

## 53-55 DONNISON STREET, WEST GOSFORD



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Prepared for

**AVIATION IMPACT ASSESSMENT**

**Wales & Associates**

**Version 1.1**

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**AVIATION IMPACT ASSESSMENT REPORT: 53-55 DONNISON STREET, WEST GOSFORD****References:**

- A. Department of Planning and Public Spaces Development Application (DA) 22/1307 53-55 Donnison Street, West Gosford (Lot/DP Number B/-/DP312912)
- B. CASA AC 91-29 Guidelines for helicopters – suitable places to takeoff and land
- C. National Airports Safeguarding Framework Guideline H – Protecting Strategically Important Helicopter Sites
- D. NSW Health GL2020\_014 Guidelines for Hospital HLS in NSW
- E. Central Coast Local Environment Plan (2022)
- F. CASA Manual of Standards 139 Chapter 8, Division 10 - Obstacle Markings
- G. Civil Aviation Safety Regulation (CASR) 1998 Part 139

Dear Matthew,

Thank you for the opportunity to review and report on the impact of the development at 53-55 Donnison St, West Gosford. The distance of the development from the Gosford Hospital is approximately 800m as depicted in Image 1 below.

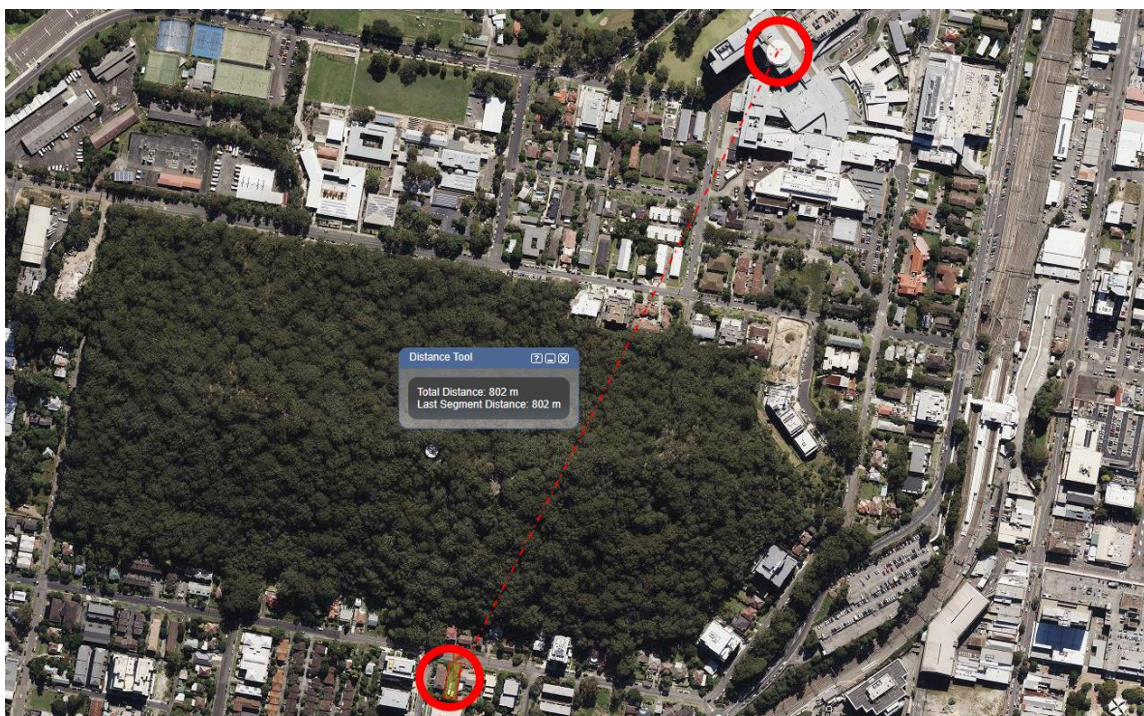


Image 1



The development at 53-55 Donnison St, West Gosford seeks approval for construction of 26 residential units.

The location of the 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).

