

# LORD HOWE ISLAND BOARD

## BOARD MEETING AGENDA

MEETING DATE:	MEETING LOCATION:	MEETING TIME:
Mon 17 September 2018	Public Hall, Lord Howe Island	Planning Session 9:00 am to 11:00 am
Mon 17 September 2018	Public Hall, Lord Howe Island	Closed Session: 11:00 am to 4:30 pm
Tues 18 September 2018	Public Hall, Lord Howe Island	Open Session: 9:00 am to 12:30 pm

Presenter	ITEM		OPEN (O)	CLOSED (C)	ACTION Note/Decide
PA	1	<b>MINUTES OF PREVIOUS MEETING – NOTICE OF ADOPTION</b>	O		Note
PA	2	<b>OUT OF SESSION MATTERS – STATUS REPORT</b>	O		Note
PA	3	<b>ACTIONS FROM PREVIOUS MEETINGS – STATUS REPORT</b>	O		Note
PA	4	<b>CHIEF EXECUTIVE OFFICER’S REPORT</b>	O	C	Note
PA	5	<b>MOTOR VEHICLE IMPORTATION OR TRANSFER – STATUS REPORT</b>	O		Note
	6	<b>BUDGET ADJUSTMENTS</b>			
BM	(i)	Proposed adjustments to the adopted Budget		C	Decide
	7	<b>DEVELOPMENT APPLICATIONS</b>			
JS	(i)	Owner Consent approved under Delegated Authority	O		Note
JS	(ii)	DAs Determined Under Delegated Authority	O		Note
JS	(iii)	DA2018.10 – Additional Staff and Tourist Accommodation – Earls Anchorage – John Green	O		Decide
	8	<b>POLICY &amp; STRATEGY</b>			
PA	(i)	Community Strategic Plan Framework	O		Decide
PA	(ii)	Operations Plan 2017/18 Review	O		Note
PA	(iii)	Operations Plan 2018/19 – Draft	O		Decide
	9	<b>FINANCE AND BUSINESS MANAGEMENT</b>			
BM	(i)	Draft Financial Statements 2017/18		C	Note
BM	(ii)	Management of Commercially Leased Buildings		C	Decide
JT	(iii)	Fees and Charges – Non Friable Asbestos Clearance Certificates		C	Decide

Presenter	ITEM		OPEN (O)	CLOSED (C)	ACTION Note/Decide
	<b>10</b>	<b>LEASING &amp; LAND ADMINISTRATION</b>			
JS	(i)	Application for Special Lease – R Jeremy	O		Decide
JS	(ii)	Lord Howe Island Land Allocation Review – Implementation Update	O		Note
JS	(iii)	Handley Review – Category B Restitution		C	Decide
JS	(iv)	Handley Review – Review of Compliance with Residency Condition of Perpetual Leases		C	Decide
JS	(v)	Application for Suspension of Residency Condition of Lease – J Lonergan		C	Decide
JS	(vi)	Estate of Late James Lonergan – Update		C	Decide
JS	(vii)	Increase of Annual Rentals for Permissive Occupancies		C	Decide
	<b>11</b>	<b>GOVERNANCE</b>			
BM	(i)	Audit and Risk Committee Report		C	Note
BM	(ii)	Attestation Statement for Financial Year 2017/18	O		Decide
	<b>12</b>	<b>OPERATIONS &amp; SERVICES</b>			
PA	(i)	Rodent Eradication Project – Implementation	O		Note
JT	(ii)	Boat Retrieval System Update	O		Endorse
JT	(iii)	Airport Runway Extension Feasibility Study Update	O		Note
JT	(iv)	Public Fuel Sales – Location	O		Decide
JT	(v)	NSW Environment Protection Authority (EPA) Per- and Poly-fluoroalkyl Substances (PFAS) Strategy	O	C	Note
JT	(vi)	Renewable Energy Program Update	O		Note
PA	(vii)	Memorandum of Understanding – Invasive Species Council	O		Endorse
	<b>13</b>	<b>WH&amp;S and PUBLIC RISK MANAGEMENT</b>			
BM	(i)	WH&S and Public Risk Management Update	O		Note
	<b>14</b>	<b>INTERVIEWS</b>			
	<b>15</b>	<b>GENERAL BUSINESS AND QUESTIONS ON NOTICE</b>	O		

# LORD HOWE ISLAND BOARD

## MINUTES OF THE MEETING OF THE LORD HOWE ISLAND BOARD

### HELD ON LORD HOWE ISLAND ON MONDAY 14 & TUESDAY 15 MAY 2018

Present:     Ms S Stewart (Chair – SS)  
                 Mr C Wilson (Deputy Chair - CW) (part meeting only)  
                 Mw M Retmock (Member – MR)  
                 Mr R Pallin (Member – RP)  
                 Mr G Crombie (Member – GC)  
                 Mr J King (Member - JK)  
                 Ms T Turner (Member - TT)

CW was in attendance until 12:30 pm on Monday 14 May.

Board staff present at all sessions were Penny Holloway (Chief Executive Officer - PH), Bill Monks (Manager Business and Corporate Services – BM), and James Lonergan (Manager Environment & Community Services - JL).

John Teague (Manager Infrastructure & Engineering Services - JT), was present on the first day only (due to illness on the second day).

The Board's external planning consultants were represented by Michelle Chapman (MC) and Peter Chapman (PC) from All About Planning.

The Closed Session commenced at 11:00 am at the Public Hall on Monday 14 May 2018 and closed at 16:10 pm.

The Open Session commenced at 9:00 am at the Public Hall on Tuesday 15 May 2018 and closed at 12:42 pm. Approximately 15 members of the public attended all or part of the open session.

Unless otherwise specified, all Board decisions were unanimous.

SS declared the meeting open and thanked members of the public for their attendance. She welcomed former Board members Barney Nichols and Lisa Makiiti to the meeting and welcomed new Board members.

SS explained that CW had flown to the mainland on Monday 14 May in order to sit on the selection panel for the new Chief Executive Officer later in the week, and there were no seats available on flights between Tuesday and Friday. SS added that she too would be on the selection panel.

SS stated that this would be the final Board meeting to be attended by PH, the current Chief Executive Officer. She added that CW had expressed his sincere thanks to PH in the Closed Session, and had asked Barney Nichols, the former Deputy Chair, to speak on his behalf in the Open Session.

Barney Nichols stated that the past four years, during which PH was the Chief Executive Officer, had been the busiest time of his 12 years on the Board in terms of major projects, such as the Rodent Eradication Program, Renewable Energy Program, reseal of the airport runway, the boat launching and retrieval system, and others. Barney added that PH was well regarded by the island community, and did a marvellous job of managing these programs and projects, as well as her day to day duties. He thanked PH for her efforts, wished PH and her husband, Jean, all the best, and hoped that she would carry happy memories of the island with her.

SS stated that Barney's words echoed the sentiments of the entire Board.

SS called for conflict of interest declarations.

There were no conflict of interest declarations.

SS stated that there were items of Other Business at Agenda Item 15.

SS stated that the Board had made site visits as follows:

- The Corey Davies lease to inform consideration of his Development Application at Agenda Item 7(iv),
- Thornleigh Farm, and
- The Pinetrees Boatshed to meet with Ed Rourke and inspect the coastal erosion in the vicinity.

## **1 MINUTES OF PREVIOUS MEETING**

SS advised the meeting that the minutes of the March 2018 meeting had been circulated and endorsed in accordance with normal practice.

## **2 OUT OF SESSION MATTERS**

PH gave an overview of the paper.

The Board noted the information provided in the Out of Session paper.

## **3 ACTIONS FROM PREVIOUS MEETINGS - STATUS REPORT**

PH stated that some of the action items from previous meetings had been completed, whilst work was in progress on all others.

GC asked, in relation to the review of the Local Environment Plan (LEP), what the current situation was.

PH replied that there are two parts to the LEP review:

1. The first stage with minor amendments, and
2. The overall review of the LEP.

PH stated that, in regard to the review of the Vegetation Rehabilitation Plan, it had not yet commenced, as the Board has no external funding for it. She added that, in relation to the overall review of the LEP, work has been completed on Stage One as previously reported to the Board, but the more comprehensive review, which also has to be completed with internal resources only, will take place over the next 12 months, in concert with the development of the Community Strategic Plan.

The Board noted the information provided in the report.

#### **4 CHIEF EXECUTIVE OFFICER'S REPORT**

PH gave an overview of the Report.

PH stated that:

- the Board had been successful in obtaining funding of about \$1 million from Round 1 of the Stronger Country Communities Fund for upgrades to the Community Hall and the forecourt of the old Powerhouse site, and
- the Board had submitted funding proposals, totalling about \$1 million in value, for Round 2 of the fund. Projects include:
  - Steven's Reserve walking track upgrade,
  - Skate Park,
  - Further improvements to the Golf Club,
  - Upgrade bowling Club amenities,
  - Lagoon foreshore fitness trail, and
  - Improvements to sporting amenities around the oval, including cricket nets.

PH explained that half of the funding for projects proposed for Round 2 funding had to be sports related.

GC stated that the use of road base to repair driveway entrances where rainfall run-off had caused damage needed to be re-considered. It would appear that later rain and consequent run-off washed away the road base, and caused damage to drains further downhill.

PH replied that she would investigate the matter.

The Board noted the information provided in the CEO's Report.

#### **5 MOTOR VEHICLE IMPORTATION OR TRANSFER**

PH gave an overview of the Motor Vehicle Importation and Transfer Status Report.

The Board noted the information provided in the Report.

#### **6 PROPOSED ADJUSTMENTS TO ADOPTED BUDGET**

Closed session

## **7 DEVELOPMENT APPLICATIONS**

### **7 (i) Owner Consent Approved Under Delegated Authority**

PH advised the Board of the four Owner Consent applications approved by the CEO since September 2017.

The Board noted the information provided in the Owner Consent under Delegated Authority paper.

### **7 (ii) Development Applications dealt with under Delegated Authority**

PH advised the Board of the one Development Application determined by the CEO since the last Board meeting.

The Board noted the information provided in the Development Applications dealt with under Delegated Authority paper.

### **7 (iii) DA2018.04 – Transfer Shearwater Cottage Dwelling and Renovate Cyclone Alley (Diane Owens)**

MC gave an overview of the paper.

It was agreed that the following should be added after the second paragraph of Condition 2:

*“All physical building consolidation works are to be completed before the approval of an Owner’s Consent and Development Application for a new dwelling on the site in accordance with the acknowledged dwelling entitlement.*

*Reason: to ensure only three dwellings are able to be achieved on site in accordance with this consent”.*

It was moved JK, seconded RP, that:

1. the Board grant an Owner’s Consent to acknowledge the existence of a Shearwater Cottage dwelling entitlement on Lot 10 and to undertake alterations to the existing Shearwater Cottage and Cyclone Alley to consolidate those two cottages, at 78 Anderson Road, Lord Howe Island further as referenced in the conditions specified, and
2. that DA No. 2018.04 for acknowledgement of the Shearwater Cottage dwelling entitlement on Lot 10 and undertake alterations to Shearwater Cottage and Cyclone Alley to consolidate those two cottages at Lot 10 in DP 1202580, 78 Anderson Road, Lord Howe Island, be approved subject to the conditions specified, and include the agreed additions to Condition 2 detailed above.

The Board then adopted the motion.

### **7 (iv) DA2018.06 Extension of Existing Dwelling (Corey Davies)**

PC gave an overview of the paper.

A member of the public, Lisa Makiiti, expressed the view that caution needed to be taken with the stringency of some of the recommendations.

MR stated that, in his view, the acoustic wall would be ineffective, and therefore should not be included as a condition. He further stated that he could not see any relationship between past noise complaints from neighbours, the proposed addition, and future noise complaints.

GC stated that he did not support the inclusion of a waste water upgrade as a condition, as there were several non-compliant properties on the island, and all the non-compliant properties should be addressed as a separate issue.

PH replied that the Development Application does involve the addition of a bathroom, which could add to the flow of waste. Therefore, it seemed reasonable to require the waste water system upgrade.

GC stated that, like MR, he did not think much could be done in terms of the Development Application to address the noise issue, and it was putting an unnecessary impost on the applicant. He added that, in his view, the noise issue was a police matter.

RP stated that he supported the conditions recommended as, in his opinion, they would have an effect on the sound impacts on the neighbours, and that he supported the recommendations in the paper.

JK stated that:

- the Board needed to consider the peaceful habitation and amenity of surrounding dwellings in making decisions on Development Applications,
- there is very little visual impact, particularly from the Treehouse tourist accommodation property,
- in regard to the noise, there is an incline straight up to the Treehouse, and there is a strong record of issues. He added that he did not know whether the proposed extension would increase the noise situation or not and stated that there were other ways besides building a wall to mitigate noise issues. He concluded by saying that he agreed with the views of MR and GC in saying that the noise matter is not a planning issue, but rather a civil issue.

TT stated that it's not as though the applicant has parties every weekend. She further stated that social gatherings only occurred on odd occasions and, as she understood it, generally during the daytime.

SS stated that she understood the intent of the conditions being recommended, and while she supported the reduction of the size of the deck from seven metres back to the five metres as approved in the Owner Consent, she did not support the additional recommendations.

It was moved GC, seconded RP, that conditional approval be given, subject to:

1. the removal of condition 2b and 2c, and
2. condition 15 being amended to read "Written notice must be given to the Lord Howe Island Board and the lessee of the adjoining portion 295 at least two days prior to the commencement of the building work".

The Board then adopted the motion.

## **7 (v) DA2018.09 Installation of Septic Sludge Rewatering System (Board)**

PC gave an overview of the paper.

A member of the public, Barney Nichols, asked if, when a south or south-westerly wind blows, this system will lessen the impact of the smell from the waste management facility on residents residing on the northern side of the runway.

PC replied that the proposed system is an enclosed mechanical system and, therefore, the odour should be reduced.

A member of the public, Lisa Makiiti, asked where the liquid that is produced goes.

JL replied that it is passed through the existing waste water treatment system.

It was moved GC, seconded MR, that the Board approve DA 2018.09 for decommissioning of the existing sludge drying beds and installation of a replacement Septic Sludge Dewatering System at the Lord Howe Island Board Waste Management Facility, Airport Road, Lord Howe Island at unidentified crown land bordered by Lot 108 and 109 DP 757515 to the east and Cobbys Beach to the west, Lord Howe Island, subject to conditions.

The Board then adopted the motion subject to the conditions specified in the Assessment Report.

## **8 (i) Development of a 10-Year Community Strategic Plan**

SS stated that the Board considered the development of a 10-year Community Strategic Plan to be a really important project. It responds to a community survey that indicated a community desire for greater involvement with, and communications to and from, the Board. She added that budget funding and resources had been allocated to the project.

PH gave an overview of the paper.

JK stated that:

- the community survey showed that the community and the Board need a shared vision,
- high level objectives are needed,
- the Plan will inform the development of strategic and operational plans, and the Board's key performance indicators, and
- there is a need to harness community views to provide clear direction for all stakeholders, such as potential investors.

GC stated that it was important to emphasise that this has to be a plan that the community gives to the Board, not vice versa.

SS stated that:

- the Plan was very important as it would provide a vision for the community and the Board. She added that it is important that the Plan is completed by April next year, as it will inform the development of the Board's financial year 2019/20 budget,



- it must capture everybody's views, including elders and young people,
- it must articulate a shared vision so that dreams and aspirations can be met.

It was moved RP, seconded MR, that the Board approve the process for developing a 10-Year Lord Howe Island Community Strategic Plan, but with an amended completion date of April 2019.

The Board then adopted the motion.

### **8 (ii) Amendment to the Dog Importation and Management Policy**

JL gave an overview of the paper.

TT suggested that, in regard to prohibited places, additional off-leash areas be considered on a seasonal basis, such as winter.

JL replied that such areas, such as Middle Beach, could be considered on a seasonal basis.

TT stated that, in the winter, off leash all the way along the whole of Lagoon Beach, rather than just from the Aquatic Club, would be appreciated.

SS stated that the Board needed to address TTs points before the draft policy is placed on public exhibition. She added that there appeared to be two suggestions:

1. That Middle Beach becomes an off-leash area, and
2. That there may be seasonal variations as to which areas are declared off leash.

JL suggested that a way to progress this matter would be for local Board members to meet with relevant Environment and Community Services Unit staff to consider the suggestions made, and to incorporate the outcomes of those discussions into the draft policy to go on public exhibition.

It was moved TT, seconded GC, that:

1. the Board approve the draft amendments to the Dog Importation and Management Policy subject to the local Board members, after consultation with the relevant Environment and Community Services Unit staff, considering and recommending the location and conditions of permissible areas, and amending the draft policy accordingly, and
2. the draft amended policy be placed on public exhibition for a period of 28 days, with the draft only being reported back to the Board if there are any submissions opposing, or seeking modification of, the proposed changes to the policy.

The Board then adopted the motion.

### **8 (iii) Dog, Avian and Stock Importation Policies – Moratorium**

JL gave an overview of the paper.

TT stated that it would be pointless to import day-old chickens after May 2018, as they would only have been laying for a few months before they have to be destroyed in about April next year. TT asked if it would be possible to import point of lay chickens instead.

TT enquired as to whether a final decision had been made regarding the management of poultry during the Rodent Eradication Program – must they be destroyed or can owners keep them?

PH replied that the management of chickens will be part of the individual property management plan for each property.

JL stated that it may be possible to import point of lay chickens with certain conditions. The conditions would need to be researched and decided.

GC stated that there is probably a good reason why the Board has not allowed the importation of chickens older than one day, so investigation is required as to why it has not been permitted up until the present time.

It was moved MR, seconded TT, that the Board obtain advice on risks associated with a change to current policy regarding the age of chickens that may be imported.

The Board then adopted the motion.

#### **8 (iv) Memorandum of Understanding: Board and LHI Museum**

PH gave an overview of the paper.

JK recommended that an additional objective be added under Clause 2, being:

*“Recognise the role of the Museum as an important tourism asset”.*

It was moved JK, seconded RP, that Memorandum of Understanding between the Board and the LHI Museum be endorsed, subject to the additional objective recommended by JK being added.

The Board then adopted the motion.

### **9 FINANCE AND BUSINESS MANAGEMENT**

Closed session

### **10 LEASING AND LAND ADMINISTRATION**

No papers.

### **11 GOVERNANCE**

Closed session

## **12 OPERATIONS AND SERVICES**

### **12(i) Rodent Eradication Progress Report**

PH gave an overview of the paper.

It was moved RP, seconded TT, that the Board note the Report and endorse the nomination of Board member Matthew Retmock to the Rodent Eradication Project Steering Committee.

The Board then adopted the motion.

### **12(ii) Renewable Energy Project Update**

JT gave an overview of the paper.

The Board noted the information provided in the paper.

### **12(iii) Airport Runway Extension Feasibility Study Update**

SS stated that a representative of the firm undertaking the Study, AECOM, would shortly be making a public presentation She added that:

- it is important to note that the presentation is on the outcomes of the first phase of the Study, pertaining to the assessment of the aircraft that may be suitable and the length of runway required. A further five phases must be completed before the study is finalised,
- the Board is not making a decision about extending the runway or not at this stage, but rather whether further investigation of the runway extension is warranted.

The presentation was given by Jed Mills of AECOM.

PH stated that the matter of the cost of the extension has not been considered at this stage. The Board wishes to ensure that all possible options are considered and, unless the feasibility study is undertaken, the Board will not know whether it is feasible to extend the runway or not, and what it will involve.

JK stated that:

- he supported proceeding to the next stage of the study,
- the Board and the community have a very short time span in which to find a solution to the issue of continued access to and from the island beyond March 2022,
- the continued access be in a form that enables the tourism sector in particular to retain its viability,
- as well as proceeding to the next stage of the feasibility study, it is important to start to involve key stakeholders at both state and federal level, such as Transport for NSW, Infrastructure NSW, NSW Treasury, the Department of Infrastructure, Regional Development and Cities, the Treasury, and the Civil Aviation Safety Authority in order to create a sense of common ownership in managing this matter.
- he supported the formation of a working group with representatives from each of the key stakeholders.

SS stated that she would be happy to chair such a working group, and requested that PH draft terms of reference.

PH stated that she would draft the terms of reference.

SS suggested that the recommendation include further investigation of the 450-meter option, not just the 570-meter option.

JK stated that Qantas and Virgin should be invited to participate in the process.

Jed Mills of AECOM stated that he would be happy to draft letters to Qantas and Virgin for the Board.

SS replied that the Board would appreciate his drafting the letters.

It was moved GC, seconded RP, that the Board note the Report and endorse further investigation of the 450-meter and 570-meter runway extension options to the west.

The Board then adopted the motion.

#### **12(iv) Boat Retrieval System Update**

SS advised the gallery that the Board had met with Angus Mitchell, Director of Maritime, Roads and Maritime Services (RMS), during the closed Session of the meeting. She added that he would have liked to have attended the Open Session as well but had to leave on the Monday as there were no flights for the remainder of the week. She further added that Mr Mitchell indicated his willingness to visit the island again.

PH gave an overview of the paper. She added that:

- RMS has earmarked \$680,000 for works at Lord Howe Island,
- No further funding is available from RMS,
- RMS has advised that the proposed boat launching and retrieval system near the Waste Management Facility was too expensive (about \$2.5 million) in relation to the number of boats that it would service,
- RMS recommended the proposed tractor and trailer solution at Wilsons Landing, in conjunction with an upgrade to the Boat ramp, and
- part of the funding could possibly be applied to strengthening the wharf, thereby facilitating the use of the crane to remove the large vessels. This would need further investigation.

SS stated that the works would need Owner's Consent and Development Application approvals.

JK stated that the \$680,000 earmarked for Lord Howe Island was at the upper end of the spectrum of RMS funding for an individual local government area. Therefore, the possibility of further RMS funding is remote at best. He added that RMS has fully allocated its funding for the next two years, further reducing the possibility of additional funding.

GC stated that the Wilsons Landing area is already being used for boat retrieval, wash-down and repairs. Therefore, the proposed works would only be formalising what is, in fact, current practice.

It was moved GC, seconded MR, that the Board notes the information from RMS, including the limitation of funding, and requested the investigation of Wilsons Landing Boat Ramp as

the only feasible alternative, including an urgent review of work required to meet the needs of the community.

The Board then adopted the motion.

## **12(v) Strategic Asset Management Plan Update**

PH gave an overview of the paper.

It was moved JK, seconded RP, that the Board approve Version 1, Revision 6 of the Strategic Asset Management Plan

The Board then adopted the motion.

## **13 WH&S AND PUBLIC RISK MANAGEMENT**

### **13 (i) Workplace Health and Safety and Public Risk Management Update**

BM gave an overview of the paper.

The Board noted the information provided in the paper.

## **14 INTERVIEWS**

Closed session

## **15 GENERAL BUSINESS & QUESTIONS ON NOTICE**

SS informed the gallery as follows:

- The Board had met with Mr Ed Rourke of Pinetrees to jointly inspect and discuss the coastal erosion problem along the lagoon foreshore. She added that the next step in addressing the erosion problem was to conduct a sediment tracing study, and that funding for the study would be sought from the Office of Environment and Heritage (OEH). She further added that if grant funding could not be obtained then the Board would consider funding the study from its reserves,
- the Board had met with AECOM representatives in the Closed Session to discuss in detail the AECOM report on Phase 1 of the runway extension feasibility study, and
- She and some of the other Board members had visited Thornleigh Farm to get a better understanding of progress on the site.

RP stated that the sediment tracing study needed to be done soon. He added that the organisation doing the sediment tracing study should liaise closely with AECOM because, if the runway extension goes ahead, it will have a major impact on the movement of water and sand within the lagoon.

GC stated that regardless of how the works to stop the coastal erosion are finally funded, the solution will involve the need for many tonnes of rock. He expressed the view that Neds Beach was a highly unlikely option, as the rocks are located in a Marine Park, but the Little Island vicinity, from where the rock for the building of the airport runway came from, is a likely candidate. He added that an investigation needed to be undertaken to determine whether the Board could source rock from the Little Island vicinity.

PH replied that the matter would be investigated.

It was moved JK, seconded GC, that:

1. Funding for the sediment tracing study be sought from OEH,
2. If grant funding from OEH is not forthcoming, then the Board fund the study from its own reserves, and
3. In doing the sediment tracing study, close liaison and information sharing with AECOM be maintained.

SS thanked Ed Rourke for his letter following his meeting with the Board to inspect coastal erosion and discuss future actions.

SS added that the television program "Gardening Australia" was planning to film at Thornleigh Farm and other locations on the island. This would provide valuable publicity.

SS thanked members of the public for attending the meeting.

The public meeting closed at 12:42 pm on Tuesday 15 May 2018.

### **Next Meeting**

The dates for the next Board meeting are 17 and 18 September 2018.

# LORD HOWE ISLAND BOARD

## MINUTES OF THE EXTRAORDINARY MEETING OF THE LORD HOWE ISLAND BOARD

HELD ON WEDNESDAY 25 JULY 2018

Present (by teleconference):

Mr M Retmock (Member – MR)

Mr R Pallin (Member – RP)

Mr G Crombie (Member – GC)

Ms T Turner (Member - TT)

Mr J King (Member - JK)

Apologies: Ms S Stewart (SS)

Mr C Wilson (CW)

Board staff present at part or all sessions were Peter Adams (Chief Executive Officer - PA), Bill Monks (Manager Business and Corporate Services - BM), James Lonergan (Manager Environment & Community Services - JL), and John Teague (Manager Infrastructure & Engineering Services - JT). JL absented himself from the meeting during consideration of Item 3(i).

The Board's external planning consultants were represented by Michelle Chapman (MC) from All About Planning.

The meeting commenced at 3:30 pm and closed at 4:15 pm.

Unless otherwise specified, all Board decisions were unanimous.

It was moved RP, seconded MR, that GC act as Chairperson of the meeting in the absence of both SS and CW.

The Board then adopted the motion.

GC congratulated PA on his appointment to the position of Chief Executive Officer on behalf of the Board.

### **1 (i)    DA2018-10 Additional Staff and Tourist Accommodation - Earls Anchorage**

MC gave an overview of the paper.

GC questioned whether the proposed staff accommodation could be interpreted, under the Local Environment Plan, to meet the definition of a "dwelling", as well as "staff accommodation".

Following discussion it was decided that clarification of the matter was required before a decision on the proposed staff accommodation element of the DA could be made. MC undertook to investigate further and provide the requested clarification.

It was moved RP, seconded MR, that:

1. development of the two new, detached tourist accommodation units be approved subject to the conditions specified,
2. consideration of the development of the three new, detached staff accommodation units be deferred for further assessment, and
3. once the further assessment was complete, the matter of the proposed staff accommodation element of the DA be considered Out of Session.

The Board then adopted the motion.

### **1 (ii) DA2019-02 Replacement of Existing Storage Shed - LHIB**

MC gave an overview of the paper.

JK asked if the Shell logo would be in accordance with the Board's signage policy.

JT replied that there would be no logo visible.

It was moved TT, seconded JK, that the DA be approved subject to the conditions specified.

The Board then adopted the motion.

### **2 (i) Closed Session**

### **3 (i) Closed Session**

### **3 (ii) Application to Transfer Perpetual Lease by way of gift – BM & M Thompson**

JL gave an overview of the paper.

RP recommended that, if approved, the applicants be reminded of the requirement to reside on the lease unless they are given special dispensation.

JL replied that this would be done.

It was moved RP, seconded TT, that the Board seek the Minister's approval to the transfer of Perpetual Lease 1975.08 by way of gift from Barry Malcolm Thompson and Marie Thompson as joint tenants to Barry Malcolm Thompson, Marie Thompson, Janine Marie Phillipps and Peter Andrew Robertson Phillipps.

The Board then adopted the motion.

The meeting closed at 4:15 pm.



<b>Board Meeting:</b> September 2018	<b>Agenda Number:</b> 1	<b>Record:</b> ED18/7730
--------------------------------------	-------------------------	--------------------------

# **LORD HOWE ISLAND BOARD**

## **Business Paper**

### **OPEN SESSION**

#### **ITEM**

Adoption of Minutes of Previous Meeting, Special April 2018 Meeting and Special July 2018 Meeting.

#### **RECOMMENDATION**

Submitted for the Board's information.

#### **BACKGROUND**

The adopted process for distributing Board minutes from the previous meeting is:

- Draft minutes will be produced within five working days of a Board meeting, and posted to Board members on the sixth working day, unless delayed for a valid reason agreed to between the Chief Executive Officer and the Chairperson.
- Board members are to return their endorsement, or otherwise, of minutes on a pro forma document provided by the Administration no later than seven working days after date of posting.
- Seven working days after date of posting, the Board will deem the minutes of the meeting to be endorsed, subject to any amendments which were received prior to that date, and agreed for inclusion by the Chairperson.

#### **CURRENT POSITION**

Minutes of the Special April 2018, May 2018 and Special July 2018 meetings were distributed to each Board member and have been endorsed through the above process with amendments.

A copy of the endorsed Minutes is attached.

#### **RECOMMENDATION**

Submitted for the Board's information.

**Prepared:** Chelsea Holden, Administration Officer

**Endorsed:** Peter Adams, Chief Executive Officer

**Attachments:**

Attachment A: Minutes - Board Meeting - May 2018 – Open

Attachment B: Minutes - Special Board Meeting - 25 July 2018 – Open

Attachment C: Minutes - Special Board Meeting – 23 April 2018 - Closed

<b>OPEN SESSION</b>				
<b>No.</b>	<b>Date</b>	<b>Application</b>	<b>Vote</b>	<b>Comment</b>
<b>May 2018</b>				
	Nil			
<b>June 2018</b>				
	Nil			
<b>July 2018</b>				
	Nil			
<b>August 2018</b>				
1	3/08/2018	DA2018-10 Additional Staff and Tourist Accommodation – Earls Anchorage	See Comment	Deferred. Sufficient information not available to make out of session decision.
<b>September 2018</b>				
	Nil			

<b>Board Meeting:</b> September 2018	<b>Agenda Number:</b> 2	<b>Record:</b> ED18/7734
--------------------------------------	-------------------------	--------------------------

# LORD HOWE ISLAND BOARD

## Business Paper

### OPEN SESSION

#### **ITEM**

Out of Session Matters Status Report

#### **RECOMMENDATION**

Submitted for the Board's information.

#### **BACKGROUND**

Since the last Board Meeting in May 2018, three matters were considered at an out of session meeting.

#### **CURRENT POSITION**

Results of the 'Out of Session' papers since the last Board meeting are shown on the attached tracking sheet.

#### **RECOMMENDATION**

Submitted for the Board's information.

**Prepared:** Chelsea Holden, Administration Officer

**Endorsed:** Peter Adams, Chief Executive Officer

#### **Attachments:**

Attachment A: Results of 'Out of Session' papers since the last Board Meeting - Open

Attachment B: Results of 'Out of Session' papers since the last Board Meeting - Closed

<b>Board Meeting:</b> September 2018	<b>Agenda Item:</b> 3	<b>Record Number:</b> ED18/4262
--------------------------------------	-----------------------	---------------------------------

# **LORD HOWE ISLAND BOARD**

## **Business Paper**

### **OPEN SESSION**

#### **ITEM**

Actions from Previous Meeting – Status Report

#### **RECOMMENDATION**

Submitted for the Board's information.

#### **BACKGROUND**

As a matter of process and procedure, a list of actions is prepared after each Board meeting to ensure that the Board's resolutions are systematically carried out by staff.

#### **CURRENT POSITION**

A list of actions from decisions of the May 2018 Board meeting, and previous meetings, is attached for the Board's information.

#### **RECOMMENDATION**

Submitted for the Board's information.

**Prepared:** Bill Monks, Manager Business and Corporate Services

**Endorsed:** Peter Adams, Chief Executive Officer

**Attachments:**

Attachment A: Action Sheet from May 2018 Board Meeting and Previous Meetings

LORD HOWE ISLAND BOARD

Action Sheet from May 2018 Board Meeting and Previous Meetings

Agenda Item No.	Item	Actions (refer to full minutes for detail)	Estimated Completion Date	By Whom	Progress	Actual Completion Date
10(iv) September 2015	Review of the LEP 2010	<ol style="list-style-type: none"> <li>Review the Vegetation Rehabilitation Plan, and</li> <li>Seek funding from Government programs to support the LEP review process.</li> </ol>	December 2018	MECS	<p>In progress although, given the decrease in available funding for this activity over the past few years, priority for the review could be reassessed.</p> <p>No funding available from DPE to support review of LEP.</p>	
12(vii) November 2016	Commercial Tour Operator Licensing System	Investigate opportunities to align with Ecotourism Australia accreditation program.	August 2018	MECS	Consultation with operators undertaken. Further development work required as result.	
7 (iii) March 2017	OC2017-07 Shearwater Cottage (Owens)	Complete a market demand study on staff and residential accommodation on behalf of the Board.	August 2018	MECS	Will form part of greater LEP Phase 2 review budgeted for 2 <sup>nd</sup> half 17/18 financial year.	
10 (iv) March 2017	Review of Boatshed Foreshore Encroachments	<ol style="list-style-type: none"> <li>Review and adjust rentals where there has been, or will be, an approved increase in the footprint area of fixed improvements.</li> <li>Follow up anomalies identified in the assessment.</li> </ol>	<p>Ongoing</p> <p>August 2018</p>	<p>MECS/MBCS</p> <p>MECS</p>	<p>Ongoing</p> <p>In progress.</p>	
4 (i) May 2018	Chief Executive Officer's Report	Question the use of road base to protect driveway entrances during heavy rain run-off.	June 2018	MIES	Road base used to repair road at entrance to driveway where scour/edge breaks. Driveways owners responsibility so need to work with lease	29 June 2018

Agenda Item No.	Item	Actions (refer to full minutes for detail)	Estimated Completion Date	By Whom	Progress	Actual Completion Date
					holders to ensure their works occur concurrently	
8 (i) May 2018	Development of a 10-Year Community Strategic Plan	Plan to be completed in April 2019 in order to inform the FY 2019/20 budget.	April 2019	CEO	In progress.	
8 (ii) May 2018	Amendment to Dog Policy	Local Board members meet with relevant ECS staff to amend draft policy prior to it going out on public exhibition.	June 2018	Local Board members and ECS staff		
8 (iii) May 2018	Chicken Importation Moratorium	Obtain advice on risks associated with a change to current policy regarding the age of chickens that may be imported.	June 2018	MECS		
12 (iii) May 2018	Airport Runway Extension Feasibility Study Update	Draft the terms of reference for the Runway Extension Feasibility Working Group.	June 2018	CEO		
12 (iv) May 2018	Boat Retrieval System Update	Investigate Wilsons Landing boat ramp as the only feasible alternative, including an urgent review of work required to meet the needs of the community.	August 2018	MIES	See agenda item 12 (ii)	31 August 2018
15 May 2018	General Business	Draft a letter to OEH for signature by the Chair seeking funding for the sediment tracing study.	June 2018	CEO		

**ENVIRONMENT & COMMUNITY SERVICES UNIT**  
**May - September 2018**

### Biodiversity Management

- Conservation Volunteers & Citizen Science programs provided increased education and participation opportunities for visitors and residents.
- Attended workshop in Coffs Harbour to revise grant details for Saving Our Species (SOS) Grant (2017- 2021) Project 2 – Year 2.
- Final report for SOS Grant (2017- 2021) Project 2 – Year 1 submitted: This project reported on weed search and control across 297 ha and site based weed control of 25 ha in threatened plant habitats. Translocation plans were prepared for Sand Spurge *Chamaesyce psammogeton* and Phillip Island Wheat Grass *Elymus multiflorus* (critically nationally endangered plant species with populations of less than 100 individuals on LHI). Both species have successfully germinated in the nursery but have been impacted by rodent predation. Rodent stations have been set up to improve the threatened plants propagation capacity (in nursery and in wild) to help their persistence in the wild on LHI.
- Successful grant bid through National Landcare Program – Regional Landcare Partners consortium with the LHIB, North Coast Local Land Service (NCLLS), Conservation Volunteers Australia, Richmond Regional Landcare and Big Scrub Rainforest Landcare Group. Funding focus is the ‘Protection of the Lord Howe Island Group’s outstanding universal World Heritage values and the Little Mountain Palm’ (LMP Grant), (addressing Nationally Endangered species funding targets). Grant bid estimate of \$300K (weed labour, vegetation monitoring Mount Gower, education aids and technical operations). Project to be administered through the NCLLS and is due for commencement in October 2018. This is a one year project.
- LHI remains free of Myrtle Rust.

### Research & Volunteers

The following persons were approved to stay in/use the Research Station during the reporting period.

<b>Name</b>	<b>No. People</b>	<b>No. Nights</b>	<b>Project</b>
Jenifer Lavers & Peter Puskic	2	2	Plastics - Shearwaters
Frank Koehler & Isobel Hymen	2	7	Australian Museum Snail Research
Geoff Hines	1	1	LHIB Plant Officer/Mechanic
Steve Smith	1	6	Conservation Volunteer Clam Surveys
Kaycee Davis	2	27	Marine Park Coral Research
Terry O'Dwyer	1	9	REP Biodiversity Benefits
Jacob Waide & Aiden Dempsey	2	33	Volunteer Weeders
Keith Springer	1	7	REP Consultant
Rochelle Ferris	2	4	Conservation Volunteer – Turtle Surveys



### **Rodent Eradication**

- See Agenda Item - Rodent Eradication progress report.

### **Quarantine**

- Biosecurity Detection Dog handlers attended DPI Biosecurity Act training in Sydney and undertook biosecurity inspections and assessments of freight, shed and grounds at Port Macquarie wharf. MEWH & Team leader Weeds and Flora attended DPI Biosecurity Act training in Coffs Harbour.
- The Board are working with NSW DPI to ascertain the best biosecurity measures for the island under the NSW Biosecurity Act 2015. A draft Discussion Paper is in preparation for consideration by the NSW Environment Minister.
- Ongoing inspections of incoming freight and passengers.

### **Weed Management**

- Attended Regional Weed Advisory Committee meeting and workshops regarding Weed Risk Assessments – Coffs Harbour.
- The Board is currently running three externally funded weed eradication grant programs (including the NSW Environmental Trust, Saving Our Species, NSW Weeds Action Plan).
- On 29 August, the Board were notified that the Weed Eradication Program was short-listed as a finalist for the 2018 [Green Globe Awards](#). Their independent judging panel assessed the Board's nomination as being one of the leading projects that is making real progress toward sustainability across NSW.
- On 29<sup>th</sup> August the Board was interviewed as a finalist to the Banksia Sustainability Awards for a project titled "Protecting Paradise – Lord Howe Island". The proposal highlighted the islands long history of implementing successful and ongoing sustainability and conservation programs that protect and enhance the World Heritage values aligning with the United Nations Sustainable Development Goal's and helping to protect the 'planet.'
- Submitted nominations to Society for Ecological Restoration Awards for Excellence in ecological restoration practise.

### **Revegetation**

- Maintenance of revegetation sites has been undertaken in accordance with the Revegetation Work Schedule.
- Revegetation on Blackburn Island to extend area of native forest, replacing the exotic Rhodes Grass *Chloris gayana*. This project has multiple benefits for species persisting on Blackburn Island but is also identified as a potential site to undertake trials prior to any reintroduction of LHI Phasmid to the main island.
- The Board has been awarded a grant of \$55,366 under the 2018 NSW Environmental Trust round of the Restoration and Rehabilitation program for the delivery of the project entitled Restoring Blackburn Island in Preparation for the Translocation of the Lord Howe Island Phasmid.
- Revegetation at Calystegia site at the start of Max Nicholls track maintained plantings and spread over 30 bulker bags of thatch on site to reduce growth of annual weeds and improve habitat features for the Critically Endangered Calystegia (funded by the Saving Our Species program).

### **Incident Management**

- One incident where elderly hiker was fatigued and required extraction from Malabar track – conducted by SES.

### **Community Programs & Education**

- Contribute to Signal and Community Information Bulletin.
- On Friday 24th August 2018, Gardening Australia screened a segment showcasing the Board's Weed Eradication Program - <http://www.abc.net.au/gardening/factsheets/weed-team/10152320>
- The Weed Eradication Protecting Paradise facebook page continues to receive interest both on island and further - <https://www.facebook.com/protectingparadiseLHI/>

### **Visitor Infrastructure**

- Walking Track Audit completed in May 2018;
- Replaced interpretation signs where degradation was observed.
- Sallywood Swamp Forest interpretation sign erected at Cobbys Corner.

### **Marine Management / Moorings**

- LHIB monthly mooring inspections were completed for the reporting period;
- Approximately 10 yachts visited the Island and attached to LHIB public moorings during the reporting period.

### **Human Resource Management**

- Sue Bower awarded position of Team Leader Weeds and Flora Projects.
- Justin Sauvage awarded position of Manager Environment/Community Services.

### **Training**

- Biosecurity detection dogs & Tim Solomon were assessed by Steve Austin and passed certification.
- First Aid.
- Chemcert.
- Biosecurity Act Phase 2 training
- Weed Risk Assessment – DPI
- Seabird Rescue.

### **Work Health & Safety**

- Nil time-lost incidents during the period.

### **Environmental Assessment**

- Ecological assessments for all OC / DAs referred completed
- Tree risk assessments completed.

### **Land Administration**

- Respond to applications for suspension of residency, lease transfers, minor land transactions, subleasing and tenure related project work.

### **Development Assessment**

- Continue assessments for Owner Consent, Development Applications and s96 modification applications

**Prepared:** Justin Sauvage, Manager Environment and Community Services

**Endorsed:** Peter Adams, Chief Executive Officer

## INFRASTRUCTURE AND ENGINEERING SERVICES

3 May 2018 to 29 August 2018

### Airport

- The Annual Aerodrome Technical Inspection (ATI) was undertaken from 22 to 25 July 2018 by Mr Daniel Holliday of Aerodrome OLS Surveys. The ensuing report was received by the Board on 10 August 2018. Four (4) Recommendations for Corrective Action were detailed in the report with two (2) relating to vegetation management, one (1) relating to the runway strip transverse slope and one (1) relating to apron markings. Aerodrome management were aware of the non-compliances and had already developed a Plan for Corrective Action. Works had already commenced at the time of the ATI and it is anticipated the majority of the actions required will be completed by January 2019.

Overall, the Inspector was pleased with the state of the aerodrome offering the following statement with the delivery of the ATI report – ‘the aerodrome itself is very well looked after and continues to improve (in regards to previous recommendations) – for that, management and staff should be commended.’

- In July 2018 the Aerodrome Manual and Bird and Animal Hazard Plan were reissued in full with a copy sent to the Civil Aviation Safety Authority on 24 July 2018.
- The LHI Aerodrome Bird and Animal Hazard Committee met on Monday 23 July 2018. The committee primarily discussed the preparation for the upcoming Sooty Tern and Migratory Wader Season. Trialling of additional bird harassment techniques will commence late September/early October and plans are in place for pasture improvement to deter on field foraging.
- In June 2018, seven (7) LHIB staff undertook Aerodrome Reporting Officer and Aerodrome Works Safety Officer training. Three (3) staff undertook the training for the first time and Four (4) undertook refresher training as per the requirements of the Civil Aviation Safety Authority. The training was delivered by Mr Tom Skorzewski of Jasko Airport Services.
- During July 2018, the Aerodrome Frequency Response Unit (AFRU) failed on two (2) occasions due to power outages. Further equipment has been purchased and installed and it is anticipated that there will be no disruption to AFRU operations should another power outage occur.
- In August 2018, the Board renewed the Pavement Concession for the QantasLink Dash 8 aircraft. A Pavement Concession is required for this aircraft to operate at the aerodrome due to their tyre pressure exceeding the published ratings.
- At the time of writing (Friday 31 August 2018) there had been two (2) bird strikes recorded for 2018 at the aerodrome. A C-130 Hercules struck a Pacific Golden Plover during night training operations on Monday 5 February 2018 and a QantasLink DHC8-200 struck a white tern over the lagoon on Sunday 18 February 2018.

From 1 January 2018 to 31 August 2018, there were 1178 aircraft movements, which equates to 1.70 strikes per 1000 movements. For the corresponding period in 2017 there was one (1) strike recorded (Pacific Golden Plover) with 1154 aircraft movements. This equates to 0.87 bird strikes per 1,000 aircraft movements.

- Removal and relocation of demountable buildings and grey water storage tanks complete.
- Temporary terminal area cleaned and serviced.
- Temporary fencing still in position adjacent to the northern side of the terminal building. Permanent fencing is planned for installation by mid-September following the return of Board's carpenter.

### **Building Construction Maintenance and Management**

- Further erosion prevention works at Pinetrees boatshed south and north of the geotextile sandbag wall. Recent works have been damaged by east coast low surges and high tides.
- Repairs to the Doctor's residence decking areas to commence September.
- Repair works completed on LHIB house TC Douglas Drive.
- Works completed at the new post office site including installation of new toilet.

### **Emergency Management**

- The Local Emergency Management Committee (LEMC) met on Thursday 16 August 2018. The LEMC was joined by Anthony Day - SES Mid North Coast Region Controller Northern Zone, Heath Stimson – SES Community First Responder Sponsor and Kam Baker – RFS Mid Coast District Manager.

Anthony Day made a presentation to the LEMC on the proposed 'One Emergency Service Model' for the Island. The model advocates the combining of the Emergency Response Agencies on the Island with a core group of volunteers cross-trained in competencies tailored to the Island situation. The model is supported by NSW Police, NSW RFS, NSW SES, NSW Health and NSW Ambulance.

The LEMC acknowledge that the 'One Emergency Service Model' is an efficient model for delivering emergency response and provides a protective measure for spontaneous volunteers. The State Emergency Management Committee (SEMC) are looking at utilising the 'One Emergency Service Model' for other remote areas/communities around NSW.

- Air Ambulance patient retrievals year to date (Friday 31 August 2018) total seven (7), six (6) of which were residents. Five (5) residents required treatment for illness and one (1) for an injury, with the one (1) visitor required treatment for illness.

Patient retrievals for the same period in 2017 totalled six (6), five (5) of which were residents. Four (4) residents required treatment for illness and one (1) for injury, with the one (1) visitor requiring treatment for illness.

- Continued successful testing of emergency siren 1000 hrs first Wednesday of each month.
- SES North Region Controller Tony Day, NSW Paramedic Heath Stimpson and RFS inspector Kam Baker visited the island 15 August to further consultation and talks regarding the establishment of a 'One Emergency Service' model. The concept was well received by all stakeholders. Further negotiations are currently underway between all agencies including the NSW Police Force.
- A 000 emergency response was initiated on May 26 when an elderly male visitor collapsed at Ned's Beach. The responding personnel, including the island doctor and nurse, attempted to revive the gentleman for 50 minutes, however resuscitation attempts were stopped as no sign of life was present. The deceased was transported off the island via QantasLink. To our knowledge this was the first time QantasLink has allowed a deceased person to be transported off the island on a QantasLink aircraft. Special conditions were imposed and LHIB staff did a great job meeting those transport requirements in a short time frame. A special mention to the Lord Howe Travellers staff who negotiated this first time body transport off island.
- Mid-June SES personnel were activated responding to 2 x male overdue walkers on the MT Gower track. The two visitors, father and son, commenced the hike unaccompanied and became disorientated as darkness approached. The hikers were located and escorted to safety and an irritated wife.
- 22 August SES in company with off duty LHIB staff and community members responded to an elderly male who had collapsed on the Malabar track. The male was located, treated and stretchered down to Oceanview Apartments. It appeared that the male may have suffered a minor stroke whilst hiking with his wife.
- The SES survival igloo which houses first aid and survival equipment at the top of Mt Gower was vandalised sometime over the past few months. The igloo was found to have been left open resulting in extensive mould over the entire contents of supplies. Emergency food etc. had been consumed and empty tins left. The SES will repair and resupply the igloo and plan to locate a second emergency point around the saddle area or half way up. This will consist of a water tight storage case containing the same supplies as the igloo. In addition the second station will contain a small survival tent to shelter those in need. Both emergency points will be padlocked with a combination style lock, the code will be supplied to all stakeholders.

## Water

- In May 2018, the Board facilitated a visit by Senior Environmental Health Officer, Mr Michael Cassidy of NSW Health. The purpose of the visit was to meet with Private Water Suppliers (PWS) on the Island and outline their legal obligations under the NSW Public Health Act 2010 and the NSW Public Health Regulation 2012 including the development and lodgement of a Quality Assurance Programme for drinking water supplies. Drinking

water refers to any water that is intended for human consumption, or purposes associated with human consumption including contact with food.

Mr Cassidy also undertook an audit on the Board's Public water supplies during his visit.

- On 12 August 2018, the Board supplied the Island Trader with approximately 10,000lt of water due to failure of their on-board desalinator.

### **General items**

- LHIB staff continue to monitor the Board's drinking water quality for NSW Health compliance.
- LHIB staff continue to monitor mosquito larvae as per the Lord Howe Island Mosquito Surveillance and Vector Monitoring Program. This program is part of a National scheme run by the Federal Government.
- LHIB staff continue to monitor wastewater discharge at the WMF with reporting for EPA licence compliance.
- LHIB staff continue to assist residents and businesses with their onsite wastewater management system installations and/or upgrades.
- LHIB staff continue to conduct building inspections and provide certification for Construction Certificates as part of the Development Application process.
- August 24 saw the final day of duty for temporary relief Works Unit Field Supervisor Martin Barrett. Tia Makiiti will be relieving in as works supervisor until the beginning of December when the position will be filled with the return of Geoff Thompson or advertised and recruited.
- Staff training was conducted by "All On Site Training Australia" (AOTA) commencing May 16. LHIB staff were trained and certified in the operation of forklift, excavator, bobcat and advanced crane operation. The training was conducted over a two week period.

### **Maritime Facilities and Coastal Activities**

- LHIB punt 'Silver Eye' continues to be utilised by LHIB Environment Unit, Marine Parks and runway extension feasibility contractors. The vessel has proven to be an excellent asset.
- The jetty stairs and boat ramp were high temperate (140°) /pressure cleaned in mid-July.
- The swimming pontoon has been cleaned, serviced and refitted with 316 stainless steel tackle. The pontoon was positioned back on her mooring 16 August 2018.

- Jetty construction contractor John Farrell, Australian Barge Hire, visited the island on 3 May 2018 to conduct a self-funded site visit with regard to jetty construction and repairs. He is expected to commence works on jetty repairs, including the replacement of the jetty access stair piles before the end of September. A scope of works for jetty repairs, maintenance and further additions is expected in early September.
- One fender on the southern side of the jetty was repositioned and remounted after being spun around during the docking of the Island Trader during heavy surge activity. Nil damage to the jetty or fender.

### **Roads, Parks and Visitor Facilities**

- Extensive pothole repairs are constantly being carried out weekly.
- Road base has been used to complete edge repairs at several driveway entrances where rainwater/traffic has eroded/damaged entrances including Greenback.
- Under the Pines carpark has had an ag-drain installed in the north western corner of the carpark where rainwater pooling has been evident. Further material was applied to raise the level and direct rainwater to the ag-drain.
- 15 dangerous trees were identified and removed from locations on the island within the road reserve and commercial properties. The trees were removed without incident with assistance of local arborist utilising the LHIB crane.
- Spraying for broadleaf weeds such as bindi and clover commenced in mid-August but was reduced as alternative methods were explored after concerns were raised regarding bees. Areas of clover on the oval are flowering attracting large numbers of bees resulting numerous bee stings to school children. LHIB works staff whipper snipped the flowering patches in order to reduce incidents whilst awaiting ideal weather conditions to continue the spraying program. Areas along the annual school cross country run were also subject to bee reduction strategies to minimise bees stings during the barefooted race. The LHIB are actively researching alternatives to pesticide and herbicide use but must weigh up the welfare of bees against current resources/practicalities.
- Levelling works were completed around the Ned's Beach shed after sand build was constantly allowing water runoff into the shed. Approximately 300 mm of sand and grass were removed and the area levelled off. Grass runners were replanted and the area watered. To date the grass coverage is progressing well and should be substantial by the commencement of the high season.

### **Waste Management Facility**

- General maintenance and service on all equipment has been undertaken.
- Installation of sludge management system complete.
- Trommel system has been installed but requires further development, so will be looked at by supplier Global Composting in September.

- Further concrete pouring operations were conducted on the compost storage area at the rear of the WMF facility.
- Glass crusher conveyor belt replaced July.
- Gary Sant relieving as supervisor during John Tofaeono's annual leave in August.
- An enormous amount of builders' waste continues to be received and processed as a result of on-going major construction projects around the island.

## **ELECTRICAL SERVICES**

Operation of the Powerhouse and Reticulation System for the reporting period 3rd May 2018 to 29th August 2018

### **Overview of Activities**

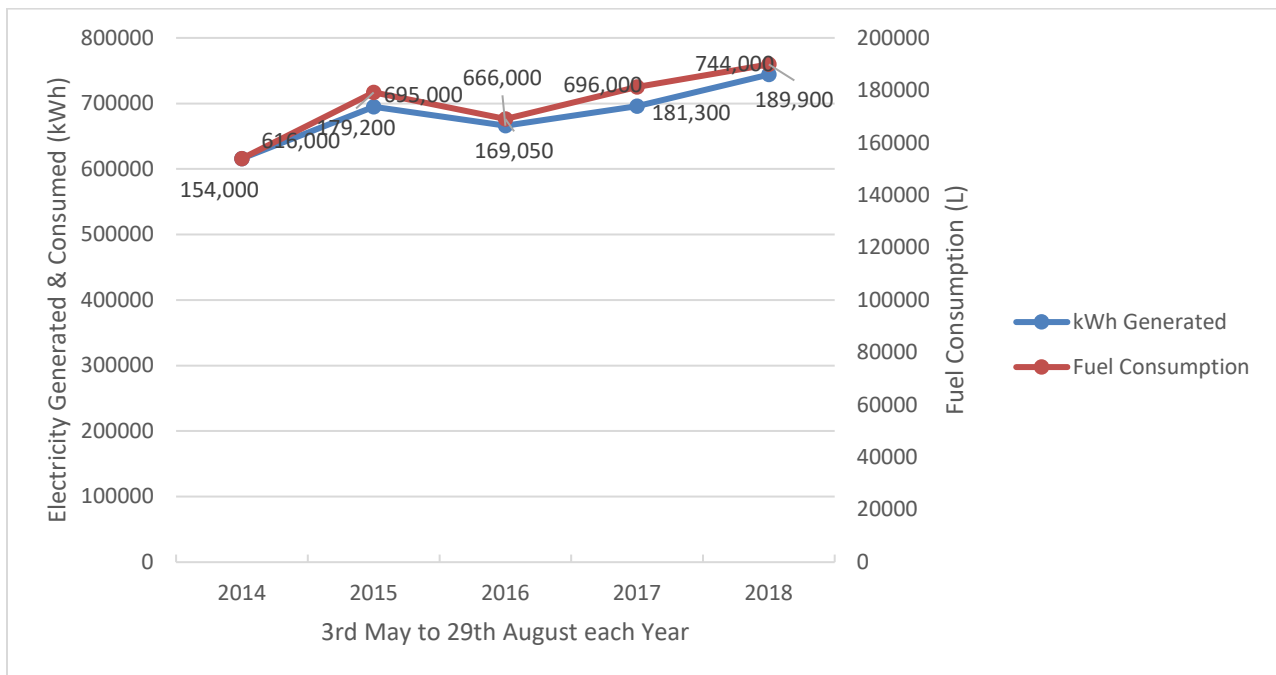
- Routine maintenance on Generator No. 1, 2 and 3 was completed.
- Routine maintenance on Generator No. 1, 2 and 3 battery banks was completed.
- Routine maintenance on Generator No. 1 and 2 Air Circuit Breaker was completed.
- Routine maintenance on Powerhouse Ventilation fans No.1 and 2 was completed.
- LHIB 6 monthly field safety checklist inspections were completed.
- Routine maintenance on Generator No. 1, 2 and 3 battery chargers was completed.
- Routine maintenance on Substation No. 5-Lagoon Road, No. 6-Middle Beach Road, No. 7 Mulley Drive and No. 8-Airport distribution pillars was completed.
- Routine maintenance on Substations No. 4-LHIB Workshop, No. 7-Mulley Drive, No. 9 Oceanview and No. 12-Powerhouse South was completed.
- Supply load surveys were carried out on Substations No.4-LHIB Workshop, No.7-Mulley Drive and No.9-Oceanview and along with their associated distribution pillars. Distribution pillars were monitored for their voltage levels. Substations were monitored for maximum demand and voltage levels. All maximum demand and voltage levels in the surveyed areas were within acceptable limits.

### **Information for Board Members**

- Energy demand for the reporting period was 744 000 kWh.
- Fuel consumption for the reporting period was 189,900 litres.



- Fuel energy efficiency for the reporting period was 3.92 kWh/l.
- Presently there are 109 kW of privately owned solar panels connected to the electrical distribution system.
- Maximum demand for the period was 470 kW on the 9<sup>th</sup> May.
- There was one powerhouse supply interruption during the reporting period. On 22<sup>nd</sup> July generator no.2 shutdown as a result of an under frequency fault. All remaining generators were restarted and full supply restored to all customers within 25 minutes. Investigations showed that generator no.2 fuel pump gear drive had sheared resulting in a loss of fuel to the engine. The fuel pump gear drive is not a serviceable part and failure is not normally expected. As a result of the fuel pump gear drive shearing significant metal debris had circulated throughout the engine resulting in it no longer being serviceable. As a result the engine was removed from service and replaced with the spare powerhouse engine. The failed generator will need a major rebuild before it can be returned to service. At the time of engine failure generator 2 had completed 21,461 operational hours and had been in service since August 2014. It is normal practice to remove the powerhouse engines for rebuild between 21,000 and 24,000 hours.
- There were three distribution system supply interruptions during the reporting period. All interruptions were the direct result of localised customer overloading.
- There were two new customers connected during the reporting period. There are currently 290 customers connected to the electrical supply system.



**Prepared:** John Teague, Manager Infrastructure and Engineering Services

**Endorsed:** Peter Adams, Chief Executive Officer

**Board Meeting:** September 2018

**Agenda Number:** 4

**Record Number:** ED18/8254

# LORD HOWE ISLAND BOARD

## Business Paper

### OPEN SESSION

#### Chief Executive Officer's Report to September 2018 Meeting of the Board

The following briefing provides an overview of key issues managed by the Board during the reporting period, and their status. It is intended that this document be available to the public as part of the minutes of the meeting. Matters which are subject to confidentiality, business in confidence or legal action are shaded and are not included in the public copy of the report.

Number of items excluded from this public edition:

Business & Corporate Service Report

Reason: Business in Confidence

MATTER	STATUS	ACTION REQUIRED BY BOARD AT THIS MEETING
Community Strategic Plan	An implementation plan has been prepared for the Board on the steps to be taken to produce a community-driven community strategic plan for the Island. Resources (personnel) were recently appointed.	See agenda item 8 (i)
Runway Feasibility Study	Consultants AECOM have completed stage one of the Feasibility Study with a report on future aircraft requirements for the island, plane characteristics, existing runway/site limitations and CASA requirements. The next stage of the feasibility analysis (conceptual design) is completed.	See agenda item 12 (iii)
Rodent Eradication Program	Work continues in preparation for the implementation of the rodent eradication project. The new permit from the APVMA has been received.	See agenda item 12 (i)
Renewable Energy Project	The Australian Renewable Energy Agency has approved the new funding agreement for the revised project.	See agenda item 12 (ii)
Boat retrieval system (slipway)	Further work has been undertaken on the Slipway project; however, there is insufficient funding to enable the preferred solution to be implemented. Project work on the RMS proposal is underway by RMS..	See agenda item 12 (iv)
Grant funding	The Board was successful in receiving Environmental Trust funding for preparation of Blackburn Island for phasmid reintroduction.	For noting

**Prepared:** Peter Adams, Chief Executive Officer

#### Attachments:

Attachment A: Chief Executive Officer Report – BCS Unit - **Closed**

Attachment B: Chief Executive Officer Report – ECS Unit - Open

Attachment C: Chief Executive Officer Report – IES Unit - Open

**Board Meeting:** September 2018

**Agenda Number:** 5

**Record:** ED18/7972

# LORD HOWE ISLAND BOARD

## Business Paper

### OPEN SESSION

#### **ITEM**

Motor vehicle importation or transfer status report.

#### **RECOMMENDATION**

The report is submitted to the Board for information.

#### **BACKGROUND**

Since the last Board meeting 18 applications to import or transfer vehicles were determined by the Chief Executive Officer under the 'Vehicle Importation, Transfer and Use Policy':

#### **CURRENT POSITION**

There will be an increase of 6 vehicles (of which 2 are trailers and 3 are plant) to the island since the last Board meeting.

Applicant	Vehicle Type	Preferred Vehicle	Use	Variation	Comment
Gower Wilson Memorial Hospital	Bus	No	Essential	0	Approved 04/05/2018 Replacement
Damien and Audrey Ball	Mitsubishi Triton	No	Commercial	0	Approved 10/05/2018 Replacement
Sean O'Hehir	Boat Trailer	No	Private	1	Approved 17/05/2018
Hank Bower	Boat Trailer	No	Private	1	Approved 22/05/2018
Peter Heck (PW Heck Plumbing)	Great Wall Utility	No	Commercial	0	Approved 22/05/2018 Replacement
Peter Phillipps (Chase N Thyme)	Bus	No	Commercial	0	Approved 04/06/2018 Replacement
Wayne and Kim Foss (Howe About Hair and Howe About Some Help)	Great Wall Utility	No	Commercial	0	Approved 05/06/2018 Replacement
Sean O'Hehir (Bluefish)	Bus	No	Commercial	0	Approved 07/06/2018 Replacement

Applicant	Vehicle Type	Preferred Vehicle	Use	Variation	Comment
Daphne Heck	Sangyong MU5596A	No	Private	0	Approved 28/06/2018 Replacement
Michael Maxwell (Pandanus)	Hino	No	Commercial/ Temporary	0	Approved 28/06/2018 Extension of temporary approval, not approval for additional vehicle
Matthew Retmock	Daihatsu Terios	No	Commercial	0	Approved 06/07/2018 Replacement
NSW Police	Toyota Hilux	No	Essential	0	Approved 11/07/2018 Replacement
Tim Cruikshank (Dynamic Physiotherapy)	Tarago	No	Commercial	1	Approved 15/08/2018
Gower Wilson (LHI Fuels)	New Holland Backhoe	No	Commercial	0	Approved 15/08/2018 Replacement
Deon Nobbs (Nobbs Servicing)	Kubota U-45 excavator.	No	Commercial	1	Approved 15/08/2018
Gary Payten (Beachcomber Lodge)	Mitsubishi Triton	No	Commercial	0	Approved 16/08/2018 Replacement
Lord Howe Island Board	Hino Mini concrete agitator	No	Essential	1	Approved 16/08/2018
Jesse McCallion (Belle Frederick Projects)	Isuzu NLR275	No	Commercial/ Temporary	1	Approved 17/08/2018 Temporary

### As at September 2018

Registered Road Vehicles						
Essential	Commercial	Private	Hire	Plant & Equipment	Imported Without Approval	Total
29	92	154	8	27	69	379

At the May 2010 meeting it was requested that further differentiation in the vehicle statistics to identify motor vehicles and motor cycles / scooters and trucks separately be presented. This information is presented below.

Registered Road Vehicles						
Car/Utility	Bus	Motorcycle / Scooter	Truck	Plant & Equipment	Trailers	Total
185	21	49	9	31	84	379

At the June 2016 meeting it was requested that future reports include trends in regards to vehicles imported without approval and clarification that these are vehicles which pre-date the Board approval and monitoring process. There has been a total of 72 vehicles imported without approval:

- 65 vehicles were imported without approval prior to 2014. The majority of these vehicles were trailers.

- One vehicle, a boat trailer, was imported without approval in 2015.
- Three vehicles, all boat trailers, were imported without approval in 2016.

The following table shows further differentiation in the vehicle statistics to identify the types of vehicles that have been imported without written approval.

<b>Vehicles Imported Without Approval – By Type</b>						
Car/Utility	Bus	Motorcycle / Scooter	Truck	Plant & Equipment	Trailers	Total
6	1	12	1	3	46	69

**RECOMMENDATION**

The report is submitted to the Board for information.

**Prepared:** Chelsea Holden, Administration Officer

**Endorsed:** Peter Adams, Chief Executive Officer

**Board Meeting:** September 2018

**Agenda Number:** 7 (i)

**Record Number:** ED18/7736

# LORD HOWE ISLAND BOARD

## Business Paper

### OPEN SESSION

#### **ITEM**

List of Owner's Consents dealt with under Delegated Authority.

#### **RECOMMENDATION**

The report is submitted to the Board for information.

#### **BACKGROUND**

The Minister for the Environment has approved delegated authority regarding the issuing of owners consents by the CEO providing:

1. The development value is not more than \$2 million,
2. Does not relate to development for the purpose of a new dwelling, and
3. Complies with any planning instrument in force relating to the Island.

#### **CURRENT POSITION**

The following Owner's Consent applications complied with the above requirements and have been processed by the CEO since the last Board meeting.

OC	Applicant	Site	Proposal	Zone	Decision
OC2018.08	Gary Payten	Res 12	Construction of rural shed.	Zone 2 Settlement	Approved subject to conditions 13/07/2018
OC2018.09	James and Kara Lonergan	Lot 13	Additions to existing dwelling.	Zone 2 Settlement	Approved subject to conditions 20/06/2018
OC2018.11	Therese Turner	Lot 8	Reinstatement of previous approved building as residence.	Zone 2 Settlement	Approved subject to conditions 6/07/2018

#### **RECOMMENDATION**

The report is submitted to the Board for information.

**Prepared:** Chelsea Holden, Administration Officer

**Endorsed:** Peter Adams, Chief Executive Officer

**Board Meeting:** September 2018

**Agenda Number:** 7 (ii)

**Record Number:** ED18/7936

# LORD HOWE ISLAND BOARD

## Business Paper

### OPEN SESSION

#### ITEM

List of Development Applications dealt with under Delegated Authority.

#### RECOMMENDATION

The report is submitted to the Board for information.

#### BACKGROUND

The Minister for the Environment, under section 80(1) of the Environmental Planning & Assessment Act, issued authority to the CEO to determine development applications providing:

1. The development value is not more than \$150,000
2. No more than 3 written objections are received within the exhibition period; and
3. The application has not been called up for full Board determination by any Board Member. (All Lord Howe Island Board development applications are to be determined by the full Board)

#### CURRENT POSITION

The following development applications complied with the above requirements and have been determined by the CEO since the last Board meeting, as detailed below:

DA	Applicant	Site	Proposal	Zone	Decision
DA2018.11	Siew Soong Sia and Janet Taka	Lot 361	Construction of a detached (single bedroom) staff accommodation and associated works	Zone 2 Settlement	Approved subject to conditions 02/08/2018
MC2018.03	Lord Howe Island Golf Club	Portion 120	Internal renovations, construct veranda and installation of bi-fold system on existing veranda	Zone 6 Recreation	Approved subject to conditions 13/07/2018
DA2018.12	Therese Turner	Lot 8	Reinstate dwelling as residence and removal of part of wall and installation of door	Zone 2 Settlement	Approved subject to conditions 06/07/2018

## **RECOMMENDATION**

The report is submitted to the Board for information.

**Prepared:** Chelsea Holden, Administration Officer

**Endorsed:** Peter Adams, Chief Executive Officer



## James Lonergan

---

**From:** Michelle Chapman <michelle@allaboutplanning.com.au>  
**Sent:** Thursday, 26 July 2018 16:20  
**To:** James Lonergan; Peter Adams  
**Cc:** Peter Chapman  
**Subject:** Earls Anchorage DA 2018-10

Dear James and Peter

After our teleconference with the LHIB members I enquired with Belinda Pankhurst into approvals in respect of both Hiscox's recent OC/DA and the DA for Maxwell.

### **Summary:**

In summary I believe AAP differs in our LEP interpretation from that of RPS in respect of the issue whether staff accommodation that includes a kitchen can also legally be used as a dwelling. Our view is that staff accommodation is a separately defined use in the LEP, even if the proposed staff accommodation is also capable of being occupied as a separate domicile.

As such, AAP considers it is open to the LHIB to consent to the proposed staff accommodation and that such a development consent will not be a defacto development consent additionally for a permanent dwelling, and will not trigger Clause 26, even if that development consent for staff accommodation includes a kitchen.

The LHI LEP contains separate land use definitions for both uses. Provided the subject development application and consent is clear as to the proposed and approved use (as in this case) there is no doubt that the subject DA can be supported as staff accommodation without triggering the Clause 26 limit on the maximum number of dwellings provision of the LEP.

At a minimum, a separate development consent would be required from the LHIB in order to legally use any approved staff accommodation as a permanent dwelling; with the possible exception of staff accommodation if it the subject building was constructed prior to 28<sup>th</sup> October 2005, (which is not the case in the subject DA 2018-10), and additionally, the potential to read Clause 25 as a prohibition against the granting of consent to the new use of a building that was erected on or after 28<sup>th</sup> October 2005 for a dwelling.

Whilst a dwelling may also be used as staff accommodation, staff accommodation may not conversely be used as a dwelling without first obtaining development consent for this use from the LHIB, if indeed such a DA could be demonstrated to be permitted given Clause 25 of the LEP.

### **Precedent Analysis:**

**HISCOX** - Belinda has advised that Hiscox's OC 2016-06 was approved on the basis that the occupants would be transient staff and not permanent residents and that the kitchen was not to contain a stove or oven, this being to ensure that the staff accommodation unit was not considered to be a dwelling. This was an RPS assessment.

The Hiscox's DA was then modified post OC at DA stage to only include commercial office space. No staff accommodation ended up being approved. The approved DA was to use the approved staff accommodation area as a garage for boat storage and an ancillary office. So while the OC was issued for staff accommodation - the approved DA specifically included a proposal to delete the staff accommodation component and use it instead for office space for their business.

**MAXWELL** - Maxwell's have apparently had two recent DAs – one for their Pandanus Tourist Accommodation and one for the LHI Nursery – both relevantly included the following details:

- Pandanus – approved OC and DA 2017-08 – approved uses are especially referenced in condition 3 – which states the permanent second dwelling that was in existence prior to 2005, and is approved to be entirely rebuilt – that this building can also be used for staff accommodation in accordance with the earlier consent of the LHIB. I am advised that there is a clear kitchen identified on the approved DA plans.
- LHI Nursery DA 2017-01, off Middle Beach Road. Condition 23 of this DA consent provides that the proposed staff accommodation can only be occupied by staff members who are employed on a full-time basis on the site. Additionally, the staff accommodation is not to be occupied as a separate domicile nor to be modified internally to provide facilities that would allow it to be occupied as a separate domicile. The OC for the staff accommodation was issued on the proviso that it could not be granted until an OC for the commercial kitchen on site has been granted.

This was an RPS assessment.

**Legal Advice Analysis:**

Additionally, in preparing this response AAP has considered confidential legal advice prepared by Lindsay Taylor for the LHIB dated 11<sup>th</sup> March 2016, in respect of Staff Accommodation and Dwellings, under the LHI LEP 2010. The following critical points are noted in this legal opinion:

- A. The relevant background to the legal advice is identified as being the Clause 26 restriction on the granting of consent to the erection of dwellings including new uses for pre - 28<sup>th</sup> October 2005 dwellings.
- B. The legal advice is responding specifically to an email from the LHIB dated 7<sup>th</sup> March 2016 – which effectively forms the brief. This brief included a requirement for review of an earlier draft advice prepared by the Office of Local Government dated 28<sup>th</sup> January 2016.
- C. The Draft Advice identified that the Board's underlying concern is to ensure that the classification of a building as staff accommodation is not used as a mechanism to circumvent the restriction in Clause 26 of the LEP on the number of dwellings for which consent can be given.
- D. For the reasons we have already indicated, Clause 20(2) of the LEP in particular, the restriction on the erection of dwellings under Clause 26 arguably already applies to the erection of staff accommodation if the building also configures as a dwelling within the meaning of the 2<sup>nd</sup> limb.
- E. The legal advice found that "The Board can impose a condition on consents for staff accommodation requiring that it only be used by persons directly employed in connection with the specified tourist accommodation or commercial operation. It is not clear whether this would discourage inappropriate applications."
- F. Points 26-29 of the legal advice appear to confirm that the interpretation of Clause 26 is open and the purpose is not easily discerned and is a question that would benefit from judicial clarification'
- G. A building without a kitchen cannot satisfy the definition of a dwelling.

- H. We do not think however that merely removing an oven or stove from a kitchenette will necessarily prevent a building from being considered to be a dwelling, especially if it is possible to install portable equipment in place of the missing items, such as a microwave oven.
- I. Clause 20 of the LEP contains an important guide to interpretation. It indicates that the draftsman of the LEP specifically envisaged that development could be a 'dwelling' and 'staff accommodation' at the same time. That is, the LEP acknowledges that 'accommodation' for staff can be their domicile.
- J. Assuming a building has the necessary physical characteristics of a dwelling as referred to in the second limb of the definition and it is otherwise occupied habitually by staff during their employment in the same way as a family group or other household group, would do in the ordinary way of life, it would be being used as a dwelling.

**AAP's Opinion:**

On review of the above prior OC and DA assessments and the above legal advice, AAP stands by our professional view which is that, in respect of the staff accommodation units proposed for Earls Anchorage:

1. Staff accommodation is separately defined in the LHI LEP 2010 from that of a dwelling and can therefore be consented to without the application triggering the No. of dwellings limit under Clause 26 of the LEP. The relevant LEP definitions are extracted below:
  - a. **Staff Accommodation** – means a building or buildings providing for the accommodation of persons directly employed in connection with tourist accommodation or a commercial operation, but does not include a building or place providing for the accommodation of persons directly employed in connection with accommodation for seniors or people with a disability.
  - b. **Dwelling** – means a room or suite of rooms occupied, or used (or so constructed or adapted as to be capable of being occupied or used), as a separate domicile, but does not include:
    - i. Accommodation for seniors or people with a disability
    - ii. Tourist Accommodation
2. Division 1, Clause 20 (2) and (3) of the LHI LEP 2010 specifically apply to the separately defined LEP terms of dwelling and staff accommodation. AAP considers that the effect of these sub-clauses is that if a dwelling is approved by the LHIB (the consent authority), then staff can also reside within that dwelling (ie. it can also be considered to be staff accommodation) (ref Subclause 20(2)). However, if staff accommodation is approved, then that staff accommodation is not considered to be a dwelling for the purposes of the LEP. Therefore, at a minimum a new DA consent would be required to effect a legal change of use from staff accommodation to a permanent dwelling (ref Subclause 20(3)) – It may actually be that Clause 25 effectively would prohibit such a consent from being granted.
3. There is an argument to be made that Clause 25 of the LHI LEP 2010 actually prohibits the new use of any building that is erected on or after 28<sup>th</sup> October 2005, for purposes of a dwelling. ie. even if a DA was lodged seeking a change of use from staff accommodation at Earls Anchorage at a later date post construction, to a dwelling, that application could not be consented to because of Clause 25. Interestingly, in the case of Therese Turner's recent tourist accommodation conversion back to a single dwelling, the only reason why this application could be supported by the LHIB in accord with Clause 25, is because that building was erected prior to 28<sup>th</sup> October 2005.

4. If staff accommodation is proposed that includes a kitchen facility, the inclusion of the kitchen does not legally result in the LHIB also inadvertently approving a permanent dwelling. Whilst it is open to the LHIB to consent to the proposed staff accommodation - such a development consent will not be a defacto development consent additionally for a permanent dwelling, and will not trigger Clause 26, even if that development consent for staff accommodation includes a kitchen and/or a laundry.
5. Clause 20 (3) of the LHI LEP 2010 confirms that whilst a dwelling may also be considered to be staff accommodation that is a dwelling, staff accommodation may not be considered to be staff accommodation that is a dwelling.
6. It is relevant to consider the underlying purpose of the relevant LEP definitions, when seeking to understand the LEP's meaning. It is AAP's view that the purpose of the maximum 25 Dwelling's restriction in the LEP at Clause 26 is to control the number of legal dwellings approved on LHI up until the year 2025, not to include approved staff accommodation that is in the form of a separate domicile within that calculation.
7. The purpose of the definition of dwelling in the LEP is not to preclude all staff accommodation from including kitchen and/or laundry facilities.
8. On a practical basis, AAP considers it would be unreasonable if staff who are residing within LHIB approved staff accommodation are effectively forced to eat out or only use a microwave, BBQ or camp gear in order to prepare a meal at their place of accommodation for themselves. Such an interpretation of the LEP would result in poor residential and working conditions for island staff, especially if those staff are not working for the larger accommodation lodges that have commercial kitchen facilities. Staff who are residing on Lord Howe Island do not have access to the same range of produce/grocery items as on the mainland and in addition, on island take away and other food options can be expensive. It is even more sub-standard if the tourist accommodation or commercial premises requiring the staff accommodation does not provide all meals on site for their staff.
9. It is additionally noted in respect of the subject staff accommodation proposed for Earls Anchorage that the proposed staff accommodation has not specified inclusion of a laundry facility, which AAP also considers is an important element of a separate domicile and a permanent dwelling.
10. To clarify the legal position in respect of dwellings and staff accommodation under the LEP 2010, a condition could be added to the proposed DA conditions which reads:
  - a. **"For purposes of clarity, the approved staff accommodation at Earls Anchorage is not consented to for purposes of a permanent dwelling. The accommodation is to be occupied only by persons directly employed in connection with the tourist accommodation or a commercial operation."**

**If the LHIB disagrees with AAP's understanding of the LEP or remains concerned with the matter of a potential precedence or inconsistency, it is open to Board members to:**

- I. Require deletion of the kitchenettes proposed in each staff unit and allow only the installation of the one communal kitchen space that is already proposed on the subject plans, to be shared by the occupants of each of the three staff accommodation units. ie. this would be a kind of share house arrangement. OR
- II. Seek an alternative interpretation of the LEP – ie. go back to Lindsay Taylor or another legal adviser and ask them to provide an additional specific legal advice to confirm if in the circumstances of this

subject DA, and an approval for staff accommodation that includes kitchen facilities is also an approval for a permanent dwelling, even if a permanent dwelling does not form part of the proposed development application documentation and is not a proposed use of the site and is a new building, not a building that was erected prior to 28<sup>th</sup> October 2005 and is now being converted for a new use. AND/OR

- III. Determine that the proposed staff accommodation should be supported but on the basis that the proposed staff accommodation is additionally considered to be a dwelling, pursuant to Clause 26 and the definition of a dwelling under the LHI LEP 2010.

In this case, the LHIB would approve the proposed staff accommodation on the basis that the DA approval will additionally acknowledge that the development consent is to be counted as one of the total 25 dwellings permitted to be approved on the island up to 28<sup>th</sup> October 2025. The LHIB can acknowledge that under this option, the number of approved permanent dwellings in accordance with Clause 26 of the LEP would be increased by 1, but which in the LHIB's calculation, still leaves capacity for ample additional dwellings to be consented to by the LHIB up to the relevant date.

Whilst AAP is yet to review the specific details of the two applications outlined above, as Belinda has advised she will forward these to me some time today, I believe the above to be an accurate summation of the key imposed requirements on the previous RPS applications referenced by attending Board Members yesterday afternoon and also which sets out more fully the reasons for AAP's differing assessment position.

I hope that the above detail is of assistance and of course we are very happy to further discuss as may be required.

Kind regards

Michelle

-----  
Michelle Chapman  
Registered Planner - RPIA (Fellow)  
Master of Town Planning, MPlA  
B. Urban & Regional Planning (Hons)  
Director

ALL ABOUT PLANNING

Ph: 02 6583 1305

E-mail: [michelle@allaboutplanning.com.au](mailto:michelle@allaboutplanning.com.au)

Mobile: 0419 632 293

PO Box 2196  
PORT MACQUARIE NSW 2444

Disclaimer: This message contains privileged and confidential information intended for the use of the addressee named above. If you are not the intended recipient of this message you are hereby notified that you must not disseminate, copy or take any action or place any reliance on it. If you have received this message in error please delete it.

-----Safe Stamp-----

Your Anti-virus Service scanned this email. It is safe from known viruses.

For more information regarding this service, please contact your service provider.

**Audit of Staff Accommodation – John Green – Friday 24 August 2018**

Photos of Existing Development and Uses



1. John's private residence – 1958.04, Portion 70. DA1996.07 – Horrie & Ivy Green – erect cottage for Aged Carer. Lease transferred to John 2002 on death of father. Residency waived for John's original residential lease 1954.45 (Portion 91).



2. Garage/workshop, also used for storage – attached to formally Aged Carer's Cottage now John's private residence. DA1993.03 – John Green – Erect Double Garage/Workshop



3. Original Residence 1958.04, Portion 71. Original residence of John's father. Now used to house staff. Can take up to 5 staff. Currently 3 Anchorage staff in residence.



4. Staff Accommodation 1958.04, Portion 71. DA2004.11 – John Green – Alterations and Additions to Existing Garage/Workshop for Staff Accommodation (2 x separate bedsits no kitchen). Currently housing 2 Anchorage chefs (1 in each). Quite small, would not suit couple.



5. Garage Component of altered garage/workshop for staff accommodation as referenced in 4. Above. 1958.04, Portion 71 (DA2004.11). Currently used as storage.



6. Flat. 1954.45, Portion 91. DA1988.01 – John Green – Demolition of Existing Residence and Flat and Construction of New Residence (4 x bed) and Flat (1 x bed). Flat is fully self-contained, 1 bedroom. John pays Long Term Accommodation Licence. Can house a couple. Currently houses 1 Anchorage staff. AKA 'Tree House'





7. Staff Accommodation – 1954.45, Portion 91. DA1990.12 – John Green - Construct Flat for Staff. DA1992.02 – John Green – Additional Bedroom to Staff Accommodation. Fully self-contained, 2 bedroom flat. John pays Long Term Accommodation Licence. Currently houses 2 staff – Anchorage Bakers. JG - Important that the bakers are separate to other staff due to baking times i.e. work night and sleep day



8. Residence 1954.45, Portion 91. DA1988.01 – John Green – Demolition of Existing Residence and Flat and Construction of New Residence (4 x bed) and Flat (1 x bed). LHIB have waived residency for this lease as holds 2 x residential leases (1958.04).

Currently houses 2 x Earls staff plus Rover, Tracey & George. Rover (Peter Ziems) works for John part-time and has done for many years (Tracey is Rover's unofficial partner and George is Tracey's son).
<b>Other Off-site Accommodation used for Staff of John Green</b>
1. Adrian Skeggs House – Portion 57. Currently housing 1 x Anchorage Chef & Family
2. Lorhiti Flat (unable to ascertain if 'Shearwater' or 'Cyclone Alley'). Lot 10 DP1202580. Currently housing 2 x Anchorage staff (couple)
3. Dot's Cottage – 2 <sup>nd</sup> dwelling on Portion 287. Currently vacant. Will be in residence in September. Suitable for a couple. Not always able to get couples so may be occupied by only 1 staff.
<b>Current Approved Staff Accommodation</b>
2 x staff bedsits portion 71 – Occupancy 2
1 x self-contained flat (2 x bedroom) portion 91 – Occupancy 2
<b>Current Self Capacity for Accommodating Staff</b>
Portion 71 - 7
Portion 91 - 7
<ul style="list-style-type: none"> <li>• Potential for increase in capacity if staff are couples (not often happens). Potential decrease in capacity if staff have families (quite often happens).</li> </ul>
<b>Staff Number Applicant Believes Need – 25.</b> Of this number, only 1 is resident housed in their own accommodation. John to check on last season's rosters and this year's expectation and confirm with the Board.

<b>Notes on Development Applications pertaining to above</b>
DA1988.01 – Portion 91, J Green - Demolish existing residence and flat and construct new residence and flat. <ul style="list-style-type: none"> <li>• Photos no. 6 &amp; no. 8</li> <li>• Approved as 'dwellings' Board Meeting 15 February 1988</li> <li>• J Green pays Long Term Accommodation on Flat – aka 'Tree House'</li> </ul>
DA1990.12 – Portion 91, J Green - Construct 1 x bedroom flat for Staff Accommodation <ul style="list-style-type: none"> <li>• Photo no. 7</li> <li>• Approved 'Staff Accommodation' Board Meeting 14 September 1990</li> <li>• Condition d) of approval – the flat not being used for any other purpose other than accommodation of employees of Mr Green</li> <li>• J Green pays Long Term Accommodation on the 'Staff Accommodation'</li> </ul>
DA1992.02 – Portion 91, J Green – Additional Bedroom to Staff Accommodation <ul style="list-style-type: none"> <li>• Photo no. 7</li> <li>• Approval letter dated 25 May 1992</li> <li>• Flat fully self-contained - 2 x bedroom – required for additional pilot for charter service</li> </ul>
DA1996.07 – Portion 70, H Green – Construct Cottage for Aged Carer <ul style="list-style-type: none"> <li>• Photo no. 1</li> <li>• 2 storey, 1 bedroom, fully self-contained</li> <li>• H Green is J Green's father</li> <li>• 'In principal' approval Board Meeting 30 &amp; 31 May &amp; 1 &amp; 2 June 1996 – 'the proposal demonstrated pressing and legitimate need' – applicant to supply additional construction documentation before full approval.</li> <li>• Approved Board Meeting 25 &amp; 26 August 1996</li> <li>• Approval for 'construction of a new dwelling on Portion 70'</li> <li>• Condition (c) 'the applicants providing written advice regarding future occupancy intentions for the ground floor prior to commencement of works' (<i>no response to this condition found on file – KD</i>).</li> </ul>
DA1999.03 – Portion 70, J Green – Construct Garage/Workshop Including Loft Storage <ul style="list-style-type: none"> <li>• Photo no. 2</li> </ul>

<ul style="list-style-type: none"> <li>• Approved Board Meeting 28, 29 &amp; 30 March 1999</li> <li>• Condition (d) 'the building being used for the purpose of a garage/workshop and not for any other purpose including human habitation without further Board approval.</li> <li>• Noted from the Board Meeting minutes – 'The Board asked that details of the previous approval for construction of the self-contained flat on Portion 70 be investigated to ensure that the present use of the flat complied with the conditions of consent.' <i>(If such an investigation took place, there is no record of this or any subsequent outcomes on the file – KD).</i></li> </ul>
<p>DA2002.12 – Portion 91, J Green – Construct 4 Tourist Units, 1 Staff Unit and Restaurant</p> <ul style="list-style-type: none"> <li>• Earls Anchorage Holiday Accommodation Complex</li> <li>• Approved Board Meeting 10 &amp; 11 March 2003 – deferred commencement</li> <li>• Restaurant deferred – see DA2005.08</li> <li>• Staff Unit – 1 x 2 bedroom fully self-contained (later change of use to Tourist Unit – see DA 2015.08)</li> </ul>
<p>DA2004.11 – Portion 71, J Green – Alterations and Additions for Staff Accommodation to existing Garage/Workshop</p> <ul style="list-style-type: none"> <li>• Photo no. 4 (staff accom. component of building) and no. 5 (Garage component of building)</li> <li>• Staff Accommodation consists of 2 x 1 bedroom bedsits – no kitchen</li> <li>• Approved Board Meeting 7 &amp; 8 June 2004</li> <li>• Noted from the Board Meeting minutes – 'While not dissenting, Mrs Riddle expressed concern regarding increased long-term rental accommodation on the Island.'</li> </ul>
<p>DA2004.12 – Portion 91, J Green – Additional Tourist Unit (Earls Anchorage)</p> <ul style="list-style-type: none"> <li>• Approval Board Meeting 7 &amp; 8 June 2004</li> <li>• An Interoffice Memo dated 13 January 2005 by Greg Pierce, LHIB Manager Operations, regarding Building Compliance with Development Applications is on the DA file. In regard to the approved staff accommodation (DA2004.11), the Memo states 'I noted this building was designated as a staff building but was being used for guest accommodation at the time of my inspection.'</li> </ul>
<p>DA2005.08 – Portion 91, J Green – Defer Commencement of Construction of Restaurant (approved DA2002.12)</p> <ul style="list-style-type: none"> <li>• The deferred commencement was to allow staged occupation of the works previously approved (DA2002.12)</li> <li>• Approved Board Meeting June 2005</li> </ul>
<p>MDC2008.01 – Portion 91, John Green – Further delay in completion of Restaurant (approved DA2002.12)</p> <ul style="list-style-type: none"> <li>• Approved by CEO under delegation 13 March 2008</li> <li>• Condition 1. Recommencement – that works be recommenced by February 2009</li> <li>• This development (restaurant) did not go ahead. Developed Portion 199 for Restaurant – Anchorage Restaurant (formerly 'Humpty Micks Café)</li> </ul>
<p>DA2015.08 – Portion 91, J Green – Change of Use – Staff Accommodation Unit to Tourist Unit</p> <ul style="list-style-type: none"> <li>• The approved Staff Accommodation Unit (DA2002.12) had been used as Tourist Accommodation (also see notes DA2004.12)</li> <li>• Approved Board Meeting 25 November 2014</li> </ul>

Site Inspections undertaken 2pm Friday 24 August 2018 by Kate Dignam, accompanied by J & K Green  
 Report compiled by Kate Dignam, LHIB Team Leader Compliance and Projects

### Portion 70 & 71

Copyright Department of Environmental Climate Change (DECC), August 2018  
This map is not guaranteed to be free from errors or omissions.  
The Department of Environmental and Climate Change (DECC) and its employees  
do not assume liability for any and all errors on the information on the  
map and any consequences of use based on such errors.



lpi\_property.shp  
0 11 22 Metres



 L2V4 Pwvs 24 August 2018  
g:\work\l2v4\proj\l2v4\_p10n.apx

### Portion 91

Copyright Department of Environmental and Climate Change (DECC), August 2018  
All maps to not guarantee title but to provide an indication  
The Department of Environmental and Climate Change (DECC) and its employees  
do not assume liability for any and all errors on the information in the  
map and any consequences of use made in reliance on it.



