

Activity Approval

Section 115B of the *Environmental Planning & Assessment Act 1979*

I, the Minister for Planning approve under section 115B of the *Environmental Planning and Assessment Act 1979* the Activity referred to in Schedule 1, subject to the conditions in Schedule 2.

This consolidated instrument includes the following approved modifications:

a) under section 75W on 10 September (MOD 1);

Frank Sartor MP
Minister for Planning

Dated this day of 2005 File W91/01229

SCHEDULE 1: DESCRIPTION OF ACTIVITY

The Activity is the *Lake Illawarra Entrance Works Project (Stage 2)* as described in the:

1. The *Lake Illawarra Entrance Works Project (Stage 2) Environmental Impact Statement* prepared by Patterson Britton & Partners Pty Ltd, dated January, 2005 and its Appendices; and
2. *Representations Report for Lake Illawarra Entrance Works Project (Stage 2) Northern Training Wall, Southern Spur Wall and Channel Dredging* dated June, 2005.

SCHEDULE 2: CONDITIONS OF APPROVAL – LAKE ILLAWARRA ENTRANCE WORKS (STAGE 2)

DEFINITIONS	4
ABBREVIATIONS	5
ADMINISTRATIVE CONDITIONS	6
The Activity	6
Compliance	6
Environmental Impact Audits	8
ENVIRONMENTAL MANAGEMENT	9
Construction Environmental Management Plan	9
Operation Environmental Management Plan	10
Environmental Management Representative	11
COMMUNICATION AND CONSULTATION	12
Advice of Construction Activities	12
Community Liaison Group	12
Construction Complaints Management System	13
INVESTIGATION OF LOW CREST STRUCTURES	14
PERFORMANCE MONITORING	14
FLORA AND FAUNA	15
HERITAGE	16
Indigenous Heritage Management	17
Aboriginal Objects	17
Historical Relics	17
NOISE AND VIBRATION	17
Construction Noise and Vibration Management Sub Plan	17
Construction Hours	18
Construction Noise Objective	18
Construction Noise Management	19
Vibration Criteria	19
PHYSICAL ISSUES	19
Soil and Water Management	20
Acid Sulfate Soils Management	20
Air Quality	21
Sustainable Energy	21
SOCIAL AND ECONOMIC ISSUES	21
Property Damage and Access	21
Traffic	22
MISCELLANEOUS REQUIREMENTS	22
Hazards and Risk Management	23
Waste Management and Recycling	23
Utilities and Services	23
Location of Ancillary Facilities	23

DEFINITIONS

Activity	The activity described in Schedule 1 of this Approval
Ancillary Facility	Temporary facility for Construction that does not form part of the Activity. Examples are an office and amenities compound, batch plant (concrete or bitumen), materials storage compound.
Approved Activity Area Conditions of Approval, also Conditions	The footprint of the Activity covered by the Conditions of Approval The Minister's Conditions of Approval for the Activity
Construction	Includes all work in respect of the Activity other than survey, acquisitions, investigative drilling or excavation, building/road dilapidation surveys, minor clearing (except where threatened species, populations or ecological communities would be affected), establishing site compounds (in locations meeting the criteria of the Conditions), or other activities determined by the Proponent to have minimal environmental impact (e.g. minor access roads, minor adjustments to services/utilities, etc.).
Department, the	Department of Planning
Director General, the	Director General of the Department (or delegate)
Director General's Agreement	A written advice from the Director General (or delegate)
Director General's Approval	A written approval from the Director General (or delegate) Where the Director General's Approval is required under a Condition the Director General will endeavour to provide a response within one month of receiving an approval request. The Director General may ask for additional information if the approval request is considered incomplete. When further information is requested the time taken for the Proponent to respond in writing will be added to the one month period.
Director General's Report	The report provided to the Minister by the Director General of the Department under section 115C of the <i>Environmental Planning and Assessment Act 1979</i> .
EIS	Means the EIS for the Lake Illawarra Entrance Works Project (Stage 2) prepared by Patterson Britton & Partners Pty Ltd (dated January 2005) and its appendices
Minister, the	Minister for Planning
Operation Proponent	Means the substantial completion of the proposed entrance works Lake Illawarra Authority

Publicly Available	Available for inspection by a member of the general public (for example available on an internet site or at a display centre).
Reasonable and Feasible	Consideration of best practice taking into account the benefit of proposed measures and their technological and associated operational application in the NSW and Australian context. Feasible relates to engineering considerations and what is practical to build. Reasonable relates to the application of judgement in arriving at a decision, taking into account: mitigation benefits, cost of mitigation versus benefits provided, community views and nature and extent of potential improvements.
Relevant Councils	Wollongong City Council and Shellharbour City Council
Relevant Government Departments	A government department with a licensing or approval role for the Activity's Construction or Operation. This refers to the DEC (including EPA and NPWS functions), the DPI (Fisheries), DNR and the Department of Lands.
Representations Report	Representations Report for the Lake Illawarra Entrance Works Project (Stage 2) prepared by Lake Illawarra Authority dated June 2005.
Sensitive receivers	Residence, educational institution (e.g. school, TAFE college), health care facility (e.g. nursing home, hospital) and religious facility (e.g. church).
Structure	Any fixed, artificial object including residence, farm shed, fence, dam, cable support structure, etc.

