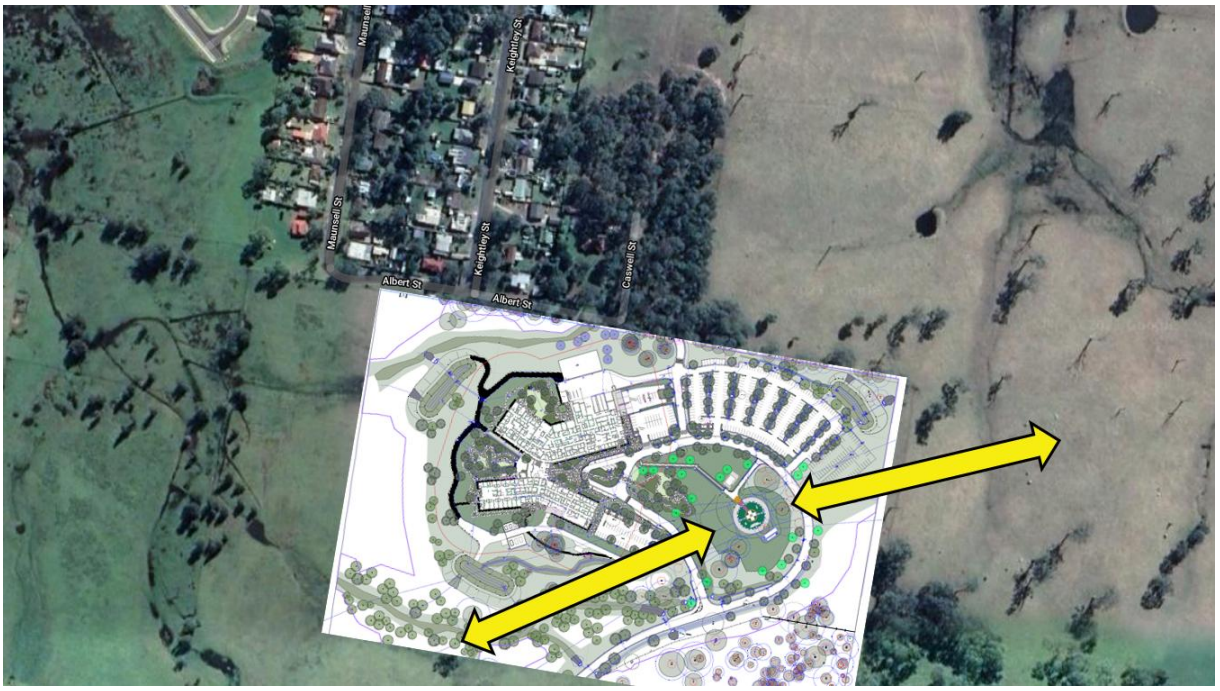
AviPro

A division of Resolution Response Pty Ltd
ABN 94 154 052 883

EUROBODALLA REGIONAL HOSPITAL AVIATION REPORT FOR A HELICOPTER LANDING SITE (HLS) UNDER A STATE SIGNIFICANT DEVELOPMENT (SSD) MODIFICATION



1 Oct 2025	**HELICOPTER LANDING SITE**
Prepared for	NSW Health Infrastructure

Version 2.1

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Document Verification
Page 1 of 1

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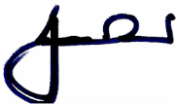
		Signature			
V1.2	06.10.22	Description	Aviation SSD Report incorporating Root Partnerships feedback.		
			Prepared by	**Checked by**	**Approved by**
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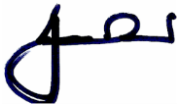
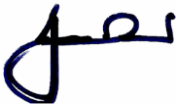
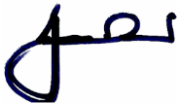
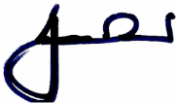
		Signature			
V1.3	17.01.23	Description	Aviation SSD Report incorporating further Ethos Urban and Root Partnerships feedback.		
			Prepared by	**Checked by**	**Approved by**
		Name	J.W. Stark	S.J. Graham	S.J. Graham
		Signature			
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			Prepared by	**Checked by**	**Approved by**
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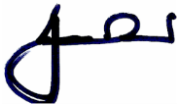
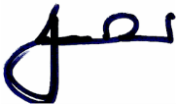
		Signature			

V1.5	XX.08.24	Description	Aviation SSD Report with amended wording of industry specific conditions.		
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		Name	J.W. Stark	S.J. Graham	S.J. Graham
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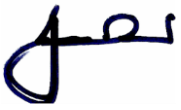
		Signature			

This Report is prepared for NSW Health Infrastructure in relation to the Helicopter Landing Site (HLS) at the new Eurobodalla Regional Hospital by Resolution Response Pty. Ltd. ABN: 94 154 052 883, trading as ‘AviPro’.

The Report relates to the aviation aspects associated with the establishment and site design of the proposed, relocated HLS to inform an application for Modification to a State Significant Development Application.

Contents

1. DESCRIPTION OF THE PROPOSAL

1.1. Introduction

On 24 May 2024, approval was granted under State Significant Development (SSD)-56989722 for the Eurobodalla Regional Hospital comprising construction and operation of a new hospital. The original project approval included:

- a three-storey building with four wings and rooftop plant.
- internal road network with access to Princes Highway.
- secondary (controlled) road access from Caswell Street.
- at-grade car parking, loading dock and ambulance bay.
- bicycle parking and end-of-trip facilities.
- hard and soft landscaping.
- tree removal and bulk earthworks.