 Lpl\_property.shp  
0 11 22 Metres



 LEVA 24 August 2018  
g:\work\leed\project\_bwa\_pbn.ap

## AUDIT OF EARLES ANCHORAGE

PURPOSE: To provide information ~~to~~ in regard to the justification for DA consent for ~~the~~ staff accommodation<sup>(a)</sup> units proposed in DA ~~2018.10~~ 2018.10.

OBJECTIVE: To determine whether there is a demonstrated need for additional <sup>staff</sup> accommodation, that cannot be met by other means.

### QUESTIONS:

- ① How many staff accommodation units are approved for Earles Anchorage and how many beds ~~essen~~ these include?
- ② How many staff accommodation units / beds are being used for this purpose?
- ③ Are there staff being accommodated elsewhere off-site, or in existing approved dwellings, or in ~~tour~~ approved tourist accommodation?
- ④ Are there non-staff being accommodated in staff accommodation units?
- ⑤ What staff numbers ~~or~~ do the applicants believe they need; how many need accommodation.

② For the purposes of this audit, "Staff accommodat<sup>n</sup>" is for staff employed by Earles Anchorage or their associated businesses.

Pg 2.

- a) List of <sup>approved</sup> staff accommodation units.
- b) " " " dwellings.
- c) Satisfaction that staff accommodation is NOT being used by Non-STAFF.
- d) Confirm (and quantify) whether any staff are being accommodated in dwellings or tourist units, OR off-site.
- e) ~~Explore why units~~ Align findings to inform whether additional staff accommodation units/bed are required.
- f) Form a view on whether staff <sup>employed</sup> ~~employed~~ by Eabs Anchorage could be accommodated without the additional <sup>units</sup> ~~units~~ staff accom.

<b>Board Meeting:</b> September 2018	<b>Agenda Item:</b> 07 (iii)	<b>File Reference:</b> ED18/8292
--------------------------------------	------------------------------	----------------------------------

# LORD HOWE ISLAND BOARD

## Planning Assessment Report

**Item Undetermined Part DA 2018.10** – Three new detached staff accommodation units at Lot 91 DP 757515, Anderson Road (Earls Anchorage), Lord Howe Island.

### 1 Summary Assessment Report

DA 2018.10 was considered at the July 2018 Out of Session LHIB meeting. The Tourist Accommodation component of that application was approved however the Staff Accommodation component was deferred. Additional information and clarification was requested by the Board which is now reported for the LHIB's consideration. The Staff accommodation component of this application is thereby now resubmitted for the Board's consideration.

### 2 Background

**DA 2018.10** was considered at the July 2018 Out of Session LHIB meeting. A copy of the assessment report regarding the application is attached for ease of reference (refer Attachment 1).

At this meeting the LHIB resolved as follows:

*It was moved RP, seconded MR, that:*

*1. development of the two new, detached tourist accommodation units be approved subject to the conditions specified,*

*2. consideration of the development of the three new, detached staff accommodation units be deferred for further assessment, and*

*3. once the further assessment was complete, the matter of the proposed staff accommodation element of the DA be considered Out of Session.*

*The Board then adopted the motion.*

During the teleconference, a LHIB member raised concern regarding AAP's understanding of the LEP compared to that used in previous DA decisions by the Board. Discussion included whether staff accommodation that included some kitchenette or other features, could practically be used as a separate domicile and therefore inadvertently effectively become an additional dwelling.

AAP were therefore asked to provide a review of previous development approvals issued.

A determination notice was subsequently issued to the applicant in line with the above recommendation only granting approval for the proposed tourist accommodation. This is a partial DA approval and does not constitute a refusal of the outstanding component (staff accommodation) of the DA.



In answer to the above request, the Board's consultant Town Planners provided emailed advice to the LHIB both on 26<sup>th</sup> July and the 8<sup>th</sup> August 2018.

The main points of the July advice were:

- *“Staff accommodation is separately defined in the LHI LEP 2010 from that of a dwelling and can therefore be consented to without the application triggering the No. of dwellings limit under Clause 26 of the LEP.*
- *If staff accommodation is approved, then that staff accommodation is not considered to be a dwelling for the purposes of the LEP. Therefore, at a minimum a new DA consent would be required to effect a legal change of use from staff accommodation to a permanent dwelling.*
- *If staff accommodation is proposed that includes a kitchen facility, the inclusion of the kitchen does not legally result in the LHIB also inadvertently approving a permanent dwelling. Whilst it is open to the LHIB to consent to the proposed staff accommodation - such a development consent will not be a de-facto development consent additionally for a permanent dwelling, and will not trigger Clause 26(2), even if that development consent for staff accommodation includes a kitchen and/or a laundry.*
- *Clause 20 (3) of the LHI LEP 2010 confirms that whilst a dwelling may also be considered to be staff accommodation that is a dwelling, staff accommodation may not be considered to be staff accommodation that is a dwelling.”*

Detail of the August advice follows:

*“The amount of staff accommodation available to Earls Anchorage is relevant to the DA, pursuant to Clause 22 (1) (d) of the LHI LEP 2010 – which requires that the consent authority be satisfied that there is a demonstrated business need for the proposed staff accommodation and tourist accommodation. This LEP provision was specifically addressed by AAP in our assessment of the OC application, with Condition 1 of the OC consent requiring that:*

*“The business need for the proposed staff and tourist accommodation shall be demonstrated and outlined in a document accompanying the development application submission for the proposed works.”*

*AAP's DA report to the LHIB identified this requirement for a demonstrated 'business need' – and confirmed we were satisfied that there is a demonstrated business need, compliant with LEP Clause 22 (1) (d):*

*The applicants submitted the following details at DA stage in support of their proposed staff accommodation:*

*“We desire to accommodate all our staff requiring accommodation in our own 'staff' accommodation and in my view expecting suitable employees to reside in a small substandard room with share facilities is unreasonable.*

*Earls Anchorage and Anchorage restaurant currently employ in the order of 15 staff in low season and up to 25 staff in shoulder/peak season. We have found it impossible to staff our business with only local employees. We rely heavily upon short term mainland labour to provide the services we offer. These*

*people have to be accommodated in suitable 'staff' type accommodation. In addition to our existing staff accommodation we rent a 3 x bedroom house plus a 1 x bedroom apartment from 3<sup>rd</sup> parties for the purpose of staff housing. This is undesirable as we have no security for long term tenancy. In addition, we have no option but to accommodate staff in our licensed long term accommodation premises and it is anticipated that my children James and Alana will be returning to live and work in the family businesses putting further pressure upon our accommodation resources."*

*Given the expressed concern with the business need/staff accommodation aspects of this DA that the LHIB may like to consider issuing consent at this time for the tourist accommodation component only, which I understand is fully supported. The following extracts from the Environmental Planning and Assessment Act 1979 confirm that it is open to the LHIB to issue a partial consent for the tourist accommodation component only and that it is not necessary to refuse consent for the staff accommodation component at the same time. The staff accommodation component may be subsequently granted consent for."*

As noted earlier in this report in section 2, a determination notice was subsequently issued to the applicant only granting approval for the proposed tourist accommodation.

A request was also received from an Elected Board member as follows:

*"I contend that we should require additional information from Mr Green, to wit an audited reporting of how much non tourist accommodation he currently has on his 2 leases. I stress that this information is only believable if verified by independent on-site inspection."*

In light of the above request, Board staff undertook a staff accommodation site audit. A copy of this audit is also attached to this report (refer Attachment 2).

In summary the audit confirmed that the proponents have capacity to accommodate a total of 14 staff members both on the subject site (portion 91) and their own lease (portion 71). In addition they are currently renting accommodation elsewhere on the Island for up to 5 staff – a collective total of 19. Of this number, 17 staff are presently being accommodated with another 2 staff, to be accommodated later this month.

The proponent advises that he has a need for an additional 7 staff members (beyond the above 19 places) which totals a need for 12 additional staff accommodation places including the 5 existing private places already rented elsewhere.

### **3 Conclusion**

The staff accommodation audit provides additional confirmation of the proponent's submission prepared in respect of the business need for the proposed staff accommodation and supports the assessment of the application included in the July 2018 report on the application.

Consequently, as reported to the July 2018 Out of Session meeting, this remaining part of the application for staff accommodation is supported subject to the application of the previously recommended conditions, as outlined in the recommendation of the July 2018 report, plus one additional condition as follows.

### **4 Recommendation (Conditional Approval)**

That the deferred staff accommodation component of DA 2018.10 for alterations and additions

(three new detached staff accommodation units) at Lot 91 DP 757515, Anderson Road (Earls Anchorage), Lord Howe Island, be approved subject to those conditions outlined in the report to the July 2018 LHIB meeting, plus the following additional condition:

18. For purposes of clarity, the approved staff accommodation at Earls Anchorage is not to be used as a permanent dwelling. The accommodation is to be occupied only by staff directly employed in connection with tourist accommodation or a commercial operation.

Report prepared by:	Approved by:
	
Peter & Michelle Chapman Date: 6 September 2018 LHI Consultant Town Planners All About Planning Pty Ltd	Peter Adams Date: 13 Sept 2018 Chief Executive Officer Lord Howe Island Board

**Attachments:**

1. Business Paper - 1 (i) DA2018.10 Additional staff and tourist accommodation at Earls Anchorage - Green John - Special July 2018
2. Business Paper - 07 (iii) DA2018-10 Additional Staff and Tourist Accommodation - Earls Anchorage - Audit of existing accommodation

# LORD HOWE ISLAND BOARD

## Business Paper

### OPEN SESSION

#### ITEM

Community Strategic Plan Update

#### RECOMMENDATION

That the Board note the Community Strategic Plan (CSP) update.

#### BACKGROUND

At the beginning of July, the Board appointed Darcelle Matassoni as Project Officer – Strategic planning (part time), commencing 23<sup>rd</sup> July 2018.

This newly appointed role of Project Officer – Strategic planning will work with the community in developing the Community Strategic Plan, under the direction of newly appointed Manager Environment and Community Services, Justin Sauvage (commenced 27<sup>th</sup> Aug 2018).

#### CURRENT POSITION

A review of the 2010-2015 Community Strategy and all associated community consultation documentation including CRG has been completed.

A report into outcomes of the 61 actions identified in the 2010-2015 CS is being undertaken and is currently 80% complete, to be finalised. This will provide a basis for understanding what the community priorities were and what progress has been achieved. The report will assist in engaging the community on its priorities and aspirations by establishing a starting point for discussions.

#### **1. *Developing the Plan***

Meaningful engagement with the LHI community is essential for the plan to have community ownership. The plan needs to be community-driven.

The proposed community communication and engagement strategy has been reviewed and is currently being updated. An implementation plan is in progress with an expected completion in September 2018.

#### **2. *Timeline for the Plan***

It is understood that the development of a CSP is a priority. The development of the Community Strategic Plan with meaningful engagement is important. It is anticipated that the community engagement process, research, development of the draft CSP and community input into the draft CSP before finalisation would normally take 12 months. However, it is

considered important to have the CSP developed so that it can guide the effective allocation of resources and actions in the upcoming (2019/20) and subsequent Operating Plans and budgets.

Therefore the timeline, proposed in May 2018, to inform progress of the CSP has been updated to reflect the current status of review and the recently appointed key personnel undertaking the CSP process. It now needs to be revised to meet the strategic and financial planning milestones in early to mid 2019. A revised timeline that meets these milestones while not compromising meaningful community engagement will be developed and reported to the Board. It is noted that work on this key project will not wait for the next Board meeting but will continue in an expedited form. Some matters to include in the CSP engagement plan may include being mindful of peak visitor periods, and ensuring the community can make final comments after their initial engagement is structured into a draft CSP.

### **RECOMMENDATION**

That the Board note the Community Strategic Plan (CSP) update.

**Prepared:** Darcelle Matassoni, Project Officer Strategic Planning

**Endorsed:** Peter Adams, Chief Executive Officer

## LHI Operations Plan FY 2018 annual review

Strategic Direction: Effective Governance and Leadership					
Strategy	1.1	Ensure accountability, fairness and transparency in the Board's decision-making and relationships with all its stakeholders.	KPI / Measure	Responsible Officer	Annual Review Jun 2018
Action	1.1.1	Develop a 10 year strategic plan to develop a longer term vision and key directions for the community, providing a basis for future policy, plans and community reporting	Community workshop held by end March 2018 Longer-term vision and key directions developed by end June 2018	CEO	Community Strategic Plan project established. To be undertaken in 2018/2019
Action	1.1.2	Hold Board meetings four times a year in public.	Four public meetings held per annum. Code of Meeting Practices is adhered to.	CEO / MBCS	Board meetings held as scheduled and Code of Meeting Practices adhered to.
Action	1.1.3	Develop and implement appropriate policies and procedures to ensure decisions are merit based, transparent and defensible.	Policies and procedures reviewed in accordance with the schedule to ensure currency and completeness.	MBCS	On track
Action	1.1.4	Ensure all conflicts of interest of Board members and staff are declared and managed in accordance with the Board's Code of Conduct.	A record is kept of conflicts of interest declared. Declarations of Pecuniary Interests are completed on an annual basis.	MBCS	Records are kept of conflicts of interest declared. Declarations of Pecuniary Interests completed.
Action	1.1.5	Ensure appropriate community engagement and consultation opportunities are provided so that community input to decisions and plans is obtained and considered.	Program of meetings and engagement opportunities undertaken. Community input to policy development is sought as appropriate.	CEO	Community engagement has taken place through meetings, and consultation on policies
Action	1.1.6	Implement a level of delegated authority to ensure efficient and equitable organisational operations.	Appropriate delegations of authority are enacted to provide staff with sufficient powers to enforce the LHI Act and Regulation and other legislation administered by the Board.	CEO	Delegations in place. Financial delegations reviewed, however have not yet been approved by Minister
Strategy	1.2	Ensure corporate governance practices meet legislative requirements.	KPI / Measure	Responsible Officer	Annual Review Jun 2018
Action	1.2.1	Work with the Audit and Review Committee (ARC) and auditors.	ARC meets four times per year. Internal audit work plan completed on time.	CEO / MBCS	ARC has met at least four times Internal audit work plan completed on time
Action	1.2.2	Provide relevant and timely advice to Government on matters affecting the management of the island.	Briefings and submissions prepared as required to the Minister, DPE, OIG and Treasury as appropriate.	CEO / MBCS	Briefings and submissions prepared as required.
Strategy	1.3	Work to achieve long term financial sustainability.	KPI / Measure	Responsible Officer	Annual Review Jun 2018
Action	1.3.1	Develop sustainable annual budget	Adequate capital funding achieved to fund the Total Asset Management Plan (TAM Plan). Recurrent funding achieved to allow the Board to meet its objectives in accordance with the Corporate Plan.	CEO / MBCS	Adequate capital funding achieved to fund TAM Plan. Additional recurrent funding will be needed for the Biosecurity Strategy once the Rodent Eradication Program is complete.
Action	1.3.2	Levy fees and charges at an appropriate level.	Fees and charges are in accordance with the Board's decisions.	MBCS	Achieved and on track
Action	1.3.3	Ensure that the services delivered are provided at the appropriate level.	Service levels and service delivery monitored and reports provided to the Board on achievement of service levels.	CEO	Service levels monitored. Quarterly report provided to Board on service delivery (CEO report)
Strategy	1.4	Ensure risks are properly managed.	KPI / Measure	Responsible Officer	Annual Review Jun 2018
Action	1.4.1	Implement the risk management policies and procedures.	Progress against the implementation of policies and procedures is reviewed quarterly.	MBCS	Quarterly reviews completed. Progress is on track.
Action	1.4.2	Regularly review the Risk Register.	Risk Register is reviewed quarterly.	CEO	Risk register reviewed and considered by A&R Committee at least quarterly.
Action	1.4.3	Develop Risk Treatment Plans (RTPs) to manage risk impacts.	RTPs tabled at management meetings.	CEO / Unit Managers	RTPs are tabled at management meetings.
Action	1.4.4	Develop and implement a Business Continuity Plan to ensure the continuance of Board services should a significant event occur.	Business Continuity Plan completed and tested by end June 2018.	CEO	This action has been deferred to 2018/2019, Reports made to ARC Committee.
Strategy	1.5	Provide internal IT and communications systems which are secure, stable and support business operations.	KPI / Measure	Responsible Officer	Annual Review Jun 2018
Action	1.5.1	Implement ICT policies and procedures.	Projects completed on time and on budget.	MBCS	Projects on track and on budget.
Action	1.5.2	Support and maintain corporate ICT.	Systems operational 99% of the time during business hours.	MBCS	KPI is being satisfied.
Strategy	1.6	Provide efficient and effective records management and information management.	KPI / Measure	Responsible Officer	Annual Review Jun 2018
Action	1.6.1	Review and implement policies and procedures regarding information management.	100% of staff informed of record keeping responsibilities.	MBCS	100% of staff are aware of their record keeping responsibilities.
Action	1.6.2	Continue the RM8 electronic records management system implementation.	Records are moved to electronic format or archived by June 2018 Alternative records system on hard drive to be reviewed by June 2018	MBCS	80% achieved as of 30 June 2018. Expert consultant returning to finish the job September 2018.
Strategy	1.7	Ensure effective management of human resources.	KPI / Measure	Responsible Officer	Annual Review Jun 2018
Action	1.7.1	Ensure organisational structure is aligned to strategic priorities and legislative requirements and is adequately resourced.	Review undertaken annually.	CEO	Review undertaken
Action	1.7.2	Attract, develop and retain an effective workforce that delivers required outcomes.	Required recruitment process implemented. Training programs provided in line with the training budget.	CEO / Unit Managers	Recruitment processes are in accordance with the GSE Act. Training and budget on track.
Action	1.7.3	Provide workplaces that ensure the health, safety and welfare of employees and members of the public.	Risk Management Policy and Guidelines and all associated policies and procedures implemented and reviewed at appropriate intervals. WH&S Management Plan reviewed annually. Incidents and injuries are reviewed. Safe work procedures and training requirements are in place.	CEO / Unit Managers	KPIs and Measures are being achieved.
Action	1.7.4	Ensure that Work and Development Plans are completed for all staff.	Work and Development Plans are completed annually, including Customer Service Objectives.	CEO / Unit Managers	On track.
			Mechanic apprenticeship in place by end October 2017.	MIES	Apprentice Mechanic has been appointed. Training program finalised and underway.

Action	1.7.5	Review and implement actions from the Workforce Plan 2015-18.	Database of volunteers created in appropriate areas. Training program developed	CEO / Unit Managers	On track
			Database of young island residents who are studying at the tertiary level developed	MECS	Not yet developed.
<b>Strategy</b>	<b>1.8</b>	<b>Provide timely and proactive communication to all stakeholders.</b>	<b>KPI / Measure</b>	<b>Responsible Officer</b>	<b>Annual Review Jun 2018</b>
Action	1.8.1	Develop and implement a Communication / Community Engagement Strategy.	A Communication / Engagement Strategy in place by end Dec 2017.	CEO / MECS	Communication/Engagement Strategy is part of development of Community Strategic Plan. A specific Communications Strategy was developed for the REP.
Action	1.8.2	Promote Board programs and services through meetings, advertising and written materials.	All materials prepared as required to a high standard.	CEO / Unit Managers	Board programs and services are promoted through all media to a high standard.
Action	1.8.3	Maintain information on the Board's website and through social media.	Number of page views per month.	MBCS	Ongoing and on track. REP Website developed and launched Dec 2017 (30,870 page views) - Facebook pages (REP, WEP, CVLHI) have a reach of ~6,000/mnth, ~500 page engagements/mth
<b>Strategy</b>	<b>1.9</b>	<b>Ensure high standards of customer service.</b>	<b>KPI / Measure</b>	<b>Responsible Officer</b>	<b>Annual Review Jun 2018</b>
Action	1.9.1	Provide appropriate services efficiently and effectively to the appropriate service level.	Communication of and access to information improved. Efficiency and effectiveness of employees enhanced.	CEO / Unit Managers	On track. All staff has had customer service training was completed.
Action	1.9.2	Implement the Customer Service Improvement Plan (CSIP).	Actions from the CSIP implemented, including the following: Explore on-line services. Continue improved Work and Development Planning system Implement social media initiatives Review processes and procedures to improve customer service.	CEO / Unit Managers	All actions have been completed.

Strategic Direction: Strong and Sustainable Economy					
Strategy	2.1	Market the island as a tourist destination.	KPI / Measure	Responsible Officer	Annual Review Jun 2018
Action	2.1.1	Maintain and enhance the sustainable tourism 'product' through the provision of infrastructure, engineering and environmental services.	Direct feedback from community members and tourists.	CEO	Feedback via LHI Tourism Association
Action	2.1.2	Conduct visitor surveys as required, in conjunction with partners where appropriate, to inform product planning and destination marketing.	Visitor surveys conducted, analysed and assessed to inform product planning and destination marketing.	CEO	Comprehensive Visitor Information Survey completed and reported to Board
Action	2.1.3	Work in partnership with LHI Tourism Association (LHITA), Destination NSW and other bodies in the ongoing implementation of the Destination Management Plan.	Regular consultation and information sharing takes place.	CEO / MBCS	Regular consultation and information sharing regularly occurs.
Action	2.1.4	Promote the island in key source markets as resources allow.	Results of marketing activities are measured.	CEO / MBCS	Major Qantas visitor survey completed during 2017. Island wide ecotourism launched Winter 2018, Conservation Volunteers LHI implemented, post-travel survey implemented.
Action	2.1.5	Ensure website content is current and relevant.	Website content is refreshed and updated as necessary.	Manager Admin	Website content is refreshed and updated as necessary.
Action	2.1.6	Review the Destination Management Plan (DMP) annually, in consultation with the LHITA.	The DMP is reviewed by December 2017. Those parts of the DMP for which the Board is responsible are implemented.	MBCS	To be completed by end December 2018.
Action	2.1.7	Ensure efficient and effective visitor information services are provided.	The MOU between the Board and the LHITA is implemented in a manner that achieves this outcome.	CEO / Unit Managers	Efficient and effective visitor information services have been provided by LHITA
<b>Strategy</b>	<b>2.2</b>	<b>Foster an environment that supports sustainable economic development.</b>	<b>KPI / Measure</b>	<b>Responsible Officer</b>	<b>Annual Review Jun 2018</b>
Action	2.2.1	Work with business regarding options and plans for sustainable business growth.	Support for local business development provided.	CEO	Support provided as required.
Action	2.2.2	Pursue avenues of funding to implement economic development projects.	Funding opportunities reported.	MBCS	Funding opportunities are pursued regularly. E.g. Community Hall, Old Powerhouse site etc.
Action	2.2.3	Develop and maintain contemporary policies to aid sustainable development.	Policies regularly reviewed and red tape reduced.	MBCS	Some policies and procedures reviewed and opportunities for red tape reduction pursued.
Action	2.2.4	Work with the Nursery lessees to support the development of a major tourist attraction.	Regular meetings as required held with the Nursery lessees and plans developed cooperatively.	MBCS	Regular meetings as required held with the Nursery lessees and plans developed cooperatively.
Action	2.2.5	Introduce Commercial Tour Operator licensing system	Commercial Tour Operator licensing system for Mt Gower Walk and other areas of PPP developed and implemented by 30 June 2018.	MECS	Process re-invigorated May 2018 following operators meeting. A more streamlined option is being drafted including standards that align with national bodies for future certification opportunities.
Action	2.2.6	Award shipping contract	New shipping contract advertised and awarded by end December 2017	MIES	Contract has been awarded
<b>Strategy</b>	<b>2.3</b>	<b>Effectively manage the Board's business enterprises.</b>	<b>KPI / Measure</b>	<b>Responsible Officer</b>	<b>Annual Review Jun 2018</b>
Action	2.3.1	Operate the LHI Liquor Store.	Budgeted revenue and expenditure targets are met.	MBCS / Liquor Store Manager	Year to date budgeted revenue and expenditure targets have been met.
Action	2.3.2	Operate the island's airport and wharf facilities.	Airport and wharf facilities are operational when required and revenue and expenditure targets are met.	MIES / MBCS	All on track, 100 % availability achieved.
<b>Strategy</b>	<b>2.4</b>	<b>Effectively manage the Board's commercial leases.</b>	<b>KPI / Measure</b>	<b>Responsible Officer</b>	<b>Annual Review Jun 2018</b>
Action	2.4.1	Ensure that fair market rental return is achieved on commercial leases.	Commercial leases are revalued at least every three years and annual CPI increases are applied. Former Post Office building advertised for commercial opportunities by end December 2017.	MBCS	Commercial leases have been revalued. Lease for former PO has been entered into.
<b>Strategy</b>	<b>2.5</b>	<b>Take action to ensure appropriate and adequate servicing of the island by a major airline.</b>	<b>KPI / Measure</b>	<b>Responsible Officer</b>	<b>Annual Review Jun 2018</b>
Action	2.5.1	Work with Air Services stakeholders and negotiate with Qantas and other airlines to ensure services to the island beyond 2018.	A new Regular Passenger Transport licence is put in place with Transport for NSW during 2017 for the period after 1 March 2018.	CEO / MBCS	New agreement with QantasLink has been negotiated and signed for services to 30 March 2022.
Action	2.5.2	Undertake Feasibility Study into the extension of the airport runway	Contract for Feasibility Study into the extension of the runway is awarded by end September 2017. Feasibility Study is progressed.	CEO / MIES	Contract awarded and study is in progress. Milestone One has been completed and reported to Board.

Strategic Direction: Sound Infrastructure					
Strategy	3.1	Provide sound asset management.	KPI / Measure	Responsible Officer	Annual Review Jun 2018
Action	3.1.1	Review and update TAMPLAN annually for Board approval in March.	TAMPLAN is updated annually to support Treasury CAPEX requests.	MIES	On track, annual update completed and reported to the LHIB

Action	3.1.2	Develop procedures then undertake and document preventative maintenance on all assets to reduce failures.	Progress of TAMPLAN reported at quarterly Board meetings.	MIES	Lack of resources is restricting the ability to pursue this KPI.
Action	3.1.3	Implement Authority Asset Maintenance System (AMS).	Authority AMS is implemented by end June 2018. Spatial data on assets collected by end March 2018.	MIES	Resources to date have not permitted capture of required spatial data
Action	3.1.4	Replacement or new plant items.	Replacement utility vehicles (2 off) purchased by end November 2017. Replacement plant trailer and waste bins trailer on Island by end November 2017. Punt, trailer & outboard on Island by end November 2017. Yard forklift \ telehandler replaced by March 2018. Purchase new concrete mini-mix and orca Replacement tractor slasher deck on Island by October 2017.	MIES	Complete Complete Complete In progress, review of most suitable equipment underway New KPI added. Complete
<b>Strategy</b>	<b>3.2</b>	<b>Maintain recreational facilities for visitor and community use.</b>	<b>KPI / Measure</b>	<b>Responsible Officer</b>	<b>Annual Review Jun 2018</b>
Action	3.2.1	Maintain and improve standard of recreational facilities through regular maintenance.	Recreational facilities are available for use. New treated water supply system installed at North Bay by end December 2017. Undertake revegetation to enhance shade areas "under the Pines" by end March 2018	MIES	Ongoing Complete Remove
Action	3.2.2	Manage construction for the Airport Terminal Upgrade.	Construction completed within budget by end December 2017.	MIES	Completed
Action	3.2.3	Implement approved walking track strategy.	Priority walking track works as per strategy implemented in accordance with available funding.	MECS	On track and ongoing within budget allocations.
<b>Strategy</b>	<b>3.3</b>	<b>Operate Aerodrome safely for Regular Passenger Transport (RPT) services, medical evacuations and general aviation.</b>	<b>KPI / Measure</b>	<b>Responsible Officer</b>	<b>Annual Review Jun 2018</b>
Action	3.3.1	Arrange Annual Aerodrome Technical Inspections and participate in CASA audits.	Annual Aerodrome Technical Inspections and CASA Audits completed and recommendations acted on.	Aerodrome Controller / MIES	Completed
Action	3.3.2	Review effectiveness Bird and Animal Hazard Management Plan annually.	Bird and Animal Hazard Management Plan effectiveness reviewed annually. Strategies to minimise risk of bird strike to aircraft implemented.	Aerodrome Controller / MIES	On track and in progress In process of trialling gas noise gun, bunting on Blinky's dune implemented seasonally.
Action	3.3.3	Review Aerodrome Manual annually.	Aerodrome Manual updated annually and distributed.	Aerodrome Controller / MIES	In progress
Action	3.3.4	Hold Aerodrome emergency exercises annually.	Desktop aerodrome emergency exercise held in 2017/2018.	Aerodrome Controller / MIES	On island Scenario Exercise completed
Action	3.3.5	Remove NFI Pines from within Obstacle Limitation Surface of Aerodrome.	NFI Pines removed by December 2017.	Aerodrome Controller / MIES	Completed
<b>Strategy</b>	<b>3.4</b>	<b>Maintain road network in good condition for all road users.</b>	<b>KPI / Measure</b>	<b>Responsible Officer</b>	<b>Annual Review Jun 2018</b>
Action	3.4.1	Implement road renewals as per TAMPLAN, subject to budget allocations.	Thompson's Road rehabilitated and resealed. Lagoon Rd – adjacent to boatsheds rehabilitated and resealed as a priority Lagoon Rd – Ned's Beach Rd to Oceanview Drive, King's Beach to Smoking Tree Ridge Rd, and King's Beach turning circle rehabilitated and resealed Access to Murray/Crombie residences rehabilitated and resealed. TC Douglass Dr rehabilitated and resealed. Ned's Beach Road – Lagoon Rd to Anderson Rd rehabilitated and resealed. Cemetery Rd rehabilitated and resealed. letty hardstand area resealed. Smoking Tree Ride Rd- Lagoon Rd to cattle grid rehabilitated and resealed. Contractor appointed for package of roadworks and on Island by end September 2017.	MIES	Contractor appointed for package of roadworks. Waiting on Solar Roads project contractor works to be undertaken to provide efficiency.
Action	3.4.2	Regular routine road maintenance programmed.	Standard of roads is maintained or improved.	MIES	On going
<b>Strategy</b>	<b>3.5</b>	<b>Maintain wharf to serve shipping contractor, charter operators and visiting boats.</b>	<b>KPI / Measure</b>	<b>Responsible Officer</b>	<b>Annual Review Jun 2018</b>
Action	3.5.1	Maintain wharf as per TAMPLAN.	Wharf is available 100% of the time when required and routine maintenance and works are carried out. Timber piles on low level landing are replaced. Feasibility of allowing outriggers to be further extended for crane to be investigated. Feasibility of 2 <sup>nd</sup> low level landing to be assessed.	MIES	100% Availability achieved Initial assessment completed by specialist contractor
<b>Strategy</b>	<b>3.6</b>	<b>Maintain Board building and property assets.</b>	<b>KPI / Measure</b>	<b>Responsible Officer</b>	<b>Annual Review Jun 2018</b>
Action	3.6.1	Maintain Board buildings as per TAMPLAN.	Buildings are maintained to an acceptable standard for commercial and residential purposes.	MIES	Ongoing, however, difficult with limited resources and opportunities
Action	3.6.2	Depot shed extension	Construction completed by end March 2018.	MECS \ MIES	Not yet commenced
Action	3.6.3	Research Facility extension	Construction completed by end March 2018.	MECS \ MIES	Not yet commenced
Action	3.6.4	Hospital garage and morgue	DA obtained in November 2017.	MIES	Review of approach underway
Action	3.6.5	Refurbish rainwater collection at Depot/Admin, Gov House and Public Hall to maintain supply levels.	New tanks installed at Depot/Admin and Public Hall by March 2018.	MIES	Used tanks earmarked for these jobs used at the airport as airport tanks had a shipping delay. Airport tank are still yet to be shipped to the Island. Community Hall tank position to be reevaluated with the restructure of the CBD and parking around the Old Powerhouse site.
Action	3.6.6	Repair and renovate Aviation Fuel Shed	Structural repairs completed by end October 2017. Other improvements such as roller doors and security improvements completed by end March 2018.	MIES	DA lodged for rebuild of shed.
Action	3.6.7	Facilitate relocation of Post Office to former Electrical Workshop building	Board activities related to new Post Office premises are completed by end October to allow opening at lessee's discretion.	MIES	LHIB activities completed.
<b>Strategy</b>	<b>3.7</b>	<b>Provide facilities in conjunction with Roads and Maritime Services for all Island boat users to safely and efficiently launch, retrieve and maintain boats in an environmentally sound manner.</b>	<b>KPI / Measure</b>	<b>Responsible Officer</b>	<b>Annual Review Jun 2018</b>



Action	3.7.1	Undertake detailed design, planning and construction for upgraded boat ramp and launch/retrieval system.	Submit DA following RMS design and process, commence implementation plan	MIES	RMS recommended options reconsidered to improve existing boatramp.
<b>Strategy</b>	<b>3.8</b>	<b>Provide reliable and efficient electricity supply.</b>	<b>KPI / Measure</b>	<b>Responsible Officer</b>	<b>Annual Review Jun 2018</b>
Action	3.8.1	Maintain electricity generation and distribution system to provide a reliable and safe supply.	Unplanned electricity outages are maintained at or above 2015/2016 levels.	MIES	Achieved
Action	3.8.2	Hybrid Renewable Energy Project continues to progress.	Project is resolved and agreement reached on next stage. ARENA funding agreement obligations met. Construction on Solar PV commenced	MIES	ARENA looking at alternative option report from Jacobs
Action	3.8.3	Electricity Safety Management System implemented fully and audited.	Audit of ENSMS is undertaken in accordance with IPART requirements and reported by 17 November 2017.	MIES	Audit completed, waiting on IPART response
Action	3.8.4	Consider second electrical officer position.	Proposal for ongoing funding of new position considered by Board in March 2018.	MIES	Complete
<b>Strategy</b>	<b>3.9</b>	<b>Provide efficient and environmentally sustainable waste and recycling management services.</b>	<b>KPI / Measure</b>	<b>Responsible Officer</b>	<b>Annual Review Jun 2018</b>
Action	3.9.1	Maintain and upgrade the Waste Management Facility using grants and allocations to improve composting and waste diversion.	New composting system construction completed by end September 2017. Compost exemption order achieved by 30 June 2018. Compost is given back (not sold) to the community once it reaches an acceptable standard under a distribution system to be determined. > 80% of waste is diverted from landfill. New baler installed by end June 2018.	MIES	Achieved Discussions held with EPA Awaiting EPA approval Achieved Purchased and currently being manufactured
Action	3.9.2	Maintain compliance with EPA licence for wastewater and waste management at WMF site.	Wastewater system is maintained and managed to achieve ongoing compliance with EPA licence requirements and the Island's Wastewater Strategy. Pollution Reduction Programs (PRPs) within licence are planned and executed as required.	MIES	Achieved, on track
Action	3.9.3	Upgrade the wastewater sludge process at the WMF to increase capacity	New system purchased and installed by end March 2018.	MIES	Completed
Action	3.9.4		Construct concrete waste bunkers Dec 2018	MIES	New KPI added.

Strategic Direction: Outstanding Environment					
Strategy		Protect and manage the environment in a manner that recognises and promotes the World Heritage values of the Island.	KPI / Measure	Responsible Officer	Annual Review Jun 2018
Action	4.1.1	Protect threatened species, populations and ecological communities, and their habitats through implementation of LHI Biodiversity Management Plan (BMP)	Significant progress against identified actions in the LHI Biodiversity Management Plan (BMP) is demonstrated. BMP action table is reviewed	MEWH	Last review was 2015 29 actions complete totalling 14.5% 42 commenced ongoing totalling 21% 89 commenced incomplete totalling 44.5% 40 uncommenced totalling 20%. Many of the uncommenced are not likely to commence
Action	4.1.2	In accordance with the LHI LEP, manage development in order to protect landscape values and scenic features	Development applications and activities are assessed in accordance with relevant environmental legislation, policies, and procedures.	MECS	All developments and activities assessed under BMP and other legislative guidelines
Action	4.1.3	Contribute to World Heritage Area conservation by being a member of the Australian World Heritage Advisory Committee (AWHAC).	Active contribution to AWHAC.	CEO / MEWH	CEO is AWHAC member & MEWH attends tele conferences actively contributed to all AWHAC meetings
<b>Strategy</b>	<b>4.2</b>	<b>Work to prevent the introduction of exotic pests and pathogens to and eradicate exotic pests from the Island.</b>	<b>KPI / Measure</b>	<b>Responsible Officer</b>	<b>Annual Review Jun 2018</b>
Action	4.2.1	Implement biosecurity measures to protect against the introduction of exotic pests and pathogens to the Island.	High priority actions identified in the LHI Biosecurity Strategy are implemented Procedures for use of detection dogs are developed, consulted on and approved prior to commencement of dog usage. Regular biosecurity inspections are conducted with detection dogs at high risk entry points. Boot scrub bays are maintained and monitor occurs for Myrtle Rust.	MEWH	12 out of 17 high priority actions commenced 5 info sheets = procedures + 3 manuals Dogs on-island inspecting all seafreight arrivals, most freight planes and high % of passenger arrivals. 2 inspections at Port Macquaire, Draft SPO's developed.
Action	4.2.2	Implement the LHI Weed Management Strategy 2016 and Program to eradicate invasive weeds	New weed threats prevented & /or detected early and eliminated (or new weed threats prevented from establishing on LHI) Funding sought to apply weed search across 500ha per year Downward trend in weed densities measured island scale Technical approaches to effect weed search in remote terrain employed Community engaged in managing weeds in the settlement	CEO	Significant SOS funding has been achieved. Creeping Cinderella weed incursion identified and treated. Biosecurity Act training. Maintained 90% target weed reduction in mature weeds. 80% target weed reduction across island. Funding sought via NCLLS, SOS, FLHI and Board recurrent Weed management Strategy being implemented EOI for Unmanned Aerial Vehicle to ID weeds and treat. Heli ops, rope access training of staff Lease holders provided assistance with focus on Maderia Vine
Action	4.2.3	Seek philanthropic investment in the implementation of LHI Weed Management Strategy / Weed Eradication Program	LHI Weed Eradication Program Prospectus developed Community and support group to champion philanthropic investment in weed eradication Sponsorship received from individuals and groups towards program implementation	CEO	Prospectus in development, MoU with Invasive species council under consideration. Fundraising strategy prepared. Trust in set-up phase.
Action	4.2.4	Eradicate African Big-headed Ants from the Island	Previous African Big-headed Ant infestation areas are monitored in summer 2017/18 to confirm if eradication is successful.	MEWH	Declared eradicated April 2018
Action	4.2.5	Complete Planning and Approvals stage of Rodent Eradication Program.	Planning and approval process to inform the implementation phase is complete The technical and non-technical feasibility of the program is demonstrated. Decision made to proceed/not proceed	CEO	Decision has been made by Board to defer implementation to winter 2019
Action	4.2.6	Finalise operational planning and commence implementation of Rodent Eradication Program	Subject to decision under 4.2.5, REP is commenced by June 2018	CEO	Decision has been made by Board to defer implementation to winter 2019
<b>Strategy</b>	<b>4.3</b>	<b>Identify, protect and value heritage items.</b>	<b>KPI / Measure</b>	<b>Responsible Officer</b>	<b>Annual Review Jun 2018</b>
Action	4.3.1	Assist the LHI Historical Association and the community with conservation of heritage items	Applications for community grants and external funding for heritage conservation initiatives are supported.	MECS	Ongoing. 2017 community grants allocated Nov 2017. Grant provided to the LHI museum to implement Conservation Volunteers LHI.

Action	4.3.2	Identify and protect heritage items	Number of heritage items identified	MECS	Following advice from DPE addition of more heritage items should be considered in Phase 2 wider review of LEP (this will be Community Strategic Plan dependant).
Strategy	4.4	<b>Improve awareness and understanding of the environment through education and research.</b>	<b>KPI / Measure</b>	<b>Responsible Officer</b>	<b>Annual Review Jun 2018</b>
Action	4.4.1	Provide regular updates on environmental programs, research and maintain interpretation to increase environmental awareness	Articles prepared for Community Bulletin, Signal and LHIB website and community consultation undertaken on weeds, rodents, waste management and biosecurity	MEWH, REP PM, FMO	Articles prepared for all Community Bulletins, Signals, LHIB website updated, Conservation volunteer & Citizen Science programmes, Gardening Australia segment on WEP, Facebook pages for REP & WEP
Action	4.4.2	Encourage appropriate environmental research which is of benefit to LHI environment and community.	High priority research supported	MEWH	7 new research permits approved
Strategy	4.5	<b>Improve environmental sustainability of Board programs and operations (waste disposal; wastewater; renewable energy).</b>	<b>KPI / Measure</b>	<b>Responsible Officer</b>	
Action	4.5.1	Develop better knowledge within the resident and tourist populations of the waste program objectives activities.	Waste data regularly updated at WMF, The Signal and/or Community Bulletin.	MIES	Achieved. Conservation Volunteers informed all visitors through Wholesalers and directly of waste information. Qantas information cards in progress.
Action	4.5.2	Improve the sustainability of transport on the Island.	Electric vehicles can be conditionally registered on LHI by 30 June 2018. Covered bike parking area installed at Board offices for staff and visitors by 30 June 2018.	MIES / CEO	Achieved Priority reassessed.
Action	4.5.3	Support community in implementing On-site Wastewater Strategy.	Demonstrated progress by commercial and residential leases to upgrade wastewater systems to meet Strategy deadlines. Temporary Project Officer position appointed for 2017/18 and undertakes compliance and data management tasks.	MIES	Strategy to assist implementation challenge being negotiated with EPA. Achieved
Action	4.5.4	Reduce the environmental impact of wastewater from Board properties.	All remaining Board properties which do not meet the Strategy are upgraded by end June 2018. All Board property wastewater systems are maintained in accordance with Strategy.	MIES	85% Complete Achieved and ongoing.
Action	4.5.5	Undertake monitoring of LHI groundwater monitoring well network on annual basis and establish data management and reporting.	Data on quality and levels is collected and data is managed to enable sensible reporting.	MIES	Achieved
Action	4.5.6	Undertake two waste audits to monitor and record waste types and volumes received from the community.	Audits completed by end June 2018.	MIES	Achieved
Action	4.5.7	Develop a program to phase out single-use takeaway containers on the Island.	Feasibility of installing two more water refill stations to be investigated at Joy's Shop and Thompson's Store by end December 2017 Work is undertaken with community representatives to put in place measures to phase out the sale of plastic water bottles, plastic-coated coffee cups, plastic/polystyrene takeaway food containers and plastic shopping bags	MIES	Owner at Joy's shop advised not interested in refill station. LHIB refill station installed and operational, Thompsons Store has a refill station within 25m. Achieved and ongoing. Successful campaign run by Community Group to reduce single use plastics.

Strategic Direction: Responsible Land Management					
Strategy	5.1	<b>Design land use and development policies that balance environmental, economic and social outcomes.</b>	<b>KPI / Measure</b>	<b>Responsible Officer</b>	<b>Annual Review Jun 2018</b>
Action	5.1.1	Finalise Stage 1 review of the LHI Local Environmental Plan (LEP)	Planning proposal revised with external assistance and lodged with DPE by end December 2017.	MECS	Not complete. No external funds available.
Action	5.1.2	Commence Stage 2 review of the LHI Local Environmental Plan (LEP)	Draft Planning proposal completed by June 2018.	MECS	Not commenced. This will be Community Strategic Plan dependant.
Action	5.1.3	Undertake a review of the Dwelling Allocation and Entitlement Policy	Dwelling Allocation and Entitlement Policy is reviewed within 6 months of Government finalisation of Handley Report	MECS	Handley Report adopted November 2017. Implementation plan in place. Some action taken on recommendations.
Action	5.1.4	Undertake Market Demand Study of Staff Accommodation	Study is completed by June 2018	MECS	Not undertaken. Will be completed as part of LEP review.
Strategy	5.2	<b>Provide an efficient and effective development planning and assessment service.</b>	<b>KPI / Measure</b>	<b>Responsible Officer</b>	<b>Annual Review Jun 2018</b>
Action	5.2.1	Provide development planning and assessment through the services of an independent planning consultant.	Contract in place for planning and assessment services by September 2017 Annual performance reviews of planning contract undertaken.	MECS	New planner appointed - All about planning Achieved
Action	5.2.2	Undertake audits of planning and assessment systems and processing to monitor compliance with legislative and policy matters under the control of the Board.	Biannual report of planning and assessment systems and processes undertaken.	MECS	Not completed due to change in provider of services. Annual report to be completed covering first year of engagement with new provider - once first year completed.
Strategy	5.3	<b>Provide an effective lease administration system.</b>	<b>KPI / Measure</b>	<b>Responsible Officer</b>	<b>Annual Review Jun 2018</b>
Action	5.3.1	Administer leases in accordance with the Act.	All necessary administration undertaken accurately and in a timely manner. Continue review of perpetual leases and develop residency policy by end December 2017	MECS	Ongoing. Exemption from residency requirement policy adopted. Advice sought regarding residency from some lessees.
Action	5.3.2	Implement recommendations from independent review of land tenure and allocation arrangements.	Priority actions from Land Tenure and Land Allocation review are implemented within 12 months of Government finalisation of Handley Report	MECS	Handley Report adopted November 2017. Implementation plan in place.
Strategy	5.4	<b>Protect and manage the LHI Permanent Park Preserve in a manner that recognises the World Heritage values of the Island.</b>	<b>KPI / Measure</b>	<b>Responsible Officer</b>	<b>Annual Review Jun 2018</b>
Action	5.4.1	Ensure LHI Permanent Park Preserve is managed in accordance with Plan of Management.	Draft LHI Permanent Park Preserve Plan of Management prepared in consultation with the PPP Community Advisory Committee by end June 2018	MECS	Review underway, 85% complete.
Strategy	5.5	<b>Protect and manage vacant crown lands.</b>	<b>KPI / Measure</b>	<b>Responsible Officer</b>	<b>Annual Review Jun 2018</b>
Action	5.5.1	Develop a management plan for Stevens Reserve and other vacant crown lands.	Draft Stevens Reserve Management Plan is placed on public consultation by June 2018.	MECS	No budget to carry this item out.
Action	5.5.2	Develop a plan for management of Norfolk Island Pines	Plan developed by June 2018	MECS	Not yet commenced
Strategy	5.6	<b>Rehabilitate degraded areas.</b>	<b>KPI / Measure</b>	<b>Responsible Officer</b>	<b>Annual Review Jun 2018</b>
Action	5.6.1	Undertake rehabilitation of the Old Powerhouse Precinct to allow alternative uses.	Traffic improvements considered and planned for 2017/18. Funding from Stronger Country Communities Program is obtained and project implemented.	MIES	Funding provided, approved works waiting to tender
Action	5.6.2	Finalise review of LHI Vegetation Rehabilitation Plan, 2003 and implement high priority actions.	Draft Vegetation Rehabilitation Plan placed on public exhibition by June 2018	MEWH	Review not yet commenced
Action	5.6.3	Implement LHI Coastal Study recommendations to manage erosion and recession risks.	Concrete protection of geotextile bag wall at Pinetrees Boatshed is completed by end October 2017. Old Settlement Creek is managed to reduce erosion impacts on the northern edge. Cobby's Creeks is managed to reduce flooding impacts on properties and salt intrusion on the Sally Swamp area. Funding opportunities for Sediment Tracing Study are pursued with OEH. Identify solution for beach erosion north of Windy Point.	MIES	Partially completed, blocks to further install Monitoring in place Reviewing funding opportunities Complete - OEH Declined. Study Needed

Strategic Direction: Strong and Engaged Community

<b>Strategy</b>	<b>6.1</b>	<b>Plan for appropriate services for the community.</b>	<b>KPI / Measure</b>	<b>Responsible Officer</b>	<b>Annual Review Jun 2018</b>
Action	6.1.1	Support a whole of government approach to the provision of health, education and other services.	Meetings held with NSW Health, RMS, Police, SES and RFS every 12 months.	SMT	Regular meetings held (eg LEMC)
<b>Strategy</b>	<b>6.2</b>	<b>Improve relationship with the community through engagement and consultation.</b>	<b>KPI / Measure</b>	<b>Responsible Officer</b>	<b>Annual Review Jun 2018</b>
Action	6.2.1	Develop a communication / community engagement strategy to support an informed and involved community.	Communication / community engagement strategy developed by Dec 2017.	CEO / MECS	Communication/Engagement Strategy is part of development of Community Strategic Plan.
<b>Strategy</b>	<b>6.3</b>	<b>Provide professional environmental and public health services.</b>	<b>KPI / Measure</b>	<b>Responsible Officer</b>	<b>Annual Review Jun 2018</b>
Action	6.3.1	Ensure compliance with public health standards for LHIB drinking water supplies, wastewater management and food safety.	Scheduled inspection and testing regime are implemented.	MECS / MIES	On going, commissioned Port Macquarie council to do inspection.
Action	6.3.2	Prepare and implement Drinking Water Quality Assurance Program for Board supplies.	Drinking Water Quality Assurance Program implemented and documented fully.	MIES	Achieved, review on new requirements underway.
<b>Strategy</b>	<b>6.4</b>	<b>Support capacity building in community organisations.</b>	<b>KPI / Measure</b>	<b>Responsible Officer</b>	<b>Annual Review Jun 2018</b>
Action	6.4.1	Make funds available under Community Grants Program for activities or projects that benefit the LHI community.	Expressions of Interest for Community Grants sought every 12 months in accordance with Policy.	MECS	Community grants allocated November 2017
<b>Strategy</b>	<b>6.5</b>	<b>Promote programs that provide for children.</b>	<b>KPI / Measure</b>	<b>Responsible Officer</b>	<b>Annual Review Jun 2018</b>
Action	6.5.1	Make funds available under LHI Scholarship Program to support the completion of tertiary education that contributes to LHI.	\$10,000 pa provided for LHI Scholarship Program.	MECS	Ongoing
Action	6.5.2	Support community events.	Event calendar developed and priority events for Board assistance identified by end Jan 2018.	MECS	Ongoing
Action	6.5.3	Actively support progress of establishment of pre-school	Substantial progress towards establishment of pre-school by end June 2018	MECS	Achieved, preschool full funded, minor conflicts with waste water location onsite resolved, minor redesign to footings required.
<b>Strategy</b>	<b>6.6</b>	<b>Manage the Local Emergency Management Committee (LEMC) and Emergency Management Plan (EMPLAN).</b>	<b>KPI / Measure</b>	<b>Responsible Officer</b>	<b>Annual Review Jun 2018</b>
Action	6.6.1	Arrange quarterly meetings of LEMC.	Quarterly meetings of LEMC held.	LEMO / MIES	On Track
Action	6.6.2	Implement EEMPLAN as required and coordinate annual review.	EEMPLAN implemented for any emergencies and annual review completed.	LEMO / MIES	Achieved and on going

# **LORD HOWE ISLAND BOARD**

## **Business Paper**

### **OPEN SESSION**

#### **ITEM**

Operations Plan 2017/2018 – Annual Review

#### **RECOMMENDATION**

It is recommended that the Board note the report on achievements against the Operations Plan 2017/2018

#### **BACKGROUND**

In September 2017, the Board adopted the Operations Plan 2017/2018. The 2017/2018 Operations Plan identified the programs and activities that were to be undertaken to achieve the second year of the Board's Corporate Plan.

The Operations Plan was formulated around the six strategic directions:

- Effective Governance and Leadership
- Strong and Sustainable Economy
- Sound Infrastructure and Services
- Outstanding Environment
- Responsible Land Management
- Strong and Engaged Community

The Operations Plan links the strategies, actions and KPI's to the approved annual budget allocations.

At the end of the 2017/2018 financial year, a review was undertaken of progress on the activities identified in the Operations Plan.

#### **CURRENT POSITION**

Attached is the Operations Plan 2017/2018, with comments on the full year review of progress against each of the identified actions as at 30 June 2018.

The review undertaken of the 2017/2018 Operating Plan including its Actions and achievement against those Actions has shown that the Board has undertaken a wide range of activities. These activities were directly aligned with the Board's adopted Strategies and in some cases were completed and in others, progressed where they were ongoing activities or staged projects.

I would like to acknowledge the excellent achievements of the LHI Board under the leadership of Penny Holloway and that the significant success in the Operating Plan outcomes is a

product of that, despite a few setbacks in terms of delays due to approval process challenges. Some of these setbacks have since been addressed and achieved since the date of this review (30 June). These are detailed in other reports to this Board meeting.

Ongoing services and activities have been delivered successfully, including critical compliance and operational requirements relating to safety, the airport, safety and risk management.

In the minority of instances where actions have not been completed, there are reasons given for non-completion.

During the year, the governance of the Board was coordinated efficiently and effectively and ongoing services were delivered to the LHI community at a high standard.

Some of the specific achievements for the year were:

- Airport terminal upgrade completed.
- A range of asset management maintenance and upgrade works were completed
- Upgrade to the Waste Management Facility through installation of new composting unit substantially completed
- Walking Track Strategy programmed works undertaken.
- Significant grant funding for weed eradication received through Saving Our Species program
- Successful rapid response implemented for incursion of myrtle rust
- Significant progress was made in the planning and approvals stage of rodent eradication program to meet new approval application requirements
- African big-headed ant declared by the CSIRO as eradicated. This is a major achievement and significant internationally.
- Significant progress on the Biodiversity Management Plan.
- Biodiversity dogs and handlers introduced, accredited and actively inspecting.
- Major Qantas visitor survey undertaken.
- Winter ecotourism launched and implemented and post travel survey initiated.
- New agreement with QantasLink has been negotiated and signed for services to 30 March 2022.
- Handley review recommendations able to be implemented by the LHIB underway.
- Support for proposed pre-school provided, wastewater scheme adapted to suit pre-school proposal and funding received by pre-school group.
- The feasibility study of the runway extension as well as review of options to retain air services to the island were commissioned, and Stage one completed on schedule.
- Electronic records management system was successfully incorporated into the organisations practices with training for all relevant staff.
- Hybrid Renewable Energy Project – following the failure to obtain Commonwealth Government approval for the wind turbine component, ARENA's support and therefore funding was jeopardised. A revised project comprising increased solar generation to replace the wind component was developed and progressed commercially. This was submitted to ARENA seeking their support.

## **RECOMMENDATION**

It is recommended that the Board note the report on achievements against the Operations Plan 2016/2017

**Prepared:** Peter Adams, Chief Executive Officer

**Attachments:** Attachment A: Operations Plan 2017/18 – Annual Review

## LHI Operations Plan FY 2019 planning

<b>Strategic Direction: Effective Governance and Leadership</b>				
Strategy	1.1	Ensure accountability, fairness and transparency in the Board's decision-making and relationships with all its stakeholders.	Responsible Officer	KPI/Measure - Operations Plan 2018/2019
Action	1.1.1	Develop a 10 year strategic plan to develop a longer term vision and key directions for the community, providing a basis for future policy, plans and community reporting	CEO	Undertake community engagement, prepare draft CSP and inform 19/20 budget and operating plan processes to meet milestones by June 2019 Longer-term vision and key directions developed by end June 2019
Action	1.1.2	Hold Board meetings four times a year in public.	CEO / MBCS	Four public meetings held per annum. Code of Meeting Practices is adhered to.
Action	1.1.3	Develop and implement appropriate policies and procedures to ensure decisions are merit based, transparent and defensible.	MBCS	Policies and procedures reviewed in accordance with the schedule to ensure currency and completeness.
Action	1.1.4	Ensure all conflicts of interest of Board members and staff are declared and managed in accordance with the Board's Code of Conduct.	MBCS	A record is kept of conflicts of interest declared. Declarations of Pecuniary Interests are completed and reported on an annual basis. Register established.
Action	1.1.5	Ensure appropriate community engagement and consultation opportunities are provided so that community input to decisions and plans is obtained and considered.	CEO	Program of meetings and engagement opportunities undertaken. Community input to policy development is sought as appropriate.
Action	1.1.6	Implement a level of delegated authority to ensure efficient and equitable organisational operations.	CEO	Appropriate delegations of authority are enacted to provide staff with sufficient powers to enforce the LHI Act and Regulation and other legislation administered by the Board.
Strategy	1.2	Ensure corporate governance practices meet legislative requirements.	Responsible Officer	Operations Plan 2018/2019

Action	1.2.1	Work with the Audit and Review Committee (ARC) and auditors.	CEO / MBCS	ARC meets four times per year. Internal audit work plan completed on time.
Action	1.2.2	Provide relevant and timely advice to Government on matters affecting the management of the island.	CEO / MBCS	Briefings and submissions prepared as required to the Minister, DPE, OLG and Treasury as appropriate.
<b>Strategy</b>	<b>1.3</b>	<b>Work to achieve long term financial sustainability.</b>	<b>Responsible Officer</b>	<b>Operations Plan 2018/2019</b>
Action	1.3.1	Develop sustainable annual budget	CEO / MBCS	Adequate capital funding achieved to fund the Total Asset Management Plan (TAM Plan). Recurrent funding achieved to allow the Board to meet its objectives in accordance with the Corporate Plan. Business cases to be prepared for recurrent funding of biosecurity strategy and REP.
Action	1.3.2	Levy fees and charges at an appropriate level.	MBCS	Fees and charges are in accordance with the Board's decisions.
Action	1.3.3	Ensure that the services delivered are provided at the appropriate level.	CEO	Service levels and service delivery monitored and reports provided to the Board on achievement of service levels.
<b>Strategy</b>	<b>1.4</b>	<b>Ensure risks are properly managed.</b>	<b>Responsible Officer</b>	<b>Operations Plan 2018/2019</b>
Action	1.4.1	Implement the risk management policies and procedures.	MBCS	Progress against the implementation of policies and procedures is reviewed quarterly.
Action	1.4.2	Regularly review the Risk Register.	CEO	Risk Register is reviewed quarterly.
Action	1.4.3	Develop Risk Treatment Plans (RTPs) to manage risk impacts.	CEO / Unit Managers	RTPs tabled at management meetings.

Action	1.4.4	Develop and implement a Business Continuity Plan to ensure the continuance of Board services should a significant event occur.	CEO	Business Continuity Plan completed and tested by end June 2018.
<b>Strategy</b>	<b>1.5</b>	<b>Provide internal IT and communications systems which are secure, stable and support business operations.</b>	<b>Responsible Officer</b>	<b>Operations Plan 2018/2019</b>
Action	1.5.1	Implement ICT policies and procedures.	MBCS	Projects completed on time and on budget.
Action	1.5.2	Support and maintain corporate ICT.	MBCS	Systems operational 99% of the time during business hours.
<b>Strategy</b>	<b>1.6</b>	<b>Provide efficient and effective records management and information management.</b>	<b>Responsible Officer</b>	<b>Operations Plan 2018/2019</b>
Action	1.6.1	Review and implement policies and procedures regarding information management.	MBCS	100% of relevant staff informed of record keeping responsibilities.
Action	1.6.2	Continue the RM8 electronic records management system implementation.	MBCS	Records are moved to electronic format or archived by June 2019
				Alternative records system on hard drive to be reviewed by June 2019
<b>Strategy</b>	<b>1.7</b>	<b>Ensure effective management of human resources.</b>	<b>Responsible Officer</b>	<b>Operations Plan 2018/2019</b>
Action	1.7.1	Ensure organisational structure is aligned to strategic priorities and legislative requirements and is adequately resourced.	CEO	Review undertaken annually.
Action	1.7.2	Attract, develop and retain an effective workforce that delivers required outcomes.	CEO / Unit Managers	Required recruitment process implemented.
				Training programs provided in line with the training budget.
Action	1.7.3	Provide workplaces that ensure the health, safety and welfare of	CEO / Unit Managers	Risk Management Policy and Guidelines and all associated policies and procedures implemented and reviewed at appropriate intervals.
				WH&S Management Plan reviewed annually.



		employees and members of the public.		Incidents and injuries are reviewed.
				Safe work procedures and training requirements are in place.
Action	1.7.4	Ensure that Work and Development Plans are completed for all staff.	CEO / Unit Managers	Work and Development Plans are completed annually, including Customer Service Objectives.
Action	1.7.5	Review and implement actions from the Workforce Plan 2015-18.	CEO / Unit Managers	Database of volunteers created in appropriate areas. Training program developed
			MECS	Database of young island residents who are studying at the tertiary level developed
<b>Strategy</b>	<b>1.8</b>	<b>Provide timely and proactive communication to all stakeholders.</b>	<b>Responsible Officer</b>	<b>Operations Plan 2018/2019</b>
Action	1.8.1	Develop and implement a Communication / Community Engagement Strategy.	CEO / MECS	A Communication / Engagement Strategy in place by end June 2019
Action	1.8.2	Promote Board programs and services through meetings, advertising and written materials.	CEO / Unit Managers	All materials prepared as required to a high standard.
Action	1.8.3	Maintain information on the Board's website and through social media.	MBCS	Number of page views per month.
<b>Strategy</b>	<b>1.9</b>	<b>Ensure high standards of customer service.</b>	<b>Responsible Officer</b>	<b>Operations Plan 2018/2019</b>
Action	1.9.1	Provide appropriate services efficiently and effectively to the appropriate service level.	CEO / Unit Managers	Communication of and access to information improved.
				Efficiency and effectiveness of employees enhanced.
				Actions from the CSIP implemented, including the following:
				Explore on-line services.

Action	1.9.2	Implement the Customer Service Improvement Plan (CSIP).	CEO / Unit Managers	Continue improved Work and Development Planning system
				Implement social media initiatives
				Review processes and procedures to improve customer service.

### Strategic Direction: Strong and Sustainable Economy

Strategy	2.1	Market the island as a tourist destination.	Responsible Officer	Operations Plan 2018/2019
Action	2.1.1	Maintain and enhance the sustainable tourism 'product' through the provision of infrastructure, engineering and environmental services.	CEO	Direct feedback from community members and tourists.
Action	2.1.2	Conduct visitor surveys as required, in conjunction with partners where appropriate, to inform product planning and destination marketing.	CEO	Visitor surveys conducted, analysed and assessed to inform product planning and destination marketing.
Action	2.1.3	Work in partnership with LHI Tourism Association (LHITA), Destination NSW and other bodies in the ongoing implementation of the Destination Management Plan.	CEO / MBCS	Regular consultation and information sharing takes place.
Action	2.1.4	Promote the island in key source markets as resources allow.	CEO / MBCS	Results of marketing activities are measured. Participate in marketing strategy and plan development. Post survey review/analysis.
Action	2.1.5	Ensure website content is current and relevant.	Manager Admin	Website content is refreshed and updated as necessary.
Action	2.1.6	Review the Destination Management Plan (DMP) annually, in consultation with the LHITA.	MBCS	The DMP is reviewed by December 2018. Those parts of the DMP for which the Board is responsible are implemented.
Action	2.1.7	Ensure efficient and effective visitor information services are provided.	CEO / Unit Managers	The MOU between the Board and the LHITA is implemented in a manner that achieves this outcome.
Strategy	2.2	Foster an environment that supports sustainable economic development.	Responsible Officer	Operations Plan 2018/2019

Action	2.2.1	Work with business regarding options and plans for sustainable business growth.	CEO	Support for local business development provided.
Action	2.2.2	Pursue avenues of funding to implement economic development projects.	MBCS	Funding opportunities, pursued and reported.
Action	2.2.3	Develop and maintain contemporary policies to aid sustainable development.	MBCS	Policies regularly reviewed and red tape reduced.
Action	2.2.4	Work with the Nursery lessees to support the development of a major tourist attraction.	MBCS	Close cooperation and planning is ongoing.
Action	2.2.5	Introduce Commercial Tour Operator licensing system	MECS	Commercial Tour Operator licensing system for Mt Gower Walk and other areas of PPP developed and implemented following consultation with key stakeholders by 30th March 2019
<b>Strategy</b>	<b>2.3</b>	<b>Effectively manage the Board's business enterprises.</b>	<b>Responsible Officer</b>	<b>Operations Plan 2018/2019</b>
Action	2.3.1	Operate the LHI Liquor Store.	MBCS / Liquor Store Manager	Budgeted revenue and expenditure targets are met.
Action	2.3.2	Operate the island's airport and wharf facilities.	MIES / MBCS	Airport and wharf facilities are operational when required and revenue and expenditure targets are met.
<b>Strategy</b>	<b>2.4</b>	<b>Effectively manage the Board's commercial leases.</b>	<b>Responsible Officer</b>	<b>Operations Plan 2018/2019</b>
Action	2.4.1	Ensure that fair market rental return is achieved on commercial leases.	MBCS	Commercial leases are revalued at least every three years and annual CPI increases are applied. Former Post Office building advertised for commercial opportunities by end December 2018.
<b>Strategy</b>	<b>2.5</b>	<b>Take action to ensure appropriate and adequate servicing of the island by a major airline.</b>	<b>Responsible Officer</b>	<b>Operations Plan 2018/2019</b>
Action	2.5.1	Work with Air Services stakeholders and negotiate with Qantas and other airlines to ensure services to the island beyond 2018.	CEO / MBCS	Progress initiatives to ensure air services to LHI beyond 2022.
Action	2.5.2	Undertake Feasibility Study into the extension of the airport runway	CEO / MIES	Complete feasibility study March 2019. Commence actions with the aim of ensuring an airtservice into the future.

### Strategic Direction: Sound Infrastructure

Strategy	3.1	Provide sound asset management.	Responsible Officer	Operations Plan 2018/2019
Action	3.1.1	Review and update TAMPLAN annually for Board approval in March.	MIES	TAMPLAN is updated annually to support Treasury CAPEX requests
Action	3.1.2	Develop procedures then undertake and document preventative maintenance on all assets to reduce failures.	MIES	Progress of TAMPLAN reported at quarterly Board meetings.
Action	3.1.3	Implement Authority Asset Maintenance System (AMS).	MIES	Initial gap analysis commenced to inform spacial data. AMS commenced Dec 2018
Action	3.1.4	Replacement or new plant items.	MIES	Replacement utility vehicles (1 off) purchased by end March 2019.
				Yard forklift \ telehandler replaced by March 2019.
				Purchase new concrete mini-mix and orca March 2019
Strategy	3.2	Maintain recreational facilities for visitor and community use.	Responsible Officer	Operations Plan 2018/2019
Action	3.2.1	Maintain and improve standard of recreational facilities through regular maintenance.	MIES	Recreational facilities are available for use.
				Undertake review of parking options for CBD to address current and proposed new development (including landscaping)
Action	3.2.2	Manage construction for the Airport Terminal Upgrade.	MIES	Identify and prioritise additional minor improvement projects for airport.
Action	3.2.3	Implement approved walking track strategy.	MECS	Priority walking track works as per strategy implemented in accordance with available funding.

Strategy	3.3	Operate Aerodrome safely for Regular Passenger Transport (RPT) services, medical evacuations and general aviation.	Responsible Officer	Operations Plan 2018/2019
Action	3.3.1	Arrange Annual Aerodrome Technical inspections and participate in CASA audits.	Aerodrome Controller / MIES	Annual Aerodrome Technical Inspections and CASA Audits completed and recommendations acted on.
Action	3.3.2	Review effectiveness Bird and Animal Hazard Management Plan annually.	Aerodrome Controller / MIES	Bird and Animal Hazard Management Plan effectiveness reviewed annually.
				Strategies to minimise risk of bird strike to aircraft implemented.
Action	3.3.3	Review Aerodrome Manual annually.	Aerodrome Controller / MIES	Aerodrome Manual updated annually and distributed.
Action	3.3.4	Hold Aerodrome emergency exercises annually.	Aerodrome Controller / MIES	Desktop aerodrome emergency exercise held in 2018/2019.
Strategy	3.4	Maintain road network in good condition for all road users.	Responsible Officer	Operations Plan 2018/2019
Action	3.4.1	Implement road renewals as per TAMPLAN, subject to budget allocations.	MIES	Thompson's Road rehabilitated and resealed.
				Lagoon Rd – adjacent to boatsheds rehabilitated and resealed as a priority
				Lagoon Rd – Ned's Beach Rd to Oceanview Drive, King's Beach to Smoking Tree Ridge Rd, and King's Beach turning circle rehabilitated and resealed.
				Access to Murray/Crombie residences rehabilitated and resealed.
				TC Douglass Dr rehabilitated and resealed.
				Ned's Beach Road – Lagoon Rd to Anderson Rd rehabilitated and resealed.
				Cemetery Rd rehabilitated and resealed.
				Jetty hardstand area resealed.

				Smoking Tree Ride Rd- Lagoon Rd to cattle grid rehabilitated and resealed.
				Contractor on Island by end March 2019.
Action	3.4.2	Regular routine road maintenance programmed.	MIES	Standard of roads is maintained or improved.
<b>Strategy</b>	<b>3.5</b>	<b>Maintain wharf to serve shipping contractor, charter operators and visiting boats.</b>	<b>Responsible Officer</b>	<b>Operations Plan 2018/2019</b>
Action	3.5.1	Maintain wharf as per TAMPLAN.	MIES	Wharf is available 100% of the time when required and routine maintenance and works are carried out.
				Timber piles on low level landing are replaced.
				Feasibility of allowing outriggers to be further extended for crane to be investigated.
				Feasibility of 2 <sup>nd</sup> low level landing to be assessed.
<b>Strategy</b>	<b>3.6</b>	<b>Maintain Board building and property assets.</b>	<b>Responsible Officer</b>	<b>Operations Plan 2018/2019</b>
Action	3.6.1	Maintain Board buildings as per TAMPLAN.	MIES	Buildings are maintained to an acceptable standard for commercial and residential purposes.
Action	3.6.2	Depot shed extension	MECS \ MIES	Contract issued, construction complete March 2019.
Action	3.6.3	Research Facility extension	MECS \ MIES	Commenced tender process, March 2019.
Action	3.6.4	Hospital garage and morgue	MIES	DA submitted March 2019. Construction commenced June 2019.
Action	3.6.5	Refurbish rainwater collection at Depot/Admin, Gov House and Public Hall to maintain supply levels.	MIES	Review need for remaining tanks and implement priority works June 2019.
Action	3.6.6	Repair and renovate Aviation Fuel Shed	MIES	Replacement shed, build complete June 2019

Action	3.6.6	Repair and renovate Aviation Fuel Shed	MIES	Replacement shed, build complete June 2019.
<b>Strategy</b>	<b>3.7</b>	<b>Provide facilities in conjunction with Roads and Maritime Services for all Island boat users to safely and efficiently launch, retrieve and maintain boats in an environmentally sound manner.</b>	<b>Responsible Officer</b>	<b>Operations Plan 2018/2019</b>
Action	3.7.1	Undertake detailed design, planning and construction for upgraded boat ramp and launch/retrieval system.	MIES	Submit DA following RMS design and process, commence implementation plan
<b>Strategy</b>	<b>3.8</b>	<b>Provide reliable and efficient electricity supply.</b>	<b>Responsible Officer</b>	<b>Operations Plan 2018/2019</b>
Action	3.8.1	Maintain electricity generation and distribution system to provide a reliable and safe supply.	MIES	Unplanned electricity outages are maintained at 2015/2016 levels.
Action	3.8.2	Hybrid Renewable Energy Project continues to progress.	MIES	Project is resolved and agreement reached on next stage.
				ARENA funding agreement obligations met.
				Construction on Solar PV commenced
Action	3.8.3	Electricity Safety Management System implemented fully and audited.	MIES	ENSMS Compliance maintained
Action	3.8.4	Consider second electrical officer position.	MIES	Appoint second Electrical Officer
<b>Strategy</b>	<b>3.9</b>	<b>Provide efficient and environmentally sustainable waste and recycling management services.</b>	<b>Responsible Officer</b>	<b>Operations Plan 2018/2019</b>
Action	3.9.1	Maintain and upgrade the Waste Management Facility using grants and allocations to improve composting and waste diversion.	MIES	Through discussions with EPA compost exemption order achieved by 30 June 2019.
				Compost is given back (not sold) to the community once it reaches an acceptable standard under a distribution system to be determined.
				> 80% of waste is diverted from landfill.

				New baler delivered and installed by end March 2019.
Action	3.9.2	Maintain compliance with EPA licence for wastewater and waste management at WMF site.	MIES	Wastewater system is maintained and managed to achieve ongoing compliance with EPA licence requirements and the Island's Wastewater Strategy. Pollution Reduction Programs (PRPs) within licence are planned and executed as required.
Action	3.9.3		MIES	Construct concrete waste bunkers Dec 2018

### Strategic Direction: Outstanding Environment

Strategy	4.1	Protect and manage the environment in a manner that recognises and promotes the World Heritage values of the Island.	Responsible Officer	Operations Plan 2018/2019
Action	4.1.1	Protect threatened species, populations and ecological communities, and their habitats through implementation of LHI Biodiversity Management Plan (BMP)	MEWH	Significant progress against identified actions in the LHI Biodiversity Management Plan (BMP) is demonstrated. BMP action table is reviewed
Action	4.1.2	In accordance with the LHI LEP, manage development in order to protect landscape values and scenic features	MECS	Development applications and activities are assessed in accordance with relevant environmental legislation, policies, and procedures.
Action	4.1.3	Contribute to World Heritage Area conservation by being a member of the Australian World Heritage Advisory Committee (AWHAC).	CEO / MEWH	Active contribution to AWHAC.
Strategy	4.2	Work to prevent the introduction of exotic pests and pathogens to and eradicate exotic pests from the Island.	Responsible Officer	Operations Plan 2018/2019
Action	4.2.1	Implement biosecurity measures to protect against the introduction of exotic pests and pathogens to the Island.	MEWH	High priority actions identified in the LHI Biosecurity Strategy are implemented
			MEWH	Procedures for use of detection dogs are developed, consulted on and approved prior to commencement of dog usage.
			MEWH	Regular biosecurity inspections are conducted with detection dogs at high risk entry points.



Action	4.2.2	Implement the LHI Weed Management Strategy 2016 and Program to eradicate invasive weeds	CEO	Implement Weed Management Strategy
Action	4.2.3	Seek philanthropic investment in the implementation of LHI Weed Management Strategy / Weed Eradication Program	CEO	LHI Weed Eradication Program Prospectus developed
				Community and support group to champion philanthropic investment in weed eradication
				Sponsorship received from individuals and groups towards program implementation
Action	4.2.4	Complete Planning and Approvals stage of Rodent Eradication Program.	CEO	Planning and approval process to inform the implementation phase is complete
				The technical and non-technical feasibility of the program is demonstrated.
				Decision made to proceed/not proceed
Action	4.2.5	Finalise operational planning and commence implementation of Rodent Eradication Program	CEO	Subject to decision under 4.2.5, REP is commenced by June 2019
<b>Strategy</b>	<b>4.3</b>	<b>Identify, protect and value heritage items.</b>	<b>Responsible Officer</b>	<b>Operations Plan 2018/2019</b>
Action	4.3.1	Assist the LHI Historical Association and the community with conservation of heritage items	MECS	Applications for community grants and external funding for heritage conservation initiatives are supported.
Action	4.3.2	Identify and protect heritage items	MECS	Heritage requests considered and assessed. Heritage items to be considered in all DA planning assessments.

<b>Strategy</b>	<b>4.4</b>	<b>Improve awareness and understanding of the environment through education and research.</b>	<b>Responsible Officer</b>	<b>Operations Plan 2018/2019</b>
Action	4.4.1	Provide regular updates on environmental programs, research and maintain interpretation to increase environmental awareness	MEWH, REP PM, FMO	Articles prepared for Community Bulletin, Signal and LHIB website and community consultation undertaken on weeds, rodents, waste management and biosecurity
Action	4.4.2	Encourage appropriate environmental research which is of benefit to LHI environment and community.	MEWH	High priority research supported
<b>Strategy</b>	<b>4.5</b>	<b>Improve environmental sustainability of Board programs and operations (waste disposal; wastewater; renewable energy).</b>	<b>Responsible Officer</b>	
Action	4.5.1	Develop better knowledge within the resident and tourist populations of the waste program objectives activities.	MIES	Waste data regularly updated at WMF, The Signal and/or Community Bulletin.
Action	4.5.2	Support community in implementing On-site Wastewater Strategy.	MIES	Demonstrated progress by commercial and residential leases to upgrade wastewater systems to meet revised Strategy deadlines.
Action	4.5.3	Reduce the environmental impact of wastewater from Board properties.	MIES	All remaining Board properties which do not meet the Strategy are upgraded by end June 2019.
				All Board property wastewater systems are maintained in accordance with Strategy.
Action	4.5.4	Undertake monitoring of LHI groundwater monitoring well network on annual basis and establish data management and reporting.	MIES	Data on quality and levels is collected and data is managed to enable sensible reporting.
Action	4.5.5	Undertake two waste audits to monitor and record waste types and volumes received from the community.	MIES	Audits completed by end June 2019.
Action	4.5.6	Develop a program to phase out single-use takeaway containers on the Island.	MIES	Feasibility of installing two more water refill stations.
				Work is undertaken with community representatives to put in place measures to phase out the sale of plastic water bottles, plastic-coated coffee cups, plastic/polystyrene takeaway food containers and plastic shopping bags

### Strategic Direction: Responsible Land Management

<b>Strategy</b>	<b>5.1</b>	<b>Design land use and development policies that balance environmental, economic and social outcomes.</b>	<b>Responsible Officer</b>	<b>Operations Plan 2018/2019</b>
-----------------	------------	---	----------------------------	----------------------------------

Action	5.1.1	Finalise Stage 1 review of the LHI Local Environmental Plan (LEP)	MECS	Planning proposal revised with external assistance and lodged with DPE - finalised March 2019.
Action	5.1.2	Commence Stage 2 review of the LHI Local Environmental Plan (LEP)	MECS	Deferred subject to priorities set by CSP.
Action	5.1.3	Undertake a review of the Dwelling Allocation and Entitlement Policy	MECS	Dwelling Allocation and Entitlement Policy is reviewed and implementation plan progressed March 2019.
Action	5.1.4	Undertake Market Demand Study of Staff Accommodation	MECS	Study is completed by June 2019
<b>Strategy</b>	<b>5.2</b>	<b>Provide an efficient and effective development planning and assessment service.</b>	<b>Responsible Officer</b>	<b>Operations Plan 2018/2019</b>
Action	5.2.1	Provide development planning and assessment through the services of an independent planning consultant.	MECS	Annual performance reviews of planning contract undertaken.
Action	5.2.2	Undertake audits of planning and assessment systems and processing to monitor compliance with legislative and policy matters under the control of the Board.	MECS	Biannual report of planning and assessment systems and processes undertaken.
<b>Strategy</b>	<b>5.3</b>	<b>Provide an effective lease administration system.</b>	<b>Responsible Officer</b>	<b>Operations Plan 2018/2019</b>
Action	5.3.1	Administer leases in accordance with the Act.	MECS	Continue review of perpetual leases on a periodic basis.
Action	5.3.2	Implement recommendations from independent review of land tenure and allocation arrangements.	MECS	Priority actions from Land Tenure and Land Allocation review are implemented within 12 months of Government finalisation of Handley Report
<b>Strategy</b>	<b>5.4</b>	<b>Protect and manage the LHI Permanent Park Preserve in a manner that recognises the World Heritage values of the Island.</b>	<b>Responsible Officer</b>	<b>Operations Plan 2018/2019</b>
Action	5.4.1	Ensure LHI Permanent Park Preserve is managed in accordance with Plan of Management.	MECS	Review completed PPPOEM, reported to LHIB and submitted - Mar 2019.
<b>Strategy</b>	<b>5.5</b>	<b>Protect and manage vacant crown lands.</b>	<b>Responsible Officer</b>	<b>Operations Plan 2018/2019</b>
Action	5.5.1	Develop a plan for management of Norfolk Island Pines	MECS	Plan developed by June 2019

Strategy	5.6	Rehabilitate degraded areas.	Responsible Officer	Operations Plan 2018/2019
Action	5.6.1	Undertake rehabilitation of the Old Powerhouse Precinct to allow alternative uses.	MIES	Investigate traffic parking options in CBD with future developments.
Action	5.6.2	Finalise review of LHI Vegetation Rehabilitation Plan, 2003 and implement high priority actions.	MEWH	Draft Vegetation Rehabilitation Plan placed on public exhibition by June 2019
Action	5.6.3	Implement LHI Coastal Study recommendations to manage erosion and recession risks.	MIES	Concrete protection of geotextile bag wall at Pinetrees Boatshed is completed by Dec 2018.
				Old Settlement Creek is managed to reduce erosion impacts on the northern edge.
				Cobby's Creeks is managed to reduce flooding impacts on properties and salt intrusion on the Sally Swamp area.
				LHIB review funding options
				LHIB review funding options

### Strategic Direction: Strong and Engaged Community

Strategy	6.1	Plan for appropriate services for the community.	Responsible Officer	Operations Plan 2018/2019
Action	6.1.1	Support a whole of government approach to the provision of health, education and other services.	SMT	Meetings held with NSW Health, RMS, Police, SES and RFS every 12 months.
Strategy	6.2	Improve relationship with the community through engagement and consultation.	Responsible Officer	Operations Plan 2018/2019
Action	6.2.1	Develop a communication / community engagement strategy to support an informed and involved community.	CEO / MECS	Communication / community engagement strategy developed by Nov 2018.

<b>Strategy</b>	<b>6.3</b>	<b>Provide professional environmental and public health services.</b>	<b>Responsible Officer</b>	<b>Operations Plan 2018/2019</b>
Action	6.3.1	Ensure compliance with public health standards for LHIB drinking water supplies, wastewater management and food safety.	MECS / MIES	Scheduled inspection and testing regime are implemented.
Action	6.3.2	Prepare and implement Drinking Water Quality Assurance Program for Board supplies.	MIES	Drinking Water Quality Assurance Program implemented and documented fully.
<b>Strategy</b>	<b>6.4</b>	<b>Support capacity building in community organisations.</b>	<b>Responsible Officer</b>	<b>Operations Plan 2018/2019</b>
Action	6.4.1	Make funds available under Community Grants Program for activities or projects that benefit the LHI community.	MECS	Expressions of Interest for Community Grants sought every 12 months in accordance with Policy.
<b>Strategy</b>	<b>6.5</b>	<b>Promote programs that provide for children.</b>	<b>Responsible Officer</b>	<b>Operations Plan 2018/2019</b>
Action	6.5.1	Make funds available under LHI Scholarship Program to support the completion of tertiary education that contributes to LHI.	MECS	\$10,000 pa provided for LHI Scholarship Program.
Action	6.5.2	Support community events.	MECS	Event calendar developed and priority events for Board assistance identified by end Jan 2019.
Action	6.5.3	Actively support progress of establishment of pre-school	MECS	Owners consent and DA assessed and lodged March 2019.
<b>Strategy</b>	<b>6.6</b>	<b>Manage the Local Emergency Management Committee (LEMC) and Emergency Management Plan (EMPLAN).</b>	<b>Responsible Officer</b>	<b>Operations Plan 2018/2019</b>
Action	6.6.1	Arrange quarterly meetings of LEMC.	LEMO / MIES	Quarterly meetings of LEMC held.
Action	6.6.2	Implement EMPLAN as required and coordinate annual review.	LEMO / MIES	EMPLAN implemented for any emergencies and annual review completed.

# **LORD HOWE ISLAND BOARD**

## **Business Paper**

### **OPEN SESSION**

#### **ITEM**

Draft Operations Plan 2018/2019

#### **RECOMMENDATION**

It is recommended that the Board adopt the draft Operations Plan 2018/2019.

#### **BACKGROUND**

In August 2016, the Board adopted the three year Corporate Plan 2016 to 2019. At this September meeting, the Board has also received a report on the annual review of the Operation Plan 2017/2018 and noted achievements against its KPIs and measures.

The draft Operations Plan for the financial year 2018/2019 has now been developed based on the structure of Corporate Plan and identified the programs and activities that are to be undertaken to achieve the third year of the Corporate Plan.

The Operations Plan has been formulated around the six strategic directions:

- Effective Governance and Leadership
- Strong and Sustainable Economy
- Sound Infrastructure and Services
- Outstanding Environment
- Responsible Land Management
- Strong and Engaged Community

The Operations Plan links the strategies, actions and KPI's (measures) to the approved annual budget allocations.

#### **COMMENT**

Attached is the draft Operations Plan for 2018/2019. The Plan identifies ongoing activities, programs and services as well as specific projects to be undertaken and completed within this financial year. Those activities which were not able to be completed in 2017/2018 have been included in this Plan.

Some of the projects to be undertaken in 2018/2019 include:

- Engage with the community to develop a Community Strategic Plan.
- Completion of the final stage of the electronic records management system.

- Continue to give priority to community engagement and communication.
- Review of the LHI Destination Management Plan in conjunction with LHITA.
- Completion of the Airport Runway Extension Feasibility Study
- Pursue options to ensure continuation of air services to the Island beyond the current Qantaslink contract.
- Continued implementation of a Commercial Tour Operator licensing system
- Undertaking priority walking track works as per the Walking Track Strategy and available funding
- Completion of construction of Airport Terminal Upgrade and minor final improvements.
- Undertaking a large package of road renewals
- Review the Destination Management Plan and implement LHIB components of Plan.
- Pursue funding opportunities for projects aligned with the Corporate Plan objectives and priorities.
- Further progress on the Biodiversity Management Plan.
- Continue implementation of the Weed Management Strategy.
- Continue implementation of the Wastewater Strategy.
- Undertake project steps to achieve and administer philanthropic investment in biodiversity projects.
- Publicly exhibit a draft Vegetation Rehabilitation Plan.
- Complete concrete protection of geotextile bag wall at Pinetrees boatshed.
- Address erosion at Old Settlement Beach (north).
- Hybrid Renewable Energy Project – Pursue ARENA funding of project and commence implementation (subject to funding). *Note. Funding now approved by ARENA.*
- Rebuild the aviation fuel shed.
- Pursue an EPA compost exemption order to allow use of compost by community.
- Install new baler and construct new concrete bunkers at the Waste Management Facility.
- Investigate parking options at or adjacent the CBD to address changes.
- Undertaking a Market Demand Study of Staff Accommodation.
- Continue review of perpetual leases on a periodic basis.
- Continue implementation of the LHIB components of the Handley Report.
- Complete planning and approvals stage of rodent eradication program and finalise decision on the program for 2018/19.
- Maintain biosecurity inspections using detection dogs at high risk entry points.
- Continuation of weed eradication program with significant Saving Our Species Program funding
- Pursue funding to resource the LEP review.
- Undertake projects with funding from the Stronger Country Communities Program.

## **RECOMMENDATION**

It is recommended that the Board adopt the draft Operations Plan 2018/2019.

Prepared: Peter Adams, Chief Executive Officer

### **Attachments:**

Attachment A: Draft Operations Plan 2018/2019

# THORNLEIGH

8 June 2018

Penny Holloway  
Chief Executive Officer  
Lord Howe Island Board  
Bowker Avenue  
PO Box 5  
Lord Howe Island NSW 2898

Dear Penny

## APPLICATION FOR SPECIAL LEASE: PORTION 32

I am writing to apply for the special lease over Portion 32, which adjoins my Perpetual Lease over Portion 31. I have enclosed the Application Form for this purpose.

Portion 32 has formed part of Thornleigh since about 1890 under continuous family stewardship. I have cared for the land since Patricia died and it is used for cultivation and grazing for Thornleigh Farm. It also provides the only vehicle access to the property.

When the Board approved the registration of the Perpetual Lease over Portion 31 in my name, it asked that Thornleigh be assessed for its heritage value. I engaged Chris and Margaret Betteridge of Muscape to assess the property and they are in the process of completing the Conservation Management Plan (CMP). I have enclosed their letter of 26 April 2018 which confirms their assessment that the property as a whole (Portions 31 and 32) has heritage significance at the local and probably State level. Once the CMP is completed, I intend to apply for listing of Thornleigh on the NSW heritage register. Their letter emphasises the importance from a heritage perspective of keeping the property as a whole intact.