ABBREVIATIONS

CEMP	Construction Environmental Management Plan
DEC	Department of Environment and Conservation (formerly the Environment Protection Authority, and the National Parks and Wildlife Service)
DNR	Department of Natural Resources
DPI	Department of Primary Industries (formerly NSW Agriculture and NSW Fisheries)
EIS	Environmental Impact Statement
EMP	Environmental Management Plan
EMR	Environmental Management Representative
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i>
LIA	Lake Illawarra Authority
OEMP	Operation Environmental Management Plan

ADMINISTRATIVE CONDITIONS

The Activity

1. The Proponent shall carry out the Activity generally in accordance with:
 - a) the procedures, safeguards and mitigation measures identified in the EIS, as modified by the Representations Report;
 - b) the Lake Illawarra Entrance Works, Management Methods and Maintenance Requirements of Sand "Bird Habitat" Island. Project Review and Supporting Information;
 - c) the Lake Illawarra Entrance Works (Stage 2) Modification of Maintenance Requirements for the Sand Bird Island as Required Under the Project Approval, dated 4 June 2012; and
 - d) the conditions of this approval.
- 1A In the event of an inconsistency between:
 - a) the conditions of this approval and any document listed from condition 1a) to 1c) inclusive, the conditions of this approval shall prevail to the extent of the inconsistency; and
 - b) any document listed from condition 1a) to 1c) inclusive, and any other document listed from condition 1a) to 1c) inclusive, the most recent document shall prevail to the extent of the inconsistency.
2. These Conditions of Approval do not relieve the Proponent of the obligation to obtain all other approvals and licences required under any other Act. The Proponent must comply with the terms and conditions of such approvals and licences.

Compliance

General

3. The Proponent must notify in writing the Director General, DEC, DPI, DNR and Relevant Councils of the start of the Activity's Construction and Operation. Such notification must be provided at least four weeks before the relevant start date unless otherwise agreed to by the Director General.
4. It is the responsibility of the Proponent to ensure compliance with all of these Conditions and to implement any measures arising from these Conditions of Approval.
5. The Proponent must bring to the Director-General's attention any matter that may require further assessment by the Director-General.
6. The Proponent must comply with any requirements of the Director General arising from the Department's assessment of:
 - a) any reports, plans or correspondence that are submitted to satisfy these Conditions of Approval; and

- b) the implementation of any actions or measures contained in such reports, plans or correspondence.

Staging Report

- 7. The Proponent may elect to construct the Activity in discrete work packages or defined stages provided that such stages or work packages are consistent with these Conditions of Approval. Where discrete work packages or defined stages are proposed, the Proponent must submit a Staging Report to the Director General at least four weeks before Construction commences (or within any other time agreed to by the Director General). The Staging Report must:
 - a) describe the work packages or defined stages; and
 - b) identify how the Conditions will be addressed in each work package or defined stage.

Pre-Construction Compliance Report

- 8. The Proponent must submit a Pre-Construction Compliance Report to the Director General at least four weeks before Construction commences (or within any other time agreed to by the Director General).

The Pre-Construction Compliance Report must include:

- a) details of how the Conditions of Approval required to be addressed before Construction were complied with;
- b) the time when each relevant Condition of Approval was complied with, including dates of submission of any required reports and/or approval dates; and
- c) details of any approvals or licences required to be issued by Relevant Government Departments or Relevant Council before Construction commences.

Pre-Operation Compliance Report

- 9. The Proponent must submit Pre-Operation Compliance Reports to the Director General at least four weeks before Operation (or within any other time agreed to by the Director-General).

The *Pre-Operation Compliance Report* must include:

- a) details of how the Conditions of Approval required to be addressed before Operation were complied with;
- b) the time when each relevant Condition of Approval was complied with, including dates of submission of any required reports and/or approval dates; and
- c) details of any approvals or licences issued by Relevant Government Departments for the Activity's Operation.

Construction Compliance Reports

- 10. The Proponent must provide the Director General, Relevant Councils and any other government departments nominated by the Director General with Construction Compliance Reports.

The first *Construction Compliance Report* must report on the first six months of construction and be submitted a maximum six weeks after expiry of that period. The second, and subsequent, Construction Compliance Reports must be submitted at maximum intervals of six months from

the date of submission of the first Construction Compliance Report (or at any other time interval agreed to by the Director General) for the duration of Construction.

The Construction Compliance Reports must include information on:

- a) compliance with the CEMP and the Conditions of Approval;
- b) compliance with any approvals or licences issued by Relevant Government Departments and Relevant Councils for the Construction phase of the Activity;
- c) the implementation and effectiveness of environmental controls. The assessment of effectiveness should be based on a comparison of actual impacts against performance criteria identified in the CEMP;
- d) environmental monitoring results, presented as a results summary and analysis;
- e) the number and details of any complaints, including a summary of main areas of complaint, action taken, response given and intended strategies to reduce recurring complaints;
- f) details of any review and amendments to the CEMP resulting from Construction during the reporting period; and
- g) any other matter relating to compliance with the Conditions of Approval or as requested by the Director General.

The Construction Compliance Reports must also be made Publicly Available.

Environmental Impact Audits

Environmental Impact Audit Report - Construction

11. An *Environmental Impact Audit Report - Construction* must be prepared and submitted to the Director General a maximum three months after the Activity begins Operation (or at any other time interval agreed to by the Director General). The *Environmental Impact Audit Report - Construction* must also be submitted to other government departments upon the request of the Director General.

The *Environmental Impact Audit Report - Construction* must:

- a) identify the major environmental controls used during Construction and assess their effectiveness;
- b) summarise the main environmental management plans and processes implemented during Construction and assess their effectiveness;
- c) identify any innovations in Construction methodology used to improve environmental management; and
- d) discuss the lessons learnt during Construction, including recommendations for future Activities.

