

# **Appendix P**

**Preliminary Aviation Report** 



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# HELICOPTER LANDING SITE (HLS) CONCEPT DESIGN REPORT FOR SSI STAGE 1 NEW MAITLAND HOSPITAL (CONCEPT DESIGN APPROVAL)

**Reference:** 

- A. Drawings 170317 Maitland Hospital Scheme dated 17 March 2017
- **B.** NSW Health Policy GL2018\_010 Guidelines for NSW Hospital HLS dated 26 April 2018
- C. Civil Aviation Safety Authority Manual of Standards Part 139 V1.13 March 2016

## Overview

AviPro have been engaged as the aviation consultants to the project at the New Maitland Hospital (NMH) site shown in Image 1. AviPro provided comment for an on-grade location for the helicopter landing site (HLS) selected for the Concept Design.

This Report provides up to date concept information to inform submissions on the regulatory landscape, airspace, helicopter frequency and initial flight path selection of the proposed NMH site for the purposes of SSI Stage 1 Concept Design Approval.

## Helicopter Frequency at NMH

The number of helicopter movements for the existing Maitland Hospital is approximately 2 per month being for emergency aeromedical transfers.

It is anticipated, given the growth of the area and the availability of increased clinical capability at the NMH, that the use of the HLS moving forward may increase, albeit not substantially. The frequency of use will depend on patient needs and clinical transfer policies. Whilst the exact figure is unknown, it is anticipated that the frequency may be approximately three flights per month.



Image 1: Concept Location of the on-grade NMH HLS



#### **Regulatory Landscape**

In order to understand the overarching design criteria of the HLS, it is important to briefly review the Regulatory landscape.

Currently within Australia, there are no set rules or regulations applicable to the design, construction or placement of HLSs. However, there may be local council planning, location and movement approvals required. The appropriate legislation at present for the use of HLSs is Civil Aviation Regulation (CAR) 92 which places the onus on the helicopter pilot to determine the suitability of a landing site.

The Civil Aviation Safety Authority (CASA), as the regulator of aviation in Australia, effectively divested itself of direct responsibility in the early 1990s and currently provides only basic operating guidelines via Civil Aviation Advisory Publication (CAAP) 92-2 (2) Guidelines for the Establishment and Operation of Onshore Helicopter Landing Sites. CASA does not provide design, structural information or advice beyond that provided in the CAAP.

The following documents provide the advisory material, guidelines and best practice standards in Australia for HLS:

- ICAO Annex 14, Vol II, Heliports.
- ICAO Heliport Manual Doc 9261-AN/903.
- US FAA Advisory Circular AC 150/5390-2C, Heliport Design, (covers both operational and design criteria, particularly for hospital based HLSs in Chapter 4, Hospital Heliports).
- CASA CAAP 92-2 (2) Guidelines for the Establishment and Operation of Onshore Helicopter Landing Sites. (covers essentially operational specifications only).

CASA has for some years been undertaking a Regulatory Reform Program in the rotary wing area and it is assumed that the Standards and Recommended Practices developed by ICAO with some of the differences removed, will form the basis of the proposed Civil Aviation Safety Regulations (CASR).

Proposed new CASRs include:

- Part 133 pertaining to Commercial Air Transport Operations;
- Part 138 pertaining to Aerial Work operations; and
- Part 139R pertaining to helicopter landing sites.

As a consequence of the current regulatory situation, NSW Health Infrastructure, Ambulance and Ministry of Health have developed a set of Guidelines which are now Policy. This document is at

http://www1.health.nsw.gov.au/pds/ActivePDSDocuments/GL2018\_010.pdf) and represents 'best practice' HLS standards and specifications for helicopter emergency medical services (HEMS). These will be reviewed during the Detailed Design Phase.

#### Airspace

The CASA Manual of Standards for Aerodromes that mention obstacle restrictions and limitations regarding airspace is at https://www.legislation.gov.au/Search/Manual%20of%20Standards.

CASA/Airservices Australia Approvals for this site will need to be reviewed to assess if penetration of primary prescribed airspace would occur. Primary prescribed airspace includes an airport's Obstacle Limitation Surfaces (OLS) involving a set of imaginary surfaces associated with an aerodrome that should be kept free of obstacles. Airspace above and around the hospital is also to be reviewed. Additionally, the Procedures for Air Navigation Services – Aircraft Operations (PANS- OPS) that takes account of the airspace associated with aircraft instrument procedures, must be considered.



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These applications will form part of the Detailed Design (Stage 2) SSI Application.

#### **Flight Path Selection**

The selection of flight paths is normally determined by weather, terrain, obstructions, and the location of the HLS.

The performance capacity of the new fleet of AW139 helicopters in NSW will allow for Category A operations to be undertaken at almost all times. Under proposed changes to CASA Rules, HEMS operations will fall under Medical Transport, an extension of a new Air Transport category. Operations are proposed to be undertaken to Performance Class 1 or 2 (PC1/2). Both PC 1 and PC2 require a Category A certified helicopter meeting the relevant Category A requirements, approaching and departing a PC1 accredited HLS along VFR approach and departure paths which have been surveyed for obstacles. It is intended to undertake this work to inform the Detailed Design (Stage 2) SSI Application.

To meet the PC1 requirements, VFR approach and departure paths are to have no obstacles penetrating the gradient of 2.5°/4.5%/22:1. Likewise obstacles should not be penetrating the adjacent transitional surface; however, some penetration may be accepted depending on the amount of penetration and the proximity to the relative flight path.

With this all considered, the selection of flight paths to this hospital site will be influenced significantly on the location within the site of the proposed HLS and obstructions positioned near it and in the approach and departure corridors.

Given the proximity of the residential areas to the south of the proposed site (Image 2), the known wire hazard along the southern boundary, and the predominant east/west winds, a generally east/west approach and departure path is recommended for the ground level site.



Image 2: The proposed HLS site and approach/departure paths



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The following estimates of the flight path directions are provided:

- Approach/Departure Path A (Yellow arrow), is approximately 260°/080° magnetic.
- Approach/Departure Path B (Green arrow), is approximately 110°/290° magnetic.

#### Conclusion

The North-Eastern HLS on-grade site, as presented, will provide a functional HLS location for NMH. The current regulatory environment allows for the HLS to be built in this location and the selected flight paths should meet most wind conditions and therefore reduce the use of additional directions subject of course to the final discretion of the pilot.

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