By way of background, in 2005 the Minister declined to renew the special lease held by Patricia in the belief that the land might be suitable for future housing under the then proposed housing strategy. Afterwards the Board decided to withdraw the land from the Category B pool and return the

Thornleigh Farm  
ABN 13 871 060 422  
PO Box 66  
Lagoon Road  
Lord Howe Island NSW 2898

T: 02 6563 2203  
M: 0419 246 636  
FAX: 02 6563 2203  
[hello@thornleighfarm.com](mailto:hello@thornleighfarm.com)  
[www.thornleighfarm.com](http://www.thornleighfarm.com)



lease to her<sup>1</sup>, the land having been confirmed unsuitable for housing<sup>2</sup>. Her application for the special lease was not processed before she died, although your predecessor Stephen Wills told me that the only reason the application was not dealt with was Patricia's poor health and absences from the Island for intensive medical treatment (indicating that there was no issue at the time).

Although the land is no longer in the Category B pool, it seems to me only fair and reasonable that it should be returned in the spirit of the Government's decision in relation to Category B lots after the Land Allocation Review. In that spirit, I confirm that no compensation was paid to Patricia in 2005 and none is sought in connection with my application. All the upkeep for and improvements on the land have been funded by me or my predecessors and so no accounting to the Board appears necessary.

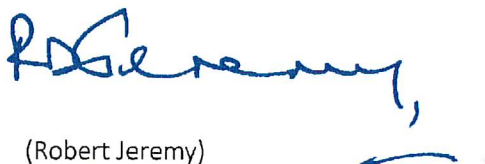
I intend to continue to care for the land and to develop its agricultural potential in support of the business of Thornleigh Farm. Since Patricia died, I have eliminated weeds, returned the pasture, installed new fencing, revegetated certain sections and planted a citrus orchard. The sheds on the land will be maintained and restored consistently with their heritage value.

I request a lease term for as long as possible, up to 10 years as permitted under the Act.

Please let me know if there is any more information the Board needs in support of this application.

Kind regards,

Yours sincerely

A handwritten signature in blue ink, appearing to read 'R. Jeremy', with a horizontal line underneath.

(Robert Jeremy)

---

<sup>1</sup> This has been confirmed to me by a number of the local Board members at the time and this prompted her to lodge her application (which I assisted her with at the time)

<sup>2</sup> The land was known to be subject to flooding

### Form 3 Application for special leases

(Clause 37 (2))

Lord Howe Island Act 1953, section 22

I, *ROBERT DAVID JEREMY*, apply for special lease for the purpose of:

Agriculture and ancillary purposes and access to Perpetual Lease 25/1954

of the land described below:

Portion 32

I have made the declaration on the back of this form.

Signed this 6<sup>th</sup> day of June, 2018.

Signature: *Robert David Jeremy*

Address: Thornleigh, Lagoon Road, Lord Howe Island NSW 2898

To the Chairperson,  
Lord Howe Island Board

#### Declaration by applicant

I, *ROBERT DAVID JEREMY*, of Thornleigh, Lagoon Road, Lord Howe Island NSW 2898, solemnly declare and affirm that I am the applicant for a special lease of the land described on the front and that the answers to the questions in the Schedule are correct.

#### Schedule

1	(a) Are you the holder of a lease in perpetuity for residence under section 21 of the <u>Lord Howe Island Act 1953</u> ?	Yes, Perpetual Lease 25/1954 over Portion 31
	(b) If you are not the holder at present, have you applied for such a lease?	Not applicable
2	(a) Are you already using the land the subject of this application?	Yes

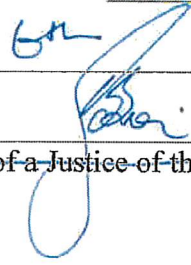
	(b) If so, for what purpose and for how long?	For the purpose of cultivation and grazing and vehicle access to Portion 31. The land has used continuously for this purpose by my family since about 1890
3	Are there any improvements on the land the subject of this application? Give brief particulars and estimated values of the improvements.	Cattle fencing, fuel storage, dairy, chicken coop, well, sheds. Estimated value: \$10,000

I make this solemn declaration as to the above matters according to the law in this behalf made and subject to the punishment by law provided for any wilfully false statement in any such declaration.

Signature of Declarant: 

Made before me at SYDNEY

this 6<sup>th</sup> day of June, 2018




~~Signature of a Justice of the Peace, Commissioner for Affidavits or Notary Public:~~  
 TIMOTHY O'BRIEN  
 SOLICITOR  
 SUITE 1503, LEVEL 15  
 109 PITT STREET  
 SYDNEY NSW 2000

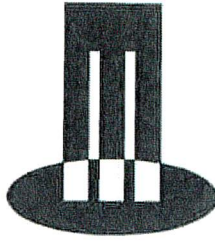
**Certificate under section 34(1)(c) of Oaths Act 1900**

I, Timothy John O'Brien, a solicitor, certify the following matters concerning the making of this affidavit by the person who made it:

1. I saw the face of the person.
2. I have known the person for at least 12 months.

  
 Timothy John O'Brien

Date: 6 June 2018



26 April 2018

Mr Robert Jeremy  
'Thornleigh'  
Lagoon Road  
Lord Howe Island NSW 2898  
C/- [robert@thornleighlhi.com](mailto:robert@thornleighlhi.com)

Dear Robert

**Re: Heritage curtilage for 'Thornleigh', Lord Howe Island**

I refer to your email in regard to the above and the Conservation Management Plan (CMP) for 'Thornleigh' which we are preparing. While the CMP requires some final editing for completion, we have completed the assessment of significance for the property in accordance with the standard criteria in the *NSW Heritage Manual* published by the Heritage Council of NSW and the curtilage determination for the place.

In our opinion, 'Thornleigh' has historic, associational, aesthetic, social, technical / research, representative and rarity values at least at a local level and probably at a State level for a number of criteria, subject to further comparative analysis with properties of similar type on the NSW mainland.

Our determination of an appropriate curtilage for 'Thornleigh' has been informed by our research of the documentary and physical evidence of the property and by reference to the Heritage Council publication, *Historic Curtilages*, (Warwick Mayne-Wilson, 1996) and to the Burra Charter of Australia ICOMOS.

The current NSW Heritage System interpretation of curtilage, embodied in the publication, *Historic Curtilages*, may be summarised as the area around a heritage item that must be conserved in context to retain the significance of the item and enable its heritage values to be interpreted.

The curtilages for many properties now listed on the State Heritage Register or on Local Environmental Plan schedules were defined at a time when more emphasis was placed on the architectural qualities of buildings than on their landscape contexts. Since the early 1980s there has been an increase in community awareness of the need to protect adequate settings for heritage items, including views and vistas.

Betteridge Consulting Pty Ltd (ABN 15 602 062 297) 42 BOTANY STREET RANDWICK NSW 2031  
Tel: 61 (0)2 9314 6642 Email: [musecape@accsoft.com.au](mailto:musecape@accsoft.com.au) Web: [www.musecape.com.au](http://www.musecape.com.au)  
Mobile (Margaret Betteridge): +61 (0)419 238 996 Mobile (Chris Betteridge): +61 (0)419 011 347

**SPECIALISTS IN THE IDENTIFICATION, ASSESSMENT, MANAGEMENT AND INTERPRETATION OF CULTURAL HERITAGE**

This enhanced appreciation of landscape is highlighted in the 1999 revision of the Burra Charter of Australia ICOMOS, placing greater emphasis on 'setting'. Article 8 of the Burra Charter (2013 edition) now reads:

*"Conservation requires the retention of an appropriate visual setting and other relationships that contribute to the cultural significance of the place. New construction, demolition, intrusions or other changes which would adversely affect the setting or relationships are not appropriate".*

The Explanatory Notes to Article 8 are as follows:

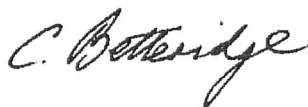
*"Aspects of the visual setting may include use, siting, bulk, form, scale, character, colour, texture and materials. Other relationships, such as historical connections, may contribute to interpretation, appreciation, enjoyment or experience of the place."*

Given the association of 'Thornleigh' with the Dignam family for more than 125 years, the wide range of agricultural and other pursuits carried on there during that period, the remarkable intactness and integrity of the property and its component elements and its very high interpretive potential, we are of the opinion that the statutory curtilage for recommended listing on the heritage schedule (Schedule 2) of *Lord Howe Island Local Environmental Plan 2010* and any subsequent planning instrument should be as follows:

1. Perpetual Lease 1954/25 of Portion 31, Lord Howe Island ('Thornleigh');
2. Special Lease over Portion 32, Lord Howe Island ('Thornleigh');
3. Permissive occupancies POA 1964/02 and POA 1968/04 over the Dignam family boatshed and slipway (built 1964), Government Reserve, Lagoon Road, Lord Howe Island;
4. Private mooring approval 34/2011;

If you have any queries about our findings, please do not hesitate to contact me by phone or email.

Yours sincerely



Chris Betteridge  
Director

# LORD HOWE ISLAND BOARD

## Business Paper

### OPEN SESSION

#### ITEM

Application for Special Lease – R Jeremy

#### RECOMMENDATION

It is recommended that the Board defer this application pending review of all Special leases and prospective applications following introduction of the 20 year term recommended in the *Lord Howe Island Land Allocation Review*.

#### BACKGROUND

Mr Jeremy has applied for the granting of a Special lease over portion 31. A copy of the application is attached at "A".

Section 22 of the Lord Howe Island Act, 1953 (the Act) state that the Minister may approve Special leases over Crown lands for cultivation or grazing or cultivation and grazing or for such other purpose as the Minister on the recommendation of the Board may approve. Section 22 further provides that the term of a Special lease may be fixed for any period not exceeding ten years, that the term of such leases may be extended and that a Special lease may only be granted to the holder of a Perpetual lease.

Portion 32 was previously held as Special lease by Mr Jeremy's late aunt Patricia Dignam. The Special lease was not renewed in 2005 as the land was then considered suitable as a Category "B" block. In May 2011, the Board agreed to "...no longer pursue sub-division of Portion 32 for Category B due to flooding constraints and other matters." The late Ms Dignam passed away in July 2012 and there is no evidence (e.g. an application) that she sought to have the Special lease granted back to her after the Board agreed that it did not meet requirements as a Category "B" block.

Recommendation 9 of the final *Review of Land Allocation on Lord Howe Island* ("the Handley Review") stated that:

*"There should be no more Category B allotments, and the 3 existing ones should revert to special lease land where substantial restitution by both parties is practicable and the former leaseholder agrees. Where restitution is not practicable or the former leaseholder does not agree, the allotment or allotments should be allocated by a revised ballot process open to Islanders deemed eligible."*

This recommendation was supported with amendment by Government. The amendments related mostly to the process of achieving “substantial restitution”, timeframes, etc. Portion 32 was not one of the “...3 existing [Category B allotments]” as the decision to no longer proceed with Portion 32 as a Category B block was made several years before the Handley Review was commissioned.

Recommendation 3 of the final Handley Review stated that:

*“Special leases are due to expire in 2015, without any legal right of renewal, although the lease holders expect to obtain renewals. The new leases should be granted for 20 year terms with strong covenants to encourage new investment and ensure that the land is fully and properly used.”*

This recommendation was supported by Government which also stated that:

*Applicants seeking renewal of their expiring special leases or initial grants will be required to lodge draft management plans for the use of the land for designated pastoral, agricultural or horticultural purposes. If successful in their application for a special lease, fully developed management plans will be requested and Lessees will be obliged by strict covenants (attached to the Lease) to make the land productive.*

*Provision will also be made in the special lease for a review of the lessee’s performance against the conditions of the lease every five years during the term.*

### **COMMENT**

Implementation of recommendation 3 will require legislative change and this has not yet occurred. All current Special leases expire in December 2019 and it could well be that a further short term extension may be required pending changes to the Act and review of existing Special leases and possible new grants.

Apart from restitution in the specific cases referred to in Recommendation 9 of the Handley Review and possible short-term renewal of existing Special leases, it is suggested that no applications for new Special leases be considered until such time as the Board is in a position to consider all prospective applicants seeking renewal of their expiring special leases, or those seeking initial grants, on a fair, equitable and competitive basis.

### **RECOMMENDATION**

It is recommended that the Board defer this application pending review of all Special leases and prospective applications following introduction of the 20 year term recommended in the Lord Howe Island Land Allocation Review.

**Prepared:** James Lonergan, Manager Environment & Community Services

**Endorsed:** Peter Adams, Chief Executive Officer

**Attachments:**

Attachment A: Application for Special Lease and Supporting Documents – R Jeremy - Open

# Appendix 1: Terms of Reference

## Background

All land on Lord Howe Island is owned by the Crown, with ownership and transfer of land controlled by the *Lord Howe Island Act 1953* (the Act). Perpetual leases are granted for residential purposes and special leases are granted for other purposes including agricultural production. To encourage a permanent residential community on the island, priority for leases is given to individuals with 'Islander' status. This status is defined as anyone who has resided continuously on the island for a period of 10 years.

Land is subject to strict controls and provisions under the Act and the Lord Howe Island Local Environmental Plan 2010 (LEP). Given the limited supply of residential land, the increasing population and increasing demand for land on the island, the Lord Howe Island (LHI) Board has adopted a policy to guide the allocation of the limited number of dwellings that are able to be approved (the Allocation and Granting of Dwelling Entitlements Policy).

The Gleeson review of Lord Howe Island Governance Arrangements (completed in June 2012) flagged land allocation and tenure as issues requiring further investigation. Consequently, the ballot process for the allocation of land has been put on hold and a comprehensive review of land allocation and tenure arrangements is now required.

## The Review

The Hon. Ken Handley AO QC has been appointed by the NSW Government to undertake a comprehensive review of the current arrangements for land allocation and tenure on Lord Howe Island.

The objective of the review is to provide advice to the Minister for the Environment and Heritage on options for new land allocation and forms of tenure, including options for increasing supply of land and improving economic sustainability. In addition, the review will consider the intergenerational issues which arise from current restrictions on land access.

In particular the review will:

- Examine the current arrangements for land allocation and tenure on LHI. This includes existing policies and legislative frameworks.
- Identify future options for land allocation and tenure and assess the relative merits of the options.
- Make recommendations to the Government on the future options for land allocation and tenure.
- Provide advice to the Government on the legislative and/or regulatory impacts of future options.

In undertaking this Review, consultation will be undertaken with key stakeholders and Lord Howe Island residents in order to identify the risks and challenges with the current arrangements and to seek feedback on future options.

The review will not seek to open the definition of Islanders that is used for the purpose of identifying who should have access to land.



### **Project Governance**

The review will be managed by the NSW Department of Premier and Cabinet. A project reference group will be established to advise on matters related to the project and to ensure that the project is being undertaken according to plan.

Recommendation	Lead organisation	Progress
1. Retain the present system of land tenure, with most Crown land outside the Permanent Park Reserve held under perpetual or special lease	N/A	In place. No further action required.
2. Properly police and enforce the residency condition in perpetual leases, with forfeiture as a last resort.	Lord Howe Island Board	<p>- Guidelines in place for assessing applications for suspension in residency conditions.</p> <p>- A limited review of compliance with the residency condition on existing lease has been undertaken. Firm guidelines for such monitoring are yet to be developed.</p> <p>- See above.</p>
3. Special leases are due to expire in 2015, without any legal right of renewal, although the lease holders expect to obtain renewals. The new leases should be granted for 20 year terms with strong covenants to encourage new investment and ensure that the land is fully and properly used.	Office of Local Government	- Required legislative changes are being pursued.
4. Permissive occupancies for business purposes, principally as boat sheds, which are currently revocable at will, should be granted for fixed terms of 5 years, to increase security of tenure and encourage investment.	Not applicable	Recommendation not supported by Government.
5. Restrictions on the enforcement of mortgages of leases should be relaxed to make leases more acceptable to lenders as security and mortgages to corporations should not require the Minister's consent.	Office of Local Government	- Required legislative changes are being pursued.
6. The restrictions on who can occupy a dual occupancy dwelling should be relaxed	Lord Howe Island Board	- To be included in the major review of the Lord Howe Island Local Environmental Plan. This review is not proposed to be undertaken until completion of the Community Strategic Plan.
7. Subject to pending applications for approval of a Category A dwelling the remaining quota for new dwellings under the LEP should be reserved for dual occupancy dwellings.	Not applicable	Recommendation not supported by Government.
8. The LEP should be amended to make it easier to subdivide perpetual leases with 2 existing detached dwellings erected before 28 October 2005 to increase the saleable housing stock without further building development, or use of the quota.	Lord Howe Island Board	- To be included in the major review of the Lord Howe Island Local Environmental Plan. This review is not proposed to be undertaken until completion of the Community Strategic Plan.

Recommendation	Lead organisation	Progress
9. There should be no more Category B allotments, and the 3 existing ones should revert to special lease land where substantial restitution by both parties is practicable and the former leaseholder agrees. Where restitution is not practicable or the former leaseholder does not agree, the allotment or allotments should be allocated by a revised ballot process open to Islanders deemed eligible.	Lord Howe Island Board	- Mediation process completed. Paper for Board consideration listed for the September 2018 meeting.
10. The provisions in the Act dealing with the succession to perpetual leases on death should be rationalised, clarified and extended to surviving spouses and de facto partners	Office of Local Government	- Required legislative changes are being pursued.
11. The existing exemption from land tax for all leases on the island should be removed to allow the Land Tax Management Act to operate on the island in the normal way. The Chief Commissioner and the Board should be permitted to exchange information to ensure that leaseholders only claim one principal or usual place of residence.	Office of Local Government	- Required legislative changes are being pursued.
12. The Board should comply with its statutory duty under s 301(1) of the Duties Act by requiring grants, transfers and mortgages of leases to be stamped or marked exempt before they are registered by the Board.	Lord Howe Island Board	Not yet implemented. Information sheet and notification to residents to be undertaken prior to end 2018.
13. In the interest of transparency and accountability, should recommendations 11 and 12 be adopted, provision should be made for the additional taxation revenue, raised from the island in these ways, to be returned to the island by being credited to the Lord Howe Island Account (s 34).	Not applicable	Recommendation not supported by Government.
14. The legal framework under which the Board and the Minister consider applications for consent to the transfer of perpetual leases should be strengthened to prevent vendors evading the maximum price provision by requiring purchasers to purchase their furniture and other chattels at prices above their fair market value, and to prevent vendors withdrawing their lease from sale when an Islander is willing to purchase the lease.	Office of Local Government	- Required legislative changes are being pursued.
15. In the interests of transparency and accountability, the Board should maintain and publish in its Annual Report to Parliament (s36A) separate accounts for its functions as custodian and manager of the Permanent Park Reserve, and its functions as the local council for the Settlement. The island community cannot reasonably be expected to pay for the upkeep of the Park out of its own resources.	Office of Local Government	- Required legislative changes are being pursued.

Recommendation	Lead organisation	Progress
<p>16. Miscellaneous recommendations by way of statute law revision which are not thought to raise any question of principle.</p> <p><i>Miscellaneous recommendations are as follows:</i></p> <p>i) Section 12 (1)(g) gives the Board power to ‘provide...shops, offices and other buildings for lease to the public’. There is some doubt about the Board’s power to lease land associated with such buildings. The matter should be put beyond doubt by adding to subsection (1)(g) the power to include in such a lease the land associated with or surrounding such buildings.</p> <p>ii) Section 21(2) enables perpetual leases to be granted to two or more Islanders as joint tenants or tenants in common, but subsections (7A) and (7B) only refer to joint tenants. They should be amended to include tenants in common.</p> <p>iii) Section 21, which only deals with perpetual leases provides in subsection (7A):  ‘The Minister may...suspend the condition of residence on a lease held or owned... by...an Islander who already...holds or owns...or subleases not more than one other lease.’  In its context the expression ‘not more than one other lease’ may refer to a perpetual lease only, and not to a special lease or one granted under section 12(1)(g), but the subsection should be amended to make this clear. This provision is used, and properly used, to allow a holder to operate tourist lodge on one perpetual lease and have his or her home on another.</p> <p>iv) Section 22(3) provides that a special lease may only be granted to the holder of a perpetual lease, but there is no expressed requirement for the perpetual leaseholder to remain the holder of the special lease. In <i>Lance Wilson v The Minister for the Environment</i> (No 2294 of 1992) the Equity Division of the Supreme Court held that there was no implied requirement for the holder to remain the holder of both leases. The plaintiff, who retained his special lease after he had transferred his perpetual lease, succeeded in having the forfeiture of his special lease set aside. Given the evident policy behind section 22(3), that special leases should be held by Islanders who have their usual home on the Island, to prevent them being held by non-residents and non-Islanders, the result appears anomalous. Section 22(3) should be strengthened by the addition of words such as ‘and must continue to be held by such holder but may be</p>	<p>Office of Local Government</p>	<p>- Required legislative changes are being pursued.</p>

<p>transferred with such lease or to an Islander who holds a perpetual lease but does not already hold a special lease' or words to that effect.</p> <p>v) Section 27(1) dealing with forfeiture provides: 'Every lease...shall be liable to be forfeited if any rent be not paid...or upon breach of any condition annexed to the lease...or if it should appear to the satisfaction of the Minister after report by the Board that the land comprised in the lease is not used and occupied bona fide for the purpose for which the lease was granted, or where in pursuance of any other provision of this Act the lease becomes liable to forfeiture.'</p> <p>Every forfeiture must be declared by the Minister by notification in the Gazette (section 27(2)), but there is no express requirement in subsection (1) for the Board to report to the Minister in cases of forfeiture for non-payment of rent or breach of any condition other than that relating to the purpose for which the lease was granted. Subsection (1) should be amended to require a report from the Board in every case where forfeiture is sought.</p>		
--	--	--

# LORD HOWE ISLAND BOARD

## Business Paper

### OPEN SESSION

#### **ITEM**

Lord Howe Island Land Allocation Review - Implementation Update

#### **RECOMMENDATION**

It is recommended that the Board note progress to date on implementation of the *Lord Howe Island Land Allocation Review*.

#### **BACKGROUND**

In February 2014 the Honourable Justice Handley AO was engaged by the NSW Department of Premier and Cabinet to review the land allocation and tenure systems on the Island and provide advice to the Minister for the Environment.

The purpose of the review was to identify options for different land allocation methods and forms of tenure which would maintain and protect the unique environmental and cultural values of the Island. The forms of tenure and allocation methods were to be transparent, fair, financially sustainable and recognise the needs of current and future generations of Islanders.

The Terms of Reference identified four key areas for consideration:

1. Forms of tenure
2. Land allocation methods
3. Strategies to increase land and housing supply
4. Economic sustainability.

The Terms of Reference are attached at "A".

Mr Handley visited the Island in March 2014 to undertake targeted consultation with a range of stakeholders including Board members, staff of the Board and residents. Fifteen individual meetings were held on the Island and Mr Handley also attended a number of meetings in Sydney with stakeholders.

A Discussion Paper was prepared and released for public comment in August 2014. The Discussion Paper outlined 15 options for reform in the areas identified in the Terms of Reference. Mr Handley made a second visit to the Island in August 2014. The options were outlined at a public meeting and Mr Handley later met individuals privately to receive their feedback.

Fifty-nine submissions were received, both written and verbal from individuals or families and four were received from groups or institutions. The majority of the submissions were from Island residents.

Mr Handley completed the review and reported his findings to the Government in November 2014. A government response to the review was considered by Cabinet in August 2016. The review report and the draft government response were released to the LHI community with an opportunity to comment in November 2016. The final Government response to the review was released in April 2017.

### **CURRENT POSITION**

An implementation plan was developed and was presented to the Board in March 2018. An implementation update has been prepared and is attached at "B".

### **RECOMMENDATION**

It is recommended that the Board note progress to date on implementation of the *Lord Howe Island Land Allocation Review*.

**Prepared:** James Lonergan, Manager Environment & Community Services

**Endorsed:** Peter Adams, Chief Executive Officer

**Attachments:**

Attachment A: Handley Review Terms of Reference

Attachment B: Implementation Update Table – September 2018

# LORD HOWE ISLAND BOARD

## Business Paper

### OPEN SESSION

#### ITEM

Attestation Statement for Financial Year Ending 30 June 2018.

#### RECOMMENDATION

It is recommended that the Board resolve to authorise the Chairperson to sign the Internal Audit and Risk Management Attestation Statement for the 2017/18 Financial Year.

#### BACKGROUND

TPP 15-03 *Internal Audit and Risk Management Policy for the NSW Public Sector* requires the head of a statutory body, in accordance with a resolution of the governing body of the statutory body, to certify compliance with the eight Core Requirements for the prior financial year (the 'reporting period') annually. When reviewing the agency's compliance with the Policy, agencies will self-assess and determine whether they have been 'compliant', 'non-compliant' or 'in transition' in relation to each of the Core Requirements for the reporting period. A copy of the Attestation Statement must be separately submitted to NSW Treasury on or before 31 October each year. For any non-compliance with Core Requirements, agencies are required to also submit a copy of the relevant Portfolio Minister's exception approval.

The eight Core requirements are as follows:

#### **1. Risk Management**

Core Requirement 1.1: The agency head is ultimately responsible and accountable for risk management in the agency

Core Requirement 1.2: A risk management framework that is appropriate to the agency has been established and maintained and the framework is consistent with AS/NZS ISO31000:2009

#### **2. Internal Audit**

Core Requirement 2.1: An internal audit function has been established and maintained

Core Requirement 2.2: The operation of the internal audit function is consistent with the International Standards for the Professional Practice of Internal Auditing

Core Requirement 2.3: The agency has an Internal Audit Charter that is consistent with the content of the 'model charter'



### **3. Audit and Risk Committee**

Core Requirement 3.1: An independent Audit and Risk Committee with appropriate expertise has been established

Core Requirement 3.2: The Audit and Risk Committee is an advisory committee providing assistance to the agency head on the agency's governance processes, risk management and control frameworks, and its external accountability obligations

Core Requirement 3.3: The Audit and Risk Committee has a Charter that is consistent with the content of the 'model charter'

An Audit and Risk Committee has been established under a Treasury approved shared arrangement with the following departments / statutory bodies:

- Department of Planning and Environment (Principal Department).
- Building Professionals Board.
- Central Coast Regional Development Corporation.
- Office of Local Government.
- Lord Howe Island Board.

### **CURRENT POSITION**

The Lord Howe Island Board has internal audit and risk management processes in operation that are compliant with the eight core requirements set out in TPP 15-03 *Internal Audit and Risk Management Policy for the NSW Public Sector*.

### **RECOMMENDATION**

It is recommended that the Board resolve to authorise the Chairperson to sign the Internal Audit and Risk Management Attestation Statement for the 2017/18 Financial Year.

**Prepared:** Bill Monks                      Manager Business and Corporate Services

**Endorsed:** Peter Adams                    Chief Executive Officer

Board Meeting: September 2017	Agenda Number: 8 (i)	Record Number: ED17/4297
-------------------------------	----------------------	--------------------------

# LORD HOWE ISLAND BOARD

## Business Paper

### OPEN SESSION

**ITEM**

Lord Howe Island Rodent Eradication Program (REP) Final Go / No Go Decision.

**RECOMMENDATION**

That the Board proceed to Stage Three of the LHI Rodent Eradication Program (REP) with implementation scheduled for winter 2018.

**BACKGROUND**

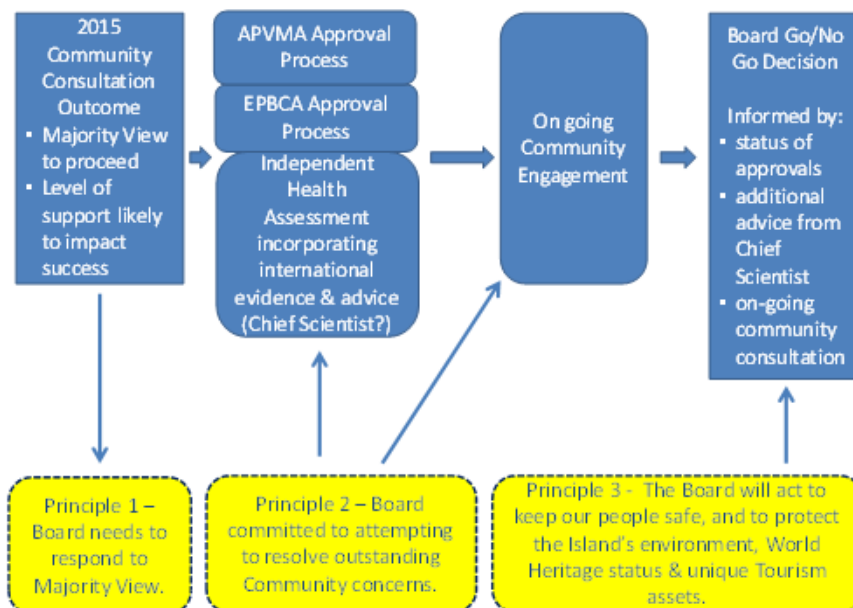
On 18 May 2015, the LHI Board decided to proceed with the planning and approvals stage of the REP in accordance with the process for resolution outlined in Figure 1.

*Figure 1: Process for Resolution*

**Process for Resolution**

*Figure 1: Process for Resolution*

**Process for Resolution**



The rodent eradication program has now been divided into three stages:

### **Stage One: Preliminary planning and community consultation**

This stage has previously been completed. It involved undertaking required initial trials including captive management and toxin resistance trials as well as initial operational planning. It included the biosecurity review and progression of biodiversity outcome monitoring. Finally it included the community consultation and engagement process and the community survey.

### **Stage Two: Planning and Approvals**

This stage is now complete. The key tasks during this stage were:

- Assembling key personnel to undertake the work on the next stages
- Reviewing the Rodent Eradication Plan to ensure that it takes into consideration all new information since it was drafted in 2009
- Developing individual property and livestock management plans, which inform the eradication plan and the approval process. This involved a detailed property by property consultation with individual leaseholders and residents.
- Continue working with community to fully understand the programs objectives
- Undertake any necessary studies required for the approval process, including independent human health risk assessment
- Continue the relevant baseline outcome monitoring
- Further develop detailed planning and all necessary risk assessments;
- Obtain required permits and approvals,
- Update operational details;
- Prepare key tender documentation

### **Final Go / No Go Decision**

The Board must now make the final go / no go decision on whether to proceed with the REP considering:

1. The status of key approvals
2. Safety of the environment
3. The advice of the NSW Chief Scientist and Engineer regarding a further independent Human Health Risk Assessment
4. Social Acceptability
5. Budget considerations
6. Technical Feasibility
7. Steering Committee recommendation

### **Stage Three: Implementation and evaluation of the eradication plan**

This Stage will not happen unless the decision to proceed is made.

Stage Three will involve the eradication plan being implemented in winter 2018 over an approximate three month period. Key elements are:

- Finalise detailed logistics and operational planning

- Assemble and train remaining resources
- Construction of captive management facilities for the woodhen and currawong
- Capture of woodhens and currawongs
- Operational readiness check
- Implementation of ground and aerial baiting
- Follow up monitoring and release of woodhens and currawongs
- Maintaining an ongoing biosecurity and rodent detection monitoring network

## **CURRENT POSITION**

### **1. Status of Required Approvals**

A range of approvals is required for the project, the status of which is detailed in Table 1 below.

All key approvals that formed part of the 2015 Process for Resolution above have been received.

A decision on the Development Application for the captive management facilities associated with the REP is required in this Board meeting (see separate report). Minor approvals remaining will be sought once the final decision to proceed is made.

Table 1: Approvals requirements and status

Agency / Legislation	Requirement and considerations	Received	Key Approval Conditions
Australian Pesticides and Veterinary Medicines Authority (APVMA)  <i>Agriculture and Veterinary Chemicals Code Act 1994</i>	Minor Use Permit for use of the pesticide in Australia specifically for the LHI REP. Considers: Safety <ul style="list-style-type: none"> <li>• Human health</li> <li>• Environment</li> </ul> Efficacy <ul style="list-style-type: none"> <li>• Effectiveness of the product</li> </ul>	Y	<ul style="list-style-type: none"> <li>• Development of Risk Mitigation Plan</li> <li>• Education programme and information sheets for community and visitors</li> </ul>
Department of the Environment and Energy  <i>Environmental Protection and Biodiversity Conservation Act 1999</i>	Approval for an “action” that will have or is likely to have a significant impact on any of the matters of national environmental significance.  Considers: Matters of National Environmental Significance <ul style="list-style-type: none"> <li>• Threatened and migratory species</li> <li>• World Heritage values</li> <li>• Commonwealth Marine Area</li> </ul>	Y	<ul style="list-style-type: none"> <li>• Establishment of Technical Advisory Group</li> <li>• Development of Monitoring and Mitigation Plan</li> <li>• Development of Biosecurity Management Plan</li> <li>• Reporting of non-target impacts</li> <li>• Reporting of post operational monitoring results</li> </ul>
Department of Agriculture and Water Resources  <i>Biosecurity Act 2015</i>	Permit to import the bait into Australia.  Considers: <ul style="list-style-type: none"> <li>• Biosecurity of the bait</li> </ul>	Y	<ul style="list-style-type: none"> <li>• Manufacturer’s Declaration</li> </ul>
Civil Aviation Safety Authority  <i>Civil Aviation Safety Regulation 1998</i>	Pilot Licensing and Aerial Operator’s Certificate (held by helicopter contractor)  General permit for flight lines	Y  To be submitted once decision is made to proceed	
Department of Primary Industry – Fisheries  <i>Fisheries Management Act 1994</i>	Section 220ZW Licence authorising an action that is likely to result in harm to a threatened species, population or ecological community.	Y	<ul style="list-style-type: none"> <li>• Marine spill containment and clean-up plan</li> </ul>

	<p>Considers:</p> <ul style="list-style-type: none"> <li>NSW listed threatened marine species</li> </ul>		<ul style="list-style-type: none"> <li>Marine research and monitoring plan</li> <li>Reporting of marine non target impacts</li> <li>Operational report</li> </ul>
<p>Department of Primary Industry – Marine Park Authority</p> <p><i>Marine Estate Management (Management Rules) Regulation 1999</i></p>	<p>Consent to harm animals and plants in all zones of the Lord Howe Island Marine Park (NSW)</p> <p>Considers:</p> <ul style="list-style-type: none"> <li>The Lord Howe Island Marine Park (NSW)</li> </ul>	Y	
<p>Office of Environment and Heritage</p> <p><i>Threatened Species Conservation Act 1995</i></p>	<p>A Species Impact Statement and Section 91 Threatened Species License to harm or pick a threatened species, population or ecological community* or damage habitat.</p> <p>Considers:</p> <ul style="list-style-type: none"> <li>NSW listed threatened species, populations and ecological communities</li> </ul>	Y	<ul style="list-style-type: none"> <li>Reporting of non-target deaths</li> <li>Operational report</li> </ul>
	<p>License to capture listed threatened species (Covered under existing LHIB licenses)</p>	Y	
	<p>Captive holding permits (held by Taronga Zoo as captive management contractor)</p>	Y	
<p>Lord Howe Island Board</p> <p><i>Environmental Planning and Assessment Act 1979 (Part 4)</i></p>	<p>Development consent for construction of the captive management facilities.</p> <p>Considers:</p> <p>Local Environmental Plan 2010</p>	Decision required as part of this Board Meeting	
<p>Environmental Protection Agency</p> <p><i>Pesticides Act 1999</i></p>	<p>Pesticide use license for prescribed pesticide works to cover ground application.</p>	To be issued once ground staff in place. EPA will train and license staff on LHI May 2018	
	<p>Chemical distribution license (Business and pilot). Held by helicopter contractor.</p>	Y	

## 2. Safety of the Environment

Potential environmental impacts of not undertaking the REP are compared to the potential impacts and benefits from proceeding with the REP below.

### Potential Environmental Impacts of Not Proceeding with the REP

The devastating impacts of introduced rodents on offshore islands around the world are well documented. The presence of exotic rodents on islands is one of the greatest causes of species extinction in the world. Ship rats alone are responsible for the severe decline or extinction of at least 60 vertebrate species and currently endanger more than 70 species of seabird worldwide (Jones *et al.* 2008)<sup>1</sup>. They suppress plants and are associated with the declines or extinctions of flightless invertebrates, ground-dwelling reptiles, land birds and burrowing seabirds. Mice have also been shown to impact on plants, invertebrates and birds (Angel *et al.* 2009)<sup>2</sup>.

On LHI, rats are implicated in the extinction of five endemic bird species, at least 13 species of endemic invertebrates, and two plant species. Rodents are also a recognised threat to at least 13 other bird species, 2 reptiles, 51 plant species, 12 vegetation communities, and seven species of threatened invertebrates on LHI (DECC, 2007)<sup>3</sup>. Rodents have therefore not reached equilibrium with native species on LHI.

Failure to proceed with the REP will result in continuing adverse consequences to biodiversity, and World Heritage values on LHI through:

- Ongoing impacts to biodiversity as a result of rodent predation and competition.
- An increased extinction probability for several species including seven species listed as Critically Endangered (probability of extinction in the wild is at least 50% within 10 years)
- An increased risk that several species could experience population declines and become eligible for higher or new threatened species status listing representing a higher degree of endangerment
- Continuation of the current rodent control program (and the continuous presence of poison baits in the environment) essentially in perpetuity. This presents an ongoing risk of poisoning for non-target species and potential for development of rodent resistance to poison.
- Potential further degradation of World Heritage values (including endemic and threatened species) and the potential for the LHIG to be inscribed on the “World Heritage in Danger List”.

---

<sup>1</sup> Jones, H. P., Tershy, B. R., Zavaleta, E. S., Croll, D. A., Keitt, B. S., Finkelstein, M. E. and Howald, G. R. (2008). Severity of the effects of invasive rats on seabirds: a global review. *Conservation Biology* **22**, 16-26.

<sup>2</sup> Angel, A., Wanless, R. and Cooper, J. (2009). Review of impacts of the introduced house mouse on islands in the Southern Ocean: are mice equivalent to rats? *Biological Invasions* **11**, 1743-1754.

<sup>3</sup> DECC. (2007) Lord Howe Island Biodiversity Management Plan. Department of Environment and Climate Change, Hurstville.

## Potential Environmental Impacts of Proceeding with the REP

The potential environmental impacts arising from the proposed REP were extensively assessed through the various environmental approval documents and processes. These included:

- Pollution of soil, air or water
- Bioaccumulation
- Mortality of non-target species due to primary poisoning from consumption of bait pellets
- Mortality of non-target species due to secondary poisoning from consumption of poisoned rodents, fish or invertebrates
- Bird strikes and collisions from helicopter activity
- Disturbance from helicopter activity
- Potential impacts as a result of handling and captive management during the captive management program
- Long term changes to ecological relationships affecting threatened species following the eradication of rats, mice and owls.

Based on evidence from similar eradications around the world, studies done on LHI, the physical and chemical properties of the bait and toxin and the relatively small quantity used in a one-off eradication, the risk to the environment and most species from the REP was shown to be very low.

The only species considered to be at significant risk from the REP were the LHI Woodhen and LHI Currawong. Mitigation is in place to manage risks to these two species through a detailed plan to manage large proportions of the populations of these two species in captivity during the REP. The captive management component of the REP will be managed by animal husbandry experts from Taronga Zoo including vets, vet nurses and experts in bird management. Both species have previously been held in captivity before with no observable ill effects. With the captive management in place, it is considered unlikely that the REP will have a significant impact on woodhens or currawongs.

An extensive monitoring program will be conducted before, during and after the REP. This includes

- Monitoring of weather in the lead up to and during the REP. This will ensure bait can be distributed safely and effectively and not during adverse weather conditions.
- Monitoring for non-target species deaths after bait distribution to ensure there are no unexpected impacts to endemic species.
- Monitoring breakdown of baits after distribution. This will provide confidence in bait breakdown prior to release of captive managed species.
- Soil monitoring before and after bait distribution. This will provide evidence that pollution has not occurred.
- Random sampling will be conducted on water bodies on the island to monitor Brodifacoum levels before and after the bait drop. This will provide evidence that pollution has not occurred and water is safe to drink.



- Monitoring of fish, milk and eggs to monitor Brodifacoum levels before and after the bait drop. This will provide evidence food is safe to eat.
- Monitoring of Woodhen post release. This will provide evidence of recovery.
- Monitoring of free-ranging currawong and captive Currawong LHPC post-release. This will provide evidence of impacts and recovery.

### **Potential Environmental Benefits from proceeding with the REP**

The many successful rodent eradication programs undertaken on islands around the world have shown that the benefits to native plants and animals are both significant and immediate (Jones *et al*, 2016)<sup>4</sup>. Benefits include:

- significant increases of seeds and seedlings of numerous plant species on islands after the eradication of various rodent species
- rapid increases in the number of ground lizards (e.g. geckos, skinks) following removal of rats – including a 30-fold increase in one case
- dramatic increases in the numbers of breeding seabirds and fledging success
- rapid increases in forest birds and invertebrates.

The anticipated benefits specifically relating to the REP on the LHIG include:

- recovery of a range of species and ecological communities directly at risk of extinction due to rodents such as the cloud forest snail species, LHI Placostylus, Little Mountain Palm, Phillip Island Wheat Grass and Gnarled Mossy Cloud Forest
- a marked increase in birds, reptiles and insect density, diversity and distribution – this boost in diversity will increase food resources for predatory terrestrial vertebrates and potentially lead to population increases which will enrich the experience of both island residents and tourists
- increases in the abundance of plants, seeds and seedlings, thereby enhancing the process of forest regeneration
- removal of the economic and environmental burden of the ongoing control currently in place, eliminating the need for the ongoing use of rodent poisons in the environment and their associated long-term risks to native species, pets, livestock and people
- the ability to return species (or closely related surrogates/ecological equivalents) that have long been absent due to the predation of rats and mice, such as the Island gerygone, grey fantail, Boobook Owl, LHI Wood-feeding Cockroach and LHI phasmid
- Long term positive impacts for tourism through protection and enhancement of World Heritage values and improved visitor experience of a rodent free World Heritage Area.

---

<sup>4</sup> Jones H. P., Holmes N. D., Butchart S. H., Tershy B. R., Kappes P. J., Corkery I., Aguirre-Monoz A., Armstrong D. P., Bonnaud E., Burbidge A. A., Campbell K., Courchamp F., Cowan P. E., Cuthbert R. J., Ebbert S., Genovesi P., Howald G. R., Keitt B. S., Kress S. W., Miskelly C. M., Opper S., Poncet S., Rauzon M. J., Rocamora G., Russell J. C., Samaniego-Herrera A., Seddon P. J., Spatz D. R., Towns D. R. and Croll D. A. (2016) Invasive mammal eradication on islands results in substantial conservation gains. *PNAS* **113**, 4033-8

The eradication of rodents is consistent with numerous local, state, commonwealth and international plans and obligations. Eradication of exotic rodents from high priority islands (including LHI) is the first objective in the Commonwealth *Threat Abatement Plan to Reduce the Impacts of Exotic Rodents on Biodiversity on Australian Offshore islands of Less than 100 000 Hectares*<sup>5</sup>.

### **Environmental Summary**

There is a clear and demonstrated need for the REP based on documented evidence of significant impacts of rodents both globally and on LHI at the species and ecosystem level, even in the presence of ongoing rodent control. There are unacceptable consequences of failing to proceed with the REP.

The REP is essential and beneficial. Risks have been addressed through proposed mitigation to the point where they are considered to be very low. Any potential impacts are localised and short term and far exceeded by the benefits that will be provided by implementation of the REP. Potential impacts of the REP are also considerably less than the ongoing impact of failing to proceed.

### **3. Advice of the NSW Chief Scientist and Engineer regarding an additional Human Health Risk Assessment (HHRA)**

In line with the agreed Process for Resolution above, in June 2016 the NSW Minister for the Environment (on behalf of the LHIB) requested that the NSW Office of the Chief Scientist and Engineer (OCSE) oversee an additional independent Human Health Risk Assessment for the project.

The OCSE was requested to convene an Expert Panel to:

1. Provide advice to the Board on processes for commissioning the HHRA including identification of suitable experts and scope of the request for proposal
2. Convene an Expert Panel to review proposals to undertake the HHRA and select a preferred candidate; review project plans and methodologies; and review draft and final reports of the HHRA as required
3. Provide advice to the Minister for the Environment on the HHRA
4. Respond to media enquires as they relate to the Terms of Reference for the Expert Panel

The Expert Panel consisted of:

- **Professor Mary O'Kane, Chair**  
Mary O'Kane is the NSW Chief Scientist & Engineer.
- **Dr Chris Armstrong, Deputy Chair**  
Chris Armstrong is the Director of the Office of Chief Scientist & Engineer, NSW.
- **Professor Brian Priestly**  
Brian Priestly is Director of the Australian Centre for Human Health Risk Assessment

---

<sup>5</sup> DEWHA, (2009). THREAT ABATEMENT PLAN to reduce the impacts of exotic rodents on biodiversity on Australian offshore islands of less than 100 000 hectares. Department of Environment Water, Heritage and the Arts, Canberra

(ACHHRA) associated with the Monash University School of Public Health & Preventive Medicine and an Independent Environmental Services Professional.

- **Emeritus Professor Stephen Leeder**

Stephen Leeder is an emeritus professor of public health and community medicine at the University of Sydney. He is also currently chair of the Western Sydney Local Health District Board.

The Expert Panel (with the assistance of two members of the Community Working Group; Dr Frank Reed and Mr Robert Rathgeber) selected Ramboll Environ Pty Ltd to undertake the HHRA.

The HHRA overseen by the OCSE and undertaken by the Ramboll Environ concluded that a comprehensive evaluation of the environmental releases from the REP **did not** identify exposures expected to lead to adverse health effects. The overall conclusion was that **estimates of exposure from all potential sources associated with the REP are below those likely to result in adverse health effects in any individuals** (Ramboll Environ, 2017).

The NSW Office of the Chief Scientist and Engineer (OCSE) has now presented its report<sup>6</sup> on the HHRA prepared by the consultants Ramboll Environ in 2017 to the NSW Minister for the Environment, Local Government and Heritage.

The OCSE and Expert Panel supported Ramboll Environ's conclusions and recommended:

- a communication strategy for the period before and during the REP;
- a monitoring strategy to measure outcomes; and
- reports to the Minister on community and environmental outcomes at designated periods post REP.

The executive summary from the OCSE report is attached (Attachment 1). The Minister has now accepted the OCSE report.

A representative of the OCSE and two representatives from Ramboll Environ visited the island on the 2<sup>nd</sup> and 3<sup>rd</sup> of Aug 2017 to present the findings to community. Approximately 40 people attended the two public sessions.

The outcomes from this additional HHRA and expert panel review concur with the results of previous HHRA's undertaken by Toxikos Pty Ltd in 2010 and by Pacific Environment Ltd in 2015 that show that with the proposed mitigation in place, the **REP is safe for the community and visitors**. The executive Summary form the OCSE report is attached (Attachment 1)

#### **4. Social Acceptability**

Continued engagement with the community from 2015 -2017 via a variety of methods has resulted in steadily increasing acceptance of the REP. Whilst a small minority of the community may still be opposed to the REP, individual property management discussions have shown that even those opposed are willing to allow access to their properties for some baiting treatment method by some nominated islanders. Only one landholder has declared they will not be allowing access to their property for baiting, citing concerns about potential impacts to human

---

<sup>6</sup> NSW Chief Scientist and Engineer (2017). Report on the Human Health Risk Assessment for the Lord Howe Island's proposed Rodent Eradication Program.

health and the environment. The project team will continue to work with this individual (and all residents) in the lead up to implementation to ensure we have 100% property access.

Social acceptability is supported by public submissions on key approvals documents:

- The Public Environment Report for the Department of Environment and Energy
  - 128 submissions were received with 118 (92%) of those in support of the project
- The Species Impact Statement or the Office of Environment and Heritage
  - 55 submissions were received with 52 (95%) of those in support of the project.

Support for the REP has been received from major organizations including:

- World Wildlife Fund Australia (WWF)
- BirdLife Australia and the Australasian Seabird Specialist Group
- Island Conservation
- International Union for the Conservation of Nature (IUCN) Invasive Species Specialist Group
- The Invasive Species Council
- CSIRO
- Taronga Conservation Society Australia
- Zoos Victoria
- Australia's Threatened Species Commissioner

A detailed economic evaluation of the project was undertaken in November 2016 (Gillespie, 2016)<sup>7</sup>. The study showed that the REP has a Benefit to Cost ratio of 17:1, resulting in an estimated net social benefits of \$142M with \$58M of that returning directly to LHI residents. Hence the REP is justified on economic efficiency grounds.

It is anticipated that acceptance and tolerance in the community will increase further still once a final decision to proceed has been made and outcomes of the approvals process and HHRA can be communicated to residents.

If the decision to proceed is made, the REP staff will continue to engage with the community via a variety of methods including one on one property discussions in the lead up to, during and after the implementation. PR consultants (also used by the LHI Tourism Association) will continue to provide assistance for on and off island stakeholder engagement.

A contingency has been put in place to cover the loss of project team member Anthony Wilson through use of Islanders in ongoing consultation. Anthony has also committed to returning to the island for implementation of the REP.

It should be noted that the REP does not need 100% acceptance to proceed or to be successful, rather it needs 100% property access (or with appropriate risk mitigation for any residual properties).

---

<sup>7</sup> Gillespie Economics Pty Ltd. (2016). Economic Evaluation of LHI Rodent Eradication Project. Final Report Unpublished report for the Lord Howe Island Board

## **Property Access Options**

Access to leases and residents properties will at all times be in accordance with “*LHIB Procedure for Access to Leasehold Land*” and the individual Property Management Plan negotiated with owners/occupiers for the Project. No access to residential dwellings will occur without approval from owners / occupiers. Options to ensure we have adequate bait coverage and property access are outlined below and in Figure 2.

### **Preferred Option**

The LHIB’s preferred option for accessing properties (including access to residential dwellings) is to continue to negotiate with leaseholders and residents to gain consent for access to distribute bait during the REP. During the negotiations we will continue to discuss issues such as:

- Individual property areas of concern such as children, pets and vegetable gardens.
- The outcome of approvals applications, the Human Health Risk Assessment and the LHIB’s final Go/ No Go decisions. Some people are awaiting the outcomes of all of these before granting access to properties.
- Individual preferences for nominated persons to undertake the baiting on individual properties. Some people have expressed concern with certain individual staff from the LHIB conducting baiting on their properties or inside dwellings. The REP will employ approximately 30-40 staff during implementation, many of these will be locals. It is highly likely that local staff will be employed on the REP with whom individual residents are comfortable to grant property and dwelling access to for baiting.

### **Potential Alternative Access Options**

The options below are *not preferred* but could be pursued if necessary.

#### *Powers of Entry to Access to Properties*

Under various pieces of legislation (outlined in the “*LHIB Procedure for Access to Leasehold Land*”), the LHIB has Powers of Entry to access all lease types on LHI (perpetual leases, special leases and permissive occupancies) in order to exercise functions of the LHIB. Where access is denied the LHIB can access leases after providing written notification of intent to enter. The REP, once approvals have been received and the decision to proceed is made, would be a valid function of the Board. Therefore access to properties can be obtained for the REP if necessary by providing written notice of intent in accordance with the access procedure.

#### *Access to Residential Premises (Dwellings)*

The LHIB’s Powers of Entry cannot be used in relation to residential dwellings except:

- a) with the permission of the occupier
- b) if entry is necessary for the purpose of inspecting work being carried out under an approval,
- c) under the authority conferred by a search warrant

Where permission to enter residential premises is not granted, the LHIB does not have the ability to obtain warrants under the LHI Act and would not be seeking warrants under other legislation for this purpose.

If there continues to be a small number of residents who refuse access to dwellings, there is potential to negotiate the use of alternate methods of rodent destruction on those premises. This could include the use of commercially available rodenticides such as Talon (which most islanders are familiar with and many currently use in their homes) on those properties. It could include the use of other methods such as rodent traps or clearance of the property with detector dogs. There may also be an option of extended baiting and surveillance monitoring (traps, cameras and detector dogs) at the perimeter of the residential dwellings where consent is not granted.

#### *Biosecurity Act Control Order*

With enactment of the new NSW *Biosecurity Act 2015* and development of the *Biosecurity Regulations 2016*, which came into force on 1 July 2017, new legislative options are available to deal with biosecurity risk matter.

The LHIB has been in discussion with NSW Department of Primary Industries about how best to manage all biosecurity risks for Lord Howe Island. Consideration is currently being given to having Lord Howe Island declared as a "Biosecurity Zone" or the ability to declare particular species that are considered biosecurity risks to Lord Howe Island and not mainland NSW (i.e. rats and mice) as Biosecurity Risk Species for Lord Howe Island only.

If the eradication proceeds, a Control Order establishing control zones or specific control measures can be issued to individuals or groups with particular control measures to be specified (i.e. baiting) for treatment or destruction of rodents. This would place the responsibility of complying with the control order on residents (i.e. residents would be responsible for baiting within their homes, not LHIB staff), therefore allowing effective bait coverage within properties and inside dwellings. Penalties are available under the act for non-compliance with a control order.



## 5. Budget Considerations

Both funding partners, the Australian Government National Landcare Program and the NSW Environmental Trust have recently extended the funding agreements for the project through to end of June 2019, ensuring continued availability to the previously allocated grant funds for the duration of the REP. Both funding partners have strict accountability and audit processes in place to ensure transparent and efficient management of government funds.

The Project budget has regularly been updated as the REP has progressed. Current estimates at completion of the REP show a final overrun of approximately 4% of total project budget. This is below the standard (and expected) 10% variance for a project of this size. At present there is still uncertainty in many individual line items until final costs are known (for example: sufficient budget has been allowed for helicopter time that includes extended weather delay, however this may not be required). It is highly likely that the budget will reduce over time as line item costs are confirmed.

In the event that minor additional funding is required, a funding strategy has been developed outlining various potential sources that can be pursued. This will be implemented if the REP proceeds. The strategy includes seeking additional funding (or alternate support such as resource sharing) through:

- Other relevant Commonwealth and State government grants programs including submitted and pending applications
- Conservation organizations including WWF, Birdlife Australia, Royal Society for the Protection of Birds, Island Conservation, Friends of Lord Howe and the Foundation for Australia's Most Endangered Species,
- High Net Wealth philanthropic donors with an interest in conservation or LHI.
- Crowd funding models such as "Go Fund Me" and "Pozzible"
- Corporate conservation investment/finance
- Volunteer positions on REP during implementation and follow up monitoring

It is expected that any minor budget shortfall can be addressed through a combination of the above sources if required.

It should be noted that if the decision not to proceed is made, all remaining grant funds will need to be returned to the funders. The funding cannot be used to fund other projects on Lord Howe Island.



LHI Rodent Eradication Project										
Balance										
			Balance on Hand 1 Jul 15	Balance on Hand 1 Jul 16	Balance On Hand 1 Jul 17	Balance Estimate 1 Jul 17- 30 Jun 18	Balance Estimate 1 Jul 18 - 30 Jun 19	Balance Estimate 1 Jul 19 - 30 Jun 20	Balance Estimate at Completion	
			\$ 8,172,756	\$ 8,041,314	\$ 6,939,653	\$ 2,736,015	\$ 39,316	-\$ 437,132	-\$ 437,132	
Revenue										
Project Revenue	Total Approved Revenue		Revenue Earned 30 June 2015	Revenue Earned FY15-16	Revenue Earned FY16-17	Revenue Estimate 1 Jul 17- 30 Jun 18	Revenue Estimate 1 Jul 18 - 30 Jun 19	Revenue Estimate 1 Jul 19 - 30 Jun 20	Total Revenue Estimate at Completion	Cross Check
NSW Env Trust	\$ 4,542,442		\$ 4,542,442	\$ -	\$ -	0			\$ 4,542,442	
Caring for Our Country	\$ 4,500,000		\$ 4,500,000	\$ -	\$ -	0			\$ 4,500,000	
Interest	\$ -		\$ 610,390	\$ 177,020	\$ 176,603	\$ 58,897	\$ 846		\$ 1,023,756	
<b>Total Revenue</b>	<b>\$ 9,042,442</b>	<b>\$ -</b>	<b>\$ 9,652,832</b>	<b>\$ 177,020</b>	<b>\$ 176,603</b>	<b>\$ 58,897</b>	<b>\$ 846</b>	<b>\$ -</b>	<b>\$ 10,066,198</b>	<b>\$ 10,066,198</b>
Expenses										
Item	Budget Estimate	Expenses Incurred 2012/2013	Expenses Incurred 2014 to 30 June 2015	Expenses Incurred 1 Jul 15 to 30 Jun 16	Expenses Incurred 1 Jul 16 - 30 Jun 17	Expenses Estimate	Expense Estimate 1 Jul 18 - 30 Jun 19	Expense Estimate 1 Jul 19 - 30 Jun 20	Total Expense Estimate at	
Captive Management Sub Total	\$ 2,183,839	\$ -	\$ -	\$ -	\$ 485,517	\$ 817,969	\$ 630,353	\$ 250,000	\$ 2,183,839	
Community Liaison Sub Total	\$ 709,381	\$ -	\$ 327,106	\$ -	\$ 82,275	\$ 210,000	\$ 90,000	\$ -	\$ 709,381	
Baiting Sub Total	\$ 2,233,681	\$ -	\$ -	\$ 3,000	\$ 34,438	\$ 1,597,743	\$ 596,250	\$ 2,250	\$ 2,233,681	
Livestock/Animal Management Sub Total	\$ 691,189	\$ -	\$ -	\$ -	\$ 23,677	\$ 378,863	\$ 288,649	\$ -	\$ 691,189	
Operational Monitoring Sub Total	\$ 577,275	\$ -	\$ -	\$ -	\$ 84,305	\$ 54,100	\$ 402,380	\$ 36,490	\$ 577,275	
Eradicating Owls Sub Total	\$ 137,000	\$ -	\$ -	\$ -	\$ -	\$ 12,000	\$ 78,000	\$ 47,000	\$ 137,000	
Project Management Sub Total	\$ 2,328,952	\$ -	\$ 336,000	\$ 305,462	\$ 470,515	\$ 706,290	\$ 382,685	\$ 128,000	\$ 2,328,952	
Biosecurity Sub Total	\$ 470,244	\$ -	\$ 60,000	\$ -	\$ 42,000	\$ 294,307	\$ 61,229	\$ 12,708	\$ 470,244	
Outcome monitoring Sub Total	\$ 414,800	\$ -	\$ -	\$ -	\$ 55,537	\$ 191,263	\$ 168,000	\$ -	\$ 414,800	
Misc Sub Total	\$ 756,970	\$ 756,970	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 756,970	
<b>Total</b>	<b>\$ 10,503,330</b>	<b>\$ 756,970</b>	<b>\$ 723,106</b>	<b>\$ 308,462</b>	<b>\$ 1,278,264</b>	<b>\$ 4,262,535</b>	<b>\$ 2,697,546</b>	<b>\$ 476,448</b>	<b>\$ 10,503,330</b>	<b>\$ 10,503,330</b>

## 6. Technical Feasibility

After completing a Feasibility Study in 2001<sup>8</sup>, the LHIB has carefully considered and evaluated the eradication of rats and mice on the LHIG. Due to developments in eradication techniques during the past 20 years, particularly the refinement of aerial baiting methods, the eradication of both rats and mice on the LHI Group in a single operation is now considered technically feasible and achievable. A range of possible methods and mortality agents were considered for use in eradicating both rats and mice on LHI. The only method capable of removing every rat and mouse on LHI is aerial distribution, in conjunction with minimal hand broadcast and bait stations where required (i.e. the settlement area), of highly palatable bait containing an effective toxicant. Assessment of other options considered and why they were unsuitable on LHI are shown in Table 2 below.

*Table 2 Assessment of Eradication Options*

Eradication Technique	Suitable for eradication	Feasible for Eradication on LHI	Justification
Disease	No	No	No suitable pathogen yet developed that could eliminate all individuals.
Trapping	Yes	No	May be feasible for eradication on small islands, however may cause individuals to become trap shy. Size and inaccessible terrain of LHI makes this option unfeasible
Biological	No	No	Likely to fail to completely eradicate the target species. High likelihood of unacceptable non-target species impacts.
Fertility Control	No	No	No suitable fertility control yet developed that could eliminate all individuals.
Toxicant - Bait station / hand broadcast only	Yes	No	May be feasible for eradication on small islands. Size and inaccessible terrain of LHI makes this option unfeasible.
Toxicant – Aerial Broadcast only	Yes	No	Highly successful on uninhabited islands. Socially unacceptable on LHI.
Toxicant – Combination of Aerial and Hand Broadcast / Bait Stations	Yes	Yes	Brodifacoum in the form of Pest off 20R has been selected as the preferred toxicant on LHI considering proven success, efficacy and non-target impacts

<sup>8</sup> Saunders, A. and Brown, D. (2001). An Assessment of the Feasibility of Eradicating Rodents from the Lord Howe Island Group. Unpublished report to the Lord Howe Island Board.

The eradication techniques proposed for LHI are neither novel nor experimental. They are the culmination of more than 30 years of development and implementation involving more than 380 successful eradications worldwide (Howald et al. 2007<sup>9</sup> and DIISE, 2016<sup>10</sup>). Systematic techniques for eradicating rodents from islands were first developed in New Zealand in the 1980s. Since then techniques have improved significantly, and eradications are now being attempted and achieved on increasingly larger and more complex islands, including those with human populations.

Aerial broadcasting of bait using helicopters has become the standard method used in eradications, particularly those on large islands (Townes and Broome 2003)<sup>11</sup>. This method has proven to be a more reliable and more cost-effective option than the previous ground based techniques. Depending on the nature of the area to be treated, aerial baiting has been combined with hand broadcasting of bait and the use of bait stations, particularly around areas of human habitation. The use of new tracking and mapping technologies such as global positioning systems and geographic information (computer mapping) systems has increased the efficacy of aerial-based eradication programmes.

The toxicant selected for the eradication of rats and mice from the LHIG is Brodifacoum, a second-generation anticoagulant. Brodifacoum has proven to be successful in over 226 eradications, in a variety of climatic conditions including those similar to LHI, and on all 14 eradications on islands greater than 500 ha in size. An evaluation of potential rodenticides for aerial control of rodents (Eason and Ogilvie 2009<sup>12</sup>) concluded that Brodifacoum was the best rodenticide for island eradications. The use of any other mortality agent would be largely experimental and pose unacceptable risks of failure. The Island Eradication Advisory Group for the Department of Conservation in New Zealand who are recognised as leaders in this field, is of the opinion that “*there is no other alternative rodenticide on the market anywhere in the world with which we would have the same level of confidence in using to eradicate Ship Rats and mice from an island such as Lord Howe*”.

There are three key principles of eradication that must be met in every case for all target species. The LHI REP has been designed with these principles in mind and they are discussed in further detail below.

---

<sup>9</sup> Howald, G., Donlan, C.J., Galvan, J.P., Russell, J.C., Parkes, J., Samaniego, A., Wang, Y., Veitch, D., Genovesi, P., Pascal, M., Saunders, A. and Tershy, B. (2007). Invasive rodent eradication on islands. *Conservation Biology* **21**, 1258-1268.

<sup>10</sup> DIISE (2016): Database for Island Invasive Species Eradications accessed January 2016: <http://diise.islandconservation.org>

<sup>11</sup> Towns, D. R. and Broome, K. G. (2003). From small Maria to massive Campbell: forty years of rat eradications from New Zealand islands. *New Zealand Journal of Zoology* **30**, 377-398.

<sup>12</sup> Eason, C. T. and Ogilvie, S. (2009). A re-evaluation of potential rodenticides for aerial control of rodents. DOC Research and Development Series 312. Department of Conservation, Wellington, New Zealand.

1. *All individuals can be put at risk by the eradication technique(s).*

Constraints and solutions to this principle are detailed below.

<b>Constraint</b>	<b>Solution</b>
Efficacy of the bait	<p>Brodifacoum is highly toxic to both rats and mice in minute quantities, allowing a lethal dose to be consumed in a single feed. It is also a chronic toxicant (i.e. its action is delayed) meaning the rodent does not associate any illness with the bait it has consumed. These two factors are important for avoiding the consumption of sub-lethal doses and the associated risk of bait shyness/avoidance.</p> <p>Trials on LHI have confirmed that doses available during the REP are sufficient to kill all rats and mice.</p>
Palatability of the bait and alternate food sources	<p>The Pestoff 20R bait proposed to be used is specially designed to be highly palatable to rodents and this has been shown on LHI even with alternate food available in the laboratory and in field conditions. The Pestoff 20R bait is much more palatable than commercial rodenticides containing Brodifacoum as these contain waxes to preserve life and taste deterrents to prevent human ingestion.</p> <p>Whilst LHI has alternate foods sources available, unlike tropical islands, the sub-tropical LHI has reduced alternate food availability over winter when the REP is planned.</p>
Access to baits, inter species competition and home ranges of rats and mice	<p>The LHI REP has been specifically designed to target both rats and mice considering the smaller home range of mice. Bait will be applied at a density that will allow all rats and mice access to a lethal dose. The second bait drop also acts as a contingency to ensure there are no gaps in the bait coverage and to target individuals that may have been denied access to bait distributed in the first application (by more dominant individuals that will now be dead).</p>
Island size and topography (including cliffs, crevices, caves)	<p>The aerial distribution of baits is the only realistic method of baiting a large topographically challenging island such LHI. Aerial application using a specifically designed spreader bucket has been shown to be effective in delivering a toxic dose of bait to every rodent on similar large and rugged islands (i.e. Macquarie and Campbell Islands). GPS technology will be used to ensure total bait coverage through the development of flight lines and ensuring 100% of island is bait treated. The second bait drop also acts as a contingency to ensure there are no gaps in the bait coverage.</p>
Permanent human population	<p>To minimise potential risks to human health, a combination of hand broadcasting and bait stations will be used in the settlement area. This will allow coverage to be maintained including in roofs and under buildings. A clean up of island hard waste successfully removed over 400 tonnes of hard waste that was providing potential rodent habitat.</p>

Access to individual properties has been agreed with all but one leaseholder and will continue prior to implementation. Contingency options for property access are available as discussed above.

#### Potential survivors

A comprehensive rodent monitoring programme has been developed for the REP. It includes intensive monitoring particularly in the settlement area immediately after the eradication and then extending to all accessible areas across the island for two years after. This approach facilitates the early detection and removal of localised survivors but will also give a high level of confidence to allow declaration of eradication success which will be declared after two years of monitoring with no rodent activity.

The detection network will include a combination of detection tools including detector dogs, chew cards, chew blocks, cameras, trakka tunnels, traps and bait stations. Response to a detection will be guided by a Technical Advisory Group (TAG) who will be on immediate standby to provide consensus advice on how to respond to any specific situation. The TAG will consist of selected experts in eradication techniques, rodent detection and rodent behaviour.

### *2. Rodents can be killed at a rate exceeding their rate of increase at all densities*

The use of aerial baiting is the only method that can be used on an island the size and topography of LHI to ensure that rodents can be killed faster than they can breed. The time between the two bait applications is deliberately shorter than the breeding cycle of rats and mice. The second bait drop also acts as a contingency to target any young recently emerging from nests after the first application.

### *3. The probability of the pest re-establishing is manageable to near zero*

To protect the eradication investment and manage the risk of rodents reinvading and establishing, the LHIB is:

- upgrading the Island's biosecurity system (regardless of whether or not the REP proceeds)
- establishing a rodent detection network.

#### Biosecurity system upgrade

In 2015 a consultant was engaged to review and update the LHI Biosecurity Strategy. Recommendations from the updated Strategy (AECOM, 2015<sup>13</sup>) include:

- reducing risk at the Port Macquarie wharf
- increasing education and awareness for residents and visitors pre arrival to LHI

---

<sup>13</sup> AECOM Australia Pty Ltd (2016). Lord Howe Island Biosecurity Strategy 2016. Unpublished Report for the Lord Howe Island Board

- Increasing inspection regimes for all pathways
- pursuing legislative declaration of LHI as a Special Biosecurity Zone under the Biosecurity Act 2015
- increasing residents' awareness of biosecurity risks of plants, animals and diseases both before and after import
- being prepared to react quickly to new incursions through early detection and rapid response
- continuing with on ongoing management and eradication programs
- ensuring biosecurity is adequately resourced with realistic cost and resource estimates

Specifically in relation to rodents the following measures will be applied:

- Employment of dedicated on island biosecurity officer(s) who will have primary responsibility for biosecurity detector dogs.
- Upgrades to the shipping contract to increase emphasis on rodent prevention including requirements to:
  - have in place a Biosecurity Management Plan
  - maintain rodent baiting at the point of mainland departure
  - maintain rodent baiting and De-ratting certificates on the cargo vessel
  - report biosecurity risk cargo and incidents prior to arrival

#### Rodent Detection Network

A permanent rodent detection and prevention monitoring network will be established on the island to detect any possible reintroductions. The monitoring network developed for the initial follow-up monitoring and declaration of success will be modified to allow targeted monitoring of high risk reinvasion points. It will include:

- A grid network of detection tools at high risk reinvasion points such as the wharf and airport and potential areas for initial recolonisation. This will be checked at a frequency commensurate with arrivals (i.e. daily at the airport and fortnightly at the wharf coinciding with cargo vessel arrivals)
- The permanent rodent detector / biosecurity dogs based on the island will routinely screen all incoming cargo and luggage
- The permanent rodent detector / biosecurity dogs based on the island will sporadically undertake targeted searches of high risk and random areas

This methodology will allow a high level of confidence that any reinvasion would be detected. Genetic testing on LHI rodents has been undertaken. In the event that rodents are detected post REP, the genetic samples will allow determination of whether the eradication failed or the detection was a reinvasion.

### **Summary of Technical Feasibility**

Whilst it is difficult to predict a likelihood of success, the selected eradication techniques, toxin and bait give the LHI REP the best chance of being successful given the constraints on LHI and based on global experience developed over 30 years and more than 380 successful rodent eradications worldwide. The success rate for mouse eradications from 1997-2014 on NZ islands using the same bait and technique is 100% or 11 from 11 attempts (Broome and Fairweather, 2016,) whilst rat eradications on islands over the same period have been 98% successful (37 of 39 attempts) (DIISE 2016).

The LHIB receives technical advice on the project from the New Zealand Island Eradication Advisory Group (IEAG) to ensure best practice and lessons learnt from other eradications are

considered. The IEAG have reviewed several versions of the operational plan as the project has progressed to provide advice to the Project steering committee and LHIB as part of the final decision to proceed. The IEAG advice to the LHIB is presented below and in full in Attachment 2.

*“The eradication of rodents is in our view, the only viable option for long-term ecological benefit on Lord Howe Island. It remains technically feasible assuming the operational plan can be delivered to a high standard and the basic principles of eradication success are adhered to; i.e.,*

- *all individual target animals are exposed to the methods;*
- *they are killed at a rate higher than their ability to reproduce at all densities; and*
- *the risk of reinvasion is managed.*

*The likelihood of success will largely depend on the ability of the team to implement the plan to the required standard of excellence. Continued attention to detail in the planning and preparation, including building a strong and motivated project team and strong support from the LHIB and community will be critical to success. There is much still to be done before next winter but the fundamental design and the preparation to implement that design we have seen so far gives every indication that eradication is achievable. A more thorough evaluation closer to the time of fieldwork beginning is advisable.”*

In addition the IEAG will review a final operational plan after the decision to proceed is made and an IEAG member will undertake a final operational readiness check prior to on the ground implementation in May of 2018.

## **7. Steering Committee Recommendation**

The Steering Committee for the LHI Rodent Eradication Project was established to:

- a) Support the Board in achieving the Project Objective of eradicating all ship rats and house mice from LHI.
- b) Advise on the best use of the funding to that end.
- c) Provide direction, guidance and support to the Project team in implementing the Project to achieve the Project Objective
- d) Provide support and advice to the Board at key milestone points where decisions have to be made about the direction of the project

Current membership is:

- Federal funding partner – National Landcare Program. Joanne Nathan (Director, Natural Heritage, Department of the Environment and Energy)
- State funding partner – NSW Environmental Trust. Peter Dixon (Director Grants, OEH)
- LHIB. Penny Holloway (Chief Executive Officer, LHIB)
- LHIB. Barney Nichols (locally elected member LHIB)
- Rodent Eradication Expert. Keith Broome (Chair, Island Eradication Advisory Group, NZ Department of Conservation)

The Steering Committee has met quarterly since 2012 and is very familiar with the Project, its development over time and current status. The Steering Committee recommendation to the LHIB is presented below.

*“The Steering Committee is of the opinion that the project team has now satisfied all criteria that were established in May of 2015 to allow the decision to proceed to Stage 3 implementation to be made; namely:*

1. *Key approvals required have been received with conditions that are achievable and do not impact implementation of the project. This includes:*
  - *Approval (EPBC 2016/7703) from the Department of Environment and Energy under the Environment Protection and Biodiversity Conservation Act considering Matters of National Environmental Significance This includes consideration of impacts to Commonwealth listed threatened and migratory species and species endemic to Lord Howe Island as part of assessment of impact to the World Heritage values*
  - *License to Harm Threatened Species (C0002763) issued under the NSW Threatened Species Conservation Act which considers impacts to NSW listed threatened species.*
  - *A Minor Use permit from the Australian Pesticides and Veterinary Medicines Authority allowing use the bait*
  - *A permit from NSW Fisheries and Marine Parks*
2. *Risks to human health have been extensively considered and are mitigated to the point where risks are considered to be very low. The Steering Committee endorse the outcomes of the Human Health Risk Assessment process overseen by the Office of the Chief Scientist and Engineer and support the recommendations made.*
3. *Community support now appears to be sufficient to allow the project to proceed*
4. *There is committed funding, sufficient budget remaining to implement the project and a contingency funding strategy in place if required.*
5. *The Project is considered to be technically feasible by eradication experts*

*On the basis of the above the Steering Committee unanimously recommends to the Board that the decision to proceed to Stage 3 implementation be made with implementation in winter 2018”*



## 8. Summary

A summary of essential criteria for the decision to proceed is shown below

Criteria	Additional Information	Result
Is the REP safe for residents and visitors	Three separate human health risk assessments of the project have shown it be safe for resident and visitors.	Yes
Is the REP safe for the environment	Receipt of the various Commonwealth and State environmental approvals required for the project is evidence that the REP is considered safe for the environment. Environmental benefits of proceeding significantly outweigh any potential impacts. Comprehensive mitigation is in place to manage the two species considered at risk.	Yes
Have all of the key approvals been received	All key approvals required have been received	Yes
Is the REP socially acceptable	The project is now well understood and accepted by the majority of the community. Property access is available for the majority of the Island	Yes
Are there sufficient funds to implement to REP	The REP currently has sufficient funds for successful implementation. Variance is currently within standard acceptable limits with some line items still to be confirmed. A plan can be enacted to seek additional funds if required.	Yes
Is the REP technically feasible	Eradication on LHI is technically feasible and achievable.	Yes
Are all risks mitigated or reduced to an acceptable level	Risks of proceeding have been identified, mitigated or reduced to an acceptable level. Several very high risks are associated not with proceeding. A more detailed risk assessment is included as Attachment 3.	Yes
Is the REP endorsed by rodent eradication experts	The eradication is endorsed by the Island Eradication Advisory Group	Yes
Is proceeding with the REP endorsed by the project Steering Committee	The steering Committee recommends proceeding to Stage Three implementation	Yes

### **RECOMMENDATION**

That the Board make the decision to proceed to Stage Three of the LHI Rodent Eradication Program (REP) with implementation in winter of 2018.

**Prepared:** Andrew Walsh, Rodent Eradication Project Manager

**Endorsed:** Penny Holloway, Chief Executive Officer

#### **Attachments:**

Attachment A: Report on Human Health Risk Assessment  
Attachment B: IEAG Recommendation  
Attachment C: Risk Assessment



**Chief Scientist  
& Engineer**

## Report on the Human Health Risk Assessment for the Lord Howe Island's proposed Rodent Eradication Program

NSW Chief Scientist & Engineer

July 2017



[www.chiefscientist.nsw.gov.au/reports/independent-review-of-the-lord-howe-island-rodent-eradication-project](http://www.chiefscientist.nsw.gov.au/reports/independent-review-of-the-lord-howe-island-rodent-eradication-project)



## Chief Scientist & Engineer

The Hon. Gabrielle Upton MP  
Minister for the Environment  
Minister for Local Government  
Minister for Heritage  
52 Martin Place  
SYDNEY NSW 2000

Dear Minister,

### **Report – Independent Human Health Risk Assessment for the Lord Howe Island’s proposed Rodent Eradication Program**

In June 2016, your predecessor wrote requesting that I assist the Lord Howe Island Board in undertaking an independent Human Health Risk Assessment for the Lord Howe Island’s proposed Rodent Eradication Program in line with the Terms of Reference (see Appendix 1). As planned, an Expert Panel was convened and a suitable firm procured (Ramboll Environ Pty. Ltd.) to undertake the Human Health Risk Assessment, with input and review of the Expert Panel.

The purpose of this report is to provide you with an overview of the process, the finding of the Human Health Risk Assessment and some observations and recommendations. The report of Ramboll’s is included as Appendix 2 of this report.

I understand that the Human Health Risk Assessment is important for the Lord Howe Island community. During discussion between the Lord Howe Island Board (the Board) and my office, the Board has expressed an interest in representatives from the Expert Panel and the Office of the Chief Scientist & Engineer attending the island to participate in a community engagement event, discussing the outcomes of the Human health Risk Assessment. I would support this suggestion and my office would be willing to assist should this occur.

I would like to acknowledge the Expert Panel members, Dr Chris Armstrong, Professor Brian Priestly and Emeritus Professor Stephen Leeder, and thank the Lord Howe Island community for their assistance and input into this project.

Yours sincerely,

**Mary O’Kane**  
**Chief Scientist & Engineer**  
19 July 2017

## EXECUTIVE SUMMARY

At the request of the Minister for the Environment, the NSW Chief Scientist & Engineer commissioned an independent Human Health Risk Assessment for the Lord Howe Island's proposed Rodent Eradication Program. The Rodent Eradication Program proposes to use the rodenticide brodifacoum, across the island to eradicate both rats and mice. The rodenticide, in the form of Pestoff 20R, would be distributed by aerial baiting, hand distributed, and in bait stations and trays.

Ramboll Environ Pty. Ltd. was engaged to undertake the Human Health Risk Assessment. An Expert Panel was convened to oversee its development and to review the Human Health Risk Assessment.

The Human Health Risk Assessment looked at a number of potential exposure pathways of the rodenticide to humans, including exposure through soil, air (dust), sediment, surface water, tank water as well as food sources such as seafood and locally grown fruits and vegetables. Potential risks from these pathways were then considered for those most sensitive, which included toddlers, school children, pregnant women and adults spending large amounts of time outside.

A quantitative risk assessment of these exposure pathways and population groups concluded that exposure to brodifacoum from all potential sources are below those likely to result in adverse health effects.

The Human Health Risk Assessment also assessed potential exposure due to ingestion of pellets and found that ingestion of one or a few pellets by a child is unlikely to result in observable anticoagulant effects.

While exposure to the rodenticide via the Rodent Eradication Program was not likely to result in adverse health effects, the pathways contributing most to projected exposure included:

- ingestion of soil
- ingestion of tank water
- dermal contact with soil
- inhalation of airborne dust during aerial operations.

The Human Health Risk Assessment report (the Report) was reviewed by the Expert Panel. The Expert Panel supported the conclusions of the Report noting that while adverse health effects are not expected, identification of the major pathways can allow those concerned with exposure to implementation mitigation strategies.

The Expert Panel noted that community concerns are greater than the scope of the Human Health Risk Assessment. These concerns include issues around health and wellbeing (e.g. anxiety and stress) and the implementation of the Rodent Eradication Program, such as the likelihood of success and possible need to undertake further eradications at a later date. It is clear that the Rodent Eradication Program is a divisive issue for the island, which has potential to affect social cohesion. Enhancement of community consultation and engagement may assist with alleviating some of these concerns, although expert advice or assistance from professionals should be considered to assist with health and wellbeing related concerns.

Planning for the case of the rats re-emerging will be considered through the Lord Howe Island Board's rodent detection monitoring program. In such a case, measurement and monitoring should enable early intervention, and consideration of other possible approaches. Further, resistance to brodifacoum has been considered and if necessary additional strategies will be implemented to address this issue. Finally, should the Rodent Eradication Program need to be repeated at a later date, new technologies that are currently being

researched (including reproductive technologies) may be considered noting that further research and commercialisation is required before being available commercially.

It is understood that other relevant approvals processes will look at environmental outcomes (effect of brodifacoum on non-rodent species), likelihood of success of the eradication, and approval of helicopter operations during the Rodent Eradication Program (Civil Aviation Safety Authority). The results of these approvals and the recommendations of this report will be considered by the Lord Howe Island Board.

## 1 RECOMMENDATIONS

### **Recommendation 1**

That the Lord Howe Island Board note the Human Health Risk Assessment report and its advice that the proposed Rodent Eradication Program is not expected to result in adverse health effects for any individual due to exposure to brodifacoum.

### **Recommendation 2**

Noting the considerable remaining community concern on Lord Howe Island, that the Minister request the Lord Howe Island Board to deliver:

1. a communication strategy for the period before and during the Rodent Eradication Program that clearly articulates the following:
  - the reason for the eradication and approach chosen
  - guidance to residents and visitors on actions that they should and could take during the Rodent Eradication Program to minimise exposure to brodifacoum
  - plans for follow-up measures that will be taken after the eradication program
2. a monitoring strategy to measure the outcomes and impacts of the Rodent Eradication Program, including for re-emergence of rodents, as well as triggers that would lead to further action
3. reports to the Minister following the Rodent Eradication Program on community and environmental outcomes, at designated timeframes, such as one month after the second bait distribution, one month after re-introduction of birds and cattle, and two years post the Rodent Eradication Program.



Department of Conservation  
*Te Papa Atawhai*

General Manager  
Lord Howe Island Board  
PO Box 5  
Lord Howe Island 2898  
NSW

15<sup>th</sup> August 2017

Our ref: DOC-3141548

Dear Penny,

You have asked the Island Eradication Advisory Group to comment on the technical feasibility of eradicating rodents from Lord Howe Island. The group has supported the project with peer review of the operational planning for several years and members are familiar with the current state of the planning through discussions with Project Manager Andrew Walsh and my involvement on the project steering committee. Below is our current assessment of the feasibility from what we know today. Technical feasibility is assessed dispassionately with a focus on what needs to be done to give the best chance of success.

The eradication of rodents is in our view, the only viable option for long-term ecological benefit on Lord Howe Island. It remains technically feasible assuming the operational plan can be delivered to a high standard and the basic principles of eradication success are adhered to; i.e.,

- all individual target animals are exposed to the methods;
- they are killed at a rate higher than their ability to reproduce at all densities; and
- the risk of reinvasion is managed.

The likelihood of success will largely depend on the ability of the team to implement the plan to the required standard of excellence. Continued attention to detail in the planning and preparation, including building a strong and motivated project team and strong support from the LHIB and community will be critical to success. There is much still to be done before next winter but the fundamental design and the preparation to implement that design we have seen so far gives every indication that eradication is achievable. A more thorough evaluation closer to the time of fieldwork beginning is advisable.

Yours Sincerely

A handwritten signature in blue ink that reads "Keith Broome".

Keith Broome  
Chair,  
Island Eradication Advisory Group

**Hamilton Office**  
Private Bag 3072, Hamilton 3240, New Zealand



Ref	Activity / Potential Impact	Impact Description	Category	Unmitigated Case						Mitigated Case			
				Consequence	Consequence Rating	Likelihood	Likelihood Rating	Unmitigated Risk Rating	Unmitigated Risk Level	Mitigation	Mitigated Likelihood	Mitigated Likelihood Rating	Residual Risk Level
<b>1</b>	<b>Not proceeding with the eradication</b>												
1.01	Ongoing rodent predation to threatened species	Continued impacts to threatened species including species extinctions	Environment	Severe	21	Likely	7	28	Very High	Ongoing control even at increased densities will not mitigate the risk sufficiently	Likely	7	Very High
1.02	Ongoing rodent predation to threatened species	Impact to World Heritage values	Reputation	Major	16	Possible	5	21	High	Ongoing control even at increased densities will not mitigate the risk sufficiently	Likely	7	High
1.03	Risk of rodents developing resistance to currently available poisons	Increased impacts to threatened species including species extinctions	Environment	Severe	21	Likely	7	28	Very High	No alternate technologies currently available	Likely	7	Very High
1.04	Ongoing accidental poisoning of non target threatened species	Continued deaths to species such as the woodhen	Environment	Moderate	11	Almost certain	9	20	High	Mitigation as per current. Doses of vitamin K if possible	Possible	5	Medium
1.05	Ongoing use of Poison	Economic costs of rodent control in perpetuity	Financial	Minor	6	Almost certain	9	15	Medium	Cost likely to increase not decrease	Almost certain	9	Medium
1.06	Accidental exposure to significant amount of poison	Potential risks to human health	Human Health / pets	Moderate	11	Unlikely	3	14	Medium	Mitigation as per current parental vigilance and treatment	Rare	1	Low
1.07	Accidental exposure to significant amount of poison	Domestic Animals	Human Health / pets	Minor	6	Possible	5	11	Medium	Mitigation as per current owner vigilance and treatment	Unlikely	3	Low
1.08	Non compliance with legal obligations	Monetary or reputational damage to the LHIB	Legal	Moderate	11	Possible	5	16	Medium	No mitigation	Possible	5	Medium
1.09	Visitor experience	interaction with rodents spoils visitor experience and incurs reputational damage to the island	Reputation	Minor	6	Likely	7	13	Medium	No mitigation	Likely	7	Medium
<b>2</b>	<b>Proceeding with the eradication</b>												
2.01	Accidental poisoning of non target threatened species	Potential risks to threatened species including woodhen and currawong	Environment	Major	16	Likely	7	23	High	Mitigation in place including captive management and monitoring	Rare	1	Medium
2.02	Accidental poisoning of other non target species	Potential risks to other non-target species	Environment	Minor	6	Possible	5	11	Medium	Mitigation in place including captive management and monitoring	Unlikely	3	Low
2.03	Accidental poisoning of the environment	Pollution of soil or water	Environment	Minor	6	Unlikely	5	11	Medium	Extensive mitigation and monitoring in place	Rare	1	Low
2.04	Accidental exposure to significant amount of Brodifacoum	Potential risks to human health	Human Health / Pets	Moderate	11	Possible	5	16	Medium	Extensive mitigation and monitoring in place	Rare	1	Low
2.05	Accidental exposure to significant amount of poison	Domestic Animals	Human Health / Pets	Minor	6	Likely	5	11	Medium	Extensive mitigation and monitoring in place	Rare	1	Low
2.06	Captive Management	Harm to species in captivity	Environment	Minor	6	Possible	5	11	Medium	Expert care in place	Rare	1	Low
2.07	Project failure -rats	Project fails for various reasons	Operational	Major	16	Rare	1	17	Medium	technical advice and operation review by eradication experts	Rare	1	Medium
2.08	Project failure - mice	Project fails for various reasons	Operational	Moderate	11	Possible	5	16	Medium	technical advice and operation review by eradication experts	Rare	1	Low
2.09	Reinvasion	Rodents invade the island	Operational	Moderate	11	Unlikely	3	14	Medium	Upgraded biosecurity and detection network	Rare	1	Low
2.1	Legal Challenge	Delays or upholds the project	Financial	Minor	6	Possible	5	11	Medium	legal advice that if challenge was overturned, costs could be reduced	Unlikely	3	Low
2.11	Rodent predation to threatened species	Impacts from rodents to threatened species removed	Environment					0		Positive impact			
2.12	Visitor experience	Visitor experience enhanced by improved world Heritage values	Reputation					0		Positive impact			
2.13	Compliance with legal obligations	No non compliance and enhanced reputation of the LHIB	Legal					0		Positive impact			
2.14	Economic impacts	17:1 Benefit to Cost ratio. Delivers wide economic benefits	Reputation					0		Positive impact			



**Australian Government**  
**Australian Pesticides and  
Veterinary Medicines Authority**

**PERMIT TO ALLOW MINOR USE AND SUPPLY OF AN AGVET CHEMICAL**

**FOR CONTROL OF THE BLACK RAT (*Rattus rattus*)  
AND HOUSE MOUSE (*Mus musculus*) ON LORD HOWE ISLAND**

**PERMIT NUMBER – PER85459**

1. This permit is issued to the Lord Howe Island Board (**the permit holder**) under section 112(2) of the Agricultural and Veterinary Chemicals Code (**Agvet Code**). It authorises certain things to be done in relation to PestOff Rodent Bait 20R (**the product**), an unregistered product containing 0.02 g/kg brodifacoum as the only active constituent. The product is proposed to be used in the implementation of a program known as the ‘Lord Howe Island Rodent Eradication Project’.
2. For the purposes of this Permit, “Lord Howe Island” means the island known as Lord Howe Island and all adjacent islands situated within 5556 metres measured from low-water mark on the coast of Lord Howe Island together with the islands known as Wheatsheaf Island, Observatory Rock and South-East Rock and the unnamed islands in the vicinity thereof.