Environmental Impact Audit Report - Operation

12. An *Environmental Impact Audit Report - Operation* must be submitted to the Director-General a maximum 24 months after the Activity begins Operation and at any additional periods that the Director-General may require. The *Environmental Impact Audit Report - Operation* must also be submitted to other government departments upon the request of the Director-General.

The *Environmental Impact Audit Report - Operation* must:

- a) be certified by an independent person at the Proponent's expense. The certifier must be advised to the Director-General before the *Environmental Impact Audit Report – Operation* is prepared;
- b) compare the Operation impact predictions made in the EIS, Representations Report and any supplementary studies with the actual impacts;
- c) assess the effectiveness of implemented mitigation measures and safeguards;
- d) assess compliance with the systems for operation maintenance and monitoring;
- e) discuss the results of consultation with the local community particularly any feedback or complaints; and
- f) be made Publicly Available.

ENVIRONMENTAL MANAGEMENT

Construction Environmental Management Plan

13. A *Construction Environmental Management Plan (CEMP)* must be prepared and implemented in accordance with these Conditions of Approval and all relevant Acts and Regulations. The Proponent must obtain the Director General's Approval for the CEMP before Construction commences or within any other time agreed to by the Director General.

The Proponent must ensure that the mitigation measures identified in the EIS, Representations Report and in these Conditions are incorporated into the CEMP.

The CEMP must:

- a) state how the mitigation measures identified in section 7 of the Representations Report will be implemented;
- b) include a Construction program, identifying/construction activities and their location and timing;
- c) cover any relevant environmental elements identified by the Proponent, or its contractor, from their environmental due diligence investigations;
- d) contain the Construction Sub Plans required by the Conditions of Approval;
- e) be prepared following consultation with Relevant Government Departments and the Relevant Councils;
- f) be Publicly Available;
- g) include a community consultation and notification strategy (including local community, Relevant Government Departments, Relevant Councils), and construction complaint handling procedures;
- h) include environmental management details such as:
 - i identification of statutory obligations which the Proponent is required to fulfil during Construction, including all approvals and licences;
 - ii an environmental management structure indicating the responsibility, authority and accountability for personnel relevant to the CEMP;
 - iii the role of the EMR and identification of Construction activities requiring EMR attendance;
 - iv details of the Construction personnel induction and training program;
 - v emergency response procedures;
- i) include implementation details such as:
 - i. identification of relevant environmental elements;

- ii. measures to avoid and/or control environmental impacts;
- iii. the tools to be used to implement the CEMP such as plans, schedules and work instructions;
- j) include monitoring and review details such as:
 - i performance criteria;
 - ii performance monitoring methods;
 - iii auditing and corrective actions procedures;
 - iv CEMP review procedures.

Operation Environmental Management Plan

14. An *Operation Environmental Management Plan (OEMP)* must be prepared and implemented in accordance with these Conditions and all relevant Acts and Regulations. The Proponent must obtain the approval of the Director-General for the OEMP before Operation commences or within any other time agreed to by the Director-General.

The OEMP must:

- a) identify the Operation activities;
- b) cover relevant environmental elements identified by the Proponent either from its environmental due diligence investigations or required to satisfy any other licence or approval;
- c) include the Operation Sub Plans required under these Conditions of Approval;
- d) be prepared in consultation with Relevant Government Departments and Relevant Councils;
- e) be made Publicly Available;
- f) include environmental management details such as:
 - i identification of statutory obligations which the Proponent is required to fulfil during the Activity's Operation, including all approvals and licences;
 - ii an environmental management structure indicating the responsibility, authority and accountability for personnel relevant to the OEMP;
 - iii details of a personnel induction and training program;
 - iv emergency response procedures;
- g) include implementation details such as:
 - i identification of relevant environmental elements;
 - ii measures to avoid and/or control environmental impacts;
 - iii the tools to be used to implement the OEMP such as plans, schedules and work instructions;
- h) include monitoring and review details such as:
 - i performance criteria;
 - ii performance monitoring methods;
 - iii auditing and corrective actions procedures;
 - iv OEMP review procedures.

If the Proponent has an Operation Environmental Management Plan (for example a certified and operating environmental management system) for its other activities which is applicable to this Activity then that system may be proposed as the OEMP. Details of the existing system must be provided to the Director-General demonstrating its application to this Activity.

