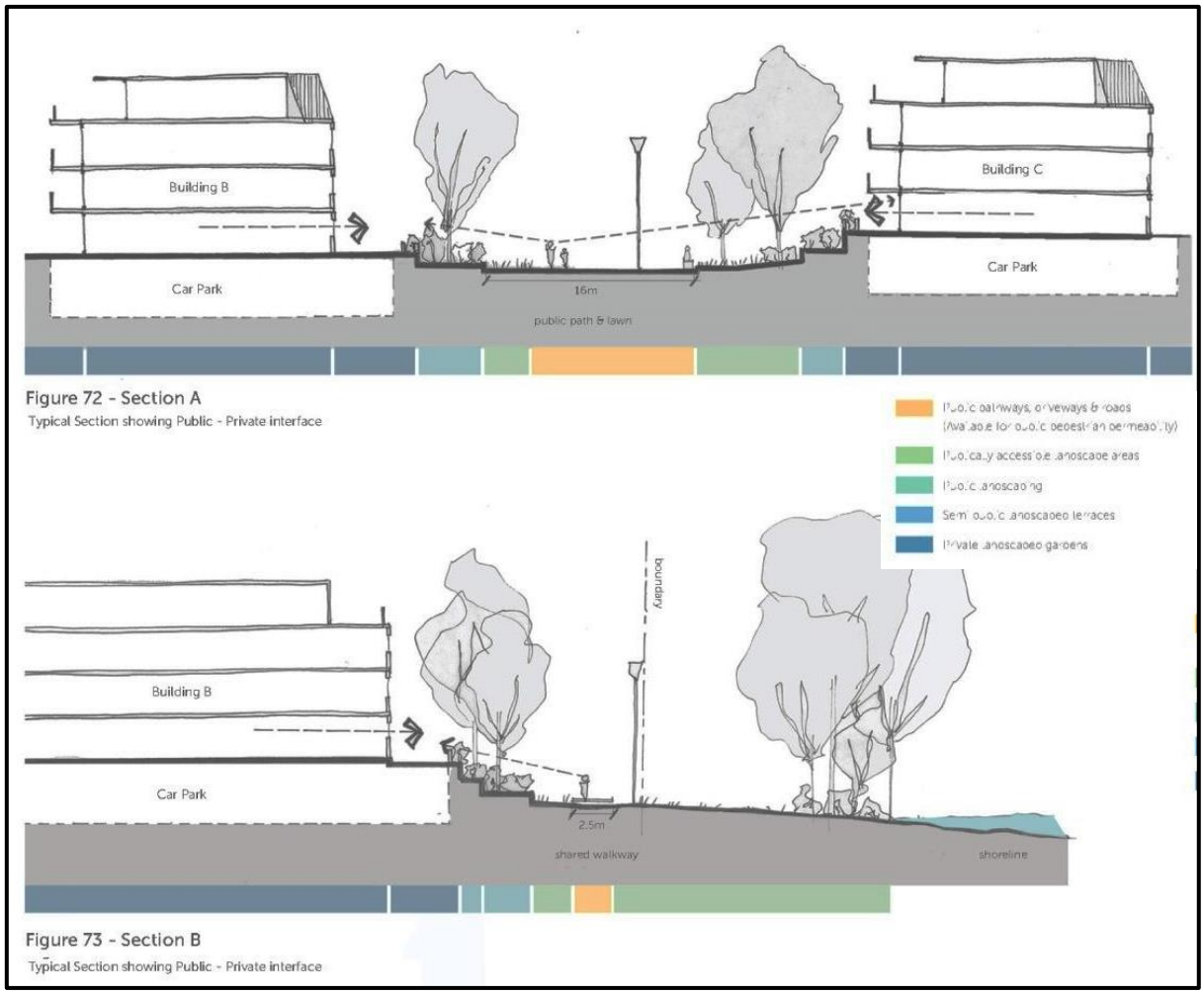

Figure 7 – Public and Private Space Hierarchy and Interface – Sections (refer *Appendix B* for larger images).

Figure 8 – Landscape Imagery of Space Hierarchy.

3.1.3 Flexibility in Type of Tourist Accommodation

The proposed maximum accommodation yield (315) and requirement for maximum of 50% to be used for residential accommodation is maintained in this RTS. However, it removes the numerical split within the tourist accommodation descriptions (ie removes all references to 65 hotel rooms and 93 serviced apartments).

This revision is proposed to provide for flexibility in the ultimate mix and numbers between these two types of short stay accommodation as part of ongoing design development.

3.2 ADDITIONAL SUPPORTING INFORMATION

This RTS report formally updates the supporting information to the environmental assessment to reflect where necessary the changes as outlined in Section 3.1, or where additional information, analysis and justification has been identified.

The Environmental Assessment Report (October 2014) provides information relating to the site, overview of the current environment and planning controls and development matters, which are not reproduced within this report.

Attached to this RTS are the following:

- Appendix A - Summary Response to Public Submissions;
- Appendix B - Replacement Comparison and Design Report (to fully replace Appendix C of EA);
- Appendix C - Replacement Landscape Analysis and Design Principles (to fully replace Appendix D of EA);
- Appendix D - Additional Visual Impact Commentary (to supplement Appendix E of EA);
- Appendix E – New SEPP 65 Design Report;
- Appendix F - Replacement Stormwater and Flooding (to replace Appendix H of EA);
- Appendix G - New Air Quality Assessment (new Appendix to EA);
- Appendix H - New Geotechnical Assessment (new Appendix to EA);
- Appendix I – Waterfront Land Information (new Appendix to EA for information purposes);
- Appendix J - New Outline of Staging and Construction Program (for information purposes only);
- Appendix K - Replacement Principles, Objectives and Urban Design Guidelines (to replace Appendix L of EA);
- Appendix L – Extract from Aquatic Ecology Investigations relating to Potential Groundwater Dependent Ecosystems (for information purposes);
- Appendix M – Disc including 3D electronic model of modified concept (for information purposes);
- Appendix N – New Excavation Comparison Plan; and
- Appendix O – Summary response to the modification against key issues identified in the original concept approval assessment report by DPE.

Appendix B to RTS document - the replacement A3 Design, Justification and Comparison Report - describes the concept, demonstrates consistency of it to the vision, broad structure principles and many of the approved principles and objectives, and describes and justifies

where an alternative approach is proposed (via this modification). The comparison document incorporates strong use of simple explanatory graphics, diagrams and photomontages. To aid comparison, the document is structured as a booklet, with direct extract from the Concept Approval document on the left hand side and comparison text and graphics on the right hand side. The comparison document provides the key justifications associated with the proposed modification. In response to SEPP 65 and DPE requests, additional justifications have been incorporated, along with additional comparative graphics and text between approved and proposed concept. Given the comprehensive nature of that document, it is not sought to repeat it or its justifications within the EA or RTS.

Appendix K to RTS document represents what the modification seeks to have approved as the Concept Plan, and incorporates the revisions proposed. It excludes justifications and comparative analysis with the approved concept (which are provided in the separate and replacement Design, Justification and Comparison Report).

A three dimensional electronic model of the modified concept has been prepared by Squillace Architects which has assisted in refining and testing the modified concept in its achievement of approved objectives and principles, and then in illustrating the effects and impacts of the modified concept (combining relevant identified guidelines). A CD is attached to this RTS (*Appendix M*) providing extracts from the model and various site 'fly throughs' which aid appreciation of the intended public domain and spaces within the scheme and their relationship to proposed building envelopes and forms.

It is highlighted that Appendices A, B, F, I, J & K of the submitted Environmental Assessment remain valid and unaltered, and are not re-supplied.

3.3 SITE, CONTEXT, URBAN DESIGN AND VISUAL

3.3.1 The Site

DPE requested clarification regarding any modifications to the site boundary for the concept approval.

The revised modified concept applies largely to the same site as the approved concept, other than:

- For thoroughness, the public reserve bordering the site has been included within the site (part Lot 32 and Lot 34 DP 1117408) rather than limiting it to just the parts of the reserve covered by legal easements (as per approved concept). Note at the time of concept approval, the land was in the process of being acquired as public reserve. Lake Macquarie City Council as now owner of the reserve has provided landowners consent relating to Lots 32 and 34 and the modification application. The inclusion of the reserve within the site area is sought for consistency and clarity, as the revised modified concept envisages future works within that reserve outside

the easement locations, being shared public pathways, stormwater management and vegetation management, where agreed to by Council; and

- The area of the approved concept labelled part Lot 33 (currently part Lot 410 DP 1139690) is land which is currently under construction and is to be dedicated as public road as part of Stage 5 of the adjoining residential subdivision (and will provide the concept plan site with its legal public road point of access). That land is not sought to form part of the concept approval site area, noting that works within that part of the public road (once dedicated) will be required as future conditions of consent (ie for construction of identified roundabout and other road modifications at the entry to the concept plan area). Consistent with the concept approval, the 'site' does not otherwise extend to other lands to be dedicated for public road as part of the adjoining residential subdivision as outlined in Section 1.1 of the EA.

Figure 9 below includes proposed site of concept plan.

Figure 9 – Site Plan.

3.3.2 Context and Site Analysis

Additional documentation is incorporated into the Design, Justification and Comparison Report (***Appendix B*** to this report), to graphically illustrate existing and future context and site analysis, with particular regard to:

- Greater Context Analysis, drawing on submitted visual impact assessment definition of low, medium and high visual sensitivity zones and key observations of the existing visual environment;

- Viewpoints Analysis, drawing on submitted visual impact assessment and identifying key perimeter screening features to aid visual absorption of proposals; and

- Site Analysis and Development Opportunities Analysis including near site vista analysis, identifying vista and access opportunities linking the approved public road network and subdivision structure to the west to the public foreshore perimeter to the north, east and south. The opportunity to integrate and plan a streetscape along Trinity Point Drive (north-south axis) is identified. The road and future small lot housing development to its western street edge will provide a transition in built form and density from single dwelling housing further west to the concept plan site.

That information is included as new Figures 1-8 in the replacement Design, Justification and Comparison Report (***Appendix B***).

3.3.3 Urban Design

Additional documentation is incorporated into the Design, Justification and Comparison Report (***Appendix B*** to this report) to expand analysis and justifications for the revised proposed concept, and provide more quantitative and graphic comparative analysis with the approved concept across the key urban design principles 1-9.

That includes updates to all relevant concept plan figures to incorporate the revised proposed concept, as well as additional information on:

- Principle 2 – Building Setbacks – Additional text and graphics on key vistas (including comparison with approved);

- Principle 3 – Building Heights – Plan showing the viewing locations of photomontages with additional text on foreshore canopy and relationship of proposed buildings to the horizon lines, two additional photomontages view locations, improved labelling of photomontages locations and view numbers and inclusion of existing view as well as photomontages of approved concept and modified concept for each view;

- Principle 4 – Public Access and Open Space – Public pedestrian access and public access within site figures have been updated to better define public and semi-public spaces within the site. Additional text and graphics also provided on:
    - primary public space within the site, with quantitative area calculations;
    - public/private interface, the hierarchy of spaces, ground plane interface and visual permeability, including sections; and
    - built form relationship to Trinity Point Drive, streetscape and small lot housing development lots opposite concept plan site, including section.
- Principle 5 – Built Form – Enhanced 3D comparative views, including comparative massing views of approved concept and extracts from 'sketch up' model of revised proposal, to demonstrate the interaction of building separations, vistas, pedestrian and vehicle access and building heights and form;
- Principle 6 – FSR – Additional GFA comparison table and commentary;
- Principle 9 – Landscape – Additional Landscape imagery added to graphically illustrate landscape look and feel, particularly as it relates to key pedestrian linkages through the central precinct; and
- Principle 17 – Sustainable Development – Results of 2 and 3 hour solar access study updated, and shadow impact diagrams provided.

Note Principle 14 (marina) has been updated to match the principle supplied and approved as part of s75w application (modification 2). Additional minor modifications are made to other principles where identified within this RTA.

3.3.3.1 Land Use Mix and GFA Comparison

Comparative GFA analysis has been incorporated and expanded into a GFA comparison table prepared by Squillace Architects included within the Comparison and Design Report under Principle 6 – FSR. It is highlighted that the analysis is for information and analysis purposes only, as detailed planning may alter final GFA distribution between uses and facilities, within the parameters sought to be set by the concept approval (ie. Maximum site FSR of 0.8:1, Maximum Accommodation Numbers up to 315 with maximum of 50% only to include residential use, and capacities of key non-accommodation uses).

Accommodation

The key modification to land use mix identified in the EA is an increase in the accommodation (short stay and residential) proposed on site, from 150 total up to 315 total, whilst retaining requirement for maximum of 50% able to be residential (with option for those to also be dual use for tourism consistent with the concept approval). The short

stay accommodation may be distributed across two products, being hotel rooms and serviced apartments (including dual key units, counted as single combined apartment within the Concept Plan yield parameters).

The EA identified that the doubling of accommodation unit numbers does not equate to a doubling of accommodation floor space, with some of the accommodation increase accounted for by a greater mix in the accommodation size and bedroom numbers and across the different accommodation products.

Key points arising from the Squillace GFA analysis is that the doubling of accommodation numbers by comparison to the approved concept is not proportionate to the increase in population density (only 4% increase in the number of bedrooms) nor in total accommodation GFA (only a 16% increase, or an additional 4300m^2 GFA), by comparison with the GFA assumed in the approved concept.

The justification for the increased accommodation GFA is linked to the supplied justification for increase in accommodation numbers and the overall modified site planning approach drawn from context and site analysis and the modified site planning guidelines which accommodate that additional GFA. This is outlined within the Comparison Report (***Appendix B***) and the original EA.

Other Uses

The proposal also seeks a minor increase in café capacity (from 30 to 40 seats), provides a capacity for outdoor dining areas (which whilst part of the approved concept was not expressed numerically relative to area, seats or patrons) and seeks an additional 100 seat temporary marquee lawn area. These represent a likely increase in day time patronage from the concept approval (noting the café and temporary marquee area are intended to operate as day time uses only). All other uses are of similar capacity. The temporary marquee area is an additional and complimentary hospitality offering to future operators of the function centre on site, providing additional market opportunities and variety that takes advantage of the lakeside and marina location.