**DURATION OF THE PERMIT**

3. This Permit is in force from 24 August 2018 until the end of 31 August 2020.

**MAKING OF CLAIMS IN RESPECT OF THE PRODUCT**

4. Any person may make a claim that the product may be used in accordance with this permit.

**POSSESSION WITH INTENT TO SUPPLY AND SUPPLY**

5. Animal Control Products Ltd, of 408 Heads Road, Wanganui, New Zealand (**the supplier**) may:
  - 5.1. Possess and have in their custody the product for the purposes of supply; and
  - 5.2. supply the product,to persons authorised to use the product by this permit.

**USE OF THE PRODUCT**

6. Employees, contractors, or persons under the direction of, the permit holder, may:

- 6.1. Possess and use the product;
- 6.2. distribute and apply the product by hand in accordance with this permit, but only if they have been appropriately trained in the use of pesticides as required by the *Pesticides Regulations 2017* (NSW);
- 6.3. apply the product aurally, but only if they hold a current NSW EPA licence to apply pesticides by aircraft.

## CONDITIONS OF USE

7. The product must be used within 12 months of the date of manufacture.

## Directions for Use

- 8.

<i>Situation</i>	<i>Target Species</i>	<i>Product Application Method, Rate and Frequency</i>
<b>Lord Howe Island</b>	<p><b>Black Rat</b> (<i>Rattus rattus</i>)</p> <p>and</p> <p><b>House mouse</b> (<i>Mus musculus</i>)</p>	<p><b>Aerial (helicopter) broadcast</b> 12 kg product/ha on initial broadcast, to be followed by a second application of 8 kg product/ha, approximately 7-21 days after, weather permitting, for a total 20 kg product/ha.</p> <p><b>Hand broadcast and bait stations around settlement area and baiting within dwellings</b></p> <p><b>Outdoor areas of the settlement:</b> Product to be dispersed by hand and/or placed into bait stations. The first distribution to be undertaken at a rate of 12 kg product/ha, and the second distribution at a rate of 8 kg product/ha. The second distribution must not be undertaken for a minimum period of 7 days following the first distribution.</p> <p><b>Within dwellings:</b> product to be placed into suitable trays and/or child-proof bait stations, with bait trays to be located in areas out of reach of children and companion animals.</p>

## **CRITICAL USE CONDITIONS**

### **Aerial (helicopter) Broadcast**

9. Product to be distributed via an underslung hopper bucket, with mechanical spinner attached to distribute the product horizontally from the helicopter. A trickle chute may also be attached to the bucket to allow the product to be dropped in a narrow swath below the helicopter.
10. Product distribution should only occur in fine weather and preferably where wind speed does not exceed 15 knots. Weather must be monitored in the lead-up to and during baiting and a record of conditions maintained.
11. A maximum of two (2) applications to be undertaken, in accordance with the Directions for Use (above).
12. User must comply with the NSW EPA Pesticide Order AIR-1

### **Hand Broadcast and Bait Stations around settlement area**

#### **Outdoor areas of the settlement**

13. Hand distribution of the product via broadcast or setting of bait stations to be carried out in accordance with Directions for Use (above).
14. Tamper proof bait stations must be adequately covered when used in the open air to prevent access by birds.
15. The product must not be hand-broadcast directly in or under buildings, where it will not be subject to weathering.
16. Use around or within food producing crops and companion/food animals must only be undertaken using tamper proof bait stations.
17. Buffer zones for hand broadcast application must be in accordance with NSW regulations and with a minimum buffer zone from dwellings of 30 m, unless where owner permission is granted.
18. Tamper proof bait stations, but NOT bait trays, may be used within the 30 m buffer zone.

#### **Within dwellings**

19. Product to be placed into suitable trays or tamper proof bait stations, with bait trays to be located in areas out of the reach of children and domestic pets.
20. Care should be taken to prevent domestic pets eating the product or carcasses of poisoned rats or mice.

### **Grazing Withholding Period**

21. DO NOT graze or cut in treated areas (except where the product has been applied by bait station) for stockfood for 4 months after treatment and until the permit holder confirms, on the basis of residue monitoring, there are no detectable residues of brodifacoum in treated pasture and soil.

### **Jurisdiction and Location**

22. NSW only; specifically Lord Howe Island (as defined at paragraph 2 of this permit).

### **ADDITIONAL CONDITIONS**

23. The permit holder shall take all possible steps to ensure that the following conditions are complied with:

#### **Container**

24. The supplier must supply the product in a container that must:
  - 24.1. be impervious to, and incapable of chemical reaction with, its contents when under conditions of temperature and pressure that are likely to be encountered in normal service; and
  - 24.2. have sufficient strength and impermeability to prevent leakage of its contents during handling, transport and storage under normal handling conditions; and
  - 24.3. if it is intended to be opened more than once, be able to be securely and readily closed and reclosed; and
  - 24.4. have sufficient excess capacity to prevent it from breaking if its contents expand during handling, transport or storage; and
  - 24.5. enable all or any part of its contents to be removed or discharged in such a way that, with the exercise of no more than reasonable care, the contents cannot:
    - 24.5.1. harm any person; or
    - 24.5.2. have an unintended effect that is harmful to the environment.
25. Attached to this container must be a label which is identical in content to the label in **Attachment 1**.
26. Persons who wish to prepare for use and/or use the product for the purposes specified in this permit must read, or have read to them, the details and conditions of this permit. Unless otherwise stated in this permit, the use of the product must be in accordance with instructions on its label as contained in **Attachment 1**.

27. The permit holder shall take all possible steps to ensure that the following conditions are complied with:

### ***Livestock and Poultry***

28. DO NOT allow livestock and poultry to come into contact with the product.
29. The permit holder must ensure that:
30. Livestock is penned in containment areas to prevent consumption of the product.
31. A 5 m buffer zone to the areas treated by broadcast is established around containment areas for the herd.
32. Bait stations must be used around and within pens for the remaining herd containment area. These bait stations must be tamper proof by livestock, and secured at ground-level.
33. Bait stations should be placed in areas that avoid damage by livestock and monitored for leakage of the product.
34. Livestock and poultry must not be reintroduced to treated areas (except where the product has been applied by bait station) for 4 months following treatment and until the permit holder confirms, on the basis of residue monitoring, there are no detectable residues of brodifacoum in treated pasture and soil.
35. Residents and tourists must be advised not eat any meat or offal from any animals on LHI during the baiting operation.
36. Milk from the dairy herd to be disposed of until bait is no longer present and laboratory testing confirms that there are no brodifacoum residues present.

### ***Food Producing Crops***

37. Use around or within food producing crops must only be undertaken using tamper proof bait stations.

## **EXPOSURE AND RISK MANAGEMENT; RESIDENTS AND VISITORS/TOURISTS**

38. An education programme must be implemented before baiting commences to inform residents including children through school(s) of the operation, risks, avoiding contact with the product and the appropriate actions in the event that the product is accidentally consumed.
39. A detailed information sheet outlining the hazards associated with brodifacoum must be prepared and distributed to residents before baiting commences and to tourists visiting and camping on the islands before and during the baiting period.
40. LHI residents to be kept informed regularly of the progress of the operation involving the use of the product.

41. The permit holder shall ensure that as far as is reasonably possible, all dwellings have an individual Property Action Plan that include baiting instructions, product placement locations, carcass disposal instructions and safety information for property residents and pets.
42. Residents and tourists must be advised to not consume the liver of any fish caught in the shore area within the lagoon until the permit holder confirms, on the basis of residue monitoring, there are no detectable residues of brodifacoum in the fish population.
43. Prior to baiting commencement residents and tourists must be advised not to drink from streams until the permit holder confirms, on the basis of residue monitoring, there are no detectable residues of brodifacoum present in streams.
44. An adequate supply of the antidote (Vitamin K1) will be held on the island for the duration of the operation in the event of incidental brodifacoum poisoning of people or domestic pets. Diagnostic and treatment procedures must be developed with the resident medical doctor and staff at LHI hospital.
45. Permanent Park Preserve areas, where aerial baiting will be undertaken, to be closed to the public during the days baiting is undertaken.
46. Hand-broadcasting of the product along the lagoon shoreline will be undertaken (where possible), with a buffer zone immediately above the water line.

#### **RISK MITIGATION PLAN**

47. All aspects of the Lord Howe Island Rodent Eradication Project Risk Mitigation Plan Version 4.0 must be followed.
48. Within 30 days after the commencement of the action, the APMVA must be informed of the actual date of commencement of the baiting operation.
49. All conditions attached to licence issued by the NSW Office of Environment and Heritage must be satisfied (C0002763).
50. All conditions attached to the approval by the Australian Department of the Environment and Energy must be satisfied (EPBC 2016/7703).

#### **NOTIFICATION, RECORD KEEPING AND OTHER CONDITIONS**

51. The permit holder must ensure that records are made and maintained for all use undertaken with the product. The details of the record must at a minimum meet the same requirements as required by the NSW *Pesticides Act 1999* and the NSW *Pesticides Regulation 2009*.
52. The records must be progressively maintained whilst the permit is in force and for a minimum period of two years from the date of expiry of this permit and must be made available to the APVMA upon request.

53. Upon a request being made, the records are to be provided: (i) immediately if the request is verbally from an APVMA *Inspector* who has attended the premises, and (ii) in the time specified in the written correspondence containing the request.

#### **ADDITIONAL SAFETY DIRECTIONS AND FIRST AID INSTRUCTIONS**

54. These Safety Directions are to be provided to all persons using, handling or storing the product and are in addition to the Precautions specified on the product label (**Attachment 1**) and must be followed during the handling, loading and distribution of the product:
- 54.1. If poisoning occurs, contact a doctor, the hospital or Poisons Information Centre, phone 131126.
  - 54.2. Vitamin K1 is an antidote to brodifacoum poisoning.
  - 54.3. Poisonous if swallowed.
  - 54.4. Repeated minor exposure may have a cumulative poisoning effect.
  - 54.5. Avoid inhaling dust.
  - 54.6. Avoid skin contact.
  - 54.7. When decanting and loading for aerial application wear cotton overalls buttoned to neck and wrist (or equivalent clothing), goggles, rubber gloves and a disposable dust face mask, covering mouth and nose.
  - 54.8. If applying product by broadcast, wear cotton overalls over normal clothing, buttoned to neck and wrist and rubber gloves.
  - 54.9. When decanting and loading bait trays or bait stations wear rubber gloves.
  - 54.10. After each baiting, wash thoroughly with soap and water.
  - 54.11. Wash hands after use.
  - 54.12. When handling carcasses or product waste, wear latex or rubber gloves.
  - 54.13. DO NOT eat, drink or smoke when using the product, handling open containers, or handling rat and mouse carcasses.
  - 54.14. Wash protective clothing, including goggles and gloves after use.
  - 54.15. Remove the outer layer of clothing and wash hands and exposed skin thoroughly before meals and after any contact with the product or carcasses.
  - 54.16. Store bait in original container, tightly closed and away from feed or foodstuffs.
  - 54.17. KEEP OUT of reach of children, pets and livestock.
  - 54.18. Additional safety information for Pestoff Rodent Bait 20R is listed on the safety data sheet, which is available from [www.pestoff.co.nz](http://www.pestoff.co.nz).



### **Re-entry or Re-handling Statement**

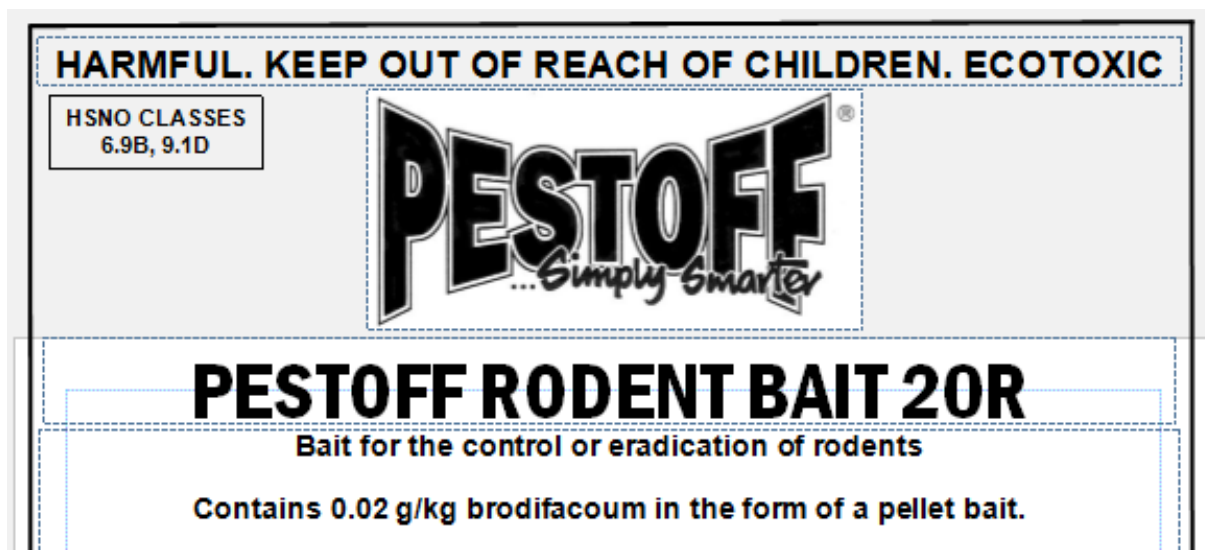
55. Do not re-handle the product, product waste or rodent carcasses, unless wearing gloves. Where possible, rodent carcasses should be collected and sealed in plastic bags at the end of each baiting program.

### **Disposal - Carcasses**

56. Collect poisoned animal carcasses where practicable for burning or burying at least 600 mm below ground. Carcass disposal must comply with NSW EPA requirements.

## ATTACHMENT 1

This product is not registered. Approved for use under APVMA Permit No. 85459



### PRECAUTIONS

**Harmful substance.** Repeated oral exposure may cause toxin to accumulate in internal organs and may affect the clotting ability of the blood. Wear gloves when handling open containers or baits. Do not breathe dust.

**Toxic to terrestrial vertebrates.** Take measures to prevent domestic animals and pets being exposed to the toxin either through eating baits or through eating the carcasses of poisoned animals.

**Storage:** Store in original container, tightly closed and away from feed or foodstuffs. Keep out of reach of children and domestic animals. Do not store in direct or diffused sunlight. Avoid cyclic heating and cooling which may cause condensation to form on the inner bag wall and cause accelerated bait degradation.

**Handling:** Wear overalls and rubber or PVC gloves when laying pellets. When handling this product in open bags particularly around aircraft, avoid inhalation of bait dust by wearing an appropriate dust mask. Avoid contact by mouth and do not smoke, drink or eat while using. Wash hands and exposed skin areas before meals, smoking and after any contact. Prevent access to baits by children, pets and domestic animals. Avoid pollution of any water supply with chemical or used container. Any dead rodents found should be buried.

**Residue Warning:** Brodifacoum, the active ingredient is a potent second generation anticoagulant poison which can accumulate particularly in the liver, kidneys and fat of poisoned animals. Do not feed rodents killed with brodifacoum baits to dogs or cats.

### EMERGENCY MANAGEMENT

**First Aid:** Brodifacoum is an anti-coagulant toxin. In the event of this product being swallowed, seek medical advice. Do not induce vomiting. The symptoms of anti-coagulant poisoning may take several days to appear. Symptoms may include pale gums, passing of blood in urine or faeces, and the appearance of bruising. Always seek medical advice in the event of suspected human poisoning.

**Treatment of domestic animals accidentally poisoned:** Vitamin K<sub>1</sub> is an effective antidote against accidental poisoning of domestic animals by Pestoff Rodent Bait 20R. Veterinarians are familiar with the information on Vitamin K<sub>1</sub> therapy and should be consulted.

**Spillage:** In the event of a spill, isolate the spill area and take all practicable steps to manage any harmful effects of a spillage including preventing baits from entering streams or waterways. Scoop spilled baits into secure containers. Recover any undamaged bait for later use by placing in appropriately labelled containers and dispose of spoiled bait as directed below. Use a broom to collect fine material and wash down the spill area with copious water only after all spilled bait has been removed.

**Disposal:** Product which is surplus or spoiled should be disposed of by burying with other organic material on the active tip face of an appropriately managed landfill or buried within the biologically active layer of soil elsewhere within a secure area. Ensure that a good covering of earth is applied over the bait immediately to prevent access by scavenging birds. Alternatively, burn unwanted bait material in a suitably constructed and appropriately located incinerator and bury any residues as above. Treating the baits through a sewage oxidation facility or other chemical treatment facility is also an acceptable means of disposing of unwanted bait material. Dispose of empty containers by burning if conditions, especially wind direction permit, otherwise bury in an approved landfill. Do not use empty container for any other purpose.

#### **DIRECTIONS FOR USE**

To achieve eradication, it is very important to apply baits across the entire treatment area and to manage successfully all possible sources of re-invasion. Apply baits in bait stations, by hand broadcasting or by aerial sowing. Two bait applications, each of approximately 8 kg - 15 kg per hectare, will usually be sufficient to achieve eradication but higher application rates and/or further applications may be required depending on the species and density of animals targeted, the presence of non-target bait consumers and the nature of the terrain. The second bait application is typically 10 or more days after the first, but may be sooner if a period of prolonged bait availability is sought or where weather or other factors limit the baiting period. Pre-feeding is not required when using Pestoff Rodent Bait 20R.

#### **LEGAL OBLIGATIONS**

**Sale:** This product may be supplied only to authorised persons operating in accordance with the relevant permits.

**Limitations on Use:** Aerial and Hand Broadcast Application or use in bait stations of Pestoff Rodent Bait 20R for the Intended Eradication of Rodents from Specified Areas of Australia has been approved for this product. Persons authorised for the use of this product must do so in accordance with the relevant permits. Any person who, when using this product, knowingly fails to follow the above conditions, commits an offence and may be liable to prosecution.

**Signage:** If baits are applied in areas to which the public has right of access, it is a legal requirement that signs must be posted to notify the public that this product has been applied in the area. Signs must state that brodifacoum has been used, that feral animals may contain residues and that they should not be taken for food. Signs must remain for a period of 12 months after the last application of bait. This product must only be used as specified in the label.


## GENERAL INFORMATION

**Shelf life:** The shelf life of this product may vary according to the suitability of storage conditions. As a guide, it is recommended that the product be used within 3 months of date of manufacture as studies have shown that the palatability of bait may progressively decline after that time. Any product held after the expiry date shown on the bag should be disposed of according to label directions.

**Livestock:** It is important to prevent access to baits by domestic livestock and pets. Stock must be kept off the treatment area until baits have been washed out by rain, removed or destroyed. Dogs and cats are at risk from scavenging poisoned animal carcasses and pet owners in the immediate vicinity should be notified of this risk. Collect poisoned animal carcasses where practicable for burning or burying at least 600 mm below ground, otherwise limit access to the treatment area until poisoned animal carcasses are unlikely to be eaten or to contain residues.

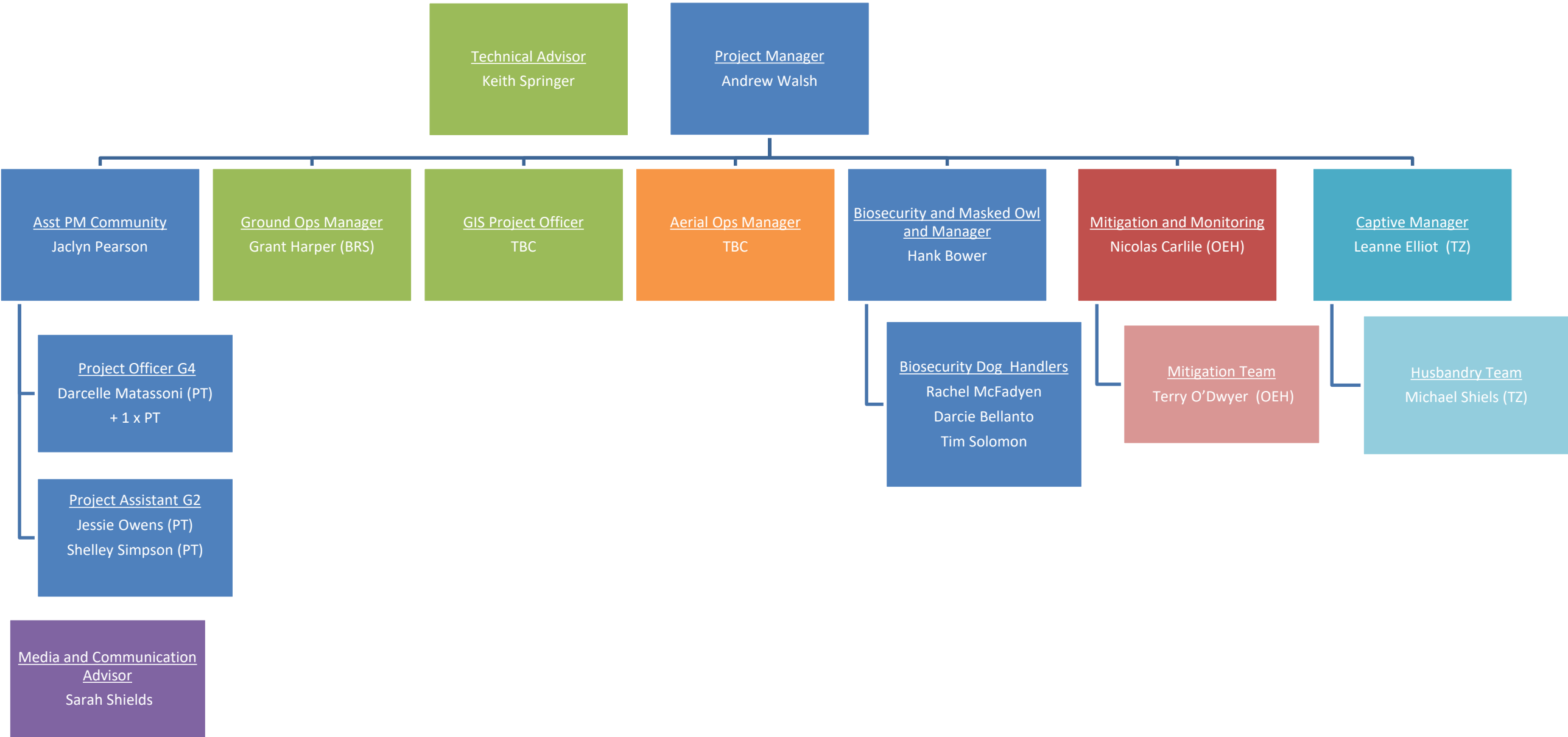
**Conditions of sale:** As no control can be exercised over the methods or conditions under which this product is used, no responsibility or claim, other than those required by statute, will be accepted for any damage or injury whatsoever arising from the storage, handling, application, use or disposal of this product.

**Transport information:** This product does not trigger a Dangerous Goods Classification and may be transported by road, rail, sea or air without the need for placarding or Dangerous Goods documentation.

<b>Registered to and Manufactured by:</b> <b>Animal Control Products Limited - Trading as ORILLION</b> 408 Heads Road, Whanganui 4501, New Zealand. Ph 64 (0)6 344 5302 For safety data sheet go to <a href="http://www.pestoff.co.nz">http://www.pestoff.co.nz</a> Registered pursuant to the ACVM Act 1997, No. V009014			<small>WUS 19 EPT 2017</small>
Pack No.: SO No. & Manuf. date: Size: Expiry Date: Batch No.:	<b>NET CONTENTS</b> <b>25 kg</b>  EPA APPROVAL CODE H SR00 16 12		

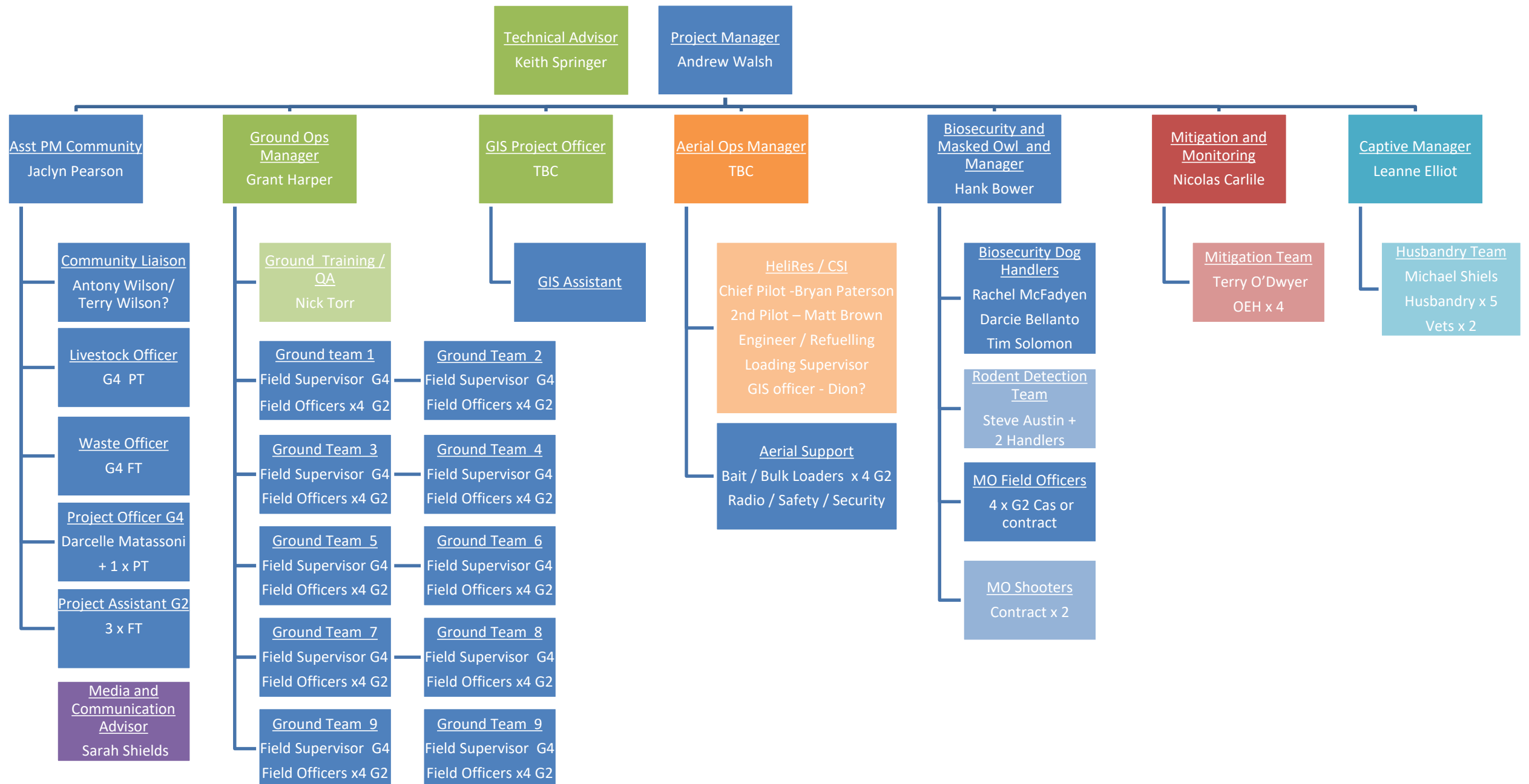
# Lord Howe Island Rodent Eradication Project

## Draft Team Structure Planning 2018-2019



# Lord Howe Island Rodent Eradication Project

## Draft Team Structure Implementation 2019



### Ground Teams:

- Needs combination of eradication exp + local in each team
- Could cover bait station or hand broadcast
- BRS to provide 10 supervisors
- LHI ~ 40 staff
- Can be Temp < 6 months
- 1 Team for support

## Lord Howe Island rodent eradication: identifying and managing risks before baiting



# **Lord Howe Island rodent eradication: identifying and managing risks before baiting**

**John Parkes**

*Kurahaupo Consulting, 2 Ashdale Lane, Strowan, Christchurch 8052, New Zealand (Email: John.Parkes1080@gmail.com)*

**Kurahaupo Consulting Contract Report: 2018/018**

**Prepared for:**

Lord Howe Island Board  
Box 5 Lord Howe Island  
New South Wales 2898  
Australia

July 2018



## Summary

**Background:** The Lord Howe Island Board (LHIB) is planning to eradicate ship rats and mice from Lord Howe Island (LHI) in winter 2019. The community and the island's biodiversity would clearly benefit from the removal of the rodents. The general precedents for eradication and the ability to resolve the particular constraints and risks on LHI suggest the goal is achievable.

Rodents have been eradicated from over 700 islands around the world, from small islets up to areas over 100 000 ha on South Georgia Island, the largest successfully attempted to date. Recent success rates against all rodent species of over 90% have been achieved using the toxin intended for use on LHI. When mice were the only rodent on the island the success rate was 43 out of 46 islands, an initial success rate of 93%. Two of the 46 islands were cleared of mice in second attempts. The ship rat-mouse combination has been attempted only 31 times with both rodents eradicated at first attempt on 20 islands - with Macquarie Island at 12 785 ha being the largest to succeed in eradicating both species. Almost all eradication attempts against mice and mouse-ship rat populations used either aerial baiting or ground-based methods in any attempt, so the proposal to spatially integrate the methods for Lord Howe Island is unique. The failed attempts were usually when the main target was rats and bait stations or bait swaths were placed too far apart to put all mice at risk.

Only a few attempts to eradicate rodents have been made on islands with a community of permanent residents. The paucity of precedents for ship rat – mouse combinations, mixed aerial and ground baiting and the complexity of a human population increases uncertainty and makes the attempt for LHI intrinsically more uncertain and complex than most other rodent eradications. However, it still has a high chance of success.

An operational plan for the 2019 attempt has been produced. This details the necessary complexity, i.e. the intention to use a combination of aerial baiting, hand broadcast and bait stations to ensure all rats and mice are placed at risk, and identifies and directs management of the various other constraints and consequences of such baiting.

**Objectives:** The LHIB commissioned Kurahaupo Consulting in July 2018 to independently review the state of the project planning to see if it is fit for purpose and has, as far as possible, minimised risks of failure or adverse outcomes. The review was recommended by the project's Steering Committee to ensure modern developments in global best practice for rodent eradications have been captured in the latest planning documents.

### **Main findings:**

1. The operational plan is detailed and comprehensive. Once it is finalised and approved by the LHIB, it will provide an excellent guideline for the project's delivery. The plan addresses all risks but of course does not reduce all uncertainties intrinsic to all eradication projects and therefore there is a residual risk of failure present in all eradication projects. Some of these uncertainties are manageable but some are not – see below.
2. The broadcast baiting (both aerial and hand) must be meticulously planned as every aspect must work 'on the day'. Apart from ensuring coverage, little information of

success or failure is provided by the method. The baiting in bait stations must also be carefully planned but in contrast to the broadcast baiting it does provide information on success or failure (e.g. from bait-take) as it proceeds and the planning can allow for flexibility to react to any ongoing detection of survivors. The regulatory approvals should allow, as far as possible, for such adaptive responses to monitored outcomes.

3. There are five potential outcomes for the project. From best to worst they are:
  - Both rats and mice are eradicated. The outcome sought and expected under this plan.
  - Rats are eradicated but not mice. This may happen despite the best planning. However, a deliberate plan to target just ship rats by changing, for example, the ground baiting to avoid social objections to baiting in houses would lead to ‘unacceptable’ consequences as mice would be released from predation and competition from rats. While some bird species may benefit from rat eradication, the presence of higher densities of mice would have adverse consequences particularly for invertebrate biodiversity.
  - Mice are eradicated but not rats. This is not likely to happen as I assume mice will be more difficult to eradicate than rats. Mice have smaller home ranges, some commensal individuals and are possibly excluded from baits by rats.
  - No attempt is made for some valid reason.
  - An attempt fails to eradicate both species. This is the worst outcome as it would only provide short-term biodiversity benefits and waste the money used in the attempt.
4. Manageable risks/uncertainties:
  - (a) Access to all buildings and houses.
    - It is critical that baits are laid in all buildings on the island and in the curtilage around them to ensure all rodents are exposed to enough baits to receive a lethal dose.
    - The use of a Control Order under the Biosecurity Act to enforce householders’ compliance must be in place and the powers it enables must be clear to all stakeholders before any decision to proceed with the project is made by the LHIB.
    - This is particularly important for mice which may be completely commensal in winter, but possibly less critical for ship rats with possibly larger home ranges.
  - (b) Use of ground-based baiting against mice
    - Ground-based baiting in bait stations, open piles of baits or hand broadcast has been attempted on many islands. There are 23 successful attempts and four failed attempts (two of which succeeded in later attempts) against mice as the only rodent present. Most (48%) used bait stations or hand broadcasting (39%). There have been 12 successful attempts against both ship rats and mice when they were simultaneously present – 33% in bait stations and 50% by hand broadcasting. Five ground-baiting attempts on islands with both ship rats and mice eradicated the rats but failed to eradicate mice at the first attempt. The reason for these failures against mice appears to be related to the distances between bait stations or bait swaths. The closest reported distance between stations that failed against mice was 40 × 40 m on Quail Island in New Zealand.

- The proposed bait station grid of  $10 \times 10$  m for LHI is likely to place a bait station within all mouse (and rat) home ranges and so will avoid the likely cause of failure noted above.
- The proposed schedule for baiting in bait stations (station grid set out well ahead of any baiting, initially baited over 2 weeks and checked and replenished every 7 days for 5 weeks or until there is no evidence of localized rodent activity) is precautionary but necessary. There is evidence that (i) ship rats dominate mice and (ii) mice have taken some time, even when not affected by the presence of ship rats, to begin to eat baits. Ship rats may therefore remove some or all of the first baits from bait stations. Ship rats will feed for 3 – 5 days before they become anorexic and change their behaviour, and most will die before 7 days. Most mice will take between 6 – 18 days to die after they first begin to eat baits, but a few may live (albeit with lethal doses) for longer and may confound the interpretation of success.
- Toxicity pen trials replicating likely exposure in the eradication operation conducted on LHI rats and mice in 2013 and 2016 showed all rodents died after exposure to brodifacoum baits. LHI mice from areas where past baiting with anticoagulants has occurred need to eat more bait than other mice and a few lived longer before finally dying – 22 days.

(c) Project management

- The management structure of the project has suffered from changing key staff since it was first mooted in 2001.
- This risk continues with the departure of Peter McLelland from his technical advisory role and his replacement, Keith Springer, due to take over in September 2018. It is intended the two will continue to liaise so this lack of continuity presents minimal risk to the project. The operational plan needs to be finalised and the aerial baiting component of the project as well as several secondary management issues means that the position should be filled as soon as practical. The management and quality control for the ground-based component of the baiting is also a critical issue recognized in the current plan.
- The intention to develop individual property management plans to act as memoranda of understanding between the staff laying baits and landowners/occupiers is a good idea. These agreements need to be completed as soon as possible to allow some focus on residual problems to reassure the LHIB that consents (however reluctant) are in place or can be enforced using a Biosecurity Order.
- The current budget is sufficient to complete the project but has a lower contingency budget for unexpected cost overruns than is normal in large eradication projects.

(d) Timing

- The timing of the baiting in early winter is partly based on lower numbers of seabirds present and so lower non-target risks (low anyway for seabirds), and it is the low-season for tourists avoiding some possible disruption to that industry.

5 Unmanageable risks/uncertainties:

(a) Competing natural food

- One explanation for recent eradication failures on tropical islands (against Polynesian rats) is that the rodents have abundant natural food sources and some individuals prefer these to artificial baits. This hypothesis is untested but is one reason why time of year to bait (lowest food abundance per capita) has been investigated (e.g. for Marion Island mice). Data on the seasonal abundance of rats and mice and of their food is not available for LHI. However, non-toxic bait trials conducted in 2007/08 on the island did show high bait acceptance by the rodents. So the default timing of an early winter baiting is sensible but it does leave some uncertainty that a better time might be possible – but see above for other manageable reasons for the early winter timing.
  - Competing food from human sources, e.g. food scraps fed to chickens and compost bins is identified as a risk in the operational plan and can to some extent be managed
- (b) Learned or innate behaviours as a consequence of past baiting
- Rats and mice have been exposed for many decades to baits with first generation anticoagulants (warfarin, diphacinone and coumatetralyl) and second generation anticoagulants (difenacoum and brodifacoum).
  - Mice are known to have developed innate resistance to warfarin and those found in the settlement area appear to have some resistance to brodifacoum and will have to eat more baits than usual for mice. It is important that bait is available in all ground-baiting areas for as long as possible to ensure any resistant mice eat enough to die. It is unlikely that rats are yet resistant to brodifacoum on LHI, as suggested in the complete mortality achieved in the 2013 and 2016 trials with LHI rodents.
  - This genetic resistance to anticoagulant toxins has a fitness cost to the mice and the trait would only be maintained if reinforced by continued exposure to toxins. It is intended to discourage use of anticoagulants as soon as possible, but this is unlikely to have any effect on the level of resistance for several generations of mice.
  - It is possible, but unlikely, that rats and mice have developed learned avoidance or neophobic behaviours and might avoid bait stations or even baits. Siting the bait stations well before they are baited will get rodents used to them and should minimize any potential avoidance behaviours.
- (c) Contingencies to manage survivors
- It is proposed to try and detect and mop-up any survivors of the ground-baiting. If rodents also survive in the aerial baiting areas, despite the best practice methods intended, the project will fail irrespective of what is done in the ground baiting areas. Stop rules for further work in the ground-baited areas would be (a) discovery of survivors (after a month or two) in the core aerial baiting areas, or (b) analysis of the probability that no detection in the ground baited zone equals no rodents present.
  - The proposed ‘detection’ TAG has the skills to detect and respond to post-baiting detections but not the analytical skill to interpret zero detection to enable the ground baiting component to be declared a success and the project to transition to a biosecurity system of early detection – rapid response to new incursions.

## 1 Introduction

The Lord Howe Island Board (LHIB) and island residents have been managing rodents since 1908, and since about 2001 have been considering how to eradicate, ship rats (*Rattus rattus*) and house mice (*Mus musculus*) from the 1572-ha Lord Howe Island. The current plan intends to apply brodifacoum rodent baits in bait stations and by hand broadcast over the parts of the island inhabited by people and their livestock and by aerial sowing over the rest of the island. Although both rodents have been eradicated from much larger islands in Australia and around the world, the presence of people and their livestock on Lord Howe Island makes the planning much more complicated, both technically and socially.

In 2015, the LHIB formally decided to proceed with the planning and approval phases of a rodent eradication project with a final decision to be made in September 2018. Before this decision, a review of the project, of which this report is part, was recommended by the project Steering Committee that would consider whether the ongoing improvements in international eradication projects had been considered in the plans for LHI rat and mouse eradication in time for an attempt to be made in early winter 2019.

This timing gives the planners and decision-makers the ability to assess whether all the conditions and constraints required for a successful project have been addressed and where required managed or mitigated. As one part of this assessment the LHIB commissioned Kurahaupo Consulting in July 2018 to review the state of the project planning to see if it is fit for purpose and has, as far as possible, minimised risks of failure or adverse outcomes.

## 2 Objectives

- To provide context for the current plan by comparing it with the conclusions reached in past studies of the problem (from 2001, 2004 and 2009) and in light of recent global successes and failures to achieve rodent eradication.
- To compare the current state of project planning against the usual criteria for success for all eradication projects and for any issues that particularly constrain meeting these criteria on Lord Howe Island, e.g. technical issues around the methods to be deployed, managing reinvasion, social acceptability of the goals and of the methods used to achieve them, regulatory requirements, mitigation of any adverse effects, capacity to deliver and funding.
- To consider whether these issues present significant risks to eradicate either ship rats, mice or both rodents from the island, and therefore whether the project is considered technically feasible.

### 3 Context for the current operational plan

Lord Howe Island was one of the last places in the world to be settled by humans, in 1834. Like many remote oceanic islands there were no native mammals other than bats before human settlement (Hutton et al. 2007). Mice had arrived some time before 1868 while ship rats arrived in 1918. Other mammal species with wild or feral populations (pigs, cats, goats) that had established have been eradicated (Hutton et al. 2007) leaving only domestic animals (cattle, horses and dogs) and the two rodents on the island.

Rats and mice have been a problem for the residents more or less since their arrival and many control regimes (shooting, bounty systems, attempts at biological control with introduced owls, to poisoning with various toxins) were conducted (Wilkinson & Priddel 2011). Control of rats in bait stations using first generation anticoagulants began in the 1960s (Billing 1999) and since 1996 was focussed first on areas important to the palm industry (Parkes et al. 2004) and now on biodiversity assets. The ongoing use of warfarin as the toxin of choice was criticised in reviews of the options (Billing 2000, Eason 1996) and subsequently other toxins (second generation anticoagulants brodifacoum, difenacoum and the first generation anticoagulant coumatetralyl) have been used for the sustained control operations on the island.

Billing (1999) was of the opinion that eradication was unlikely to be achievable because of the problems associated with people and the extra food they supplied to rodents, the difficulties in putting all rodents at risk, reinvasion risks and costs. However, success at eradicating rodents from other islands around the world led to a more positive view and to a series of proposals to make the attempt on Lord Howe Island. Saunders & Brown (2001) considered an attempt was justified by the biodiversity and commercial benefits and that despite the usual constraints there was a 70% chance of success. The LHIB also commissioned a wider quarantine strategy that in part addressed rodent reinvasions (Landos 2003) and updated in 2015 (AECOM 2016a). Parkes et al. (2004) considered the costs and benefits of both eradication and improved methods of sustained control. They noted the increased risks of having to use two methods (aerial baiting and ground control) and recommended the LHIB would need to gain social consent both for the goal and the methods used to achieve it. They noted the estimated costs (which they underestimated) were justified by increased profits from the kentia palm industry. A more formal cost-benefit analysis commissioned by the LHIB also concluded that eradication of the rodents would have net benefits for Lord Howe Island residents and the wider Australian community (Gillespie & Bennett (2017). Finally, Wilkinson & Priddel (2009) developed the first draft operational plan to eradicate the rodents which was the basis for funding approval but lacked many of the regulatory and risk management detail necessary for action to begin. Funding was provided in 2012 with implementation originally planned for 2015. Implementation has been delayed several times to allow for additional work to be undertaken on social, technical and regulatory components of the project. In 2015, the LHIB made a approval to proceed and the current process to develop a more detailed operational plan, gain regulatory and social consent was initiated.

Several regulatory approvals were required, including a ‘minor-use permit’ from the Australian Pesticides and Veterinary Medicines Authority (APVMA) (LHIB in prep.) and an approval under the Environment Protection and Biodiversity Act 1999 (EPBC) (LHIB 2016b). Both of these applications required detailed benefit-risk analyses that have to be

consistent with the contents of the current operational plan. The APVMA permit is pending but is expected to be approved in July 2018.

The ideal process to plan and deliver pest control such as an eradication project is to recognise that the different steps along the way are aimed at different audiences. First, those who might benefit from a project need to act as proponents or advocates for the plan. They need to set out why they think the animals are a problem and why they think managing them will be of economic or environmental benefit to themselves. The audience at this phase are, in terms of Lord Howe Island, the island residents and their elected representatives.

Having decided that something should be done to the pests, the question is what are the options? This is the time for a critical feasibility study to look at whether eradication, sustained control, or doing nothing is best given the tools and constraints on using them in the particular case under review. This phase is best done by someone who is not a stakeholder and is aimed at the proponents and their decision-makers and sometimes the funding agencies if these are external to the former.

Having decided which strategy is best the stakeholders have to secure the funds, set up some management structure of governance and accountability and commission an operational plan to deliver the desired outcomes. Generally at this stage the management team has to ensure all the regulatory hurdles are met. The operational plan for a complex pest project is a skilled job and most programs hire in those with a track record of success to write it and deliver the on-ground action. So one audience of an operational plan is the governance team and the other is the operations manager and field staff who will do the work. Another audience at this stage are the government regulators with legal requirements to show that the benefits outweigh costs and risks are mitigated. Note that regulators are also often required to weigh up the benefits and the primary stakeholders are often annoyed if the first they see these is in a feasibility study or the management planning phases of the project.

The process since 2001 for the Lord Howe Island rodent eradication project has often allowed these phases and audiences to be blurred. Whether a clearer process would have created more unanimity among island residents will never be known, although it is recognised that all agree rats and mice are a pest so the contention is around what to do, how to do it and the process that has been followed – not the goal itself. There is no way to unscramble that egg so the motivation for this report is to see whether despite the contentions there is still a viable way ahead to achieve the original goals to solve the rodent problem on the island.

#### **4 General rules and constraints for rodent eradication**

Eradication is the permanent removal of a population and so requires some obligate rules that must be met. Feasibility studies judge whether these rules can be met and what constraints have to be removed or managed to achieve them. Most judgements on whether eradication is possible are based partly on precedents and partly on the analysis of the particular issues for the target species and the island under consideration. If the same species have been eradicated many times under similar circumstance, decision-makers can be more confident that they can succeed on their island. Previous failures also provide operational managers on lessons on some risks to avoid.

There are many ways of expressing these rules and constraints but here I follow Parkes (1990) with three ‘biological’ rules. The constraint criteria have been described by Bomford & O’Brien (1995) with economic and social constraint categories, Myers et al. (2000) with organisational commitment and Cromarty et al. (2002) with appropriate planning processes as necessary elements (see Parkes & Panetta (2009) for a discussion of the taxonomy of eradication criteria.

The question addressed is ‘does the current plan in all its parts identify and satisfy the rules for eradication considering the particular constraints and risks present on LHI?’

#### **4.1 Rules that must be met for Lord Howe Island**

##### ***Rule 1: All individuals capable of breeding must be at risk***

###### *Aerial baiting*

The best-practice use of overlapping swaths for the aerial baiting, two bait applications, use of GPS with daily analysis for any gaps, use of deflectors to treat cliffs, precautionary baiting of the 10 small islands around LHI will expose all rodents in the areas to be baited from the helicopter. This gives a high level of confidence for success based on the numerous precedents from other islands eradication projects.

At 12 + 8 kg of bait/ha this will result in 6000 + 4000 of the 2 g Pestoff baits per hectare – or about 1 bait/m<sup>2</sup> over the two sowings. Rat and mouse densities will vary across the island but assuming a worst case density of 74 rats<sup>1</sup> and 100 mice/ha (DECC quoted in the operational plan) this sowing rate will provide about 23 baits per rodent during the second baiting even if none were killed in the first sowing.

At 0.02 g of brodifacoum in each bait an average mouse weighing 17 g would have to eat only one bait to obtain an LD<sub>50</sub> (c. 0.5 mg/kg) and probably only two baits each to kill 100% of the population. In one cage trial with New Zealand wild mice the animals ate an average of 11.3 g of Pestoff bait over three days and all died between 6 and 18 days after exposure (O’Connor & Booth 2001). However, trials exposing LHI mice, caught in the Settlement Area in 2013 where they have had long exposure to a variety of anticoagulants, suggest they are more resistant to brodifacoum with doses of 6.0 mg/kg required to kill 100% (Wheeler et al. draft ms.). This means a large, resistant LHI mouse would need to eat about 3.75 baits to be killed, and given the daily intake rates quoted in Wheeler et al. (draft ms.) and O’Connor & Booth (2001) this would take several feedings over about three days.

However, a second trial exposing mice caught in the settlement area to Pestoff 20R baits with 20 ppm brodifacoum showed that the mice ate enough bait to ensure 100% kills (O’Dwyer et al. 2016). In this trial 100% of 30 mice with ad lib access to baits (to mimic bait stations) died after 20 days and 100% of 30 mice exposed in pulses (to mimic aerial and hand broadcast methods) died after 22 days.

---

<sup>1</sup> Billing (1999) reports average densities of 8.5 rats/ha in North Hills and Boat Harbour and 65 rats/ha on Mt Gower. Wilkinson (2016) reported 67 and 81 mice/ha and 31 and 64 rats/ha at two sites on Transit Hill.



A precautionary approach suggests baits should remain available to mice for as long as possible, especially in the hand-broadcast areas. The 55 days bait life shown in the exposure trial should be long enough so the only issue will be if the rodents remove all baits before the last resistant mouse has a chance to eat enough to die. A third baiting in areas in the hand broadcast zones where all baits appear to have been taken by about three weeks would reduce this risk of missing the ‘tail’ of most-resistant mice. Alternatively, the toxic load of bait used in the Settlement Area should be increased if the APVMA permit allows.

Ship rats weigh on average about 200 g on LHI with an LD<sub>50</sub> of 0.27 mg/kg and so would need to eat about six baits to have a 50% chance of dying. The trial conducted by Wheeler et al. (draft ms.) showed 100% mortality of ship rats was achieved with a dose of 0.8 mg/kg. This suggests ship rats on LHI are not resistant to brodifacoum and given the daily food intake rates quoted in Wheeler et al (draft ms.) rats would eat a lethal dose each day.

The first sowing would provide about 35 baits/rodent and although LD<sub>100s</sub> are not known for either species, the data provided in Wheeler et al. (draft ms.) shows this should provide ample baits to kill every rodent within the baited area.

A trial on LHI and three field trials elsewhere using non-toxic baits with a bait marker broadcast at similar sowing rate to that intended on LHI showed 100% of mice that had been caught and tagged before baiting in the baited areas had eaten baits when recaptured after baiting (Table 1).

**Table 1.** Bait acceptance by wild house mice on LHI and three subantarctic islands in small-scale sowing trials.

<b>Trial island</b>	<b>Bait type</b>	<b>Area baited (ha)</b>	<b>Sowing rate (kg/ha)</b>	<b>Number tagged mice or rats recaptured after baiting</b>	<b>% that had eaten baits</b>	<b>Reference</b>
Lord Howe	Pestoff 20R (2 g bait)	3	10	9 + 5	100	Wilkinson (2016)
Gough	Pestoff 20R	2.6	16	368	100	Cuthbert et al. (2011)
Antipodes	Pestoff 20R	6	16	100	100	Elliott et al. (2015)
Steeple Jason	Bell	15	7.5	284	100	Rexer-Huber et al. (2013)

All else being equal these results suggest the aerial sowing rates intended for LHI will be sufficient to place all rats and mice at risk. Most rats should obtain a lethal dose from the first sowing and most should die before the second sowing is conducted at least 10 days later.

So, even if rats dominate the uptake of baits or in some way exclude mice from the baits (unlikely given the bait density) in the initial sowing there will be plenty of baits left for the mice after the second sowing.

#### *Ground baiting – bait stations*

The home range size of rats and mice on LHI is unknown but elsewhere mice had mean home range length of c. 58 m and ship rats of 103 m for females and 194 m for males (King 2005). Eradication attempts mostly succeeded for mice when bait stations were less than 25 m apart and mostly failed when over 40 m apart.

Therefore the proposed 10 × 10 m station grid is likely to put all mice (and all rats) in the baited areas at risk. A precaution might be to move some of the stations by 5 m towards the end of the time when bait take has ceased - at least in areas with known histories of mice or where rats were particularly active. Moving bait stations, even if still within a mouse's home range, might cover any small risk of mice with very small ranges and might cover risks if the bait station was originally in some 'place to be avoided' within the general range of a mouse.

The main risk that not all rodents will be at risk comes from the commensal individuals (mostly I presume mice), and if some rodents have developed resistance to anticoagulants. Access to place baits in all buildings will be a necessary condition of proceeding with the whole project. Commensal mice may also be breeding in early winter so keeping bait present for longer would be a sensible precaution.

#### *Ground baiting – hand broadcast*

The proposed hand-broadcast baiting mimics the aerial baiting with lines 20 m apart and baits thrown on two baitings to achieve a bait density across the zones of 12 + 8 kg/ha spaced at least 10 days apart.

Overlap zones between baiting strategies: The operational plan has spatial buffer zones of hand baiting between the zones to be baited in stations and the major aerial zones. The risk probably is where rodents that have not been exposed to a lethal dose in one baiting zone move into another once all the baits have been removed or decayed. I do not think this will be a problem as bait life outside bait stations should be several weeks and the bait stations will be baited before the aerial operation begins – Pestoff 20R 2 g baits lasted at least 55 days with a total of 164 mm of rain on LHI (Wilkinson 2016).

#### *Rule 2: The target population must be killed faster than they can replace their losses*

The timing of the eradication for June-July 2019 should avoid any recruitment problems as the last LHI rodent should be dead before any new breeding season begins – presumably in spring. I cannot find any information on the breeding season for LHI rodents but assume there is no breeding of ship rats between about late April and early September as is usual in forest habitats in New Zealand – unless there is a seeding or mast year (Innes 2005). Mice also usually stop breeding in the winter outside mast years, although commensal mice may breed all year round (Ruscoe & Murphy 2005). If there are commensal mice the possibility that they are breeding in early winter suggests the need to keep baits in buildings for as long as possible in case there are semi-independent juveniles present. Food abundance seems to be the key that determines the breeding season in both species.

*Rule 3: There must be no immigration*

Logically this condition can never be met. The species arrived at least once in the past and so could do so again. However, the risk can be reduced to near-zero and mitigated by a biosecurity plan. A study of the genetic diversity of the current populations of LHI mice and rats may provide information on past frequencies of invasions (c.f. the studies on stoat and red deer invasion frequencies on islands in Fiordland, New Zealand; Veale et al. 2013).

The LHIB has a general biosecurity strategy, the rodent eradication plan (Pearson et al. 2018) has a rodent-specific biosecurity component and the project has a plan to manage any potential risks (from other pests) from the importation of Pestoff baits.

The rodent-specific plan assumes the main risk of reinvasion will come from the regular supply ship and intends to manage at all points along the risk chain from the source port, on the ship and on the island. This will require ongoing investment and given this funding is not unlimited for LHI (c.f. the Chevron biosecurity response on Barrow Island; Jarrod et al. 2011)), the optimal focus point of action along the chain depends on the actual frequency of events, the costs of the action, and the consequences of a biosecurity failure. This part of the operational plan is detailed in a rodent-specific biosecurity plan.

The cheapest points for investment are to stop rodents getting on the supply vessel or in its cargo at Port Macquarie and hygiene and control on the ship. Rodent control at the port would be expensive and probably futile but simple rules such as ‘potentially dirty in – clean out and on board’ systems for cargo and quarantine procedures (rat guards and lighting on gangways at night) would reduce risks of rodents getting on board. Prophylactic rodent control on the ship with a few permanent bait stations in risky areas or extra effort if sign is detected could be part of the shipping contract to ensure de-rat certification is meaningful. The LHIB minutes of September 2017 note these intentions.

Biosecurity actions against rodent (or other pests) arriving on the island depend on early detection – rapid response. The intention is to have both an active and a passive EDRR system. The active component is the island’s two rodent detector dogs which act as one tool in the early detection on-island system. Effective rapid response (for presence of rodents) detected by the dogs is likely to be difficult unless the detection is on the ship or in cargo. The passive or prophylactic system is intended around high risk sites. Ideally, this should simultaneously detect and kill any invaders (kill traps), rather than simply detect a rodent (chew cards, tracking tunnels) or kill but not detect with certainty (bait stations).

Another risk, albeit probably infrequent, comes from other vessels and particularly any that run aground on the island. Some islands have a ‘rat-spill’ contingency plan to react to shipwreck (Ebbert et al. 2007), i.e. some standing infrastructure to allow for rapid response in case the wreck was infested.

#### **4.2 Particular constraints that have to be managed on LHI**

The operational plan identifies all of the particular ancilliary issues that will have to be managed to increase the chance of eradication success (Table 2).

**Table 2.** Constraints and issues identified in the operational plan (presented in the same order as in the operational plan)

<b>Issue</b>	<b>Addressed in plan</b>	<b>Residual risk to eradication success</b>	<b>Any further management?</b>
Justification	No, addressed in EPBC and APVMA reports	None	Benefits of success (outside operational plan)
Consents	Yes	None if completed. Property Management Plans may show risks if objectors obstruct actions	APVMA and Biosecurity Order to be completed. MOUs with each landowner required and different response to those who comply, merely acquiesce, or resist
Timing of baiting	Yes	Optimal timing unknown for LHI	None. Timing is set by social conditions and some ecological conditions
Timeline	Yes	Ground baiting must be in place before aerial baiting	None. The plan sets out target dates
Baits	Yes	Only if baits arrive in poor condition or contingency bait insufficient	None. Baits arrive in two tranches – first for bait stations.
Control baiting	Yes	Bait shyness, neophobia, toxin resistance	Stop baiting as soon as practical. Will not effect genetic resistance to brodifacoum in mice
Waste management	Yes	Part of competing food issue. Probably small risk compared with natural food	None. Covered in plan
Island cleanup	Yes	Low. Natural harbour from palm frond piles - ?	Underway but concentrated at the waste management site. Impractical to remove palm

		risk	fronds
Management of livestock and pets	Yes	Plans are to manage livestock to reduce risk of exposure to baits. Low residual biological risk, but some risks if baits are moved (by rodents) from stations	Minimise exposure and check for bait 'spillage'
Aerial baiting	Yes	None that can be managed	None
Ground baiting	Yes	Which type of bait station is best for rats, for mice?	Training of staff, baits on sea cliffs to be resolved. Trials on bait stations to be completed  Contingency for tertiary baiting in hand-broadcast areas if all second baits are removed. To cover resistant mice issue.
Personnel, project structure	Yes	Timing of replacement staff	None.
Result monitoring	In part	Rodent detection TAG does not have the analytical skills to determine probability of eradication	Need to appoint an analyst to the TAG. There are two issues (1) if a rodent is detected anywhere what to do and (2) if no rodents are detected in the ground baiting zones what is the probability that none are present?
Declaration of success (or failure)	In part	If rodents are detected in the aerial zone the surveillance in the ground zone is redundant	The issue is should the aerial zone be monitored during the period the ground baited zone is monitored? Failure in this zone would truncate the rest of the monitoring
Adverse conservation	Yes (in operational plan and regulatory reports)	The lizards are unaffected by	Staged release of woodhens and currawongs is planned, but

risks		brodifacoum but have acted as reservoirs on other islands and extended the period when animals that prey on reptiles are at risk	some monitoring of toxicity levels in exotic skinks would be advisable
-------	--	--	--

## 5 Conclusions and recommendations

1. The documents provided for the regulatory agencies make a convincing case for the benefits that would accrue to the island's economy and biodiversity if rodents are eradicated.
2. The draft operational plan is comprehensive and should provide a high degree of confidence that the eradication of both rats and mice will succeed. All of the manageable risks are identified and plans are (or will be) in place to mitigate them. Unmanageable uncertainties leave residual risks, in particular the possibility that natural food will leave some rodents unexposed to baits.
3. Once the last regulatory instruments are agreed the individual property documents should be tabled as soon as possible to allow clarity for the Board should objectors continue (with legal actions) or other obstructive behaviour. It would be good to bring such issues to a head before 2019 and the key operational deadlines.
4. Ground baiting allows for the possibility to monitor (using bait take from bait stations or other detection devices in the hand broadcast zones) the probability of success and so short circuit the 2-year waiting time usual for the aerial baiting. It also allows a focussed response to any detection of survivors that might rescue an apparent failure.

Of course any detection of survivors in the areas aerielly baited before the usual 2-year period would indicate failure as a whole.

Measuring the probability that absence of bait-take or detection of survivors within the ground baiting areas is high enough to stop surveillance and declare success would require expertise in spatial Bayesian analyses.

**The project is clearly justified on economic and biodiversity grounds, eradication is feasible, and the planning is complete and robust identifying all risks and constraints with actions to reduce and manage these as far as possible.**

## 6 Acknowledgements

Thanks to the Lord Howe Island rodent team for their frank responses to my questions during my visit to the island.

## 7 References

- Billing J (1999). The management of introduced rodents on Lord Howe Island. Report to the Lord Howe Island Board, 52 p.
- Billing J (2000). The control of introduced *Rattus rattus* L. on Lord Howe Island. II. The status of warfarin resistance in rats and mice. *Wildlife Research* 27: 659–661.
- Bomford M, O'Brien P (1995). Eradication or control for vertebrate pests? *Wildlife Society Bulletin* 23: 249–255.
- Cromarty PL, Broome KG, Cox A, Empson RA, Hutchinson WM, McFadden I (2002). Eradication planning for invasive alien species on islands – the approach developed by the New Zealand Department of Conservation. In: Veitch CR, Clout MN (Eds.). Turning the tide: the eradication of invasive species. Occasional Paper of the IUCN Species Survival Commission No. 27: 85–91.
- Cuthbert RJ, Visser P, Louw H, Ryan PG (2011). Palatability and efficacy of rodent baits for eradicating house mice (*Mus musculus*) from Gough Island, Tristan da Cunha. *Wildlife Research* 38: 196–203.
- Eason CT (1996). An evaluation of different rodenticides for use on Lord Howe Island. Landcare Research Contract Report LC9596/102.
- Ebbert SM, Sowls A, Byrd GV (2007). Alaska's rat spill response program. Pp. 332–336. In: Witmer GW, Pitt WC, Fagerstone KA (Eds.). Managing vertebrate invasive species: Proceedings of International Symposium, Fort Collins, Colorado, USA.
- Elliott GP, Greene TC, Nathan HW, Russell JC (2015). Winter bait uptake trials and related field work on Antipodes Island in preparation for mouse (*Mus musculus*) eradication. DOC Science and Development Series 345. Department of Conservation, Wellington.
- Gillespie R, Bennett J (2017). Costs and benefits of rodent eradication on Lord Howe Island, Australia. *Ecological Economics* 140: 215–224.
- Hutton I, Parkes JP, Sinclair ARE (2007). Reassembling island ecosystems: the case of Lord Howe Island. *Animal Conservation* 10: 22–29.
- Jarrad, FC, Barrett, S, Murray J, Parkes J, Stoklosa E, Mengersen K, Whittle P (2011). Improved design method for biosecurity and early detection of non-indigenous rats. *New Zealand Journal of Ecology* 35: 145–152.
- King CM (2005). The handbook of New Zealand mammals. Oxford University Press. Melbourne.
- Landos J (2003). Quarantine strategy for Lord Howe Island. Report to the Lord Howe Island Board.
- Lord Howe Island Board (in prep.). Application for a minor-use permit to bait Lord Howe Island with the unregistered rodenticide bait Pestoff 20R. Lord Howe Island Board.
- Lord Howe Island Board (2016a). Lord Howe Island biosecurity strategy 2016. AECOM Australia Pty Ltd, unpublished report.

- Lord Howe Island Board (2016b). Lord Howe Island rodent eradication project public environment report. Lord Howe Island Board.
- Myers JH, Simberloff D, Kuris AM, Carey JR (2000). Eradication revisited: dealing with exotic species. *Trends in Ecology and Evolution* 15: 316–320.
- O'Connor CE, Booth LH (2001). Palatability of rodent baits to wild house mice. Science for Conservation 184. Department of Conservation, Wellington.
- O'Dwyer T, Carlile N, Portelli D, Wheeler R, Wilkinson I (2016). Testing the efficacy of Pestoff® 20R to kill house mice *Mus musculus* on Lord Howe Island. Appendix D in EPBC Report.
- Parkes JP (1990). Feral goat control in New Zealand. *Biological Conservation* 54: 335–348.
- Parkes JP, Panetta FD (2009). Eradication of invasive species: progress and emerging issues in the 21<sup>st</sup> century. Pp. 45–60. In: Clout MN, Williams P (Eds.). Invasive species management. Oxford University Press.
- Parkes J, Ruscoe W, Fisher P, Thomas B (2004). Benefits, constraints, risks and costs of rodent control options on Lord Howe Island. Landcare Research Contract Report LC0304/64. Report to the Lord Howe Island Board.
- Pearson J, McClelland P, Walsh A (2018). Lord Howe Island rodent eradication plan. Biosecurity Plan. Appendix D, EPBC.
- Rexer-Huber K, Parker G, Reeves M, Stanworth AJ, Cuthbert RJ (2013). Winter ecology of house mice and the prospects for their eradication from Steeple Jason (Falkland Islands). *Polar Biology* 36: 1791–1797.
- Ruscoe WA, Murphy EC (2005). House mouse. Pp. 204–221. In: King CM (Ed.). The handbook of New Zealand mammals. Oxford University Press, Melbourne.
- Saunders A, Brown D (2001). An assessment of the feasibility of eradicating rodents from the Lord Howe Island group. Endangered Species Recovery Council Report to the Lord Howe Island Board.
- Veale AJ, Edge K-A, McMurtrie P, Fewster RM, Clout MN, Gleeson DM (2013). Using genetic techniques to quantify reinvasion, survival and in situ breeding rates during control operations. *Molecular Ecology* 22: 5071–5083.
- Wheeler R, Priddel D, O'Dwyer T, Carlile N, Portelli D, Wilkinson I (in prep). Evaluating the susceptibility of invasive black rats (*Rattus rattus*) and house mice (*Mus musculus*) to brodifacoum as a prelude to rodent eradication on Lord Howe Island. Draft manuscript.
- Wilkinson I, Priddel D (2009). Draft plan for the eradication of ship rats (*Rattus rattus*) and house mice (*Mus musculus*) on Lord Howe Island. Report to the Lord Howe Island Board.
- Wilkinson IS, Priddel D (2011). Rodent eradication on Lord Howe Island: challenges posed by people, livestock, and threatened endemics. In: Veitch CR, Clout MN, Towns DR



(Eds.). *Island invasives: eradication and management*. Occasional Paper of the IUCN Species Survival Commission No. 42: 508–514.



To: Andrew Walsh, Lord Howe Island Board  
 Cc: Lord Howe Island REP Steering Committee.  
 From: Island Eradication Advisory Group  
 Date: 3rd September 2018

Subject: **IEAG COMMENTS ON LORD HOWE RODENT ERADICATION RISK REASSESSMENT REPORT**

## INTRODUCTION

You asked for comments on a revised assessment of the risks and feasibility of the rodent eradication project, prepared by John Parkes of Kurahaupo Consulting July 2018. This exercise was in response to an Island Eradication Advisory Group (IEAG) recommendation made in April 2018 to ‘Formerly reassess the feasibility of the project’.

IEAG met on 22<sup>nd</sup> August to discuss this report. Below is a summary of this discussion.

The report did not acknowledge many of the risks we identified in April or failed to recognise the importance of them. Nor did it give a view of the collective risk of failure facing the project from the multitude of compromises from best practice made to create the social licence to undertake the project. Instead it provided some useful advice about what should be done and assumed the operational planning in place now was adequate to the task.

IEAG perceptions, based on our understanding of the draft operational plan from April 2018, differ from those of the author on five key issues:

	Statements in the report	IEAG thinking
1.	<i>“The draft operational plan is comprehensive and should provide a high degree of confidence that the eradication of both rats and mice will succeed...”</i>	The draft operational plan (at least what we have seen of it) is not comprehensive and currently lacks the detail necessary to provide such confidence.
2.	<i>“The APVMA permit is pending but is expected to be approved in July 2018...”</i>	It is our understanding that this permit arrived recently, but it restricts the application rates and by inference, the total quantity of bait able to be applied. This places risks on the imperative to ensure no gaps are left in the aerial baiting coverage.
3.	<i>“Access to all buildings and houses.</i> <ul style="list-style-type: none"> <li>• <i>It is critical that baits are laid in all buildings on the island and in the curtilage around</i></li> </ul>	We totally agree with this but highlight the risk of uncooperative residents’ potential to sabotage the success of the project has not been

	<p><i>them to ensure all rodents are exposed to enough baits to receive a lethal dose.</i></p> <ul style="list-style-type: none"> <li><i>• The use of a Control Order under the Biosecurity Act to enforce householders' compliance must be in place and the powers it enables must be clear to all stakeholders before any decision to proceed with the project is made by the LHIB.</i></li> <li><i>• This is particularly important for mice which may be completely commensal in winter, but possibly less critical for ship rats with possibly larger home ranges."</i></li> </ul>	<p>well articulated in the report. In other words, we know what we must do to succeed, but the report offers no comment on whether this can be practically achieved. The situation (as we currently understand it) is:</p> <ul style="list-style-type: none"> <li>• property management plans are not in place,</li> <li>• the biosecurity control order is not in place and</li> <li>• opposition to the project appears to be organised and highly motivated - albeit a little difficult to quantify.</li> </ul>
4.	<p><i>"Competing food from human sources, e.g. food scraps fed to chickens and compost bins is identified as a risk in the operational plan and can to some extent be managed... Probably small risk compared with natural food... Covered in plan...."</i></p>	<p>This is a significant risk due to the limited means of addressing it currently in the operational plan (see our advice from April 2018). Additionally, it adds complexity to an already complex project can be viewed as synonymous with risk.</p>
5.	<p><i>Although biosecurity is discussed in the report it is not considered as a constraint in Table 2 and it does not feature in section 5 Conclusions and Recommendations.</i></p>	<p>Biosecurity actions must be well planned and managed. These should be included in minimum standards of preparedness recommended below.</p>

None of the issues discussed above are insurmountable but we currently lack the "high degree of confidence" at this stage of the planning that measures are in place or in train to overcome them. We suggest they deserve particular focus in the coming months.

To support the Board's understanding of the preparedness for implementation we recommend the Steering Committee provide the project a structure setting some minimum standards, including timelines, for the project to proceed to implementation against which the project team and Steering Committee can measure progress. In the table below we make a few suggestions on how this could look.

<b>What?</b>	<b>When?</b>	<b>Who?</b>	<b>Evidence</b>
Operational plan peer reviewed	29/30 November 2018	IEAG and project team	Review comments by IEAG
Property management plans completed	30 January 2019?	Jaclyn & Eradication advisor	Compliance register & Ground operations detailed plans
Final drafts of operational planning documents	10 April 2019	Project Manager, Eradication advisor & Readiness check team	The plans themselves: Aerial baiting Ground baiting Waste management Stock management
Operational Readiness check	29 April 2019	2 members of IEAG	Readiness check report from IEAG









LHI Rodent Eradication Project											
Balance											
		Balance on Hand 1 Jul 15	Balance on Hand 1 Jul 16	Balance On Hand 1 Jul 17	Balance on Hand 1 Jul 18	Balance Estimate 1 Jul 18 - 30 Jun 19	Balance Estimate 1 Jul 19 - 30 Jun 20	Balance Estimate 1 Jul 20 - 30 Jun 21	Balance Estimate 1 Jul 21 - 30 Dec 21	Balance Estimate at Completion	
		\$ 8,185,122	\$ 8,053,680	\$ 6,952,019	\$ 4,946,327	\$ 999,728	-\$ 755,235	-\$ 930,235	-\$ 1,091,235	-\$ 1,091,235	
Revenue											
Project Revenue	Total Approved Revenue	Revenue Earned as at 30 June 2015	Revenue Earned FY15-16	Revenue Earned FY16-17	Revenue Earned FY17-18	Revenue Estimate 1 Jul 18 - 30 Jun 19	Revenue Estimate 1 Jul 19 - 30 Jun 20	Revenue Estimate 1 Jul 20 - 30 Jun 21	Revenue Estimate 1 Jul 21 - 30 Dec 21	Total Revenue Estimate at Completion	Cross Check
Project Equipment resale			\$ -	\$ -	0		64000	0	0	\$ 64,000	
OEH REP Planning	\$ 20,300	\$ 20,300	\$ -	\$ -	0					\$ 20,300	
NSW Env Trust	\$ 4,542,442	\$ 4,542,442	\$ -	\$ -	0					\$ 4,542,442	
Caring for Our Country	\$ 4,500,000	\$ 4,500,000	\$ -	\$ -	0					\$ 4,500,000	
Interest	\$ -	\$ 610,390	\$ 177,020	\$ 176,603	\$ 120,911	\$ 13,866				\$ 1,098,790	
<b>Total Revenue</b>	<b>\$ 9,062,742</b>	<b>\$ 9,673,132</b>	<b>\$ 177,020</b>	<b>\$ 176,603</b>	<b>\$ 120,911</b>	<b>\$ 13,866</b>	<b>\$ 64,000</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 10,225,532</b>	<b>\$ 10,225,532</b>
Expenses											
Item	Expenses Incurred 2012/2013	Expenses Incurred 2014 to 30 June 2015	Expenses Incurred 1 Jul 15 to 30 Jun 16	Expenses Incurred 1 Jul 16 - 30 Jun 17	Expenses Incurred 1 Jul 17 - 30 Jun 18	Expense Estimate 1 Jul 18 - 30 Jun 19	Expense Estimate 1 Jul 19 - 30 Jun 20	Expense Estimate 1 Jul 20 - 30 Jun 21	Expense Estimate 1 Jul 21 - 30 Dec 21	Total Expense Estimate at Completion	
Captive Management Sub Total	\$ -	\$ -	\$ -	\$ 485,517	\$ 696,824	\$ 618,750	\$ 348,750	\$ -	\$ -	\$ 2,149,841	
Community Liaison Sub Total	\$ -	\$ 327,106	\$ -	\$ 82,275	\$ 232,219	\$ 25,000	\$ 15,000	\$ 5,000	\$ -	\$ 686,600	
Baiting Sub Total	\$ -	\$ -	\$ 3,000	\$ 34,438	\$ 158,449	\$ 2,312,309	\$ 774,552	\$ -	\$ -	\$ 3,282,748	
Livestock/Animal Management Sub Total	\$ -	\$ -	\$ -	\$ 23,677	\$ 11,018	\$ 131,000	\$ 147,000	\$ 20,000	\$ -	\$ 332,695	
Operational Monitoring Sub Total	\$ -	\$ -	\$ -	\$ 84,305	\$ 11,570	\$ 32,000	\$ 189,000	\$ 30,000	\$ 53,000	\$ 399,875	
Eradicating Owls Sub Total	\$ -	\$ -	\$ -	\$ -	\$ 7,062	\$ -	\$ 30,000	\$ 15,000	\$ 8,000	\$ 60,062	
Project Management Sub Total	\$ -	\$ 336,000	\$ 305,462	\$ 470,515	\$ 864,497	\$ 495,000	\$ 211,000	\$ 5,000	\$ -	\$ 2,687,474	
Biosecurity Sub Total	\$ -	\$ 60,000	\$ -	\$ 42,000	\$ 144,964	\$ 135,000	\$ -	\$ -	\$ -	\$ 381,964	
Outcome monitoring Sub Total	\$ -	\$ -	\$ -	\$ 55,537	\$ -	\$ 211,406	\$ 103,661	\$ 100,000	\$ 100,000	\$ 570,604	
Misc Sub Total	\$ 756,970	\$ 7,934	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 764,904	
<b>Total</b>	<b>\$ 756,970</b>	<b>\$ 731,040</b>	<b>\$ 308,462</b>	<b>\$ 1,278,264</b>	<b>\$ 2,126,603</b>	<b>\$ 3,960,465</b>	<b>\$ 1,818,963</b>	<b>\$ 175,000</b>	<b>\$ 161,000</b>	<b>\$ 11,316,767</b>	<b>\$ 11,316,767</b>



## Lord Howe Island Board of Management

# Scoping a Potential Philanthropy Campaign – Workshop Summary

**Summary of Workshop Conducted 29 August 2018, between Lord Island Board of Management and Invasive Species Council.**

### Attendees:

#### LHIB

- Rob Pallin – Board Member
- Matt Retmock – Board Member
- Peter Adams CEO
- Andrew Walsh PM REP
- Jaclyn Pearson – Assistant PM REP
- Hank Bower Manager Environment and World Heritage (by phone)
- Sue Bower Flora Management Officer (by phone)

#### Invasive Species Council

- Andrew Cox - CEO
- Eliza Ginnivan – Board member

#### Others

- Roewen Wishart – Xponential (facilitator)
- Ray Nias – TierraMar Consulting

### 1. Scope for Philanthropy Targets

The workshop identified the following possible scope

- a. Balance of Rodent Eradication Project funding need – approx. \$0.5 to \$1.0 mill (includes item c)
- b. Re-release of temporary captive species, and release of captive-bred species (\$ not specified)
- c. Post baiting monitoring (health, rodents, ecosystem recovery such as species re-establishment and improved condition)
- d. Continuation of Weed Eradication Program – approx. \$0.5 mill per year
- e. Ongoing biosecurity program to prevent invasive species reintroduction and arrival of new invasive species.

Xponential also advised that recovery of direct costs of a fundraising campaign are often included into the target.

Before a further “market testing”, a tentative target would need to be settled, although it would not need to be definite.

## **2. Background Factors for a Possible Campaign**

- a. Five conservation/natural history organisations are involved in the project already, although all have active or low-scale fundraising of their own. This means potential access to donors via those organisations if willing, but also their own competing fundraising needs.
- b. Some potential donors were identified in 2015 when a ten-year anniversary celebration was held for the weed eradication program.
- c. The 2018 winter eco-tourism campaign by LHIB (in place of usual Destination NSW campaign) has generated approx. 1,600 visitor bookings, many of who have a clear interest in the conservation projects.
- d. Small numbers of very large potential donors are already aware of the rodent eradication project from prior information visits.
- e. Long-term visitors to the Island are a large natural constituency of potential donors. However, access to those visitors in some cases would be via accommodation providers, who may be reluctant to introduce a new element into the relationship with their customers, and in a few cases are not supportive of the Rodent Eradication Project.
- f. The LHIB may wish to develop some ongoing fundraising capability for other future projects, rather than outsource; however there are benefits in having fundraising managed by an organisation already familiar (such as ISC). To date, there has been discussion on the option of Invasive Species Council conducting the proposed fundraising campaign on behalf of LHIB. ISC is a deductible gift recipient category 1 organisation, which is a precondition for donors to receive tax deductions, and a mandatory requirement for Private Ancillary Funds to donate.

## **3. Possible Fundraising Approaches**

Xponential outlined common elements for fundraising for similar needs

- a. Dedicated large-gift campaigns – recent Australian examples from private donors, foundations, and some corporate). The majority of large examples in conservation relate to land acquisition and to comprehensive land management on Indigenous land. Australian Wildlife Conservancy and

Bush Heritage Australia are prominent cases.

- b. Xponential tabled a summary (separate attachment) of recent fundraising campaigns specifically aimed at threat abatement for native animals (two for feral threats, one for a disease threat). The theme of reliance on funding through partners such as foundations and companies was strong in two examples.
- c. Xponential tabled a sample Gift Planning Chart and Donor Pipeline model (appendix 1). This uses the assumption of a campaign target of \$1,000,000 for conservation activity, plus recovery of \$250,000 of campaign costs. The speed and cost effectiveness of large gift campaigns depends on achieving the result with the smallest possible number of gifts. The donor pipeline shows progression from people who are unqualified donor prospects (simply, able to give a gift of \$25,000), through to confirmation of a donation after an individual solicitation.
- d. A large-gifts campaign typically has a subsequent public phase campaign with large numbers of smaller gifts. Crowdfunding options may be suitable for Lord Howe island Board due to having a large potential pool of email addresses and social media followers of organisations and businesses on the Island which may be willing to provide access. This is an important precondition for successful crowdfunding.

Xponential outlined two common approaches to crowdfunding in Australia. For example. Charidy operates highly focused “all or nothing” 24 hour “Giving Day” campaign which involve large gifts for matched giving incentives. The fee is 5% of the funds raised on the Day. An alternative model is Chuffed which operates a longer campaign with no fees and uses a “get what you raise” model.

Although some Australian charities successfully raise very large amounts through crowdfunding, these typically require a very large supporter base and commonly a big share of the reported total is large matched giving incentive donations which must be found via major gift methods, not in the crowdfunding promotion itself.

#### **4. Appraisal issues – Planning of Campaign Method**

- a. Xponential outlined the common market feasibility testing approach, known as a campaign readiness assessment (CRA). This uses a simplified “test version” case for support and will:
  - i. identify by name potential donor prospects (individuals, foundations and companies) and whether there is an established personal linkage to those potential donors
  - ii. interview 15 to 25 potential donors about their reaction to the project and proposed campaign, and perceived strengths and weaknesses

- iii. Take around 8-10 weeks, depending on the “fundraising readiness” of the organisation
- b. Other issues which are typically examined in the CRA include market perceptions of trust. This could manifest as questions whether a specific-purpose fund within ISC would be required for donors to have confidence about quarantining funds for the agreed ongoing program needs.
- c. Typical elements in a large-gift campaign are: a strong case for support, donor prospect identification, high-quality campaign visual materials, use of influential advocates to reach donor prospects, cultivation of interest through “money can’t buy” experiences, personal solicitation, and high-quality impact reporting and stewardship to ensure continued support and payments where donors have pledged gifts over multiple years.

## **5. Appraisal Issues – Fundraising Campaign Timing**

- a. Xponential outlined typical options for fundraising program management options (outsourcing, insourcing).
  - i. For organisations with experience with fundraising, and managing fundraising staff, campaign management by the organisation, supplemented with external mentoring by a big-gifts specialist, may be feasible. This would typically involve materials creation, campaign management, dealings with donors and volunteer influential advocates, prospect research, data base, organising cultivation activities, and impact reporting and donation pledge reminders after the campaign.
  - ii. Alternatively, specialist big-gifts fundraising consultants offer substantially “full-service” campaign management, in which the consultants do almost all the tasks listed in i above, other than impact reporting and pledge reminders.
- b. The workshop discussed a typical timetable for a campaign of this scale (appendix 2). The principle of the campaign sequence is that the focus of the first  $\frac{3}{4}$  of the campaign period is a “quiet phase” dealing only with larger donor prospects. This gives the campaign some perceived “exclusivity” for donors and avoids the time-consuming aspects of mass-technique fundraising.
  - i. The workshop discussed how this indicative timetable might relate to the project timetable. A campaign with planning starting in February 2019 would be unlikely to reach the stage of individual cultivation and asking for gifts until approximately June 2019. By this time the aerial phase of baiting is hoped to have started. This means that the funding ask would need to relate to post eradication

activities.

- ii. A possible option would be to approach a very small number of donor prospects (commonly termed “Advance Gifts”) a little earlier than June. This would then require that a different emphasis be given in the message to the next group of donor prospects (i.e. more emphasis on the animal release, post-baiting monitoring, and weeds program).
  - iii. The interaction with the proposed November 2018 launch of the 2019 conservation volunteers program was discussed. In the timetable outlined for fundraising, this would not be a suitable time to “piggy-back” a fundraising message with the volunteering promotion. However, the volunteering is a helpful part of a case for support, and past volunteers would be plausible donor prospects.
- c. Xponential outlined that fundraising consultants in Australia do not work on a “commission” basis, and this means that involvement of consultants would therefore involve cashflow requirements for campaign costs in the months before donations are solicited.
- d. Trusts and foundations are a plausible source for campaign donations. However, these commonly have long lead-times for funding rounds and decisions. Therefore it would be expected that some confirmations of funding would occur beyond the active campaign period. This also has cash-flow implications.

## APPENDIX 1 - GIFT CHART AND DONOR PIPELINE

GIFT AMOUNT	NUMBER OF GIFTS	SUB-TOTAL
\$200,000	1	\$200,000
\$100,000	3	\$300,000
\$75,000	3	\$225,000
\$50,000	5	\$250,000
\$25,000	9	\$225,000
	21	
Public Phase		\$50,000
		<b>\$1,250,000</b>

Stage	Gift Prospect	Qualified, Warm Prospect	Solicitation - Presentation; Pending Decision	Gift Confirmed
<b>Description</b>	Capacity to give \$25,000+ (inferred, or known from other giving)	Linkage to prospect clearly established + interest adequate	Solicitor identified Strategy determined Size of ask determined	Gift received or pledged
<b>Actions</b>	Name identification Short-form research Engagement events	Engagement events, selective tours Comprehensive research	Individual meetings	Thanks, recognition, pledge reminders
<b>Number</b>	189	63	42	21
<b>Typical progression rate to next stage</b>	1 out of 3	2 out of 3	1 out of 2	

## APPENDIX 2 - INDICATIVE TIMETABLE

<b>12-month duration active campaign: (not including Dec-Jan)</b>	
	<b>Phase</b>
<b>Month 1-4</b>	Initial Prospect Workshop  Campaign advocate identification  Case for Support preparation  Prospecting and cultivation: <ul style="list-style-type: none"> <li>• 3 Prospect Cultivation [engagement] events across the campaign with 30 people at each = 90 new prospects entering pipeline</li> </ul>
<b>Month 5-9</b>	Campaign Kick-off – Private Individual Cultivation & Asking phase begins  Trust and Foundation scoping and applications
<b>Month 9-12</b>	Trust and Foundation long-lead applications
<b>Month 10-12</b>	Public Phase (lower level gifts)
<b>After Active Phases</b>	Long-lead trust & foundation decisions  Pledge reminders and donations year 2/3?  Donor impact reporting

Indicative – no prospect identification or case development done, campaign cost estimate only.



<b>Board Meeting:</b> September 2018	<b>Agenda Number:</b> 12 (i)	<b>Record Number:</b> ED/18/8163
--------------------------------------	------------------------------	----------------------------------

# LORD HOWE ISLAND BOARD

## Business Paper

### OPEN SESSION

#### **ITEM**

Lord Howe Island Rodent Eradication Project (REP) Implementation.

#### **RECOMMENDATION**

That the Board note the update to the REP.

#### **BACKGROUND**

The Board made the final decision to proceed to implementation of the REP at the Board meeting held 12 Sept 2017 considering:

1. The status of key approvals
2. Safety of the environment
3. The advice of the NSW Chief Scientist and Engineer regarding a further independent Human Health Risk Assessment
4. Social Acceptability
5. Budget considerations
6. Technical Feasibility
7. Steering Committee recommendation

The resolution from the minutes of the Sept 2017 Board meeting is presented below.

*“It was moved JK, seconded RP, that, in accordance with the previously approved Process for Resolution and noting that all required approvals had been received, the Board now proceed with Stage 3 of the Rodent Eradication Program with implementation in winter 2018, subject to all recommendations included in the Chief Scientist’s Human Health Risk Assessment, the Environment Protection and Biodiversity Conservation and the Australian Pesticides and Veterinary Medicines Authority reports being adhered to. It was also moved CW, seconded JK that that the conditions and recommendations of the certifying authorities should be made available to the community. The Board then adopted the motions.”*

#### **Stage Three: Implementation and evaluation of the eradication plan**

This Stage is now underway.

Stage Three involves the eradication plan (now planned for implementation in winter 2019) over an approximate three – four month period. Key elements are:

- Finalise detailed logistics and operational planning including Property Management Plans
- Assemble and train remaining resources
- Finalise construction of captive management facilities for the woodhen and currawong
- Capture of woodhens and currawongs
- Operational readiness check
- Implementation of ground and aerial baiting
- Follow up monitoring and release of woodhens and currawongs
- Maintaining an ongoing biosecurity and rodent detection monitoring network

### **Decision to Delay March 2018**

In March 2018, the Board made the decision:

*“to delay implementation of the REP until winter 2019, with a change in methodology to bait stations only in the settlement area.”*

The decision was made after considering other options (including to consider a rat only eradication and to not proceed with the eradication) and that the outcome of the second application for a permit from the Australian Pesticides and Veterinary Medicines Authority had not been determined and that there was still some opposition to the REP from the community.

### **CURRENT POSITION**

A detailed assessment of how the project meets the criteria established in the previously agreed Process for Resolution was provided in the Business Paper from the Sept 2017 Board meeting (Attachment 1). An update on elements that have changed or advanced in the last 12 months is provided below.

#### **1) Impacts of Rodents on Threatened Species**

Evidence of rodent impacts on the threatened species on LHI continues to be gathered. The Australian Museum recently published a report<sup>1</sup> on surveys of four critically endangered land snails (*Pseudocharopa whiteleggei*, *Pseudocharopa ledgbirdi*, *Mystivagor mastersi* and *Gudeoconcha sophiae magnifica*) that they have conducted on LHI in 2016, 2017 and 2018. The report concluded that rodent predation is the most significant factor affecting these species. Low numbers of three of the species were collected in the surveys: 2016 (*M. mastersi*, *P. whiteleggei*), 2017 (*P. ledgbirdi*) and 2018 (*P. whiteleggei*). However despite extensive searching in known habitats, the land snail *Gudeoconcha sophiae magnifica* was not found. The last known specimens were collected in 2002. The authors consider it possible that the species is already extinct on the summit of Mt Gower. The report notes that until the rodent eradication takes place, populations of these species will not have the opportunity to recover.

#### **2) Status of Required Approvals**

---

<sup>1</sup> Hyman, I. and Koehler, F., (2018). Survey of critically endangered land snails on Lord Howe Island. Australian Museum, Sydney

### APVMA Permit Application

The Permit from the Australian Pesticides and Veterinary Medicines Authority was received on 24 August (Attachment 2). The permit has some conditions which place additional constraints on the project, however all are manageable. Monitoring and adaptive management of potential risks to non- target species is detailed in the Risk Mitigation Plan that was developed as part of the assessment process and endorsed by the Technical Advisory Group established by the Federal Minister for the Environment.