Environmental Management Representative

15. The Proponent must request the Director-General's Approval for the appointment of an Environmental Management Representative (EMR) at least eight weeks before Construction commences (or within any other time agreed to by the Director-General). In its request the Proponent must provide the following information:
 - a) qualifications and experience of the EMR including demonstration of general compliance with relevant Australian Standards for environmental auditors;
 - b) authority and independence (from the Proponent or its contractors) of the EMR including details of the Proponent's internal reporting structure; and
 - c) resourcing of the EMR role. The EMR must be available:
 - i for sufficient time to undertake the EMR role. This timing shall be agreed between the Proponent and the EMR and advised to the Director-General in the request for approval;
 - ii at any other time requested by the Director-General;
 - iii during any Construction activities identified in the CEMP to require the EMR's attendance; and
 - iv for the duration of Construction.
16. The Director-General may at any time immediately revoke the approval of an EMR appointment by providing written notice to the Proponent. Interim arrangements for EMR responsibility following the revocation must be agreed in writing between the Director-General and the Proponent.
17. The Director-General may at any time conduct an audit of any actions undertaken by the EMR. The Proponent must:
 - a) facilitate and assist the Director-General in any such audit; and
 - b) include in the conditions of the EMR's appointment the need to facilitate and assist the Director-General in any such audit.
18. The EMR is authorised to :
 - a) consider and advise the Director-General and the Proponent on matters specified in the Conditions of Approval and compliance with such;
 - b) determine whether work falls within the definition of Construction where clarification is requested by the Proponent;
 - c) review the CEMP;
 - d) periodically monitor the Proponent's activities to evaluate compliance with the CEMP. Periodic monitoring must involve site inspections of active work sites at least fortnightly;
 - e) provide a written report to the Proponent of any non-compliance with the CEMP observed or identified by the EMR. Non compliance must be managed as identified in the CEMP;
 - f) issue a recommendation to the Proponent to stop work immediately if in the view of the EMR an unacceptable impact on the environment is occurring or is likely to occur. The stop work recommendation may be limited to specific activities causing an impact if the EMR can easily identify those activities. The EMR may also recommend that the Proponent initiate reasonable actions to avoid or minimise adverse impacts;
 - g) review corrective and preventative actions to monitor the implementation of recommendations made from audits and site inspections;

- h) certify that minor revisions to the CEMP are consistent with the approved CEMP; and
- i) provide regular (as agreed with the Director-General) reports to the Director-General on matters relevant to carrying out the EMR role including notifying the Director-General of any stop work recommendations.

The EMR must immediately advise the Proponent and the Director-General of any incidents relevant to these Conditions resulting from Construction that were not dealt with expediently or adequately by the Proponent.

COMMUNICATION AND CONSULTATION

Advice of Construction Activities

19. Before Construction commences, and then at maximum three monthly intervals, the Proponent must advertise in relevant newspapers the: nature of the works proposed for the next three months; areas in which these works are proposed; Construction hours; and a contact telephone number.

The Proponent must ensure that the local community and businesses are advised of Construction activities that could cause disruption. Methods to disseminate this information must be identified in the CEMP. Information to be provided must include:

- a) details of any traffic disruptions and controls;
 - b) construction of temporary detours; and
 - c) work approved to be undertaken outside standard Construction hours, in particular noisy works, before such works are undertaken.
20. The Proponent must establish an Activity internet site before Construction commences and maintain the internet site until Construction ends. This internet site must contain:
- a) periodic updates of work progress, consultation activities and planned work schedules. The site must indicate the date of the last update and the frequency of the internet site updates;
 - b) a description of relevant approval authorities and their areas of responsibility;
 - c) a list of reports and plans that are Publicly Available under this Approval and details of how these can be accessed;
 - d) contact names and phone numbers of relevant communications staff; and
 - e) the 24 hour toll-free complaints contact telephone number.

Updates of work progress, Construction activities and planned work schedules must be provided where significant changes in noise or traffic impacts are expected.

Community Liaison Group

21. A Community Liaison Group (CLG) must be formed and hold its first meeting before Construction commences. The CLG must include the EMR and representatives from the Proponent and its

head contractor. Community representatives should be identified and selected from relevant community and business groups, individual members of the community adjoining the Activity and representatives from Relevant Councils.

The Proponent must, at its own expense:

- a) maintain the CLG for the duration of Construction unless otherwise approved by the Director-General;
- b) provide a chairperson for the CLG. The chairperson must be independent of the Proponent and may be elected from the CLG membership;
- c) nominate two representatives to attend all CLG meetings;
- d) provide to the CLG regular information on the progress of Construction and related environmental performance;
- e) promptly provide to the CLG information that the CLG Chair may reasonably request concerning the Activity's environmental performance;
- f) provide access for site inspections by the CLG;
- g) provide meeting facilities for the CLG, and take notes of CLG meetings. These meeting notes must be available to CLG members within 14 days of the meeting and should be endorsed by the Chair;
- h) where reasonably required by the Chair, arrange consultant(s) to explain technical information to the CLG; and
- i) where reasonably required by the Chair, invite representatives from Relevant Government Departments or other individuals to attend CLG meetings.

Issues for discussion by the CLG include the dissemination of information to the community, design issues related to the Conditions or mitigation measures, the CEMP and Construction activities. The CLG may make comments about these issues which must be considered by the Proponent. The Proponent must report back to the CLG on its considerations of the comments.

The Proponent may review a CLG's membership and/or the need for the CLG at any time during Construction. The Proponent must seek the Director-General's approval to dissolve a CLG. Any request for dissolution must demonstrate why the CLG is no longer required.

In the event of any dispute between the CLG and the Proponent, the Proponent's decision is final provided it is consistent with these Conditions of Approval.

22. The Proponent must consult property owners about implementing mitigation measures that affect their property. Mitigation measures should be implemented according to a program derived from that consultation if consistent with the Conditions of Approval.

Construction Complaints Management System

23. The Proponent must prepare and implement a *Construction Complaints Management System* before Construction commences and maintain the System for the duration of Construction. The *Construction Complaints Management System* must be consistent with AS 4269 "Complaints Handling" and include:
 - a) a 24 hour, toll free telephone number listed with a telephone company and advertised;
 - b) a system to receive, record, track and respond to complaints within a specified timeframe. When a complaint cannot be responded to immediately, a follow-up verbal response on what

- action is proposed must be provided to the complainant within two hours during night-time works and 24 hours at other times;
- c) a process for the provision of a written response to the complainant within 10 days, if the complaint cannot be resolved by the initial or follow-up verbal response; and
 - d) a mediation system for complaints unable to be resolved.

