a division of Resolution Response Pty Ltd
ABN: 94 154 052 883

122 Queen Street
BEACONSFIELD NSW 2015

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Mr Johann Strey
Senior Associate ADG architects
Suite 3.04, Level 3, 107-109 Mann St
GOSFORD NSW 22500

AVIATION DUE DILIGENCE REPORT - GOSFORD GATEWAY

References:

A. Barker Ryan Stewart Pty Ltd Request for SEARs Ref: CC160154 dated 6 Dec 2019
B. Planning Secretary's Environmental Assessment Requirements SSD 10414 dated 17 Jan 2020
C. Central Coast LHD Letter CD20/4312 dated 16 Jan 2020
D. CASA CAAP 92-2(2) Guidelines for the establishment and operation of onshore HLS
E. National Airports Safeguarding Framework Guideline H – Protecting Strategically Important Helicopter Sites
F. NSW Health GL2018_010 Guidelines for Hospital HLS in NSW
G. Gosford Local Environment Plan (2014)
H. CASA Manual of Standards 139 Section 8:10 Obstacle Markings
I. Civil Aviation Safety Regulation (CASR) 1998 Part 139

Dear Johann,

Thank you for the opportunity to review and report on the impact of the Gosford Gateway development at 8-16 Watt St, Gosford which is proposed for development in accordance with Reference A. The distance of the development from the Gosford Hospital is approximately 530m as depicted in Image 1 below.

Image 1

The proposed State Significant Development Application (SSD DA) seeks concept development approval for the redevelopment of the Gosford Gateway Centre at 8-16 Watt St, Gosford. The concept development application will be subject to subsequent DAs with development approvals required for each stage. The concept development proposes three mixed use towers and a public plaza in the centre. The development will be constructed in stages. Full details of the proposal are included in the Environmental Impact Statement prepared by Barker Ryan Stewart.

The location of the Gosford Gateway development in relation to the Gosford Hospital Helicopter Landing Site (HLS) is depicted in Image 2 below. The authorised approach and departure paths for Gosford Hospital are illustrated by the yellow arrows (these are actually painted onto the HLS).

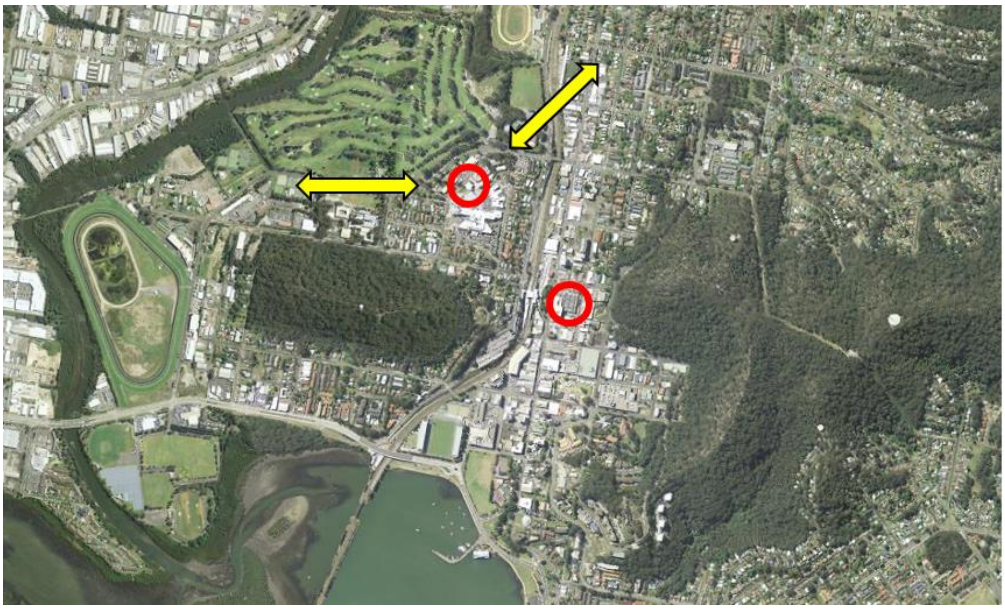

Image 2

This report addresses specific requirements of References B and C. Reference B requires:

- "During the preparation of the EIS, you must consult with the relevant local, State or Commonwealth Government authorities, service providers, local community groups and affected landowners. In particular, you must consult with: NSW Health (Central Coast Local Health District)" and to

- "Consult with Central Coast Local Health District to ensure Gosford Hospital's Strategic Helicopter Landing Site (and associated flight paths) are not adversely impacted by the proposal during construction or operation at any stage".