### EPBC Post Approval Actions

The Monitoring and Mitigation Plan and Biosecurity Plan required under the EPBC approval have both now been submitted. The first draft of the Monitoring and Mitigation was submitted on 20 May 2018. Andrew met with the Post Approvals section on 6 June to discuss. Following discussions between the APVMA and the Department of Environment and Energy, alignment with the APVMA Risk Mitigation Plan was requested. A revised draft considering Department feedback and aligning with the APVMA Risk Mitigation Plan was submitted on 25 Jul 2018.

The Biosecurity Plan was submitted on 8 Aug 2018 after independent review by a biosecurity expert (Dr Euan Kennedy, National Advisor for Island Biosecurity, NZ Department of Conservation).

The Department advised that both plans would be reviewed and taken to the Minister (or delegate) together, with an expected turnaround time of three months.

### **3) Staffing**

The following actions have been undertaken since the previous meeting:

- With the pending expiry of Jaclyn Pearson's visa in May, an immigration consultant was engaged to provide advice on securing her for the REP implementation. It was determined that the secondment / current visa could not continue and the best way to secure a different class visa was to undertake a recruitment process to demonstrate that Jaclyn was the most suitable candidate. Through a nationally advertised recruitment process, it was found that Jaclyn was the only suitable candidate. Jaclyn has now been engaged as a temporary employee of the LHIB and has a visa in place for up to four years.
- A procurement process has been undertaken to secure a replacement Technical Advisor for Pete McClelland. Keith Springer was the preferred consultant at the end of that process and a contract is being finalized to secure Keith's involvement for detailed planning and implementation. Keith was on island from 8-15 Aug to have some initial handover with Pete McClelland. Pete has offered to remain involved for advice as required.
- A contract has been renegotiated with Helicopter Resources and their partner Central South Island Helicopters, securing the helicopters, key equipment and pilots for 2019.
- A revised contract has been executed with Biodiversity Restoration Specialists securing Grant Harper for the ground baiting component.
- Ann De Schutter (Project GIS Officer) has chosen not to extend her secondment from the NZ Department of Conservation into the detailed planning and implementation phase. A replacement will need to be found ASAP. Options include further consideration of two

candidates on the original talent pool or to procure GIS support through a contract or consultancy.

The project team structure has been updated and split into planning and operational aspects. (Attachment 3).

#### 4) Community Engagement Update and Acceptability

##### Ecotourism update

The ecotourism package was developed to demonstrate to lodges, operators and business that tourism would not be adversely affected during or after the REP. The role out of the winter 2018 package has been a resounding success to date. The campaign targeted eco tourists through a digital mail-out to our conservation network, supported by Qantas sale fares in January and May 2018, for travel May – Sept 2018. In partnership with the LHI Museum and LHI Marine Parks, a series of ecotourism / conservation volunteers events was developed and implemented from May – Sept.

Despite Destination NSW not running their normal \$200,000 campaign to attract winter visitors in 2018, overall sale fares sold and passenger arrivals visitor numbers have remained approximately the same as 2017 as a result of the ecotourism offer (see table below).

	Total winter sale fares sold	Passenger arrival numbers (reported by Qantas to the LHIB)			
		May	Jun	Jul	Total Winter To Date
<b>2017*</b>	1660	1231	701	657	<b>2589</b>
<b>2018^</b>	1686	1235	719	655	<b>2609</b>

\*Sale period May 2017. Supported by Destination NSW winter campaign ~\$200K

^Sale periods Jan and May 2018. – Digital ecotourism campaign only ~\$20K

The results show that there is definitely a group of travelers interested in being on LHI during the REP. It is considered that if a similar program is implemented in 2019, along with the normal winter campaign run by Destination NSW, there would be no negative impacts to local tourism during the REP. Feedback is being collected from participants via a survey process to understand travel motivations, connection to the REP and areas for improvement for 2019. This will be shared with local lodges and tour operators as part of a 2018 debrief and to plan for 2019. The 2019 winter campaign will again be launched at the Eco-Tourism Australia conference in November 2018. Destination NSW has committed funding of \$20,000 to implement the campaign in 2019.

##### Community Acceptability

Not having the APVMA permit until late August has continued to hinder finalisation of property plans as conditions from the permit affects details of individual plans. The late issue of the permit has meant that there has been insufficient time to have property management plans progressed for this Board meeting.

Jaclyn reports that the majority of the community are supportive of the REP. During her eight months in the role, she has seen this support grow. ‘Fence sitters’ have become supportive,

confirming they will allow property access (through 1:1 conversations with Jaclyn ahead of signed property management plans) and the longer term supporters have become stronger in their support. Recently over 100 residents emailed the NSW Minister for the Environment, to ask for her continued support of the project. It is understood that this was based on their concern for the lack of APVMA license being issued, and a concern that a small number of residents may not allow access to their property for baiting. These refusals come from residents who are often already baiting their properties for control purposes, so the jeopardy they place on the full eradication seems unfair to the majority of the community.

We do recognize that this minority of the community firmly oppose the project and note that the Board recently received form letters from 49 residents (representing 25 leases and 14 tenancies) refusing access to their property. It should be noted that some of these residents have also signed Property Management Plans since.

Despite our best endeavors over many years, consensual access to all properties will not be possible. There will be a few cases (~10 – 15 properties) where a biosecurity order may therefore need to be used in order to ensure that bait can be applied to every rodent territory and to give the project the highest possible chance of success.

Discussions continue with the Department of Primary Industries and they have advised that the *Biosecurity Act 2015* has the necessary powers to support the REP through either a Control Order (issued by the Minister for Primary Industry) or through a General or Individual Biosecurity Direction (which can be issued by Authorised Officers).

As presented in the Sept 2017 Business Paper, where consent is not provided for REP staff to undertake baiting in residential dwellings, the Control Order or Biosecurity Direction would direct the owner / occupier to undertake the measures (i.e. baiting) themselves subject to suitable training and verification. This is considered a reasonable follow-on step if consent is not granted. It is important to note that the control order / biosecurity direction **would not** seek to allow REP staff to enter dwellings without consent.

However, if there is non-compliance with an Order / Direction, there are penalties and powers within the Act under both mechanisms for Authorised Officers to enter a residential premise, without consent, to undertake the measures, with DPI authority. The use of these powers is highly sensitive and would only be considered as a last resort where all reasonable avenues to gain consensual access or to have the occupier undertake the measures themselves have been exhausted. The use of this power would only be considered when the entire operation is at high risk of failure if it is not used. It is considered possible that this would need to be used on at least two and up to five properties.

Work continues with DPI to determine the appropriate pathway to request the support of the Minister Primary Industries to issue a Control Order. A detailed work procedure is being drafted with DPI to ensure the REP team, and particularly Authorised Officers are held to the highest standard when implementing the control order.

A control order was previously used to support the eradication of African Big-headed Ants on the island, which was declared a success earlier this year; the first for an oceanic island.

The Board should note that use of a Control Order / Biosecurity Direction, and potentially legislative powers to undertake the measures where there is non-compliance, is considered critical for project success.

## 5) Technical Feasibility

The LHIB receives technical advice on the project from the New Zealand Island Eradication Advisory Group (IEAG) to ensure best practice and lessons learnt from other eradications are considered. The IEAG have reviewed several versions of the operational plan as the project has progressed to provide advice to the Project steering committee and LHIB. In April 2018, the IEAG recommend to the Steering Committee that the feasibility of the project be formally reassessed.

A select tender process was undertaken and Kuarapho Consulting (John Parkes) was chosen as the preferred consultant to reassess the project feasibility.

John Parkes visited the island in Jul 2018 and spent time with the REP team and assessing project risks. Parkes concluded that:

*“The project is clearly justified on economic and biodiversity grounds, eradication is feasible, and the planning is complete and robust identifying all risks and constraints with actions to reduce and manage these as far as possible.”*

A copy of the report is attached (Attachment 4).

The IEAG separately reviewed Parkes’ report and their comments are provided in full in Attachment 5. It should be noted that John Parkes had reviewed a more up to date version of the operational plan than the IEAG had reviewed (April 2018).

To support the Board’s understanding of the preparedness for implementation, the IEAG have recommended the below project review structure to allow the Board and Steering Committee to measure technical progress as planning for implementation proceeds.

What?	When?	Who?	Evidence
Operational plan peer reviewed	29/30 November 2018	IEAG and project team	Review comments by IEAG
Property management plans completed	30 January 2019?	Jaclyn & Eradication advisor	Compliance register & ground operations detailed plans
Final drafts of operational planning documents	10 April 2019	Project Manager, Eradication advisor & Readiness check team	The plans themselves: Aerial baiting Ground baiting Waste management Stock management
Operational Readiness check	29 April 2019	2 members of IEAG	Readiness check report from IEAG

## 6) Project Timelines

The Project Schedule has been updated with minor changes to reflect the decision to delay implementation until winter 2019. First bait drop scheduled for 3 June 2019 (See Attachment 6). A more detailed task list with dates is included in the Operational Plan.

A variation request was submitted to both funders on 14 Aug requesting the funding agreements are extended to account for the delay. The variation request has been approved by the National Landcare Program, extending funding until 31 Dec 2021. Formal approval from the NSW Environmental Trust is pending.

## 7) Budget

The Project budget has regularly been updated as the REP has progressed and revised to reflect the numerous delays to implementation. As a result of the delays and additional work undertaken to address some community concerns, current estimates at completion of the REP show a final overrun of approximately 10% of total project budget (approximately \$1.1M) (see Attachment 7). It should be noted that this is in line with the standard (and expected) variance for a project of this size and duration.

To address the predicted funding shortfall, the following actions have been undertaken to date:

- a. The budget has been redeveloped from the bottom up to identify remaining essential and non-essential items and where potential cost savings can be made. The budget is being actively managed and spend will be tracked monthly to ensure the budget is being adhered to. At present there is still uncertainty in many individual line items until final costs are known (for example: sufficient budget has been allowed for extended ground baiting, helicopter time that includes extended weather delay and several rounds of residue monitoring, all of which may not actually be required. It is highly likely that the budget will reduce over time as line item costs are confirmed. If needed, some elements could be dropped from the currently funded project or further streamlined (i.e. the ongoing biodiversity benefits monitoring post eradication).
- b. Additional funding from external sources is being investigated:
  - A Memorandum of Understanding has been developed with the Invasive Species Council to allow joint fundraising between the LHIB and the ISC for a range of invasive species projects including the REP (see separate business paper). This importantly allows collection of tax deductible donations through the ISC (a Deductible Gift Recipient). An Action Plan for the REP will be developed detailing what each party is responsible for and how money collected for the REP is granted to the LHIB and accounted for.
  - A fundraising workshop was held on 29 August where potential methods of securing additional funding were discussed, focusing on philanthropic donations from a variety of sources and potential timelines. Key elements may include:
    - Identifying, scoping and targeting philanthropic donations from high net worth donors with a connection to LHI. This could include targeted approaches and hosting a visit to LHI from potential donors through the Australian Environmental Grantmakers Network
    - Corporate conservation investment/finance through corporate entities with an interest in LHI
    - Partnering with a Tier 1 Non-Government Organisation (i.e. WWF, Conservation International, the Nature Conservancy, Flora and Fauna International) and / or a specialized NGO (i.e. Island Conservation Birdlife Australia, Royal Society for the Protection of Birds, Island Conservation, Friends of Lord Howe and the Foundation for Australia's Most Endangered Species) to target some of their high net worth donors
    - Local business / residents sponsorships

- Targeted crowd funding campaigns through various sources “Go Fund Me” and “Pozzible” and our conservation network.
- Other relevant Commonwealth and State government grants programs including submitted and pending applications

The workshop participants agreed that the LHI World Heritage brand and the REP presents a strong and compelling case for investment but acknowledged that securing additional investment for the REP presented challenges given the timeline for funding to be secured. A Summary of the workshop is provide in Attachment 8.

It is important to note that securing additional funding cannot proceed until there is certainty that the project is proceeding. Additionally, securing the additional funding may require some seed investment from the REP through engagement of an environmental fundraising specialist in a consultant role. It is recommended that a procurement process be undertaken to find the best consultant to undertake a campaign readiness assessment and further progress the fundraising strategy. This will be developed and presented at the Nov 2018 Board meeting.

- c. Revenue opportunities from resale of some project assets and infrastructure have been identified for further investigation. This includes some GIS equipment, the currawong aviaries and potentially bait stations.

The project budget status will continue to be reported to the Board. Should a shortfall still be predicted as the project progresses, the REP will look at other options including:

- A proposal to Treasury for additional funding assistance in FY19/20
- Board consideration for accessing some of the LHIB surplus funds in FY19/20 or FY 20/21.

## **8) Steering Committee Recommendation**

The Steering Committee for the LHI Rodent Eradication Project was established to:

- a) Support the Board in achieving the Project Objective of eradicating all ship rats and house mice from LHI.
- b) Advise on the best use of the funding to that end.
- c) Provide direction, guidance and support to the Project team in implementing the Project to achieve the Project Objective
- d) Provide support and advice to the Board at key milestone points where decisions have to be made about the direction of the project

Current membership is:

- Federal funding partner – National Landcare Program. Joanne Nathan (Director, Natural Heritage, Department of the Environment and Energy)
- State funding partner – NSW Environmental Trust. Peter Dixon (Director Grants, OEH)
- LHIB. Peter Adams (Chief Executive Officer, LHIB)
- LHIB. Mathew Retmock (locally elected member LHIB)
- Rodent Eradication Expert. Keith Broome (Chair, Island Eradication Advisory Group, NZ Department of Conservation)



The Steering Committee has met quarterly since 2012 and is very familiar with the Project, its development over time and current status. The Steering Committee recommendation to the Board is presented below.

*“In Sept of 2017, as the Project Steering Committee, we unanimously recommended to the Board that the decision to proceed to Stage 3 implementation be made, noting that all criteria established in May of 2015 were satisfied. In March 2018 we recommended to the Board to delay implementation of the program until 2019 with a change of methodology to bait stations only in the settlement area.*

*Having considered that the Permit from the Australian Pesticides and Veterinary Medicines Authority is now received and additional planning has been undertaken to further understand and mitigate risks, we unanimously recommend to continue to proceed with implementation in winter 2019.”*

## **SUMMARY**

The APVMA permit is now received and strategies to address budget shortfall and to implement the project are under way.

## **RECOMMENDATION**

That the Board note the update to the REP.

**Prepared:** Andrew Walsh, Rodent Eradication Project Manager

**Endorsed:** Peter Adams, Chief Executive Officer

### **Attachments:**

Attachment A: Business Paper Sept 2017

Attachment B: APVMA Permit

Attachment C: Project Team Structure

Attachment D: Revised Feasibility Assessment

Attachment E: IEAG Review of Feasibility Assessment

Attachment F: Revised Project Schedule

Attachment G: Revised Project Budget

Attachment H: Fundraising Workshop Summary

Record Number: ED18/5667  
Enquiries: John Teague



27 June 2018

Mr Angus Mitchell  
Executive Director, NSW Maritime  
Roads and Maritime Services  
33 James Craig Road  
Rozelle NSW 2039  
Via email: [Angus.Mitchell@rms.nsw.gov.au](mailto:Angus.Mitchell@rms.nsw.gov.au)

ADMINISTRATION OFFICE  
P.O. Box 5  
Lord Howe Island NSW 2898

Phone: 02 6563 2066  
Facsimile: 02 6563 2127  
Email: [administration@lhib.nsw.gov.au](mailto:administration@lhib.nsw.gov.au)

Dear Angus,

### Lord Howe Island Slipway Project (Boating Now Round 1 Project – MN-22)

Thank you for your letter dated 18 June 2018 and your time to visit Lord Howe Island inspect the sites and discuss the Slipway/Boat Ramp project with our Board members.

As discussed after much stakeholder and community consultation the preferred option for the slipway project was to be located on piles at the Waste Management Facility where appropriate environmental protection measures could be provided and linked to our current wastewater treatment system.

However, considering the funding situation you have outlined in your letter and the time taken to date in trying to come up with the best solution for the island boating community it appears that the option of upgrading the existing boat ramp along with a specialised trailer/cradle is the only plausible current solution available.

With this being the case the Lord Howe Island Board wishes to pursue this option. The Board requests further assistance from RMS to progress this matter, due to the Board's very limited staff resources, by way of procuring suitable design/construction plans for the boat ramp along with a specialised trailer.

The Board along with RMS is aware that this project has been on the books for too long and needs to be completed with some urgency. To discuss these matters further please do not hesitate to contact John Teague Manager Infrastructure and Engineering Services via email [John.Teague@lhib.nsw.gov.au](mailto:John.Teague@lhib.nsw.gov.au) or on telephone 6563 2066 (ext. 29).

Yours faithfully



Penny Holloway  
CHIEF EXECUTIVE OFFICER



WORLD HERITAGE AREA

# LORD HOWE ISLAND BOARD

## Business Paper

### OPEN SESSION

#### ITEM

Boat Retrieval System (Slipway) Update and Boat Ramp Upgrade

#### RECOMMENDATION

It is recommended that the Board note the boat retrieval system update and endorse the response to NSW Roads and Maritime Services.

#### BACKGROUND

The planning and development of an improved boat ramp and boat retrieval system (slipway) for the Island has been under consideration for many years. In May 2014, the Board adopted the option of minor improvements to the existing boat ramp at Wilson's Landing and a separate slipway facility located at the Waste Management Facility (two site solution).

NSW Roads and Maritime Services (RMS) had already approved funding of \$680,000 from the Better Boating program for an upgraded boat ramp and development of a slipway.

After considerable investigation of options for a slipway at the WMF and taking into account cost, available funding and environmental impacts, a proposal for a slipway consisting of a wheeled cradle capable of being winched across sand was developed. A development application was considered by the Board in September 2016, and consent given:

To construct a vessel launching and retrieval facility including two concrete bunded work areas, a cradle, electric winch and pollution control system at the Waste Management Facility

This was subject to deferred commencement conditions to be satisfied prior to the consent becoming operative:

#### **1. Detailed design**

Drawings showing the detailed design of the vessel launch and retrieval system are to be provided to the Board for planning review and sign off, showing all proposed structures with dimensions, materials and colours. This is also to include:

- a) Details and location of the proposed 6,000L water tank. It is to be in a location which is hidden behind the dune by vegetation and not visible from the foreshore.
- b) Details of any piling, foundations or other structures required that were not provided on the submitted plans.

- c) Details of any excavation and piping required to transport the waste generated to the wastewater management system at the Waste Management Facility.

The acceptability of the impacts of the above final designs will be considered in the review.

## **2. Comments from NSW Department of Primary Industries – Lord Howe Island Marine Park**

Referral comments from the NSW Department of Primary Industries in relation to the Marine Park are to be obtained and it is to be demonstrated to the Board's satisfaction that their general terms of approval will be complied with.

Subsequent to development consent, and in order to meet the deferred commencement conditions, consultants Advisian were engaged to investigate possible modification options for the existing slipway cradle, which was originally designed to operate on rails. The cradle is owned by the LHI Slipway Association.

Due to concerns regarding issues and risks identified, Advisian advised that the cradle operating on sand was not the best option for the site. As a result, alternate options for a vessel launching and retrieval facility were considered by Advisian,

After thorough analysis, construction of an elevated, piled, railed slipway for use with the existing cradle was recommended by Advisian as the preferred option.

In the meantime, larger vessels using Lord Howe Island waters have been experiencing difficulties with no access to a slipway, and interim arrangements are needed.

### ***Interim Arrangements for boat storage***

The Lord Howe Island Police Officer has instructed all boat trailer owners to have the trailers registered to enable them to be used on public roads. Most trailer owners are able to comply with this direction, with the exception of a number of owners of larger vessels. The boat trailers for a number of larger vessels have been constructed on the Island and are not able to be upgraded to the point of being registrable. This means that these trailers cannot be taken on public roads limiting the ability of the owners to store their larger vessels in the long-term storage area. This limitation applies to between two and four trailers.

In the absence of a slipway, an interim solution was proposed to enable identified larger vessels to be taken out of the water and stored near the boat ramp so that they do not have to be towed on the public road network.

The short-term storage area is adjacent to the boat ramp at Wilson's Landing. At the November 2017 meeting, the Board approved long-term storage in this designated area, including waiving short-term storage fees on a case-by-case basis and relying on evidence that there was no alternative registrable trailer option for a particular vessel.

### ***Slipway development***

The plan was to return to the option of an elevated, piled, railed slipway for use with the existing cradle at the Waste Management Facility. In relation to the development consent, the change to a railed slipway will be dealt with under the deferred commencement conditions. A detailed

design needs to be submitted to the Board for assessment in satisfying the first deferred commencement condition.

The changed design will require additional funding. It is estimated that an elevated, piled, railed slipway would cost \$1.5 million on the mainland. However, freight costs to the Island would almost double that estimate to \$2.5 million.

Mr Angus Mitchell, Executive Director NSW Maritime, after inspecting the various proposed sites attended the Boards May meeting and advised that increased funding was not an option available from RMS for this project. After detailed discussions regarding various options including the fact that the State Government were keen to see this project completed it was agreed Mr Mitchell and his department would provide an options paper for the Boards consideration.

A letter from Mr Mitchell was received on 18 June 2018 (attached) stating that the only real option available was to upgrade the existing boat ramp adjacent to the jetty to bring it more into line with RMS' NSW Boat Ramp Facility Guidelines and possibly extending the toe of the ramp to improve access at low tides. This will not only enhance access for the existing recreational boaters on the Island who use the ramp, but also provide the opportunity for larger vessels to be 'slipped' from the ramp using a specialised trailer/cradle. He concluded the letter by saying *"I urge the Lord Howe Island Board to give urgent consideration to RMS' suggested option to progress the project. As you are aware, it has now been over three years since the grant offer was made and unless a resolution can be reached in the immediate future RMS will have no choice but to withdraw the remaining grant offer and reallocate the funds to other projects around NSW."*

Given this advice Lord Howe Island Board have agreed (response attached) to this option and have been working with RMS to procure consultants to design a generally compliant boat ramp along with a specialised trailer (20t vessel trailer with max draft of approx. 2.5m draft which would cost approximately \$160k with modifications + Freight).

### **CURRENT POSITION**

While the option that has been adopted does not meet with all the desired outcomes; including boat storage which will still be at the boat ramp, no bunded wash-down area and no wastewater treatment; it must be remembered that this 'Boating Now' funding was also allocated for the boat ramp upgrade. In reality, it could never have stretched financially to totally resolve the two matters and fund both projects. It is the only affordable way forward and it is understood that some local lease holders and the EPA will not be totally happy with this outcome, but really it is just business as usual.

RMS preferred method of delivery for the works is through a design and construct tender which would optimise the funding and deliver a project that provides the most suitable facility. This also reduces the risk by removing the design/construct interface where potentially issues may arise during the construction phase. RMS are now preparing the design brief for approval and putting out to tender.

LHIB's role will be for obtaining any Development Approval and Marine Parks approval along with the project's management during the construction phase and assisting with the tender assessment.

## **RECOMMENDATION**

It is recommended that the Board note the boat retrieval system update and endorse the response to NSW Roads and Maritime Services.

**Prepared:** John Teague, Manager Infrastructure and Engineering Services

**Endorsed:** Peter Adams, Chief Executive Officer

**Attachments:**

Attachment A: Roads and Maritime Services Response Letter

# PROJECT EXECUTION PLAN

## CONCEPT DESIGN REPORT

Lord Howe Island Board | 15 August 2018



**D R A F T**

## Lord Howe Island Concept Design Report

Client: Lord Howe Island Board

Co No.: N/A

Prepared by

**AECOM Australia Pty Ltd**

Level 21, 420 George Street, Sydney NSW 2000, PO Box Q410, QVB Post Office NSW 1230, Australia

T +61 2 8934 0000 F +61 2 8934 0001 www.aecom.com

ABN 20 093 846 925

15-Aug-2018

Job No.: 60559990

AECOM in Australia and New Zealand is certified to ISO9001, ISO14001 AS/NZS4801 and OHSAS18001.

© AECOM Australia Pty Ltd (AECOM). All rights reserved.

AECOM has prepared this document for the sole use of the Client and for a specific purpose, each as expressly stated in the document. No other party should rely on this document without the prior written consent of AECOM. AECOM undertakes no duty, nor accepts any responsibility, to any third party who may rely upon or use this document. This document has been prepared based on the Client's description of its requirements and AECOM's experience, having regard to assumptions that AECOM can reasonably be expected to make in accordance with sound professional principles. AECOM may also have relied upon information provided by the Client and other third parties to prepare this document, some of which may not have been verified. Subject to the above conditions, this document may be transmitted, reproduced or disseminated only in its entirety.



**DRAFT****Quality Information**

Document Lord Howe Island Concept Design Report


Ref 60559990

Date 15-Aug-2018

Prepared by Jed Mills

Reviewed by Richard Murran and Peter Fountain

## Revision History

Rev	Revision Date	Details	Authorised	
			Name/Position	Signature
A	15-Aug-2018	Draft Issue	Jed Mills Project Manager	

**DRAFT****Table of Contents**

1.0	Introduction	1
1.1	Background	1
1.2	Purpose	1
1.3	Scope of this report	1
1.4	Basis of Design Report	2
2.0	Proposed Airfield Layout	3
2.1	Runway extension	3
2.2	Runway strip	4
2.3	Runway turning heads	4
2.4	Taxiway	5
2.5	Apron & Terminal	6
3.0	Key Environmental Design Constraints and Considerations	8
4.0	Construction Constraints	10
4.1	Airport Operations	10
4.2	Seasonal Restrictions	10
4.3	Noise Restrictions	10
4.4	Light Restrictions	10
4.5	Vibration Restrictions	10
4.6	Supply & storage of Plant, Labour and Materials	10
5.0	Geotechnical Design Conditions	12
5.1	Further geotechnical investigations	12
6.0	Coastal Design Conditions	13
6.1	Design Events	13
6.1.1	Ultimate (failure)	13
6.1.2	Working (no damage)	13
6.1.3	Operational (planes landing)	13
6.2	Water Levels	13
6.3	Waves	14
6.4	Observed Geological Features	15
6.5	Currents	16
7.0	Land Reclamation Design	17
7.1	Wave Trip Structure	17
7.2	Reclamation Revetment Design	18
7.2.1	Armour sizing	18
7.2.2	Overtopping and Crest Elevation	19
7.3	Fill	20
7.3.1	Properties	20
7.3.2	Sources	20
7.3.3	Construction Considerations	20
7.4	Impact on Coastal Processes	21
7.4.1	Impact 1: Barrier to Longshore Sediment Transport	21
7.4.2	Impact 2: Sand Trap and Accumulation Zone	21
7.4.3	Impact 3: Reduced Storm Waves at Seabee and Rock Revetment at Windy Point	22
7.4.4	Impact 4: Wave Reflections	22
7.4.5	Impact 5: Scour	22
7.4.6	Impact 6: Changed Water Current Patterns	23
7.4.7	Impact 7: Monitoring and Management of Sand Volumes after Construction	23
8.0	Deck on Pile Structural Design	24
8.1	Deck System	24
8.2	Pile System	24
8.3	Wave Action Consideration	24
8.4	Accommodation of Drainage System	24
8.5	Potential Construction Methodology	24

**D R A F T**

	8.5.1	Piles	24
	8.5.2	Deck Slab Units and Deck Beams	25
	8.5.3	Construction Sequence	25
	8.6	Impact on Coastal Processes	26
9.0		Runway Extension Contour Mastergrading	27
10.0		Airfield Drainage Design	28
	10.1.1	Runway Extension Drainage	28
	10.1.2	Apron Extension Drainage	29
11.0		Airfield Pavement Design	30
Appendix A			
		Draft Concept Design Drawings	A
Appendix B			
		Basis of Design Report	B

# DRAFT

## 1.0 Introduction

### 1.1 Background

Lord Howe Island is located approximately 590 km from the closest town on the Australian mainland and 790 km from Sydney, it is one of the most remote communities in NSW and among the most remote of any Australian territory.

There are currently regular airline services operating from Sydney and Brisbane to the island, although the current route agreement is scheduled to end in March 2022 and Qantas have indicated they will no longer be operating the DHC8-200 aircraft servicing the island beyond this date. The existing runway at 888m long, does not allow for any candidate aircraft to take off or land without restrictions which limits the financial viability of the route for airline operators. Therefore an extension of the runway may be the only viable solution to ensure continued service of Lord Howe Island.

In April 2018, AECOM completed a Detailed Assessment of Extended Runway Requirements and Suitable Aircraft which recommended that a 570m runway extension to the NW should be investigated further. This recommendation was approved by the Lord Howe Island Board (LHIB) at their quarterly meeting held on Monday 14<sup>th</sup> May 2018.

### 1.2 Purpose

The concept design is required to achieve the following:

- Identify and resolve critical constraints;
- Confirm the scope for airfield work in addition to the runway extension;
- Provide the ability to develop a high level construction program;
- Provide the ability for early planning and discussions with stakeholders relating to the project delivery;
- Provide adequate information to develop construction costing (to + / - 30% accuracy) for the airfield work
- Determine the most viable construction solution to extend the runway

### 1.3 Scope of this report

The scope of work is detailed in the following documents:

- a. Document - Request for Quote - LHI Airport Runway Extension Feasibility Study - Contract LHIB 2017-25 (August 2017)
- b. AECOM Proposal for LHI Airport Runway Extension Feasibility Study - Contract LHIB 2017-25 (11<sup>th</sup> September 2017)

The scope generally comprises the following:

- Proposed airfield layout
- Key Environmental Design Constraints and Considerations
- Geotechnical design conditions
- Coastal design conditions
- Land reclamation design
- Deck on pile structural design
- Contour mastergrading of the runway extension
- Airfield drainage layouts and design
- Airfield pavement design

The outcome of each of the above scope items is described in the following sections with draft feasibility design drawings attached as Appendix A

# DRAFT

## 1.4 Basis of Design Report

AECOM's technical approach to the works including design criteria are included within the draft Basis of Design Report issued 28<sup>th</sup> June 2018, this is a live document that will continue to be used through any subsequent design stages beyond concept design.

The report sets out the following:

- Key environmental design constraints and considerations
- Construction constraints
- Design datum
- Design standards, codes and guidelines
- Design life
- Design parameters

A copy of this document can be found in Appendix B

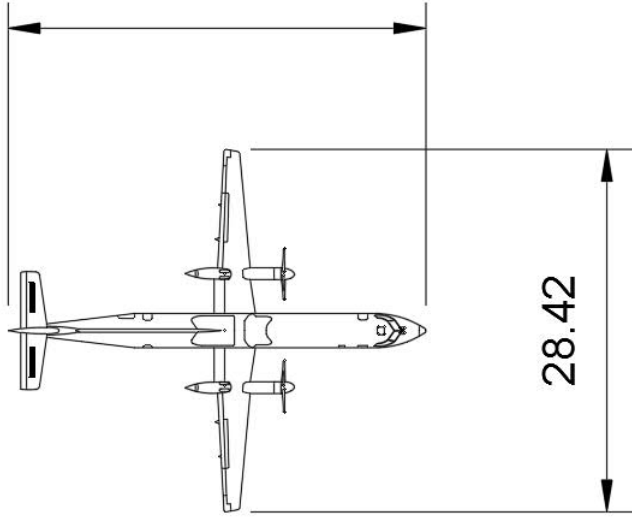
# DRAFT

## 2.0 Proposed Airfield Layout

DHC8-200 aircraft currently operate at the existing airfield on Lord Howe Island, in order to ensure the largest candidate aircraft (Table 1) is able to operate to the island; the existing airfield requires significant upgrades to meet Civil Aviation Safety Authority (CASA) standards.

**Table 1 Largest candidate aircraft design characteristics**

Aircraft	Manufacturer	Runway Code <sup>1</sup>	Aircraft Code <sup>2</sup>	OMGWS	Tail Height
<b>DHC8-400</b>	Bombardier	3	C	9.54m	8.38m



The diagram shows a top-down view of a DHC8-400 aircraft. A horizontal dimension line above the aircraft indicates a length of 32.83m, which corresponds to the reference field length. A vertical dimension line to the right of the aircraft indicates a width of 28.42m, which corresponds to the outer main gear wheel span.

**Note**

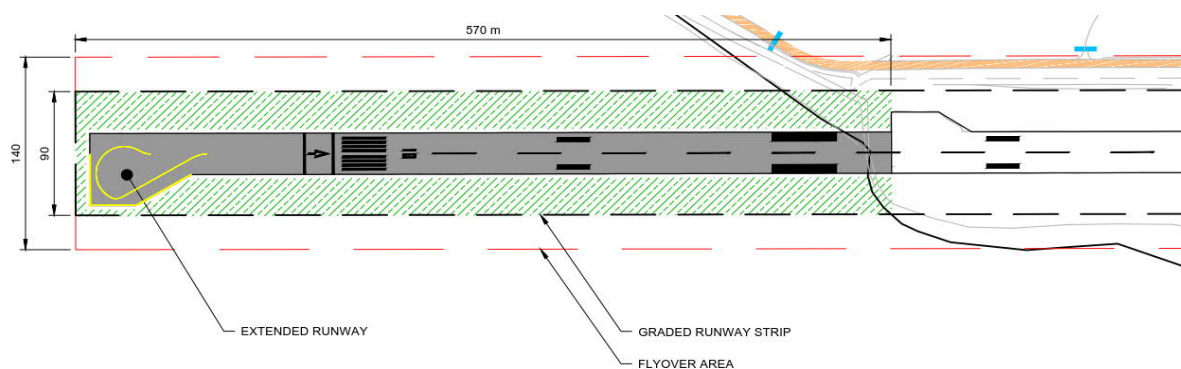
1. Runway code refers to the aeroplane reference field length
2. Aircraft code is determined by the wing span of an aircraft
3. OMGWS = outer main gear wheel span

### 2.1 Runway extension

As recommended in AECOM's *Detailed Assessment of Extended Runway Requirements and Suitable Aircraft (issued April 2018)* a 570m physical extension to the existing Northwest end of the runway has adopted for this concept design.

In accordance with CASA Manual of Standards 139 (MOS139) a code 3 aircraft with OMGWS greater than 9m would require a 45m wide runway, under Civil Aviation Regulations 235A (CAR 235A) the minimum runway width requirement for DHC8-400 operations can be reduced by one runway width to 30m.

The existing 30m wide runway meets the minimum width requirements and therefore the width of the runway extension has been designed to match. As shown in Figure 1 the extension is over water, this will require either a structural deck on piles to be constructed or land reclamation; these options are discussed further in section 7.0 and 8.0.

**DRAFT**

**Figure 1 Runway Extension Layout**

## 2.2 Runway strip

The runway strip is a defined area which is provided to reduce the risk of damage to aircraft running off a runway and to protect aircraft flying over the runway during take-off or landing operations.

The existing runway has Global Navigation Satellite System (GNSS) approaches available in each runway direction, supplemented by a Non Directional Beacon (NDB) and Distance Measure Equipment (DME) circling approach. Therefore it is designated an instrument non-precision approach runway.

Code 3 instrument non-precision approach runways require a 90m wide graded runway strip in addition to 25m wide fly-over area on each side. No portion of the fly-over area of a runway strip, and no object or structure on the fly-over area, may project through a plane that:

- a) starts along each outer side of the graded runway strip; and
- b) has an upward slope away from the graded runway strip of more than 5%.

Based on these requirements the runway extension only provides a physical surface for the 90m wide graded runway strip out over the lagoon, the sea level is significantly lower than both the deck on pile and reclaimed land options and therefore nothing will project through the fly-over area “plane”.

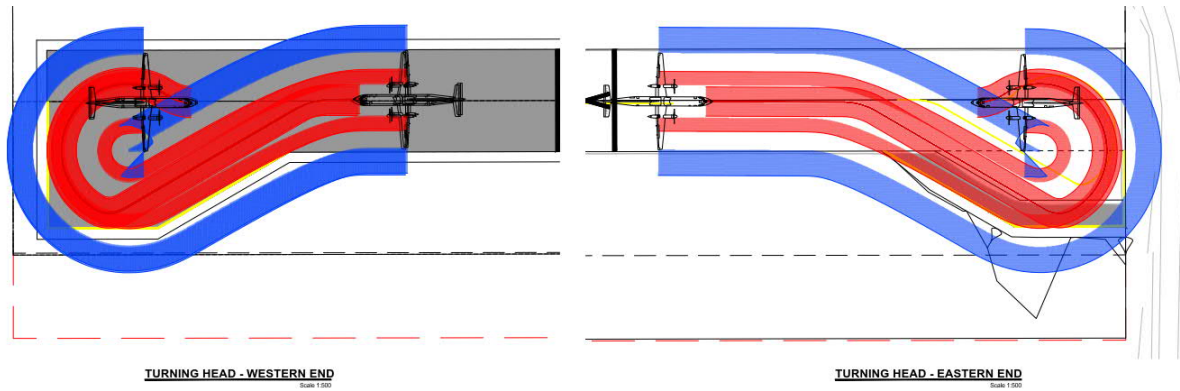
As shown in Figure 1 the island road is now located within the fly-over area of the runway strip, in order to avoid vehicle impinging the fly-over area “plane” during take-off and landing operations, traffic lights or a physical traffic barrier will need to be installed at the interfaces of the road and fly-over area (shown in blue).

## 2.3 Runway turning heads

The existing runway turning heads were designed to allow DHC8-200 aircraft to turn round at either end of the runway, the turning head at the current RWY 10 threshold will be retained in order to allow suitable aircraft to turn round at the runway midpoint instead of taxiing the full runway extension. The turning head at the RWY28 threshold will require an additional 445m<sup>2</sup> of pavement to ensure DHC8-400 aircraft have sufficient wheel gear clearance to the edge of pavement.

A turning head has been provided on the southern edge of the runway at the new RWY 10 threshold, as per industry standard the aircraft has been tracked making the turn in a clockwise direction. This is contrary to current operations on Lord Howe Island, as land constraints enforced the original turning heads to be constructed for anti-clockwise turning.

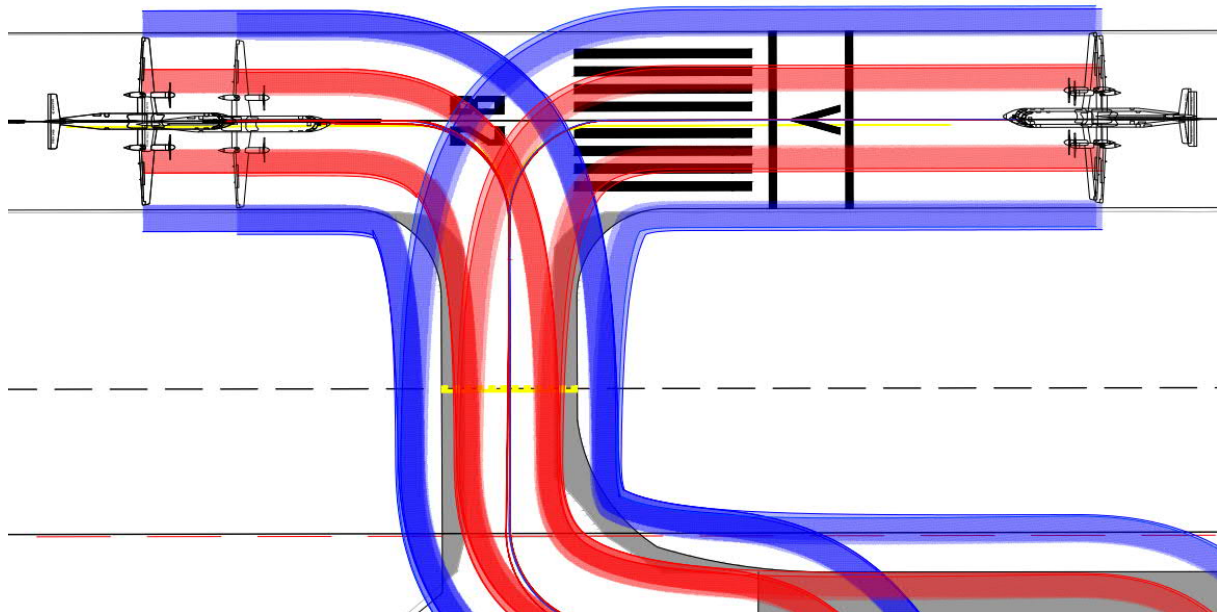
**DRAFT**



**Figure 2 Turning Head Layout and Tracking**

**2.4 Taxiway**

The existing 15m wide Code C taxiway has been widened to by 4m either side in order to meet the minimum taxiway width requirements for aircraft with OMGWS over 9m. In addition aircraft manoeuvres have been tracked between the runway and taxiway to ensure the sufficient main wheel gear clearance is provided on the taxiway fillets. An additional 490m<sup>2</sup> of airfield pavement has been provided.



**Figure 3 Taxiway Layout and Tracking**



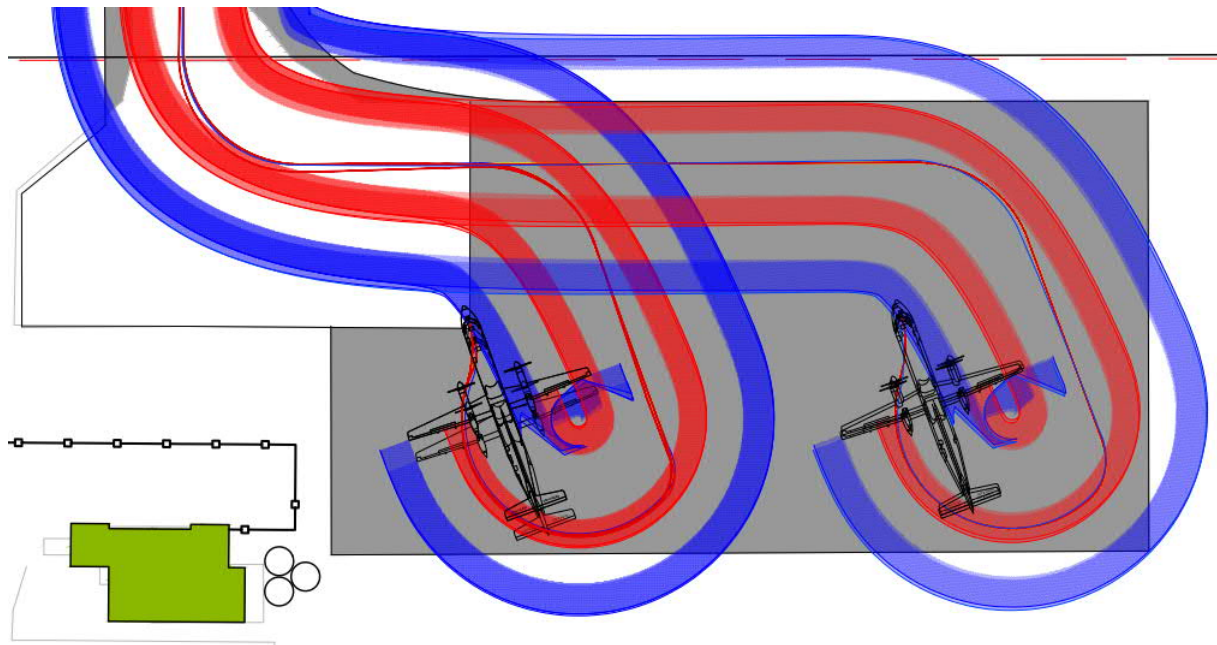
# DRAFT

## 2.5 Apron & Terminal

The new apron has been sized to accommodate 2 x DHC8-400 aircraft, based on the following scenarios;

- Lord Howe Island continues being serviced by 2 aircraft per day
- Lord Howe Island is serviced by 1 aircraft per day
  - A second aircraft may be required to deliver an engineer/parts for another broken down aircraft

As per the existing apron, the aircraft stands will operate as power in/power out stands because of the lack of aircraft pushback tug on the island. Sufficient wing tip clearance has been provided to ensure each stand can operate independently of the other. An additional 7275m<sup>2</sup> of apron pavement is required.



**Figure 4 Apron Layout and tracking**

The obstacle limitation surface (OLS) is a series of 3d planes associated with the runway that define the desirable limits to which objects or structures may project into the airspace around the aerodrome so that aircraft operations at the aerodrome may be conducted safely.

One of these surfaces is the transitional surface which begins at the edge of the runway strip, as the runway strip will widen by 50m should Code 3 aircraft such as the DHC8-400 begin to operate at Lord Howe Island, the terminal and aircraft parking positions have been assessed to ensure they don't infringe upon the OLS.



# DRAFT

## 3.0 Key Environmental Design Constraints and Considerations

Based on the background environmental research undertaken for the project to date, the key constraints / non-negotiables in relation to the environment will have been considered as part of the design process and should be avoided during construction and operation of the runway extension are as follows:

- Direct and indirect impacts on the World Heritage values of the Island, including:

### Direct impacts:

- impacts to algal and coral reefs, during construction or operation (e.g. via scouring due to surface water run-off), for example by limiting the physical footprint of the project within the lagoon. Within the lagoon, coral areas have dominant coverage in the western portion located seaward of Blackburn Island, while the landward (eastern) portion of the lagoon is generally comprised of sandy substrate;
- impacts to items of the Lord Howe Island Group (listed on the NSW Office of Environment and Heritage (OEH) State Heritage Register (SHR 00970)), including the “Kentia” on Lagoon Road, Portion 111, to the west of the existing airport terminal and apron area;
- physical impact to species (and their habitats) listed as threatened under the EPBC Act (refer to Figure 1), in particular the following species:
  - the only breeding habitat of the Providence Petrel (*Pterodroma solandri*) between March to November and they nest on the tops of Mount Gower and Mount Lidgbird and to a less extent, on the lower slopes of the mountains;
  - the breeding habitat of the Lord Howe Woodhen (*Gallirallus sylvestris*) between spring and early summer, within a territory of around 3 hectares primarily within the Lord Howe Island Permanent Park Preserve (nesting on the ground in thick vegetation, under tree roots and fallen logs). They are not found in the northern hills area;
  - the foraging habitat of the migratory Red Knot (*Calidris canutus*) on coastal areas in sandy estuaries with tidal mudflats on the island, between September and April;
  - the foraging habitat of the migratory Curlew Sandpiper (*Calidris ferruginea*) on intertidal mudflats of lagoons, and beaches and rocky shores between August and mid-April;
  - the foraging habitat of the migratory Eastern Curlew (*Numenius madagascariensis*), on intertidal mudflats and sandflats, on sheltered coasts, especially lagoons, from August each year;
  - the foraging and nesting habitat of the Loggerhead Turtle (*Caretta caretta*) particularly from late October to late February;
  - the foraging habitat of the migratory Leatherback Turtle (*Dermochelys coriacea*) which are found in tropical and temperate waters; and
  - the critical habitat of the Lord Howe Island skink, listed on the NSW threatened species list, at the receding dunal area at the southern end of Lagoon Beach (to the north of Windy Point).

### Indirect impacts:

- impacts to existing wave patterns due to the runway extension structure, which could cause beach/lagoon erosion and impacts to algal and coral reefs and/or threatened species (such as the Lord Howe Island skink) or their habitat;
- noise impacts during breeding season to species listed as threatened under the EPBC Act (refer to Figure 1), in particular:
  - the breeding habitat of the Red-tailed Tropicbird (*Phaethon rubricauda*), which nests on cliffs of the northern hills and southern mountains on the main island at Lord Howe Island; and

## DRAFT

- the Lord Howe Island Phasmid (on Balls Pyramid).

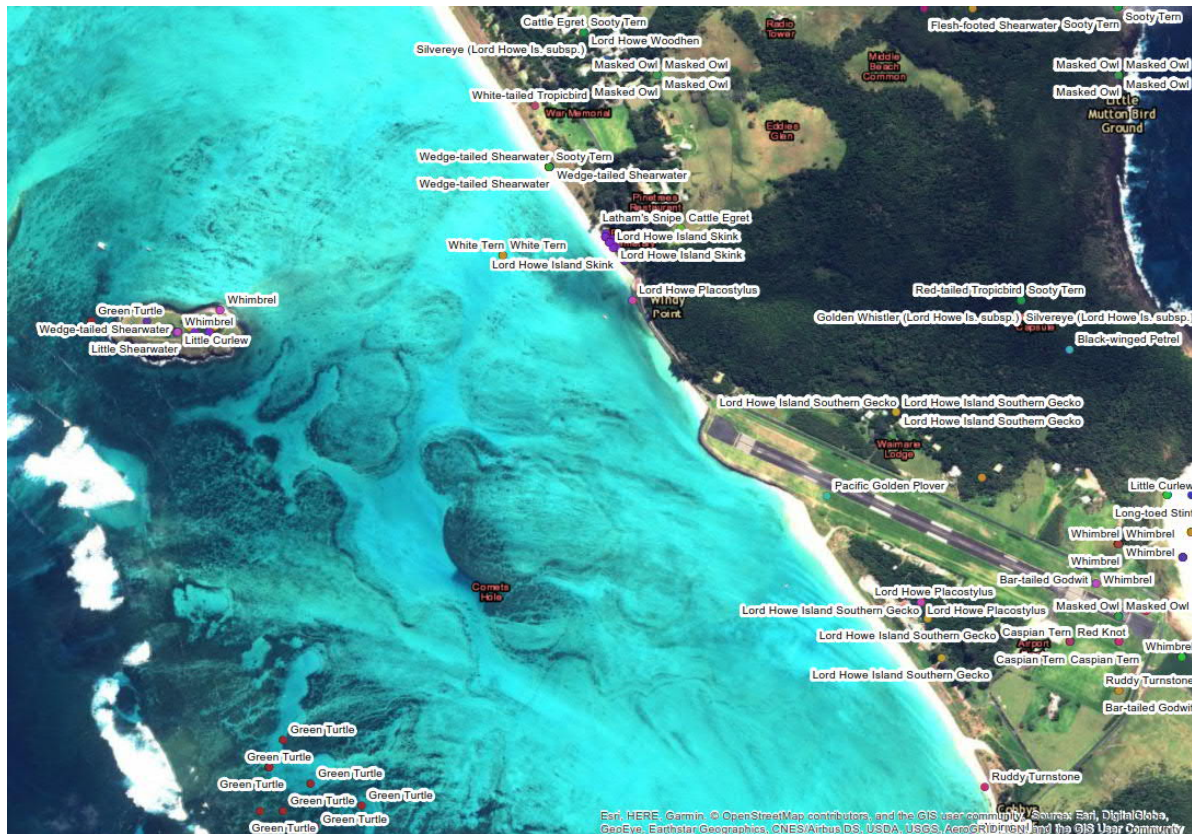


Figure 7 Threatened species located in the vicinity of the proposed project

- Consideration of the likely impacts of climate change in any flood modelling and related design for the project, including factoring in:
  - Increased intensity of rainfall events (using an approach in accordance with relevant guidelines (e.g. *Practical Responses to Climate Change*, Engineers Australia);
  - Sea level rise of between 45 to 82 cm by 2090 (as projected for the NSW coastline under Representative Concentration Pathway 8.5), coupled with extreme sea level events, with increases in storm surge and the extent of inundation across the island; and
  - Increased tailwater levels or sensitivity testing undertaken for various projected rises in mean sea levels.
- Other important considerations for the design of the project include:
  - Prevention of pollution of waterways, including lagoon or coastal waters, by sediments, oils/petrols and other contaminants, during construction or operation;
  - Ensuring the design process and runway structures consider the opportunity to provide suitable habitat for flora/fauna, where possible; and
  - The use of sustainably sourced and/or recycled construction materials which do not contravene the requirements of the *Marine Estate Management (Management Rules) Regulation 1999*.

Further information will be provided upon completion of Milestone 4 of the project in the form of a Preliminary Environmental Assessment.

# DRAFT

## 4.0 Construction Constraints

The construction methodologies for both the land reclamation and deck on pile extension options have been strongly influenced by the need to accommodate a number of constraints during construction.

### 4.1 Airport Operations

It is expected that unrestricted access for construction during daylight hours will be limited to two non-consecutive days per week. Construction work will be phased around aircraft flight schedules for the remaining days of the week.

The airport does not operate at night. Access for construction activities at night may be possible, subject to additional constraints including but not limited to those described below.

It is assumed that construction plant, materials and personnel can be located along the runway extension during airport operations, subject to the obstacle limitation surface (OLS) restrictions of the existing runway.

### 4.2 Seasonal Restrictions

Construction activities during both day and at night may be limited during the breeding season of certain migratory birds and marine mammals, as detailed in section 3.0.

### 4.3 Noise Restrictions

As a minimum noise restrictions are expected to apply during any night works. It is assumed that over water pile driving will not be allowed. Although quieter construction activities such as welding, steel fixing and concrete pouring may be allowed.

### 4.4 Light Restrictions

Light spill restrictions are expected to apply during night time construction activity.

### 4.5 Vibration Restrictions

Restrictions on significant underwater vibrations due to pile driving may apply during any marine mammal seasonal restrictions described in 3.0. Vibratory equipment may be required in place of piling hammers.

### 4.6 Supply & storage of Plant, Labour and Materials

It is assumed that there is no local availability of plant, materials or construction personnel. All such items must be brought in by air or by sea.

The island is serviced by the MV Island Trader vessel which runs freight between Port Macquarie and Lord Howe Island on average every two weeks.

**Table 2 MV Island Trader Vessel Characteristics**

Deadweight Tonnage	Gross Register Tonnage	Overall Length	Beam	Draft
242t	485t	38.8m	9m	TBC

The vessel enters the lagoon at high tide before ballasting down to sit on the seabed at the island's only wharf during cargo transfer. Based on the vessel characteristics shown in Table 2, the wharf should be suitable to accommodate a small crane barge.

**DRAFT**

**Figure 8 MV Island Trader at Lord Howe Island**

It is to be noted that the use of the wharf structure was deemed unsuitable for the 2014 runway overlay project due to concerns over its structural loading capacity. Fulton Hogan delivered plant and material via shallow barges across the Lagoon which docked at the SW extent of the runway.



**Figure 9 Plant and material delivery for the 2014 runway overlay project**

Limited onshore area is available for the storage of construction plant and materials, and this may be required to be stored on barges moored outside the reef until a sufficient portion of the runway extension has been constructed to provide the required storage area without penetrating the OLS.

**DRAFT**

## 5.0 Geotechnical Design Conditions

The preliminary geological model in the Lagoon is based on information interpreted for the desktop geotechnical study contained within AECOM's "Geotechnical Interpretative Report" and is presented in Table 3 and Table 4 .

**Table 3** Interpreted geological model

Geotechnical Unit	Simplified Description	Depth to Top of Unit (m)	Unit Thickness (m)
<b>1. Upper Sand</b>	Carbonate sands trace gravel	0.0	0.0 to 1.9
<b>2. Lower Sand</b>	Carbonate silty gravelly sands	0.0 to 2.0	7.3 to 10.4
<b>3. Interbedded Sands and Clays</b>	Interbedded Sands and Clays	7.9 to 9.5	2.8 to 4.9
<b>4. Calcarenite</b>	Calcarenite (calcareous sandstone)	11.0 to 13.8	
a. Calcarenite-W	Weathered calcarenite		1.8 to 3.1
b. Calcarenite-FR	Fresh calcarenite		0.7 (proven)
<b>5. Volcanic bedrock</b>	Basalt, Breccia and Tuff	Not encountered	

**Table 4** Interpreted Ground Profile

Geotechnical Unit	Density/Consistency	Bulk Unit Weight (kN/m <sup>3</sup> )	Effective Cohesion (kPa)	Effective angle of internal shearing resistance (°)
<b>Upper Sand</b>	Loose	16	0	25
<b>Lower Sand</b>	Very loose / very soft	16	0	25
<b>Interbedded Sands and Clays</b>	Loose to medium dense	16	0	30
<b>Calcarenite</b>	Weathered	18	10	32
	Sound	20	50	35

### 5.1 Further geotechnical investigations

The unit depths, thicknesses and material properties presented in Table 3 and have been adopted for the concept design but should not be assumed to represent the extremes that may be encountered across the site. The desktop study was based on a limited number of boreholes from within and surrounding the site. Intrusive drilling will be required to inform future design stages. The investigation programme should:

- include the western section of the alignment to cover the existing gap in information
- correlate with the 1972 investigation
- Collect samples of the overlying soils for laboratory characterisation testing (PSD, Atterberg limits, and
- core the calcarenite (with acceptable core recovery) to carry out rock strength testing (UCS and Point Load Testing)
- prove the depth to top of the volcanic rock

# DRAFT

## 6.0 Coastal Design Conditions

As stated in the basis of design report, all coastal structures have been designed for a 50 year design life, with a design horizon of 2070. To account for climate change a sea level rise of 0.4m has been adopted for the 50 year design life (2070); this is applied to the ambient water levels.

### 6.1 Design Events

Lord Howe Island airport is defined as critical infrastructure due to the need to remain operational after major events in order to allow emergency services access to the island. The runway and associated structures (deck on piles or land reclamation) must remain functional after a major event, therefore in accordance with AS4997-2005 it is designated as a function category 3 (High property value or high risk to people)

#### 6.1.1 Ultimate (failure)

Based on the design life and function category the coastal structures are to be designed to be damaged but must retain functionality for a 1,000 year Average Recurrence Interval (ARI), this is defined as the failure event.

#### 6.1.2 Working (no damage)

In addition the airport shall be expected to withstand moderate storm events without needing repair; this is described as the no damage event and has been set at 100 year ARI.

#### 6.1.3 Operational (planes landing)

Finally the runway operations should not be impacted by waves/overtopping during anticipated airport open conditions. The operating conditions are not directly linked to a marine event but shall be assumed to be moderately large marine conditions with depth limited waves.

### 6.2 Water Levels

Water levels in the Lagoon vary with astronomical tide and other processes. Manly Hydraulics Laboratory (MHL) has operated a water level recorder on Lord Howe Island since 1994, analysis of the data collected between 1994 and 2013 at 15 minute intervals indicate the still water level can vary considerably above nominal tidal range with maximum recorded level of 2.84 m AHD over the lagoon reef.

Wave setup is the increase in mean water level due to the presence of breaking waves; this governs the extreme water levels over the reef. Based on the equations described by Gourlay in his 1997 paper "Wave Set-up on Coral Reefs: Some Practical Applications" water levels over the reef have been assessed. The critical equation is:

$$\bar{\eta}_r = \frac{3 \times K_p \times g^{1/2} \times H_0^2 \times T}{64 \times \pi \times (\bar{\eta}_r + h_r)^{3/2}}$$

Where:  $\eta_r$  is depth of wave setup

$K_p$  is reef profile characteristic, defined based on reef edge slope (0.4 adopted).

$H_0$  and  $T$  are offshore wave characteristics.

$h_r$  is the depth of ocean level over reef edge (reef edge assumed to be -1.5m AHD).

Analysis of the extreme water levels for various design events was completed, and the results are presented in Table 5. To account for the 50 year design life of the coastal structures an additional 0.4m has been added for sea level rise by 2070, presented in Table 6.



**DRAFT****Table 5 Adopted Reef Top Water Levels (today)**

Variable	Ultimate	Working	Operational
<b>Approximate ARI (years)</b>	1,000	100	N/A
<b>Offshore wave <math>H_0</math> (m)</b>	10	8	4
<b>Wave period T (s)</b>	12	10	8
<b>Ocean water level (m AHD)</b>	2.0	2.0	1.8
<b>Wave Setup on reef <math>\eta_r</math> (m)</b>	1.8	1.2	0.3
<b>Extreme Water Level (m AHD)</b>	<b>3.8</b>	<b>3.2</b>	<b>2.1</b>

**Table 6 Adopted Reef Top Water Levels (2070)**

Variable	Ultimate	Working	Operational
<b>Approximate ARI (years)</b>	1,000	100	N/A
<b>Offshore wave <math>H_0</math> (m)</b>	10	8	4
<b>Wave period T (s)</b>	12	10	8
<b>Ocean water level (m AHD)<sup>1</sup></b>	2.4	2.4	2.2
<b>Wave Setup on reef <math>\eta_r</math> (m)</b>	1.7	1.1	0.3
<b>Extreme Water Level (m AHD)</b>	<b>4.1</b>	<b>3.5</b>	<b>2.5</b>
<i>Note</i>			
1. This accounts for current day tidal water level plus 0.4m for sea level rise			

### 6.3 Waves

Large waves impacting the runway extension will be limited by the shallow depth of water over the reef and the flat bathymetry; therefore the biggest waves will typically occur during extreme water level events.

The reef top area undulates but is relatively flat, sitting at approximately -1.5 m AHD off shore from the proposed works. Wave break conditions with this type of foreshore were assessed in a 1997 study by Nelson. His equation indicates that the breaker limit will be 0.55 of the depth.

$$H_{br} = 0.55 \times depth$$

Depth limited breaking results in a compressed wave distribution with the proportional difference between the largest waves and statistically more common waves reduced. To define the wave spectrum after breaking shallow water wave characteristics as defined in the method presented by Battjes and Groenendijk (2000) have been adopted. The wave height distribution was developed assuming the 1% exceedance wave height was the depth limited breaking wave.

$$H_{1\%} = H_{br}$$

The wave crests represent the combined influence of lagoon top water level and wave excursion. The shallow water conditions result in a cnoidal wave profile, with the crest excursion significantly greater than the trough. Cnoidal waves typically have a crest elevation that equivalent to 70% of the wave height.

$$\eta_{1\text{wave crest}} = 0.7 \times H + WL$$

Based on the above relationships, the design the wave conditions presented in Table 7 have been adopted.

**DRAFT**

Table 7 Near Shore Waves

Variable	Extreme	Working	Operational
Approximate ARI (years)	1,000	100	N/A
Offshore wave $H_0$ (m)	10	8	4
Wave period $T$ (s)	12	10	8
Reef Top Water Level (m AHD)	4.1	3.5	2.5
Reef bed level (m AHD)	-1.5	-1.5	-1.5
Still Water Depth $h_r$ (m)	5.6	5.5	4.1
Breaker factor $g_{br}$	0.55	0.55	0.55
Significant wave height $H_{m0}$ (m)	2.44	2.18	1.74
Mean of 10% largest waves $H_{1/10}$ (m)	2.80	2.50	2.00
2% waves height $H_{2\%}$ (m)	2.96	2.64	2.11
1% waves height $H_{1\%}$ (m)	3.09	2.76	2.21
Significant wave crest elevation $\eta_s$ (m AHD)	5.81	5.03	3.71
2% wave crest elevation $\eta_{2\%}$ (m AHD)	6.17	5.35	3.98

#### 6.4 Observed Geological Features

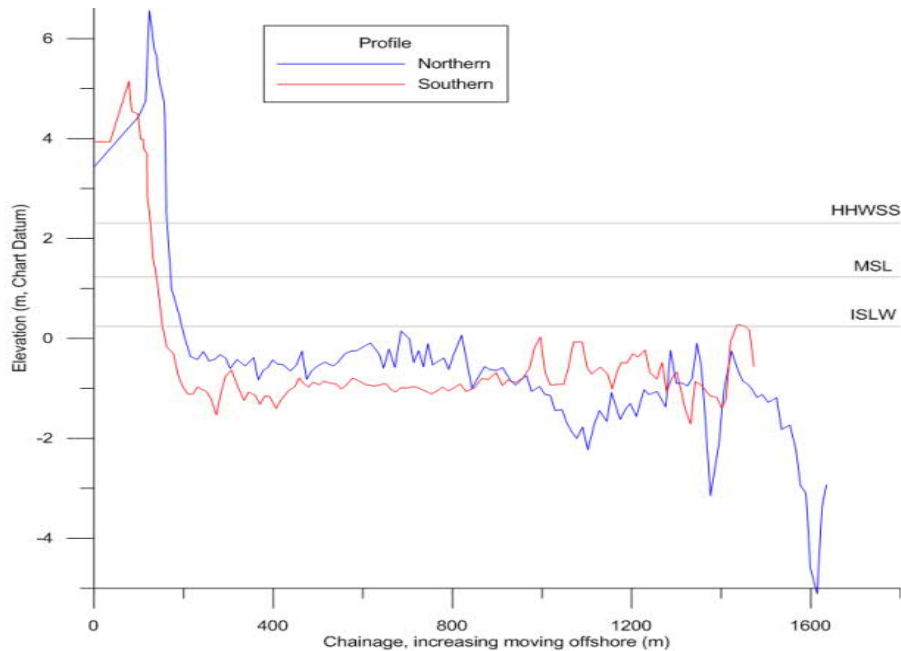
Images presented in Figure 10 reveal there are a series of parallel dune lines on the lagoon beaches north and south of the existing runway. These features are typical of extreme event dune systems seen in a number of locations; research in Queensland reveals that similar features mark the sediment deposition lines during extreme cyclonic events (~500 year ARI). Wind forced dune formations typically aren't parallel.



Figure 10 Dune ridges north and south of the runway

**DRAFT**

Based on the elevation data shown in Figure 11, the dune crests at this site are at approximately 6m AHD, this is consistent with the ultimate event as presented in Table 7.



**Figure 11 Sections across the reef**

Although the observed geological features reinforce the values shown in Sections 6.2 and 6.3, the values are derived based on simplistic models and indicative calculations. This information is suitable to inform the concept design of the runway extension, but it is highly recommended that 2d or 3d computational modelling of the water dynamics within the lagoon is carried out at subsequent design stages of the project.

## 6.5 Currents

Significant currents can develop on the reef flats during the extreme wave events. The adopted shore parallel current is 1 m/s under operational conditions. During extreme events (beyond recorded data) a design current of 1.5 m/s has been adopted. For works that substantially block the flow paths on the reef top (reclamation) the adopted current is 2 m/s at choke points (seaward edge).

**DRAFT****7.0 Land Reclamation Design****7.1 Wave Trip Structure**

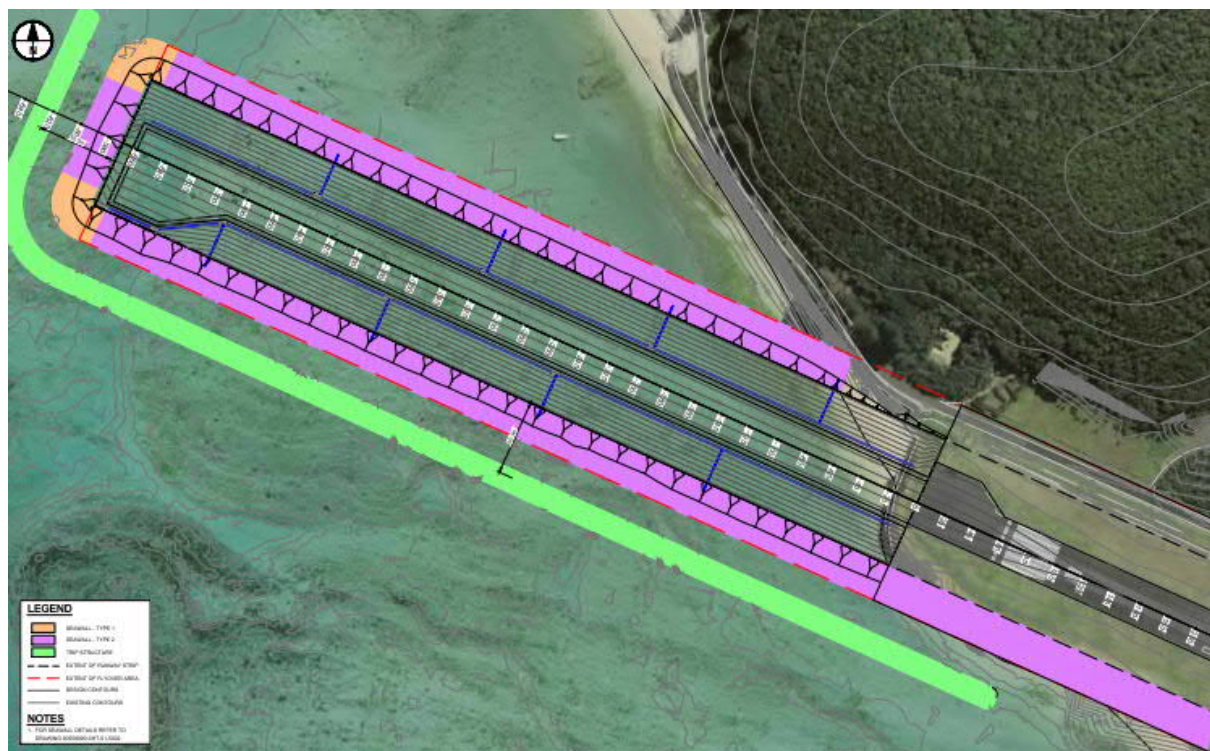
To ensure the land reclamation design complies with the coastal design requirements in section 6.1, the western extent of the new runway would need to be at 6.0m RL and the western extent of the existing runway would need to be raised to 5.0m RL to prevent damaging overtopping and inundation of the runway.

The current level at the western extent of the existing runway is 4.6m, in order for the extension to avoid overtopping and inundation the existing runway and surrounding earthworks levels would need to be raised by roughly 500mm in addition to the increased height of the reclaimed land or deck on piles.

This solution would have significant construction cost and duration implications in addition to the reclamation and due to the significant level increases it may not be achievable to keep the airfield operational during construction work. Therefore a wave trip structure has been introduced along the western and southern edges of the extension, this will absorb wave energy and reduce wave crest impacting the runway extension structure to 5.76m RL.

The structure has been designed to have the minimal impact in ambient conditions while offering sufficient protection during extreme events to preserve airport functionality. The structure works by inducing waves to trip (break), with the resultant wave reduced in height beyond the trip structure.

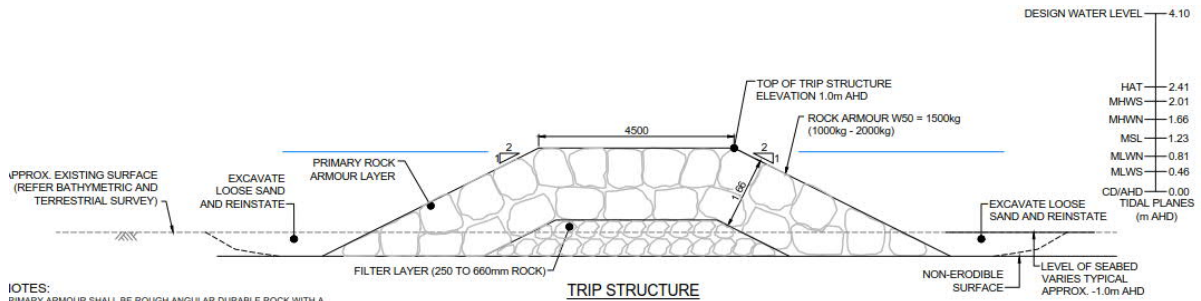
The crest of the structure was determined using a breaker index of 0.8 (which reflects the stepped nature of the face) to assess the breaking wave. The structure has been located 50m offshore from the runway revetment to provide a body of water that would absorb the wave breaking as shown in Figure 12.



**Figure 12 Wave Trip Structure Layout**

# DRAFT

The armour used in the trip structure has been based on a conventional armour stability assessment under design waves and is shown in Figure 13.



**Figure 13 Wave Trip Structure**

## 7.2 Reclamation Revetment Design

As discussed in Section 6.1, coastal structures have been designed for Ultimate, Working and Operational events. Steep sloped rock armour design criteria have been based on the guidance in Table 5.4 of the Rock Manual, as shown in Table 8.

**Table 8 Steep sloped rock armour design criteria**

Design Event	Storm Average Recurrence Interval (ARI)	Damage Level ( $S_d$ )	Damage Commencement Overtopping Rate	Mean Overtopping Discharge Limit (Q)
<b>Ultimate</b>	1000 years	8	$\geq 0.2\text{m}^3/\text{s}/\text{m}^1$	$< 200 \text{ l/s}/\text{m}$
<b>Working</b>	100 years	2	$\geq 0.05\text{m}^3/\text{s}/\text{m}^2$	$< 50 \text{ l/s}/\text{m}$
<b>Operational</b>	N/A	N/A	Minimal <sup>3</sup>	$< 1 \text{ l/s}/\text{m}$

*Note*

1. Based on damage to paved promenades (runway) behind a seawall
2. Based on damage to an unprotected promenade
3. Operating conditions are not directly linked to a marine event but shall be assumed to be moderately large marine conditions with depth limited waves.

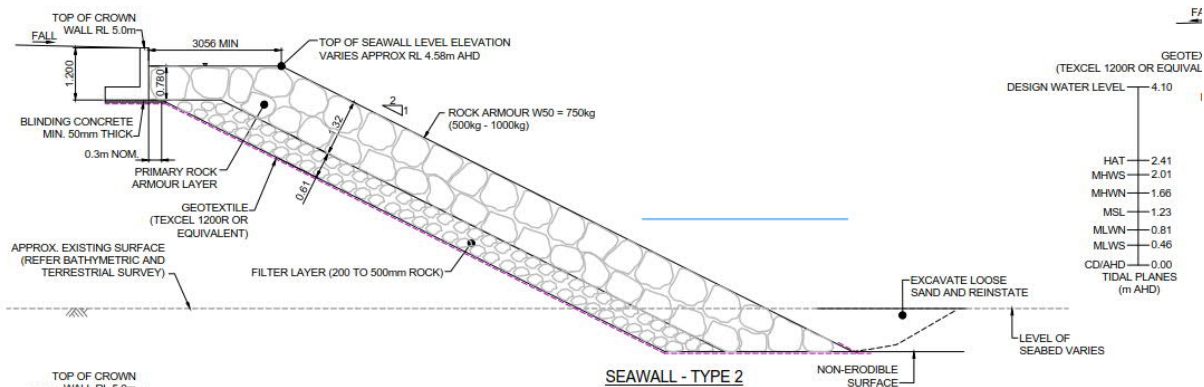
### 7.2.1 Armour sizing

Rock armour design has been based on Van der Meer’s equation with results cross checked with the more robust Hudson equation. These equations are considered industry standard for the design of rock armour solutions.

Armour has been designed as a conventional double layer rubble structure with a slope of 1 in 2. The armour grading is narrow to maximise the armour performance. A double layer of secondary armour is included to enhance wave interactions with the revetment and to protect the geotextile. A heavy grade geotextile is used to separate the armour from the fill beneath the revetment.

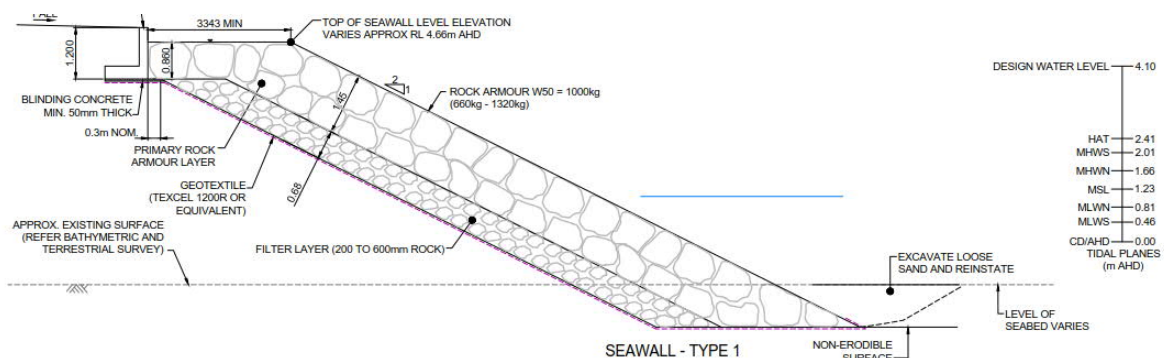
The toe is assumed to be dug in and founded on a non-erodible surface. If suitable bed conditions cannot be exposed close to the surface a scour mat would need to be included in the toe detail. The crown of the revetment has been set at or below runway level to avoid impacting aviation operations. Primary armour is carried over the crest, with a concrete head wall used to ensure a robust clean edge detail that minimises fill volumes, as shown in Figure 14

**DRAFT**



**Figure 14 Seawall Cross Section**

On the corners of the sea wall, 25% larger armour has been used to account for decreased armour stability on concave surfaces as shown in Figure 15



**Figure 15 Corner Seawall Cross section**

The use of the trip structure described in section 7.1 dissipates much of the wave energy which has allowed smaller armour to be used on the revetment.

Design profiles and armour sizing are presented in the concept design drawings. Armour sizes are summarised in Table 9.

**Table 9 Armour Sizing**

Location	Primary Armour	Secondary Armour
<b>Trip Structure</b>	1,500 kg (1,000 to 2,000 kg)	250 to 660 mm
<b>Runway Corners (type 1)</b>	1,000 kg (660 to 1,320 kg)	200 to 600 mm
<b>Runway Revetments (type 2)</b>	750 kg (500 to 1,000 kg)	180 to 500 mm

**7.2.2 Overtopping and Crest Elevation**

Desk top overtopping assessments are notoriously unreliable, with a wide range of equations giving widely varying estimates. Overtopping was assessed using a range of equations, though most reliance was placed on the recent Australian research paper published by Griffith University Academics Etemad-Shahidi & Jafari in 2014. This solution was adopted because it includes robust consideration of the impact of depth limited wave conditions. The overtopping equations were used to define the size of the trip structure required to achieve the performance criteria stated in section 6.1.

It is noted that this element of the design will need to be revisited in subsequent design stages using physical modelling to refine and assess the wave interactions with the structures.

# DRAFT

## 7.3 Fill

### 7.3.1 Properties

The construction of the reclaimed land runway extension will require a large volume of fill (~360,000m<sup>3</sup>). The fill material requires good geotechnical properties to provide a suitable compacted base for the runway construction. Key features of the fill material:

- Fill placed below the water level must be granular to allow saturated compaction under overburden.
- Unconfined fill in the lagoon must be clean (low fines content) to minimise plume impacts.
- Fill needs to have suitable engineering properties near the surface to facilitate airport works and maintenance (CBR 10%-15%)

### 7.3.2 Sources

If fill could be won locally by dredging or from a land based source this would provide the project with an affordable, logistically simple solution. Of these, sand pumped from the dredge directly into the reclamation is a common technique around the world and represents the most affordable solution.

At this stage it is understood that fill cannot be won from Lord Howe Island or adjacent waters. As such fill will need to be imported. Importing fill provides opportunity to be more selective about the fill quality used. Industrial scale civil suppliers from anywhere in the region (Australia, New Zealand, New Caledonia) could be used, opening up an opportunity to adopt a material that is best fit for purpose at market driven prices. The major constraint for remote material sources are the logistical and financial impacts of the double and triple handling of material onto and off barges at remote locations along with the haulage.

### 7.3.3 Construction Considerations

The suggested construction methodology for the reclaimed land runway extension option is as follows:

1. Construction will begin onshore, creating access as it progresses.
2. Fill material will be tipped over the “end” of the reclamation with reworking of the external faces.
3. To manage turbidity, perimeter bunds will be constructed initially using high grade clean fill to allow confined placement of the remaining material. If perimeter bunds are used back filling can be undertaken in a controlled environment.
4. As works progress the external faces will be armoured with the final armour solution.
5. Material placed below the water level cannot be directly compacted and therefore compaction will begin once fill material is above the water level.
6. The use of granular fill should limit the risk of delayed settlement issues, although the use of overburden may be required to bring about final settlement of fill and underlying soils. However the materials on this project should not require extended periods of loading to achieve settlement (a method used with cohesive sediments).
7. After compaction is achieved the surface of the fill material will be trimmed and airport civil works would commence (drainage, pavements, etc.)
8. The trip structure would be constructed using floating plant or by working outwards from the shoreline if existing depths are too restrictive, largely independent of the runway works. This structure does not utilise fill and the methodology is primarily place and trim the relevant armour material.

Construction would occur around the aircraft flight schedules as required and around the clock subject to noise and light impact constraints.

The importation and transfer of large volumes of material will likely result in damage to local infrastructure. It is anticipated that the repair and remediation will need to be undertaken on roads and marine facilities.

# DRAFT

## 7.4 Impact on Coastal Processes

The long term potential impacts and proposed solutions of the 570m reclaimed runway extension on coastal processes have been summarised in Table 10. These impacts have been discussed further in sections 7.4.1 to 7.4.7.

**Table 10 Long term potential impacts and proposed solutions on coastal processes.**

No.	Impact of Reclaimed Runway Extension	Solution
1	Act as a complete barrier to longshore sand transport along the Lagoon shoreline	Monitoring and management of sand volumes with mechanical intervention (pump or haul) and regular clean-up of foreshore deposition.
2	The SE corner of the extended runway would tend to become a sand trap, and an accumulation zone for floating and suspended matter	Monitoring and management of sand volumes with mechanical intervention (pump or haul) and regular clean-up of foreshore deposition.
3	The previously eroding area north of the Seabee revetment, where the Windy Point rock revetment was constructed in 2015, would have significantly reduced wave action, including reduced storm wave heights	N/A this is a benefit
4	Wave reflections from the extended runway would change wave patterns within the Lagoon causing scour	Rock armour sea wall toe design in addition to environmental management measures.
5	Scour could occur adjacent to the extended runway	Rock armour sea wall toe design in addition to environmental management measures.
6	Water current patterns could change within the Lagoon	N/A minimal impact on the overall Lagoon
7	Sand Volumes would need to be monitored and managed after construction	Manual relocating of sand

It has been assumed that no dredging would be undertaken, particularly of the Lagoon, to provide fill for the runway reclamation due to the additional environmental impacts. If it was, there would be additional impacts on coastal processes beyond those listed above.

There would also be potential short-term construction impacts, such as sediment plumes generated as a part of reclamation. Any sediment plume generated would tend to either flow north or south towards the reef passages, given that circulation is understood to change direction near the runway location. Extended plumes would only be expected for finer materials such as silts and clays, with sandy plumes limited in extent due to the greater fall velocity of sand.

### 7.4.1 Impact 1: Barrier to Longshore Sediment Transport

The extent of the runway projection into the Lagoon would be such that longshore transport from Lagoon Beach to Cobbys Beach would no longer be possible, and vice versa. That stated, the magnitude and direction of longshore transport around the existing runway is uncertain, but is most likely to be limited already. If this is correct, the runway extension would not significantly alter the status quo with regard to longshore transport.

Therefore, the impact of the runway extension on longshore transport is considered unlikely to be significant. However, monitoring and management of sand volumes after construction would be necessary as discussed in Section 7.4.7.

### 7.4.2 Impact 2: Sand Trap and Accumulation Zone

The area at the SE corner of the extended runway, between the reclaimed runway and Lagoon Beach, would be expected to accumulate floating and suspended matter, including sand. The reduction of wave heights and current speeds in the area would cause this effect; in addition there would be no flow through the bay which would be formed. Although, some form of eddying current would be expected to be formed, allowing some flushing of the bay.



# DRAFT

The reduced sand transport at the southern end of Lagoon Beach would be expected to reduce the supply of sand from south to north along Lagoon Beach that is presently assumed to be occurring. This would be beneficial in increasing sand volumes at the relatively denuded southern end of Lagoon Beach, but with reduced supply to the north, over the long term the northern end of Lagoon Beach may begin to recede. This would initially not be a concern, as there has been an oversupply of sand at the northern end of Lagoon Beach in the past. However, monitoring and management of sand volumes after construction would be necessary as discussed in Section 7.4.7.

### 7.4.3 Impact 3: Reduced Storm Waves at Seabee and Rock Revetment at Windy Point

The extended runway would provide some shelter from waves at the southern end of Lagoon Beach, potentially making the Seabee revetment, and southern portion of the Windy Point rock revetment, somewhat redundant and/or reducing their future maintenance requirements.

Diffraction waves around the NW tip of the extended runway would allow some wave action to continue to reach the Pinetrees Boatshed area.

### 7.4.4 Impact 4: Wave Reflections

Wave reflections off the extended runway, particularly its SW face, would cause greater wave energy to be reflected back into the Lagoon and towards the south compared to the present situation. In Figure 16 the vector-average offshore wave direction and its reflected angle off the extended runway are depicted. This does not take into account wave refraction over the Lagoon bed, which would cause some curvature of the incident and reflected wave directions.

It is evident that most of the incident wave energy would be reflected into the Lagoon, and not directly towards the shoreline. On this basis, wave reflection is unlikely to be a significant impact, except note the potential for scour in Section 7.4.5.



Figure 16: Reflected angle of vector-average offshore wave direction off extended runway (ignoring wave refraction over Lagoon bed)

### 7.4.5 Impact 5: Scour

Some seabed scour could occur at the toe of the rock armour sea wall; this process has been accounted for through the toe design of the revetment. Although there may be further environmental management measures required.

# DRAFT

## **7.4.6 Impact 6: Changed Water Current Patterns**

The extended runway would change current patterns in its vicinity. For example, the area between Blackburn Island and the NW tip of the runway would be expected to have higher current speeds than at present. As this area is relatively shallow, some seabed erosion may occur as a result. However, the impact of the extended runway on the overall Lagoon circulation and tidal exchange and residence times would not be expected to be significant.

## **7.4.7 Impact 7: Monitoring and Management of Sand Volumes after Construction**

It would be necessary to monitor shoreline changes after construction, and manage accreting and eroding areas as appropriate. For example, this could involve mechanically relocating sand from accreting to eroding areas (e.g. with an excavator and truck), as was recommended to be undertaken at Lagoon Beach (moving sand from north to south) in Royal Haskoning's Lord Howe Island Coastal Study (2014).

# DRAFT

## 8.0 Deck on Pile Structural Design

### 8.1 Deck System

The optimum form of deck system comprises precast concrete deck panels supported on precast reinforced concrete beams. This system will maximise the scope for prefabrication and minimise on-site construction time. The deck panels are fixed to the beams via in-situ concrete stitch pours. The main deck support beams run longitudinally (i.e. parallel to the runway) at 6m centres, and are supported on piles at 8m centres.

Typically the beams are approximately 1100mm wide and 1200mm deep, although certain beams have been widened to 1300mm in order to accommodate drain infrastructure to support deck panels designed for crawler crane access during construction.

The piles and beams are interconnected via an in-situ concrete stitch pour. The beam penetrations are oversized in order to accommodate the pile installation tolerances.

### 8.2 Pile System

The piles comprise steel tubes of 600mm diameter, with a wall thickness around 16mm. Reinforced concrete plugs will be formed inside the piles, extending from the soffit of the beams down to approximately RL-1.0m AHD.

The piles will either be pre-coated with a suitable paint system, or will be wrapped with a proprietary protection system after installation which would extend to the seabed.

### 8.3 Wave Action Consideration

Due to the low level of the existing runway, the inshore section of the deck structure will be subject to wave action during extreme events. These will reduce as the deck rises seawards.

The deck will be subject to uplift loads, which will be transferred to the piles. This will result in increased design loads for all elements. It is considered that this strengthening can be achieved with a marginal increase in construction cost over a conventional deck constructed above the wave zone. This is more economical than provision of a trip breakwater to reduce incident wave heights.

### 8.4 Accommodation of Drainage System

The longitudinal drains located between the runway and the outer runway strips comprise precast concrete base and walls, fitted with removable heavy duty cast iron grates. The drains are supported by widened longitudinal beams.

At drainage pit locations, the longitudinal beams are modified to accommodate the pit chambers and the drainage outfall. Additional pile support is provided to the beam as required. Incorporating the pits within the longitudinal beams maintains the simplicity of the deck system.

At the outer edges of the runway strip, the thickened edge detail of the deck panels facilitates shaping of the top surface to form a vee drain which will intercept runoff and direct it to discrete scuppers, through which the runoff will be discharged to the lagoon.

### 8.5 Potential Construction Methodology

#### 8.5.1 Piles

Piles will be fabricated and coated offshore (most likely in Asia) and brought in by a large barge; several trips will be required over the piling period. This barge will moor outside the Lagoon. The piles will be offloaded using a smaller crane barge, which will transfer the piles to the island wharf or SW extent of the runway. Here the piles will be unloaded onto chassis for transport to a pile storage area

# DRAFT

adjacent to the airport. The piles will be offloaded from the chassis using a small mobile crane or fork lift. The piles will be stacked, using packing to protect the pile coating.

When required, the piles will be loaded onto a chassis and delivered to the piling rig via the runway perimeter road. A small stockpile of piles will be maintained at the piling rig in order that piling can continue during airport operating hours (subject to OLS restrictions), when shore access to the work front will be restricted.