On 18 March 2024, application was made for Modification 1 (Mod 1) requesting design amendments to the building design and landscaping. Mod 1 achieved consent on 14 May 2025.

Modification 2, the focus of this Aviation SSD Report, now seeks approval for the inclusion of a mounded, at-grade Helicopter Landing Site (HLS), into the hospital design, and for the operation of that HLS once constructed and commissioned.

1.2. The Site

The new Eurobodalla Regional Hospital development is located in Moruya on the Princes Highway to the south-east of the Moruya Town Centre, on vacant greenfield land. To the west of the site is Moruya TAFE, and to the north is a small residential subdivision called Mynora Estate. The majority of works will occur on this greenfield site, with some road works proposed in the adjoining Princes Highway and northern access road reserves. The site is legally described as Lot 2, DP 1281576. A map of the site is shown in Figure 1.

Figure 1: Aerial image of the site. Some development may occur outside this boundary for ancillary works

1.3. Description of the Proposed Modification

The following works are proposed as part of the amended application/modification:

Alterations and additions to the ERH, comprising:

- Inclusion of a mounded, at-grade HLS, including HLS deck, pathway and ambulance access to the south-east of the main hospital building;
- Establishment of plant and fixtures to provide protection for people and equipment in the vicinity of the HLS and in transit to/from it;
- An illuminated wind direction indicator (IWDI) on the roof of the main hospital building;
- Emergency egress from the HLS deck;
- Lighting/electrical and firefighting services to support safe helicopter operations;
- Earthworks to accommodate tanks and drainage systems for storing liquids (spills etc) emanating from the HLS;
- Landscaping,
- Tree removal and pruning, and
- Approval to operate the HLS.

The proposed Mod 2 development is shown in Figure 2 below.

Figure 2: Proposed Mod 2 development

1.4. SEARs Reporting

In preparing this report, the following SEARs General Requirements and Key Issues have been addressed. Table 1 below sets out the reference or location of these matters within this report.

Item	SEARS Requirement	Relevant Section of Report
24.1	If the development proposes a helicopter landing site (HLS), assess its potential impacts on the flight paths of any nearby airport, airfield or HLS.	*See Sections 3.5 to 3.8*
24.2	If the site contains or is adjacent to a HLS, assess the impacts of the development on that HLS.	*Not applicable*

Table 1: Secretary's Environmental Assessment Requirements - Aviation

2. TERMS AND ABBREVIATIONS

2.1. Explanation of Terms

Aircraft. Refers to both aeroplanes (fixed wing) and helicopters (rotorcraft).

Approach/Departure Path (VFR) (Day and Night). The flight track helicopters follow when landing at, or departing from, the FATO of an HLS. The VFR Approach/Departure path extends outwards from the edge of the FATO Safety Area with an obstacle free gradient of 2.6º or 4.5% or 1:22.2 vertical to horizontal, measured from the forward edge of the FATO Safety Area. The VFR Approach/Departure path commences at a width of 40m, and splays laterally at an angle (based on night operations) of 8.7º/15%/1:12.8 to a width of 180m, then remains parallel to a distance of 3,386 m, where the height is 152 m above the elevation of FATO surface.

Design Helicopter. The Leonardo AW139 contracted to the NSW Ambulance. The type reflects the new generation Performance Class 1 capable helicopters used in HEMS and reflects the maximum weight and maximum contact load/minimum contact area.

D Value (also Overall Length (L)). The distance from the tip of the main rotor tip plane path to the tip of the tail rotor tip plane path or the fin if further aft, of the Design Helicopter.

Elevated Helicopter Landing Site. An HLS located on a roof top or some other elevated structure where the Ground Effect Area/Touchdown and Lift-off Area (TLOF) is at least 2.5 m. above ground level.

Final Approach. The reduction of height and airspeed to arrive over a predetermined point above the FATO of an HLS.

Final Approach and Takeoff Area (FATO). A defined area over which the final phase of the approach to a hover, or a landing is completed and from which the takeoff is initiated. For the purposes of these guidelines, the specification of 1.5 x Length Overall of the Design Helicopter is used and equates to 25 m. diameter. Area to be load bearing.

Flight Path Alignment Guidance (FPAG). FPAG lighting system are provided at a heliport where it is desirable and practicable to indicate available approach and/or departure path direction(s).

Ground Taxi. The surface movement of a wheeled helicopter under its own power with wheels touching the ground.

Hazard to Air Navigation. Any object having a substantial adverse effect upon the safe and efficient use of the navigable airspace by aircraft, upon the operation of air navigation facilities, or upon existing or planned airport/heliport capacity.

Helicopter Landing Site (HLS). The area of land, water or a structure used or intended to be used for the landing and takeoff of helicopters, together with appurtenant buildings and facilities.

Helicopter Landing Site Elevation. At a HLS without a precision approach, the HLS elevation is the highest point of the FATO expressed as the distance above mean sea level.

Helicopter Landing Site Reference Point (HRP). The geographic position of the HLS expressed as the latitude and longitude at the FATO centre.