Reference C states that "assessment on the impact on helicopter flight paths to and from Gosford Hospital will be required."

In assessing the impact, References D-F have been reviewed and their relevant requirements, principles and best practices have been applied. Additionally, some NSW Councils apply an "airspace operations" Clause in their Local Environment Plan (e.g. Liverpool – see Clause 7.17). There are, however, no such similar provisions in Reference G.

The Gosford Hospital HLS has been surveyed in accordance with Reference F Sections 3.14.4 and 3.14.5. Section 3.14.4 Visual Flight Rules (VFR) Approach and Departure Path and Transitional Surface Survey requires compliance with Figure 11 of Reference F. Figure 11 is reproduced here as Figure 1 below:

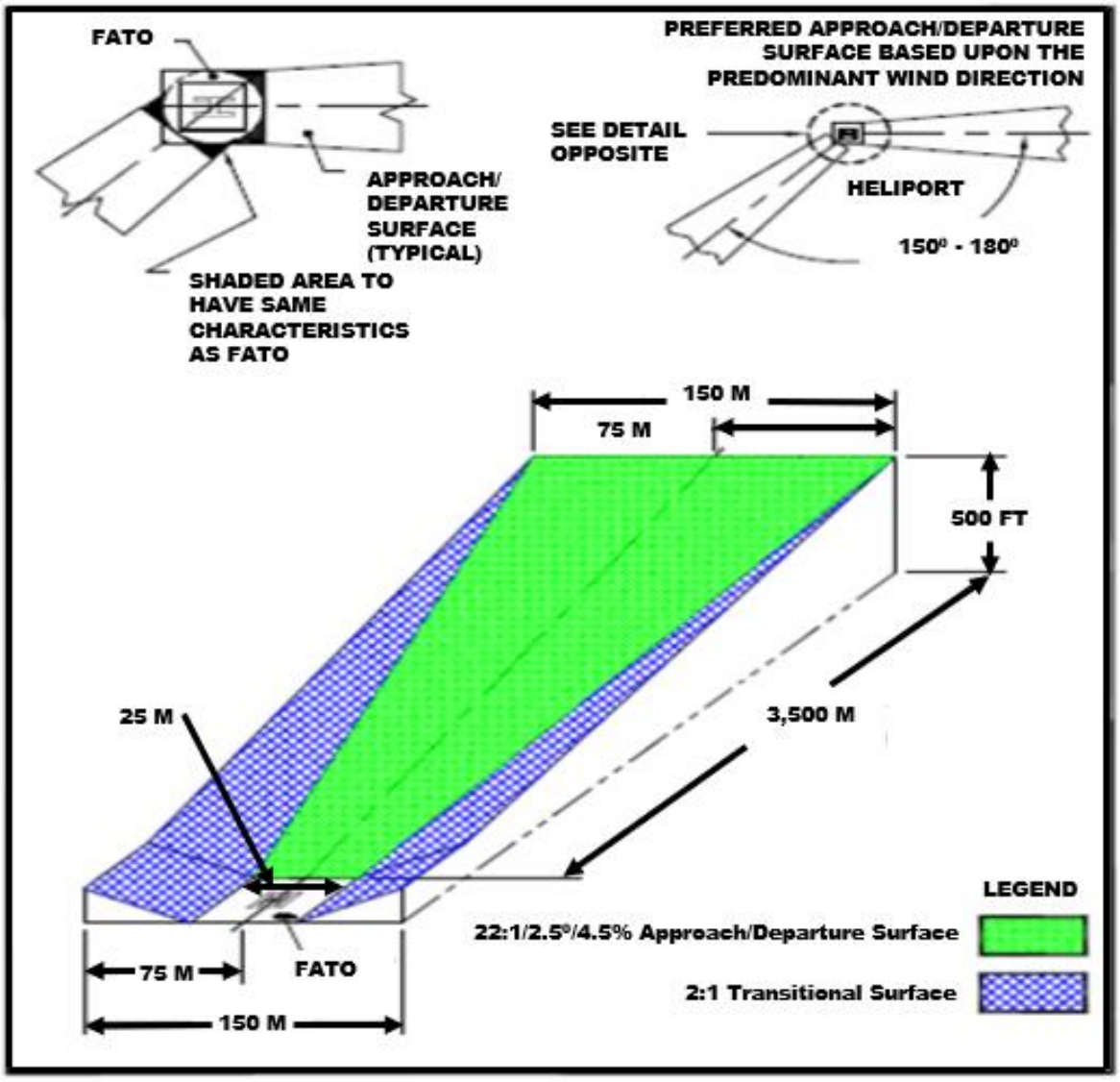

Figure 1