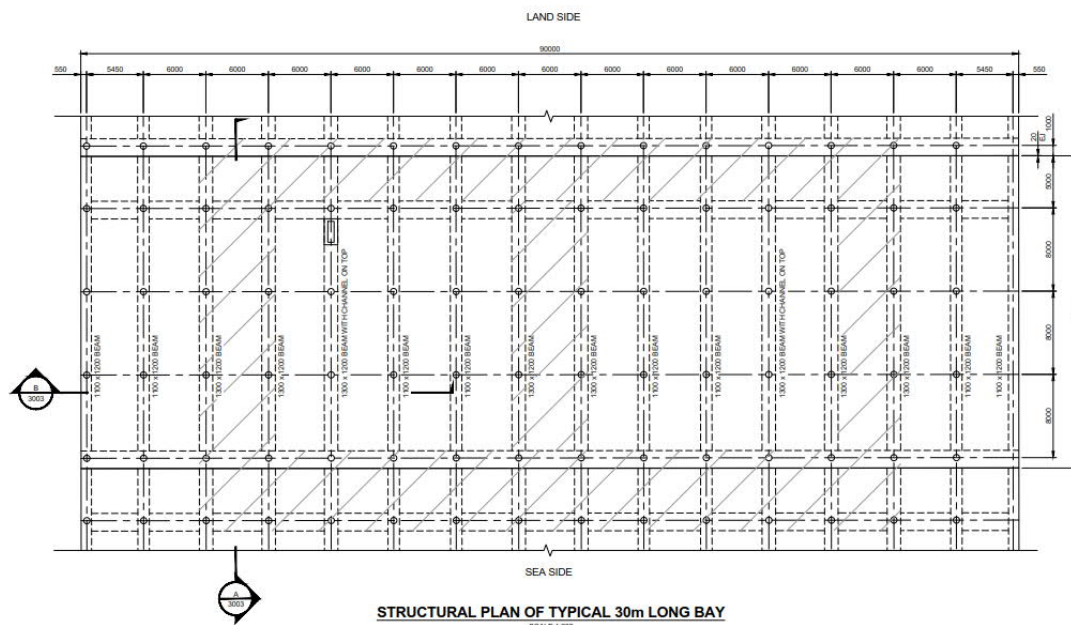
## 8.5.2 Deck Slab Units and Deck Beams

Reinforced concrete deck slab units and deck beams will be precast offshore (probably Australia or NZ) and will be brought in by a large barge. They will be offloaded in similar fashion to the piles, and delivered to a storage area adjacent to the airport.

As for the piles, a small stockpile of deck units and beams will be maintained at the work front to enable installation work to continue during airport operating hours.

## 8.5.3 Construction Sequence

The concept design is based on construction using large crawler cranes which will operate over specific deck spans designed for this purpose. These spans are shown cross-hatched in Figure 17.

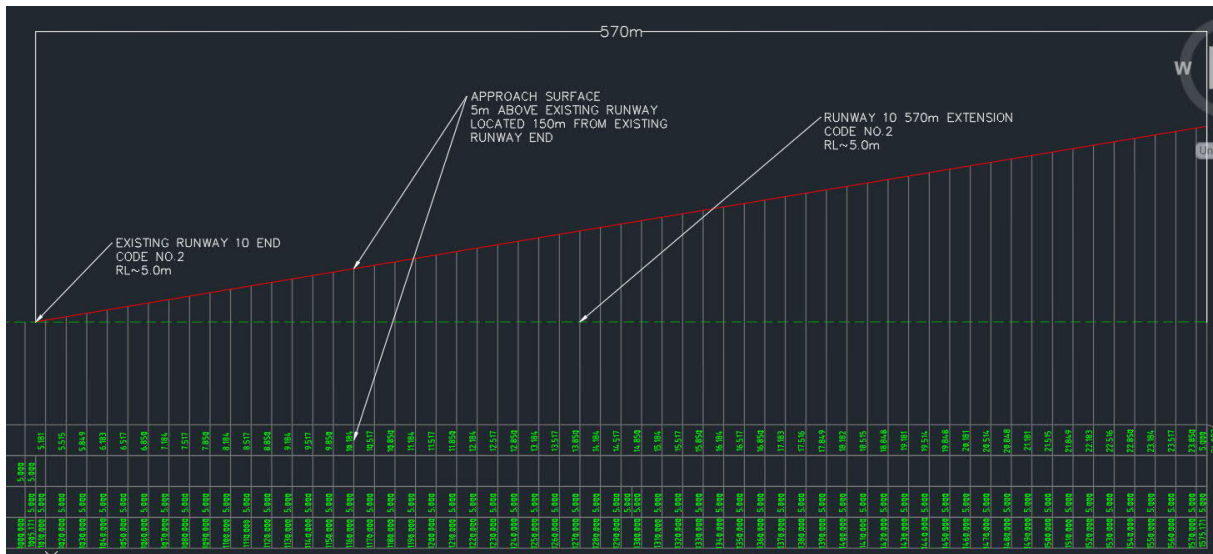


**Figure 17 Crawler crane deck layout**

Construction will commence at the outer end of the existing runway strip, working progressively seaward. This will only occur outside of airfield operations in order to avoid OLS infringements.

Initial construction will focus on a 30m wide section which will act as a roadway for construction activities. Construction will be by hand-over-hand installation of piles, beams and deck units, using a large crawler crane travelling on the central span. The crawler crane will be of sufficient size to reach an additional two spans each side; these will be completed as required to provide access for other construction plant, and for temporary stockpiling of materials, subject to OLS restrictions.

# DRAFT



**Figure 18 Runway Extension Profile and Existing OLS**

Once the initial 30m wide section has been constructed 450m beyond the existing runway end, the crawler crane (assumed 15m height) will no longer infringe upon the OLS, therefore multiple construction fronts can be opened up using the designated crawler crane spans to move laterally as well as longitudinally.

Contractor’s plant and material stockpiles can be based at the outer end of the runway extension, clear of the OLS. As more deck area becomes available, more plant and materials can be stockpiled subject to height limitations, minimising conflict between airport operations and materials delivery.

Pile driving will be the activity most affected by the OLS, due to the crane boom height required. This is dictated by pile length, with a boom height in the order of 25m potentially being required. In addition for safety reasons, piling is usually only carried out during daylight and will be managed around aircraft flight schedules.

As previously stated the installation of beams and deck units will not require the same crane boom height (around 15m should suffice), and could be carried out under artificial light, subject to environmental constraints.

## 8.6 Impact on Coastal Processes

A 570m piled runway extension would not be expected to have any significant impacts on coastal processes, although if storm wave crests reached the slab soffit, then some attenuation of wave action would be expected at the shoreline, as per section 7.4.3, although not to the same magnitude.

**DRAFT**

## 9.0 Runway Extension Contour Mastergrading

Contour mastergrading modelling of the runway extension was based on the 3d geometric requirements of CASA as shown in Table 11.

Table 11 MOS139 3D Geometric Runway requirements

3D Geometric Runway Requirements	Runway Design Parameters <sup>1</sup>	MOS 139 reference section
<b>Max. overall longitudinal slope</b>	1%	6.05.1
<b>Max. longitudinal slope</b>	1.5%	6.05.2
<b>Max. longitudinal slope changes</b>	0.2% per 30m	6.05.6
<b>Max. longitudinal slope on graded strip</b>	2%	6.18.1
<b>Sight distance</b>	600m @ 3m above the surface	6.06.2
<b>Transverse slopes</b>	Maximum slope = 2.5% Minimum slope = 1%	6.07.2
<b>Transverse slopes on shoulders</b>	Maximum slope = 5% for the first 3m, then 2.5% Minimum slope = 1%	6.12.1
<b>Max. transverse slope on graded strip</b>	2.5%	6.20.1
<b>Flyover area transverse slope<sup>2</sup></b>	Nothing may project through an upward slope of 5% from the edge of the graded strip	6.20.3
<b>RESA slopes</b>	Max. longitudinal slope = 5% downwards Max. transverse slope = 5%	6.25.7

Contour mastergrading for the deck on pile solution has been developed to aid the stormwater drainage of the structure. The drainage infrastructure has been designed to be coincident with the decking and therefore a constant 0.25% longitudinal upward slope has been applied from east to west along the extension in order to provide “natural” fall within the grated drains. This methodology removes the structural complexity of the drainage infrastructure being underslung to the deck structure.

In order to reduce volume of fill material required for the land reclamation solution and therefore reduce capital costs and construction durations, the runway extension has been modelled with a constant level.

For both mastergrading designs, the runway will have a crowned cross sections falling at 1% from the runway centreline to the edge of the runway strip.

# DRAFT

## 10.0 Airfield Drainage Design

It is assumed that the existing drainage infrastructure servicing the airport is suitable to meet the criteria in Table 12.

**Table 12 Drainage design criteria**

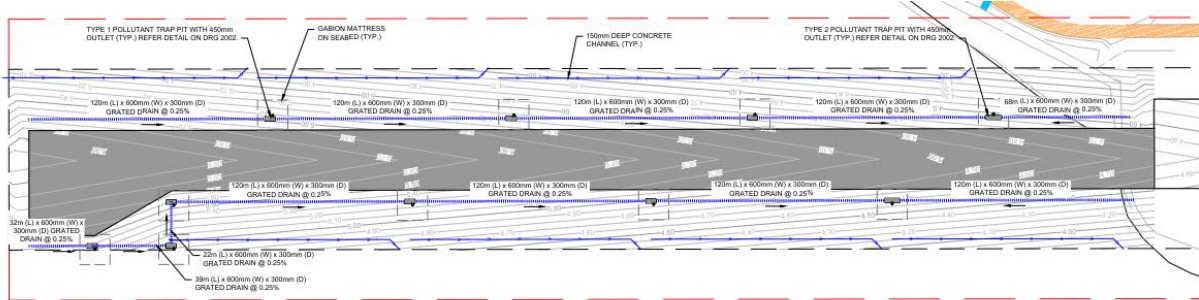
Design Storm Event	Design Criteria	Reference
5 year (minor event)	- No encroachment of runway (incl. paved shoulders) - No encroachment of taxiway (incl. paved shoulder.)	FAA Advisory Circular 150/5320-5D 2-2.4.2
10 year (major event)	- No encroachment of centre 50% of runway - No encroachment of centre 50% of taxiway	FAA Advisory Circular 150/5320-5D 2-2.5

The only existing form of stormwater treatment at Lord Howe Island is at the southern end of the runway which drains through a water course containing mangroves prior to discharging. It is recommended that prior to discharging into the ocean, any runoff from new pavement areas is collected and any oil or sediment is removed prior to discharging into the ocean.

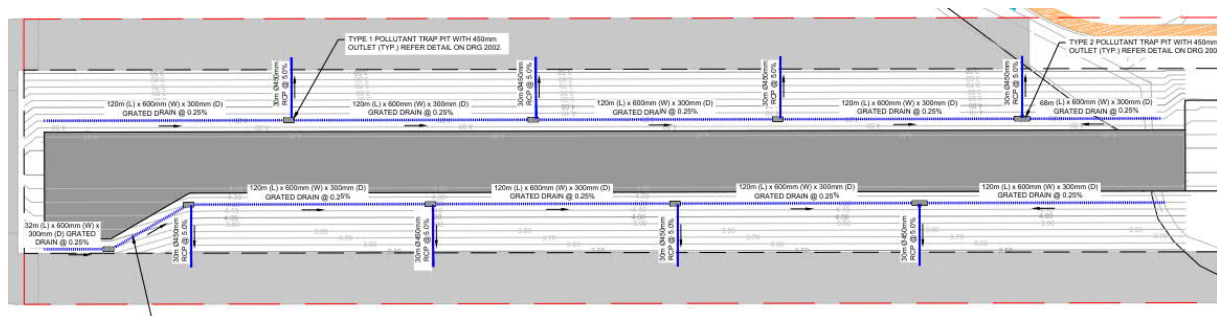
### 10.1.1 Runway Extension Drainage

The additional runway extension will be drained through the use of grated drains along both edges of the runway falling into pits spaced at 120m centres. The deck on pile extension option will have the drains inbuilt into the deck infrastructure which will have natural fall due to the 0.25% longitudinal slope of the runway, the outlet pipes from the pits discharging vertically downwards into the ocean. Whereas the grates for the land reclamation option will have internal falls of 0.25% due to the flat longitudinal grade of the extension, the outlet pipes will extend horizontally to the edge of the runway strip and outfall along the seawall rock armour.

Rain water falling onto the runway strip will sheet flow to extent of the strip before being collected in a 150mm deep concrete drainage channel out falling vertically downwards at 150m centres for the deck on pile solution or simply flowing down the seawall rock armour for the land reclamation option.



**Figure 19 Deck on piles drainage layout**

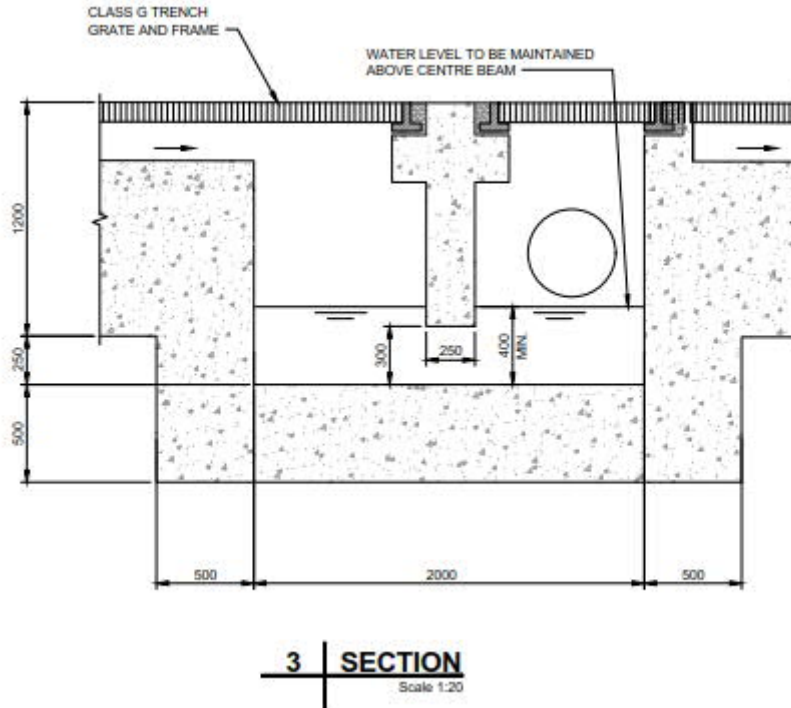


**Figure 20 Land reclamation drainage layout**

The runway drainage pits have been designed to intercept both oil and sediments through the use of an internal dividing wall (as shown in Figure 21). To ensure that collected fuel spills do not flow into the downstream drainage system, a constant water level needs to be maintained above the centre berm. During regular runoffs, the water within the pit will pond and this provides the necessary water level

**DRAFT**

required to be above the centre berm. In addition to this, the airport’s operation crew, whilst conducting regular routine maintenance, will need to ensure that the water level is kept at a minimum 400 mm from the invert of pit. The oil and sediment collection will also need to be included as part of the regular maintenance.

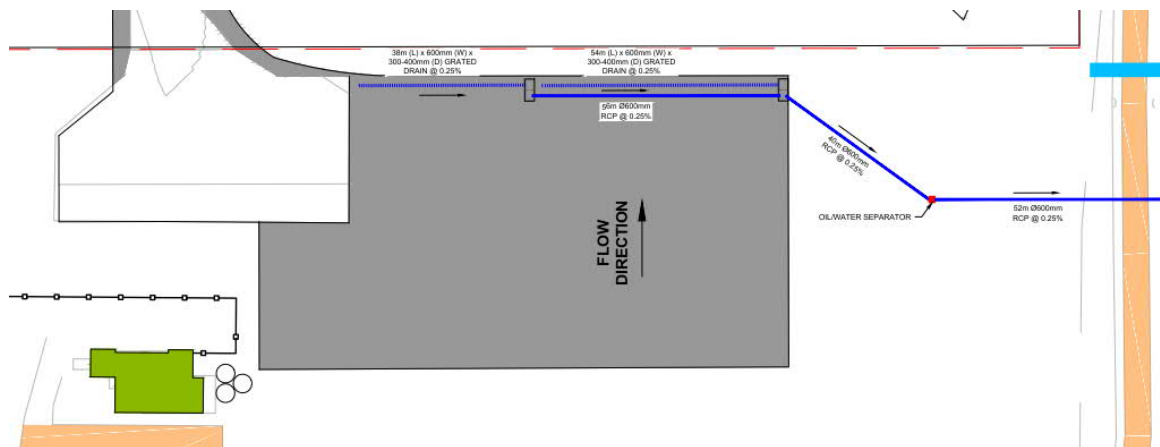


**Figure 21 Drainage pit detail**

Where stormwater discharge has the potential to cause scouring of the seabed, scour protection will be provided. The optimum form of protection is a sand-filled geotextile mattress, which can simply be laid on the seabed and will automatically adjust to variations in the shape of the seabed.

**10.1.2 Apron Extension Drainage**

It is assumed there will continue to be aircraft refuelling operations required on Lord Howe Island; therefore the stormwater drainage infrastructure for the additional 7275m<sup>2</sup> of apron pavement will include a downstream oil/water interceptor with a treatment flow rate of 130L/s for fuel spill mitigation purposes.



**Figure 22 Apron drainage layout**



# DRAFT

## 11.0 Airfield Pavement Design

The airfield pavement design has been based on the requirements of the Federal Aviation Authority (FAA) and modelled using FAARFIELD v1.41 – Airport Design Software. It is recommended at subsequent advanced design stages that a more complex analysis of the pavement design should be completed using Airport Pavement Structural Design System (APSDS) software.

A flexible pavement has been designed for the reclaimed land runway extension; the concrete deck will act as the runway pavement for the deck on piles option.

In the absence of a full 20 year fleet mix, the design traffic loading within Table 13 have been adopted for the purpose of the concept design of airfield pavements and evaluation of existing airfield pavements.

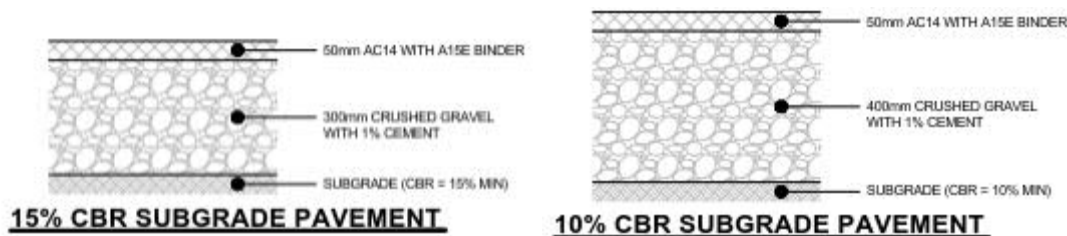
**Table 13 Aircraft Design Traffic Loading**

Aircraft	Departures			Ad-hoc flights/annum <sup>1</sup>	Passes to Traffic Cycles <sup>2</sup>	Design Period (Years)	Cumulative Passes
	Daily	Monthly	Annual				
<b>DHC8-400</b>	2	-	730	70	2	20	32,000
<b>C130</b>	-	3	36	4	2	20	800

*Notes*

1. Additional ad-hoc flights have been based on 10% of the annual departures
2. This is based on aircraft requiring to taxi along the runway to either end prior to take off

As per section 7.3 the fill material used in the reclaimed land design will provided a subgrade California bearing ratio (CBR) of 10%-15%. The new pavement depth based on the assumed aircraft traffic mix and subgrade strength is shown in Figure 23, a design for a 10% CBR subgrade has also been completed.



**Figure 23 Pavement profiles**

Pavement extensions of the existing eastern turning head, taxiway and apron are required in order to accommodate the DHC8-400 aircraft; the 10% CBR subgrade pavement profile in Figure 23 has been adopted for these extensions in order to keep materials consistent for ease of construction. Typically rigid pavements are designed for aircraft aprons, but given the difficulties in getting construction plant and materials to the island a flexible pavement design has been adopted at this stage. As detailed in section 5.1, there is limited geotechnical information across the existing airport and therefore further investigations are required to determine the in-situ subgrade CBR.

The existing airfield pavement structure (Table 14) have been assessed to provide sufficient structural capacity, the weakest area of pavement (area 2) was modelled in FAARFIELD with the proposed aircraft design traffic loading (Table 13).

**DRAFT****Table 14 Existing airfield pavement structure**

Area	Chainage		Asphalt Thickness (mm)	Basecourse		Sub-base	
	Runway	Taxiway		Thickness (mm)	Modulus (MPa)	Thickness (mm)	Modulus (MPa)
1	940 to 1400	-	45	200	300	225	200
2	1400 to 1945	15 to 40	45 <sup>3</sup>	200	250	225	200
3	-	40 to 76	-	200	300	200	300

**Notes**

- Existing pavement structural information has been taken from "Report for Lord Howe Island Board – Airport Pavement and Drainage Assessment, August 2014)
- The above report stated CBR values of 15%, the concept design has conservatively adopted a CBR of 10%
- 45mm asphalt has only been constructed on the runway

**DRAFT**

# Appendix A

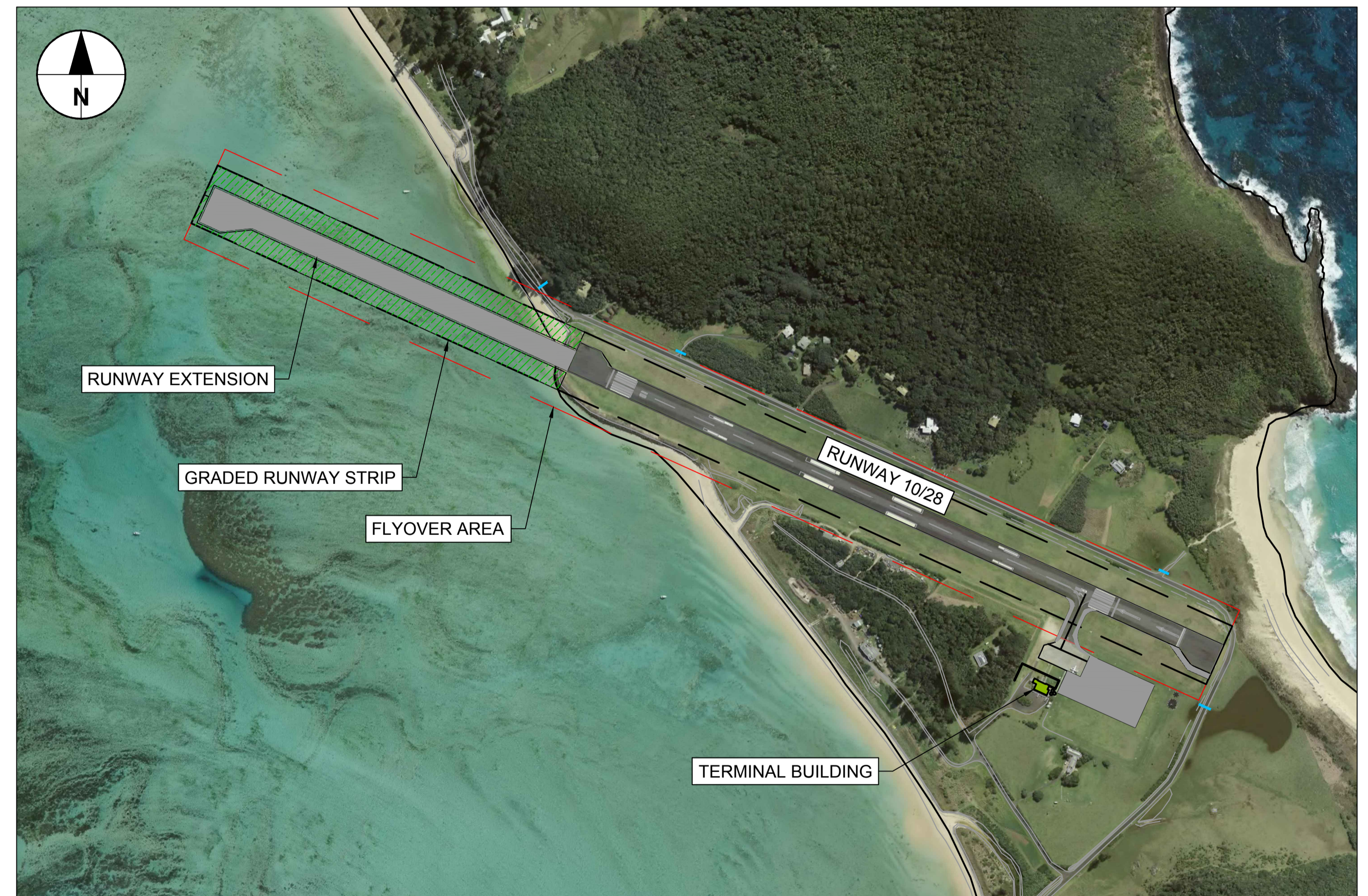
Draft Concept Design  
Drawings

# LORD HOWE ISLAND RUNWAY EXTENSION FEASIBILITY STUDY



## DRAWING LIST

60559990-SHT-01-CI-0001	COVER SHEET AND DRAWING INDEX
60559990-SHT-01-CI-1001	GENERAL ARRANGEMENT SITE PLAN
60559990-SHT-01-CI-1002	RUNWAY TURNING HEAD - AIRCRAFT TRACKING
60559990-SHT-01-CI-1003	APRON AND TAXIWAY - AIRCRAFT TRACKING
60559990-SHT-01-CI-1004	TERMINAL AND APRON - OLS SECTIONS
60559990-SHT-01-CI-2001	LAND RECLAMATION LAYOUT PLAN
60559990-SHT-01-CI-2002	LAND RECLAMATION LONG SECTION
60559990-SHT-01-CI-2003	LAND RECLAMATION DRAINAGE PLAN
60559990-SHT-01-CI-2004	LAND RECLAMATION TYPICAL SECTIONS
60559990-SHT-01-CI-3001	DECK ON PILES LAYOUT PLAN
60559990-SHT-01-CI-3002	DECK ON PILES LONG SECTION
60559990-SHT-01-CI-3003	DECK ON PILES DRAINAGE PLAN
60559990-SHT-01-CI-3004	DECK ON PILES DETAILED LAYOUT PLAN
60559990-SHT-01-CI-3005	DECK ON PILES DETAILED LAYOUT PLAN
60559990-SHT-01-CI-3006	DECK ON PILES STURCTURAL SECTIONS AND DETAILS
60559990-SHT-01-CI-4001	APRON DRAINAGE PLAN
60559990-SHT-01-CI-4002	DRAINAGE DETAILS
60559990-SHT-01-CI-5001	PAVEMENT LAYOUT PLAN AND DETAILS
60559990-SHT-01-CI-6001	LAYOUT AND DECLARED DISTANCES



**SITE PLAN**  
1:5000

Last saved by: TOWNSEND\2018\_08-15\_ Last Picked: 2018\_08-15  
Filename: P:\60559990\60559990\3\_CAD\20-SHEETS\01\_CONCEPT\60559990-SHT-01-CI-0001.DWG

This drawing is confidential and shall only be used for the purpose of this project. The signing of this title block confirms the design and drafting of this project have been prepared and checked in accordance with the AECOM quality assurance system to ISO 9001-2000.



CONSULTANT

AECOM Australia Pty Ltd  
A.B.N 20 093 846 925  
www.aecom.com

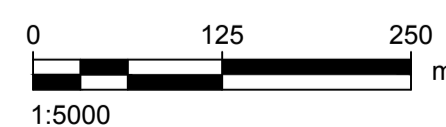
PROJECT

RUNWAY  
EXTENSION  
FEASIBILITY STUDY

CLIENT

LORD HOWE ISLAND  
BOARD

SCALE BAR



KEY PLAN

PROJECT MANAGEMENT INITIALS

JM	RM	JM
DESIGNER	CHECKED	APPROVED

PROJECT DATA

DATUM	SURVEY
-------	--------

ISSUE/REVISION

NO	DATE	DESCRIPTION
01	15.08.2018	DRAFT ISSUE

PROJECT NUMBER

60559990

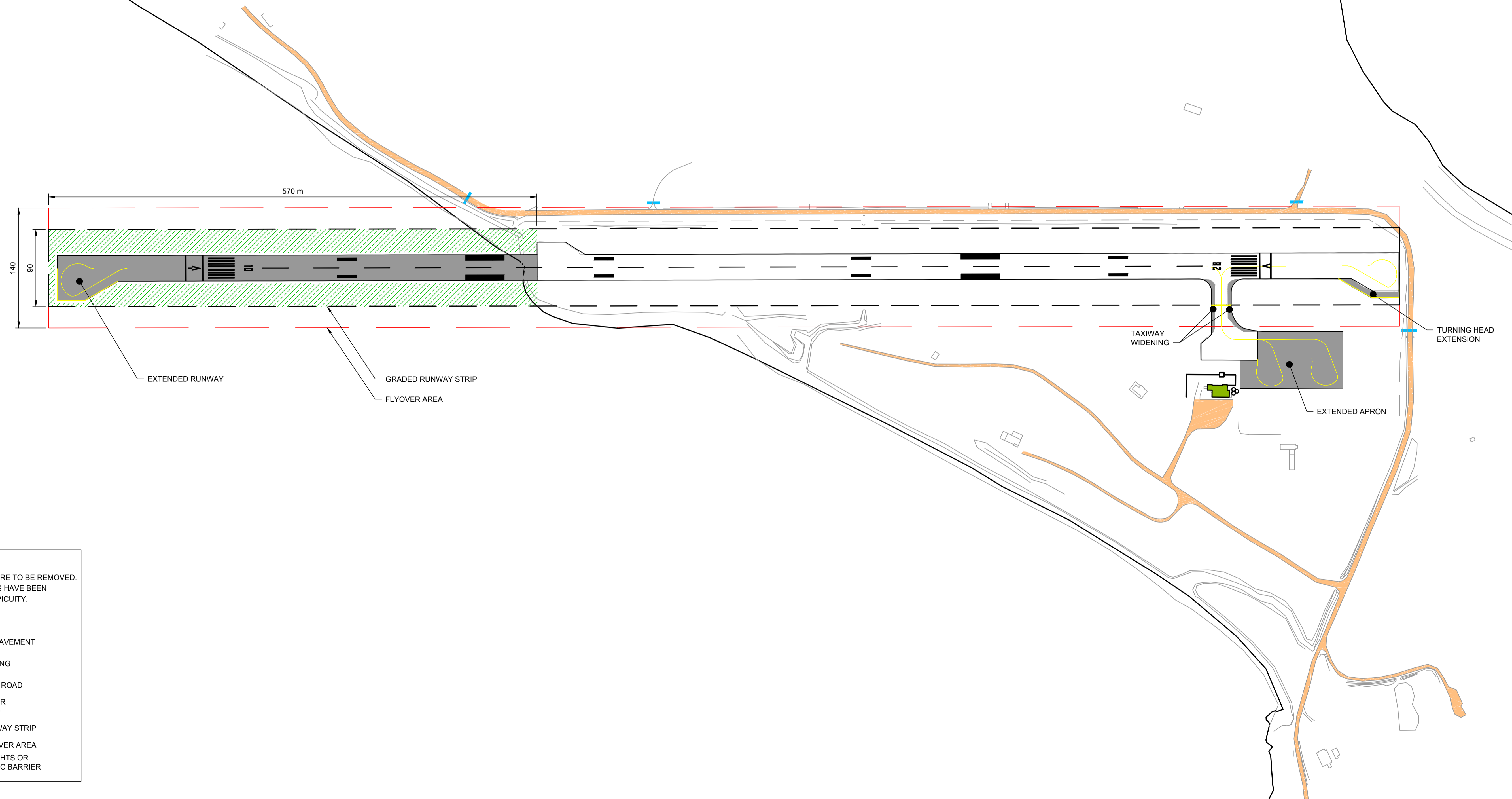
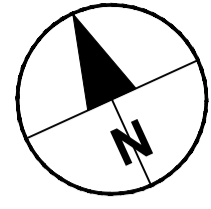
SHEET TITLE

COVER SHEET AND DRAWING INDEX

SHEET NUMBER

60559990-SHT-01-CI-0001

DRAFT



**NOTES**

- EXISTING PAINT MARKINGS ARE TO BE REMOVED.
- NEW WHITE PAINT MARKINGS HAVE BEEN HATCHED BLACK FOR CONSPICUITY.

**LEGEND**

- NEW AIRCRAFT PAVEMENT
- TERMINAL BUILDING
- EXISTING ISLAND ROAD
- DECK ON PILES OR RECLAIMED LAND
- EXTENT OF RUNWAY STRIP
- EXTENT OF FLYOVER AREA
- NEW TRAFFIC LIGHTS OR PHYSICAL TRAFFIC BARRIER

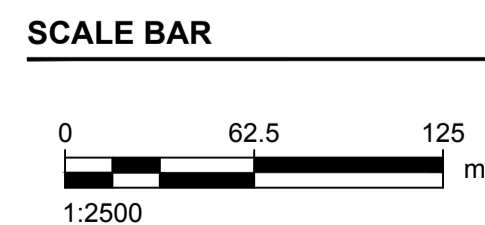
This drawing is confidential and shall only be used for the purpose of this project. The signing of this title block confirms the design and drafting of this project have been prepared and checked in accordance with the AECOM quality assurance system to ISO 9001-2000.



CONSULTANT  
AECOM Australia Pty Ltd  
A.B.N 20 093 846 925  
www.aecom.com

PROJECT  
**RUNWAY  
EXTENSION  
FEASIBILITY STUDY**

CLIENT  
**LORD HOWE ISLAND  
BOARD**



KEY PLAN

PROJECT MANAGEMENT INITIALS		
JM	RM	JM
DESIGNER	CHECKED	APPROVED
PROJECT DATA		
DATUM	SURVEY	

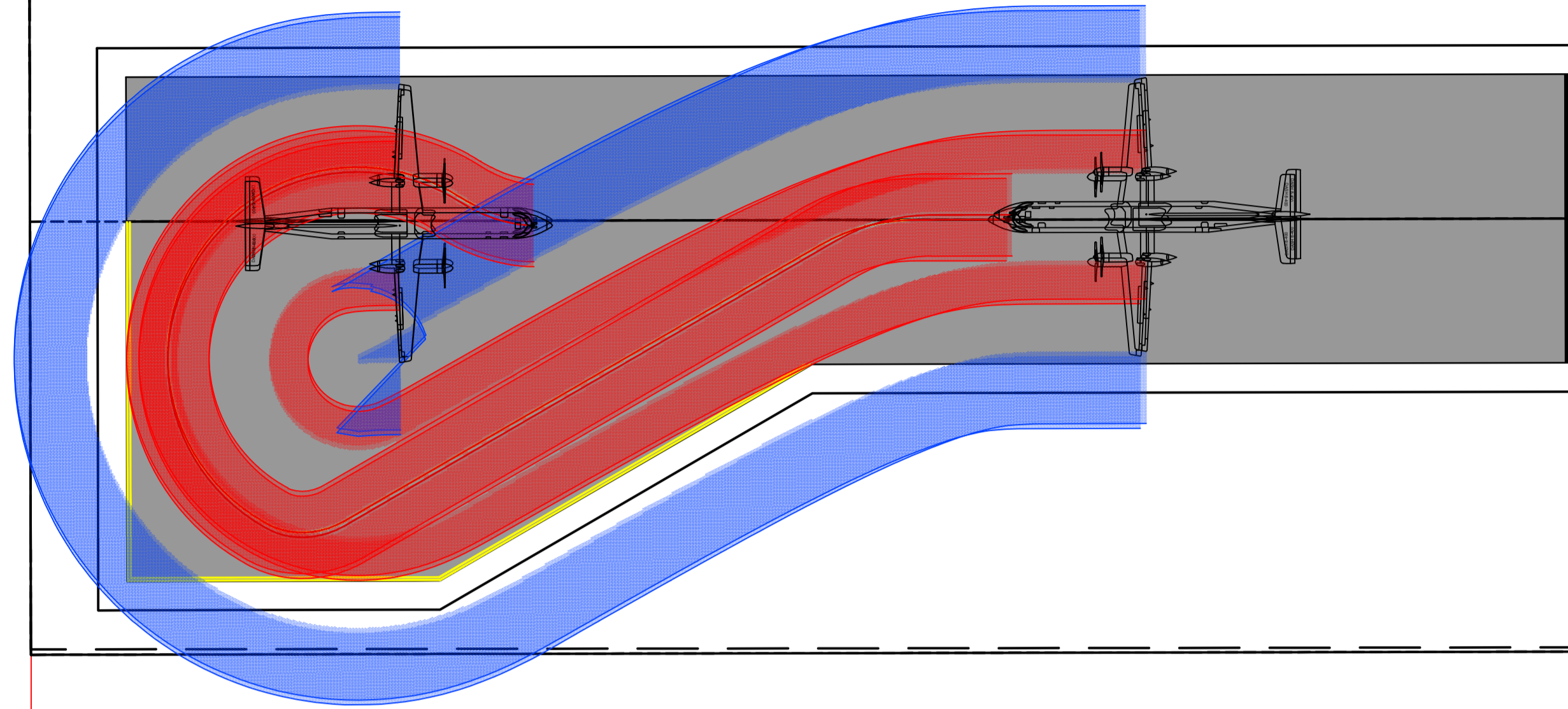
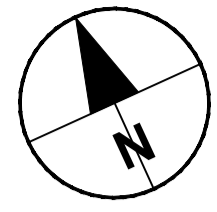
ISSUE/REVISION		
I/R	DATE	DESCRIPTION
01	15.08.2018	DRAFT ISSUE

PROJECT NUMBER  
60559990

SHEET TITLE  
GENERAL ARRANGEMENT SITE PLAN

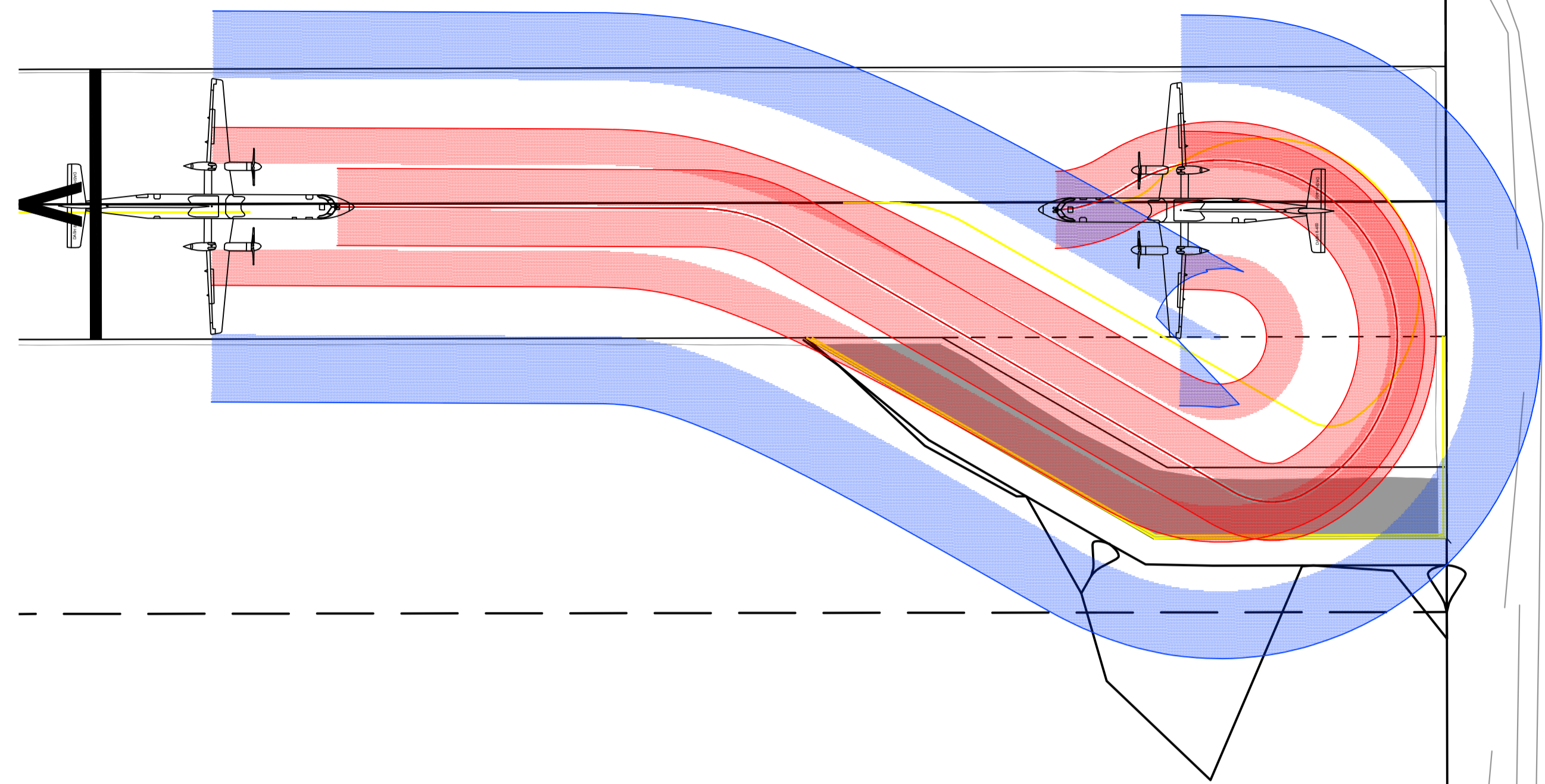
SHEET NUMBER  
60559990-SHT-01-CI-1001

**DRAFT**



**TURNING HEAD - WESTERN END**

Scale 1:500



**TURNING HEAD - EASTERN END**

Scale 1:500

**LEGEND**

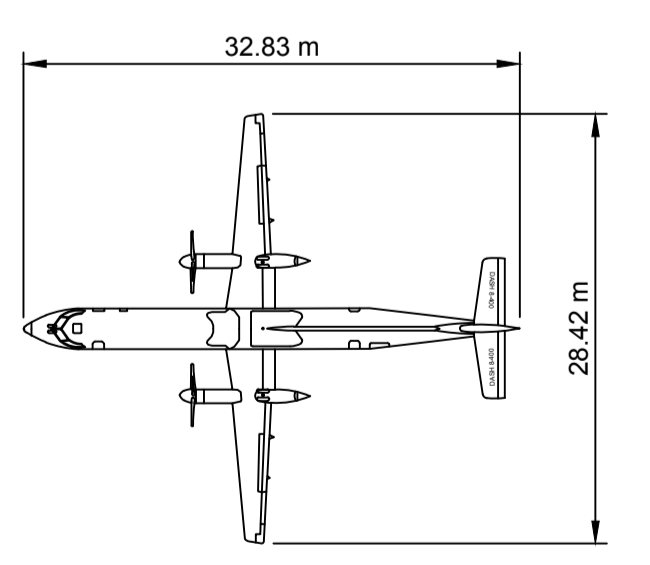
- NEW AIRCRAFT PAVEMENT
- TERMINAL BUILDING
- 4m WHEEL CLEARANCE
- 4.5m WINGTIP CLEARANCE
- EXTENT OF RUNWAY STRIP
- EXTENT OF FLYOVER AREA

**NOTES**

1. AIRCRAFT HAVE BEEN TRACKED USING BOTH THE "PILOTS EYE" METHOD AND "NOSE WHEEL GEAR" METHOD.

**AIRCRAFT CHARACTERISTICS**

<b>MANUFACTURER</b>	<b>BOMBARDIER</b>
<b>MODEL</b>	<b>DASH8-400</b>
<b>ICAO CODE LETTER</b>	<b>C</b>
<b>WINGSPAN</b>	<b>28.42 m</b>
<b>LENGTH</b>	<b>32.83 m</b>
<b>TAIL HEIGHT</b>	<b>8.38 m</b>
<b>DESIGN SPEED</b>	<b>5 km/hr</b>
<b>DESIGN NOSE GEAR ANGLE %</b>	<b>80</b>



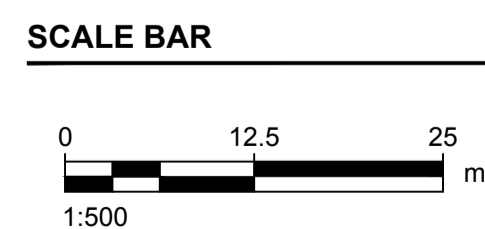
This drawing is confidential and shall only be used for the purpose of this project. The signing of this title block confirms the design and drafting of this project have been prepared and checked in accordance with the AECOM quality assurance system to ISO 9001-2000.



CONSULTANT  
AECOM Australia Pty Ltd  
A.B.N 20 093 846 925  
www.aecom.com

**PROJECT**  
RUNWAY  
EXTENSION  
FEASIBILITY STUDY

**CLIENT**  
LORD HOWE ISLAND  
BOARD



**KEY PLAN**

**PROJECT MANAGEMENT INITIALS**

JC	RM	JM
DESIGNER	CHECKED	APPROVED

**PROJECT DATA**

DATUM	SURVEY
-------	--------

**ISSUE/REVISION**

I/R	DATE	DESCRIPTION
01	15.08.2018	DRAFT ISSUE

**PROJECT NUMBER**

60559990

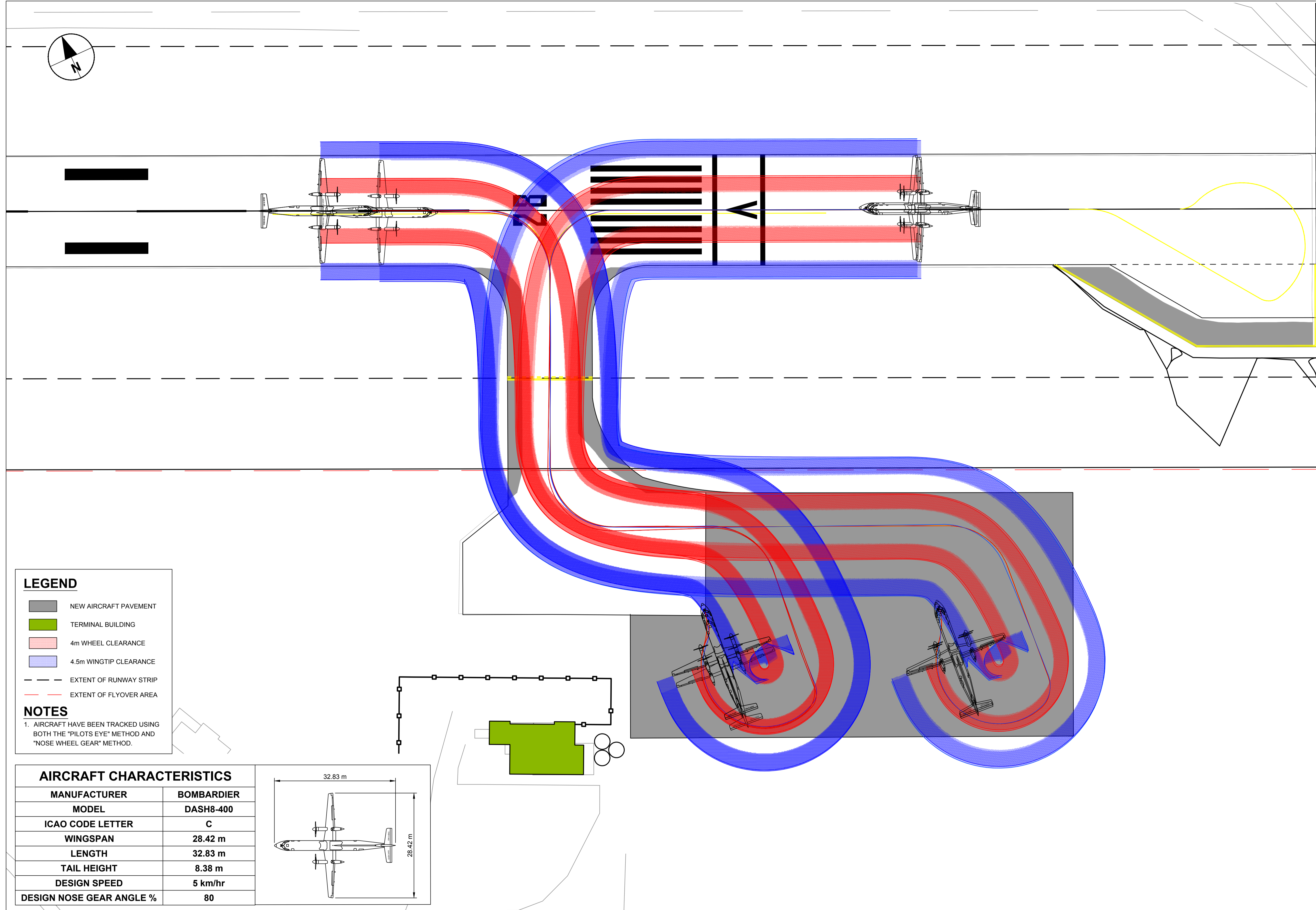
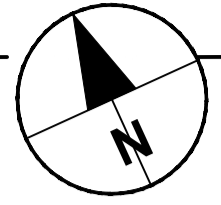
**SHEET TITLE**

RUNWAY TURNING HEAD  
AIRCRAFT TRACKING

**SHEET NUMBER**

60559990-SHT-01-CI-1002

DRAFT



**LEGEND**

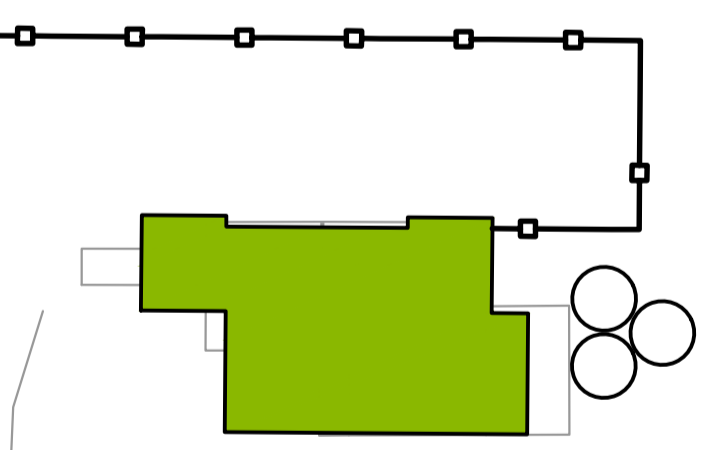
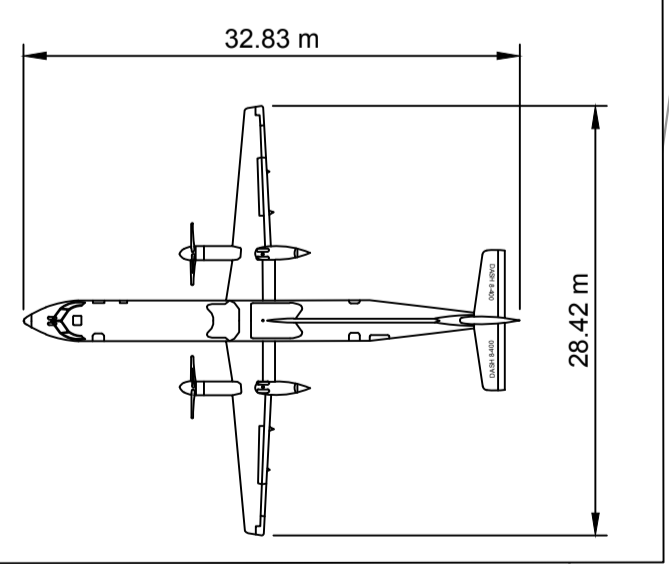
- NEW AIRCRAFT PAVEMENT
- TERMINAL BUILDING
- 4m WHEEL CLEARANCE
- 4.5m WINGTIP CLEARANCE
- EXTENT OF RUNWAY STRIP
- EXTENT OF FLYOVER AREA

**NOTES**

1. AIRCRAFT HAVE BEEN TRACKED USING BOTH THE "PILOTS EYE" METHOD AND "NOSE WHEEL GEAR" METHOD.

**AIRCRAFT CHARACTERISTICS**

MANUFACTURER	BOMBARDIER
MODEL	DASH8-400
ICAO CODE LETTER	C
WINGSPAN	28.42 m
LENGTH	32.83 m
TAIL HEIGHT	8.38 m
DESIGN SPEED	5 km/hr
DESIGN NOSE GEAR ANGLE %	80



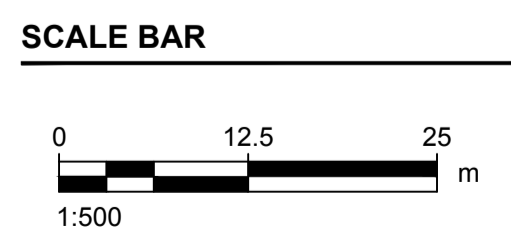
This drawing is confidential and shall only be used for the purpose of this project. The signing of this title block confirms the design and drafting of this project have been prepared and checked in accordance with the AECOM quality assurance system to ISO 9001-2000.



CONSULTANT  
AECOM Australia Pty Ltd  
A.B.N 20 093 846 925  
www.aecom.com

PROJECT  
**RUNWAY  
EXTENSION  
FEASIBILITY STUDY**

CLIENT  
**LORD HOWE ISLAND  
BOARD**



KEY PLAN

PROJECT MANAGEMENT INITIALS

RS DESIGNER	RM CHECKED	JM APPROVED
----------------	---------------	----------------

PROJECT DATA

DATUM	SURVEY
-------	--------

ISSUE/REVISION

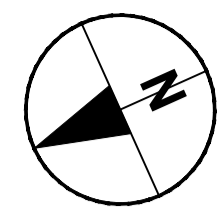
I/R	DATE	DESCRIPTION
01	15.08.2018	DRAFT ISSUE

PROJECT NUMBER  
60559990

SHEET TITLE  
APRON AND TAXIWAY  
AIRCRAFT TRACKING

SHEET NUMBER  
60559990-SHT-01-CI-1003

DRAFT

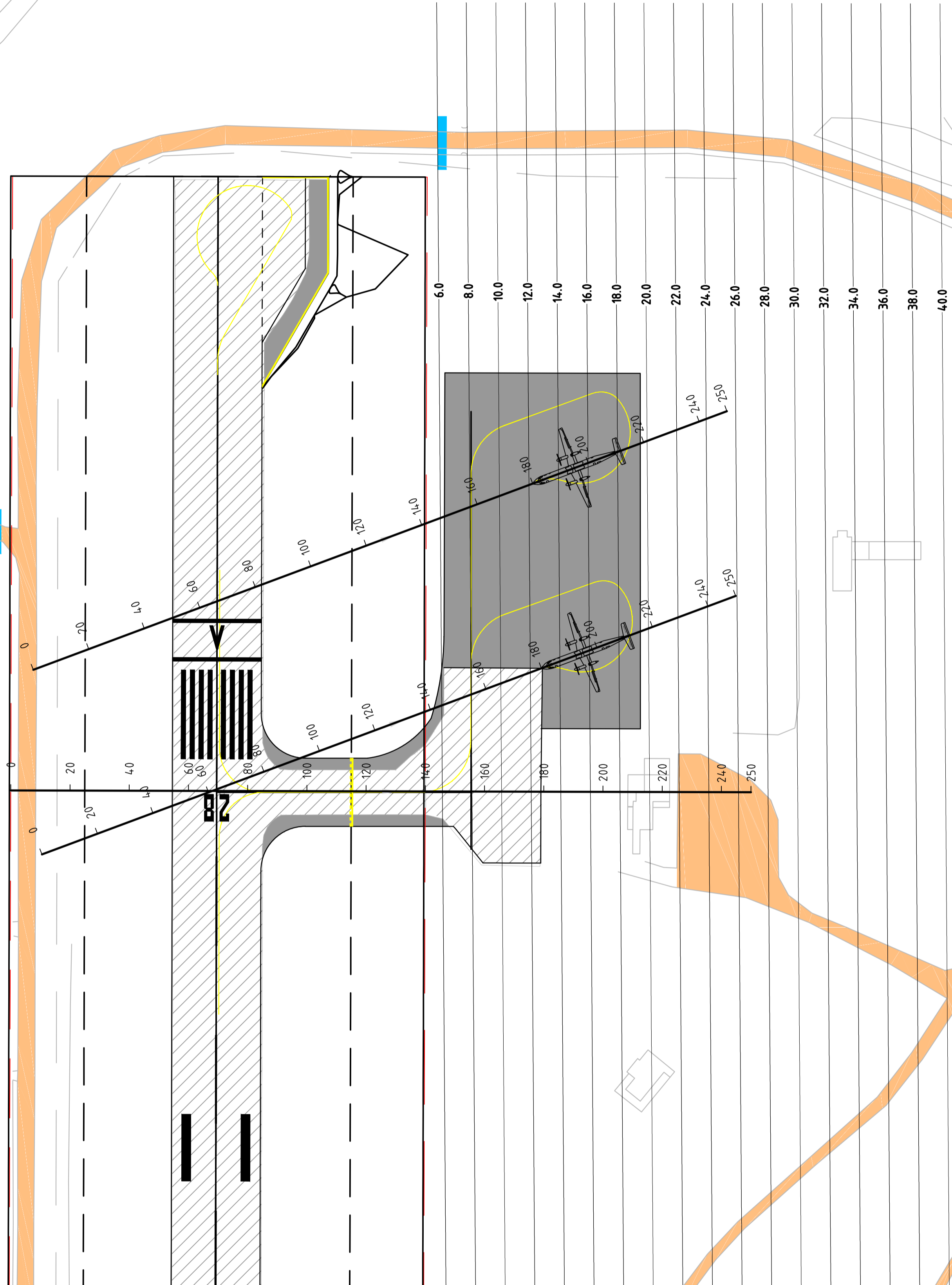


**NOTES**

- EXISTING PAINT MARKINGS ARE TO BE REMOVED.
- NEW WHITE PAINT MARKINGS HAVE BEEN HATCHED BLACK FOR CONSPICUITY.

**LEGEND**

- NEW AIRCRAFT PAVEMENT
- TERMINAL BUILDING
- EXISTING ISLAND ROAD
- DECK ON PILES OR RECLAIMED LAND
- EXTENT OF RUNWAY STRIP
- EXTENT OF FLYOVER AREA
- NEW TRAFFIC LIGHTS OR PHYSICAL TRAFFIC BARRIER



VERT EXAG 1:1  
Datum -5.000

DESIGN LEVELS	10.000	14.25	3.415	4.840
EXISTING LEVELS	20.000	1.004	3.842	4.847
DEPTH	30.000	0.757	4.096	4.853
CHAINAGE	40.000	0.512	4.348	4.860
	50.000	0.282	4.585	4.867
	60.000	0.135	4.739	4.874
	70.000	0.096	4.785	4.880
	80.000	0.244	4.643	4.887
	90.000	0.384	4.510	4.894
	100.000	0.567	4.334	4.901
	110.000	0.806	4.102	4.907
	120.000	1.113	3.801	4.914
	130.000	1.448	3.473	4.921
	140.000	1.816	3.121	4.928
	150.000	2.223	2.751	4.935
	160.000	2.670	2.363	4.942
	170.000	3.157	1.958	4.949
	180.000	3.684	1.537	4.956
	190.000	4.251	1.101	4.963
	200.000	4.858	0.651	4.970
	210.000	5.505	0.187	4.977
	220.000	6.192	-0.302	4.984
	230.000	6.919	-0.827	4.991
	240.000	7.686	-1.392	4.998
	250.000	8.493	-2.007	5.005

APRON POS. 2 ALIGNMENT LONG SECTION

VERT EXAG 1:1  
Datum -5.000

DESIGN LEVELS	10.000	0.991	3.730	4.720
EXISTING LEVELS	20.000	0.795	3.932	4.727
DEPTH	30.000	0.627	4.107	4.734
CHAINAGE	40.000	0.429	4.312	4.741
	50.000	0.234	4.514	4.747
	60.000	0.089	4.665	4.754
	70.000	0.147	4.614	4.761
	80.000	0.294	4.473	4.768
	90.000	0.422	4.352	4.774
	100.000	0.563	4.218	4.781
	110.000	0.701	4.087	4.788
	120.000	0.832	3.962	4.795
	130.000	0.906	3.895	4.801
	140.000	1.334	3.896	5.230
	150.000	3.196	3.913	7.109
	160.000	5.030	3.959	8.988
	170.000	6.863	4.005	10.868
	180.000	8.682	4.065	12.747
	190.000	10.539	4.087	14.626
	200.000	12.398	4.108	16.505
	210.000	14.256	4.129	18.385
	220.000	16.114	4.150	20.264
	230.000	17.973	4.171	22.143
	240.000	19.831	4.192	24.023
	250.000	21.722	4.180	25.902

APRON POS. 1 ALIGNMENT LONG SECTION

VERT EXAG 1:1  
Datum -5.000

DESIGN LEVELS	10.000	1.117	3.638	4.755
EXISTING LEVELS	20.000	1.012	3.743	4.755
DEPTH	30.000	0.819	3.936	4.755
CHAINAGE	40.000	0.601	4.154	4.755
	50.000	0.384	4.371	4.755
	60.000	0.193	4.562	4.755
	70.000	0.050	4.705	4.755
	80.000	0.208	4.547	4.755
	90.000	0.360	4.395	4.755
	100.000	0.495	4.260	4.755
	110.000	0.617	4.138	4.755
	120.000	0.742	4.013	4.755
	130.000	0.784	3.971	4.755
	140.000	0.839	4.007	4.846
	150.000	2.742	4.104	6.846
	160.000	4.675	4.171	8.846
	170.000	6.607	4.238	10.846
	180.000	8.531	4.315	12.846
	190.000	10.481	4.365	14.846
	200.000	12.417	4.429	16.846
	210.000	14.368	4.478	18.846
	220.000	16.342	4.503	20.846
	230.000	18.540	4.306	22.846
	240.000	20.610	4.236	24.846
	250.000	22.676	4.169	26.846

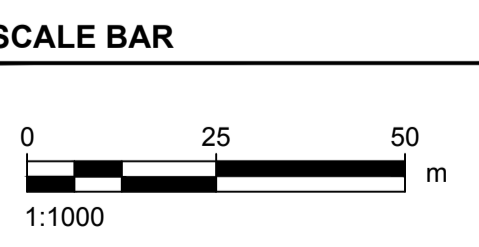
TAXIWAY ALIGNMENT LONG SECTION

This drawing is confidential and shall only be used for the purpose of this project. The signing of this title block confirms the design and drafting of this project have been prepared and checked in accordance with the AECOM quality assurance system to ISO 9001-2000.



**PROJECT**  
RUNWAY  
EXTENSION  
FEASIBILITY STUDY

**CLIENT**  
LORD HOWE ISLAND  
BOARD



**KEY PLAN**

**CONSULTANT**  
AECOM Australia Pty Ltd  
A.B.N 20 093 846 925  
www.aecom.com

**PROJECT MANAGEMENT INITIALS**

JC	RM	JM
DESIGNER	CHECKED	APPROVED

**PROJECT DATA**

DATUM	SURVEY
-------	--------

**ISSUE/REVISION**

NO	DATE	DESCRIPTION
01	15.08.2018	DRAFT ISSUE

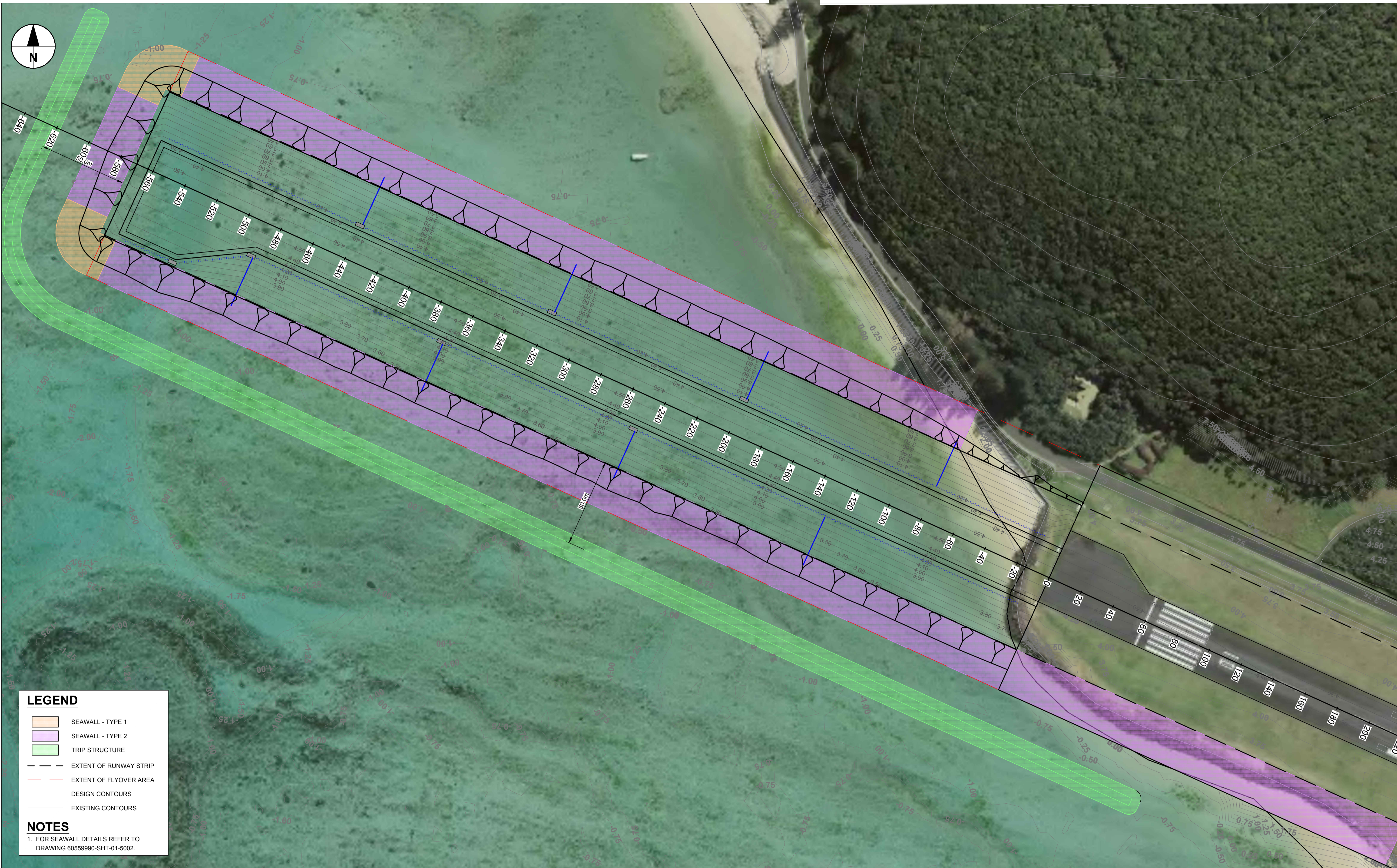
**PROJECT NUMBER**  
60559990

**SHEET TITLE**  
TERMINAL AND APRON  
OLS SECTIONS

**SHEET NUMBER**  
60559990-SHT-01-CI-1004

DRAFT





**LEGEND**

- SEAWALL - TYPE 1
- SEAWALL - TYPE 2
- TRIP STRUCTURE
- EXTENT OF RUNWAY STRIP
- EXTENT OF FLYOVER AREA
- DESIGN CONTOURS
- EXISTING CONTOURS

**NOTES**

1. FOR SEAWALL DETAILS REFER TO DRAWING 60559990-SHT-01-5002.

This drawing is confidential and shall only be used for the purpose of this project. The signing of this title block confirms the design and drafting of this project have been prepared and checked in accordance with the AECOM quality assurance system to ISO 9001-2000.

**AECOM**  
 CONSULTANT  
 AECOM Australia Pty Ltd  
 A.B.N 20 093 846 925  
 www.aecom.com

**PROJECT**  
 RUNWAY  
 EXTENSION  
 FEASIBILITY STUDY

**CLIENT**  
 LORD HOWE ISLAND  
 BOARD



**KEY PLAN**

**PROJECT MANAGEMENT INITIALS**

KP	SB	JM
DESIGNER	CHECKED	APPROVED

**PROJECT DATA**

DATUM	SURVEY
-------	--------

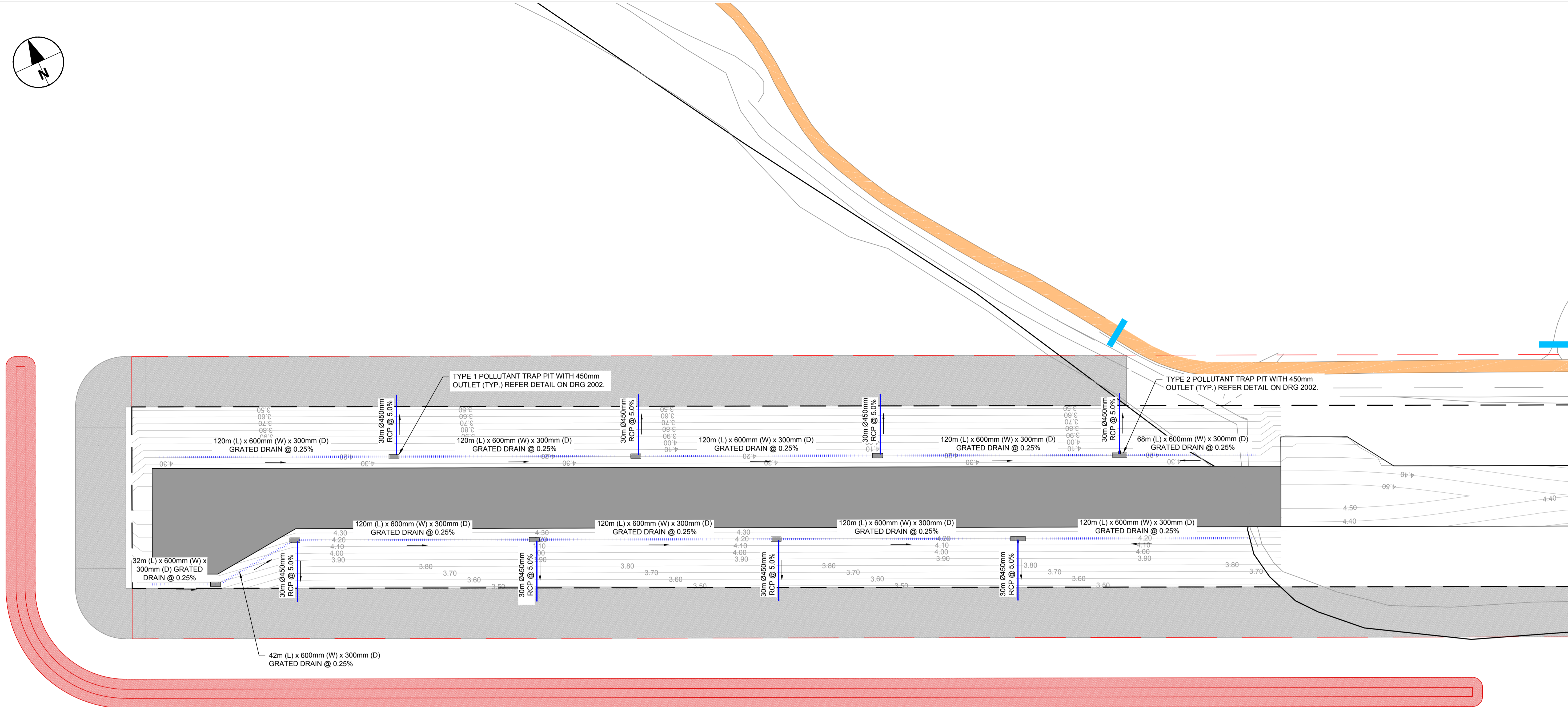
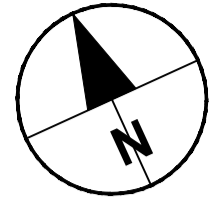
**ISSUE/REVISION**

IR	DATE	DESCRIPTION
01	15.08.2018	DRAFT ISSUE

**PROJECT NUMBER**  
 60559990  
**SHEET TITLE**  
 LAND RECLAMATION  
 LAYOUT PLAN  
**SHEET NUMBER**  
 60559990-SHT-01-CI-2001

DRAFT





**LEGEND**

- NEW AIRCRAFT PAVEMENT
- EXISTING ISLAND ROAD
- SEAWALL
- TRIP STRUCTURE
- EXTENT OF RUNWAY STRIP
- EXTENT OF FLYOVER AREA
- NEW TRAFFIC LIGHTS OR PHYSICAL TRAFFIC BARRIER

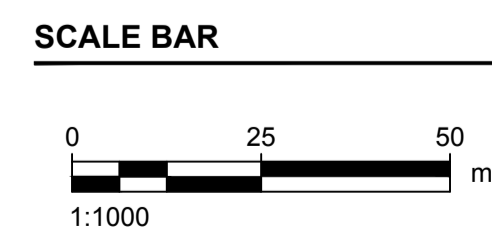
This drawing is confidential and shall only be used for the purpose of this project. The signing of this title block confirms the design and drafting of this project have been prepared and checked in accordance with the AECOM quality assurance system to ISO 9001-2000.



CONSULTANT  
AECOM Australia Pty Ltd  
A.B.N 20 093 846 925  
www.aecom.com

PROJECT  
**RUNWAY  
EXTENSION  
FEASIBILITY STUDY**

CLIENT  
**LORD HOWE ISLAND  
BOARD**



KEY PLAN

PROJECT MANAGEMENT INITIALS

JC	RM	JM
DESIGNER	CHECKED	APPROVED

PROJECT DATA

DATUM	SURVEY
-------	--------

ISSUE/REVISION

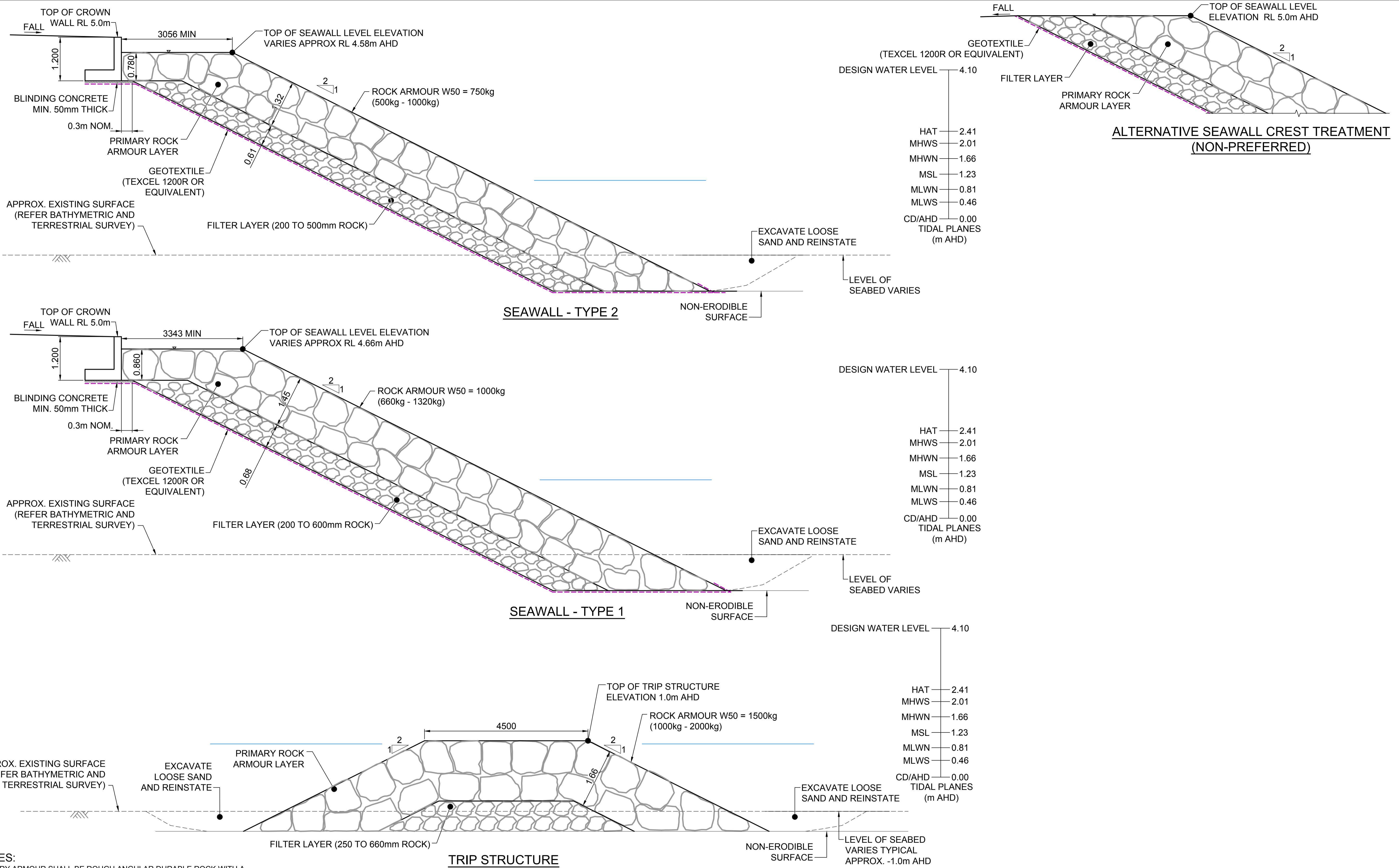
I/R	DATE	DESCRIPTION
01	15.08.2018	DRAFT ISSUE

PROJECT NUMBER  
60559990

SHEET TITLE  
LAND RECLAMATION  
DRAINAGE PLAN

SHEET NUMBER  
60559990-SHT-01-CI-2003

DRAFT



**NOTES:**  
 PRIMARY ARMOUR SHALL BE ROUGH ANGULAR DURABLE ROCK WITH A UNIFORM GRADE BETWEEN LIMITS PROVIDED WITH A MAXIMUM DIMENSION NOT MORE THAN 3x THE MINIMUM DIMENSION FOR ANY SINGLE ROCK.

This drawing is confidential and shall only be used for the purpose of this project. The signing of this title block confirms the design and drafting of this project have been prepared and checked in accordance with the AECOM quality assurance system to ISO 9001-2000.



CONSULTANT  
 AECOM Australia Pty Ltd  
 A.B.N 20 093 846 925  
 www.aecom.com

PROJECT  
**RUNWAY  
 EXTENSION  
 FEASIBILITY STUDY**

CLIENT  
**LORD HOWE ISLAND  
 BOARD**



KEY PLAN

REGISTRATION

PROJECT MANAGEMENT INITIALS		
KP	SB	JM
DESIGNER	CHECKED	APPROVED
PROJECT DATA		
DATUM	SURVEY	

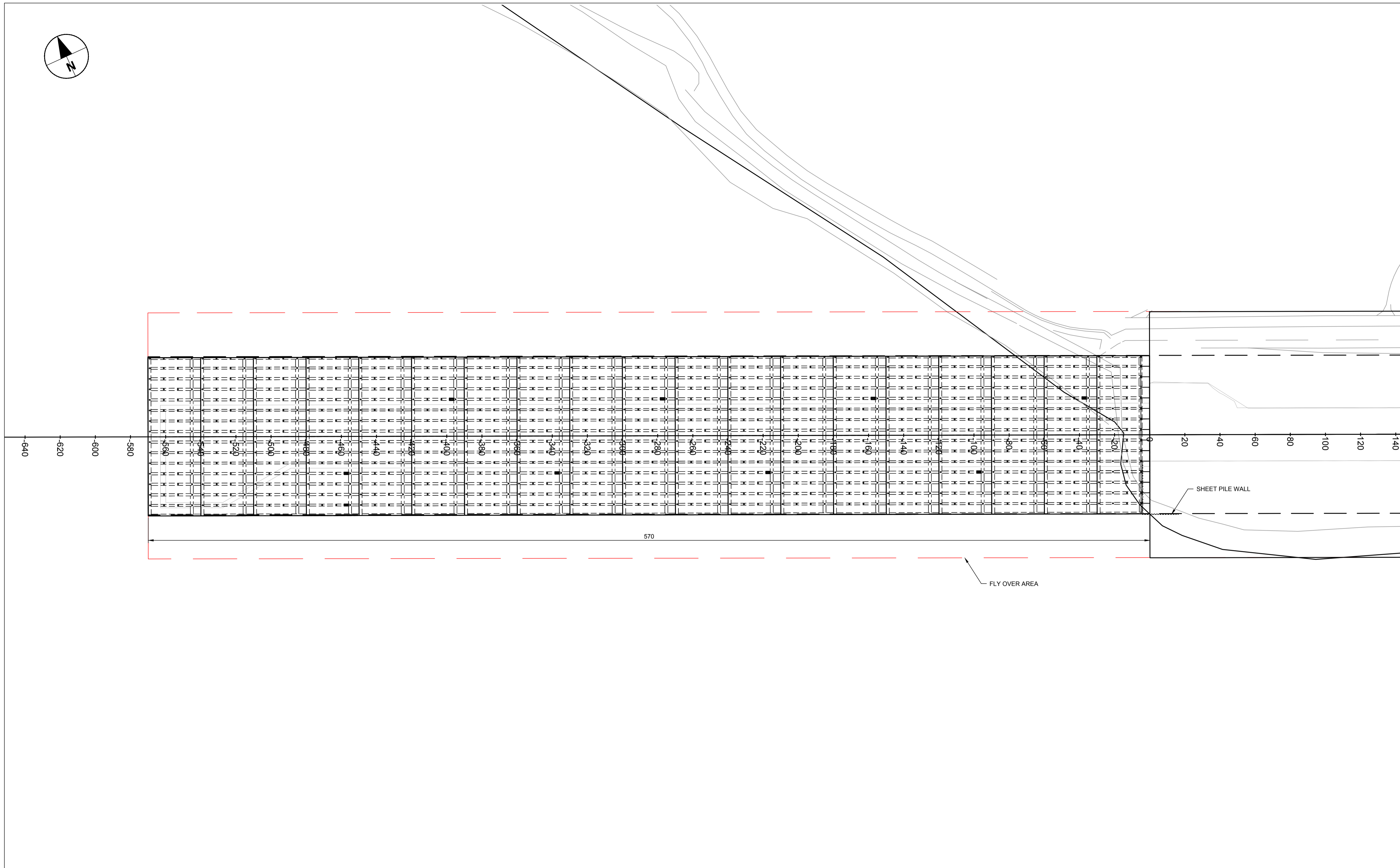
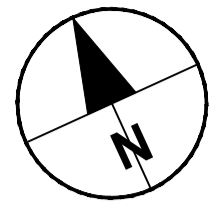
ISSUE/REVISION		
01	15.08.2018	DRAFT ISSUE
I/R	DATE	DESCRIPTION

PROJECT NUMBER  
 60559990

SHEET TITLE  
 LAND RECLAMATION  
 TYPICAL SECTIONS

SHEET NUMBER  
 60559990-SHT-01-CI-2004

DRAFT



This drawing is confidential and shall only be used for the purpose of this project. The signing of this title block confirms the design and drafting of this project have been prepared and checked in accordance with the AECOM quality assurance system to ISO 9001-2000.



CONSULTANT  
AECOM Australia Pty Ltd  
A.B.N 20 093 846 925  
www.aecom.com

PROJECT  
**RUNWAY  
EXTENSION  
FEASIBILITY STUDY**

CLIENT  
**LORD HOWE ISLAND  
BOARD**



KEY PLAN

PROJECT MANAGEMENT INITIALS

VW	PF	JM
DESIGNER	CHECKED	APPROVED

PROJECT DATA

DATUM	SURVEY
-------	--------

ISSUE/REVISION

I/R	DATE	DESCRIPTION
01	15.08.2018	DRAFT ISSUE

PROJECT NUMBER

60559990

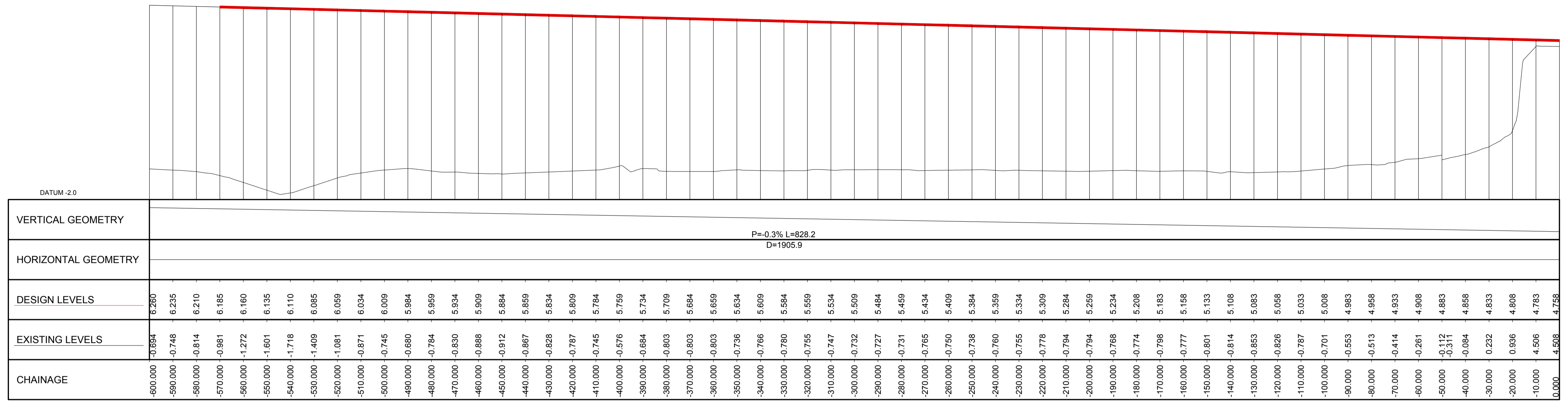
SHEET TITLE

DECK ON PILES  
LAYOUT PLAN

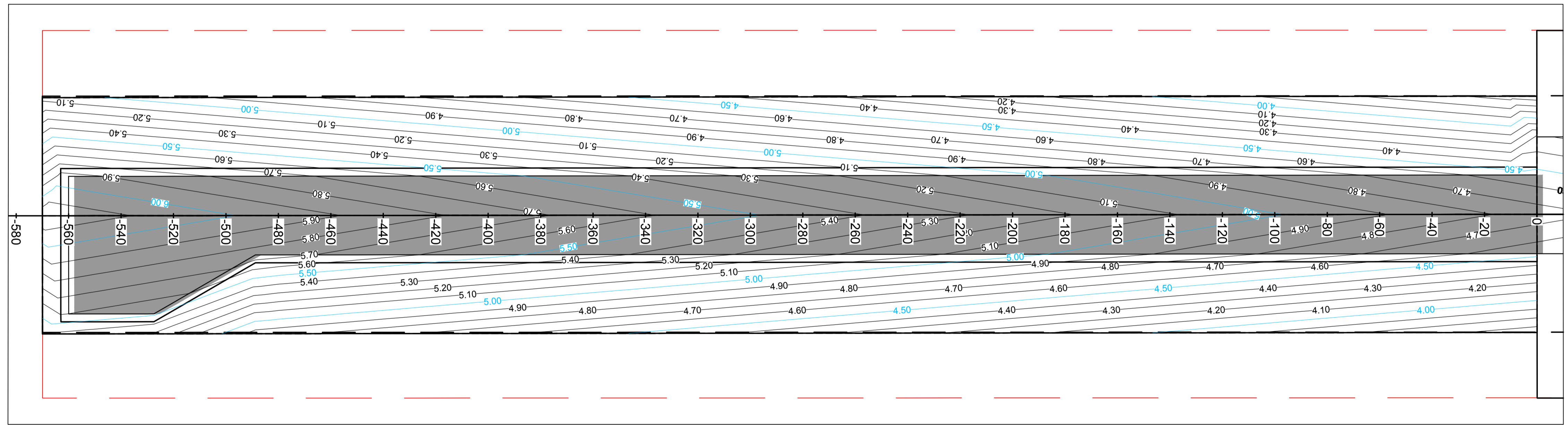
SHEET NUMBER

60559990-SHT-01-CI-3001

DRAFT



**RUNWAY 10/28 CENTRELINE PROFILE - OPTION 1**  
 A1 HORIZONTAL SCALE 1:1000  
 A1 VERTICAL SCALE 1:100



**LEGEND**

- NEW AIRCRAFT PAVEMENT
- EXTENT OF RUNWAY STRIP
- EXTENT OF FLYOVER AREA
- MAJOR (1m) CONTOURS
- MINOR (0.1m) CONTOURS

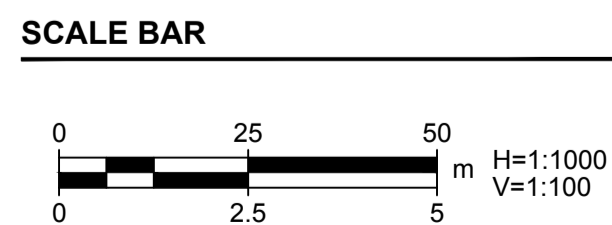
This drawing is confidential and shall only be used for the purpose of this project. The signing of this title block confirms the design and drafting of this project have been prepared and checked in accordance with the AECOM quality assurance system to ISO 9001-2000.