Information on all complaints received, including the means by which they were addressed and whether resolution was reached with or without mediation, must be included in the *Construction Compliance Reports* and must be made available to the Director-General on request.

INVESTIGATION OF LOW CREST STRUCTURES

24. Prior to commencement of substantial construction, the Proponent must submit a report to the Director-General, on the potential for reducing the height of the northern breakwater. Unless otherwise approved by the Director-General, substantial construction may not commence until the report has been approved by the Director-General.

The report must be prepared by an independent coastal structural designer with experience in the design and construction of low-crest structures.

The report must address but is not limited to:

- a) Constructability of a lower northern breakwater;
- b) Cost implications;
- c) Structural integrity of a lower northern breakwater;
- d) Practicality of increasing the height of a lowered northern breakwater, should this be required;
- e) Any additional public safety issues resulting from a lowered northern breakwater;
- f) Any implications for other components of the proposed scheme such as the cumulative effect on the southern breakwater;
- g) Details of the final height proposed for construction.

PERFORMANCE MONITORING

25. As part of the OEMP, the Proponent must prepare and implement a detailed Monitoring Sub Plan, in consultation with DEC, DPI (Fisheries), DNR, Relevant Local Councils and the Illawarra Bird Observers Club (as relevant). The Sub Plan must address the matters identified in Appendix A (Performance Indicators) and incorporate and further develop the monitoring program outlined in section 14 of the EIS, as follows:
- a) ecological monitoring program to assess:
 - i. annual changes in seagrass area, depth limits and speciation;
 - ii. bi-annual (summer/winter) occurrence of aquatic bird populations, behaviour, nests, eggs, successful fledglings, predator incidences and changes in food resources and habitat;
 - iii. changes to fish and benthic communities of the lake and its entrance;
 - iv. condition of the rock reef community on the northern side of Windang Island.
 - b) coastal/estuarine monitoring program to assess changes in coastal/estuarine processes to include:
 - i. erosion or beach recession at Perkins Beach;
 - ii. dune formation on Perkins and Warilla Beaches;
 - iii. creation of sand fillets at either side of the training walls/breakwaters;

- iv. behaviour of sand shoals within the entrance.
- c) water quality monitoring program to include routine measurement of water height, salinity, chlorophyll-a and a measure of clarity (eg turbidity or sechi depth) of the lake's waters at a minimum of three selected sites;
- d) flood levels within the lake.

The Sub Plan must incorporate a decision making framework that clearly describes how the proponent will respond to the outcomes of monitoring and address the application of the decision making framework, need for mitigation measures, progress with implementation of mitigation measures, and effectiveness of the mitigation measures.

26. The Proponent must report to the Department, DEC, DPI, DNR, Relevant Councils and other stakeholders on the outcomes of the monitoring program implemented under Condition 25. The report must address:
- a) the first year of operation;
 - b) the first three years of operation;
 - c) the first five years of operation; and
 - d) any other period required by the Director-General.

Each report must be submitted within two months of the end of the relevant reporting period.

The reports must:

- a) specifically address the results of the monitoring against the identified performance indicators referred to in Condition 25;
- b) address the application of the decision making framework, need for mitigation measures; progress with implementation of mitigation measures, and effectiveness of the mitigation

FLORA AND FAUNA

27. A Flora and Fauna Management Sub Plan must be prepared as part of the CEMP. The Sub Plan must be prepared in consultation with DEC, DPI, DNR and Relevant Councils and include:
- a) plans showing terrestrial and aquatic vegetation communities; important flora and fauna habitat areas; areas to be disturbed; and a 50m buffer zone between channel dredging or Construction works and existing seagrass beds;
 - b) methods to manage impacts on flora and fauna species (terrestrial and aquatic) and their habitat which may be directly or indirectly affected by the Activity. These must include:
 - i procedures for vegetation clearing, soil management and managing other habitat damage (terrestrial and aquatic) during Construction;
 - ii methods to protect vegetation both retained within, and also adjoining, the Activity from damage during Construction;
 - iii measures to minimise turbidity in the channel and minimise disturbance to both fish and crustacean movements through the channel;
 - iv performance criteria against which to measure the success of the methods;
 - c) a construction schedule that minimises disturbance to aquatic biota, with the main objective to limit disturbance on the northern side of the entrance channel shoal over the Little Tern breeding season (October to March inclusive). Construction must cease on the northern breakwater / training wall if there is evidence that construction is impacting upon bird breeding. No Construction must occur on the northern breakwater section (from chainage 0m to 150m) during the summer bird breeding season (October to March inclusive);

- d) methods for the construction of a bird habitat island;
- e) a Weed Management Strategy including:
 - i identification of weeds within the Activity and adjoining areas;
 - ii weed eradication methods and protocols for the use of herbicides;
 - iii methods to treat and re-use weed infested topsoil;
 - iv strategies to control the spread of weeds during Construction;
- f) a program for reporting on the effectiveness of terrestrial and aquatic flora and fauna management measures against the identified performance criteria. Management methods must be reviewed where found to be ineffective.