Key points arising from the Squillace GFA analysis is that due to more detailed design development for the non-accommodation uses, there is a 40% increase in GFA for those uses by comparison with the approved concept (noting that in real terms that increase represents approximately 1400m^2 additional GFA, noting that GFA excludes the outdoor dining areas and marquee).

Combined

Key points arising from the Squillace GFA analysis is that overall GFA has increased by 19% (increase of 5700m^2 GFA, with over a quarter of that increase due to more detailed design development of non-accommodation uses), to an FSR of 0.8:1. That increase in GFA and modifications to accommodation numbers is accommodated within a reduced development footprint of some 19% arising from a redistribution of building footprint and

heights with the objective of providing greater open space, building separations and vistas.

3.3.3.2 SEPP 65 and Supporting Information

DPE requests assessment on the capability of the modified accommodation building envelopes to comply with the requirements of State Environmental Planning Policy 65 Design Quality of Residential Flat Development, including reference to the Residential Flat Design Code (RFDC) and draft Apartment Design Guide.

Appendix E includes a new SEPP 65 Design Verification report relating to the modified concept, prepared by Squillace Architects.

The modified concept plan (as presented in Appendix B and K) seeks to establish an overall arrangement of built form and open space on site, developed with regard to the ten (10) SEPP 65 Design Principles and in consultation with the LMCC SEPP 65 Design Plan. The concept plan establishes and provides justification relating to site specific building heights, street and boundary setbacks, FSR, building separations and through site vistas and permeability, arising from a considered context and site analysis and consideration against the ten (10) design principles.

In seeking approval for the modified concept, Squillace Architects are satisfied that, as the concept progresses through design development, it is capable of meeting the ten (10) Design Principles and achieving compliance (or with alternative outcomes that are appropriately justified) on key provisions of the RFDC that apply at the broader site planning and building envelope level.

A response is provided with the Design Verification Report (***Appendix E***) to each of the ten (10) design principles and also includes an extract from the LMCC SEPP 65 Panel minutes from December 2014 relating to each principle.

The Concept Plan design verification report (***Appendix E***) identifies compliance with the following key provisions of the RFDC:

- Communal Open Space;
- Deep Soil Planting;
- Unit Size;
- Single Aspect Apartments;
- Solar Access;
- Cross Ventilation;

- Floor to Ceiling Heights;
- Private Open Space (balconies);
- Core;
- Kitchen Window; and
- Vehicle Access.

The Concept Plan design verification report (***Appendix E***) identifies justification where strict compliance with the 'rules of thumb' of the RFDC has not been proposed relating to:

- Building Depth (up to 0.5m variation only for some);
- Building Separation (most building separations internal to site meet or exceed the building separation rules of thumbs, with variation to acute separations between building across the north-south access way, building separation between adjoining sites exceeds RFDC separations due to Trinity Point Drive); and
- Private Open Space (ground level) (less than 1% variation to rule of thumb for 14% of ground floor apartments, including residential and tourism, noting the variations are for smaller units and exceed what would have been provided for equivalent units in the approved concept).

In each of the above, the rules of thumb are not substantially varied for residential accommodations and are appropriately justified.

The Concept Plan design verification report (***Appendix E***) provides some commentary on the range of other more detailed provisions of the RFDC that will be developed and responded to as part of design development and DA documentation such as planting on structures, accessibility, vehicle access, visual privacy, safety, apartment layout and mix, waste management, water conservation, universal design, acoustic privacy and energy efficiency.

Noting that the draft Apartment Design Guide is not yet an adopted policy within the NSW planning system and has varied industry acceptance, the focus of design verification is retained at the statutory provisions of SEPP 65 and its currently reference RFDC.

3.3.3.3 Open Space and Public Access

DPE requests a comparison on the total amount and distribution of open space between the approved and modified concepts, and details of how open space will be activated.

Comparative open space analysis has been incorporated into a comparison table prepared by Squillace Architects included within the Design, Justification and Comparison Report under Principle 6 – FSR.

Amount and Distribution of Open Space

Key points arising from the Squillace analysis is that the modified concept has a 10% increase in open space compared to the approved concept (noting that open space in the comparison includes access ways and pathways and spaces in between buildings including on podiums). The Squillace analysis also indicates that the modified concept has a 30% increase in soft landscaping area and 10% increase in deep soil areas compared to the approved concept.

Of the total open space, the spaces with the greatest public/semi public design intent are in and around the northern precinct (but excluding the access way and marina carpark area/formerly vessel hardstand and marina repair workshop), around the eastern and southern perimeter and via multiple east/west thru site spaces. The principle of providing high amenity public domain is similar between the approved and modified concepts. The modified concept provides an alternative approach.

Detailed justification for the alternative approach is contained graphically and in text throughout the Design, Justification and Comparison Report (***Appendix B***), and should be referenced directly, refer specifically Figures 27, 31, 33, 66, 68, 69, 70 and 71).

In summary:

- The village piazza bordered by perimeter building form on three sides is replaced by a more passive design approach with landscaped podium and lawn areas, and an active waterfront precinct (for patrons) fronting the reserve and overlooking the lake and marina. A key outcome of the modified concept is the presentation of a landscaped forecourt with increased setbacks to buildings at the primary site entrance from Trinity Point Drive, and the opportunity for multiple views and access over the landscaped forecourt and between buildings. Whilst the lawn area is proposed to double as a site for use by temporary marquee, it is not intended that the marquee will be permanently erected (with adequate and nearby storage incorporated), and so at times outside events, the lawn area is part of the open space, vista and access network. An east/west landscaped pathway extends on the southern edge of the northern precinct creating an axial continuation of Trinity Point Drive and primary link to the lake edge. By comparison this space is no longer edged by building form along both sides of the axis, which was the outcome from the approved concept; and

- Spaces between buildings in the accommodation precinct widen views towards the east following radially oriented buildings, whilst maintaining appropriate spaces and connections west to connect to and from key locations in the approved public road system.

The widened spaces towards the east (25-35m wide) integrate seamlessly into the eastern open space area where views to the lake become more apparent. Combined with open space at Bluff Point to the south (which has elevated views and proximity to cultural areas and has a comparable open space area as the approved concept approximately 2,800m^2) and open space and active waterfront and landscaped podium to the north, the public domain function of the integrated spaces are expected to be welcoming for all, activated and of good amenity.

The primary east-west linkage extending from Celestial Drive provides a central view corridor with public paved pathway and informal public nodes provided to invite the public within the site and to enjoy closer views of the lake and connect into the perimeter public pathway system.

Principle 5 in the Design, Justification and Comparison Document (***Appendix B***) also provides 3D model views of the modified concept from key sites and locations to demonstrate the combined effect of building separations, vistas and spaces created. The landscape concept plan and imagery included in ***Appendix C*** provides additional detail on the role that landscaping and detailing will provide in the successful creation of the spaces proposed.

Details of Open Space Activation

Open space will primarily be activated by the occupants, users, patrons and general public who visit the site and are encouraged, through design, to filter through the site and its multiple spaces. The role of design in activating open space is to provide legibility to the space and design for its purpose.

To improve legibility within the accommodation precinct as identified by the SEPP 65 Design Panel, the modified concept (in addition to repositioning of some buildings) has further detailed the concept hierarchy of public, semi-public and private open space and the concepts for the interface of those spaces and with the ground plane and built form. This is documented within the Design, Justification and Comparison Document (***Appendix B***), and specifically within Principle 4 (public access and open space). In addition to text descriptions of the hierarchy and interfaces, additional figures have been supplied nominating the hierarchy of space across the site, as well as typical sections showing public-private interface between building, between the eastern end of buildings and the eastern pathway system and between the western buildings and the streetscape of Trinity Point Drive (refer Figures 71-74). The interfaces are largely delineated by level changes and associated landscaping.

Principle 5 in the Design, Justification and Comparison Document (***Appendix B***) also provides 3D model views of the modified concept from key sites and locations to demonstrate the combined effect of building separations, vistas and spaces created. The landscape concept plan and imagery included in ***Appendix C*** provides additional

detail on the role that landscaping and detailing will provide in the successful creation of the spaces proposed.

Public Access

DPE requests detail on whether the modified concept will result in a reduction in public access within the site and along the public foreshore, and if a loss, how that is to be compensated.

The key public access opportunities of the approved concept are shown in approved Principle 4. A comparison of those opportunities (as opposed to the numerical areas of open space described above) relevant to modification 5 is provided for in **Table 3**, as further discussed and presented in Principle 4 in the Design, Justification and Comparison Document (***Appendix B***), refer specifically Figure 65, 66, 67, 68 and 69.

Table 3: Comparison – Public Access Permeability

PUBLIC ACCESS PERMEABILITY	APPROVED CONCEPT	PROPOSED CONCEPT
Public Reserve	Full access other than due to natural/vegetation or cultural constraints, and marina structures	No change as a result of Modification 5
At primary Site Entry	Framed through extensive perimeter built form to piazza, and along southern edge of precinct	Opened up across landscaped forecourt and lawn area with built form repositioned, and along southern edge of precinct
North-South Permeability	Additional footpath along Trinity Point Drive Perimeter shared pathway along eastern edge Accessway internal to accommodation precinct, connecting northern precinct south to Bluff Point	Additional footpath along Trinity Point Drive Perimeter shared pathway along eastern edge Accessway internal to accommodation precinct, connecting northern precinct south to Bluff Point
East-West Permeability	Three east-west connections from west to east Pathways through Bluff Point	Three east-west connections from west to east Additional two east-west connections from internal accessway east Pathways through Bluff Point

It is considered that opportunities for public access and permeability within the site and along the public foreshore are not reduced by the modified concept.

All multiple east-west building separations contain publicly accessible pedestrian paths connecting into the eastern perimeter pathway system, with a north-south linkage also retained to connect from the tourism hospitality precinct in the north through to Bluff Point in the south (in addition to the eastern pathway system and additional footpaths proposed in the public road system). Pedestrian links will be reinforced through design development with landscaping and detailed interfaces to any private domain and building edges.

3.3.3.4 Proposed Pool

DPE requests detail on changes to the location of the pool facility and any consequential impacts arising from these changes.

From a review of the approved concept, it is unclear if it included a pool and if so, where it was to be sited. A pool may have been intended to sit within one of the buildings bordering the village piazza, but that intent is not documented.

The modified concept includes a resort pool (for patrons) sited along the eastern edge of the restaurant and function centre. The resited restaurant and function centre building is an integral part of the alternative approach to site planning for the northern precinct, being to engage with and activate the foreshore. The pool acts as an extension of the restaurant facilities, which are designed with a strong physical and visual connection to the lakefront and is permeable to the outdoors almost continuously along its perimeter. The pool will significantly add to the amenity of the restaurant and visually enhance the zone between the built form and the public shared pathway to the east. Details of the pool has been included within DA 1731/2014, and demonstrate sensitive design development and planning for the edge of the pool through to the shared pathway to ensure the pool and its fencing and landscaping adds rather than detracts from the amenity and experience of users of the shared pathway.

In addition, the pool forms part of a transition between built form (raised to meet flood planning levels) and podium levels, parking below and the foreshore. It integrates into and forms part of the transition from the podium to the foreshore and removes previous concerns of sheer unarticulated edges or vertical faces of undercroft parking being exposed to the foreshore. The pool integrates into the overall design solution.

The pool sits above natural ground level (design level of base of RL 2.1) with a 'wet' edge and as such does not increase consequential impacts that may otherwise occur if it were to be excavated below ground.

Importantly, a pool contributes to the overall tourist experience and assists in reinforcing the overall objectives of the tourism zone and concept approval.

3.3.3.5 Shadowing

DPE request shadow diagrams and an assessment of the shadow impacts.

Shadow diagrams for winter solstice, equinox and summer solstice for 9am, midday and 3pm are included in Principle 17 of the Design, Justification and Comparison Document (***Appendix B***), and are accompanied by a shadow impact assessment by Squillace Architects.

These do not illustrate any unacceptable shadow impact in mid-winter to future small lot housing to the west opposite Trinity Point Drive, to the streetscape of Trinity Point Drive, to the eastern perimeter shared pathway, to the southern Bluff Point pathway and open space area, to primary east-west thru site connections or to the landscaped forecourt and lawn area.

The diagrams, in conjunction with the solar access analysis undertaken by Squillace Architects relative to accommodation units, reveal that RFDC solar access requirements are capable of being complied with as a result of proposed positioning and heights of built form (ie 73% of apartments receive 3 hours of sunlight between 9am and 3pm in mid winter to both living areas and private open space).

As requested by DPE, shadow diagrams have also been provided at ***Appendix B*** (pages 174,176 and 178) for the approved concept (based on assumptions given integrated housing area not detailed and based on broad massing only) for winter solstice, equinox and summer solstice for 9am, midday and 3pm. A comparison of the shadow diagrams for the approved concept against the proposed concept (pages 175, 177, 179) demonstrates that any shadowing generated by the proposed concept generally remains unaltered from what was originally approved.

3.3.4 Visual

A Visual Impact Assessment by Richard Lamb & Associates forms part of the submitted Modification 5 documentation. That assessment provided:

- a description of the modifications as they relate to visual impact (being the siting and type of built form including heights and setbacks);
- established that no significant changes to the regional and local visual environment or access to it have changed and no significant changes have occurred to the character, quality or visual accessibility of the site; and
- an assessment of the likely extent and significance of visual impacts of the modified concept in regard to a range of public and private places, and in comparison with the Concept Approval.

Following a comprehensive methodology, it concluded that overall in comparison to the concept approval the visual impacts are considered to be either neutral (no different) or superior (less).

DPE requests that the Visual Impact Assessment be updated to provide a comparison of visual impacts of the approved concept plan and the modified concept, along with clearer identification of the location of photomontages and clear labelling.