Hospital Helicopter Landing Site. HLS limited to serving helicopters engaged in air ambulance, or other hospital related functions.

> ***Note:***
>
> *A designated HLS located at a hospital or medical facility is an emergency services HLS and **not** a medical emergency site.*

Helideck. A heliport located on a fixed or floating offshore facility such as an exploration and/or production unit used for exploitation of oil or gas.

Heliport. An HLS that meets or exceeds the specifications contained within CASA Advisory Circular (AC) 139R-01 Guidelines for heliports design and operation. A heliport may have two or more co-existing HLS. There are no implications for operating a heliport as opposed to an HLS, other than having a "Heliport Operations Manual" rather than an "HLS Operations Manual" which would address the various interactions and interoperability (aviation, clinical etc) at multi-HLS sites.

Hover Taxi. The movement of a helicopter above the surface, generally at a wheel/skid height of approximately one metre. For facility design purposes, a skid-equipped helicopter is assumed to hover-taxi.

Object Identification Surface. The OIS are a set of imaginary surfaces associated with a HLS or heliport. They define the volume of airspace that should ideally be kept free from obstacles in order to minimise the danger to a helicopter during an entirely visual approach.

Obstacle Limitation Surface. The OLS are a set of imaginary surfaces associated with an aerodrome. They define the volume of airspace that should ideally be kept free from obstacles in order to minimise the danger to aircraft during an entirely visual approach.

Parking Position. The paved centre portion of a parking position, normally adjacent to an HLS. Also known as a stand.

Performance Class 1 (PC1). Similar to Category A requirements. For a rotorcraft, means the class of rotorcraft operations where, in the event of failure of the critical power unit, performance is available to enable the rotorcraft to land within the rejected take-off distance available, or safely continue the flight to an appropriate landing area, depending on when the failure occurs. For an elevated HLS, the reject area is that area within the FATO (25 m. diameter) and therefore this area is to be load bearing. PC1 also requires CASA approved flight path surveys to/from the HLS.

Performance Class 2 (PC2). For a rotorcraft, means the class of rotorcraft operations where, in the event of failure of the critical power unit, performance is available to enable the rotorcraft to safety continue the flight, except when the failure occurs early during the take-off manoeuvres, in which case a forced landing may be required. PC2 also requires CASA approved flight path surveys to/from the HLS.

Performance Class 2 With Exposure (PC2WE). PC2WE is very similar to PC2 as mentioned above. The primary difference is that there need not be any provision for a suitable forced landing area during the take-off and landing phases of flight, within the designated exposure period for the rotorcraft. PC2WE offers operators alternative mitigation strategies based on: a defined exposure time limit, demonstrated engine reliability, engine maintenance standards, pilot procedures and training, and operator risk assessments. Specific approval to operate with exposure is required from CASA and will require a number of mitigation strategies from the operator to gain that approval.

Performance Class 3 (PC3). For a rotorcraft, means the class of rotorcraft operations where, in the event of failure of the critical power unit at any time during the flight, a forced landing:

- in the case of multi-engine rotorcraft – may be required; or
- in the case of single-engine rotorcraft – will be required.

Pilot Activated Lighting (PAL). A PAL system utilises a hospital-based VHF radio and timed switching device, activated by the pilot via a radio transmission on a pre-set frequency, to turn on the associated HLS lighting.

Rotor Wash. The volume of air moved by the action of the rotating main rotor blades. When moving vertically downwards this volume of air is known as downwash. Once this air strikes the ground or some other surface and turns outwards it is known as outwash. Together downwash and outwash cause a highly turbulent flow of air from beneath the helicopter.

Safety Area. A defined area on an HLS surrounding the FATO intended to reduce the risk of damage to helicopters accidentally diverging from the FATO. This area should be free of objects, other than those frangible mounted objects required for air navigation purposes. The Safety Area for the Design Helicopter extends 4.5m beyond the FATO perimeter forming a 34m X 34m square or a 34m diameter circle.

Safety Net. Surrounds the outer edge of a rooftop HLS. It is to be a minimum of 1.5m wide and have a load carrying capacity of not less than 122 kg/m^2. The outer edge is not to project above the HLS deck, and slope back and down to the deck edge at approximately 10 degrees, and not more than 20 degrees. Both the inside and outside edges of the safety net are to be secured to a solid structure.

Shielded Obstruction. A proposed or existing obstruction that does **not** need to be marked or lit due to its close proximity to another obstruction whose highest point is at the same or higher elevation.

Touchdown and Lift-off Area (TLOF). A load bearing, generally paved area, normally centred in the FATO, on which the helicopter lands or takes off, and that provides ground effect for a helicopter rotor system. Size is based on 1 x main rotor diameter of the Design Helicopter, and is 14m diameter.

Touchdown Positioning Circle (TDPC). Sometimes called the Touchdown Positioning Marking (TDPM). A touchdown positioning marking in the form of a circle use for omnidirectional positioning in a TLOF. The term TDPM is more correctly used to define the white hospital cross and red “H” within the TDPC. Size is based on 0.5D of the Design Helicopter, and is 10m diameter.

Unshielded Obstruction. A proposed or existing obstruction that may need to be marked or lit since it is **not** in close proximity to another marked and lit obstruction whose highest point is at the same or higher elevation.