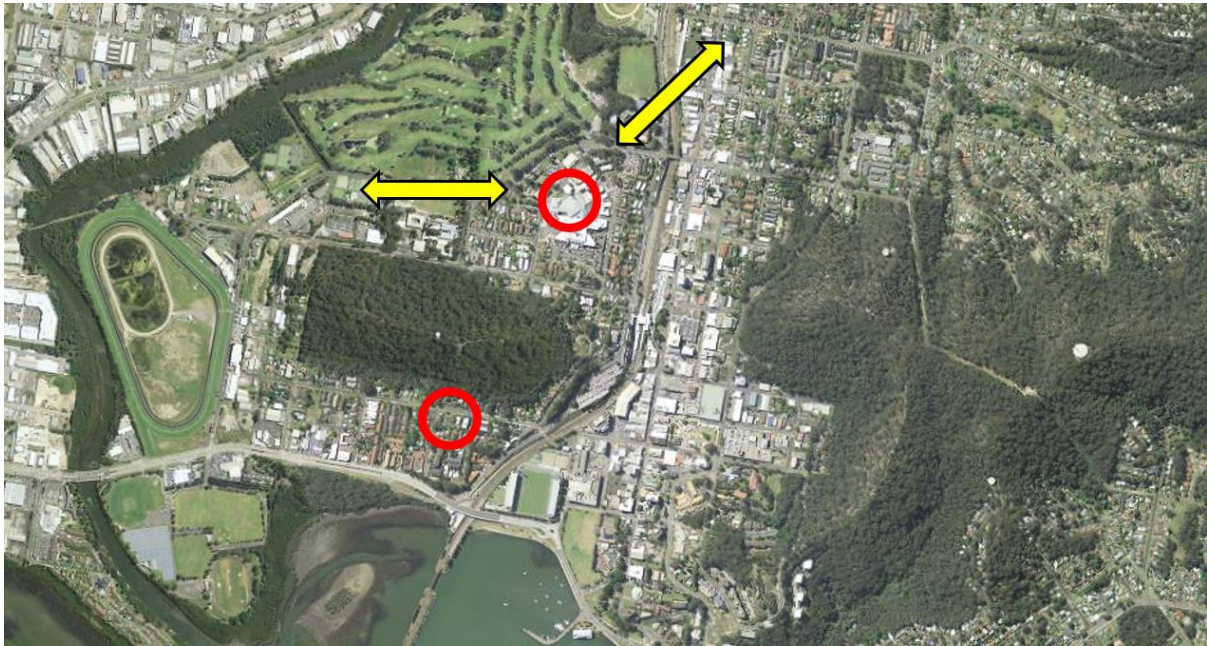


Image 2

This report addresses the requirements of the Department of Planning and Public Spaces in relation to Reference A. Specifically, this report addresses the requirement for “Information and clarification, prepared by a suitably qualified aviation expert, whether the proposal will impact Gosford Hospital’s helicopter flight paths, particularly from the use of cranes during the construction phase.”

In assessing the impact, References B-D have been reviewed and their relevant requirements, principles and best practices have been applied. N.B. Reference C requirements are incorporated in Reference D.

Some NSW Councils apply an “airspace operations” Clause in their Local Environment Plan. Reference E contains such a clause but it applies only to the Central Coast Airport and not to the Gosford Hospital HLS.

The State Environmental Planning Policy (Precincts—Regional) 2021 contains no aviation limitations in Chapter 5 pertaining to the Gosford City Centre.

The Gosford Hospital HLS has been surveyed in accordance with Reference D 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 D. Figure 11 is reproduced here as Figure 1 below:

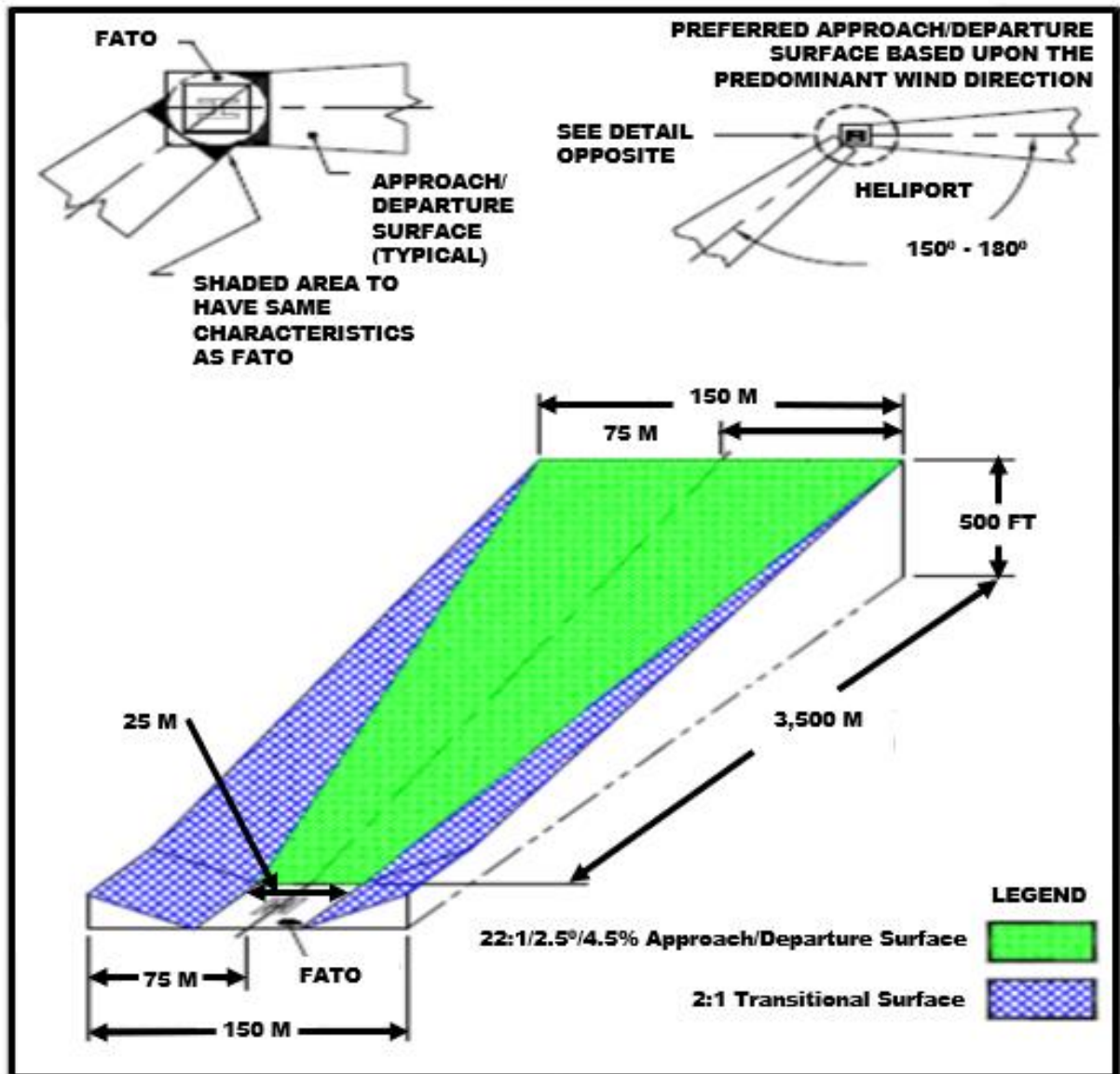
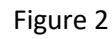


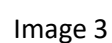
Figure 1

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 D, and this figure is reproduced below as 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 53-55 Donnison St development.



The Gosford Hospital HLS has an instrument approach titled RNP 340. See Figure 3 below.