In response to the request, an addendum visual impact comparison has been prepared by Richard Lamb & Associates (refer ***Appendix D***). This addendum report expands

considerably the comparative analysis between the visual effects of the approved and modified concept (and updates the analysis to reflect the revised modified concept arising from the design review process with the local SEPP 65 panel), whilst reaching the same conclusion of the original assessment – that visual effect is either neutral (no different) or superior (less).

The addendum is additionally supported by:

- Visual Context Analysis Plans; and
- Updated photomontage series that includes plan showing location of each view/photomontage and clear labelling of the photomontages and its view location, two additional view locations (and associated photomontages), and the modelling and provision of comparative photomontages for each view showing (i) existing, (ii) approved and (iii) proposed.

Table 4 below provides a summary comparison of visual impact, derived from the addendum assessment, between the approved and revised modified concept.

Table 4: Summary Comparison of Visual Impact

CONSIDERATION	COMPARISON
Baseline	
Effective Visual Catchment	No change
Landscape Setting	No change
Scenic Quality Rating	No change
Visual Accessibility	No change
Visual Exposure to external visual catchment (land and water)	No change
Visual Exposure to future internal views	No change
Existing Scenic Resources	No change
Viewing Locations & Situations	No change
The Proposal	
Visual Opportunities	Similar opportunities, achieved and in some cases, optimised
Visual Constraints	Similar constraints, achieved
Visibility and Prominence	No difference in distant and middle distance views, with close range views differences perceived due to higher permeability to views from west and from public domain within the site.
View Accessibility	Significantly better and more equitable distribution of view sharing, higher proportion of perceived public to private space and a more spacious, inviting and engaging environment. Access to view improved for areas of the approved residential subdivision. Views from public domain significantly improved.
Assessment	
Effect on View Composition	No difference (medium to low)
Effect on Relative Viewing Level	No difference (low to moderate, with moderate only on close views)
Impact on view from waterway and foreshores to the north east	No greater impact
Overall Rating of visual effects on	No difference

CONSIDERATION	COMPARISON
total visual catchment	
Physical Absorption Capacity	Same
Visual Compatibility	Same
Overall Visual Impacts	Neutral (no different) or Superior (less)

The addendum VIA concludes as follows:

> *"The southern basin of Lake Macquarie has generally low public accessibility, including low accessibility from the waterway, as identified in the LMSMG and confirmed in the assessment in this report. The locality is of moderate scenic quality and varied integrity. The subject site has a significant capacity to absorb the Concept Approval without negative visual effects that would be perceived by large numbers of viewers from sensitive public domain locations. The subject site itself possesses minor scenic resources. The MOD 5 application would be no more visible from those locations than the Concept Approval and in some locations, less so.*
>
> *The Concept Approval contemplates the transformation of the site to an urban lake-side setting and a tourism and residential destination as does the MOD 5 application. However, the Concept Approval is unlikely to be successful in making the site into a world-class tourism destination. In our opinion as regards view accessibility, relationship of the built form to the views and the lake, landscape and foreshore, the application is superior to the Concept Approval, as analysed and summarised in Tables 1-8 above.*
>
> *There are substantive differences between the Concept Approval and the MOD 5 application with regard to building numbers and proposed building form, character of the public and private domains, view availability and spatial qualities of the site. At the same time, these differences will largely be perceived within the site and will be seen as part of the distinctive character that is intended for the development and an integral part of its appeal as a destination. On most criteria the MOD 5 application is superior, while on all others there is no difference between it and the Concept Approval.*
>
> *A more consistent theme for the whole site exists in the MOD 5 application, compared to the Concept Approval, which was partly a tourism site and partly a small lot residential development. The distinctive character of the application would remain no matter how the individual buildings or groups of buildings are delivered, giving more certainty as to the visual character of the outcome of the MOD 5 application in regard to the built form compared to the Concept Approval.*
>
> *The buildings' scale can be accommodated on the site within the fringing vegetation and below the tree canopy height in both the Concept Approval and MOD 5 application. Some additional canopy trees are proposed as a part of the landscape scheme to augment the canopy without conflicting with the obvious pull factor of views of the Lake in both scenarios.*

This assessment against the criteria of the LMSMG also found the MOD 5 application would be acceptable.

We consider that the public domain benefits of the proposed MOD 5 and the contrast they will provide to the generally privatised foreshores of the Lake in the vicinity are major compensatory factors for the change in visual character proposed compared to the Concept Approval. The benefits will flow to high numbers of people, not only those within the subject site, but from elsewhere in the locality and the region".

3.4 STORMWATER

3.4.1 Background

A concept stormwater and flooding management plan by ADW Johnson (2014) forms part of the submitted Modification 5 documentation.

Relating to stormwater, that assessment reported on the modified concept against the approved stormwater management principles which form part of the concept approval (established via Condition C19 and Principle 11 of the approved Principles, Objectives and Urban Design Guidelines document). It also identified the same water quality targets as original assessments and provided a water quality model. It did not seek to replicate or repeat detail of the original assessments.

Notwithstanding, DPE have requested revised information, similar in detail to that provided in the 2008 stormwater and flooding assessment report (Patterson Britton & Partners Pty Ltd, 2008), that provides details on stormwater management, including source controls, average monthly demands, water balance, water quality, proposed catchment sizes, indicative water quality control design parameters, location of overland flow paths, demonstration that bio-retention basin have sufficient capacity and proposed water quality sampling program, and enables a direct comparison of stormwater impact between approved and proposed development concept.

In responding to this request, it is important to acknowledge the following:

(i) The PB 2008 report does not report on the approved concept. It reports on stormwater management for a larger project that was originally submitted, including a 308 berth marina across four stages, helipad, repair and maintenance facility, and a differently configured site plan and built form than was ultimately concept approved.

It does validly identify stormwater management objectives and philosophies for development of the site at a concept level, as superseded by approved Principle 11 and the requirements of condition C19.

It demonstrated, at concept plan level, that the stormwater management objectives of pollution prevention and source controls including stormwater

harvesting (and associated demand analysis and storage sizes) and water quality treatment targets could be met by a concept stormwater management plan.

It had a significant focus on the marina and marina vessel hardstand repair and maintenance facility components of the concept, given potential pollutant sources and spillage risks. It identified a unique stormwater management strategy for the vessel hardstand area and a potential water quality monitoring program, primarily focused on the marina construction and marina operation.

For water quality targets, it modelled four catchments (excluding the vessel hardstand area which had a unique stormwater management strategy identified separately), incorporating concept water quality control designs including:

- rainwater tank storage and reuse of up to 250kL;
- bio-retention swales with 200m^2 filter area retention storage; and
- roof top gardens (accounted by setting roof area catchment as pervious).

It concluded that identified water quality targets were capable of being achieved for the total concept and within each catchment.

(ii) Relative to the stormwater management, the changes to the concept between the 2008 concept and the approved project was a reduced size marina (to 188 berth across two stages), removal of the helipad, and modification to the site planning, built form and distribution of commercial, tourist and residential accommodations.

Whilst the principles identified in the 2008 report and the overall water quality reduction targets would largely remain for the approved concept, as a result of the site planning changes, the details of pervious/impervious areas, catchments, stormwater controls and their volumes and stormwater concepts and treatment train required in order to achieve the water quality targets would be different in detail. These are not quantified or available in any technical assessment from that time.

In the absence of that available information, the approved concept has been interpreted and modelled, with likely concept water quality control designs identified to meet related targets, in order to aid the comparison requested by DPE between approved concept and proposed concept.

For water quality targets, the approved concept has been modelled over five catchments, incorporating concept water quality control designs in order for it to meet the same 2008 identified water quality targets for the total concept and within each catchment, being:

- rainwater tank storage and reuse of up to 250kL (ie same as 2008 reporting);
- bio-retention swales with 550m^2 filter area (ie 2.5 times the filter area identified in 2008 reporting); and
- excluding roof top gardens (unlikely under the approved concept due to revised pitched roof built form).

(iii) Modification 5 (the subject of the request for additional information on stormwater management) does not propose any modifications to the marina component of the project, nor the water quality management issues that relates to the marina (water and land based).

Modifications to the marina are approved under s75w (Mod 2). From a stormwater management perspective, Mod 2 approves construction of the 188 berth on-water marina in up to five (5) stages and permanently deletes the repair and maintenance facilities (travel lift, hardstand and workshop) from the concept and replaces it with marina carparking area. No updated stormwater management, water quality or waste assessment was required for Modification 2, which has recently been approved.

For that reason, the stormwater report accompanying Modification 5 does not need to provide the 2008 detail on stormwater and water quality management relating to the marina and marina related facilities, as these are not themselves subject to this modification (Mod 5).

The first stage of the marina (first 94 berths and all land based marina works) has been subject to a detailed Environmental Impact Statement (EIS) that is under assessment by Lake Macquarie City Council (DA 1503/2014). That detailed report documents baseline water quality (ie as required by Condition C11 of the concept approval), pollution potential and water quality mitigation measures including stormwater management for the marina and associated land based works (ie as required by Condition C19 and C23 of the concept approval) and provides a marina environmental monitoring program (including water quality monitoring) as required by Condition C19 and C13 of the concept approval. Those details supercede the details provided in the 2008 assessment, incorporate the modifications approved in Mod 2 and are not impacted on by the modifications proposed in Mod 5.

The Mod 5 report incorporates and draws on the results of that detailed stage 1 marina assessment, and elevates them back up into the concept plan catchment and water quality analysis and modelling. The detailed report on the marina and erosion and sediment control plans for that stage can be made available on request.

(iv) Modification 5 proposes primarily changes to site planning and built form, including different pervious and impervious areas (and excludes permeable paving and roof top gardens), with the assessment noting overall reduced impervious surfaces, makes some minor adjustments to the previous treatment train and provides modelling over five catchments that demonstrates the concept water quality control designs required in order to meet the same identified water quality targets (for 2008 and approved concept) for the total concept and within each catchment, being:

- rainwater tank storage and reuse of up to 200kL (ie less proposed and less required than the 2008 and approved concept);
- bio-retention swales with 405m^2 filter area (ie less than the filter area identified likely required for the concept approval); and
- addition of gross pollutant traps.

It is highlighted that the tourism and hospitality precinct (essentially the northern precinct as proposed under Mod 5) has been subject to a DA level stormwater management assessment and plan that is under assessment by Lake Macquarie City Council (DA 1731/2014). That fully documents pollution potential and water quality mitigation measures including stormwater management for the precinct (ie as required by Condition C19). The Mod 5 report now incorporates and draws on the results of the detailed precinct assessment, and elevates them back up into the concept plan catchment and water quality analysis and modelling. The detailed report and erosion and sediment control plans for that stage can be made available on request. Additionally, DA level stormwater management assessment and plan is almost complete for the third likely stage of the proposed concept (first four accommodation buildings).

Given the above, there is an appropriate degree of confidence in the appropriate requirements for water quality management via erosion and sediment control during construction and stormwater management and water quality for the modified concept and its operation.

It is noted that Mod 5 proposed minor amendment to Principle 11 of the approved Principles, Objectives and Urban Design Guidelines to reflect the updated concept regarding treatment measures and provide a consistency update to reflect deletion by other modification of the vessel hardstand and repair/maintenance facility (Mod 2).

3.4.2 Stormwater Management Assessment and Comparison

In response to DPE request, a replacement stormwater management plan (SMP) has been prepared by ADW Johnson Pty Ltd, refer ***Appendix F***. (note: this replaces in full the ADWJ 2014 report submitted with original modification 5). Refer Section 3.4.1 above for discussion on level of detail relative to the 2008 PB report.

The replacement report reviews the stormwater impacts associated with construction and operation of the proposed concept (as sought to be modified) and provides a concept plan level outline of stormwater management.

It concludes that the predicted water quality impacts of the modified concept are anticipated to be largely controllable through a range of measures including erosion and sediment control during construction, and inclusion of a treatment train of sufficient capacity, which is derived from and capable of integration into the modified concept.

The replacement SMP provides water quality modelling to demonstrate that the concept treatment train can meet the identified water quality targets, which are the same from the 2008 and approved concept.

The replacement SMP (2015) also provides a comparison between predicted water quality impact of the approved and proposed concept, which is summarised in Table 6 within

that report. Table 6 at the end of this section provides a summary table comparison of the approved and modified concept as it relates to stormwater management overall. Key comparisons are described below.

- The SMP (2015) does not identify any new sources of potential water quality impact between approved and proposed concept;

- During construction, the SMP determines that subject to appropriate erosion and sediment control practices, impacts on water quality from the modified concept are likely to be similar to those for the approved concept, given the magnitude of construction activities under both (even if the detail of staging, extent of excavation and construction programming and duration varies).

  Condition C23 of the Concept Approval, requiring a detailed soil and water management plan relating to erosion and sediment control for each relevant stage, will continue to apply to the modified concept as it does to the approved concept. For these reasons, no changes are proposed to the guidelines document within MOD 5 arising from updated stormwater assessment;

- By design, the modified concept has a reduced roof area, reduced path and roads area and significant increase in pervious (landscaped) areas by calculated comparison with the approved concept plan. In addition to removal of the vessel hardstand and repair/maintenance facility, this reduces potential sources of waterway pollution and is consistent with an identified preventative measure.

  The treatment train targets are maintained the same for the modified concept as applied to the 2008 and approved concept, and relate to Total Suspended Solids (TSS), Total Phosphorus (TP) and Total Nitrogen (TN), as a % mean annual retention of pollutants.

  The treatment train targets are achieved, inclusive of minor adjustments to the treatment train and based on concept design capacity for rainwater tanks for reuse (including review to provide optimal water balance) and biofiltration areas, for the modified concept (as modelled).

  There is adequate area within the modified concept to include the treatment train controls as identified (with reduced total volume of rainwater tanks and reduced biofiltration area compared to approved concept), and these are conceptually shown on the overall stormwater masterplan, as is the concept stormwater network and overland flow paths;

  The key comparisons between approved and proposed stormwater management are summarised in **Table 5** below.