2.2. Applicable Abbreviations

Acronym	Meaning
AC	Advisory Circular
ACC	Aeromedical Control Centre (HQ Eveleigh). Responsible for control and tasking of HEMS
ACMA	Australian Communication and Media Authority
AsA	Airservices Australia
ASB	Acute Services Building
ATC	Air Traffic Control
CASA	Civil Aviation Safety Authority (Australia)
CASRs	Civil Aviation Safety Regulations (1998) Australia
CTAF	Common Traffic Advisory Frequency (5 nm. Radius, ground level to 3,000’)
D	Helicopter D value - (also referred to as Overall Length) - the total distance between the main rotor and tail rotor tip path planes when rotating
DA	Development Application
DDO	Design and Development Overlay
DIFFS	Deck Integrated Fire Fighting System
DPHI	Department of Planning, Housing and Industry (NSW)
ED	Emergency Department

Acronym	Meaning
ERH	Eurobodalla Regional Hospital
ESC	Eurobodalla Shire Council
FAA	Federal Aviation Administration, USA
FATO	Final Approach and Take-Off Area (1.5 x helicopter length)
FARA	Final Approach Reference Area
FMS	Fixed Monitor System (foam fire-fighting system)
FPAG	Flight Path Alignment Guidance
GPS	Global Positioning System
HEMS	Helicopter Emergency Medical Service
HI	Health Infrastructure
HLS	Helicopter Landing Site
HLSRO	HLS Reporting Officer (Airservices Australia requirement)
ICAO	International Civil Aviation Organisation
IFR	Instrument Flight Rules
IMC	Instrument Meteorological Conditions - requiring flight under IFR
ISLHD	Illawarra-Shoalhaven Local Health District
L	Helicopter fuselage length
LDP	Landing Decision Point (Category A/Performance Class 1 operations)
LGA	Local Government Area
LHD	Local Health District
MoH	Ministry of Health NSW
MOS	Manual of Standards (CASA)
MRI	Magnetic Resonance Imagers
MTO	Medical Transport Operations
MTOM	Maximum Take Off Mass
MTOW	Maximum Take Off Weight
NOTAM	Notice to Airmen. Issued by Airservices Australia in relation to airspace and navigation warnings
NVG	Night Vision Goggle(s)
OIS	Object Identification Surface(s) (Heliport/HLS)
OLS	Obstacle Limitation Surface(s) (Aerodrome)
PC1	Performance Class 1
PC2	Performance Class 2
PC2WE	Performance Class 2 (With Exposure)
PC3	Performance Class 3
RD	Main Rotor Diameter
SARPS	Standards and Recommended Practices developed by ICAO and promulgated in the Annexes to the Convention of International Civil Aviation
SEARs	Secretary's Environmental Assessment Requirements

Acronym	Meaning
SSD	State Significant Development
SSDA	State Significant Development Application
TDP	Takeoff Decision Point (Category A/Performance Class 1 operations)
TDPC	Touchdown Positioning Circle
TLOF	Touch Down and Lift Off Area. Load bearing min. 1 x main rotor diameter.
VFR	Visual Flight Rules
VHF	Very High Frequency radio
VMC	Visual Meteorological Conditions - allowing flight under VFR
V_{TOSS}	Take off Safety Speed

3. SSD SPECIFIC REQUIREMENTS – NEW PERMANENT HLS

3.1. Need for a Permanent HLS

The decision whether or not to have an HLS at all is a clinical decision, not an aviation decision (unless it was considered unsafe from an aviation perspective). It was determined that the original location for the HLS was unsatisfactory from the perspective that it could not be guaranteed that main rotor wash was able to be kept at a safe level upon escaping from the hospital campus. A relocation was assessed as the only option.

3.2. HLS Approach and Departure Path Considerations

Primary considerations in selection of HLS approach and departure paths include:

- Avoidance of airspace restrictions and limitations,
- Avoidance of high terrain;
- Avoidance of vertical structures and obstacles/hazards (including the building lift core/overrun),
- Alignment with direction of prevailing winds,
- Availability of emergency landing areas,
- Integrating with local aerodrome traffic and circuit procedures,
- Avoidance of flying animal/bird camps/colonies,
- Avoidance of areas sensitive to noise and vibration,
- Avoidance of culturally sensitive areas, and
- Avoidance of ecologically and environmentally sensitive areas.

Important criteria for approach/departure paths is that there be a minimum of two that are at least 135° apart.

3.3. HLS Siting Constraints

There are several siting constraints that restricted the options of where a successful HLS could be established within the overall site. These included:

- Avoidance of low-lying, flood-prone areas;
- Avoidance of high bushfire risk areas;
- Avoidance of the high knoll which is of Aboriginal cultural sensitivity;
- Proximity to the hospital building, the siting of which is, in turn, governed by Aboriginal Community feedback and best fit with car parking requirements;
- Proximity of residential areas;
- Avoidance of high terrain not in use as part of the HLS;
- Avoidance of the main hospital building and car park light poles;
- Approach and departure path alignment preferably north-east/south-west; and
- Approach and depart over clear land to the maximum extent possible.

3.4. Wind

The Bureau of Meteorology has an automated weather station at Moruya Airport, approximately 2.5nm/5km from the ERH campus. The wind roses for this location show data based on annual, average wind readings for Moruya at 0900 and 1500 since 1999. The wind data correlates quite well with the selected approach and departure paths i.e. to/from the north-east and west-south-west. Refer to Figure 3 below. This information is relevant during planning to account for any obstructions along the paths.