CONSULTANT  
 AECOM Australia Pty Ltd  
 A.B.N 20 093 846 925  
 www.aecom.com

PROJECT  
**RUNWAY  
 EXTENSION  
 FEASIBILITY STUDY**

CLIENT  
**LORD HOWE ISLAND  
 BOARD**



KEY PLAN

PROJECT MANAGEMENT INITIALS

PM	RM	JM
DESIGNER	CHECKED	APPROVED

PROJECT DATA

DATUM	SURVEY
-------	--------

ISSUE/REVISION

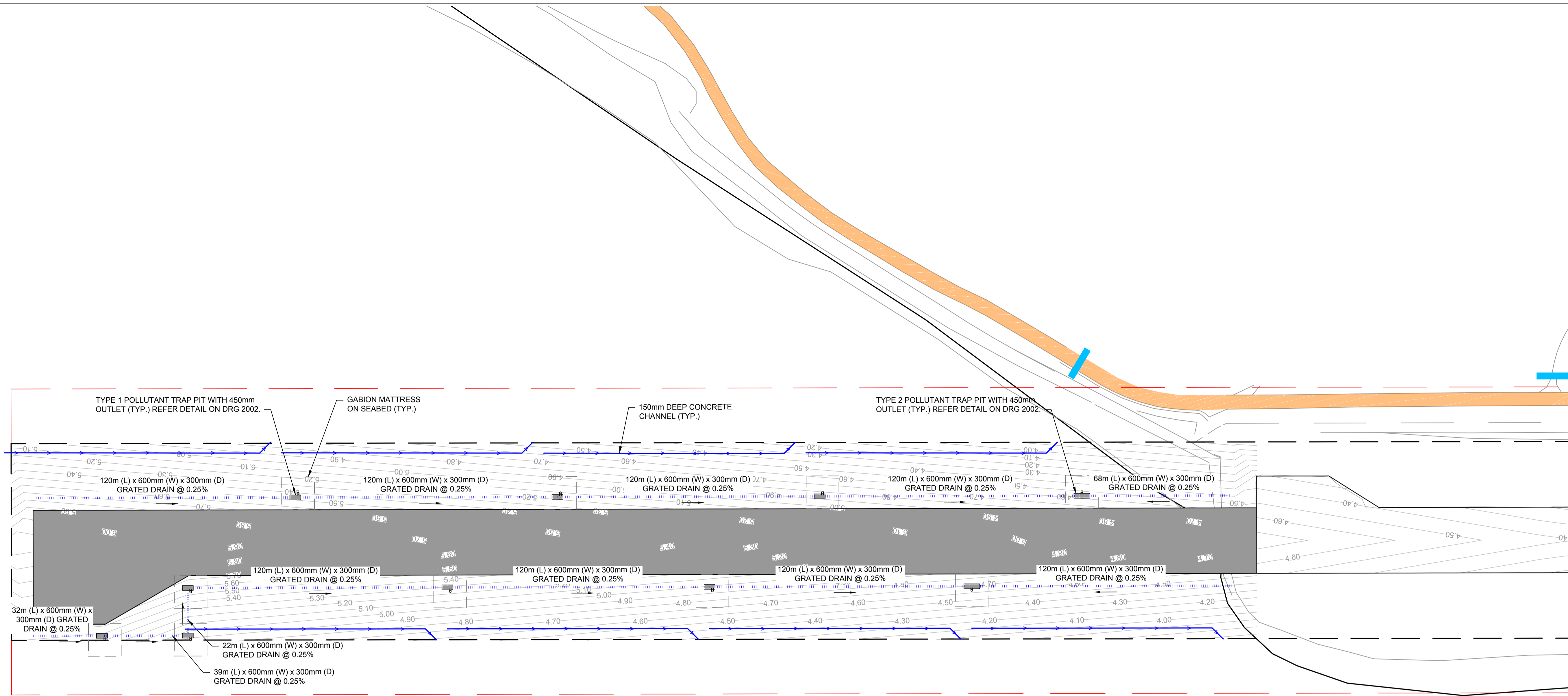
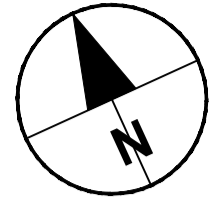
I/R	DATE	DESCRIPTION
01	15.08.2018	DRAFT ISSUE

PROJECT NUMBER  
 60559990

SHEET TITLE  
 DECK ON PILES  
 LONG SECTION

SHEET NUMBER  
 60559990-SHT-01-CI-3002

**DRAFT**



**LEGEND**

	NEW AIRCRAFT PAVEMENT
	EXISTING ISLAND ROAD
	EXTENT OF RUNWAY STRIP
	EXTENT OF FLYOVER AREA
	NEW TRAFFIC LIGHTS OR PHYSICAL TRAFFIC BARRIER

This drawing is confidential and shall only be used for the purpose of this project. The signing of this title block confirms the design and drafting of this project have been prepared and checked in accordance with the AECOM quality assurance system to ISO 9001-2000.



CONSULTANT  
AECOM Australia Pty Ltd  
A.B.N 20 093 846 925  
www.aecom.com

PROJECT  
**RUNWAY  
EXTENSION  
FEASIBILITY STUDY**

CLIENT  
**LORD HOWE ISLAND  
BOARD**



KEY PLAN

PROJECT MANAGEMENT INITIALS

JC	RM	JM
DESIGNER	CHECKED	APPROVED

PROJECT DATA

DATUM	SURVEY
-------	--------

ISSUE/REVISION

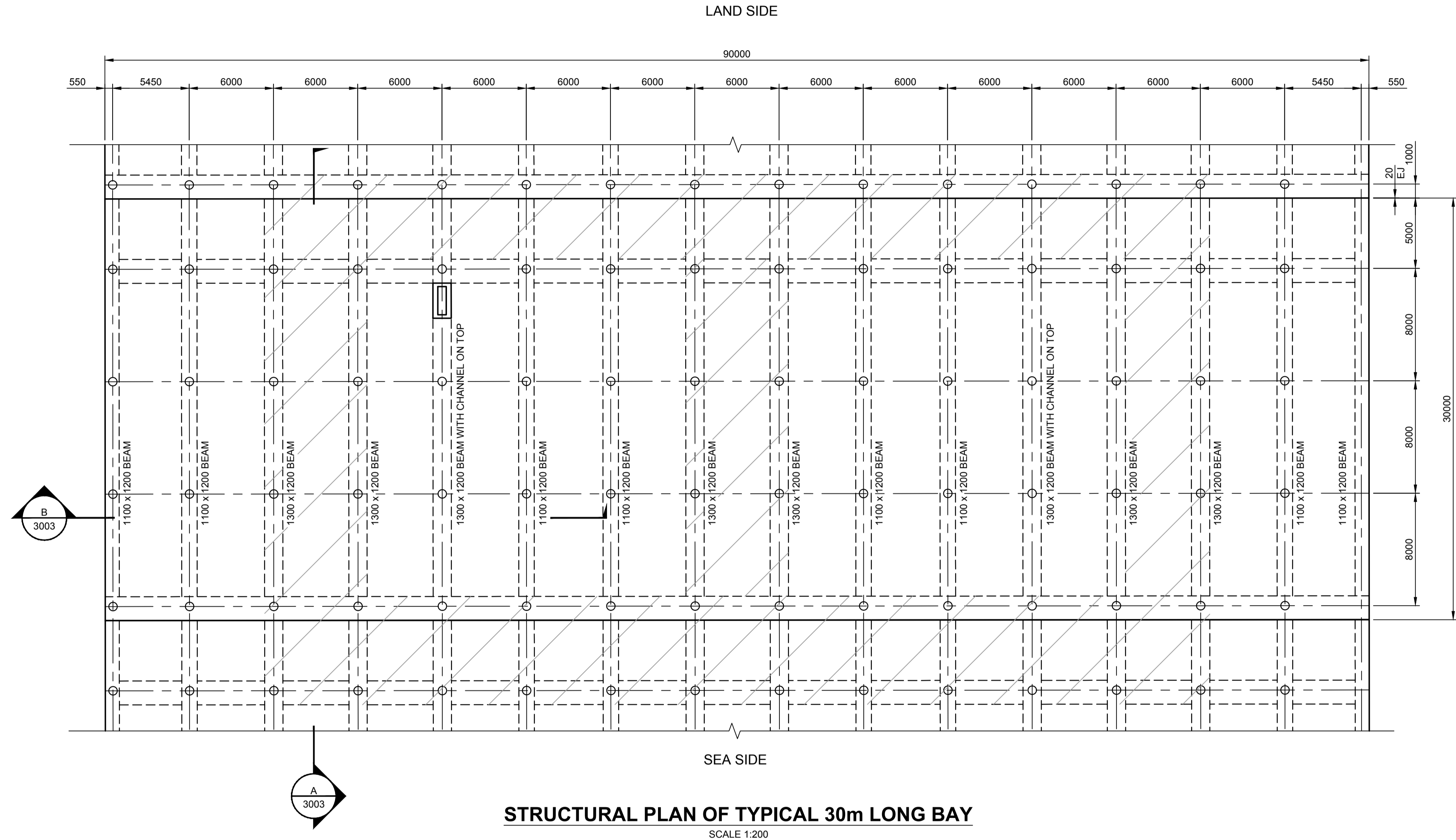
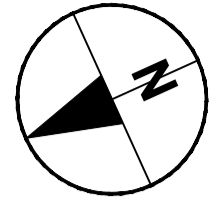
I/R	DATE	DESCRIPTION
01	15.08.2018	DRAFT ISSUE

PROJECT NUMBER  
60559990

SHEET TITLE  
DECK ON PILES  
DRAINAGE PLAN

SHEET NUMBER  
60559990-SHT-01-CI-3003

DRAFT



**STRUCTURAL PLAN OF TYPICAL 30m LONG BAY**

SCALE 1:200

**LEGEND**

BAYS (SHADED AREA) DESIGNED FOR ACCESS CRAWLER CRANE

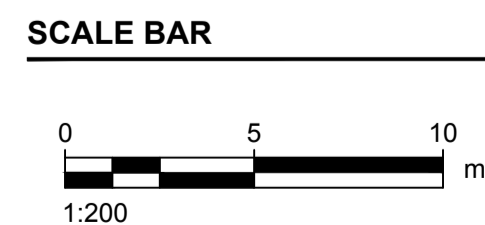
This drawing is confidential and shall only be used for the purpose of this project. The signing of this title block confirms the design and drafting of this project have been prepared and checked in accordance with the AECOM quality assurance system to ISO 9001-2000.



CONSULTANT  
AECOM Australia Pty Ltd  
A.B.N 20 093 846 925  
www.aecom.com

PROJECT  
**RUNWAY  
EXTENSION  
FEASIBILITY STUDY**

CLIENT  
**LORD HOWE ISLAND  
BOARD**



KEY PLAN

PROJECT MANAGEMENT INITIALS		
VW	PF	JM
DESIGNER	CHECKED	APPROVED
PROJECT DATA		
DATUM	SURVEY	

ISSUE/REVISION		
I/R	DATE	DESCRIPTION
01	15.08.2018	DRAFT ISSUE

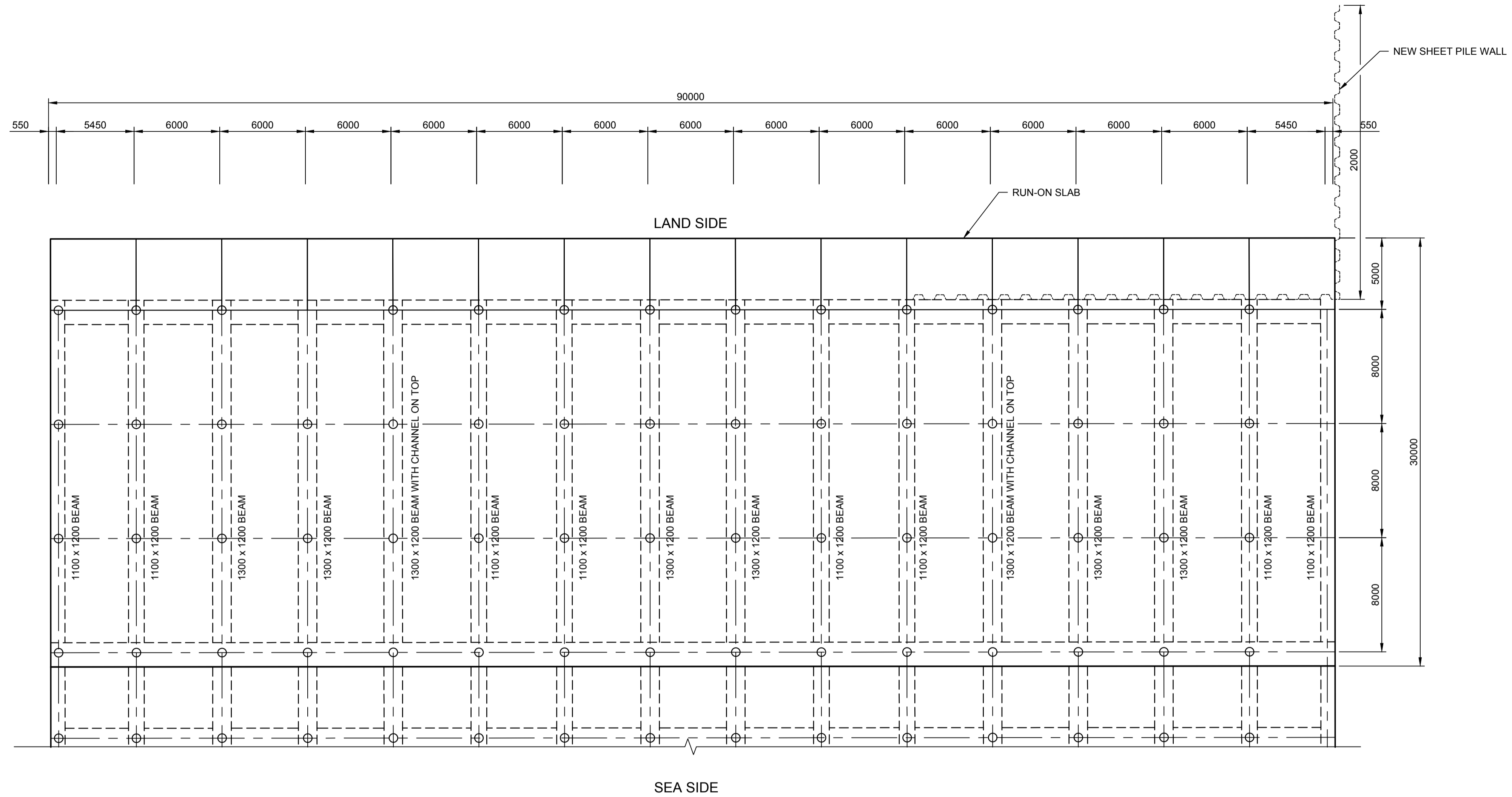
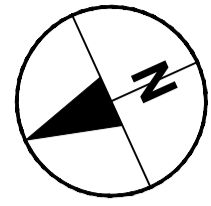
PROJECT NUMBER  
60559990

SHEET TITLE  
DECK ON PILES  
DETAILED LAYOUT PLAN

SHEET NUMBER  
60559990-SHT-01-CI-3004

DRAFT





**STRUCTURAL PLAN OF LAND SIDE END BAY**  
SCALE 1:200

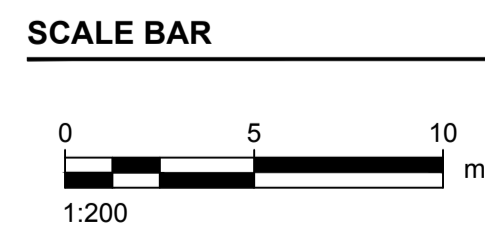
This drawing is confidential and shall only be used for the purpose of this project. The signing of this title block confirms the design and drafting of this project have been prepared and checked in accordance with the AECOM quality assurance system to ISO 9001-2000.



CONSULTANT  
AECOM Australia Pty Ltd  
A.B.N 20 093 846 925  
www.aecom.com

PROJECT  
**RUNWAY  
EXTENSION  
FEASIBILITY STUDY**

CLIENT  
**LORD HOWE ISLAND  
BOARD**



KEY PLAN

PROJECT MANAGEMENT INITIALS

VW	PF	JM
DESIGNER	CHECKED	APPROVED

PROJECT DATA

DATUM	SURVEY
-------	--------

ISSUE/REVISION

I/R	DATE	DESCRIPTION
01	15.08.2018	DRAFT ISSUE

PROJECT NUMBER

60559990

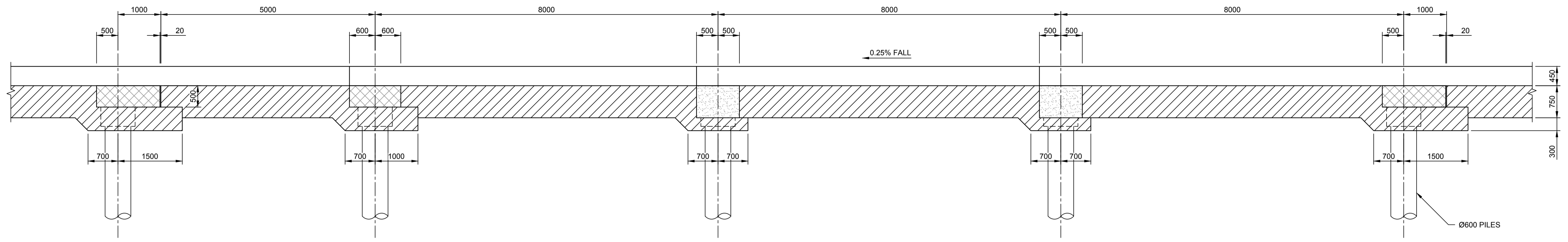
SHEET TITLE

DECK ON PILES  
DETAILED LAYOUT PLAN

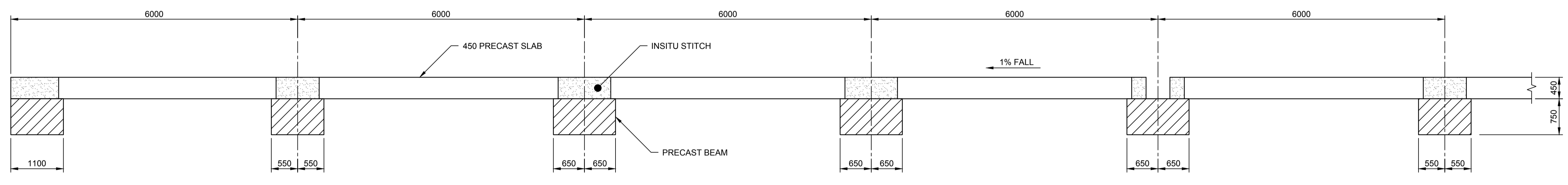
SHEET NUMBER

60559990-SHT-01-CI-3005

DRAFT



**A SECTION**  
CI-3002 Scale 1:50



**B SECTION**  
CI-3002 Scale 1:50

This drawing is confidential and shall only be used for the purpose of this project. The signing of this title block confirms the design and drafting of this project have been prepared and checked in accordance with the AECOM quality assurance system to ISO 9001-2000.



CONSULTANT  
AECOM Australia Pty Ltd  
A.B.N 20 093 846 925  
www.aecom.com

PROJECT  
**RUNWAY  
EXTENSION  
FEASIBILITY STUDY**

CLIENT  
**LORD HOWE ISLAND  
BOARD**



KEY PLAN

PROJECT MANAGEMENT INITIALS

VW	PF	JM
DESIGNER	CHECKED	APPROVED

PROJECT DATA

DATUM	SURVEY
-------	--------

ISSUE/REVISION

I/R	DATE	DESCRIPTION
01	15.08.2018	DRAFT ISSUE

PROJECT NUMBER

60559990

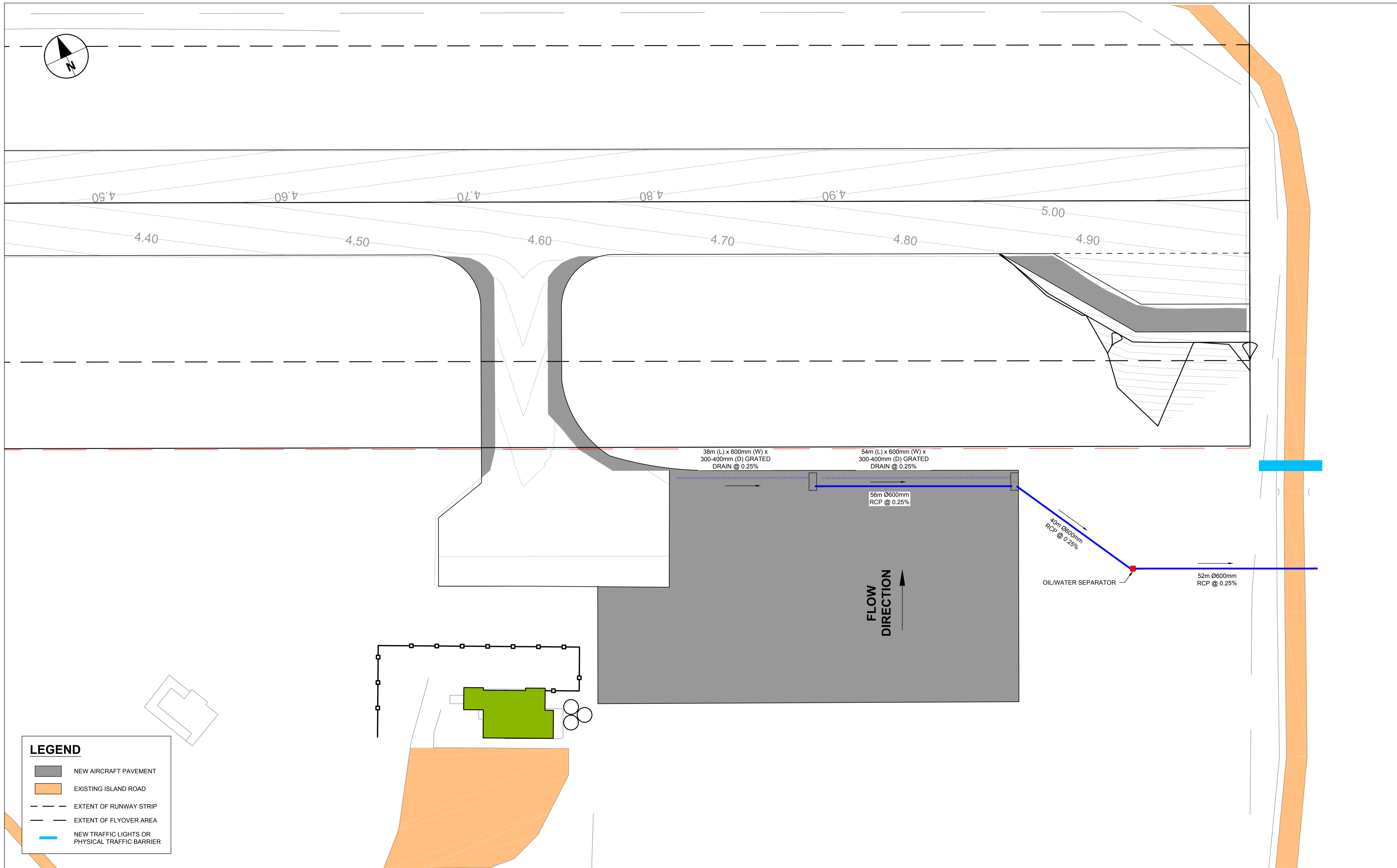
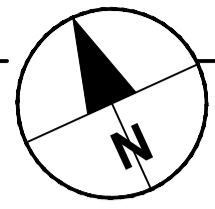
SHEET TITLE

DECK ON PILES  
STRUCTURAL SECTIONS AND DETAILS

SHEET NUMBER

60559990-SHT-01-CI-3006

DRAFT



Last saved by: LEONISA(2018-08-14) Last Plot: 2018-08-15  
Filename: P:\60559990\3\_CAD\20-SHEETS\01\_CONCEPT\60559990-SHT-01-CI-4001.DWG

This drawing is confidential and shall only be used for the purpose of this project. The signing of this title block confirms the design and drafting of this project have been prepared and checked in accordance with the AECOM quality assurance system to ISO 9001-2000.



**CONSULTANT**  
AECOM Australia Pty Ltd  
A.B.N 20 093 846 925  
www.aecom.com

**PROJECT**  
RUNWAY  
EXTENSION  
FEASIBILITY STUDY

**CLIENT**  
LORD HOWE ISLAND  
BOARD



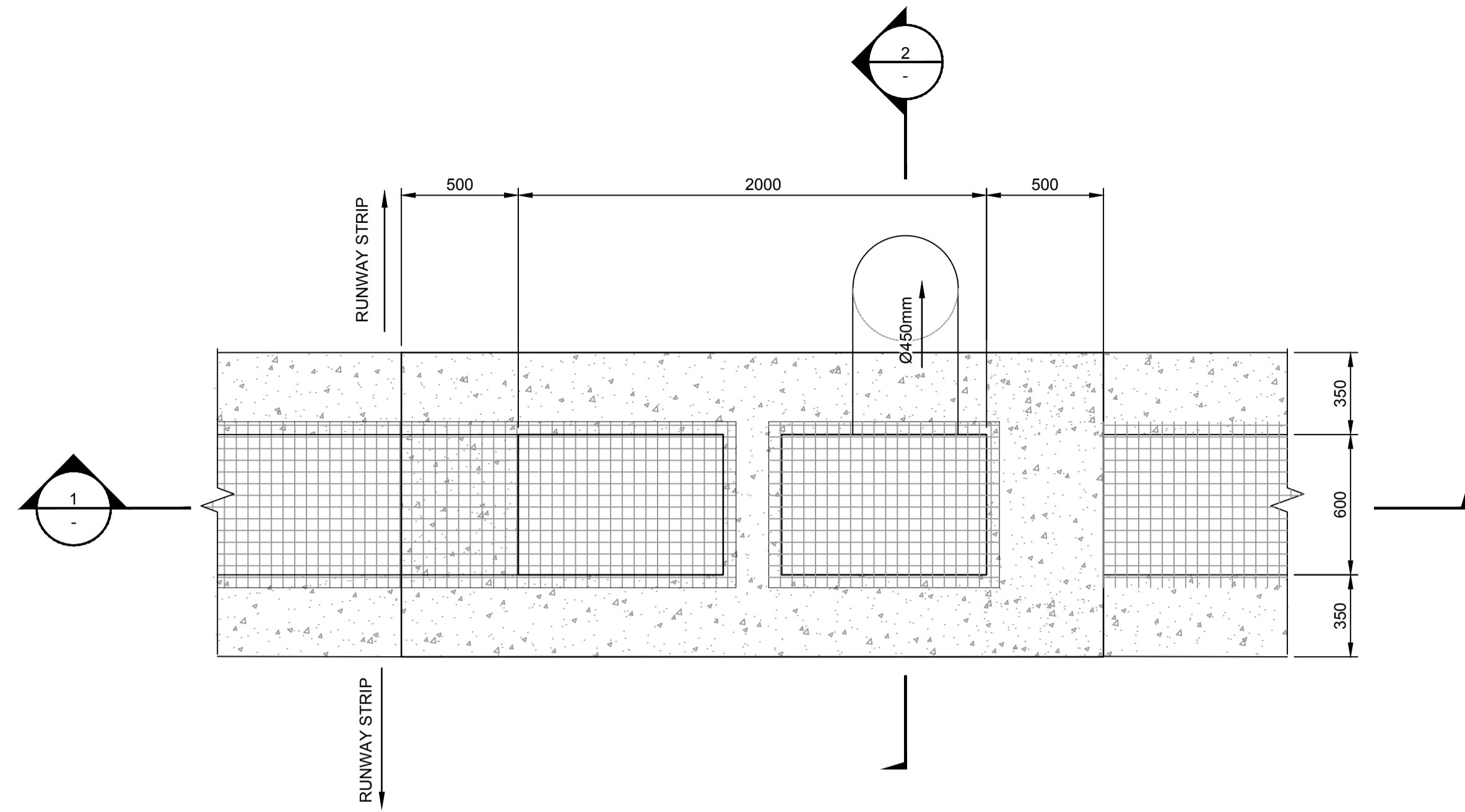
**KEY PLAN**

PROJECT MANAGEMENT INITIALS		
JC	RM	JM
DESIGNER	CHECKED	APPROVED
PROJECT DATA		
DATUM	SURVEY	

ISSUE/REVISION		
01	15.08.2018	DRAFT ISSUE
I/R	DATE	DESCRIPTION

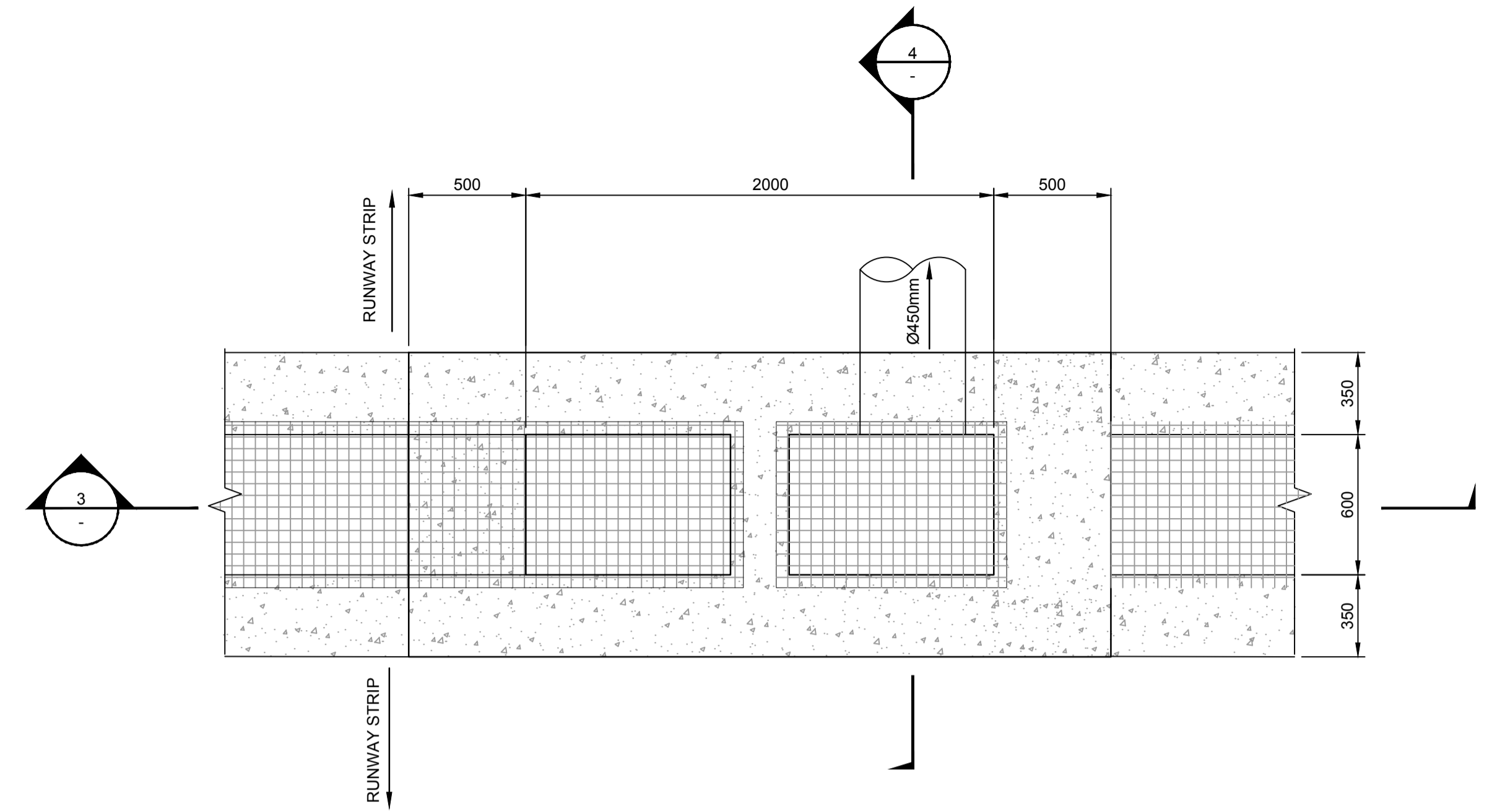
**PROJECT NUMBER**  
60559990  
**SHEET TITLE**  
APRON  
DRAINAGE PLAN  
**SHEET NUMBER**  
60559990-SHT-01-CI-4001

DRAFT



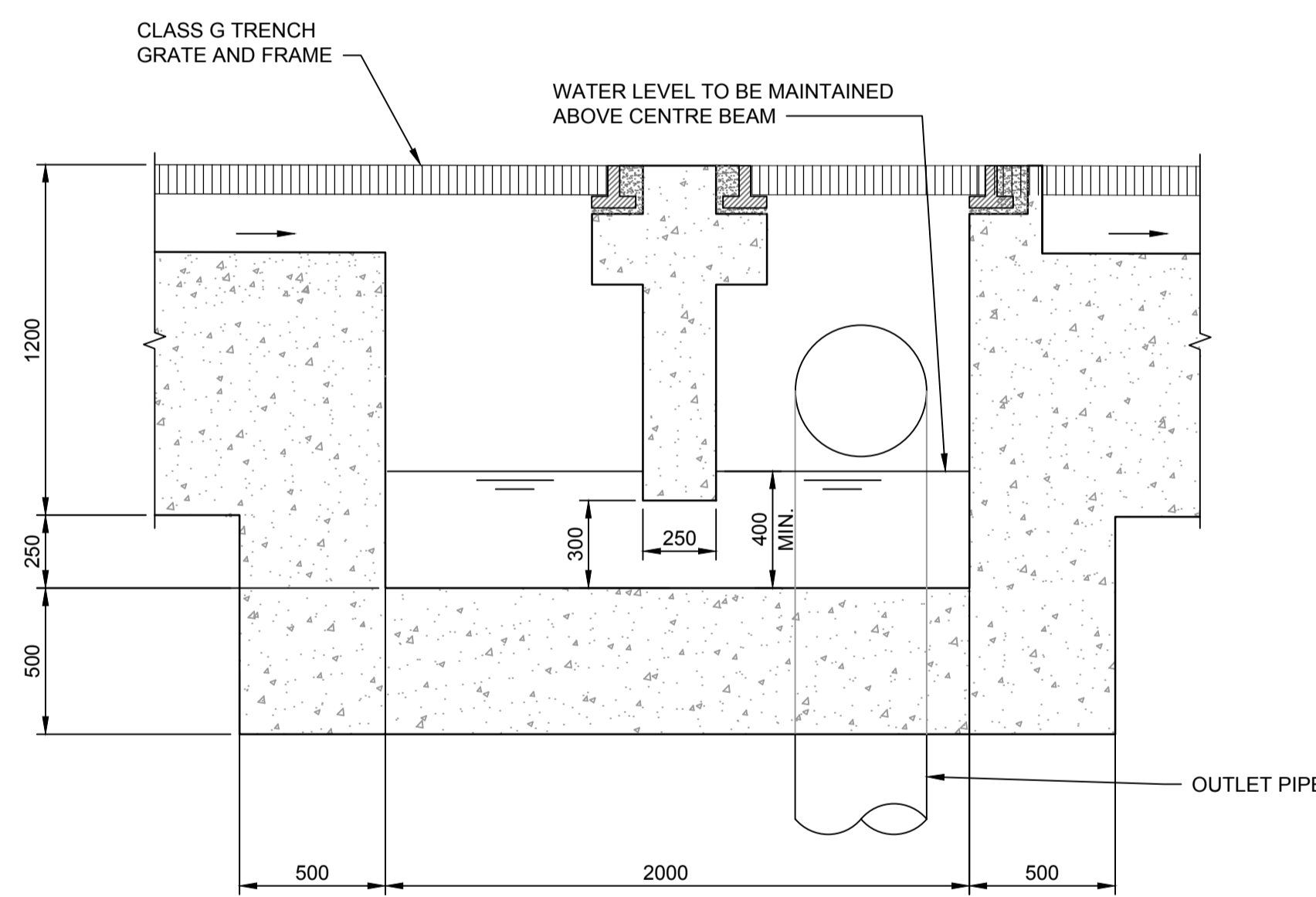
**DECK OPTION - INLET PLAN**

Scale 1:20



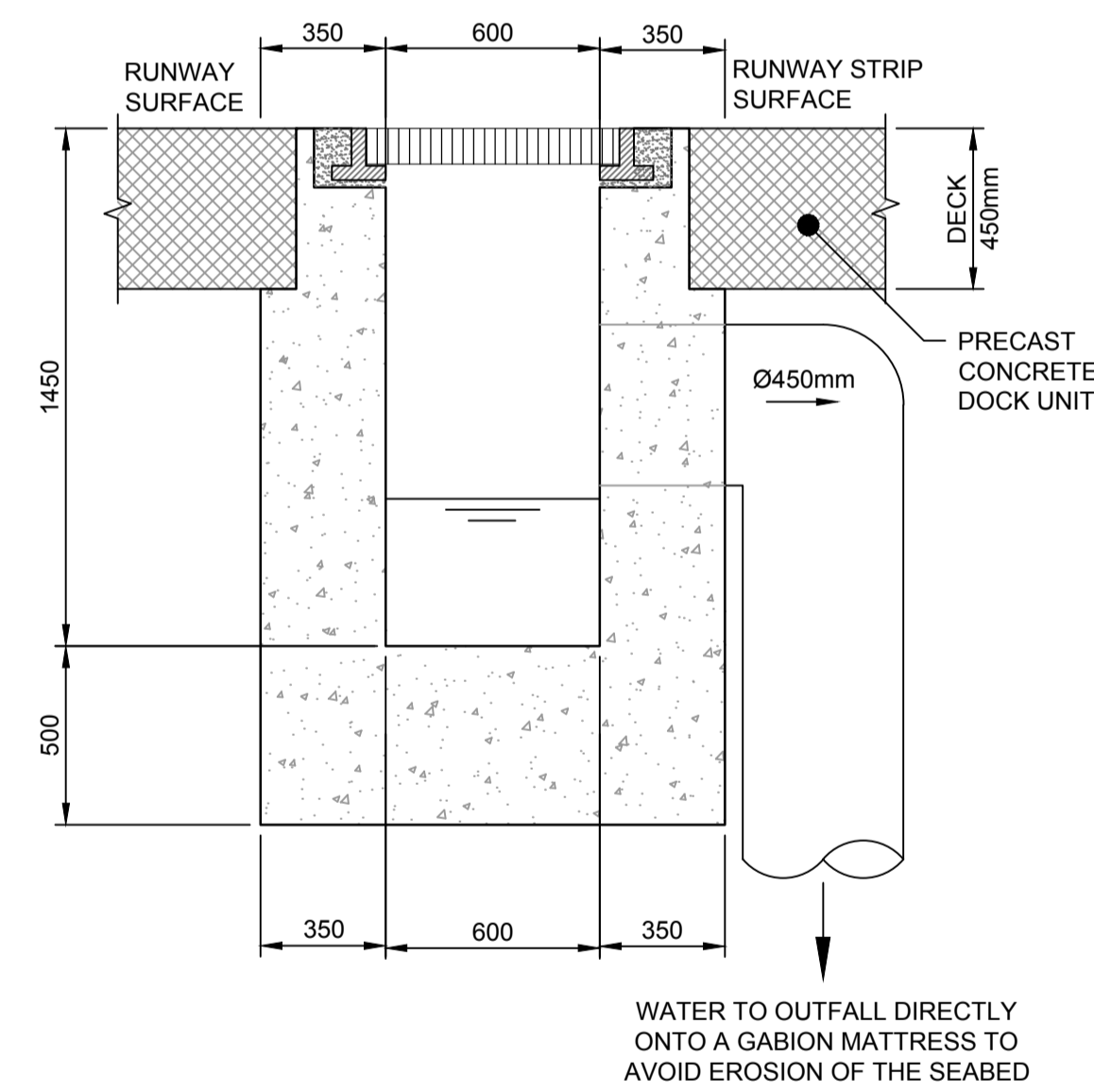
**LAND RECLAMATION OPTION - INLET PLAN**

Scale 1:20



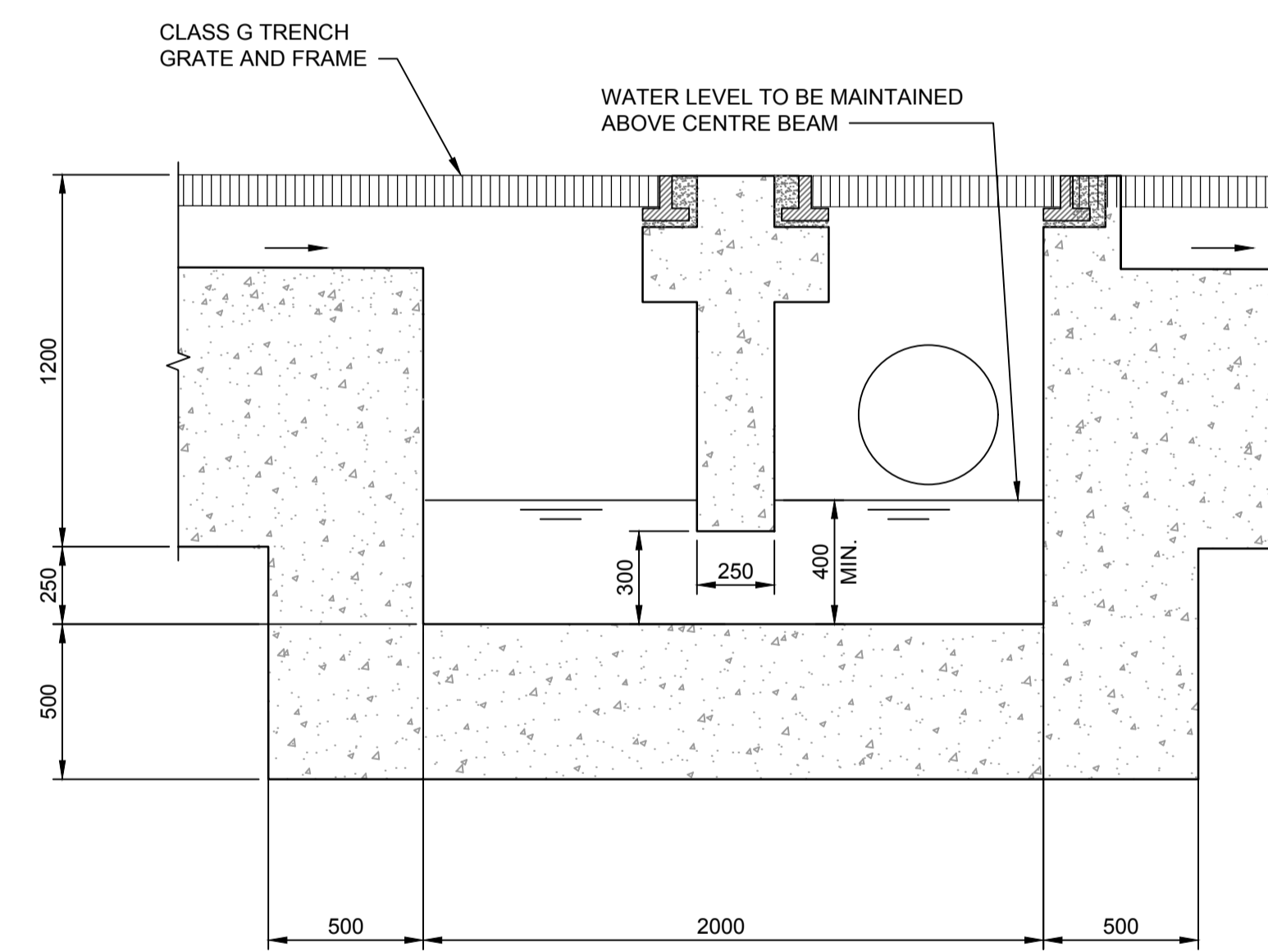
**1 SECTION**

Scale 1:20



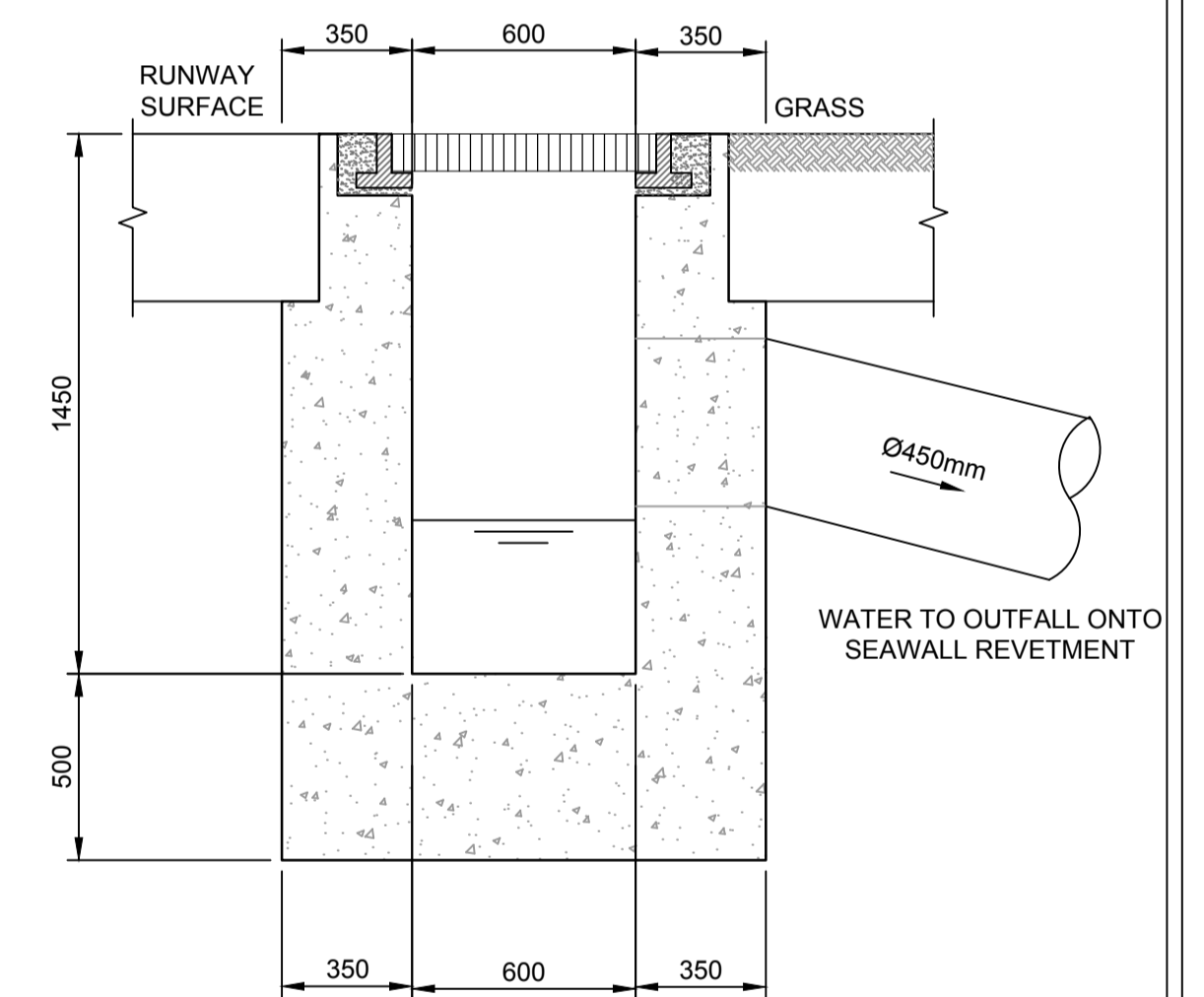
**2 SECTION**

Scale 1:20



**3 SECTION**

Scale 1:20



**4 SECTION**

Scale 1:20

**NOTES**

1. INLET PITS HAVE BEEN DESIGNED IN ORDER TO SEPARATE HYDROCARBONS AND TO ALLOW SEDIMENT TO SETTLE. CONTAMINANTS ARE TO BE REGULARLY REMOVED AS PART OF THE AIRPORT MAINTENANCE REGIME.

Last saved by: LEONISA(2018-08-14) Last Plotter: 2018-08-15  
Filename: P:\60559990\3\_CAD\20-SHEETS\01\_CONCEPT\60559990-SHT-01-CI-4002.DWG

This drawing is confidential and shall only be used for the purpose of this project. The signing of this title block confirms the design and drafting of this project have been prepared and checked in accordance with the AECOM quality assurance system to ISO 9001-2000.



CONSULTANT

AECOM Australia Pty Ltd  
A.B.N 20 093 846 925  
www.aecom.com

**PROJECT**  
RUNWAY  
EXTENSION  
FEASIBILITY STUDY

**CLIENT**  
LORD HOWE ISLAND  
BOARD



**KEY PLAN**

**PROJECT MANAGEMENT INITIALS**

JC/VV	RM/PF	JM
DESIGNER	CHECKED	APPROVED

**PROJECT DATA**

DATUM	SURVEY
-------	--------

**ISSUE/REVISION**

I/R	DATE	DESCRIPTION
01	15.08.2018	DRAFT ISSUE

**PROJECT NUMBER**

60559990

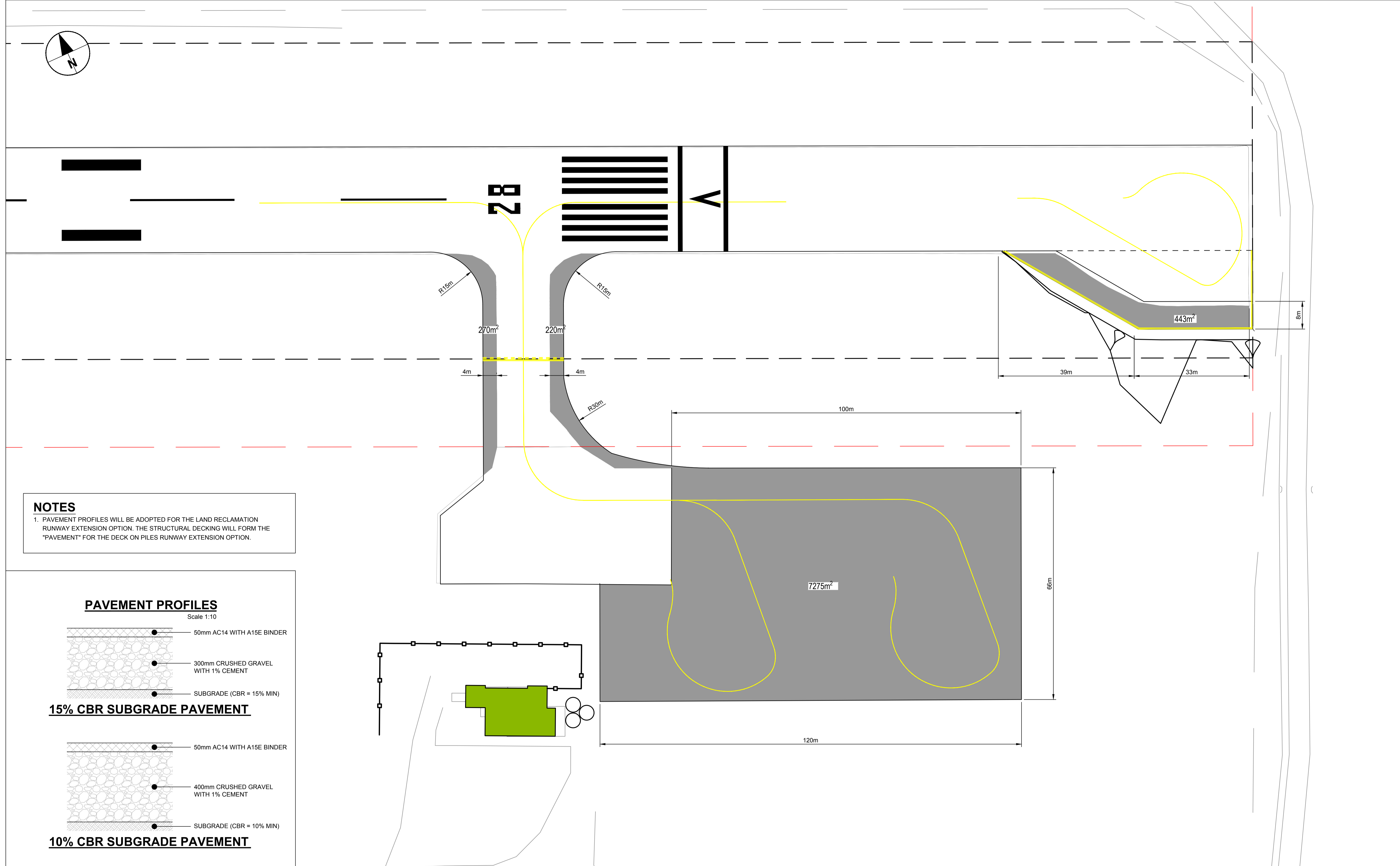
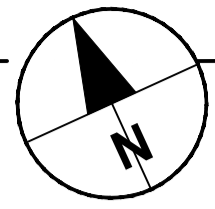
**SHEET TITLE**

DRAINAGE DETAILS

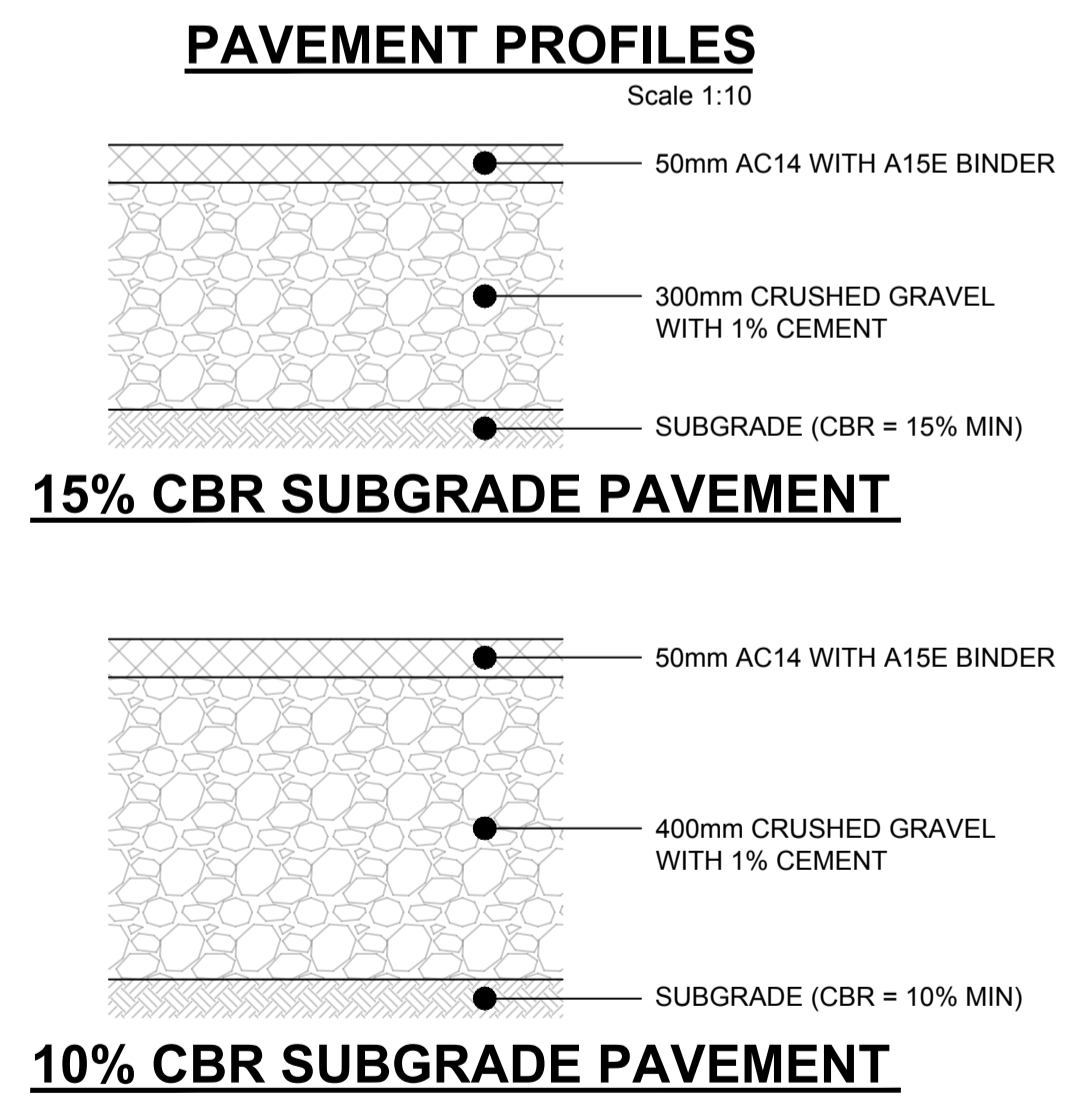
**SHEET NUMBER**

60559990-SHT-01-CI-4002

DRAFT



**NOTES**  
 1. PAVEMENT PROFILES WILL BE ADOPTED FOR THE LAND RECLAMATION RUNWAY EXTENSION OPTION. THE STRUCTURAL DECKING WILL FORM THE "PAVEMENT" FOR THE DECK ON PILES RUNWAY EXTENSION OPTION.

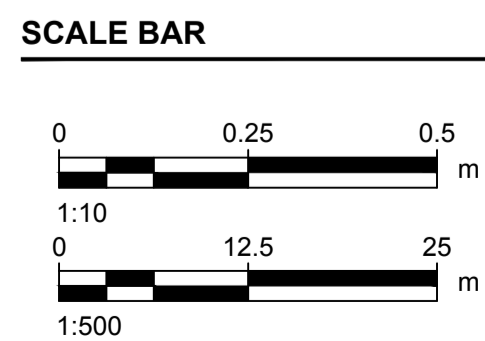


This drawing is confidential and shall only be used for the purpose of this project. The signing of this title block confirms the design and drafting of this project have been prepared and checked in accordance with the AECOM quality assurance system to ISO 9001-2000.

**AECOM**  
 CONSULTANT  
 AECOM Australia Pty Ltd  
 A.B.N 20 093 846 925  
 www.aecom.com

**PROJECT**  
 RUNWAY  
 EXTENSION  
 FEASIBILITY STUDY

**CLIENT**  
 LORD HOWE ISLAND  
 BOARD



**KEY PLAN**

**PROJECT MANAGEMENT INITIALS**

ME/R/S	RM	JM
DESIGNER	CHECKED	APPROVED

**PROJECT DATA**

DATUM	SURVEY
-------	--------

**ISSUE/REVISION**

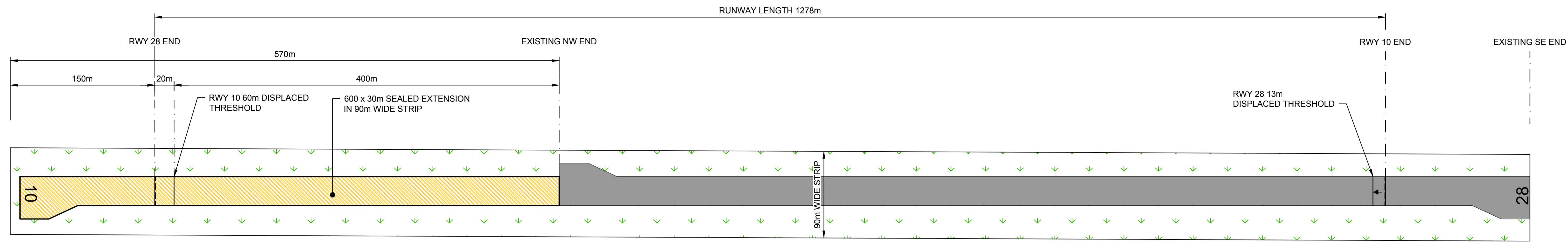
I/R	DATE	DESCRIPTION
01	15.08.2018	DRAFT ISSUE

**PROJECT NUMBER**  
 60559990

**SHEET TITLE**  
 PAVEMENT LAYOUT PLAN AND  
 DETAILS

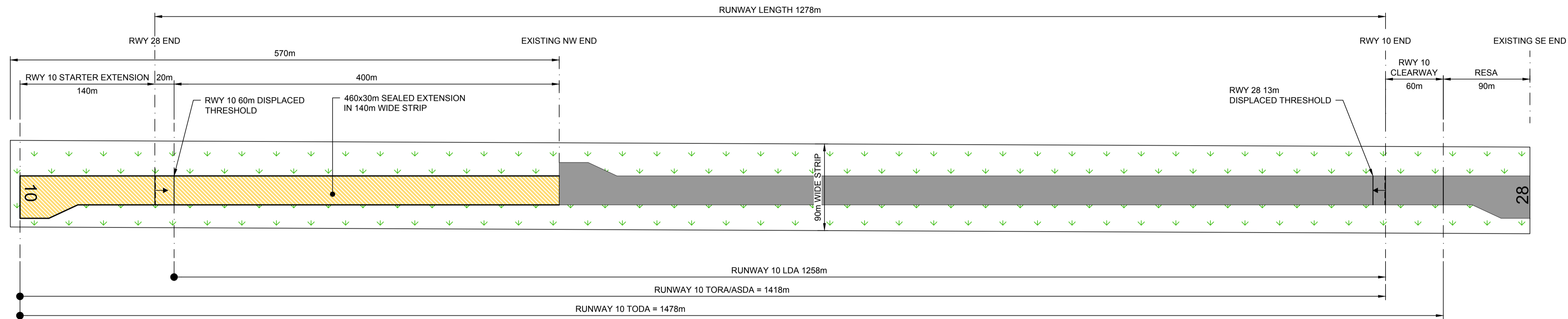
**SHEET NUMBER**  
 60559990-SHT-01-CI-5001

**DRAFT**



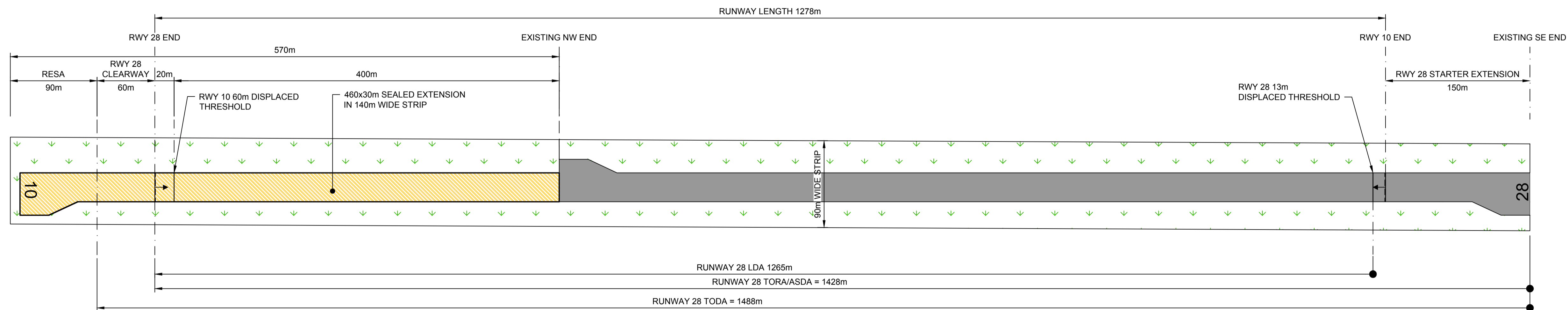
**LORD HOWE ISLAND AIRPORT - 570m EXTENSION LAYOUT**

NOT TO SCALE



**LORD HOWE ISLAND AIRPORT - 570m EXTENSION  
RUNWAY 10 DECLARED DISTANCES**

NOT TO SCALE



**LORD HOWE ISLAND AIRPORT - 570m EXTENSION  
RUNWAY 28 DECLARED DISTANCES**

NOT TO SCALE

This drawing is confidential and shall only be used for the purpose of this project. The signing of this title block confirms the design and drafting of this project have been prepared and checked in accordance with the AECOM quality assurance system to ISO 9001-2000.



CONSULTANT  
AECOM Australia Pty Ltd  
A.B.N 20 093 846 925  
www.aecom.com

PROJECT  
**RUNWAY  
EXTENSION  
FEASIBILITY STUDY**

CLIENT  
**LORD HOWE ISLAND  
BOARD**

SCALE BAR  
NOT TO SCALE

KEY PLAN

PROJECT MANAGEMENT INITIALS

JM	RM	JM
DESIGNER	CHECKED	APPROVED

PROJECT DATA

DATUM	SURVEY
-------	--------

ISSUE/REVISION

I/R	DATE	DESCRIPTION
01	15.08.2018	DRAFT ISSUE

PROJECT NUMBER

60559990

SHEET TITLE

LAYOUT AND DECLARED DISTANCES

SHEET NUMBER

60559990-SHT-01-CI-6001

DRAFT

DRAFT

# Appendix B

## Basis of Design Report

# PROJECT EXECUTION PLAN

## BASIS OF DESIGN REPORT

Lord Howe Island Board | 28 June 2018





# DRAFT

## Basis of Design Report

### Milestone 3 - Concept Design

Client: Lord Howe Island Board

Co No.: N/A

#### Prepared by

**AECOM Australia Pty Ltd**

Level 21, 420 George Street, Sydney NSW 2000, PO Box Q410, QVB Post Office NSW 1230, Australia  
T +61 2 8934 0000 F +61 2 8934 0001 www.aecom.com  
ABN 20 093 846 925

28-Jun-2018

Job No.: 60559990

AECOM in Australia and New Zealand is certified to ISO9001, ISO14001 AS/NZS4801 and OHSAS18001.


© AECOM Australia Pty Ltd (AECOM). All rights reserved.

AECOM has prepared this document for the sole use of the Client and for a specific purpose, each as expressly stated in the document. No other party should rely on this document without the prior written consent of AECOM. AECOM undertakes no duty, nor accepts any responsibility, to any third party who may rely upon or use this document. This document has been prepared based on the Client's description of its requirements and AECOM's experience, having regard to assumptions that AECOM can reasonably be expected to make in accordance with sound professional principles. AECOM may also have relied upon information provided by the Client and other third parties to prepare this document, some of which may not have been verified. Subject to the above conditions, this document may be transmitted, reproduced or disseminated only in its entirety.

**DRAFT****Quality Information**

Document     Basis of Design Report  
 Ref            60559990  
 Date           28-Jun-2018  
 Prepared by   Jed Mills  
 Reviewed by   Richard Murran

## Revision History

Rev	Revision Date	Details	Authorised	
			Name/Position	Signature
A	28-Jun-2018	Draft Issue	Jed Mills Project Manager	

**DRAFT****Table of Contents**

1.0	Introduction	6
1.1	Background	6
1.2	Scope of Concept Design Services	6
2.0	Key Environmental Design Constraints and Considerations	7
3.0	Construction Constraints	9
3.1	Airport Operational Restrictions	9
3.2	Seasonal Restrictions	9
3.3	Noise Restrictions	9
3.4	Light Restrictions	9
3.5	Vibration Restrictions	9
3.6	Supply & storage of Plant, Labour and Materials	9
4.0	Datum	10
4.1	Vertical Datum	10
4.2	Horizontal Grid	10
5.0	Design standards, codes and guidelines	11
5.1	Coastal Design Standards	11
5.2	Airfield Design Standards	11
5.3	Structural Design Standards	12
6.0	Design life	13
7.0	Coastal Design Parameters	14
7.1	Bathymetric survey data	14
7.2	Sea Water Levels	15
7.3	Sea level rise	15
7.4	Wave Climate	16
7.5	Design Current	16
7.6	Armour Stability and Sizing	17
	7.6.1 General	17
	7.6.2 Design Parameters for Rock Armour	17
	7.6.3 Design Parameters for Concrete Armour Units	17
7.7	Overtopping	18
8.0	Ground Conditions and Geotechnical Design Parameters	19
9.0	Airfield Design	20
9.1	General	20
9.2	Functional Requirements	20
9.3	Design Approach	21
	9.3.1 Geometry and Grading	21
	9.3.2 Obstacle Limitation Surface	23
	9.3.3 Pavements	25
	9.3.4 Line markings	26
	9.3.5 Stormwater Drainage	28
10.0	Structural Deck Design	31
10.1	General	31
10.2	Functional Requirements	31
	10.2.1 Deck Geometry	31
	10.2.2 Structural Form	31
	10.2.3 Settlement and Movement Tolerances	31
	10.2.4 Design Deck Levels	31
	10.2.1 Deck Surface Requirements	32
	10.2.2 Provision for Stormwater Drainage	32
	10.2.3 Provision for Other Utilities	32
	10.2.4 General design criteria and parameters	32
	10.2.5 Structural Materials	32

# DRAFT

	10.2.6	Design Loads	33
11.0		Summary and Recommendations	35
	11.1	General	35

# DRAFT

## 1.0 Introduction

### 1.1 Background

Lord Howe Island is located approximately 590 km from the closest town on the Australian mainland and 790 km from Sydney, it is one of the most remote communities in NSW and among the most remote of any Australian territory.

There are currently regular airline services operating from Sydney and Brisbane to the island, although the current route agreement is scheduled to end in March 2022 and Qantas have indicated they will no longer be operating the DHC8-200 aircraft servicing the island beyond this date. The existing runway at 888m long, does not allow for any candidate aircraft to take off or land without restrictions which limits the financial viability of the route for airline operators. Therefore an extension of the runway may be the only viable solution to ensure continued service of Lord Howe Island.

In April 2018, AECOM completed a Detailed Assessment of Extended Runway Requirements and Suitable Aircraft which recommended that a 570m runway extension to the NW should be investigated further. This recommendation was approved by the Lord Howe Island Board (LHIB) at their quarterly meeting held on Monday 14<sup>th</sup> May 2018.

### 1.2 Scope of Concept Design Services

The scope of concept design services to be provided by AECOM is defined in AECOM's proposal dated 11 September 2017 which forms the basis of the subsequent formal agreement with LHIB for this engagement.

In broad terms, the concept design services to be provided by AECOM comprise the following major work elements:

- **Airfield design:** including extension of the runway, widening of the runway strip, existing taxiway and apron alterations if necessary and associated earthworks, grading, pavements and stormwater infrastructure;
- **Physical runway extension design:** based on the consideration of a structural deck solution or land reclamation solution

In addition, the following elements will be key considerations throughout the design process;

- **Key environmental design constraints and considerations:** Summary of the key constraints / non-negotiables in relation to the environment which will need to be considered as part of the design process and avoided during construction and operation of the runway extension
- **Construction Constraints:** Summary of the key construction constraints which will influence the concept design process
- **Coastal Design Parameters:** Key coastal engineering parameters which will be incorporated into the concept design process

# DRAFT

## 2.0 Key Environmental Design Constraints and Considerations

Based on the background environmental research undertaken for the project to date, the key constraints / non-negotiables in relation to the environment will need to be considered as part of the design process and avoided during construction and operation of the runway extension are as follows:

- Direct and indirect impacts on the World Heritage values of the Island, including:

### Direct impacts:

- impacts to algal and coral reefs, during construction or operation (e.g. via scouring due to surface water run-off), for example by limiting the physical footprint of the project within the lagoon. Within the lagoon, coral areas have dominant coverage in the western portion located seaward of Blackburn Island, while the landward (eastern) portion of the lagoon is generally comprised of sandy substrate;
- impacts to items of the Lord Howe Island Group (listed on the NSW Office of Environment and Heritage (OEH) State Heritage Register (SHR 00970)), including the “Kentia” on Lagoon Road, Portion 111, to the west of the existing airport terminal and apron area;
- physical impact to species (and their habitats) listed as threatened under the EPBC Act (refer to Figure 1), in particular the following species:
  - the only breeding habitat of the Providence Petrel (*Pterodroma solandri*) between March to November and they nest on the tops of Mount Gower and Mount Lidgbird and to a less extent, on the lower slopes of the mountains;
  - the breeding habitat of the Lord Howe Woodhen (*Gallirallus sylvestris*) between spring and early summer, within a territory of around 3 hectares primarily within the Lord Howe Island Permanent Park Preserve (nesting on the ground in thick vegetation, under tree roots and fallen logs). They are not found in the northern hills area;
  - the foraging habitat of the migratory Red Knot (*Calidris canutus*) on coastal areas in sandy estuaries with tidal mudflats on the island, between September and April;
  - the foraging habitat of the migratory Curlew Sandpiper (*Calidris ferruginea*) on intertidal mudflats of lagoons, and beaches and rocky shores between August and mid-April;
  - the foraging habitat of the migratory Eastern Curlew (*Numenius madagascariensis*), on intertidal mudflats and sandflats, on sheltered coasts, especially lagoons, from August each year;
  - the foraging and nesting habitat of the Loggerhead Turtle (*Caretta caretta*) particularly from late October to late February;
  - the foraging habitat of the migratory Leatherback Turtle (*Dermochelys coriacea*) which are found in tropical and temperate waters; and
  - the critical habitat of the Lord Howe Island skink, listed on the NSW threatened species list, at the receding dunal area at the southern end of Lagoon Beach (to the north of Windy Point).

### Indirect impacts:

- impacts to existing wave patterns due to the runway extension structure, which could cause beach/lagoon erosion and impacts to algal and coral reefs and/or threatened species (such as the Lord Howe Island skink) or their habitat;
- noise impacts during breeding season to species listed as threatened under the EPBC Act (refer to Figure 1), in particular:
  - the breeding habitat of the Red-tailed Tropicbird (*Phaethon rubricauda*), which nests on cliffs of the northern hills and southern mountains on the main island at Lord Howe Island; and

## DRAFT

- the Lord Howe Island Phasmid (on Balls Pyramid).

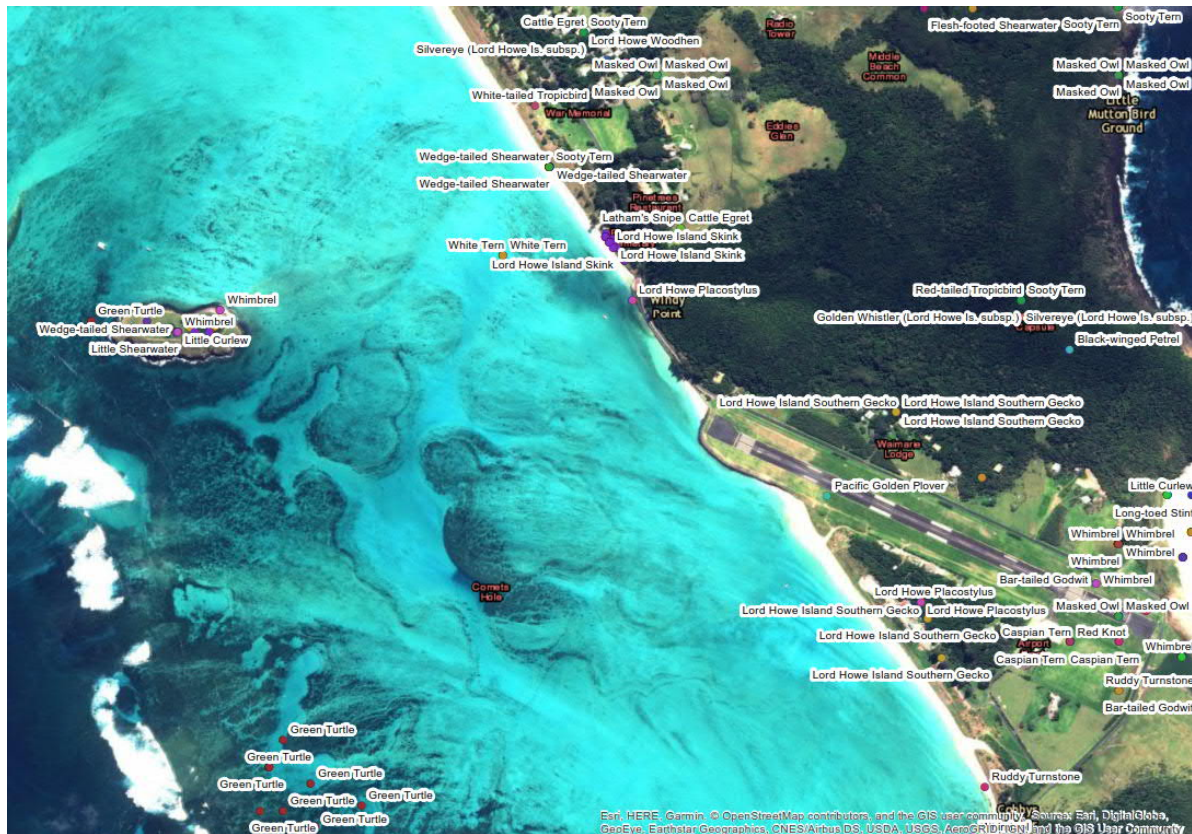


Figure 1 Threatened species located in the vicinity of the proposed project

- Consideration of the likely impacts of climate change in any flood modelling and related design for the project, including factoring in:
  - Increased intensity of rainfall events (using an approach in accordance with relevant guidelines (e.g. *Practical Responses to Climate Change*, Engineers Australia);
  - Sea level rise of between 45 to 82 cm by 2090 (as projected for the NSW coastline under Representative Concentration Pathway 8.5), coupled with extreme sea level events, with increases in storm surge and the extent of inundation across the island; and
  - Increased tailwater levels or sensitivity testing undertaken for various projected rises in mean sea levels.
- Other important considerations for the design of the project include:
  - Prevention of pollution of waterways, including lagoon or coastal waters, by sediments, oils/petrols and other contaminants, during construction or operation;
  - Ensuring the design process and runway structures consider the opportunity to provide suitable habitat for flora/fauna, where possible; and
  - The use of sustainably sourced and/or recycled construction materials which do not contravene the requirements of the *Marine Estate Management (Management Rules) Regulation 1999*.

Further information will be provided upon completion of Milestone 4 of the project in the form of a Preliminary Environmental Assessment.

# DRAFT

## 3.0 Construction Constraints

The concept design of the runway extension will be strongly influenced by the need to accommodate a number of constraints during construction. These constraints include but are not limited to the following:

### 3.1 Airport Operational Restrictions

It is expected that unrestricted access for construction during daylight hours will be limited to two non-consecutive days per week. Construction work will be phased around aircraft flight schedules for the remaining days of the week.

The airport does not operate at night. Access for construction activities at night may be possible, subject to additional constraints including but not limited to those described below.

It is assumed that construction plant, materials and personnel can be located along the runway extension during airport operations, subject to the obstacle limitation surface (OLS) restrictions of the existing runway.

### 3.2 Seasonal Restrictions

Construction activities during both day and at night may be limited during the breeding season of certain migratory birds and marine mammals, as detailed in section 2.0.

### 3.3 Noise Restrictions

As a minimum noise restrictions are expected to apply during any night works. It is assumed that over water pile driving will not be allowed. Although quieter construction activities such as welding, steel fixing and concrete pouring may be allowed.

### 3.4 Light Restrictions

Light spill restrictions are expected to apply during night time construction activity.

### 3.5 Vibration Restrictions

Restrictions on significant underwater vibrations due to pile driving may apply during any marine mammal seasonal restrictions described in 2.0. Vibratory equipment may be required in place of piling hammers.

### 3.6 Supply & storage of Plant, Labour and Materials

It is assumed that there is no local availability of plant, materials or construction personnel. All such items must be brought in by air or by shallow draft barges.

Limited onshore area is available for the storage of construction plant and materials, and this may be required to be stored on barges moored outside the reef until a sufficient portion of the runway extension has been constructed to provide the required storage area without penetrating the OLS.



# DRAFT

## 4.0 Datum

### 4.1 Vertical Datum

Table 1 Project Vertical Datum

Datum	Basis
0m AHD	<p>0m AHD at the site is equivalent to:</p> <ul style="list-style-type: none"> <li>• Chart Datum (established on Lord Howe Island in 1954)</li> <li>• NVM/C/447</li> <li>• LHI-16</li> <li>• PM 1030</li> </ul> <p>This AHD on Lord Howe Island and is not equivalent to AHD on mainland Australia.</p>

Note that Lord Howe Island Tidal Datum (LHITD) is the datum used for water level measurements that are currently undertaken by Manly Hydraulics Laboratory (MHL) at the jetty north of Signal Point in the Lagoon at Lord Howe Island. The current MHL tide gauge zero is 0.144m above the 1954 datum (that is, 0.144mm above AHD).

### 4.2 Horizontal Grid

Map Grid of Australia Zone 57 GDA 94 (MGA94-57) co-ordinates will be adopted for the horizontal grid.

# DRAFT

## 5.0 Design standards, codes and guidelines

### 5.1 Coastal Design Standards

The coastal design elements of the Lord Howe Island Runway Extension will be designed to meet the relevant requirements nominated in Table 2 and will follow the guidelines nominated in Table 3.

Table 2 Coastal Design Codes

Document Reference	Description
<b>BS6349</b>	Maritime Structures

Table 3 Coastal Design Guides

Reference
US Army Corps of Engineers - "Coastal Engineering Manual (CEM)
Eurotop – Wave Overtopping of Sea Defences and Related Structures: Assessment Manual, 2016
The Rock Manual, CIRIA C683D, Second Edition, 2007

### 5.2 Airfield Design Standards

The airfield design elements of the Lord Howe Island Runway Extension will be designed to meet the relevant requirements of the Civil Aviation Safety Authority (CASA) nominated in Table 4 and will be designed to meet the requirements of other relevant standards, codes and guidelines nominated in Table 5 where CASA does not provide specific guidance.

Table 4 Relevant CASA Standards – Airfield Design

Document Reference	Description
<b>Manual of Standards (MOS) Part 139</b>	Draft Part 139 Manual of Standards (Aerodromes) Instrument 2017 <sup>1</sup>
<i>Note</i>	
1. CASA advised that the applicable Manual of Aerodrome Standards (MOS139) is currently undergoing detailed review. The final draft is currently out for industry consultation and is expected to be adopted by the end of 2018	

Table 5 Other Relevant Standards, Codes and Guidelines – Airfield Design

Document Reference	Description
<b>International Civil Aviation Authority (ICAO) Annex 14 Volume I</b>	Aerodrome Design and Operations (7 <sup>th</sup> Edition, July 2016)
<b>ICAO Aerodrome Design Manual Part 1</b>	Runways (3 <sup>rd</sup> Edition, August 2006)
<b>ICAO Aerodrome Design Manual Part 2</b>	Taxiways, Aprons and Holding Bays (4 <sup>th</sup> Edition, July 2005)
<b>ICAO Aerodrome Design Manual Part 3</b>	Pavements (2 <sup>nd</sup> Edition, October 1983)
<b>FAA Advisory Circular 150/5320-6F</b>	Airport Pavement Design and Evaluation (October 2016)
<b>FAA Advisory Circular 150/5320-5D</b>	Airport Drainage Design (August 2013)

**D R A F T****5.3 Structural Design Standards**

The deck structure shall be designed using current editions of the relevant Australian and International Codes and Standards. In addition to the airfield design standards listed in section 5.2 the latest editions of the design standards, guidelines and references contained in Table 6, Table 7 and Table 8 shall apply:

**Table 6 Australian Design Standards**

Document Reference	Description
<b>AS/NZS 1170</b>	Structural design actions – General principles
<b>AS/NZS 1170.1</b>	Structural design actions: Part 1 – Permanent, imposed and other actions
<b>AS/NZS 1170.2</b>	Structural design actions: Part 2 – Wind actions
<b>AS/NZS 1170.4</b>	Structural design actions: Part 4 – Earthquake actions in Australia
<b>AS 2159</b>	Piling – Design and installation
<b>AS/NZS 2312</b>	Guide to the protection of structural steel against atmospheric corrosion by the use of protective coating
<b>AS 3600</b>	Concrete structures
<b>AS 4997</b>	Guidelines for design of maritime structures

**Table 7 International Standards and Guidelines**

Document Reference	Description
<b>BS 6349-1</b>	Maritime structures – Code of practice general criteria
<b>BS 6349-2</b>	Maritime structures – Design of quay walls, jetties and dolphins
<b>PIANC WG 34</b>	Seismic Design Guidelines for Port Structures, 2001

**Table 8 Additional references**

Reference
US Army Corps of Engineers - "Shore Protection Manual"
EurOtop – Wave Overtopping of Sea Defences and Related Structures: Assessment Manual, 2016
Royal Haskoning DHV, <i>Coastline Hazard Definition and Coastal Management Study</i> , Issue 5, 9 September 2014 (RH Coastline Study Report)

# DRAFT

## 6.0 Design life

The required minimum design is shown in Table 9.

**Table 9 Design Lives by component**

Element	Design Life
<b>Revetment Armour</b>	50 years
<b>Deck structure</b>	50 years
<b>Deck sub-structure</b>	50 years
<b>Piles</b>	50 years
<b>Bearings</b>	20 years
<b>CP system</b>	20 years
<b>Steel coating systems</b>	15 years
<b>Drainage structures</b>	50 years
<b>Scour protection</b>	10 years
<b>Airfield Pavement</b>	20 years

### Structural Decking Requirements and Asset Management

The structural deck components shall be designed such that no structural repairs are required over the design working life of the structure.

Replacement of non-structural components and fixtures is permitted in accordance with the design life schedule given above.

Routine inspection and replacement of bearings, CP systems etc. must be possible without interruption to airfield operations.

### Airfield Pavement Asset Management

The following asset management considerations are identified as being necessary to achieve the overall design life for these elements:

- Visual pavement condition survey is recommended at least once per year to identify and document any pavement defects observed and to facilitate proactive maintenance (this is Lord Howe Island's current practice carrying out Annual Technical Inspections);
- Based on observations from visual pavement condition survey, proactive maintenance works to be carried out on an "as needed basis" may include:
  - Localised minor repairs to wearing course (crack sealing, joint maintenance, repair of surface spalls);
  - Localised heavy patching to repair pavement sublayers prior to milling; and
  - Asphalt mill and resheet

# DRAFT

## 7.0 Coastal Design Parameters

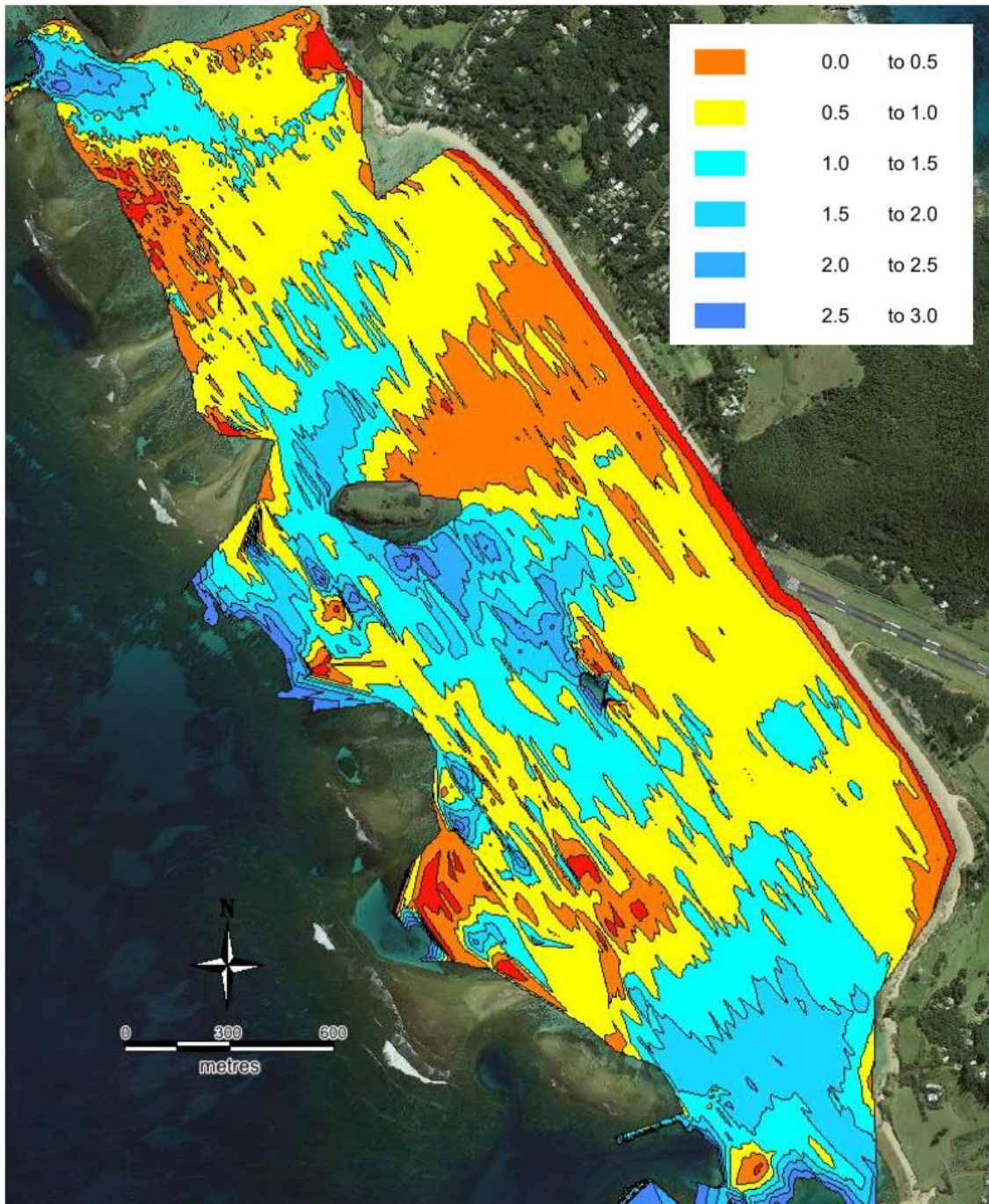
The following Coastal Design Parameters will be adopted to inform the concept design.