Table 5: Comparison – Potential Water Quality Impacts (Design and Operation)

CONSIDERATION	APPROVED CONCEPT	MODIFIED CONCEPT
CONCEPT ESTIMATES		
Estimated Roof Area	1.4ha	1.1ha *(reduction)*
Estimated Road/Path Area	1.31ha	1.18ha *(reduction)*

CONSIDERATION	APPROVED CONCEPT	MODIFIED CONCEPT
Estimated Pervious Area	0.9ha	1.33ha *(increase)*
PROPOSED CATCHMENTS		
Number of Catchments and sizes *(same catchments and sizes used to aid comparison)*	6	6
WATER DEMAND AND BALANCE		
Proposed Use	Irrigation Toilet Flushing (*subject to CBA at detailed design stage)*	No change
Total Demand (average KL/Day)	*(as assessed for 2008 scheme only)* Seasonal range 19.7KL – 40.6KL/d ay	Seasonal range 16KL – 27.76KL/day
Recommended Storage Size	*(as assessed for 2008 scheme and applied to approved concept)* 250KL/day	200KL/day (to be refined as part of detailed design)
Approximate Saving of Mains Potable Water/Year	2500-3000KL (2008)	4671KL
TREATMENT TRAIN		
Rainwater Tanks for reuse	250KL	200KL (reduced)
Bio-filtration Basins	550m^2 filter area	405m^2 filter area (reduced)
Permeable Paving	1000m^2	Not proposed
Gross Pollutant Trap	Not proposed	Yes
Roof Top Gardens	Not likely	Not proposed
WATER QUALITY TARGETS (TREATMENT TRAIN % REDUCTION)		
TSS	85%	Same target maintained
TP	65%	Same target maintained
TN	45%	Same target maintained
TREATMENT TRAIN MODELLED RESULTS (% REDUCTION)		
TSS whole of site	Target achieved	Target achieved or better
TSS per catchment	Target achieved	Target achieved or better
TP whole of site	Target achieved	Target achieved
TP per catchment	Target achieved	Target achieved
TN whole of site	Target achieved	Target achieved or better
TN per catchment	Target achieved	Target achieved or better

- Condition C19 of the Concept Approval, requiring a stormwater management system consistent with approved Site Principle 11, will continue to apply to the modified concept as it does to the approved concept. Only minor changes are proposed to the guidelines document (principle 11) within MOD 5 arising from updated stormwater assessment to reflect the revised treatment train; and

- Condition C19(7) identifies the need for a water quality monitoring system during construction phase and for 2 years for the marina. Condition C13 identifies the requirement for a monitoring program for the stage 1 marina during construction and for one year from commencement of operation of the marina (and is linked to Condition C14 which requires negligible impact on water quality arising from stage 1 of the marina).

  The stage 1 marina EIS (DA 1503/2014) includes a water quality monitoring system to meet the requirements of water quality monitoring under the concept approval relating to the marina (C13, C14 and that part of C19):

- DA 1503/2014 provides verification of baseline data (including water quality) as required by condition C11 of the concept approval. That includes the establishment of a pre-construction baseline on water quality. No additional pre-construction water quality monitoring is required beyond that and that has been established and supercedes any pre-construction baseline sampling regime included in 2008 assessments. A full copy of the baseline verification report can be provided on request if required; and

- DA 1503/2014 provides a water quality monitoring program during construction of the marina and for one year from marina operation, as required by Condition C13/C14. That detail overrides the water quality monitoring program included in the 2008 PB report, and can be provided on request. The focus of that program is on monitoring of water quality against water based construction activities. It identifies that during land based construction activities, the requirements for water quality monitoring can be reduced to checking integrity and performance of land based erosion and sedimentation controls.

Based on the approach taken in DA 1503/2014 to land based construction activities, the water quality monitoring program for other non-marina land based construction will be the same ie. checking integrity and performance of land based erosion and sedimentation controls.

It is noted that notwithstanding the 2008 report which reported on three year post-construction monitoring program, the Concept Approval limited operational water quality monitoring to one year (under Conditions C13/14) and two years (under condition C19(7)), both linked to operation of the marina, as opposed to the land based wider development. In order to meet the second year monitoring period, it is proposed to monitor water quality at land based stormwater outlets, as distinct from the marina.

3.5 FLOODING

3.5.1 Background

A concept stormwater and flooding management plan by ADW Johnson (2014) forms part of the submitted Modification 5 documentation.

Relating to flooding management, the submitted 2014 assessment focused on the modified concept against the approved flood management principles which form part of the concept approval (established via Condition C21 and Principle 12 of the approved Principles, Objectives and Urban Design Guidelines document), whilst acknowledging and updating flood planning levels established by a comprehensive lake-wide study undertaken by Lake Macquarie City Council in 2012 (after the 2009 concept approval). Given the updated study undertaken in 2012 (which effectively can act as the detailed flood study required under Condition C21 and can supercede the flood planning levels set under Principle 12), it did not seek to replicate or repeat detail of the original assessments.

Notwithstanding, DPE have requested revised information, similar in detail to that provided in 2008 stormwater and flooding assessment report (Patterson Britton & Partners Pty Ltd, 2008), that considers the flooding impacts associated with the revised building envelopes, to enable a direct comparison of flooding impact between approved and proposed development concept, including an updated flood plan and provision of any revisions required to approved flood mitigation measures.

In responding to this request, it is important to acknowledge the following:

(i) The PB 2008 report provided a significant amount of detail in order to account for potential sea level rise from a 'first principles' basis at a time where authorities were developing climate change responses into flood planning levels. It therefore included consideration of potential sea level rise, potential increase in rainfall, combined impact (low, mid and high range), provided a case for which range could be applied to determine a total increase in lake water level, and to incorporate that into the establishment of flood planning levels for various components of the concept at that time. It also presented alternative solutions for different infrastructure types on a risk based approach.

None of that detail is now considered necessary to replicate, given the broader 2012 lake wide studies undertaken and the establishment by Council of flood planning levels for development around the lake incorporating climate change. Those flood planning levels have been adopted in the modified concept, as outlined in the 2014 Mod 5 report.

(ii) The approved concept extended into flood planning areas as mapped in 2008/09 and into areas mapped in LEP 2014 (generally being all land below RL 3.0m), with varying parts sitting on land affected by current flood levels, as well as projected 50 year and 100 year 1:100 year flood levels incorporating climate change.

The approved concept permitted substantial footprint and building volume in those parts of the site, on the basis that flood planning would be accommodated vertically, through different flood planning levels for different land uses and design life, in combination with appropriate edge/barrier protection where necessary, and flood warning and preparation measures (noting that flood warning was not a significant issue given the long time to peak of Lake flooding providing sufficient time for preparation and evacuation measures).

That principle is no different with the modified concept, with vertical flood planning levels, edge/barrier protection and flood preparation and evacuation measures remaining relevant. The footprint and building volume proposed within the flood planning area under the modified concept is not substantially increased from the approved concept.

3.5.2 Flood Management and Comparison

In response to DPE request, a replacement stormwater and flooding management plan has been prepared by ADW Johnson Pty Ltd, refer ***Appendix F*** (note: this replaces in full the ADWJ 2014 report submitted with original modification 5). Refer Section 3.5.1 above for discussion on level of detail relative to the 2008 PB report.

Regarding flood management, some additional comparison between approved and modified concepts has been provided (refer Table 7).

Essentially, the assessment establishes that updated flood planning levels established by Lake Macquarie City Council since those in the 2009 concept approval are to be accommodated into the modified design and there are no increased consequences arising from the proposed modifications from flooding management perspective. ***Appendix F*** provides comparison plans that show,

1) Flood levels on site as shown in approved concept plan Principle 12;
2) Updated flood planning levels on site, consistent with 2012 Flood Study and Council's determined flood planning levels;
3) 2012 Flood Planning Levels from (b) overlaid onto approved concept plan;
4) 2012 Flood Planning Levels from (b) overlaid onto modified concept plan;
5) Post development flood immunity from 2012 levels for approved concept plan; and
6) Post development flood immunity from 2012 levels for modified concept plan.

Figure 10 overpage provides an extract of that plan, parts (5) and (6).

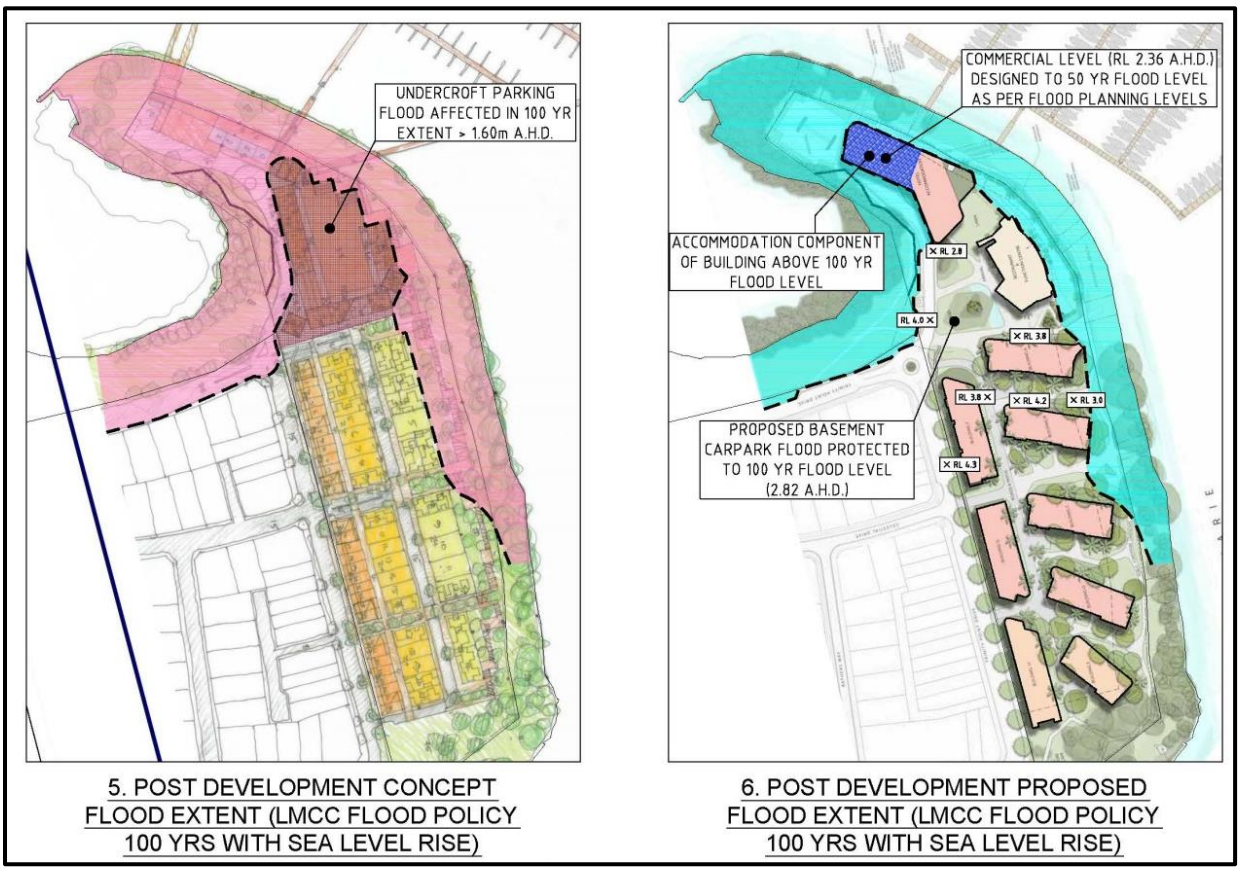

Figure 10 - Comparison between approved and modified proposal against updated 2012 Flood Planning Levels.

Other than updating the flood planning levels to reflect current policy (and designing the modified concept to suit), the only necessary additional measure for the modified concept as identified in the 2014 report is the inclusion of a flood gate in one location at a pedestrian connection area in the modified concept as part of barrier protection. A further update to Principle 12 has been proposed to identify this additional measure.

Flooding evacuation remains essentially the same, with vehicular and pedestrian egress from the site providing appropriate evacuation routes to reach immunity either vertically within the buildings to podiums and floor levels above, or to a level at ground above the PMF (3.27m AHD).

Table 6: Comparison - Flood Planning Levels and Management

CONSIDERATION	APPROVED CONCEPT	MODIFIED CONCEPT (APPLIED FROM LMCC FLOOD PLANNING LEVELS)
Flood Planning Levels	• Marina 1.6m AHD • Vessel Hardstand Area and Workshop1.1m AHD (with electrical wiring 2.42 AHD) • Road Level and protection to undercroft parking1.6m AHD • Habitable Floor Levels 2.85m AHD	**Current 1:20 yr flood level** • Marina carpark 1.23m AHD **Year 2050 1:100 yr + 500mm freeboard** • Hotel foyer and carpark 2.36m AHD • Marina office, shops, commercial 2.36m AHD • Marina (pile cap level) 2.36m AHD **Year 2100 1:100 yr + 500mm freeboard** • Accommodation 2.82m AHD • Restaurant 2.82m AHD • Tourist/Hospitality carpark entry and barriers 2.82m AHD

CONSIDERATION	APPROVED CONCEPT	MODIFIED CONCEPT (APPLIED FROM LMCC FLOOD PLANNING LEVELS)
		Note: Marina is a floating structure and not subject to flood planning level. The modified concept has been proposed to provide differing flood immunity to different parts of the site as per flood planning levels above, with one flood gate identified as required to provide full immunity protection to the main undercroft parking area.
Evacuation	Habitable floor levels were established to provide flood immunity as determined appropriate. No evacuation requirements identified for central and southern parts of the site. Evacuation strategies required as part of future applications for village piazza undercroft parking, village piazza and buildings and marina buildings and areas (ie. northern precinct of site, noting that sufficient time exists due to the nature of lake flooding for flood preparation and evacuation measures. Evacuation routes to be identified for PMF in 100 years incorporating climate change.	The tourist/residential accommodation precincts (inclusive of floor levels, podium levels, accessway levels and connections to basement parking) will be designed to exceed 3.27m AHD, which represents the probable maximum flood (PMF) in 100 years incorporating climate change identified by Council. No evacuation plan is necessary for the central and southern parts of the modified concept. The tourism and hospitality precinct and marina precinct has variable flood immunity, consistent with the application of Council's flood planning levels, to achieve appropriate protection. This is not any different to the approved concept. Evacuation for PMF in 100 years incorporating climate change is no different between the approved and modified concepts. Where evacuation is required beyond the immunity provided (and similarly between the approved and modified concepts), flood water would rise slowly allowing ample time for evacuation, with access ways rising up and away from flooding areas and providing flooding immunity into the surrounding public road system or vertically to podiums, buildings and areas of the site beyond that sit above the 3.27m AHD.