28. As part of the OEMP, an Aquatic Bird Management Plan must be prepared by a suitably qualified expert. The Plan must be prepared in consultation with the Department, Environment Protection Authority, Office of Environment and Heritage, Department of Primary Industries (Fisheries), Wollongong City Council, Illawarra Bird Observers Club, Illawarra Birders Inc, and include:

- a) objectives and performance criteria to measure the effectiveness of management methods (in addition to the aquatic bird monitoring required in condition 28e)).
- b) reasonable and feasible management methods and maintenance requirements for enhancing bird habitat, including ongoing responsibilities for maintenance;
- c) strategies for predator control and protection from human disturbance in the vicinity of the Lake Illawarra entrance;
- d) an education program for the local community and stakeholders;
- e) ongoing monitoring of aquatic bird populations in the vicinity of the Lake Illawarra entrance consistent with Condition 25;
- f) a program for reporting on the effectiveness of the bird habitat management and mitigation measures against identified performance criteria for aquatic bird habitat management. Management methods and maintenance requirements must be reviewed and amended or new methods/maintenance requirements adopted where found to be ineffective.

28A An Adaptive Management Review is to be conducted, in September each year, in consultation with Environment Protection Authority, Office of Environment and Heritage, Department of Primary Industries (Fisheries), Wollongong City Council, Illawarra Bird Observers Club and Illawarra Birders Inc. to determine the management and maintenance measures to be implemented prior to the commencement of the Little Tern breeding season. The Adaptive Management Review is to:

- a) consider the prevailing conditions at the entrance of Lake Illawarra and reports prepared in accordance with condition 28f);
- b) consider the management methods undertaken in accordance with condition 28 (including the feasibility of reinstating the bird habitat island, predator control, monitoring and education) and maintenance requirements to enhance shorebird breeding habitat to achieve the identified performance criteria identified in condition 28a); and
- c) report on the management measures considered and to be implemented. The report must include justification for either adopting or not adopting each management measure considered.

A five year report is to be provided to the Department, by October 2017, summarising the implemented management and maintenance measures over that period and evaluating their effectiveness in providing optimal habitat for target species breeding.

HERITAGE

Indigenous Heritage Management

29. An Indigenous Heritage Management Sub Plan must be prepared as part of the CEMP. The Sub Plan must be prepared in consultation with all relevant Aboriginal groups and the DEC and include:
- a) details of the archaeological investigations to be undertaken and any associated licences or approvals required;
 - b) procedures to be implemented if previously unidentified Aboriginal objects are discovered during Construction. If such objects are discovered all work likely to affect the object(s) must cease immediately and the DEC informed in accordance with the *National Parks and Wildlife Act 1974*; and
 - c) an education program for Construction personnel on their obligations for Aboriginal cultural materials.

Aboriginal Objects

30. If during the course of Construction the Proponent becomes aware of any unexpected Aboriginal object(s), all work likely to affect the object(s) must cease immediately and the DEC informed in accordance with the *National Parks and Wildlife Act 1974*.

Historical Relics

31. An Historical Relic Management Sub Plan must be prepared as part of the CEMP. The Sub Plan must be prepared in consultation with the Heritage Office and Relevant Councils and include:
- a) details of any investigations to be undertaken and any approvals required;
 - b) procedures to be implemented if previously unidentified historical relics are discovered during Construction. If such relics are discovered all work likely to affect the relic(s) must cease immediately and the Heritage Council notified in accordance with the *Heritage Act 1977*; and
 - c) an education program for Construction personnel on their obligations for historic relics.
32. If during the course of Construction the Proponent becomes aware of any unexpected historical relic(s), all work likely to affect the relic(s) must cease immediately and the Heritage Council notified in accordance with the *Heritage Act 1977*.

NOISE AND VIBRATION

Construction Noise and Vibration Management Sub Plan

33. A Construction Noise and Vibration Management Sub Plan must be prepared as part of the CEMP. The Sub Plan must be prepared in consultation with the Relevant Councils and the CLG and include:
- a) an education program for Construction personnel about noise minimisation;

- b) identification of each Construction activity, including Ancillary Facilities, and their associated noise sources;
- c) identification of all potentially affected Sensitive Receivers;
- d) the Construction noise objective specified in the Conditions of Approval;
- e) the Construction vibration criteria specified in the Conditions of Approval;
- f) determination of appropriate noise and vibration objectives for each identified Sensitive Receiver;
- g) noise and vibration monitoring, reporting and response procedures;
- h) assessment of potential noise and vibration from each Construction activity including noise from Construction vehicles and any traffic diversions;
- i) a description of management methods and procedures and specific noise mitigation treatments that will be implemented to control noise and vibration during Construction;
- j) justification for any activities outside the Construction hours specified in the Conditions of Approval. This includes identifying areas where Construction noise would not be audible at any Sensitive Receiver;
- k) procedures for notifying residents of Construction activities that are likely to affect their noise and vibration amenity; and
- l) contingency plans to be implemented in the event of non-compliances and/or noise complaints.

Construction Hours

34. Construction must be restricted to between the hours of 7:00 am to 6:00 pm (Monday to Friday), 8:00 am to 1:00 pm (Saturday) and at no time on Sundays and public holidays except:
- a) for the delivery of materials required outside these hours by the Police or other authorities for safety reasons; or
 - b) where it is required in an emergency to avoid the loss of lives, property and/or to prevent environmental harm; or
 - c) where the work is identified in the Construction Noise and Vibration Management Sub Plan and approved as part of the CEMP.

Local residents must be informed of the timing and duration of work approved under item (c) at least 48 hours before that work commences.

35. Transportation of rocks must be restricted to between the hours of 7:00 am to 5:00 pm (Monday to Friday) and at no time on Saturdays, Sundays and public holidays.