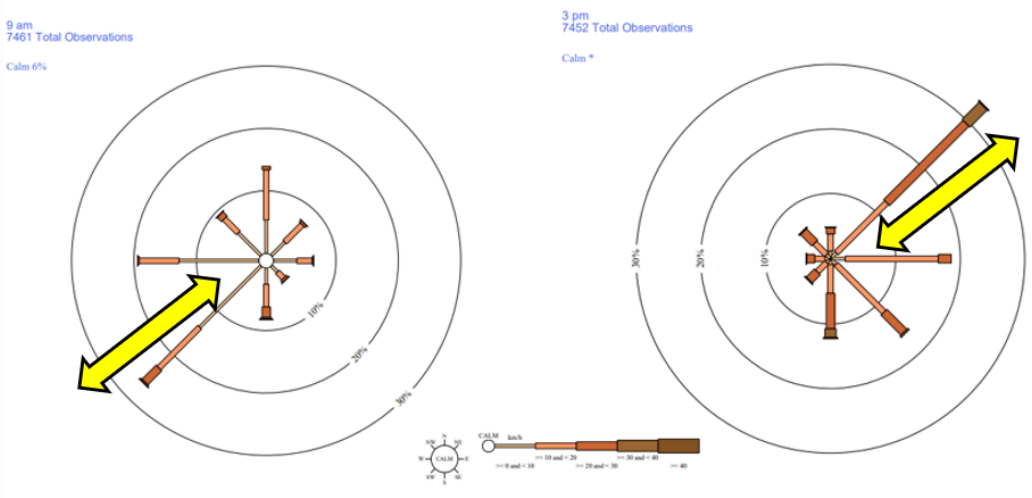


Figure 3: Moruya Airport Wind Roses – Annual Averages

3.5. Local Government Requirements - Eurobodalla Local Environment Plan (LEP) 2012

Clause 6.17 of the Eurobodalla Local Environment Plan 2012 states that one objective of the Clause is "to provide for the effective and ongoing operation of the Moruya Airport by ensuring that such operation is not compromised by proposed development that penetrates the obstacle limitation surface or PANS-OPS surface for that airport."

Further, Clause 6.17 states that "Before deciding whether to grant development consent for the application, the consent authority must... consult the relevant Commonwealth body about the application…"

3.6. Airspace

The airspace over the site has been reviewed for compliance with obstacle limitation surfaces (OLS) and Procedures for Air Navigation Services – Aircraft Operations (PANS OPS). The development (site structures and cranes) WILL NOT penetrate the OLS or the PANS OPS lower limit for Moruya aerodrome.

The general airspace arrangement over Moruya is depicted in Figure 4 below.

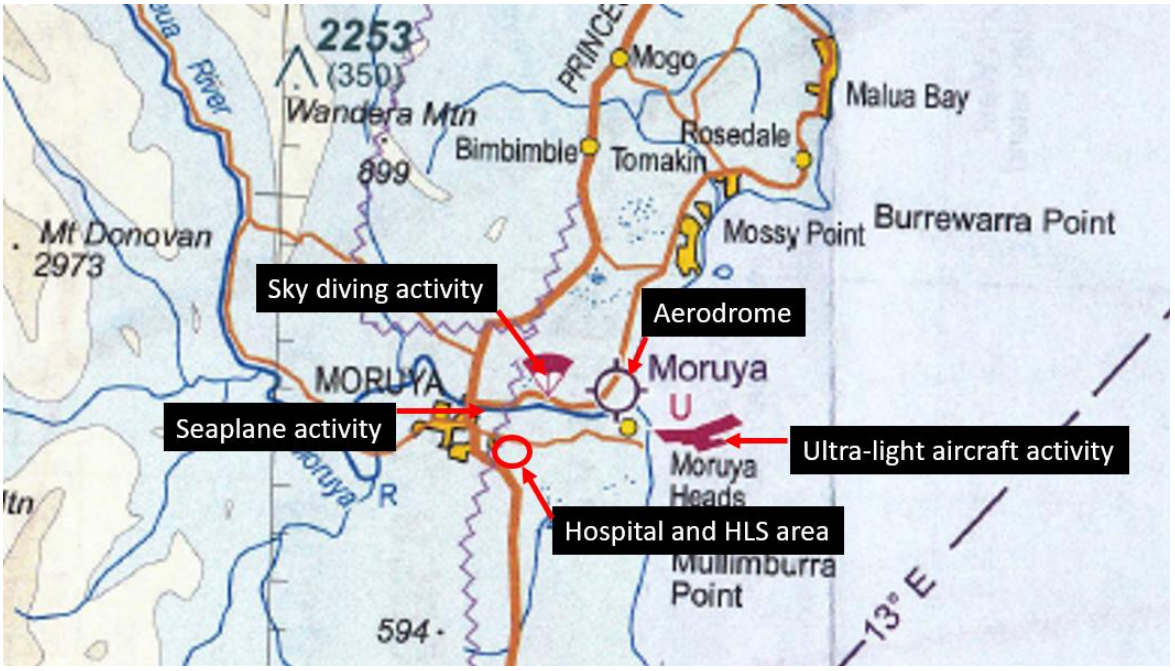


Figure 4: Airspace layout for Moruya aerodrome

The Obstacle Limitation Surfaces (OLS) associated with the Moruya aerodrome is depicted in Figure 5 below.