3.6 ACOUSTIC

DPE have requested a revised acoustic assessment to include updated requirements and level of detail on construction noise and traffic noise by comparison with the 2008 acoustic report whilst also assessing cumulative impact from the construction of the residential subdivision to the west. DPE also request comparison between predicted noise impact of the approved and proposed concept assessed against the relevant noise criteria. DPE also request provision of mitigation measures for construction, traffic and operational noise.

Steve Cooper from The Acoustic Group (TAG) prepared the Acoustical Criteria Report which is Appendix G of the submitted environmental assessment (not this RTS Report). The report was prepared with consideration of the 2008 ARUP report as well as the concept approval including approved Principle 16 and the requirements of Condition B2 relating to Principle 16. It includes throughout the report a strong emphasis on comparison to the 2008 ARUP criteria, as updated via additional ambient monitoring, inclusion of relevant updated requirements and to reflect the modified concept.

The DPE request has been reviewed in conjunction with Steve Cooper from The Acoustic Group (TAG). He has identified that the last paragraph of Section 5.5.1 of the Mod 5 Environmental Assessment report has not most accurately communicated the basis of acoustic assessment at concept plan level. It should have indicated that as a result of the acoustic criteria report, the criteria has been amended and adjusted for ambient noise and provides a whole of site noise criteria for construction, traffic and operations. Steve has a strong view that the appropriate mitigation measure at concept approval stage is the identification of acoustic criteria which are to apply for construction, traffic and operation noise, which his technical report does.

At concept plan stage it is appropriate to establish and set noise criteria. Once that is set by the Concept Plan, further detailed acoustic reports with future applications will be required to demonstrate compliance, along with maintaining requirements for construction noise management plans to meet the established criteria, at the time when actual acoustic controls can be finalised. In setting the criteria, the acoustic impact is managed at concept plan stage, with a process in place to provide that criteria is to be satisfied when appropriate details are available at DA/CC stage.

It is disagreed that the concept plan process needs to incorporate detail assessment or predictions beyond establishing the criteria. Whilst an overall staging and high level construction program can be outlined, details of individual components of noise during construction, specific equipment, time they operate, respite scheduling etc are not known for the overall concept, and is best developed prior to construction phase with contractors. The requirement is that construction, traffic and operation noise is to comply with criteria established, and once that is established by the concept approval, and as above, future acoustic assessment with future applications will be required to outline compliance, along with requirements for construction and operational noise management plans at CC and OC stages.

Whilst the 2008 ARUP report attempted to make predictions and quantify acoustic impact and controls (and went through multiple iterations attempting to do so), the conclusion in the end, as evidenced by the concept approval, its conditions (including required text in Principle 16 (refer condition B2)). Section 5.10 of the DG assessment report (2009), reported that due to the concept nature of the application and that actual controls are yet to be finalised, that the setting of criteria, with requirements for acoustic assessment addressing those both at DA stage, and prior to Construction Certificates (with management plans), and Occupation Certificates (with management plans) was the only approach that could be adopted. That reported approach is maintained under the modification and consistent with TAG approach to acoustic assessment in this modification.

Additionally, there is no other predicted noise impact established for the approved concept (noting the 2008 report was for a different concept), other than the setting of criteria. The comparison with the proposed concept is that the criteria has been updated to reflect new requirements, a check on background noise levels and the setting of criteria as a 'noise budget' across multiple uses to 'share' the allowable overall noise budget within criteria to be shared across the uses. The TAG Acoustical Criteria Report also considered the requirements of Condition B2 of the Concept Approval relating to Principle 16. As noted in the TAG (2014) report, the

deletion of the marina repair and maintenance facility (via Modification 2) gives rise to a significant reduction in potential noise emission during the day.

The residential subdivision to the west is controlled under separate approvals and acoustic and construction management and it is not intended to provide impact assessment relating to that ongoing subdivision. The setting of acoustic criteria by TAG (and DA acoustic assessments) has considered future residents of that subdivision as sensitive receivers.

Components of the modified concept have also been subject to concurrent development applications and TAG has undertaken acoustic assessments for those (ie. Stage 1 marina and separately the tourism and hospitality development). If of assistance, TAG can extract out and provide information from those that provide information about how at DA level, compliance with acoustic criteria is being achieved, noting both also require construction and operational noise management plans as part of post approval processes once the project reaches those points.

Principle 16 in Appendix K has been updated to include reference to the Acoustical Criteria report which includes the updated project specific acoustical criteria and also lists the primary environmental assessment requirements being:

- Compliance with Acoustical Criteria under TAG August 2014 report;
- Detailed acoustic reports demonstrating ability to achieve compliance with established noise criteria and ameliorative measures with future development applications;
- Construction Noise and Vibration Management Plan to be prepared prior to construction activity commencing;
- Operational Noise Management Plan to be prepared for relevant components of projects as a condition of subsequent development consents; and
- Additional specific requirements for marina acoustic reports.

In conclusion, The Acoustic Group believe the approach to update and establish acoustic criteria at concept plan stage (which are updated to latest requirements, established after a check of background noise and where relevant allocated across the modified concept plan land use components) is adequate, with environmental assessment requirements similar to those relied upon in granting concept approval.

3.7 AIR QUALITY

3.7.1 Background

DPE have requested an updated air quality assessment to include the level of detail similar to the air quality assessment (ARUP, 2008), with a comparison between predicted air quality impact of approved and proposed concept.

In responding to this request, it is important to acknowledge the following:

(i) The ARUP 2008 report was prepared in response to original DGR 14.1, which related to the marina component of the mixed use development. That DGR required assessment on marina impacts on air quality including:

- dust generation;
- construction; and
- boat and maintenance repairs.

(ii) The ARUP 2008 report does not report on the approved project. It reports on air quality impact for a larger project, including a 308 berth marina across four stages, helipad, repair and maintenance facilities (travel lift, hardstand and workshop) and breakwater jetty, with reference to standard construction impacts and mitigation from the non-marina land based commercial and accommodations. For the larger project it found that:

- Construction emissions are temporary in nature and may be reduced by implementation of reasonably standard construction management measures; and

- Operational emissions had negligible or negligible with management potential to impact on air quality, with impact on sensitive receivers likely to be low. It recommended standard construction environmental management plan and a range of mitigation measures related to the marina, its fuel facilities and the repair and maintenance facility.

(iii) Relative to the air quality assessment, the changes to the project between the 2008 concept reported and the approved 2009 project was a reduced size marina (down to 188 berths across two stages), removal of the helipad, and modification to the site planning, built form and distribution of commercial, tourist and residential accommodations (including changes to extent of excavation). No staging or construction outline formed part of the approved project, with a requirement for standard construction management to address dust generation.

It is considered that notwithstanding the change to project between 2008 and the approved 2009 concept, the conclusions, management and mitigation measures identified in the ARUP 2008 qualitative report would likely remain largely relevant to the 2009 concept approval;

(iv) Regarding management and mitigation, the 2009 concept approval requires, via condition C24, a detailed Construction Management Plan, to be provided for each relevant stage of the development of the site. The condition does not specifically list air quality, but is not limited to exclude it. The approved Statement of Commitments identified a commitment to address dust control within a Construction Management Plan.

It is noted that the approved Principles, Objectives and Urban Design Guidelines did not document specific air quality management or mitigation. It is taken that the concept approval recognised that Condition C24 and the Statement of Commitment provided adequate outcomes for air quality impact assessment and management as relevant at Concept Approval stage; and

(v) Noting above, Modification 5 (the subject of this request for additional information on air quality) does not propose <u>any</u> modifications to the marina component of the project (the marina being the original primary trigger for air quality assessment). Modifications to the marina have been approved under s75w (Mod 2). From an

air quality perspective, Mod 2 seeks to construct the 188 berth on-water marina in up to five (5) stages and remove the repair and maintenance facilities (travel lift, hardstand and workshop) from the concept. No updated air quality assessment was required for Modification 2, which has recently been approved.

Modification 5 proposes primarily changes to site planning and built form and extent of accommodation on site. The changes of potential relevance to possible air quality impact within that modification may be:

- Likely altered construction methodology and staging (by comparison to approved concept, but not compared to that reported in 2008 technical assessment), and

- Increase in short term and residential accommodation numbers on site.

3.7.2 Air Quality Impact Assessment and Comparison

An updated air quality impact assessment (AQIA) has been prepared by SLR Consulting Pty Ltd, refer ***Appendix G***. This includes a qualitative assessment and level of detail similar to the 2008 ARUP report, and identifies applicable current guidelines, policies and background information.

The AQIA reviews the potential air quality impacts associated with construction and operation of the proposed concept (as sought to be modified), provides a qualitative risk-based impact assessment and identifies a range of control measure available to mitigate any potential impacts identified.

It concludes that the predicted air quality impacts of the modified concept are anticipated to be largely controllable through a range of measures including good site management and housekeeping, vehicle maintenance and application of appropriate air quality mitigation measures where required. Air quality impact assessment is also provided where it is assumed that site specific and site appropriate mitigation measure will be employed. It assesses that:

The AQIA assesses neutral impact significance may be achieved for all emission sources.

The updated AQIA (2015) provides a comparison between predicted air quality impact of the approved and proposed concept.

- The AQIA does not identify any new sources of potential air quality impact between approved and proposed concept; and

- During construction, the AQIA determines that impacts on air quality from the modified concept are likely to be similar to those for the approved concept, given the magnitude of construction activities under both (even if the detail of staging, extent of excavation and construction programming and duration varies). A comparison of potential air quality impact during construction between the approved and modified concept is included in **Table 7** overpage.

Table 7: Comparison – Potential Air Quality Impacts during Construction

CONSIDERATION	APPROVED CONCEPT (AS GUIDED BY 2008 REPORT)	MODIFIED CONCEPT
Potential Air Quality Impacts	The 2008 ARUP report identified the potential impact of construction activities (being dust generation during excavation or exposed soil and emissions from construction traffic, plant and equipment) as temporary in nature (a qualitative level of impact category was not specifically identified) and reported as reduced by mitigation measures. The 2008 report identified a potential total construction program of 70 weeks, and identified significant earthworks for the land based works. The approved concept had no identified construction program, and retained earthworks for land based works, other than a reduced likely extent of basement excavation for that part of the site which changed to small lot housing reliant on at grade parking.	The potential impact of construction activities are reported in the AQIA (2015) and are similar to those identified by the 2008 report. The 2015 report identifies a potential total construction program of 21 months (84 weeks) for the land based works, which includes staged bulk earthworks and excavation. The AQIA determines potential air quality impact of construction as intermediate significance in the absence of any management, reduced to neutral significance with appropriate management of dust generation and traffic, plant and equipment.
Air Quality Management & Mitigation	The 2008 ARUP report concluded that air quality considerations be included within a construction environmental management plan (CEMP) including dust mitigation measures and measures to reduce emissions from construction traffic, plant and equipment to the extent practicable. It provided a range of mitigation measures that could be included in future CEMP/s.	The AQIA (2015) provides a similar conclusion, that air quality considerations be included within a construction environmental management plan (CEMP). It identifies that CEMP should include reference to NSW EPA guidance on Dust Suppression and lists a range of generic and site specific mitigation measures that may be identified in future CEMP and implemented during construction.
Concept Approval Requirements	Condition C24 of the Concept Approval requires a Construction Management Plan (CMP) for each relevant stage. Statement of commitment requires future CMPs to include dust controls.	Condition C24 of the Concept Approval, requiring a CMP for each relevant stage, will continue to apply to the modified concept as it does to the approved concept, as will the statement of commitment for future CMPs to include dust controls. Accordingly, the concept approval, as modified, provides for the same process for detailing management of potential air quality impacts from construction as does the concept approval prior to modification. That protection is provided without inclusion of air quality or the listing of any or all potential construction mitigation measures specifically within the Principles, Objectives and Urban Design Guidelines document that forms part of the Concept Approval (as sought to be modified). For that reason, no changes are proposed to the guidelines document within MOD 5 arising from updated air quality impact assessment. If additional transparency is desired within the concept approval instrument, it is recommended that Condition C24 be amended to list dust and air quality management as a matter to specifically be addressed within each stage Construction

CONSIDERATION	APPROVED CONCEPT (AS GUIDED BY 2008 REPORT)	MODIFIED CONCEPT
		Management Plan, and the updated SLR AQIA (2015) form part of concept approval documentation under Condition A3.

- During operation, the AQIA determines that impacts on air quality from the modified concept are likely to be lower than those for the original approved concept given the removal (under Mod 2) of the approved boat lift and repair/maintenance facility.

  It is noted the majority of the potential operational air quality impacts identified in the 2008 ARUP report are either no longer applicable (due to removal of boat lift and repair/maintenance facility) or relate to marina or helipad operations, which are not subject to modifications sought under Mod 5. For thoroughness and in response to the DPE request for comparative detail as the 2008 report, the SLR 2015 report has incorporated reporting on the marina operation (excluding the helipad which is subject to a separate modification environmental assessment process), included predicted impact and mitigation where relevant.