Construction Noise Objective

36. The Construction noise objective for the Activity is to manage noise from Construction activities (as measured by a L_{A10} (15minute) descriptor) so it does not exceed the background L_{A90} noise level by:
- a) more than 20 dB(A) for a Construction period of four weeks and under;
 - b) more than 10 dB(A) for a Construction period of greater than four weeks and not exceeding 26 weeks; and
 - c) more than 5 dB(A) for a Construction period greater than 26 weeks.

Background noise levels are those identified in the EIS or Representations Report or otherwise identified in the Construction Noise and Vibration Management Sub Plan.

Any activities that have the potential for noise emissions that exceed the objective must be identified and managed in accordance with the Construction Noise and Vibration Management Sub Plan. The Proponent must implement all Reasonable and Feasible noise mitigation and management measures with the aim of achieving the Construction noise objective.

If the noise from a Construction activity is substantially tonal or impulsive in nature (as described in Chapter 4 of the *NSW Industrial Noise Policy*), 5dB(A) must be added to the measured Construction noise level when comparing the measured noise with the Construction noise objective.

Construction Noise Management

37. The Proponent must ensure that public address systems used at any Construction site are not used outside the Construction hours detailed in the Conditions of Approval unless otherwise approved through the Construction Noise and Vibration Management Sub Plan. Public address systems must be designed to minimise noise spillage off-site.
38. The Proponent must schedule rock breaking, rock hammering, and any similar activity only between the following hours unless otherwise approved in the Construction Noise and Vibration Management Sub Plan:
 - a) 9 am to 12 pm and 2 pm to 5 pm, Monday to Friday; and
 - b) 9 am to 12 pm, Saturday.
39. The Proponent must, where Reasonable and Feasible, erect noise mitigation measures at the start of Construction (or at other times during Construction) to minimise Construction noise impacts.

Vibration Criteria

40. Vibration caused by Construction and received at any Structure outside the Activity must:
 - a) for structural damage vibration be limited to German Standard DIN 4150 Part 3 *Structural Vibration in Buildings. Effects on Structures*; and
 - b) for human exposure to vibration be limited to the evaluation criteria presented in British Standard BS 6472 - *Guide to Evaluate Human Exposure to Vibration in Buildings* (1Hz to 80 Hz) for low probability of adverse comment.

These limits apply unless otherwise approved in the Construction Noise and Vibration Management Sub Plan.

PHYSICAL ISSUES

Soil and Water Management

Soil and Water Quality Management Sub Plan

41. A Soil and Water Management Sub Plan must be prepared as part of the CEMP. The Sub Plan must be prepared in consultation with Relevant Government Departments and Relevant Councils. The Sub Plan must:
- a) where relevant, be consistent with the Department of Housing's guideline "Managing Urban Stormwater - Soils and Construction" and the RTA's "Guidelines for the Control of Erosion and Sedimentation in Roadworks";
 - b) identify the Construction activities that could cause soil erosion or discharge sediment or water pollutants from the site;
 - c) describe management methods to minimise soil erosion or discharge of sediment or water pollutants from the site including a strategy to minimise the area of bare surfaces during Construction;
 - d) describe the location and capacity of erosion and sediment control measures;
 - e) identify the timing and conditions under which Construction stage controls will be decommissioned;
 - f) include contingency plans to be implemented for events such as fuel spills; and
 - g) identify how the effectiveness of the sediment and erosion control system will be monitored, reviewed and updated.

Construction

42. An appropriately qualified soil scientist or person with similar expertise in soil and water management must be consulted according to a schedule identified in the Soil and Water Management Sub Plan to:
- a) undertake inspections of temporary and permanent erosion and sedimentation control devices;
 - b) ensure that the most appropriate controls are being implemented;
 - c) check that controls are being maintained in an efficient condition; and
 - d) check that controls meet the requirements of any relevant approval and/or licence condition.

The results of these inspections and any follow-up actions must be reported in the *Construction Compliance Reports* required by the Conditions of Approval.

Acid Sulfate Soils Management

43. An Acid Sulfate Soil Management Sub Plan must be prepared as part of the CEMP. The Sub Plan must be prepared in consultation with Relevant Government Departments. The Sub Plan must:
- a) be consistent with the "Acid Sulfate Soils Manual" (Acid Sulfate Soil Management Advisory Committee, 1998) or update;
 - b) include a contingency plan to deal with the unexpected discovery of actual or potential acid sulfate soils; and
 - c) include a water quality monitoring program.

Air Quality

Dust Management Sub Plan

44. A Dust Management Sub Plan must be prepared as part of the CEMP. The Sub Plan must identify:
- a) potential sources of dust;
 - b) dust management objectives consistent with DEC guidelines;
 - c) a monitoring program to assess compliance with the identified objectives. Monitoring for dust deposition and particulate concentration must be undertaken according to the DEC Guideline "Approved Methods for Sampling and Analysis of Air Pollutants in New South Wales";
 - d) mitigation measures to be implemented, including measures during weather conditions where high level dust episodes are probable (such as strong winds in dry weather); and
 - e) a progressive rehabilitation strategy for exposed surfaces with the aim of minimising exposed surfaces.

Construction

45. Construction vehicles using public roads must be maintained to prevent any loss of load, whether dust, liquid or soils. Facilities must be provided at exit points of all Construction sites/compounds to minimise tracking mud, dirt or other material onto a public road or footpath. In the event of any spillage, the Proponent must remove the spilled material as soon as practicable within the working day of the spillage.
46. The Proponent must ensure that all plant and equipment used in connection with the Activity are:
- a) maintained in a proper and efficient condition; and
 - b) operated in a proper and efficient manner.