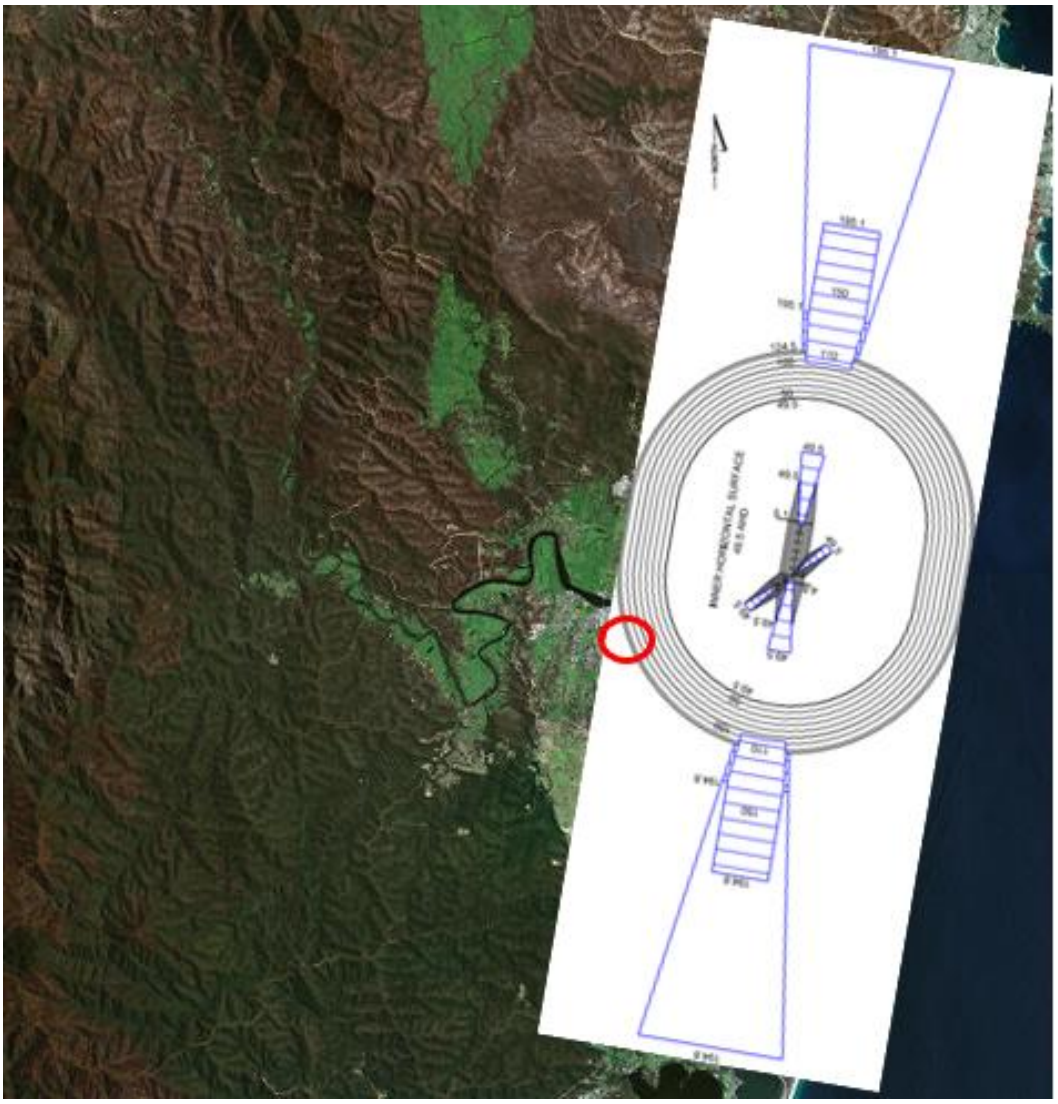


Figure 5: Obstacle Limitation Surface overlay for Moruya aerodrome

3.7. Civil Aviation Safety Authority Advice

The Civil Aviation Safety Authority (CASA) was consulted on the proposed development of the HLS and responded on 5 October 2023 stating that “CASA has reviewed the Aviation Report for the new Eurobodalla Regional Hospital by AviPro” and “CASA does not object to the proposed new Eurobodalla Regional Hospital including the helicopter Landing Site.”

3.8. HLS Air Traffic Management

Aircraft arriving and departing from the ERH HLS will not require an ATC clearance and will not interfere with any instrument approach procedures for Moruya aerodrome. There will be no issues with air traffic management.

3.9. Impacts on Sensitive Receivers

The approach and departure paths have been designed with due cognisance of the adjacent residential area. Consideration was given to avoiding any overflight of camps, colonies or roosting areas of migratory or foraging animals that may be present in these areas. There are no known areas of sensitive environmental or ecological concern in the preferred approach and departure zones, noting that at dawn and dusk in Australia any forest may be host to foraging bats and flying foxes.