The Design and Development Overlay (DDO) is a survey of an area 30 m below the VFR Approach and Departure Path and Transitional Surface. The surface 30 m below the VFR Approach and Departure Path and Transitional Surface is known as the Object Identification Surface (OIS). There should be no penetration of the OIS, however there may be exceptions and where deemed tolerable, such obstructions must be lit. The DDO requirement is depicted in Figure 10 of Reference F, and this figure is reproduced below as Figure 2.

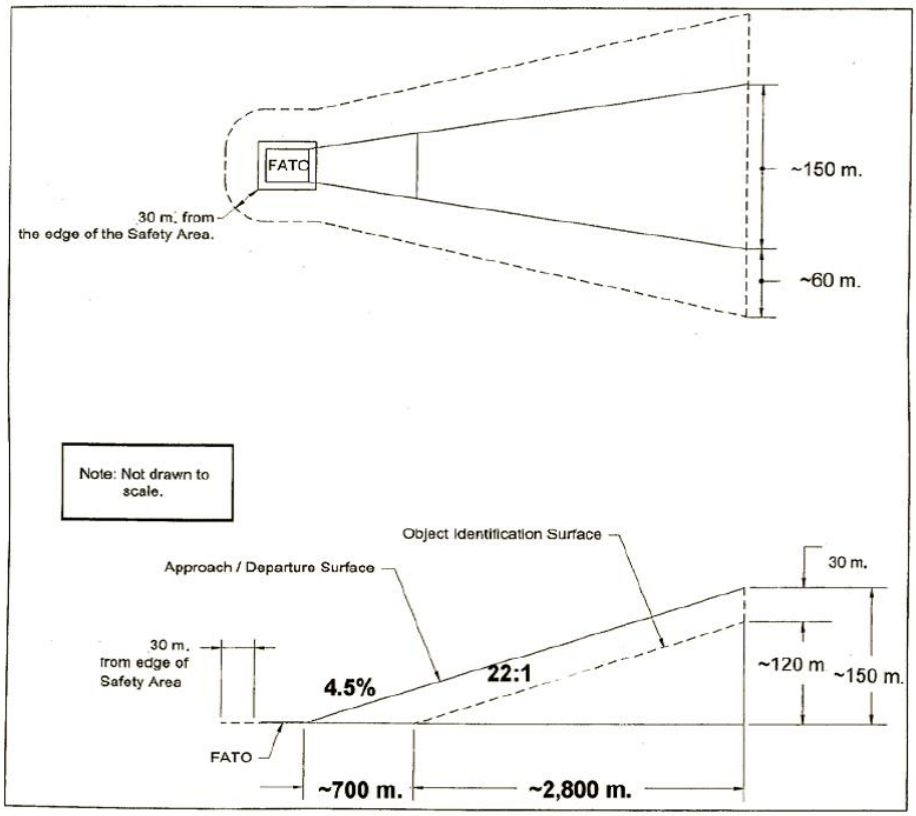

Figure 2

The combined VFR approach and departure path and transitional surfaces and DDO survey results for the Gosford Hospital HLS are depicted on Image 3 below. Also included is the location of the Gosford Gateway development at 8-16 Watt St, Gosford.