  The only potential operational air quality impact which relates directly to the modifications sought in Mod 5 is operational road traffic, due to the increase in traffic arising from the increase in on site land uses. A comparison of potential air quality impact during operation (excluding marina and helipad components) between the approved and modified concept is included in **Table 8** below.

Table 8: Comparison – Potential Air Quality Impacts during Operation (Mod 5)

CONSIDERATION	APPROVED CONCEPT (AS GUIDED BY 2008 REPORT)	MODIFIED CONCEPT
Potential Air Quality Impacts – Operational Road Traffic	This potential impact was reported as negligible in the 2008 ARUP report (and no mitigation measures or specific recommendations were identified)	This potential impact is reported as slight impact significance in the SLR 2015 report, reduced to neutral significance factoring in on road vehicle standards in Australia and the capacity of the receiving environment to assimilate emissions without resulting in exceedances of health based air quality criteria.
Air Quality Management & Mitigation – Operational Road Traffic	No management or mitigation measures or recommendations were identified.	No site specific management or mitigation measures or recommendations.
Concept Approval Requirements	Nil	Nil

3.8 GEOTECHNICAL

Appendix H of this report provides a Geotechnical Assessment Report (Cardno Geotech Solutions, 2015) that relates to the modified concept. The report summarises available geotechnical data in light of the proposed concept and provides preliminary advice on a range of geotechnical matters. An addendum letter is also included within the Appendix, to provide some comparison between the approved and modified concept in response to DPE requests.

3.8.1 Acid Sulphate Soils

The concept plan was approved with the requirement for acid sulphate soils management plan (ASSMP) to be prepared prior to any works commencing, based on the acknowledgement of testing and assessment that identified acid sulphate soil and potential acid sulphate soils on site.

Previous geotechnical assessments including acid sulphate assessment and a detailed ASSMP has been prepared for the site previously (Douglas Partners, 2007) and is attached to the Cardno 2015 report (***Appendix H***).

Modification to the concept plan does not alter the existence of that site characteristic, and nor does it alter the requirement for an acid sulfate soils management plan to be prepared.

Cardno advises in the advice letter and geotechnical assessment (***Appendix H***) that:

- The previous geotechnical investigations into potential and actual acid sulfate soils, relied upon for concept approval, remain applicable;

- All excavation and dewatering (when necessary) for the modified concept should be undertaken in accordance the previous supplied ASSMP (Douglas Partners 2007) and any dewatering requirements; and

- That the ASSMP (DP 2007) remains applicable as regardless of specific building footprint size or disturbance, the management of acid sulfate soils would be the same for the modified concept as for the previously reported and approved concepts.

In response to the specific DPE request:

- Cardno are of the view that the proposed development concept is similar in scope to that likely in the approved concept in terms of potential acid sulphate soil disturbance and management. Neither the original geotechnical reports/management plans nor the concept approval quantified the extent of potential ASS disturbance. From a qualitative perspective the following additional observations are provided relating to potential disturbance to ASS.

    - *Area of Site most susceptible to need for ASS management* - The northern part of the site is the part of the site recommended in 2007 reports to have all excavations subject to an ASSMP, due to existing site levels and results of previous testing and assessment. That management equally applies to the approved and modified concept.

      As identified in 2007 ASSMP, the potential exists to encounter ASS within some of the other areas of the site (ie south of the northern precinct) however that diminishes as surface elevations increase to the south. Further

assessment was recommended in 2007 as part of detail design for those areas to determine the need or otherwise to apply ASSMP, and these requirements would form part of relevant development applications.

- *Northern Part of Site Disturbance Footprint* - In the northern part of the site, the approved concept includes an undercroft parking area (with podium and buildings above), access way, vessel hardstand and marina building footprint and would also have included installation of utilities and similar.

  Cardno advise that as a combined area the approved concept would have a similar footprint of disturbance as what is now proposed in the modified concept (it is noted that the modified undercroft parking area extends southwards to connect into accommodation parking areas which may be additional to that likely under the approved concept). The extent of building footprint (and its volume) which sits above the undercroft parking and parking area or areas where cut is not proposed does not alter in any significant way the likely disturbance or otherwise of acid sulphate soils. It is also noted that the vessel hardstand and marina building footprint has been replaced with a carpark and part building (as part of modification 2) and additional building (as part of modification 5). This creates similar potential disturbance of acid sulphate soils and is subject to ASSMP.

- *Northern Part of the Site Excavation Depths* - In the northern part of the site, it is considered the approved concept would have required the undercroft parking to be excavated, as opposed to the 2007 concept which proposed parking to sit on or above natural ground. This is based on working down from available concept levels of the approved piazza and podium (concept levels are shown within approved concept principle 3). Given the similarity between the approved piazza/podium levels and those under the modified concept (noting both are largely dictated by flood planning levels), it can be taken that the undercroft parking area for the approved concept would likely have required similar depth of excavation to that known to be required for the modified concept.

  The approved and modified concepts for the northern part of the site (ie hotel/marina/restaurant/function centre) is on natural, or fill and has the least amount of cut proposed to achieve the parking areas. Cardno identify that depending on detailed design and assumptions the undercroft parking area may sit between 200-400mm lower than approved concept, or may be similar.

  For the modified concept Cardno report the concept of the main undercroft parking area generally requiring some 0.7m cut (incorporating carpark level and subgrade). The parking area has been documented to DA level (DA 1731/2014), which shows proposed cut generally of that order, but increasing southwards to the edge of the precinct of up to 1.2m. An

extract of concept cut/fill for the northern precinct undercroft parking area is shown as **Figure 11** below.

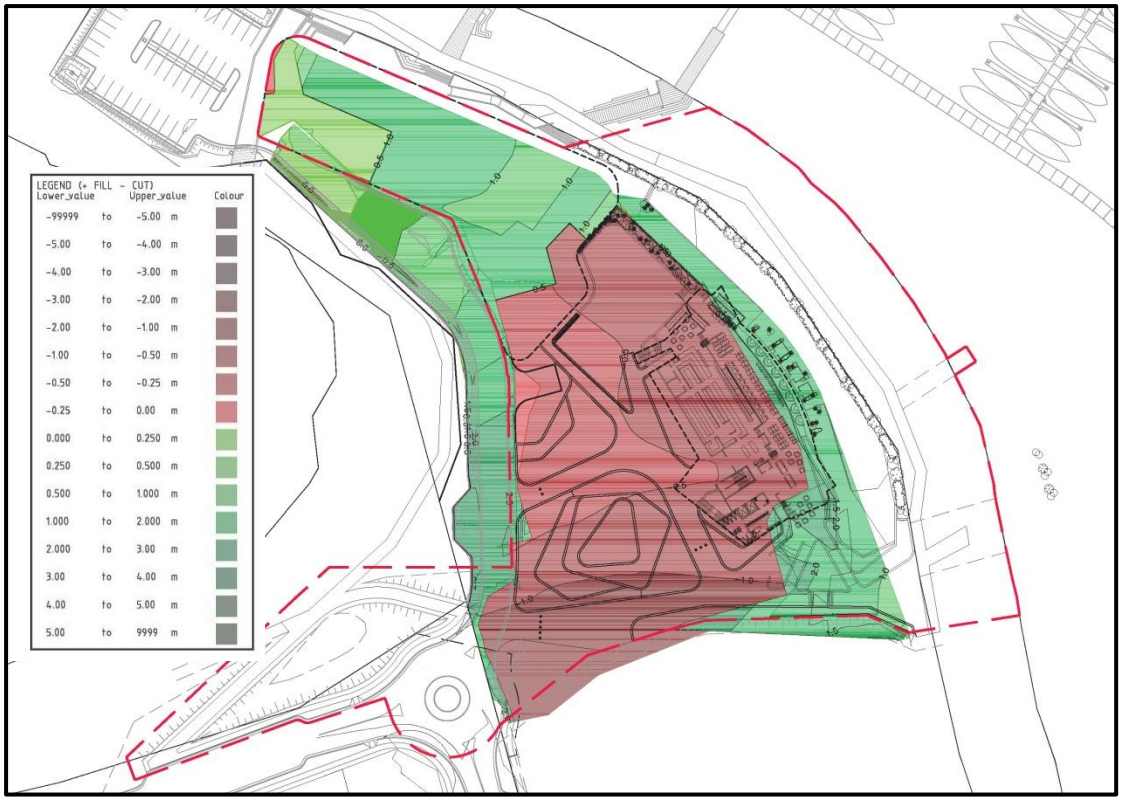

Figure 11 - Concept Cut and Fill for Undercroft Parking Area.

Noting the discussion above, theoretically, there is a potential for increased excavation volume in the northern precinct which has the potential to disturb increased quantities of ASS. Based on the interpretation of the concept approved undercroft footprint and the current proposed basement carparking, there is an additional 1500m^3 of excavated material from the northern portion of the site. This is an increase of 60% from the estimated concept approval 2500m^3 to current proposal 4150m^3. Cardno advise that management of ASS and any acidic water encountered during construction would remain the same for either concept.

- *Central Part of Site* – As outlined above, the 2007 assessments identified that for the concept reported on at the time, buildings closest to the northern precinct may potentially encounter ASS with further assessment recommended as part of detail design to determine the need or otherwise to apply ASSMP.

  It is noted that the concept as approved proposed only small semi-basement excavation along Trinity Point Drive, whereas the concept reported on in the 2007 assessments included full basement excavation for accommodation buildings (with the building closest to the northern precinct noted with excavation to 0.15m AHD). By comparison, the modified concept is more aligned to the extent of excavation reported in the 2007

reports, although the depth of excavation would be less (modified concept basement in that part of the site to be 0.85m higher than the 0.15m AHD identified in previous assessments).

It is considered prudent to apply ASSMP to the extended basement of buildings A and F of the modified concept.

- Cardno advises that no additional management measures for acid sulphate soils are required to apply to the modified concept beyond those identified in the 2007 ASSMP. Principle 11 of the approved concept is retained and equally applies to the modified concept and requires "*Consider acid sulphate soils management, in line with a management plan, in design and construction methodologies*".

Whilst a comparative description relating to changes in excavation depths is provided above, a new Figure (Excavation Comparison Plan) has also been prepared to assist in conveying the comparison, and is attached at ***Appendix N.***

3.8.2 Mine Subsidence Parameters

The Mine Subsidence Board, in correspondence dated 9 December 2014, advised updated mine subsidence parameters to apply to the site from those applied in the Concept Approval issued in 2009. These are incorporated into the concept approval under Modification 2 and will guide ongoing design development of the site. These supercede the information provided in Section 3.5.1 of the Modification 5 report, and are acknowledged in the attached geotechnical report (***Appendix H***).

3.8.3 Groundwater

The concept plan was approved with the requirement for consideration of groundwater implications in design and construction methodologies, based on acknowledgement of testing and assessment that identified shallow groundwater in the northern portion of the site.

The Cardno geotechnical report (***Appendix H***) provides a summary of previous investigations on groundwater (Section 4.3), and provides a section on groundwater (Section 5.4) which comments on groundwater flow, gradient and yield; groundwater chemistry, dewatering and groundwater protection, monitoring and reporting. It also reports on acid sulphate soil management during any excavation and dewatering (Section 5.11).

It has been acknowledged in Section 6.0 of the Modification 5 report that some excavation works associated with the approved and modified concept are likely to intercept groundwater and require dewatering and require approval under Part 5 of the *Water Act1912.* Cardno anticipate that sump and pump methods will likely be workable for relatively shallow excavations required for undercroft parking and services. The Cardno

geotechnical report identifies the possibility that temporary dewatering during construction may be necessary, where deeper excavations are required, such as for construction of underground fuel tanks (which do not form part of modifications sought by Modification 5). Cardno identify that the need for ongoing dewatering after the construction period is not anticipated.

As outlined above in the ASS comparisons which provides a qualitative review of potential excavation, the footprint and depth of excavation (and hence potential to intercept groundwater) is not substantially different in the northern part of the site from that likely under the approved concept. The footprint and depth of excavation adjoining the northern precinct is greater than likely under the approved concept, but less than what was likely required under the previous 2007 technical assessments. Cardno have advised (refer ***Appendix H***) that the undercroft parking area of the modified concept does not increase the impact on groundwater regime or groundwater quality above that of the approved concept. Cardno identify that shallow groundwater may require management for excavations during construction of the northern precinct.

As outlined above in the ASS comparisons which provides a qualitative review of potential excavation, footprint and depth of excavation outside the northern precinct, the modified concept proposes additional excavation by reintroducing basement parking that did not form part of the concept approval (but did form part of the assessed 2007 concepts). Cardno identify that shallow groundwater may require management during construction of the basement parking area of some accommodation buildings.

Sections 5.4.1 to 5.4.3 of Cardno Geotechnical Report submitted as Appendix H outline the method for management of groundwater as follows:

- Sump and pump methods will likely be workable for relatively shallow temporary excavations required during construction, i.e. under croft parking and underground services;

- Dewatering wells may be required during construction for excavations for a sewer pump station or for subsurface fuel storage tanks in the vicinity of the marina. A series of temporary dewatering wells (combined with temporary sheet piling) along the excavation perimeter may be a viable to method to temporarily ameliorate groundwater inflow during construction in isolated locations; and

- The need for ongoing dewatering after the construction period is not anticipated.

Cardno advise that whilst shallow groundwater will affect the development (and did for the approved concept), it is not anticipated that development will have a detrimental effect on the local or regional groundwater regime or on groundwater quality.

No groundwater users have been identified during this study. The Natural Resource Atlas (http://www.nratlas.nsw.gov.au/wmc/custom/homepage/home.html) indicates that groundwater of marginal quality may be present in four isolated areas within the site (see

Figure 4 in Cardno report submitted as Appendix H). The atlas indicates that there are 5 groundwater bores within the development area, but these have been confirmed to be the temporary piezometers that were installed during the previous geotechnical investigation in 2007. These piezometers are no longer in use, and never were used for extraction of groundwater.