3.10. HLS Lighting

The ERH HLS will have a lighting system to aid pilots navigating towards the facility and to aid approaches to land. Most of the lights are only visible from above and won't impact local residents. Such lighting is a safety feature and a standing requirement for NSW HLSs. Floodlights on the HLS will be used to aid the loading/unloading of patients being transferred, and will only be illuminated after the helicopter lands and then extinguished prior to the helicopter departing. Some people find such lighting annoying. Little can be done to reduce any impacts as the siting of such lights fits with an overall scheme of design to best support helicopter operations. Lighting on helicopters is minimal.

3.11. Effects of Helicopter Operations on Buildings, Infrastructure and People

Figure 6 below illustrates the planned approach and departure paths to the ERH HLS (small scale) that will be surveyed to support Performance Class 1 helicopter operations (this is a NSW Ambulance requirement of their helicopter contractors). The approach and departure paths do not overfly the main, new ERH buildings. They do not transit close to residential areas and working areas of the hospital e.g. the loading dock.

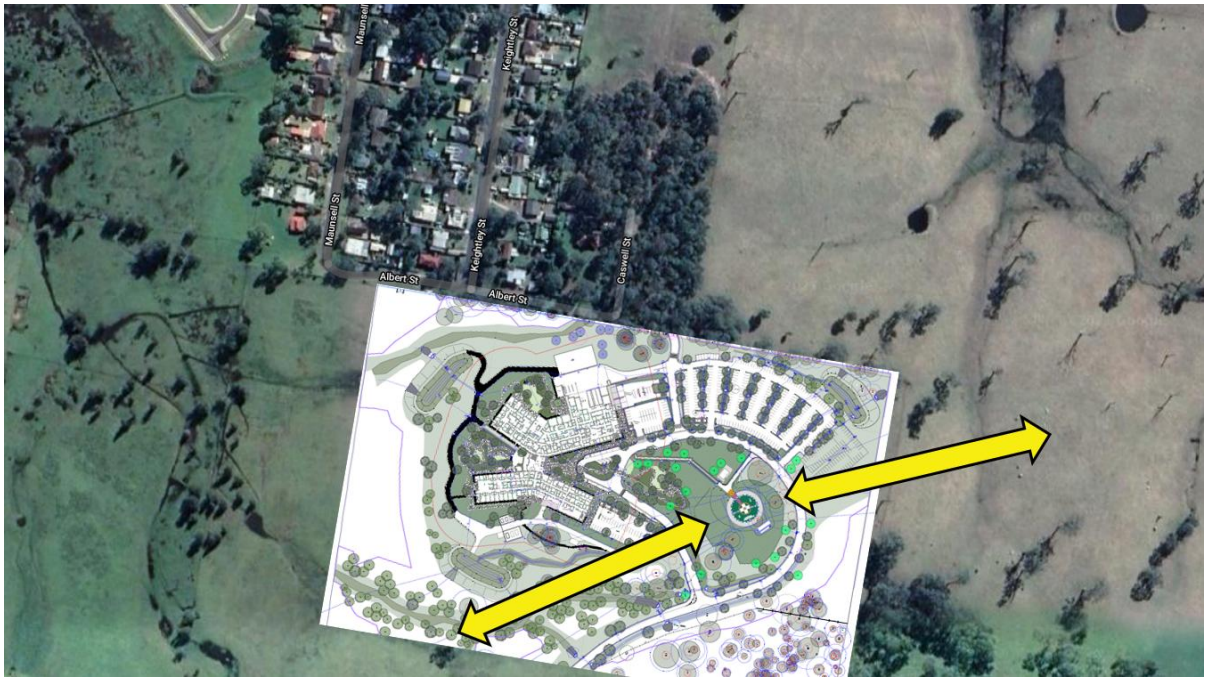


Figure 6: Flight path illustration at ERH HLS (small scale)

3.12. Acoustic Mapping

Acoustic mapping is not planned for the site as it is very distant from all occupied parts of the hospital campus.

3.13. Requirement for HLS Survey

For the relocated ERH HLS, selected approach and departure paths are approximately 170° apart. The preference is to have some component of head wind when landing or departing. The near-reciprocal flight paths should allow for acceptable head wind components at almost all times.

There should be few occasions when wind direction alone would lead to the HLS being unusable. The primary wind risk is either a very strong northerly wind or very strong southerly wind, however the data shows that this is only a remote likelihood. Prior to acceptance by NSW Ambulance, a VFR Approach and Departure Surface (Performance Class 1) survey combined with a Design Development Overlay (DDO) survey will need to be completed. The primary purpose of a DDO survey is to provide a baseline for the protection of airspace around the HLS as defined in the National Airports Safeguarding Framework Guideline H – Protecting Strategically Important Helicopter Landing Sites.

3.14. Obstructions and VFR Approach/Departure

One pair of proposed VFR Approach and Departure paths run East-North-East and South-West. The selection of these paths aims to achieve an obstacle free gradient of 2.6º (4.5%, 1:22.2 vertical to horizontal), measured from the forward edge of a 34m diameter safety area to a height of 152m above the FATO at a distance of ~3,386m.

The approach and departure paths commence at 34m width at the safety area edge and expand uniformly, laterally at an angle of 8.7^0/15%/1:12.8 to a width of 140 m, then remains parallel to a distance of 3,386 m, where the height is 152 m above the elevation of FATO surface.

The VFR approach and departure paths are to be obstacle free. It is important to achieve the 2.6^0/4.5%/1:22.2 obstacle free slope to account for the performance requirements of one engine inoperative (OEI) flight following an emergency.