Image 3

The Gosford Hospital HLS has an instrument approach titled the RNAV GNSS 340. In this instance RNAV is an abbreviation for Area Navigation and GNSS is an abbreviation for Global Navigation Satellite System based upon the better-known Global Positioning System (GPS). The 340 stands for the direction of approach, in degrees magnetic. The approach is approved by the Civil Aviation Safety Authority (CASA) for approved operators only. These approvals are mainly restricted to Helicopter Emergency Medical Services (HEMS) operators. For Gosford Hospital, the approach requires the pilot to track on a bearing of 340^0 towards the HLS descending to 1040 ft above mean sea level at a point approximately 2500 metres from the hospital. This position corresponds roughly with the tip of Point Frederick. This position is known as the Missed Approach Point (MAPt) and if the pilot is not in "visual" conditions with at least five kilometres visibility and clear of cloud, must execute a missed approach (this requires an immediate climb and a turn onto a track of 015^0). If visual, the pilot then continues, determining the best way to approach the HLS based upon the prevailing conditions. The approach is shown in Figure 3 below:

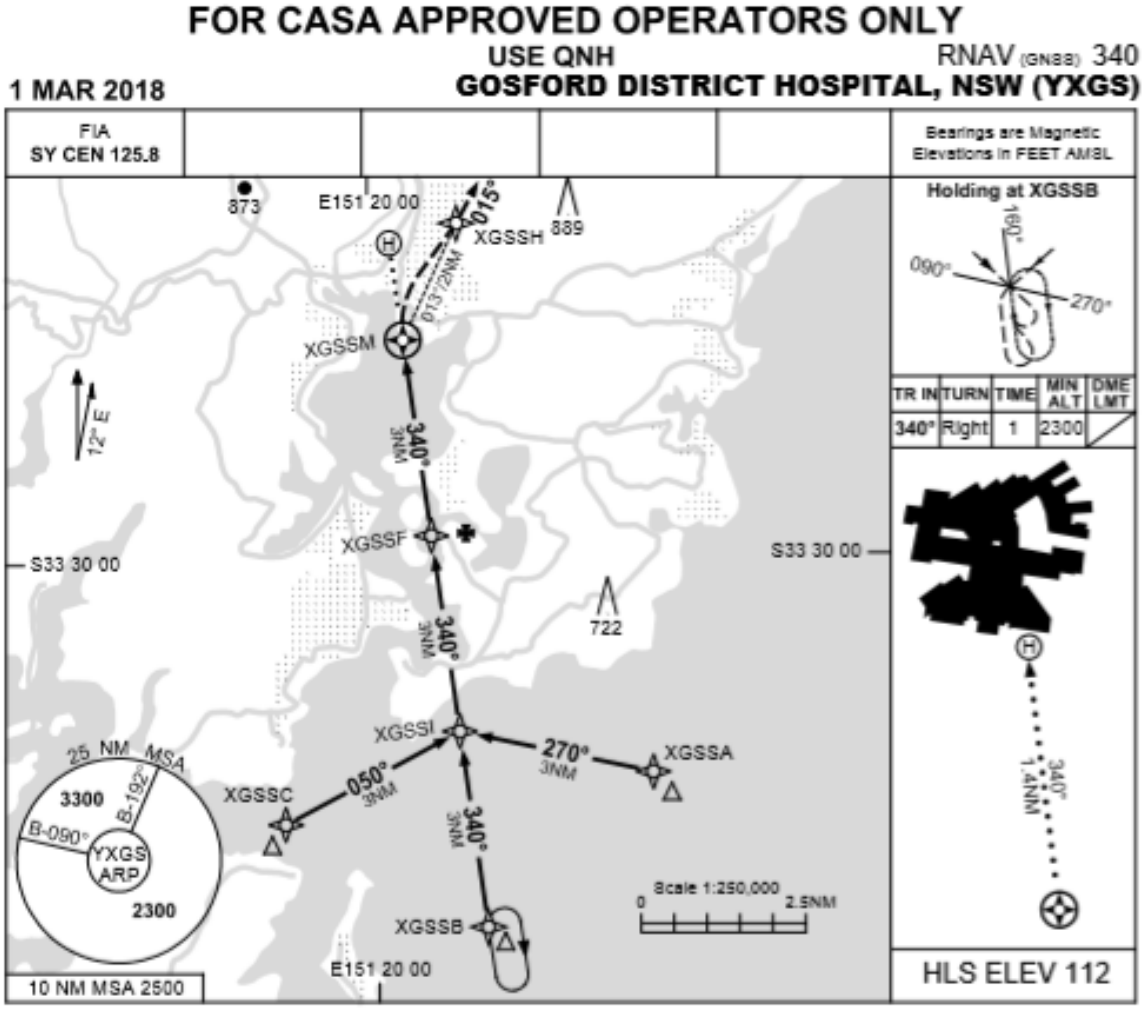

Figure 3

The visual segment allows the pilot to fly in any way considered safe and expeditious in order to arrive in the vicinity of the HLS in the best possible situation to land in the preferred or chosen direction. Significant factors for the pilot's consideration are:

- The pilot sits in the right-hand seat and will mostly prefer to circle to the right in order to keep the HLS in view,
- Overflight of built-up and populous areas will be avoided to the maximum extent possible,
- Overflight of known noise-sensitive areas and areas of environmental interest such as bird and bat colonies will be avoided to the maximum extent possible,
- Known obstacles such as high terrain, high power lines and cranes will be avoided to the maximum extent possible, and
- Landings into a significant headwind component will be flown to the maximum extent possible.

Considering the points above, in the majority of cases the pilot will either (only in good weather) continue tracking towards the hospital with all obstacles in sight; or track to the west around President's Hill (the high terrain directly between the MAPt and the hospital) mostly over the racecourse, tennis courts, the golf course and Narara Creek. It would only be in rare cases that the pilot would track towards the Gosford Gateway development at 8-16 Watt St between President's Hill and the high terrain of Rumbalara Reserve. This track places the HLS to the pilot's left making it difficult to keep in sight and transits over a significantly built-up area. It may be necessary to fly this track on rare occasions but it would mostly be avoided. A depiction of the most usual paths of the visual segment are demonstrated in Image 4 below:

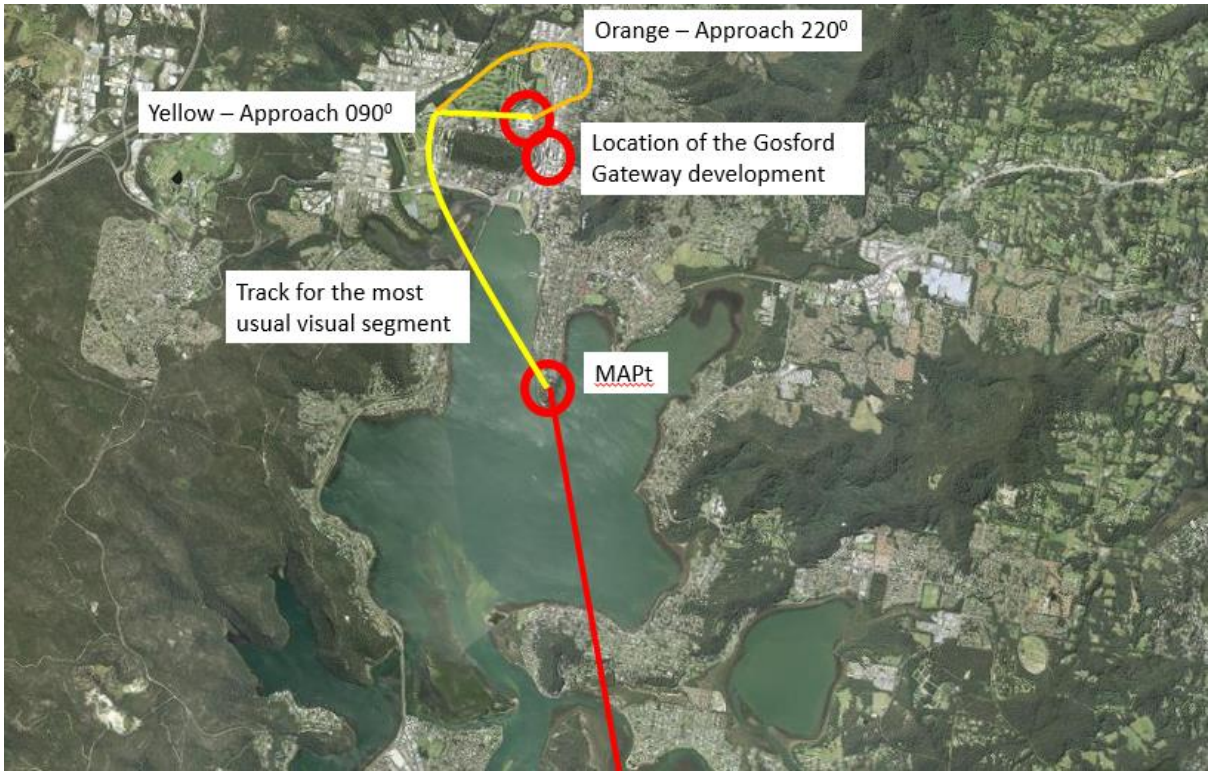

Image 4

The resulting analysis of how a pilot would fly the visual segment of the GNSS 340 approach leads to the conclusion that overflight of the Gosford Gateway development at 8-16 Watt St, Gosford will in almost all cases be avoided; and when the development is overflown it will be in good weather conditions that allow the building to be clearly seen.

The conclusion from reviewing survey and instrument approach data for the Gosford Hospital HLS is that the Gosford Gateway development at 8-16 Watt St, Gosford will have no impact on the approach and departure paths to and from the HLS.

This does not, however, completely address the whole matter. Reference H states that "In general, an object in the following situations would be required to be provided with obstacle lighting unless CASA, in an aeronautical study, assesses it as being shielded by another lit object or that it is of no operational significance: outside the obstacle limitation surfaces of an aerodrome, if the object is or will be more than 110m above ground level." At RL 133.887 one of the towers in this development meets this criterion and will need to be lit in accordance with Reference H (a steady red, medium intensity obstruction light).

Reference I requires that "Any object that extends to a height of 110 m or more above local ground level, must be notified to CASA by the proponent or owner." This is done through Airservices Australia. The proponent or owner should confirm with the NSW Department of Planning, Industry and Environment whether it will advise CASA through Airservices Australia or whether the proponent or owner should do this directly. The relevant notification form to be completed can be found at: http://www.airservicesaustralia.com/wp-content/uploads/ATS-FORM-0085_ObstacleNotificationForm.pdf AviPro is able to assist further in this regard should you do desire.