Please also find attached a new Figure (Excavation Comparison Plan) conveying the comparison relating to changes in excavation depths (attached at ***Appendix N***), and an extract from aquatic ecology investigations (Marine Pollution Research Pty Ltd, 2014) attached as ***Appendix L***. Section 2.5.3 of Appendix L reports on riparian freshwater habitat and potential groundwater dependent ecosystems (GDEs). It reports on survey undertaken to check for seepages that may indicate surface expressed GDEs during extended dry period and following a wet period. It concludes that there are no expressed GDEs at the site.

3.9 WATERFRONT LAND

3.9.1 Description of Waterfront Land

The site adjoins and extends (for the marina) into the Lake Macquarie waterway. The lake borders the concept plan site to the south, east and north, with an unnamed bay partly bordering the site to the west.

Land around the edge of the lake and the unnamed bay to the west (and extending inland by 40m width) is classified as waterfront land under the provisions of the *Water Management Act* 2000. It has been acknowledged in Section 6.0 of the Modification 5 report that given works arising from the approved and modified concept plan are proposed within that 40m waterfront land area, a controlled activity approval has and will likely be required for some or all works within 40m of the lake.

The waterfront land consists of land across two different ownerships and categories, being:

- Public Reserve (public recreation zoned land under Lake Macquarie City Council ownership) to west (partial), north, east and south, generally 20m wide, and variable width to the west; and
- Development Site (Tourism zoned and subject to approved concept plan).

As part of the original concept approval, and as updated through progressive baseline verification processes and development applications, the mapping and health of the existing terrestrial vegetation around the site edge, and the adjoining aquatic vegetation is well documented and understood. Section 3.4 to the Modification 5 Environmental Assessment provides a summary outline of that vegetation and mapping of those environments that all of the relevant 'waterfront land' and beyond. Full copies of baseline reporting can be provided on request. In addition to the vegetation characteristics, the EA provides a summary description of the topography, drainage and flooding characteristics of the site and geotechnical characteristics inclusive of the 'waterfront land'.

3.9.2 Waterfront Land and Comparison

Appendix J to this report provides a plan that shows the location of the properties boundaries, the area defined as waterfront land, existing terrestrial and aquatic vegetation mapping and an overlay of the concept approval, for information purposes and to assist in comparison. It also provides the same base plan, but overlays the modified concept.

Tables 9 and 10 provides a comparison to the types and scale of works between the approved concept (2009) and modified concept.

Table 9: Description and Comparison of Works within 'Waterfront Land' – Public Reserve

APPROVED CONCEPT (2009)	MODIFIED CONCEPT
Boat travel lift within easement (A) crossing foreshore and associated 0.04ha clearing of casuarina forest	n/a - boat travel lift and associated 0.04ha clearing is proposed to be deleted via Mod 2, which has been approved by DPE.
Essential marina infrastructure and services for 188 berth marina including two elevated crossings of foreshore (easement (B) and (C) and associated individual tree clearing	Retained and no change to general marina infrastructure, services and no change to crossing locations with associated limited tree clearing. *Note*: Marina infrastructure and crossings documented in greater detail in DA 1503/2014 (Stage 1 marina EIS).
Vegetation Management including compensatory planting of 0.05ha casuarina forest (due to clearing for boat travel lift), 0.52ha of assisted rehabilitation around western edge, and weed control and potential infill for remaining of eastern and southern perimeter reserve. Condition C9 of Concept Approval requires the provision of a Vegetation Management Plan for retained existing vegetation.	Retained general intent for vegetation management of existing vegetation in reserve, other than to exclude the 0.05ha compensatory planting (as clearing for boat lift has been deleted via Mod 2). The concept of compensatory planting is retained to apply as necessary to other proposed works. Mod 2 sought staged provision of Vegetation Management Plans to align vegetation management with development staging and works (which has been approved by DPE). *Note*: A Vegetation Management Plan for western and northern tip of the site reserve (approx. 6100m^2) has been prepared and submitted in DA 1503/2014 (Stage 1 marina EIS). The VMP was prepared with due consideration given to the NoW Guidelines for Vegetation Management Plans on Waterfront Land (2012). It is intended to extend the VMP to include additional vegetation management areas and management actions on a stage by stage basis, which correspond to details of works proposed in relevant development applications. Ultimately it is the intent that the full reserve bordering Lot 31 will form part of a final VMP. It is not proposed to revegetate the existing grassed and open parts of the eastern reserve which adjoin the marina, hotel and restaurant.
Potential for landscaping to extend into foreshore zone where agreed to by Council	Retained and no change to that intent. *Note*: To date, development applications in the northern part of the site has limited the extent of landscaping that extends into the reserve other than where associated or ancillary to other works. This may change as the project evolves in detail.

APPROVED CONCEPT (2009)	MODIFIED CONCEPT
Stormwater discharge and overflow (not detailed)	Retained and no change to that intent. Note: Stormwater infrastructure and outlets are documented in greater detail and subject to impact assessment in DA 1503/2014 (Stage 1 marina EIS) and DA 1731/2014 (Tourism & Hospitality). A total of two stormwater discharge points are proposed for the concept plan, conceptually as shown in the updated Stormwater Management Plan attached to this report as ***Appendix F***. These outlets have been subject to impact assessment by aquatic ecologists as part of the development applications which propose them.
Part of site access/western accessway extends across corner of the reserve at end of Trinity Point Drive	n/a, modified concept limits the site access into proposed road reserve and development site, other than works that tie in with provision of public pathways.
	Modification 2 sought changes to conditions to enable the provision of shared pathway to be located within the reserve, if agreed to by Council. Consistent with that modification, the modified concept shows siting of 2.5m wide shared pathways (for public access) including some within the reserve as agreed to with Council, being: • western shared pathway that sits within the reserve from Trinity Point Drive (public road) and extends at grade around the edge of the western access (partially in reserve and partially out). Part of the alignment has been elevated to reduce clearing to a minimum (47m^2 of casuarina to be cleared for the pathway). Compensatory planting of 48m^2 is included within the VMP. • eastern shared pathway that sits within the reserve from the marina carpark (including a small viewing deck for heritage interpretation) and in front of the hotel, restaurant and function centre. No clearing within the reserve is required for the pathway, and its design has been integrated with the marina crossings. These pathways are shown on the summary concept plan. No pathways are proposed in the more sensitive and vegetated northern tip of the reserve. The pathways shift back into the development site as shown on the concept plan at a point along the eastern perimeter, in order to limit works in the existing fringing vegetation. It is envisaged that pedestrian viewing platforms will be proposed in several locations around the reserve, and are based on being sited so as not to require any vegetation clearing, and will be of a construction and design method to limit impacts to that existing vegetation and lake edge. Details of any pathways or heritage interpretation works within the reserve around Bluff Point to the south are to be detailed and documented in future development applications. *Note:* Pathway alignments, sections, and details for the western and north-eastern reserve are documented in greater detail in DA 1503/2014 (Stage 1 marina EIS) and DA 1731/2014 (Tourism and Hospitality).

Table 10: Description and Comparison of Works within 'Waterfront Land' – Lot 31

APPROVED CONCEPT (2009)	MODIFIED CONCEPT
Vessel hardstand area and repair and maintenance facility (including associated earthworks and stormwater management)	Vessel hardstand area and repair and maintenance facility is proposed to be deleted via Mod 2 and replaced with a marina carparking area, which has been approved by DPE. *Note*: Works for the carpark and associated earthworks, stormwater and landscaping proposed, inclusive of underground fuel tanks, are documented in DA 1503/2014 (Stage 1 marina EIS).
Western vehicular access way to under croft parking area (designed to meet flood planning access level requirements) and to vessel hardstand facility	Retained and no change in general intent other than updates to meet flood planning requirements and provide connection to proposed pathways and include infrastructure including electrical kiosk and carpark. *Note:* The western access way is documented in DA 1503/2014 (Stage 1 marina EIS).
Perimeter pathway/boardwalk around eastern and southern site perimeter	Part of the pathway system around the western and northern part of the eastern perimeter is shifted into reserve (refer above), other parts are retained within the development site, as generally shown on the modified concept, but will be for public access purposes.
Parking and Buildings are sited within the development site and partially within the 'waterfront land' area generally as described in approved Principles 2 (buildings) and Principle 10 (parking). That includes: • part of northern precinct undercroft parking area and barriers along with marina building, tourism/hospitality and accommodation buildings and raised piazza and associated landscaping, stormwater and other works.	Mod 2 sought variation from a 30m building setback to 28m building setback around the western perimeter and development side edge of the western access way to facilitate stage 1 marina building (which has been approved by DPE). Mod 5 seeks further variations to building and parking locations and types around the perimeter that result in variations in detail to the works proposed within the outer part of the 'waterfront land'. These are detailed in the comparison report included as ***Appendix B***. These variations occur within cleared, tourism zoned land, and are proposed for strong urban design, context and site planning reasons as described throughout the ***Appendix B*** comparison report.

Noting the provisions of NoW Guidelines for Riparian Corridors (2012), a 40m wide 'riparian corridor' to the lake does not currently exist, one was not created or proposed under the concept approval, nor is one created or proposed under the modified concept.

It is noted that the Concept Approval incorporates requirements for erosion and sediment control, construction management, stormwater management, acid sulphate management, groundwater management and vegetation management. These are not proposed to be substantially modified, and the requirements will remain for these management and mitigation measures to be in place. For example, Condition C24 (Construction Management Plan) requires designs and construction methods and activities to result in minimal harm to aquatic and riparian environments and not cause erosion, sedimentation or increase flood levels of waterfront land.

Inclusive of those management and mitigation measures, it is considered that the proposed modifications to the concept plan, as they relate to 'waterfront land', will not likely result in additional impacts to water quality of the lake and unnamed bay nor the ecological values of the aquatic and lake edge vegetation communities, beyond impacts likely under the approved concept, and that existing concept approval

conditions reinforce that outcome. It is considered that the removal, (under modification 2), of the boat lift facility (and associated clearing) and repair and maintenance facility reduces potential direct and indirect impacts on those values.

With appropriate design, management and mitigation, the proposed works in the waterfront land as modified are likely to cause no more than minimum harm to the lake, unnamed bay and waterfront land by comparison with the approved concept.

To aid consideration of the nature of works identified in the modified concept plan (and shown in ***Appendix I***) an information package of background information has been collated and included in ***Appendix I***, drawn from recent detailed work on DA 1503/2014 and DA 1731/2014.

3.10 CONSTRUCTION

3.10.1 Staging and Construction Program Outline

No staging or construction outline formed part of the approved project. Staging associated with the marina has been separately assessed and approved under modification 2.

Principle 19 of the approved concept established three staging principles being:

- Important to create piazza in an early stage and some of the activating land uses;
- Staging for residential purposes such that the number of residential dwellings is not to exceed the number of tourist accommodation units for the total project at any stage; and
- Whilst public pathways and spaces will be staged, each stage provides a temporary pedestrian circulation system that connects to the public road network until it is replaced by subsequent final works in subsequent stages.

All of those staging principles remain valid (other than replacement of village piazza terminology) and will equally apply to the modified concept. They are retained in Principle 19.

Notwithstanding above, DPE request an outline of stages and construction duration associated with the modified concept. To demonstrate the overall likely staging, an indicative staging plan and construction program outline is included in ***Appendix J*** for information purposes only:

- The staging outline illustrates consistency with staging principles outlined above and in the concept approval as modified (ie. it includes activating land uses in early stages in the northern precinct, progressing southwards, it proposes delivery of tourism accommodation in early stages and at no stage where numbers of

residential accommodation exceeds the total number of tourism accommodations (combined with that and any earlier stage);

- In terms of construction programming, there are many factors which will ultimately determine staging and construction duration, and these are typically determined post development approval. A potential construction duration for each stage is shown, as well as potential overlap between the construction across various stages. Detailed breakdown of overall construction programing at this concept plan stage is not provided; and

- In terms of pedestrian links, it is noted that there are currently no pedestrian links on site, with these to be delivered across the staged concept. Approved principle 19 incorporates temporary pedestrian circulation systems at each stage. These will be identified and detailed with relevant development applications.

3.11 OTHER

3.11.1 Traffic

In response to DPE request, it is confirmed that the submitted traffic report by Seca (Appendix F to EA) includes assessment of cumulative traffic relating to residential development to the west by virtue of (a) updated traffic surveys undertaken in the broader road network in July 2014 in preparation for updated traffic impact assessments and (b) identifying the balance of the approved residential development to the west yet to be developed (refer Seca Section 2.7) and incorporating traffic flows anticipated by that within the assessment (refer Seca Section 4.3.3).

Despite previous communications with RMS prior to preparation of the traffic reports, RMS in their correspondence has identified a requirement for satisfactory arrangements for fair and equitable contribution to the RMS committed upgrade of Macquarie Street / Fishery Point Road intersection to traffic signals. JPG have met with RMS to discuss this request. RMS are undertaking work to advise JPG on more specific details and justification relating to the request prior to a JPG response. RMS verbally advised that there is no current need for the signal upgrade despite the SIDRA analysis submitted by Seca as part of this modification which illustrates the current performance of the intersection (without MP 06-0309) operating at Level of Service E or F.

3.11.2 Heritage

DPE request confirmation that the sundial and grotto will be maintained as part of the modified proposal.

- The stone base of the sundial and the grotto are sited within the public reserve, with the sundial base located at Bluff Point and the grotto located at the waters edge below Bluff Point. It is noted that the original metal sundial itself was not in place

during 2008 assessments for the original concept approval and a modern replacement sundial provided in the early to mid 2000 is also no longer in place. As identified in the 2008 assessment, the stone base appears to be of early construction, has remained in place and continue to remain in place;

- As per the approved concept, it is not intended to remove, demolish or damage the grotto and stone base of the sundial as part of the modified concept, and appropriate protections will be put in place during construction of relevant stages to protect those features; and

- As per the approved concept and required by Principle 18, interpretation of the grotto and the stone base of the sundial near Bluff Point is to be included as part of heritage interpretation of european use of the site to the general public and as part of overall site interpretation.