Sustainable Energy

47. The Proponent must use electrical energy derived from a renewable energy source accredited by the Sustainable Energy Development Authority (SEDA) for the supply of at least 50% of the on-site electrical energy requirements for the Activity's Construction. Power consumption (green power or other) must be reported in the Construction Compliance Reports.

SOCIAL AND ECONOMIC ISSUES

Property Damage and Access

48. Subject to landowner agreement, property inspections must be conducted on all Structures within:
- a) 200 metres of blasting;
 - b) 50 metres of Construction activities that generate vibration impacts;
 - c) any other locations identified by the Proponent; and
 - d) any other locations identified by the EMR.

The property inspections must be undertaken consistent with AS 4349.1 "Inspection of Buildings".

The owners of all properties on which property inspections are to be conducted must be advised at least two weeks before the inspection of its scope and methodology and of the process for making a property damage claim. A copy of the property inspection report must be given to the owner of each property inspected at least three weeks before Construction that could affect the property commences.

A register of all properties inspected must be maintained by the Proponent indicating whether the owner accepted or refused the property inspection offer. A copy of the register must be provided to the Director-General upon request.

49. The Proponent, where liable, must rectify any property damage caused directly or indirectly (for example from vibration or from groundwater change) by the Activity's Construction or Operation at no cost to the property owner(s). Alternatively the Proponent may negotiate compensation for the property damage with the property owner.
50. The Proponent must ensure that access to properties is maintained during Construction. The Proponent must ensure that any legal property access affected by the Activity is reinstated to an equivalent standard or that alternative arrangements are negotiated with the relevant property owner.

Traffic

51. Road dilapidation reports must be prepared for all roads likely to be used by Construction traffic. These reports must be prepared before Construction commences and after Construction is complete. Copies of the reports must be provided to the relevant roads authority. Any damage resulting from Construction, except that resulting from normal wear and tear, must be repaired at the Proponent's cost. Alternatively the Proponent may negotiate an alternative arrangement for road damage with the relevant roads authority.
52. A Construction Traffic Management Sub Plan must be prepared as part of the CEMP. The Sub Plan must be prepared in consultation with the relevant roads authority and include:
 - a) identification of all public roads to be used by Construction traffic, in particular roads proposed to transport large quantities of Construction materials. The expected timing and duration of road usage must be stated;
 - b) management methods to ensure Construction traffic uses identified roads;
 - c) identification of all public roads that may be partially or completely closed during Construction and the expected timing and duration of these closures. Consideration must be given to programming Construction works to minimise road closures during peak hours and/or holiday periods;
 - d) impacts on existing traffic (including pedestrians, vehicles, cyclists and disabled persons);
 - e) temporary traffic arrangements including property access;
 - f) access to Construction sites including entry and exit locations and measures to prevent Construction vehicles queuing on public roads;
 - g) a response plan for any Construction traffic incident; and
 - h) monitoring, review and amendment mechanisms.

MISCELLANEOUS REQUIREMENTS

Hazards and Risk Management

53. As part of the Construction and Operation EMPs, the Proponent must prepare and implement Hazards and Risk Management Sub Plan(s). These Sub Plans must include:
- a) details of the hazards and risks associated with the Activity; and
 - b) mitigation measures including contingency plans.

Waste Management and Recycling

54. As part of the Construction and Operation EMPs the Proponent must prepare Waste Management and Re-use Sub Plan(s). The Sub Plans must address the management of wastes during the Construction and Operation stages respectively in accordance with the NSW Government's Waste Reduction and Purchasing Policy. The Sub Plan(s) must identify requirements for:
- a) the application of the waste minimisation hierarchy principles of avoid/reduce/re-use/recycle/dispose;
 - b) waste handling and storage;
 - c) disposal of wastes. Specific details must be provided for cleared vegetation, contaminated materials, glass, metals and plastics, hydrocarbons (lubricants and fuels) and sanitary wastes; and
 - d) any waste material that is unable to be re-used, re-processed or recycled must be disposed at a facility approved to receive that type of waste.

Utilities and Services

55. The Proponent must identify the utilities and services (hereafter "services") potentially affected by Construction to determine requirements for diversion, protection and/or support. Alterations to services must be determined by negotiation between the Proponent and the service providers. The Proponent in consultation with service providers must ensure that disruption to services resulting from the Activity are minimised and advised to customers.

Location of Ancillary Facilities

56. The sites for Ancillary Facilities must satisfy the following criteria unless otherwise approved through the CEMP:
- a) be located within the Approved Activity Area;
 - b) have ready access to the road network;
 - c) be located to minimise the need for heavy vehicles to travel through residential areas;
 - d) be sited on relatively level land;
 - e) be separated from nearest residences by at least 200 m (or at least 250 m for a temporary batch plant);
 - f) not be within 100 m of, or drain directly to, SEPP 14 wetlands;
 - g) be located above the 20 ARI flood level unless a contingency plan to manage flooding is prepared and implemented;
 - h) not require vegetation clearing beyond that already required for the Activity; and
 - i) not affect the land use of adjacent properties.

The location of the Ancillary Facilities must be identified in the CEMP and must include an analysis against the above criteria. Where these criteria cannot be met the CEMP must demonstrate there will be no adverse impacts from the Ancillary Facility's construction or operation.