AviPro notes, further, that the construction crane(s) will need to be lit to a suitable aviation standard (not all of the points below will be applicable). AviPro advises that the next version of Reference F which is at a very mature draft stage will state the following:

"The illumination requirements for cranes in the vicinity of a Hospital HLS are detailed below.

As a minimum for all tower cranes:

- top of crane A frame or cabin: medium intensity flashing red obstruction light,
- both ends of Jib: medium intensity flashing red obstruction light,
- along Jib: line of white LED fluoro on a PE cell along the full length of the jib, and
- tower section: stairway lights or spot lights attached to the top of the tower pointing down and onto the tower (not up into pilot eyes).

As a minimum for all luffing cranes:

- top of crane A-frame or cabin: medium intensity red obstruction light,
- end of Jib: medium intensity red obstruction light,
- along Jib: line of white LED fluoro on a PE cell along the full length of the jib,
- tower section: stairway lights or spot lights attached to the top of the tower pointing down and onto the tower (not up into pilot eyes), and
- the LED jib fluro lights are to be LED weather proof emergency fluros controlled via a PE cell with a minimum 90 minute battery back-up."

In summary, AviPro advises that:

a. the Gosford Gateway development at 8-16 Watt St, Gosford will have no impact on the approach and departure paths to and from the HLS,

b. CASA must be notified of the intent to build the Gosford Gateway development at 8-16 Watt St, Gosford,

c. aviation standard crane lighting will be required on the Gosford Gateway construction crane(s), and

d. permanent aviation obstruction lighting will be required on one of the Gosford Gateway towers (RL 133.887) once it has been developed.

Sincerely,

Steve Graham
Managing Director
AviPro
Aviation Management and Safety Advisors
Tel: 0401 520048
Email: s.graham@avipro.com.au