### 7.1 Bathymetric survey data

As surveyed by The Port Authority of New South Wales on the 23<sup>rd</sup> to 31<sup>st</sup> March 2015 and provided to AECOM in file: 201503\_LHI\_HydroDatum\_MGA57\_1m\_TrueXY.

Seabed levels based on information provided by NSW Maritime are shown in Figure 2 where bathymetric contours are extracted from their 2008 survey. Depths are shown relative to AHD.

Figure 2 2008 bathymetric contours



# DRAFT

## 7.2 Sea Water Levels

Based on the RH Coastline Study Report, the tidal planes for the site are presented in Table 10

**Table 10 Tidal Planes in Lagoon at Lord Howe Island**

Tidal Plane	Tidal Level (m AHD)
High High Water Solstice Springs	2.31
Mean High Water Springs	2.01
Mean High Water	1.83
Mean High Water Neap	1.66
Mean Sea Level	1.23
Mean Low Water Neap	0.81
Mean Low Water	0.63
Mean Low Water Springs	0.46
Indian Springs Low Water	0.24

The water levels for different exceedance probabilities are presented in Table 11.

**Table 11 Exceedance probabilities for water levels in Lagoon at Lord Howe Island**

Probability of exceedance (%)	Tidal Level (m AHD)
0.1	2.53
1	2.30
5	2.05
10	1.91
50	1.23
90	0.58

## 7.3 Sea level rise

The NSW Government no longer prescribes statewide sea level rise projections and the 2009 NSW Sea Level Rise Policy Statement is no longer NSW Government policy. However, this document provides reasonably conservative allowances for planning purposes.

Based on the 2009 Policy, national and international projections of sea level rise along the NSW coast are for a rise relative to 1990 mean sea levels of 40 cm by 2050 and 90 cm by 2100.

For the purposes of this study, the allowance for future sea level rise is taken to be 0.9m.

# DRAFT

## 7.4 Wave Climate

From the RH Coastline Study Report, the statistical wave parameters derived from the analysis of 31 year WAVEWATCH III model are presented in Table 12.

**Table 12 Statistics from analysis of 31 year WAVEWATCH III® model wave hindcast at Lord Howe Island**

Statistic	Hs (m)	Tp(s)
Median	2.7	11.7
Mean	2.8	11.6
Minimum	0.7	3.8
Maximum	10.4	23.4
Standard Deviation	1.0	2.4
10% Probability of exceedance	4.2	14.5
5% Probability of exceedance	4.8	15.5
1% Probability of exceedance	6.0	17.6

The method of Goda (2010) for incipient breaking of significant ( $H_s$ ) waves will be applied to determine the design wave height at the structure. This depends on the design water depth, offshore wavelength and bed slope.

Using the methodology in Battjes and Groenendijk (2000) for wave height distributions in the shoaling and breaking zone,  $H_{10\%}$  and  $H_{2\%}$  design wave heights at the structure can then be determined, which will be used in rock armour hydraulic stability calculations.

The deck on piles design will be based on the design parameter with a 5% probability of exceedance. The stability of the deck will be checked for the 1% wave condition, allowing for some yielding of the structure.

## 7.5 Design Current

From the RH Coastline Study Report the ocean current speed is between 0.5 and 1.0 m/s. For the purposes of this study the design current speed is taken to be 1.0 m/s parallel to the shoreline.

Accumulation of encrustations up to 100mm thick shall be allowed for in assessing loads due to currents on piles and other submerged elements.

# DRAFT

## 7.6 Armour Stability and Sizing

### 7.6.1 General

Armour sizing will be carried out using Van der Meer's methodology modified for shallow water as appropriate, as outlined in the CIRIA Rock Manual C683.

Concrete armouring will be considered in the design where sourcing rock of the sizing derived from the above method is considered uneconomic.

### 7.6.2 Design Parameters for Rock Armour

Armour layers will be designed to have minimum damage under the extreme design events considered, levels corresponding to 'start of damage' in will be incorporated in design,

**Table 13 Design Values of Damage Parameter  $S_d$ , for Double Layer Armouring, CIRIA C683**

Slope ( $\cot \alpha$ )	Damage Level $S_d$		
	Start of Damage	Intermediate Damage	Failure
1.5	2	3-5	8
2	2	4-6	8
3	2	6-9	12
4	3	8-12	17
6	3	8-12	17

Hydraulic performance, i.e. notional permeability coefficients of the various armour configurations considered during design will be in line with recommendations of Section 5.2.2.2 of the Rock Manual, C683.

### 7.6.3 Design Parameters for Concrete Armour Units

Designs incorporating the use of concrete armour units will be based primarily on manufacturer's specifications and guidelines for the use of the respective units considered. As a guide, a summary of stability numbers,  $N_s$  and  $K_D$  values for the most common concrete armour layers are summarised from CIRIA C683 in Figure 3.



**DRAFT****Figure 3 Stability Numbers for Concrete Armour Units**

Armour type	Damage level	Stability number $H_s/(\Delta D_n)$				References/remarks	
		Trunk		Head			
		Non-breaking waves	Breaking waves	Non-breaking waves	Breaking waves		
Cube (2 layers)	0%	1.8–2.0		-		Brorsen et al (1975) slope: 1:1.5 and 1:2	
	4%	2.3–2.6		-			
	0% ( $N_{od} = 0$ )	1.5–1.7		-		Van der Meer (1988a) <sup>1</sup> slope 1:1.5	
	5% ( $N_{od} = 0.5$ )	2.0–2.4		-			
	< 5%	2.2	2.1	1.95	-	SPM (CERC, 1984)	slope 1:1.5
		2.45	2.35	2.15	-		slope 1:2
2.8		2.7	2.5	-	slope 1:3		
Cube 2, 3 (1 layer)	0% ( $N_{od} = 0$ )	2.2–2.3		-		Van Gent et al (2000)	
Tetrapod	0% ( $N_{od} = 0$ )	1.7–2.0		-		Van der Meer (1988a) <sup>1</sup> slope 1:1.5	
	5% ( $N_{od} = 0.5$ )	2.3–2.9		-			
	< 5%	2.3	2.2	2.1	1.95	SPM (CERC, 1984)	slope 1:1.5
		2.5	2.4	2.2	2.1		slope 1:2
		2.9	2.75	2.3	2.2		slope 1:3
Dolos	2% ( $N_{od} = 0.3$ )	2.7 ( $r = 0.32$ ) <sup>4</sup>		-		Burcharth and Liu (1993) <sup>5</sup> slope 1:1.5	
		2.5 ( $r = 0.34$ ) <sup>4</sup>		-			
		2.3 ( $r = 0.36$ ) <sup>4</sup>		-			
	<5% ( $N_{od} = 0.4$ )	3.2 ( $r = 0.32$ ) <sup>4</sup>		-		Holtzhausen (1996) <sup>6</sup>	
Accropode	0% ( $N_{od} = 0$ )	2.7 (15)	2.5 (12)	2.5 (11.5)	2.3 (9.5)	Sogreah (2000) <sup>7, 8</sup>	
Core-loc	0% ( $N_{od} = 0$ )	2.8 (16.0)		2.6 (13.0)		Melby and Turk (1997) <sup>7, 8</sup>	
Xbloc	0% ( $N_{od} = 0$ )	2.8 (16.0)		2.6 (13.0)		DMC (2003) <sup>7, 8</sup>	

**7.7 Overtopping****Table 14 Overtopping Limits**

Design Case	Design Wave Event	Design Water Level Event	Overtopping Limit	Source
<b>Operational</b>	Corresponding to ARI of the runway operational wind limit	5% exceedance	Mean: 0.16 l/s/m	Eurotop II: 3.3.7 (practical zero limit)
<b>Survival</b>	Combined exceedance probability of 1%		Mean: ≤1.0 l/s/m Peak: <1,000 l/m	Eurotop II: Table 3.2

Overtopping limits apply at the seaward edge of the runway pavement.

**DRAFT****8.0 Ground Conditions and Geotechnical Design Parameters**

The preliminary geological model in the Lagoon is based on information interpreted for the desktop geotechnical study contained within AECOM's "Geotechnical Interpretative Report" and is presented in Table 15 and Table 16 .

**Table 15 Interpreted Ground Profile**

Geotechnical Unit	Simplified Description	Depth to Top of Unit (m)	Unit Thickness (m)
<b>1. Upper Sand</b>	Carbonate sands trace gravel	0.0	0.0 to 1.9
<b>2. Lower Sand</b>	Carbonate silty gravelly sands	0.0 to 2.0	7.3 to 10.4
<b>3. Interbedded Sands and Clays</b>	Interbedded Sands and Clays	7.9 to 9.5	2.8 to 4.9
<b>4. Calcarenite</b>	Calcarenite (calcareous sandstone)	11.0 to 13.8	
a. Calcarenite-W	Weathered calcarenite		1.8 to 3.1
b. Calcarenite-FR	Fresh calcarenite		0.7 (proven)

**Table 16 Interpreted Ground Profile**

Geotechnical Unit	Density/Consistency	Bulk Unit Weight (kN/m <sup>3</sup> )	Effective Cohesion (kPa)	Effective angle of internal shearing resistance (deg)
<b>Upper Sand</b>	Loose	16	0	25
<b>Lower Sand</b>	Very loose / very soft	16	0	25
<b>Interbedded Sands and Clays</b>	Loose to medium dense	16	0	30
<b>Calcarenite</b>	Weathered	18	10	32
	Sound	20	50	35

The unit depths, thicknesses and material properties presented in Table 15 and are to be adopted for the concept design but should not be assumed to represent the extremes that may be encountered across the site. Further geotechnical investigations are required to define this information as actual unit boundaries and material properties can be highly variable.

**DRAFT****9.0 Airfield Design****9.1 General**

The airfield design elements of the works generally include the extension of the runway, modification to the existing taxiway and apron affected by the runway strip, review of the existing services and navaid infrastructure, grading and pavements.

This section defines the functional requirements and design standards applicable to the airfield design elements of the Lord Howe Island Runway Extension and outlines the approach adopted for the design of these elements at the concept design stage.

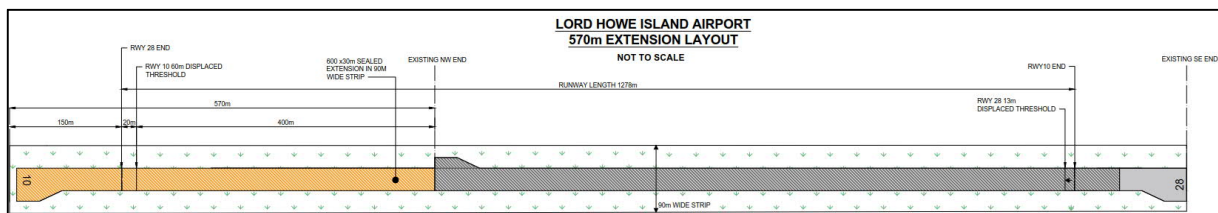
**9.2 Functional Requirements**

The Design Brief and the referenced *Detailed Assessment of Extended Runway Requirements and Suitable Aircraft* (Revision B, issued 20<sup>th</sup> April 2018) define the baseline functional requirements for the airfield design elements of the works.

Functional requirements for airfield design elements are summarised as follows.

The runway extension will be based on the 570m Extension layout as shown in Figure 4, the existing taxiway, apron and other infrastructure will be assessed based on a Code 3 runway strip and associated Obstacle Limitation Surfaces (OLS) surfaces being implemented.

**Figure 4 570m Extension Layout**



At this stage the aircraft servicing Lord Howe Island beyond 2022 is unknown, and therefore a specific design aircraft has not been adopted. Table 17 lists the candidate aircraft types and their specific design characteristics; the most onerous aircraft (shown in red) for each characteristic will be adopted for design purposes.

**Table 17 Candidate Aircraft design characteristics**

Aircraft	PCN	Runway Code <sup>1</sup>	Aircraft Code <sup>2</sup>	OMGWS <sup>3</sup> (m)
Saab 340B	6	3	C	7.37
DHC8-100	-	2	C	8.49
DHC8-200	9	2	C	8.50
ATR42-500/600	9	2	C	4.68
DHC8-300	8	2	C	8.56
Fokker 50	9	3	C	7.90
ATR72-500/600	11	3	C	4.66
DHC8-400	14	3	C	9.54

*Note*

- Runway code refers to the aeroplane reference field length
- Aircraft code is determined by the wing span of an aircraft
- OMGWS = outer main gear wheel span

**D R A F T****9.3 Design Approach****9.3.1 Geometry and Grading**

Modelling of the Lord Howe Island airfield design will be based on the geometric requirements of CASA, which have been split into three sections Runways (Table 18, Table 19 and Table 20), Taxiways (Table 21 and Table 22) and Aprons (Table 23).

The existing Apron will be evaluated based on the requirement that 2x DHC8-400 aircraft will need to be parked at the same time without causing any operational restrictions.

**Table 18 MOS139 Runway Code Number**

Code Number	Aeroplane reference field length	MOS139 reference section
1	Less than 800m	4.01.3
2	Not less than 800m	
3	Not less than 1,200m	
4	Not less than 1,800m	

**Table 19 MOS139 2D Geometric Runway requirements**

2D Geometric Runway Requirements	Runway Design Parameters <sup>1</sup>	MOS 139 reference section
<b>Min. Runway width</b>	30m <sup>2</sup>	6.02.1
<b>Min. Runway strip</b>	140m	6.16.5
<b>Width of shoulders</b>	N/A for Code C aircraft	6.10
<b>Min. clearance of OMGWS to taxiway edge</b>	4m	6.03.1
<b>Graded RWY strip from CL</b>	90m (if the runway is 30m)	6.16.2
<b>Flyover area<sup>3</sup></b>	50m (if the runway width is 30m)	
<b>Min. RESA</b>	90m	6.25.5
<i>Note</i>		
1. Runway Design Parameters are based on a Code 3 Runway used by an aircraft with an OMGWS of greater than 9m		
2. Under CAR 235A minimum runway width requirements for Dash 8 Q400 operations can be reduced by one runway width to 30m		
3. The runway extension is to be elevated over a body of water and therefore no physical structure is required within the flyover area, as long no objects impinge the "Flyover area transverse slope" as defined in Table 6.		

**Table 20 MOS139 3D Geometric Runway requirements**

3D Geometric Runway Requirements	Runway Design Parameters <sup>1</sup>	MOS 139 reference section
<b>Max. overall longitudinal slope</b>	1%	6.05.1
<b>Max. longitudinal slope</b>	1.5%	6.05.2
<b>Max. longitudinal slope changes</b>	0.2% per 30m	6.05.6
<b>Max. longitudinal slope on graded strip</b>	2%	6.18.1
<b>Sight distance</b>	600m @ 3m above the surface	6.06.2
<b>Transverse slopes</b>	Maximum slope = 2.5% Minimum slope = 1%	6.07.2
<b>Transverse slopes on shoulders</b>	Maximum slope = 5% for the first 3m, then 2.5% Minimum slope = 1%	6.12.1
<b>Max. transverse slope on graded strip</b>	2.5%	6.20.1
<b>Flyover area transverse slope<sup>2</sup></b>	Nothing may project through an upward slope of 5% from the edge of the graded strip	6.20.3
<b>RESA slopes</b>	Max. longitudinal slope = 5% downwards Max. transverse slope = 5%	6.25.7

**DRAFT****Note**

1. Runway design parameters are based on a Code 3 Runway used by an aircraft with an OMGWS of greater than 9m
2. The runway extension is to be elevated over a body of water and therefore no physical structure is required within the flyover area, as long no objects impinge the "Flyover area transverse slope" as defined in Table 6.

**Table 21 MOS 139 2D Taxiway geometric requirements**

2D Geometric Taxiway Requirements	Design Parameters <sup>1</sup> Code C aircraft	MOS 139 reference section
Min. taxiway width	23m	6.36.2
Min. taxiway strip from CL	26m	6.47
Width of shoulders	Not required for turboprop aircraft	6.43
Min. clearance of outer main wheel gear to taxiway edge	4m	6.37.2
Graded TWY strip from CL	15m	6.48

**Note**

1. Taxiway design parameters are based on a Code C aircraft with an OMGWS of greater than 9m

**Table 22 MOS 139 3D Taxiway geometric requirements**

3D Geometric Taxiway Requirements	Design Parameters <sup>1</sup>	MOS 139 reference section
Max. longitudinal slope	1.5%	6.39.1
Max. longitudinal slope changes	1% per 30m	6.39.2
Sight distance	300m @ 3m above the surface	6.41.2
Transverse slope	Maximum slope = 2.5% Minimum slope = 1%	6.40.2
Max. transverse slope on graded TWY strip	2.5% upwards and 5% downwards relative to the horizontal	6.49.1
Max. transverse slope on non-graded TWY strip	Should not exceed 5% upwards and downwards measure away from the direction of the TWY	6.49.4

**Note**

1. Taxiway design parameters are based on a Code C aircraft with an OMGWS of greater than 9m

**Table 23 MOS139 Apron geometric requirements**

Apron Requirements	Design Parameter	MOS 139 reference section
Max. slope of Apron	2%	6.59.3
Max. slope on a designated aircraft parking position	1%	6.59.1
Min. clearance of outer main wheel gear to taxiway edge	4m	6.37.2

Existing surface levels have been adopted based on topographic survey data provided by LHIB

# DRAFT

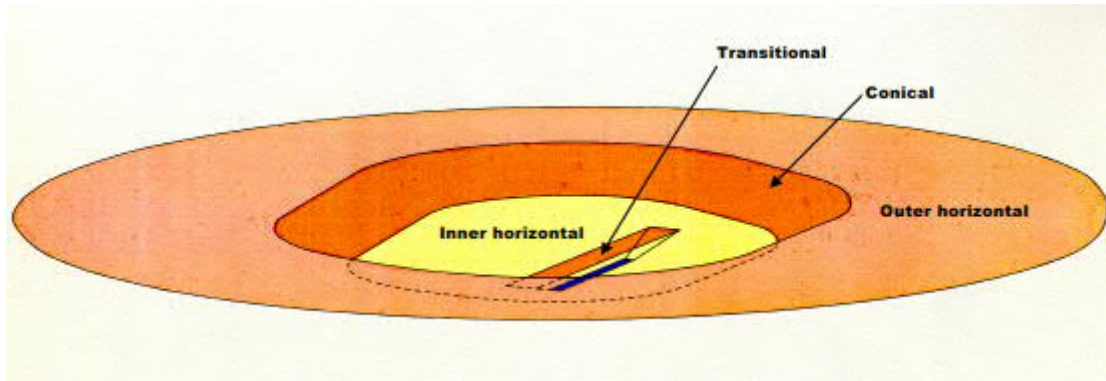
## 9.3.2 Obstacle Limitation Surface

Assessment of potential penetrations through the Obstacle Limitation Surface will be based on the CASA requirements contained within Table 7.15 of MOS139 for a Code 3 non-precision approach runway. These requirements are contained in Table 24 and illustrated in Figure 5, Figure 6 and Figure 7.

Table 24 MOS139 Code 3 non-precision approach runway OLS requirements

Surface	Requirements
<b>Conical</b>	Slope = 5% Height = 35m
<b>Inner Horizontal</b>	Length of inner edge = 140m Distance from threshold = 60m Divergence each side = 15% First section length = 3000m First section slope = 3.33% Second section length = 3600m Second section slope = 2.5% Horizontal section length = 8400m Total length = 15000m
<b>Transitional</b>	Slope = 20%
<b>Take-off climb</b>	Length of inner edge = 180m Minimum distance of inner edge from runway end = 60m Rate of divergence = 12.5% Final width = 1800m Overall length = 1500m Slope = 2%

Figure 5 Relationship of outer horizontal, conical, inner horizontal and transitional surfaces



# DRAFT

Figure 6 Approach surface for an instrument approach runway

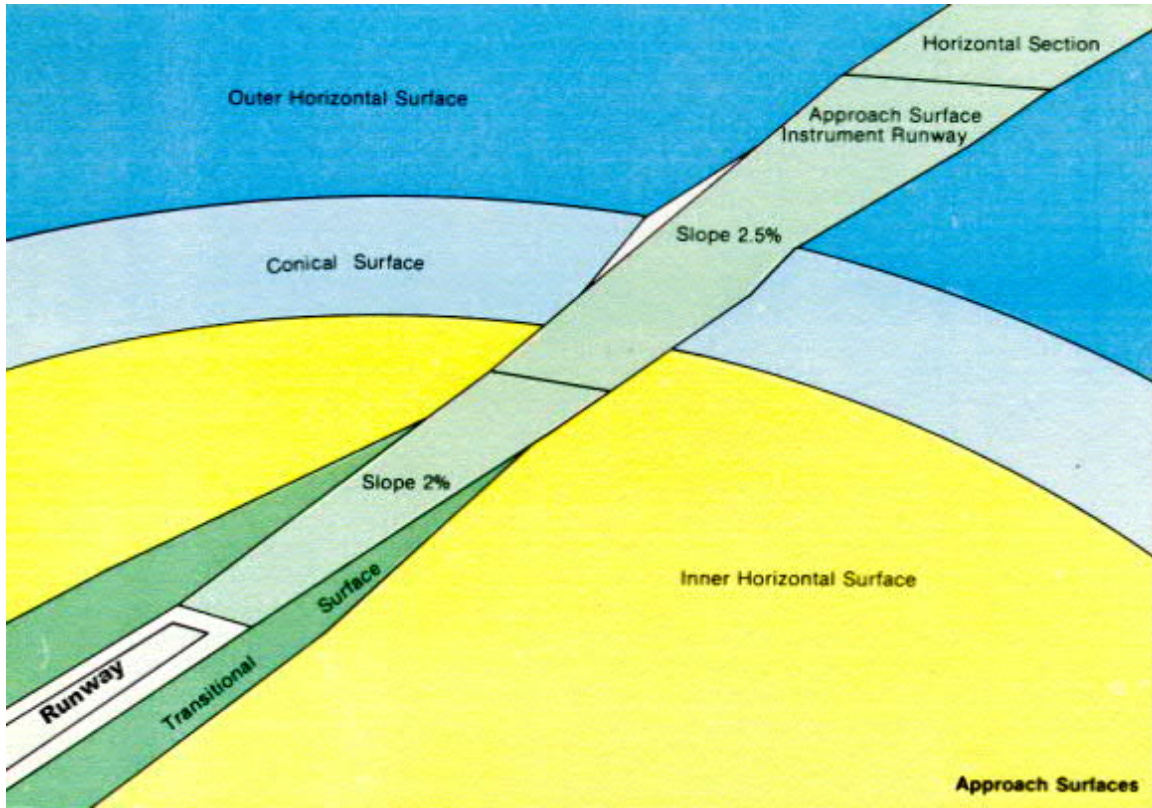
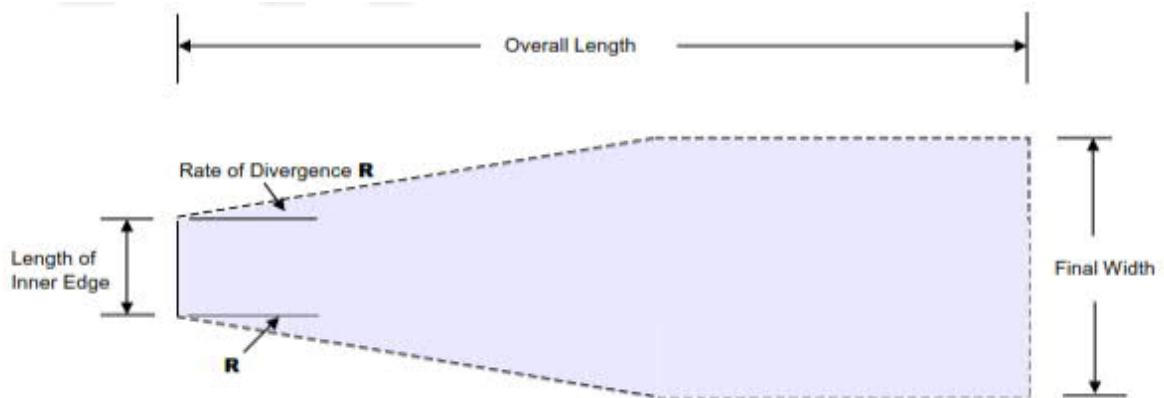


Figure 7 Take-off climb surface



**DRAFT****9.3.3 Pavements**

Pavement design at Lord Howe Island will be based on the requirements of the FAA and modelled using FAARFIELD v1.41 – Airport Design Software. At subsequent design stages a more complex analysis of the pavement design will be required using APSDS software.

A flexible pavement will be designed for the reclaimed land runway extension, for the deck on piles design the concrete deck will act as the runway pavement.

In the absence of a full 20 year fleet mix, the design traffic loading within Table 25 have been adopted for the purpose of the concept design of airfield pavements. The existing airfield pavements will also be assessed based on this traffic loading.

**Table 25 Aircraft Design Traffic Loading**

Aircraft	Departures			Ad-hoc flights/annum <sup>1</sup>	Passes to Traffic Cycles <sup>2</sup>	Design Period (Years)	Cumulative Passes
	Daily	Monthly	Annual				
<b>DHC8-400</b>	2	-	730	70	2	20	32,000
<b>C130</b>	-	3	36	4	2	20	800
<i>Notes</i>							
1. Additional ad-hoc flights have been based on 10% of the annual departures							
2. This is based on aircraft requiring to taxi along the runway to either end prior to take off							

Should the existing apron not be sufficiently sized to accommodate two DHC8-400 aircraft, a rigid pavement design will be provided for the proposed apron extension.



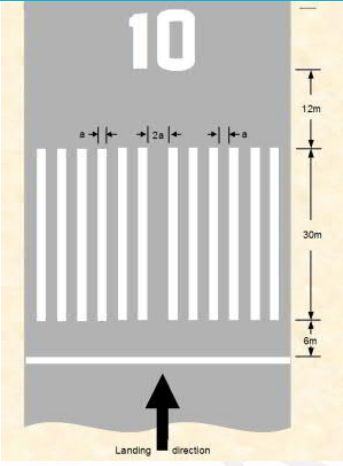
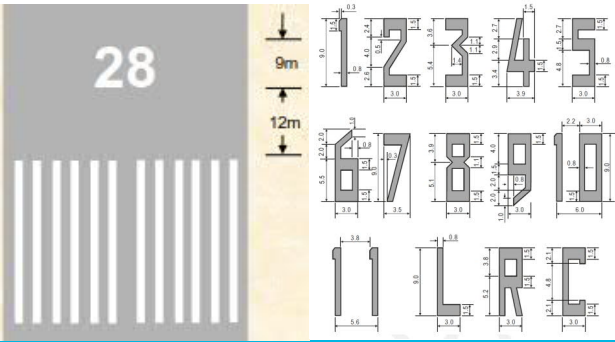
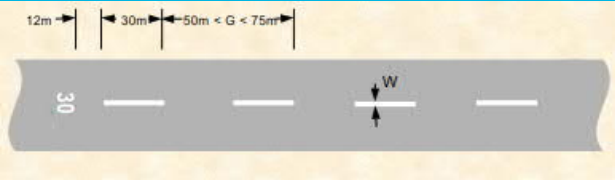
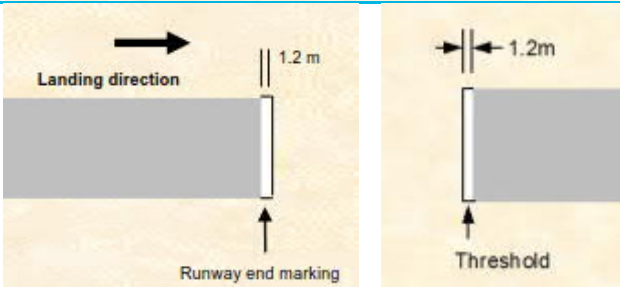
# DRAFT

## 9.3.4 Line markings

### 9.3.4.1 Runway

The extended runway will be provided with all applicable mandatory markings, as shown in Table 26

Table 26 Runway Line Markings

Runway Markings	Design Parameter	Reference
	<p><u>Threshold Markings</u> Runway width = 30m Number of stripes = 8 Width of stripes (a) = 1.5m</p>	<p>MOS139 Section 8.17</p>
	<p><u>Runway Designation Markings</u></p>	<p>MOS139 Section 8.18</p>
	<p><u>Centreline Markings</u> Width (w) = 0.45m</p>	<p>MOS139 Section 8.19</p>
	<p><u>End &amp; Threshold Markings</u> Width (w) = 1.2m</p>	<p>MOS139 Section 8.20</p>

**DRAFT**

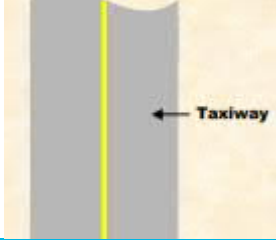
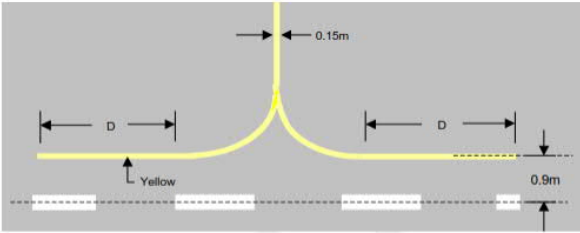
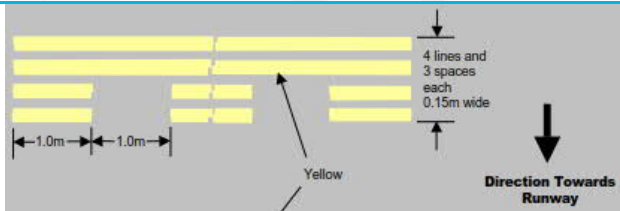
	<p><u>Aiming Point and Touchdown Zone Markings</u> Width (W) = 6m D = 17m</p> <p>MOS139 Section 8.25</p>
	<p><u>Permanently displaced threshold markings</u></p> <p>MOS139 Section 8.26</p>
	<p><u>Runway turn pad markings</u></p> <p>MOS 139 Section 8.33</p>
	<p><u>Runway starter extension markings</u> Width (W) = 0.45m If runway starter extension is provided, runway side stripes must be provided within the runway starter extension section. The start of the runway starter extension before the threshold line must be marked by a transverse line with the same characteristics as the runway side-stripe marking.</p> <p>MOS139 Section 8.34</p>

# DRAFT

## 9.3.4.2 Taxiway

The existing will be provided with all applicable mandatory markings, as shown in

Table 27 Taxiway Line Markings

Taxiway Markings	Design Parameter	Reference
	<p><u>Taxi guidelines</u> Width = 0.15m</p>	MOS139 Section 8.36
	<p><u>Taxi guidelines on the runway</u> D = 60m</p>	MOS139 Section 8.37
	<p><u>Runway Hold Position</u> To be positioned beyond the graded area of the runway strip</p>	MOS139 Section 8.18

## 9.3.5 Stormwater Drainage

The FAA Advisory Circular 150-5320-5D recommends the 5-year ARI design storm event as the criteria for the design of the airfield drainage network. This criterion is often adopted in absence of any local design standards on airport drainage. The criteria from this document that will be adopted as part of the drainage design for Lord Howe Island Airport is summarised in Table 28 below.

Table 28 - Drainage Design Criteria (FAA Advisory Circular 150-5320-5D)

Design Storm Event	Design Criteria	Reference
5 year (minor event)	- No encroachment of runway (incl. paved shoulders) - No encroachment of taxiway (incl. paved shoulders)	FAA Advisory Circular 150/5320-5D 2-2.4.2
10 year (major event)	- No encroachment of centre 50% of runway - No encroachment of centre 50% of taxiway	FAA Advisory Circular 150/5320-5D 2-2.5

It is assumed that the existing drainage infrastructure servicing the airport is suitable to meet the criteria above. The additional runway extension will be drained through a separate drainage system.

### 9.3.5.1 Rainfall

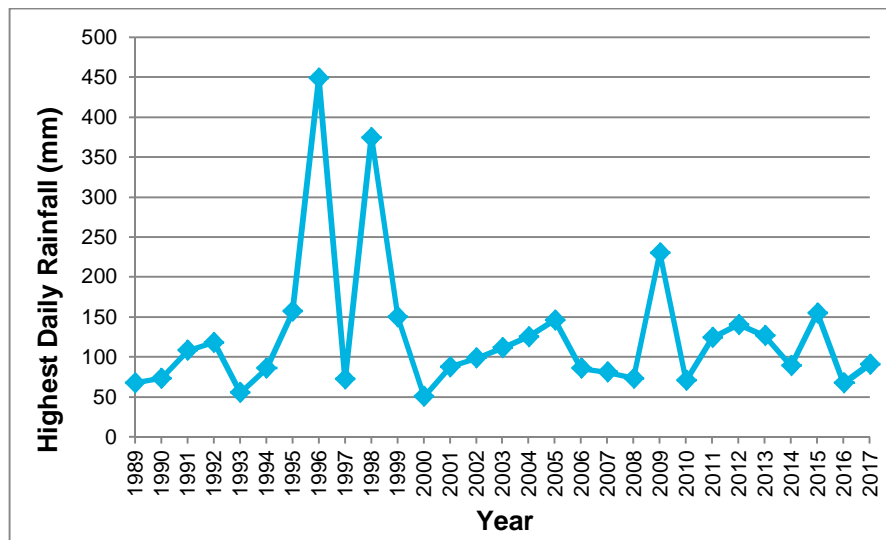
The Bureau of Meteorology has operated a station at Lord Howe Island collecting rainfall on a daily basis since 1988. The highest daily rainfall for each month for the years 1989 to 2017 is shown in Table 29 and the highest rainfall for each year is presented in Figure X below. The data shows that the average highest rainfall for each month is 44mm and average highest rainfall for each year is 127mm. The lowest rainfall recorded was in 2000 with 50.6mm and the highest rainfall was in 1996 with 449mm recorded.

**DRAFT**

**Table 29 - Lord Howe Island Highest Daily Rainfall by Month (Bureau of Meteorology Station No. 200839)**

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Highest Rainfall
1989	54.4	11.2	57.4	33	16.2	68.2	24.6	15.4	46.4	16.8	50.6	37.6	68.2
1990	48.4	33.2	65	73.2	69	28.8	70	73.6	45.2	53.8	24.8	20.4	73.6
1991	77.2	108.4	36.4	29.6	27	26.4	36.2	39.4	22.2	9.2	26	52.8	108.4
1992	19	47.4	33.2	38.2	36.6	28.2	24.2	18.6	27.8	27.4	33.2	118.4	118.4
1993	11.4	18	55.4	5.4	12.4	12.2	53.8	50.2	42.2	18.8	40.4	26.4	55.4
1994	63.4	11.2	45.4	46	19.4	77.4	23.4	16.2	13.8	86	30.8	35.4	86
1995	93.2	14.2	85.8	18.8	157.2	50.6	13.4	15.2	38	50	65.6	45	157.2
1996	238.6	57	33.4	48.4	10.4	449	30.6	40.4	34.2	96.6	27	17	449
1997	13.2	11	72.6	15.6	61.8	35.6	14.2	10.8	16.4	13	17.2	28.8	72.6
1998	43.6	374.6	88.8	23	60.8	100.6	29	29.2	26.2	87.2	48.4	60.6	374.6
1999	68.2	46.2	65.4	12.8	150	72	68.6	13.6	58.4	19.4	31.4	22	150
2000	25	1.4	13.8	40.8	50.6	22	30	35	13	32.4	50.2	36.8	50.6
2001	9	85	88.2	62.6	33.8	22.4	48.4	27.4	29.8	32.2	73.8	15.8	88.2
2002	26.4	53	71	99	90.8	33.4	13.8	34	35.8	21	18.2	19.2	99
2003	25	36.8	63.8	74.8	55.6	67.2	33.4	23.4	13.8	39	68.6	111.6	111.6
2004	48.8	125.8	20.4	21.8	26.6	26.4	48.4	10.4	71.6	40.2	18	42.8	125.8
2005	146.6	13	40	17.8	75.6	32.4	70.4	21.2	41.2	32.4	66.8	58.2	146.6
2006	27.6	5.6	16.4	86.2	69	33	18.2	51	33	13.6	25	22.8	86.2
2007	13.4	18.4	15.8	36.4	28.8	81.2	18	5.2	32.6	22.6	11.6	14	81.2
2008	73.6	35.6	9.4	24	28.4	24.6	54.2	33.6	35.8	18.6	48.4	25.8	73.6
2009	18.4	13.6	50	230.4	23.6	19.4	20	22	22	16.2	6.6	7	230.4
2010	41.2	13.2	27	53.6	46.4	26	46.6	34	27.8	27	3.8	71	71
2011	24.8	24.4	97.2	46.4	75.6	124.6	18.8	51.8	83.6	47.6	15.8	48.6	124.6
2012	141	60	81	78.4	86.8	33.6	49.6	31.4	35.4	24.2	43.6	8.8	141
2013	13.4	48.2	53.4	21.8	33.6	21.8	36.2	24.6	45.2	31.8	126.8	17.2	126.8
2014	8.2	5.2	21.8	16.6	18.2	37	27	38.2	47.2	89.2	22.2	54	89.2
2015	17.2	12.4	31.2	134.4	45.2	26.8	54.2	30	60.4	9.8	155.2	61	155.2
2016	40.4	25.8	17.4	31.4	15.8	23.5	37.8	48.8	67.6	24.4	26.4	12.6	67.6
2017	8	10.8	91.2	58.8	34.2	64.6	21.8	17	17.6	24	22	70.8	91.2

**Figure 8 - Lord Howe Island Highest Daily Rainfall by Year (Bureau of Meteorology Station No. 200839)**



To size drainage infrastructure to meet the design criteria it is important to have suitable data for different storm durations at different annual recurrence intervals. The rainfall data recorded by BOM measured every 24 hours; however it is not known what storm duration events each of the recording are from. Therefore further analysis on the data needs to be carried out to determine a complete set of rainfall data for hydraulic modelling. The table below shows the highest daily rainfall with the estimated exceedance probability based on the 29 years of recordings.

A comparison with the Sydney and Townsville 24 hour rainfall event (based on BOM AR&R87 IFD data) is all shown in Table 30 below. Sydney was chosen a suitable comparison because of its similar latitudinal position and Townsville was also selected due to its tropical climate. The comparison shows

# DRAFT

that the rainfall for an assumed equivalent ARI is lower than that of Sydney and Townsville. It is recommended that a complete AR&R87 IFD data set be adopted for the hydraulic modelling completed at the later design stages.

**Table 30 - Lord Howe Island Highest Daily Rainfall Comparison (Bureau of Meteorology Station No. 200839)**

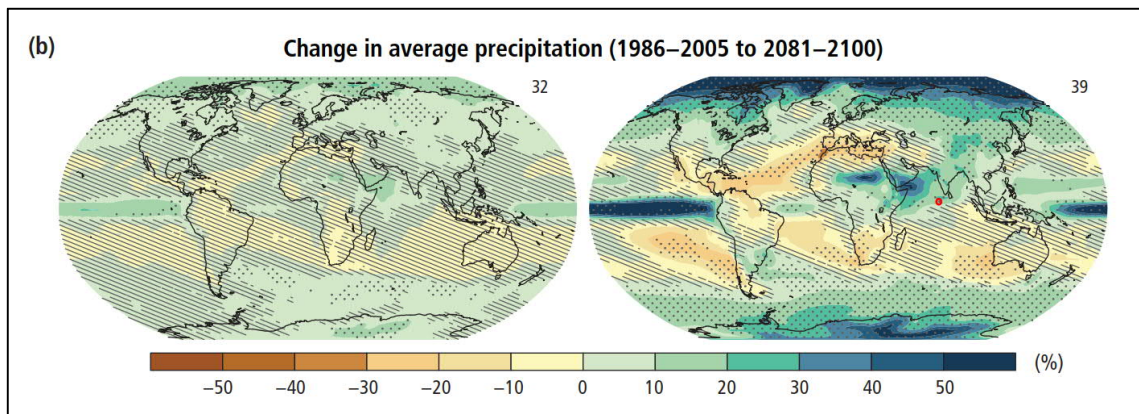
Year	Highest Daily Rainfall (mm)	Exceedance Probability	ARI	Sydney	Townsville
1996	449	0.00%			
1998	374.6	3.45%			
2009	230.4	6.90%			
1995	157.2	10.34%	10 Year	190.8	285.6
2015	155.2	13.79%			
1999	150	17.24%			
2005	146.6	20.69%	5 Year	167.52	244.8
2012	141	24.14%			
2013	126.8	27.59%			
2004	125.8	31.03%			
2011	124.6	34.48%			
1992	118.4	37.93%			
2003	111.6	41.38%			
1991	108.4	44.83%			
2002	99	48.28%	2 Year	127.92	180.72
2017	91.2	51.72%			
2014	89.2	55.17%			
2001	88.2	58.62%			
2006	86.2	62.07%			
1994	86	65.52%			
2007	81.2	68.97%			
1990	73.6	72.41%			
2008	73.6	72.41%			
1997	72.6	79.31%			
2010	71	82.76%			
1989	68.2	86.21%			
2016	67.6	89.66%			
1993	55.4	93.10%			
2000	50.6	96.55%	1 Year	98.88	137.28

### 9.3.5.2 Climate Change

The potential implications of climate change will be assessed with reference to the IPCC Climate Change 2014 Synthesis Report.

Review of this report indicates that average rainfall could be expected to remain the same (-10 to 10%) by 2100 (refer Figure 9). For the 50 year planning horizon, an increase of 5% in rainfall intensity will be adopted to include in a climate change sensitivity analysis.

**Figure 9 - Change in average precipitation (IPCC Climate Change 2014 Synthesis Report)**



Sea level rise information contained within section 7.3 will be adopted for the stormwater design.

# DRAFT

## 10.0 Structural Deck Design

### 10.1 General

This section summarises the functional requirements, standards, and design criteria for the structural deck. These parameters have been used to develop a concept design for the deck, in sufficient detail for the purposes of this study, including preparation of a concept cost estimate.

### 10.2 Functional Requirements

#### 10.2.1 Deck Geometry

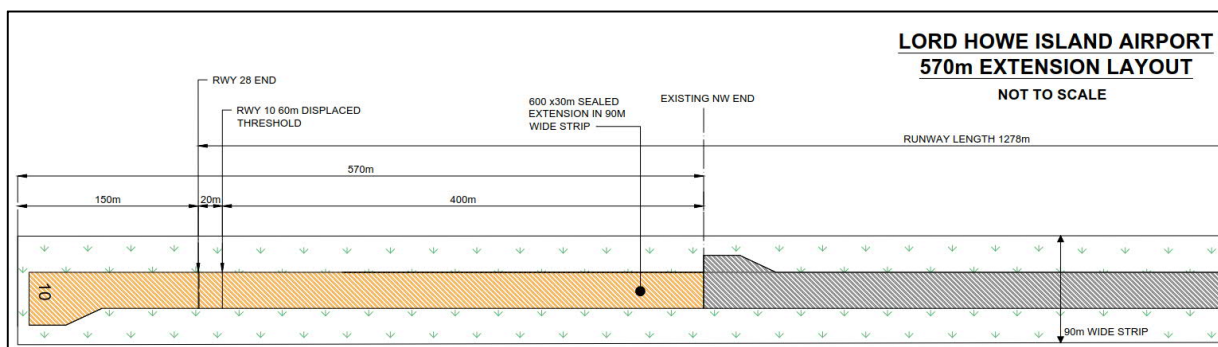
The horizontal and plan geometry of the deck surface is dictated by the requirements of section 9.3,

##### 10.2.1.1 Plan Geometry Principle

The indicative plan geometry of the deck is shown in Figure 10 and summarised below;

- Length of deck = 570m
- Width of deck = 90m
  - Including 30m wide Runway and aircraft turning head

Figure 10 570m Extension Dimensions



##### 10.2.1.2 Horizontal Geometry Principle

In principle the longitudinal gradient of the deck will rise from the end of the existing runway to the extent of the 570m extension. The transverse gradient of the deck will slope from down from the centreline to the outer edges.

#### 10.2.2 Structural Form

The deck structure is required to cause minimum impact to the coastal processes. This is expected to be achieved via a deck on piles.

The deck will be connected to the existing runway via a link span to minimise the potential for differential settlement or movement at the interface.

#### 10.2.3 Settlement and Movement Tolerances

The structural deck is to be designed for zero permanent settlements and movements under design loads. If settlements and movements occur at the seaward end of the existing runway, the link span connecting the existing runway to the structural deck will be designed to accommodate this.

Optimum economy is likely to be achieved using vertical piles to support the deck.

#### 10.2.4 Design Deck Levels

The deck finished surface levels at the landward end shall match the existing pavement levels, which are believed to be approximately +5.0m AHD. Deck levels seaward of this interface shall be as required to minimise wave impacts on the deck and its substructure, subject to the restrictions on

# DRAFT

longitudinal and transverse gradients specified in section 9.3.1. Where possible the underside of the deck structure shall be located above the maximum predicted wave crest level for a 1 in 50 year event.

## 10.2.1 Deck Surface Requirements

For a concrete wearing course the runway surface shall have a broomed transverse finish, which meets the friction requirements of Table 3-1 contained in ICAO Doc 9137 Airport Services Manual – Part 2 Pavement Surface Conditions

## 10.2.2 Provision for Stormwater Drainage

Stormwater drainage requirements are contained in section 9.3.5, the related infrastructure will be contained within the overall deck structure.

Where possible, stormwater system infrastructure shall be located above the maximum predicted wave crest level for a 1 in 50 year event.

## 10.2.3 Provision for Other Utilities

No provision is required for other services or utilities.

## 10.2.4 General design criteria and parameters

### 10.2.4.1 Units of Measurement

Calculations shall be in S.I. units. Units of stress for concrete and steel shall be MPa and loading intensity shall be kPa ( $\text{kN/m}^2$ ). Loads shall be given in kN and moments in kN-m.

## 10.2.5 Structural Materials

### 10.2.5.1 Steel

Steel piles will be designed to meet the minimum requirements contained in Table 31, in accordance with AS4100.

Table 31 Steel Material Requirements

Grade	Yield Strength (fy)	Ultimate Strength (fu)
C350	350MPa	430MPa

### 10.2.5.2 Corrosion Allowances

In the tidal and splash zones, circular steel piles will be designed to be ultimately sacrificial, with transfer of stresses to a reinforced concrete plug extending to at least -3m AHD.

The outer surface of the piles will initially be coated with a protective paint system and/or a wrap system from top down to at least 1.5m below seabed level.

An additional 6mm corrosion allowance will be provided.

This combination should provide the required minimum design life without significant maintenance.

**DRAFT****10.2.5.3 Concrete and Reinforcement**

The concrete strength and reinforcement requirements contained within Table 32 will be adopted for the concept design;

**Table 32 Concrete Material Requirements**

Concrete Type	Concrete Strength (@ 28 days)	Steel Grade	Cover	Axial load transfer stress <sup>1</sup>
<b>Reinforced in-situ</b>	Min. 40 MPa	500MPa	Top of deck = 75mm Exposed faces = 75mm Interior surfaces = 30mm	0.248MPa
<b>Reinforced precast</b>	Min. 40 MPa	500MPa	Faces in tidal or splash zones = 65mm Other faces = 60mm Interior surfaces = 30mm	0.248MPa
<b>Unreinforced</b>	Min. 25MPa	-	-	-
<i>Note</i>				
1. Axial load transfer stress between the steel and concrete in the pile is limited in accordance with API Report 2A_LRFD Clause H4.3.1				

**10.2.5.4 Crack control**

To control cracking, reinforcement stresses are to be limited to those specified in Table 6.6 of AS4997 under the serviceability conditions (i.e. dead and 50% of the live UDL).

**10.2.6 Design Loads**

The structural deck will be designed to support the loads shown in Table 33.

**Table 33 Design Loads**

Load	Load Type	Load Value	Description
<b>Reinforced Concrete</b>	Dead	25 kN/m <sup>3</sup> (2% of steel reinforcement)	Structural component of the deck
<b>Steel</b>	Dead	78.5 kN/m <sup>3</sup>	Structural component of the deck
<b>Deck Surcharge</b>	Live	10kPa	For general operations and maintenance
<b>Aircraft</b>	Live	33 tonnes	Based on a DHC8-400
<b>Construction</b>	Live	400kPa	Based on a typical medium sized crawler crane



# DRAFT

## 10.2.6.1 Seismic Loads

The seismic design load is based on AS 1170.4 – 2007, Amendment A2-2018.

For the purposes of the study it is assumed that the structure has a post-disaster function and therefore has an importance rating of 4, compared with a rating of 2 for a normal structure with no such requirement.

The significance of the importance rating will be checked during concept design and costing.

## 10.2.6.2 Design Load Factors

Ultimate Limit State (ULS) and Serviceability Limit State (SLS) load factors for various applied loadings are summarized in Table 34.

**Table 34 Design Load Factors**

Load Type	ULS	SLS
Dead load (DL)	1.2	1.0
Deck surcharge (LL)	1.5	1.0
Aircraft load (AL)	1.5	1.0
Construction load (CL)	1.5	1.0
Wind (Wi)	1.0	1.0
Wave (Wa)	1.0	1.0
Earthquake (EQ)	1.0	1.0
Thermal (TL)	1.25	1.0

## 10.2.6.3 Design Load Combinations

Design load combinations shall be in accordance with AS1170 and 4997, and are summarised below:

**Table 35 Design Load Combinations**

Combination Load Case Number	Combination
1	1.35 DL
2	1.2DL +1.5LL
3	1.2DL + 1.5AL
4	1.2DL + 1.5CL
5	1.2DL +0.9LL + Wi +Wa
6	0.9 DL + Wi + Wa
7	1.0DL + 0.9LL + EQ
8	0.9 DL + EQ
9	1.2DL+0.9LL + TL

# DRAFT

## 11.0 Summary and Recommendations

### 11.1 General

This BOD report defines the functional requirements, applicable design standards and design approach adopted for the concept design.

It is recommended that the content of this BOD report is re-validated in consultation with relevant project stakeholders prior to commencement of subsequent detailed design stage.

## **About AECOM**

AECOM is built to deliver a better world. We design, build, finance and operate infrastructure assets for governments, businesses and organizations in more than 150 countries. As a fully integrated firm, we connect knowledge and experience across our global network of experts to help clients solve their most complex challenges. From high-performance buildings and infrastructure, to resilient communities and environments, to stable and secure nations, our work is transformative, differentiated and vital. A Fortune 500 firm, AECOM had revenue of approximately \$18.2 billion during fiscal year 2017. See how we deliver what others can only imagine at [aecom.com](http://aecom.com) and [@AECOM](https://twitter.com/AECOM).

## **AECOM Australia Limited**

Level 21, 420 George Street  
Sydney, NSW 2000  
PO Box Q410  
QVB PO, Sydney  
NSW, 1230  
T +61 2 8934 0000  
F +61 2 8934 0001

# LORD HOWE ISLAND BOARD

## Business Paper

### OPEN SESSION

#### ITEM

Airport Runway Extension Feasibility Study Update

#### RECOMMENDATION

It is recommended that the Board note this report.

#### BACKGROUND

Lord Howe Island's restricted runway length of 888 metres limits the type of commercial aircrafts that can operate on the Island. While other options have been considered such as leasing or hiring other aircrafts to operate on Lord Howe Island or to get other airlines to operate; without extending the runway, airlines will be restricted in the types of aircraft that can service the Island. A sustainable and viable long-term solution is therefore needed to secure the provision of air services to Lord Howe Island.

In late November 2017, AECOM Australia Pty Ltd was contracted to undertake the Lord Howe Island Airport Runway Extension Feasibility. The scope of the study includes the future aircraft requirements for the island, plane characteristics, existing runway/site limitations, CASA requirements, conceptual design, geotechnical investigation, environmental assessment, community consultation and economic impacts/costs. The project is broken down into a number of milestones.

Milestone	Description	Anticipated time
1.	Completion of detailed assessment of extended runway and suitable aircraft options. <b>COMPLETED</b>	March 2018
2.	Completion of preliminary geotechnical investigation <b>COMPLETED</b>	June 2018
3.	Completion of conceptual engineering design <b>COMPLETED</b>	August 2018
4.	Completion of preliminary environmental assessment	September 2018
5.	Undertake economical assessment and preliminary business case	October 2018
6.	Final presentation and report	December 2018

The funding for the project comes predominately from a Restart NSW grant through Infrastructure NSW with a small amount of Board staff wages for project management as shown below:

1. Infrastructure NSW - Restart NSW funding	\$450,000
2. Board staff wages	\$ 19,000
<b>TOTAL</b>	<b>\$469,000 (excl. GST)</b>

## **CURRENT POSITION**

AECOM completed field testing for the sub-bottom profiling (seismic refraction) in the Lagoon area covering the footprint of the proposed runway extension in late May 2017 as part of their geophysical survey. The Board's vessel 'Silvereye' was used to house the test equipment along with the two AECOM members, the observer from Marine Parks and Board operator. The results from the survey have been included as part of the project's Milestone 2 requirement through the ***Geotechnical Interpretive Report*** dated 6 August 2018.

AECOM used the first two milestone reports to prepare a ***Concept Design Report*** which investigates in broad terms the following:

- Proposed airfield layout
- Key Environmental Design Constraints and Considerations
- Geotechnical design conditions
- Coastal design conditions
- Land reclamation design
- Deck on pile structural design
- Contour master-grading of the runway extension
- Airfield drainage layouts and design
- Airfield pavement design

The technical approach to the works including design criteria are included within the draft Basis of Design Report issued 28th June 2018, which is a live document that will continue to be used through any subsequent design stages beyond concept design.

The concept design is required to achieve the following:

- Identify and resolve critical constraints;
- Confirm the scope for airfield work in addition to the runway extension;
- Provide the ability to develop a high level construction program;
- Provide the ability for early planning and discussions with stakeholders relating to the project delivery;
- Provide adequate information to develop construction costing (to  $\pm 30\%$  accuracy) for the airfield work
- Determine the most viable construction solution to extend the runway

The outcome of each of the above criteria is detailed in the Concept Design Report and cannot be satisfactorily condensed down and covered suitably in this overview report. However in general terms it appears that each item can be achieved. Details can be seen in the attached AECOM – Concept Design Report.

## **RECOMMENDATION**

It is recommended that the Board note this report.

**Prepared:** John Teague, Manager Infrastructure & Engineering Services

**Endorsed:** Peter Adams, Chief Executive Officer

**Attachments:**

Attachment A: AECOM – Concept Design Report

# LORD HOWE ISLAND BOARD

## LORD HOWE ISLAND PROPOSED PRIVATE FUEL SUPPLY

The current owner of the public fuel sales business on the Island, has indicated that he intends to cease trading in the fuel business sometime in the near future. As there are no other fuel outlet alternatives the Board is investigating options for private fuel supply which includes site locations.

Whilst to date the timing of the business closure is unknown, the Board has investigated a number of sites for suitability with two sites identified as possibilities. These sites are; Site 2 - Grassed Storage Area on Old Lagoon Road (three alternatives) and Site 4 - Opposite Jetty Corner Lagoon Road and Ocean View Road as shown below.



Site 2: Grassed storage area Old Lagoon Road near airport (3 alternatives)

Site 4: Opposite Jetty on Lagoon Road

Both sites are suitable in terms of zoning, access and layout. Site 4 is positioned closer to the Settlement and the Jetty and therefore has an advantage in terms of fuel transport from the Jetty and access for the public. Site 2 is on the way to the airport or the waste management facility. However if people have other suggestions to make, they would be very welcome.

The proposed fuel supply outlet, would have an approximate overall footprint of 18 metres by 6 metres and consist of a concrete fuelling hardstand, above ground tank/s, bowsers, credit card facility and oil/water separator.

The Board is now seeking written comment from the Lord Howe Island community by Friday December 8 in respect to these two sites or any alternative sites before any decision can be made and any works can commence.

Penny Holloway  
CHIEF EXECUTIVE OFFICER  
Date: 24 November 2017

<b>Board Meeting:</b> September 2018	<b>Agenda Number:</b> 12 (iv)	<b>Record Number:</b> ED18/8073
--------------------------------------	-------------------------------	---------------------------------

# **LORD HOWE ISLAND BOARD**

## **Business Paper**

### **OPEN SESSION**

#### **ITEM**

Public Fuel Sales - Location

#### **RECOMMENDATION**

That the Board:-

1. consider this report and recommend a site for the sale of public fuel; and
2. direct that a DA application for the sale of public fuel be prepared and submitted for the Board's consideration.

#### **BACKGROUND**

A Public Fuel Supply Preliminary Options Assessment was presented at the May 2017 Board meeting and informal updates at subsequent meetings. The Board Administration has completed further site assessment following a community survey. The current owner of the public fuel sales business on the Island, Gower Wilson, who advised that he intended to cease trading in the fuel business when the Island Trader was sold, has indicated his intention to operate for a further five (5) years at the present location and would provide twelve (12) months' notice if this timeframe changed again.

This paper presents the results and discussions of the preferred community site investigation.

#### **COMMUNITY SITE ASSESSMENT AND UPDATE**

Following the identification of the two preferred sites (Airport and Jetty) consultation was initially undertaken with the northern lease holders potentially impacted by the Jetty location site. The consultation was then broadened to include all residents, see attached householder, to establish the preferred site and seeking any other concerns or comment in relation to this matter.

Local lease holders were also directly approached to see if there was any interest in setting up a public fuel sales business on their existing leases. Unfortunately there was no interest most likely as the estimated capital cost to establish such as business (\$300,000 to \$400,000) would be relatively high and the return would be low.

Therefore at this time it is proposed to determine the most suitable location and put in place the required DA. This way before the five years is complete, or following Gower's notification, the 4-6 months required to source and install the equipment for the new public fuel sales can be achieved.

The outcome of the consultation showed overwhelming community support for the Airport location with three potential sites identified as shown in the Airport Location Site Plan below. With the most favoured site being closer to the Lagoon Road as it was away from the airport entrance and the private residence.



Airport Location Site Plan

Initial discussions with the Board's Town Planning consultants identified that this site is in the Environmental Protection zone. Of the proposed Old Lagoon Road sites identified, they agree that the site closer to Lagoon Road would be preferable as it is not directly opposite the airport entrance, furthest from the nearest dwellings, and can be positioned further off the road and therefore has more possibilities for planting of vegetative screening. However the facility would need to be owned and operated by the Board otherwise it is not permissible anywhere in the Environment Protection zone. Therefore unless a rezoning was appropriate and achieved, the site nearest Lagoon Road would preclude private ownership or operation.

The other two sites opposite Airport Road are in the Special Uses zone where fuel storage depots are permitted and therefore it may be that the operation could be undertaken by a private person or organisation.

In summary therefore:

- If the two sites nearer the airport terminal in the Special Uses zone were favoured, market testing by advertising for expressions of interest (EOIs) is recommended.
- If these sites are not favoured and the site close to Lagoon Road in the Environmental Protection zone is favoured, it is understood that only the Board could own and operate the fuel facility.
- It appears pointless to advertise for EOIs if the sites in the Special Uses zone near the terminal are not supported.



Depending on the Board's decision regarding favoured location, the Administration would further pursue a Development Application and planning assessment and if sites 1 or 2 were favoured prepare for advertising of the business opportunity. This would be advertised in the local and Port Macquarie communities, as resolved by the Board in May 2017.

The above steps are so that when Gower provides notice, the new location, expressions of interest and planning assessments are well advanced.

### **RECOMMENDATION**

That the Board:

1. consider this report and recommend a site for the sale of public fuel; and
2. direct that project planning be advanced including preparation of a DA application for the sale of public fuel.

**Prepared:** John Teague, Manager Infrastructure & Engineering Services

**Endorsed:** Peter Adams, Chief Executive Officer

**Attachments:**

Attachments A: Householder - Public Fuel Supply

# **LORD HOWE ISLAND BOARD**

## **Business Paper**

### **OPEN SESSION**

#### **ITEM**

NSW Environment Protection Authority (EPA) Per- and Poly-fluoroalkyl Substances (PFAS) Strategy

#### **RECOMMENDATION**

Submitted for the Board's information.

#### **BACKGROUND**

The EPA is leading an investigation program to assess the legacy of PFAS use across NSW.

PFAS are chemicals that have historically been used in a number of different products in Australia and worldwide due to the unique heat and chemical resistance, most notably as an essential ingredient of certain fire-fighting foams. Aqueous Film-Forming Foams (AFFF) have been used extensively by emergency services across the world to extinguish Class B fires involving flammable fuels, such as those involving vehicles, aeroplanes and chemicals.

PFAS are very stable chemicals that bioaccumulate, do not break down, and can persist for a long time in the environment. Due to their widespread use in a range of industrial and consumer products over many decades PFAS contamination is commonly found in the environment at low levels.

In October 2017, the EPA contacted the Lord Howe Island Board requesting the provision of information on current and historical use of products containing PFAS, which the Board subsequently supplied.

In November 2017, the EPA requested that preliminary investigations be undertaken at the airport and other known training sites involving the use of fire fighting foam as well as the Board depot as it is a known storage site. The investigation was to obtain sufficient information to determine the extent of contamination and to assess any potential contamination impacts to the surrounding areas and local community.

In December 2017, the Board engaged experienced consultants AECOM Australia Pty Ltd to undertake the preliminary investigations. On Island field works were conducted in January 2018 collecting samples of soil, sediment, surface water and groundwater. After laboratory analysis and technical review, the final report was delivered to the EPA on 6 April 2018.

From the preliminary investigation it was identified that PFAS was present at the sites investigated.

On 20 April 2018, the EPA requested the Board to undertake a detailed site investigation into the nature, extent, fate and transport of PFAS at the identified contamination sites and at appropriate off-site locations.

While the results are only preliminary and further investigation is necessary, **it is important to note that at those locations where PFAS was detected at levels above adopted thresholds for human health, the results were only marginally in excess of those thresholds.**

Other locations across Australia that have been prominently in the media as having PFAS contamination, are understood to have levels very much higher than those recorded to date on Lord Howe Island.

The EPA requested before the commencement of further investigation, a Sampling and Analysis Quality Plan (SAQP) be provided to the EPA and that a communication plan be developed, in collaboration with the EPA, to ensure consistent messaging occurs regarding PFAS on the Island.

### **CURRENT POSITION**

The Board, NSW EPA and AECOM are developing a SAQP (currently in draft) to enable a Detailed Site Investigation to be undertaken along with a Communication Plan to engage with the community and other stakeholders.

Prior to any further investigations the Communication Plan will be implemented by the Board to assist in providing information through factsheets, letters to residents, website (the Board/EPA) and community drop-in sessions. A factsheet is currently being prepared.

At this stage all that can really be said is that PFAS had been identified at locations on the Island in both the soil and groundwater and until results from the proposed Detailed Site Investigation and assessment is completed it is unclear as to what further action may be required.

EPA is not currently recommending that residents or visitors to the Island need to take any additional steps to reduce their exposure to PFAS.

### **RECOMMENDATION**

Submitted for the Board's information

**Prepared:** John Teague      Manager Infrastructure and Engineering Services

**Endorsed:** Peter Adams      Chief Executive Officer

<b>Board Meeting:</b> September 2018	<b>Agenda Number:</b> 12 (vi)	<b>Record Number:</b> ED18/8075
--------------------------------------	-------------------------------	---------------------------------

# **LORD HOWE ISLAND BOARD**

## **Business Paper**

### **OPEN SESSION**

#### **ITEM**

Renewable Energy Program Update

#### **RECOMMENDATION**

It is recommended that the Board note the renewable energy program update.

#### **BACKGROUND**

Funding for the LHI Renewable Energy project is provided through a \$4 million grant from the Federal Government via the Australian Renewable Energy Agency (ARENA), a \$5.9 million loan from NSW Treasury (to be paid back via diesel fuel savings), and \$0.5 million from the Board.

Consultants Jacobs were engaged by the Board in 2014 to lead the technical elements of the project, and community consultation. Jacobs completed a Technical Feasibility Study which showed that using 450 kW of solar panels, a 400kWh battery and two small 275kW wind turbines, would reduce the Island's diesel fuel consumption from 541,000 litres per year to around 180,000 litres per year, a 66% reduction. This combination would also provide 67% of the Island's annual electricity needs. In May 2017, the Federal Minister for the Environment and Energy decided that the "proposed action of constructing and operating two wind turbines on Lord Howe Island would have unacceptable impact on World Heritage values and the National heritage values of the Lord Howe Island Group". This means that it is not possible to proceed with the wind turbine component at this stage. In June 2017, ARENA representatives indicated that they did not believe that the ARENA Board would support continued funding for the project in its current form. Without the wind turbine component, the project with just solar and battery storage, saving 35% of diesel fuel was not seen as sufficiently innovative and would not serve as a demonstration case for other remote areas. After extensive negotiations, ARENA approved the funding for the development of further options, comprising solar and other renewable approaches, which may be acceptable to their Board and lead to a variation in the Board's funding agreement with ARENA.

Consultants Jacobs completed their other Options Analysis Report on the project economics and potential demonstration value in December 2017.

The Options Report was presented to the Board in March 2018, with the Board endorsing Option 4 – Optimised Solar and battery configuration with enabling technologies, as the preferred option. Jacobs prepared an addendum to the tender documents to include the changes for the optimised solar and battery configuration ready for the repricing by the two successful tenderers and timelines to award the contract and complete the works, based on the tenderers' response.

## **THE WAY FORWARD**

### **Solar, Battery and Control System**

The ARENA Board considered the response from Jacobs and the Board based on the tenderer's submission to the addendum for the Solar, Battery and Control System (SBC). At the ARENA Board meeting on 10 August 2018 the recommendation to vary the project to solar and battery only subject to conditions and a variation to the current funding deed was approved.

### **SBC System Contract**

The tender for the solar, battery and control system contract package of work was advertised on NSW e-tendering between 15 June and 24 August 2016. The assessment of the tenders by Jacobs and the Board is complete. However, with the latest addendum it will require re-assessment based on the current submissions and approval from ARENA. This timeframe is expected to be approximately 4 weeks, which is about the same timeframe for the variation in the funding deed to be finalised.

ARENA's Board have approved the project to continue, subject to:

- the winning solar and battery tender achieving a minimum renewable energy factor of 67%
- confirmation of site availability based on the final design
- establishing a Project Control Group
- ensuring LHIB has an appropriately skilled & experienced Project Manager
- the review and acceptance of final costs and timeframes
- the finalisation of funding variation agreement

ARENA also want to ensure the final plant design and roll out provides the simplest system for LHIB to manage and that LHIB are provided with the appropriate training and support by the winning solar and battery tenderer, to allow for the best ongoing maintenance.

At this stage there does not appear to be any technical reason why this project should not proceed and Jacobs have been requested to complete the final tender assessment report. Once this is complete the final budgeting will be undertaken to ensure that sufficient funding is available.

## **RECOMMENDATION**

It is recommended that the Board note the above information.

**Prepared:** John Teague, Manager, Infrastructure & Engineering Services

**Endorsed:** Peter Adams, Chief Executive Officer

## Memorandum of Understanding / Partnership Agreement

between

**Invasive Species Council (ISC)**

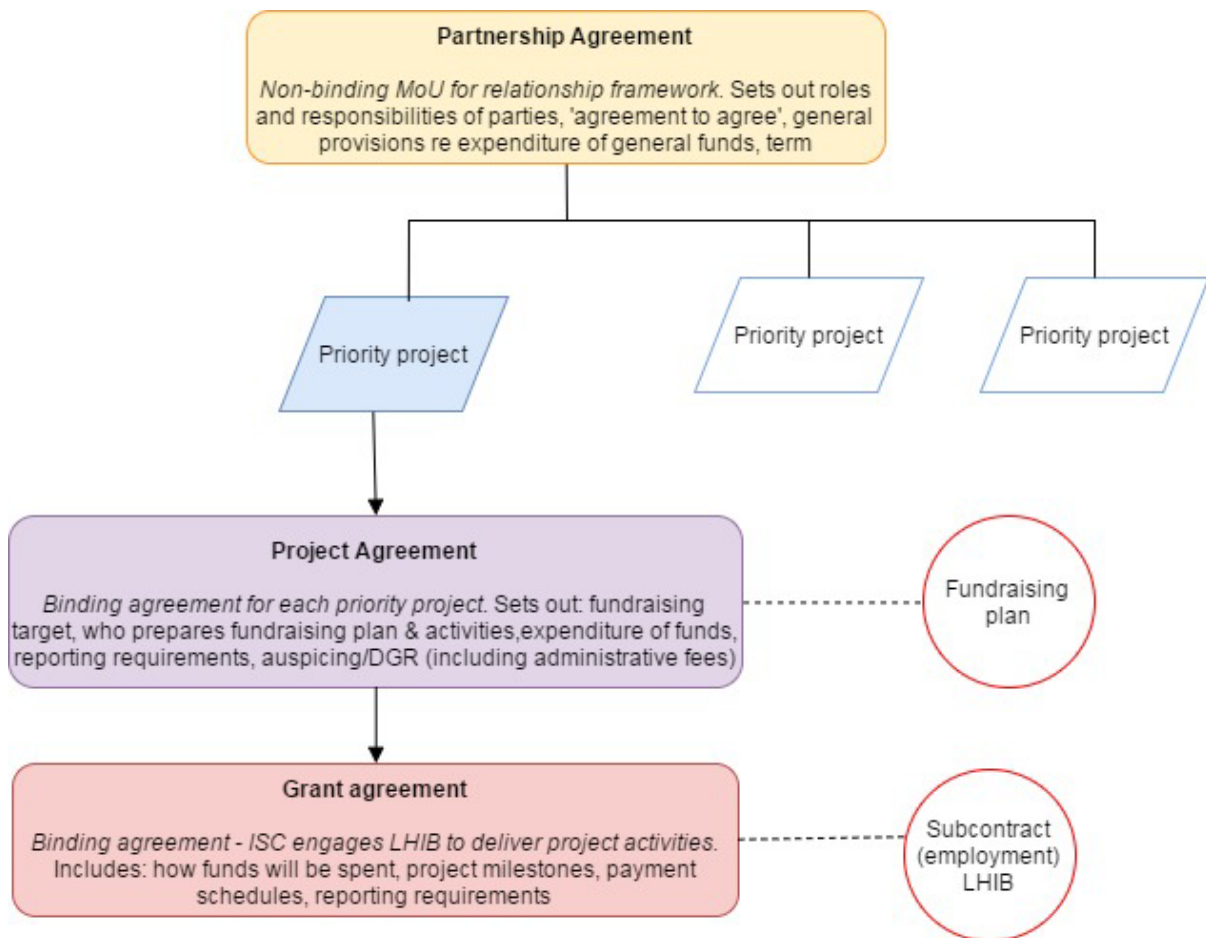
and

**Lord Howe Island Board (LHIB)**

**CONFIDENTIAL**

Version 2, 4 September 2018

### Proposed framework



## 1. Parties

### **Invasive Species Council Inc. (ISC) ABN 27 101 522 829**

PO Box 166, Fairfield VIC 3078

### **AND**

### **Lord Howe Island Board (LHIB) ABN 33 280 968 043**

PO Box 5, Lord Howe Island, NSW, 2898

## 2. Background and term

- 2.1. This is a non-binding Memorandum of Understanding (**MOU**) between Invasive Species Council (**ISC**) and the Lord Howe Island Board (**LHIB**).
- 2.2. The MOU will apply from [#date#] and will continue to apply until [#date/] or until termination by either party on the giving of three months' written notice to the other.

## 3. Purpose and scope

- 3.1. ISC and LHIB are committed to maintaining a positive and cooperative working relationship.
- 3.2. ISC and LHIB agree to work together to progress the shared objectives (**project objectives**) of:
  - 3.2.1. Eradicating invasive species from Lord Howe Island, including rodents and weeds;
  - 3.2.2. Restoring the natural ecosystems of Lord Howe Island impacted by invasive species; and
  - 3.2.3. Implementing and maintaining an effective ecologically based biosecurity system for Lord Howe Island.

3.3. [#insert details of any timelines to achieve these goals and objectives#]

## 4. Roles and responsibilities

- 4.1. ISC agrees to:

- 4.1.1. Pursuant to any project agreement set out in clause 6 below, auspice joint projects when DGR status is a prerequisite for applying or receiving funding.
- 4.1.2. Receive donations from Australian taxpayers to support projects consistent with the project objectives either in accordance with project agreements or generally.
- 4.1.3. Distribute funds received in accordance with any project agreement.
- 4.1.4. Separately account for funds raised under this MoU or any specific project agreement through its accounting system.
- 4.1.5. Carry out any administrative and regulatory requirements of donations.
- 4.1.6. On request from LHIB, provide a report on the balance and any income and expenditure under this MoU within a nominated period.

4.2. LHIB agrees to:

- 4.2.1. Fund a professional fundraising program to resource joint projects.
- 4.2.2. Provide additional resources for fundraising and other specialist input to develop and implement the fundraising plan.
- 4.2.3. Under any grant agreement set out in clause 7 below, provide to ISC regular reports on the status of any project subject to an agreement.
- 4.2.4. Assist with donor communication on request from ISC.

4.3. Jointly, the parties agree to:

- 4.3.1. Develop a list of priority projects.
- 4.3.2. Enter into project agreements in relation to agreed priority projects in accordance with clause 5 below.
- 4.3.3. Enter into grant agreements in relation to activities arising under project agreements in accordance with clause 6 below.

## 5. Project agreements

- 5.1. For each priority project that the parties agree will proceed, the parties will enter into a legally binding agreement (**project agreement**) that will include:
  - 5.1.1. Fundraising target(s).
  - 5.1.2. Responsibility for preparing a fundraising plan.
  - 5.1.3. Responsibility for conducting fundraising activities.



5.1.4. How funds will be expended

5.1.5. Auspicing arrangements if required

5.1.6. Administrative and other costs (including administrative costs payable to ISC in furtherance of an auspicing arrangement)

5.1.7. A list of other agreements (such as grant agreements discussed below at clause 6) required to deliver the project.

## 6. Grant agreements

6.1. If LHIB is engaged by ISC to carry out activities under the project agreement:

6.1.1. prior to the distribution of funds to LHIB, the parties will enter into a grant agreement (consistent with the project agreement) that will set out:

6.1.1.1. How funds will be spent (including whether additional staff will be hired to carry out the activities)

6.1.1.2. Project milestones

6.1.1.3. Payment schedules

6.1.1.4. Reporting requirements.

6.1.2. ISC will seek to ensure that reporting requirements in any grant agreement align with other LHIB reporting requirements for related work.

## 7. Funding from other sources

7.1. If ISC receives **tied** donations from donors that are consistent with the project objectives but are outside the scope of the priority projects:

7.1.1. ISC will liaise with the LHIB to determine how best to deliver the wishes of the donor.

7.1.2. ISC retains the final say in the use of this funding.

7.2. If ISC receives **untied** donations from donors from general fundraising in support of the project objectives:

7.2.1. ISC and LHIB will seek to jointly determine where to direct funds

7.2.2. If no agreement is reached, ISC will direct funds at its discretion to one of the priority projects or to activities consistent with the project objectives.

7.2.3. ISC retains the final say in the use of this funding.

7.3. For work to be carried out by the LHIB, a grant agreement under clause 6 will be prepared.

7.4. ISC will retain 5% of received donations under this clause as a fee for its direct costs related to receiving and administering donations and the intangible value of its DGR status and reputation.

7.5. An alternative payment formula to clause 7.4 may be agreed in writing by both parties.

## 8. Intellectual property

8.1. The parties retain their respective ownership of all intellectual property rights in its materials which were in existence at the date of execution of this MOU or which were or are developed independently of this agreement (background IP)

8.2. ISC grants LHIB a limited, non-exclusive, royalty-free licence during the term of the MOU to use ISC background IP solely for the purpose and to the extent necessary to perform this agreement.

8.3. LHIB grants ISC a limited, non-exclusive, royalty-free licence during the term of the MOU to use LHIB background IP solely for the purpose and to the extent necessary to perform this agreement.

8.4. All intellectual property rights in any material created specifically as part of this agreement vest jointly in ISC and the LHIB (Project IP). The parties grant each other a non-exclusive, royalty free, irrevocable, transferable licence to use the Project IP solely for the purpose and to the extent necessary to perform this agreement.

8.5. Any agreed use of the name, logo or other intellectual property rights of the parties, including such property licensed to the parties, must be in a manner and on terms that a party may not damage the other party's reputation

## 9. Termination

9.1. The term of this MoU is from xxx until xxx.

9.2. The term may be extended with the written agreement of both parties. If this MoU is extended, the terms of this agreement will continue unless varied and agreed in writing by the parties.

9.3. This MoU may be terminated by either party by providing three months written notice.

9.4. Upon termination, if ISC retains undistributed funds received in furtherance of the project objectives, ISC can, at its absolute discretion, determine to:

- 9.4.1.            Distribute the funds to LHIB via a grant agreement
- 9.4.2.            Distribute the funds on activities consistent with the wishes of the donor
- 9.4.3.            Return the funds to the donor.

**10. Variation**

10.1.        This MoU may be varied by written agreement by the parties.

**11. Execution clause [include]**

# **LORD HOWE ISLAND BOARD**

## **Business Paper**

### **OPEN SESSION**

#### **ITEM**

Memorandum of Understanding, LHIB and Invasive Species Council

#### **RECOMMENDATION**

That the draft Memorandum of Understanding between the Invasive Species Council (ISC) and the Lord Howe Island Board (LHIB) be endorsed for execution.

#### **BACKGROUND**

Memoranda of Understanding have been developed where necessary in order to document the way in which the LHIB and various stakeholders work together and in partnership both on Lord Howe Island and in other locations.

A memorandum of understanding (MOU) is non-binding in that it is not a legal contract. However, it provides a good way of identifying the benefits and expected outcomes of working in partnership as well as the mutual expectations of the parties to the MOU. An MOU is two-way in that there must be benefits to both parties involved in the partnership.

The LHIB already has memoranda of understanding with a number of organisations, including:

- The Port Macquarie Hastings Council
- The LHI Tourism Association
- The Office of Environment and Heritage, Science Division
- LHI Marine Parks

In 2016, an investigation was conducted by the LHIB (Weed Eradication Program) to find an appropriate mechanism to accept philanthropic donations for conservation projects on Lord Howe Island.

Identified options were assessed against key drivers for Lord Howe Island conservation fundraising. The LHIB was reluctant to receive donations directly and based on the legal advice we received at the time, a stand alone collection mechanism was considered to be the best option.

With this in mind, we explored the options of joining with a partnering agency to collect funds on our behalf and the option of establishing a 'Protecting Paradise LHI Trust'.

The following list of agencies were considered as they have Deductible Gift Recipient (DGR) status and are positively aligned with the conservation goals we would fundraise for:

- LHI Museum
- Friends of Lord Howe
- Paddy Pallin Foundation
- Invasive Species Council (ISC)

The possibility of creating a 'Protecting Paradise LHI Trust', was also reviewed; this trust would be specifically set up to collect funds for local conservation projects and would be facilitated by a community appointed trust board, but could not be run by the LHIB.

Following the review process it was determined that a combination of both partnerships with aligned organisations and a 'Protecting Paradise LHI Trust' to collect funds directly would best meet our fundraising needs.

The 'Protecting Paradise LHI Trust' concept was advanced following a review of what others had already done in this area. It was determined that Bendigo Bank – Community Sector Banking (<https://www.communityenterprise.foundation.com.au>) was the mechanism that would allow us to begin to collect donations, the bank account we investigated would also provide the administration and reporting needed for a not-for-profit organisation at a standard fee of 3%, alleviating the need for specialised resourcing.

This bank account application was made and is 95% complete; it remains in draft awaiting the commencement of our DGR status, which will take approx. 1 year to obtain. DGR status would need to be obtained, to authenticate the trust. A generous offer was made by one of our supporting agencies in providing support through the legal process, this is yet to commence. With the re-invigoration of the need for a fundraising mechanism this offer has been followed up and steps to begin this process are being put in place.

## **CURRENT POSITION**

2018 has seen a reinvigoration of the need for a fundraising mechanism, a trust is still identified as the best long term goal for fundraising collection and will be progressing in the background over the next year. However fundraising for the REP and WEP programs will be necessary during the trust set up time and will inevitably need a separate collections portal.

2018/2019 fundraising needs to be supported by a partner agency with DGR status, a collection mechanism, key fundraising reach and expertise. To meet this requirement, the ISC was re-engaged as one appropriate partner agency and brought up to speed on the requirements on the upcoming 2018/2019 fundraising needs.

It was recognised that the goals and needs of the LHIB and ISC positively aligned and therefore we sought to begin negotiating a MoU with ISC to assist with a donation collection portal, collaborative support, and raising funds through the ISC network.

Shared objectives of the LHIB and the ISC include:

- Eradicating invasive species from Lord Howe Island, including rodents and weeds;
- Restoring the natural ecosystems of Lord Howe Island impacted by invasive species; and
- Implementing and maintaining an effective ecologically based biosecurity system for Lord Howe Island.

ISC have prepared a draft MoU having sought legal advice on auspicing arrangements related to their DGR status. The Draft MoU is attached (Attachment A) for LHIB endorsement prior to execution.

It should be noted that the MOU is non binding, not exclusive and does not make a commitment to any financial contribution from the LHIB to the ISC. However, joint projects may be identified through the MOU, which could lead to agreement about a financial contribution for a specific project. A project plan is required to be developed for any joint project, and the financial arrangements would be an essential part of any plan.

There is benefit for the LHIB in entering into the MOU with the ISC to assist with fundraising for conservation projects and the draft MOU is therefore supported.

### **RECOMMENDATION**

That the draft Memorandum of Understanding between the LHIB and the Invasive Species Council be endorsed for execution.

**Prepared:** Darcelle Matassoni, Project Communications Coordinator

**Endorsed:** Peter Adams, Chief Executive Officer

**Attachments:**

Attachment A: Draft Memorandum of Understanding – LHIB and Invasive Species Council

**Board Meeting:** September 2018

**Agenda Number:** 13 (i)

**Record No:** ED18/8031

# LORD HOWE ISLAND BOARD

## Business Paper

### OPEN SESSION

#### ITEM

Work Health and Safety (WH&S) and Public Risk Management Update

#### RECOMMENDATION

It is recommended that the Board note the information provided on Public Risk and WH&S matters.

#### BACKGROUND

The Board has requested information on Public Risk and WH&S matters be presented on a quarterly basis.

#### CURRENT POSITION

##### **Workplace Health and Safety**

As at 30 June 2018 fifteen claims had been lodged for the 2017-18 financial year:

2017/18				
No	Date of Injury	Type of Injury	Cause of Injury	Hours Lost
1	3/07/2017	Disc bulge or prolapse	Bending over	117.8
2	12/07/2017	Tenosynovitis of extensor tendon R forearm	Jackhammering	Medical expenses only
3	2/08/2017	Petrol in R ear	Working on air blocked fuel line	Medical expenses only
4	4/08/2017	R pectoral muscle strain	Shovelling	Medical expenses only
5	13/07/2017	L lower costo-chondral cartilage tear	Removing rubble from tracks	45.6
6	31/10/2017	Laceration L thumb	Angle grinder jumped and cut through glove	Medical expenses only
7	15/11/2017	Sore knees	Walking mountain tracks carrying equipment	Medical expenses only
8	21/11/2017	Puncture wound right palm	Tripped and fell sharp stick puncturing right palm	30.4
9	1/12/2017	Foreign body in right eye	Welding and foreign body flew into right eye	Medical expenses only
10	9/01/2018	Jarred right shoulder and cervical spine	Tripped on boardwalk near conference room at Board's offices	Medical expenses only
11	9/04/2018	Twisted right knee	Slipped on track while walking down a slope	16
12	28/04/2018	Twisted right knee	Slipped and fell down stairs at WMF while carrying 120 litre bin	71.6
13	1/05/2018	Sprain of L ankle	Rolled ankle on side of road edge	10

14	4/05/2018	Sprained ligament of third L finger	Jammed finger whilst preventing fall from tripping on pallet	Medical expenses only
15	16/03/2018	Reactive depression and anxiety	Feels isolated and excluded from involvement in workplace planning.	TBC. Claim not accepted until 25/07/2018

At 31 August 2018 no new claims have been lodged for the 2018-19 financial year.

The updated data tables are provided below.

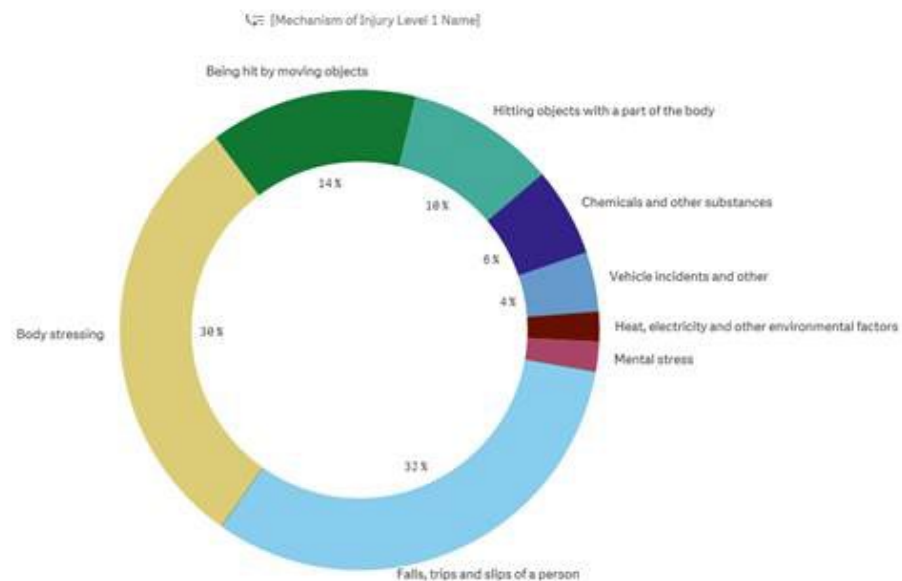
Workers compensation statistics for the last five years:

#### 4. Claims Table Summary

(Reportable and non-Reportable Claims)

Last 5 FY Occurred	Number of Claims #	Avg \$ Cost	Net Incurred Cost \$	Total Amount Paid \$	Latest Estimate \$	Amount Recovered \$
<b>Totals</b>	<b>50</b>	<b>\$8,566.94</b>	<b>\$428,347.13</b>	<b>\$270,854.12</b>	<b>\$157,493.01</b>	<b>\$0.00</b>
FY 14-15	8	\$969.57	\$7,756.58	\$7,756.58	\$0.00	\$0.00
FY 15-16	9	\$4,356.44	\$39,208.00	\$39,208.00	\$0.00	\$0.00
FY 16-17	18	\$13,085.88	\$235,545.88	\$187,472.48	\$48,073.40	\$0.00
FY 17-18	15	\$9,722.44	\$145,836.67	\$36,417.06	\$109,419.61	\$0.00
FY 18-19	0	-	\$0.00	\$0.00	\$0.00	\$0.00

#### 3. Mechanism of Injury (Reportable and non-Reportable Claims)



Actions taken to address the incidence of injury include Workplace WH&S matters being discussed and addressed at monthly staff meetings, including reviews of Job Safety Analysis and Hazard Identification.

#### Public Risk Management

Chemcert training took place in May with 24 Board staff attending. This training involved using pesticides correctly and safely so no harm comes to staff, other people or the environment and to gain a thorough understanding of health, safety and environment risk management concepts.



Plant and equipment training also took place in May, which included forklift, excavator, bobcat and advanced crane operation.

First aid training is taking place in September for Board staff. Provide First Aid Training is scheduled with 32 staff attending. Advanced First Aid and Advanced Resuscitation is scheduled for 18 staff who work in more remote conditions.

### **RECOMMENDATION**

It is recommended that the Board note the information provided on WH&S and Public Risk matters.

**Prepared:** Belinda Panckhurst      Acting Manager Administration

**Endorsed:** Peter Adams      Chief Executive Officer