Subject to formal survey, it is apparent that there are some obstructions (trees) along the proposed VFR Approach and Departure paths which will require removal.

3.15. Crane Management

As cranes are already onsite, no crane airspace assessments or management planning is required.

4. SSD KEY ISSUES

4.1. Key Issue: Policies

NSW Health Policy. The HLS will meet the compliance requirements of CASA AC 139R-01 Guideline for heliports – design and operation, and where additional guidance is required, from NSW Health GL2020_014 Guidelines for NSW Hospital HLS. Whilst the relevant guidelines do not restrict flight over adjacent buildings, it is common practice in approach and departure path design to avoid such situations. It has been possible on this occasion to avoid overflight of the adjacent hospital buildings and to also avoid impacting any rooftop services e.g. cooling towers and vents, with rotor downwash.

4.2. Key Issue: Siting Options

During the HLS design process, several siting options were considered. Finding a safe and workable location was difficult. Extensive community consultation occurred to explain the difficulty of establishing a suitable site. Of all the locations assessed against the requirements of Section 4, the current location was determined to be the best site, notwithstanding it is quite distant from the main hospital building.

4.3. Key Issue: Environmental Amenity

Acoustic Impacts. There will be minimal acoustic impacts associated with the conduct of helicopter flight operations to/from the proposed HLS. Total avoidance of acoustic impacts on local residential communities is impractical and cannot be guaranteed.

Main Rotor Downwash Impacts. There will be no negative impacts on external receivers from main rotor downwash.

Lighting Impacts. There is unlikely to be any reaction to HLS lighting associated with the HLS.

Ecological Impacts. There are no known areas of environmental or ecological significance that require specific protection from the impacts of helicopter operations. A search of data, reports and other sources did not reveal the existence of any additional, nearby, noteworthy habitats, nesting areas, breeding grounds or roosting colonies that might be impacted by helicopters. The greatest ecological impacts occur when helicopters fly low over a site. The vegetated area to the south-east of the campus will not be adversely impacted as helicopters will avoid low flight over this area because it contains high terrain which is unsuitable for making an emergency/forced landing. Transit at higher altitudes will not impact the ecology of the area.

4.4. Key Issue: Noise and Vibration

Noise. The typical helicopter “noise” event includes the following components:

Helicopter arrival:

- 1-minute approach and land, and
- 2 minutes engine idle (then shutdown).

Helicopter departure:

- 1-minute start-up,
- 1-minute hover and backup, and
- 1-minute departure.

Total elapsed noise event is approximately 6 minutes.

It should be noted that at “city” hospitals where the pilot is subject to Air Traffic Control (ATC), it may take several minutes longer as clearance may not be immediately available for the route that the pilot wishes to take. In such circumstances, ATC may keep a HEMS helicopter waiting for a long period before approval to depart is gained. This issue will not arise at the ERH HLS.

4.5. Key Issue: Contamination

The main contamination from an HLS is that of fuel product spillage. In the case of the ERH HLS, this risk is significantly mitigated by not conducting refuelling operations or maintenance on the HLS.

If there was a fuel leak of any sort from the helicopter, the installation of the fuel/water separator will mitigate the contamination risk.

4.6. Key Issue: Drainage

The HLS will have drainage to ensure standing water is drained from the deck. A slope of up to 2° will ensure water does not pool and helps maintain the integrity of the anti-slip surface.

4.7. Key Issue: Management of Cranage during construction

As the new ERH building is low-set and there is no existing HLS within immediate proximity to the ERH HLS, there is no need to manage crane-helicopter interfaces during construction.

5. CONSULTATION, CONCLUSION AND SUMMARY

5.1. Consultation

AviPro has consulted with the following organisations with no reportable feedback:

- NSW Ambulance aeromedical operations, and
- Toll Helicopters (contracted helicopter operator).

Consultation also occurred with the HLS Clinical Project Working Group with representation from clinicians across SNSWLHD, (as well as NSW Ambulance) to assess each of the options from a clinical perspective. Feedback informed the location of the HLS.

Extensive consultation also occurred with community stakeholders.

5.2. Future Consultation

AviPro will further engage with the following organisations as appropriate:

- Health Infrastructure (Program Management),
- NSW Ambulance Service (the helicopter retrieval capability Director), and
- Toll Helicopters (contracted helicopter operator).

AviPro may also engage with the following additional organisations:

- CASA - if regulatory change occurs that materially impacts the program.

5.3. Conclusion

The relocated on-grade layout, as currently designed, is suitable as an HLS. The HLS will result in a minimal amount of overflight of populated areas. If it occurs, this overflight will be unavoidable.

5.4. Summary

From an SSD perspective, in summary:

- Planned approach and departure paths conform with the most likely wind directions and provide pilots with the best forced landing areas available in the event of emergencies requiring immediate landing on final approach to land or immediately after departure, whilst concurrently also avoiding built-up and sensitive areas to the maximum extent possible.
- The new, relocated ERH HLS structure and associated cranes used for construction will not infringe prescribed airspace OLS.
- The HLS will be compliant with CASA AC 139R-01 Guideline for heliports – design and operation, and to the extent that the primary CASA document does not provide sufficient guidance, with NSW Health GL2020_014 Guidelines for NSW Hospital HLS of 1 July 2020.