  The physical outcome and details for interpretation and other works at Bluff Point will be subject to design development in conjunction with Lake Macquarie City Council as owners of the items and the land on which they sit at relevant development application stages.

Additionally, responsibility for maintenance/conservation of the existing features, interpretation outcomes and other works (ie paths) within the council reserve will be subject to future arrangements with Lake Macquarie City Council as landowner. JPG have previously expressed a desire to Council to enter into a maintenance license agreement with Council for the foreshore reserve, which will be subject to a separate negotiation process outside the concept approval process.

3.11.3 Various

DPE identify that some figures in the EA are illegible. Thumbnail figures were provided throughout Section 2.2 and 5.3 of the EA as indicative of the information available in the A3 Comparison Document included as original Appendix C. The thumbnail figures can be ignored, and reference made to the replacement Design, Justification and Comparison document that has been updated and included as ***Appendix B*** in this RTS. If there are specific figures that remain of concern, please advise specific figure numbers.

3.12 URBAN DESIGN PRINCIPLES

DPE request that the Urban Design Principles be updated to reflect any changes proposed in the RTS.

Appendix K includes a full replacement and revised Principles, Objectives and Urban Design Guidelines document that have specifically been updated to reflect all changes proposed in the RTS, where they are relevant.

It is highlighted that the document also incorporates Principle 14 (marina) as approved under Modification 2, and provides numerous consistency updates across other principles to reflect the outcomes of Modification 2 as recently approved. Therefore ***Appendix K*** is based on the Modification 2 approval.

3.13 TERMS OF CONCEPT APPROVAL

It is also proposed to provide, under separate cover, a table that identifies the associated modifications to the terms of the Concept Approval itself to achieve the modifications sought by this application, for consideration as part of the assessment process.

The proposed changes will require changes to the following aspects of the concept plan approval in particular:

- The description of the approved development in Schedule 1 Part 4A of the concept approval (namely the description relating to numbers of accommodation units);
- The description of the terms of the concept plan approval in condition A1 of Schedule 2 Part A of the concept approval;
- The plan and report references in conditions A2 and A3 of Schedule 2 Part B of the concept plan approval;
- The conditions modifying the concept plan outlined in Schedule 2 Part B of the concept plan approval;
- The development parameters outlined in condition C2 of Schedule 2 Part C of the concept plan approval;
- Updates to plan and report references and requirements (including updated Principles as per ***Appendix K*** to the RTS report – being the Revised Guidelines February 2015) where required throughout Schedule 2 Part C, and other modifications to specific conditions to reflect modified concept and new information; and
- Consistency updates to Statement of Commitments.

4.0 Justification for Modification

This section provides a summary justification for the modification, and also addresses the power to modify under section 75W of the *Environmental Planning & Assessment Act 1979* (EPA Act).

4.1 JUSTIFICATION

The modification does not represent a radical transformation of the entire concept approval and the environmental consequences arising from the modification, on balance, are not significant. Simply, the modification is being sought as an alternative approach has been identified to achieve the approved visions, principles and objectives based on input from tourist and hospitality industry operators who demand additional onsite accommodation and a new architectural project team who have identified a superior contemporary site planning and design approach to develop the site and provide a better outcome to achieve Council original objective of delivering a tourist development of Trinity Point

The modification seeks:

- To maintain and reinforce the vision of the approved concept plan, to create a premier mixed use development, a successful and vibrant place and a destination;

- To provide an experience and interaction with the lake itself for the local and regional community, day visitors, overnight visitors, patrons of restaurants, café and function centres and the boating community, reinforcing the profile of Lake Macquarie for tourism, hospitality, functions, boating, recreation and lifestyle;

- To maintain and reinforce all of the approved principles and objectives of the approved concept plan by an alternative site planning and built form approach (with alternative built form, building positioning, setbacks, heights, parking arrangements) that has been well considered and justified against context and site analysis, opportunities and constraints analysis, design analysis and impact assessment analysis, and is supported by a team of no less than 16 technical specialties; and

- To retain the same general mix of land uses as approved (ie marina, restaurant, café, function centre, shops and office with supporting accommodation units), with an increase in accommodation units to provide an identified critical mass and synergy (as identified by operators, industry and economic analysis) to support and maximise patronage and use of the approved scale of tourism and hospitality uses (ie to support and assist viability of the approved scale of tourism land uses and primarily the function centre).

  The success of the non-accommodation land uses (which are underpinned by the support of the accommodation land uses) is crucial to the delivery of the strategic potential of the site for tourism and hospitality as identified by the concept approval, the site's land use zoning, and within components of local, regional and state planning including Council's Lifestyle 2030, the Lower Hunter Regional Strategy and the NSW 2021 Plan.

Together, the mix of uses proposed will generate vibrancy, social interaction, activity and surveillance.

The modifications provide a variety of tourist-oriented development that is appropriately designed to enhance and complement its location and that avoids unacceptable adverse impacts on the environment (with on-site accommodation maximising on site containment and cross use between the mix of uses). Whilst residential land use is included in the approved concept and increased in the modified concept, the percentage of residential use to tourism uses (ie maximum of 50% on site) is maintained and that land use will enhance, not erode, the broader tourism outcomes. The modifications provides for a more flexible and variable accommodation offering. Local development controls for tourist and visitor accommodation have objectives of promoting tourism within Lake Macquarie and facilitating growth in the local tourism economy. Trinity Point modified concept will make significant contributions to those objectives.

The modification significantly enhances the amenity of public pedestrian connections and 'frees up' available and perceived vistas and visual opportunities through the site, replacing narrower 'street based' style linkages with increased 'pedestrian only' landscaped connections with increased and wider landscaped settings, of high amenity, of good permeability and legibility, with a variety in experience, radiating outwards towards the foreshore edge at multiple locations. This is achieved in part by the reduction in building footprint and siting of that building footprint, nestled within a landscape that now forms part of the experience of the site. It maintains and funds new public access importantly including around the foreshore perimeter, which will encourage public visitation to the site and access for all. Overtime and once built, Trinity Point is intended to be a source of pride for the local community and facilitate a sense of community.

The modification provides a more coherent and contemporary architectural style in the context of the sites setting and destination role and in combination with landscape setting, will assist in creating a memorable place that can be enjoyed by many. It delivers a built form that is a considered response to the topography, orientation, visual catchment and street and lake interfaces and will provide good amenity to users of the buildings and adds to the diversity of housing options and the urban community. It maintains a design intent to provide all visitors to the site with an experience and interactions with the areas greatest quality – the lake itself.

The modification, with an overall capital investment value of $138.5M, represents a significant investment into the southern part of Lake Macquarie and is sited within the catchment of Morisset, which is identified as an emerging sub-regional centre in the Lower Hunter Regional Strategy and the local Lifestyle 2030.

With construction to occur over some five main stages, the direct and indirect benefits of the construction process alone are substantial (estimated to be potential for over 1,200 direct and over 5,000 indirect EFT positions over the life of the construction phase). The employment associated with the mix of land uses may equate to some 108 to 115 EFT positions, which based on typical multiplier indexes can generate some 411 to 438 EFT indirect jobs. Importantly the typical employment profile of hospitality and tourism work, will provide opportunities for youth employment that would benefit the Morisset locality and community. In the context of the local catchment, the new jobs arising from the concept approval (which are underpinned by the

modification) are significant and in part go to achieving local employment sought at local, regional and state planning levels. One of the five key strategies of the NSW 2021 is to rebuild the economy with a target of 40,000 new jobs in regional NSW. The Hunter Regional Action Plan, which supports NSW 2021, acknowledges the world class assets of the region, reinforces Morisset as an emerging major regional centre and identifies one of the drivers for economic growth and diversity is to invest and support diversity and grow the visitor economy. Trinity Point as modified seeks to make a contribution to those strategies and goals and at a local level, be a key driver of it. The economic impact assessment (Appendix P) indicates that the project will have a direct impact of $138.5m over the construction phase with flow on construction phase impacts of almost $397 m. During full operation the total facility will generate direct and flow on impacts in the order of $55 to $58m annually.

The modification manages potential impacts proactively and significant consideration has been given to the surrounding environment, landscape and context. No significant impact has been identified from a range of comprehensive technical assessments that would preclude support for the modified concept. Monetary contributions by the project via the local Section 94 plan will provide a significant contribution towards local road, public transport and pedestrian facility upgrades in the Morisset Peninsula community that have been identified by Council in catchment based planning undertaken in 2012.

4.2 SCOPE OF MODIFICATION

- Section 75W (s75W) applies to the application to modify the concept plan approval, under the transitional provisions provided by Clause 3C(1) to Schedule 6A of the EPA Act;

- The power to modify in s75W is significantly different, and broader, compared to the other modification powers that are contained elsewhere in the EPA Act (such as section 96). For example, s75W does not require a comparison with the development so as to determine whether they are "substantially the same". Section 75W instead is concerned with consideration of any significant additional impacts;

- Proper, genuine and realistic consideration on whether an application falls with s75w is required in assessment and determination; and

- The nature of the approval being modified is relevant. An approval for a concept plan is quite different from a project approval. It is an overarching approval that requires subsequent approvals to be obtained. Given its nature, it is likely that the power under s75W to modify a concept plan is wider than the power to change a project approval. It is noted that s75W(7) of the EPA Act provides that section 75W "*does not limit the circumstances in which the Minister may modify a determination made …in connection with the approval of a concept plan*". This further supports the position that s75W was intended by the legislature to have wider application to changes to concept plan approvals than to project approvals.

For the above reasons, the power under s75W so far as this application is concerned can be construed very broadly. When analysing the power to modify under s75W, the scope of changes

and environmental consequences beyond those which were the subject to the original concept should be looked at in the context of the concept plan approval as a whole.

MP 06_0309 concept plan approval authorises a project that involves 188 berth marina and associated facilities, 150 accommodation units (75 tourist, 75 residential), restaurant, café, function centre, shops and office and parking, landscaping and boardwalk.

The proposed changes identified in the proposed modified concept plan will not alter the key principles which form the basis of the concept plan approval.

- No modification is proposed to the approved vision and concept overview, with the approved broad structure principles (as expressed in Part A of the approved Principles, Objectives and Urban Design Guidelines document) largely retained without modification; and

- All objectives of the nineteen (19) approved site principles are retained without modification, which include objectives for land use; building setbacks; building heights; public access and open space; built form; FSR; building materials and colours; vegetation; landscape; roads, vehicle access & parking; water management; flooding; services & waste management; marina; acoustics; sustainable development; indigenous and european heritage; and staging, subdivision and management.

The modification is an alternative approach to achieving the same key principles and objectives. It proposes alternative guidelines to achieve the approved site principles, and primarily includes:

- Modified layout (which broadly covers changes to site planning and guidelines for buildings heights, built form and envelopes, setbacks and separations, public access, permeability and open space, with associated updates to landscaping, stormwater, flood planning and other management guidelines); and

- Modified land use, primarily the increase in the number of accommodation units.

Consideration is required of the extent of environmental consequences which arise from the modification beyond those which were the subject to the original assessment. This does not mean there can be no environmental consequence in order to fall within the powers of s75W.

Significant design comparison and justifications for the alternative approach is provided in the application, collated into the Design, Justification and Comparison Report (***Appendix B***).

The modification application, inclusive of this RTS, provides additional technical assessment of the consequences of the modification in support of ***Appendix B*** assessment. This RTS acknowledges the recent DPE approval of Modification 2 (marina related), and that assessment of modification 5 should not seek to revisit merits or impacts of the marina.

To assist consideration of environmental consequences of the modified concept, a summary response to the modification against key issues identified in the original concept approval assessment report by DPE is provided in ***Appendix O***.

Appendix A

SUMMARY RESPONSE TO PUBLIC SUBMISSIONS

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Appendix B

REVISED DESIGN, JUSTIFICATION & COMPARISON REPORT RELATING TO PRINCIPLES, OBJECTIVES AND URBAN DESIGN GUIDELINES, FEBRUARY 2015 (SQUILLACE ARCHITECTS)

Appendix C

REVISED LANDSCAPE ANALYSIS AND DESIGN PRINCIPLES, FEBRUARY 2015 (TERRAS LANDSCAPE ARCHITECTS)

Appendix D

ADDITIONAL VISUAL IMPACT ASSESSMENT (RICHARD LAMB AND ASSOCIATES)

Appendix E

SEPP 65 REPORT (SQUILLACE ARCHITECTS)

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Appendix F

REVISED STORMWATER AND FLOODING CONCEPT REPORT (ADW JOHNSON)

Appendix G

AIR QUALITY ASSESSMENT (SLR CONSULTING)

Appendix H

GEOTECHNICAL ASSESSMENT (CARDNO)

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Appendix I

PLAN AND BACKGROUND INFORMATION RELATING TO WATERFRONT LAND

Appendix J

OUTLINE OF STAGING AND CONSTRUCTION PROGRAM (SQUILLACE ARCHITECTS)

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Appendix K

REVISED PREFERRED PROJECT REPORT RELATING TO PRINCIPLES, OBJECTIVES AND URBAN DESIGN GUIDELINES, FEBRUARY 2015 (SQUILLACE ARCHITECTS)

Appendix L

EXTRACT FROM AQUATIC ECOLOGY INVESTIGATION RELATING TO POTENTIAL GROUNDWATER DEPENDENT ECOSYSTEMS (MARINE POLLUTION RESEARCH)

Appendix M

3D ELECTRONIC MODEL OF MODIFIED CONCEPT – DISC (SQUILLACE ARCHITECTS)

Appendix N

EXCAVATION COMPARISON PLAN (ADW JOHNSON)

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Appendix O

SUMMARY RESPONSE TO THE MODIFICATION AGAINST KEY ISSUES IDENTIFIED IN THE ORIGINAL CONCEPT APPROVAL ASSESSMENT REPORT BY DPE (ADW JOHNSON)