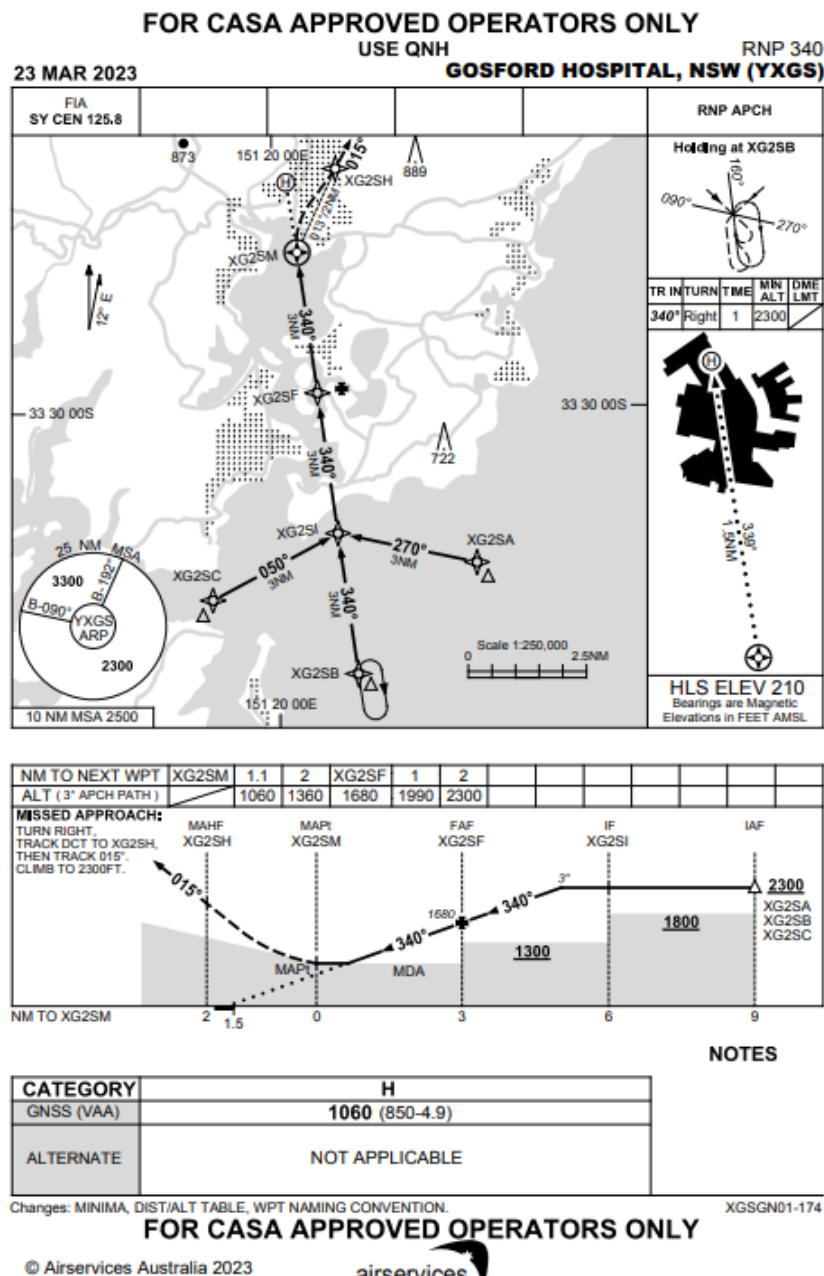


Figure 3

RNP is an abbreviation for Required Navigation Performance. The 340 is 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 restricted to Helicopter Emergency Medical Services (HEMS) operators. For Gosford Hospital, the approach requires the pilot to track on a bearing of 340° towards the HLS descending to 1060 ft (323m) above mean sea level at a point approximately 2500 metres from the hospital. This position corresponds roughly with half-way along the eastern side of Point Frederick. This position is known as the Missed Approach Point (MAPt) and if the pilot is not in “visual” 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 013°). If visual, the pilot then continues, determining the best way to approach the HLS based upon the prevailing conditions.

The visual segment (the dashed line in Figure 3 from fly-over waypoint XGSSM and the Gosford Hospital HLS) 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 bring the HLS clearly into view and keep it there,
- 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 (high terrain 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 Gosford CBD and then 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 occasions but it would mostly be avoided. A general depiction of the most usual paths of the visual segment are demonstrated in Image 4 below:

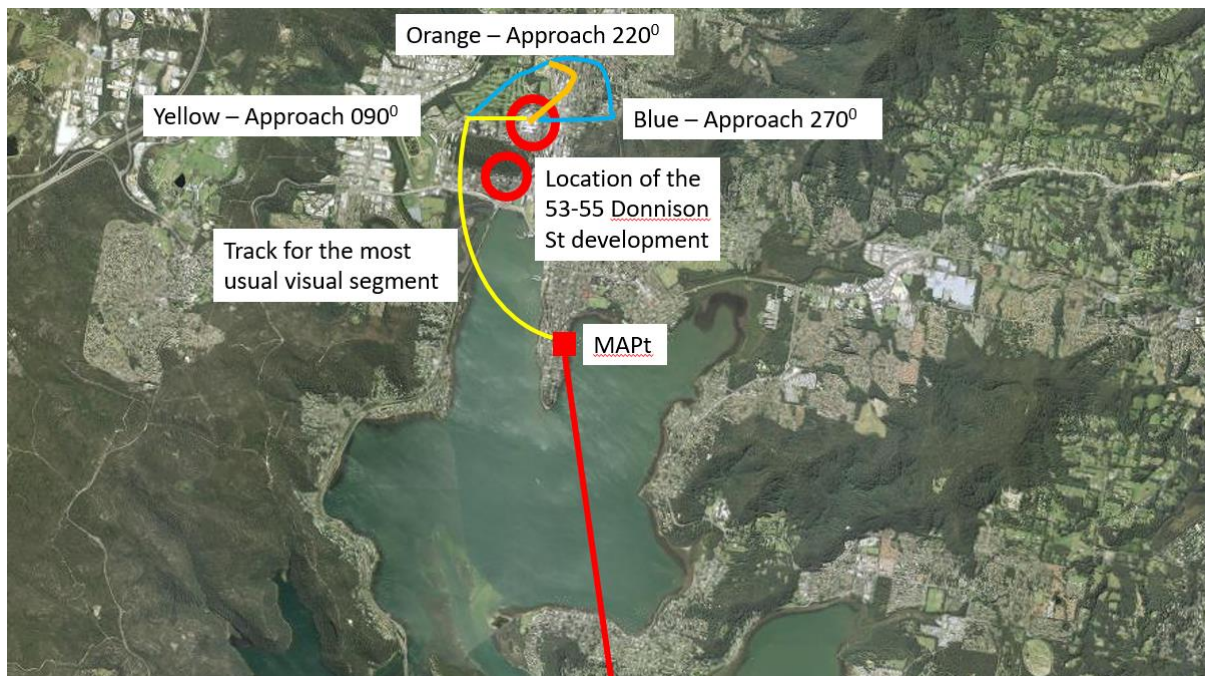


Image 4

Analysis of how a pilot would fly the visual segment of the RNP 340 approach leads to the conclusion that flight in the vicinity of the development at 53-55 Donnison St will occur. In order to commence the visual segment of the RNP 340 approach, the pilot requires a minimum of 4.9km visibility and must be clear of cloud at no lower than 1060ft (323m) above mean sea level (AMSL) (equating to 323 AHD) at the MAPt. From this position, the pilot is at liberty to manoeuvre safely to the HLS.



The terrain elevation between the Gosford Hospital HLS and the 53-55 Donnison St development is 116m/380ft. See Figure 4 below.



Figure 4

The development at 53-55 Donnison St, West Gosford is planned to have a rooftop elevation of RL 62.8 (equating to 62.8 AHD or 62.8m/207ft AMSL). See Figure 5 below.

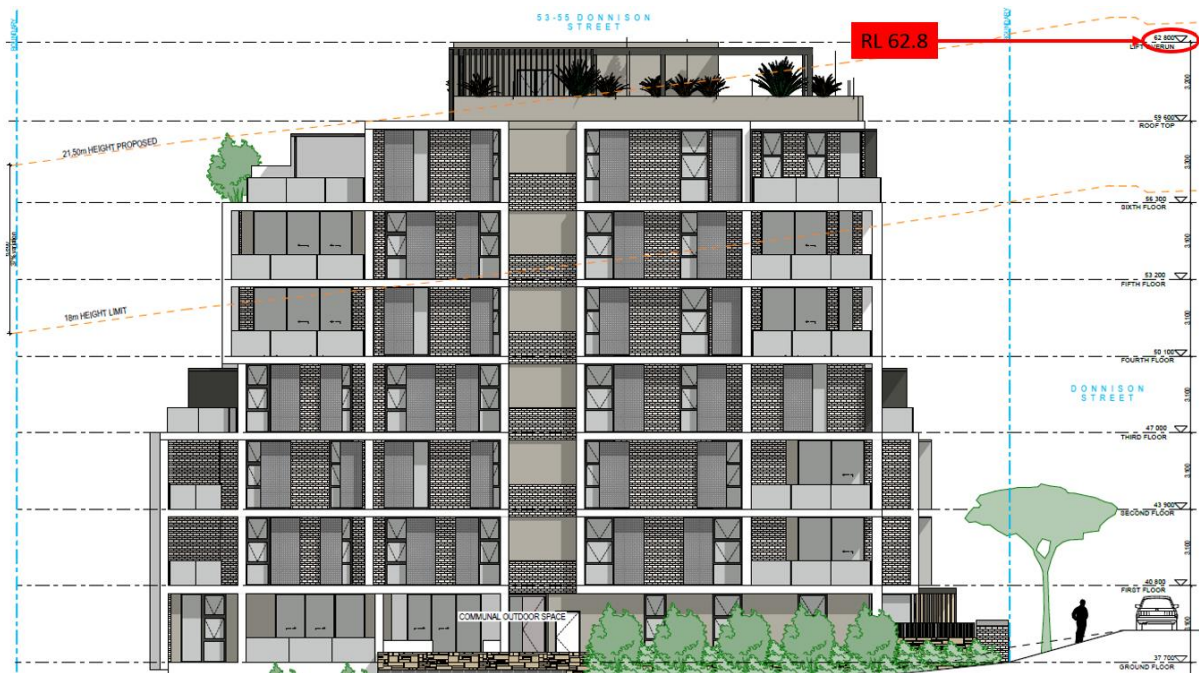


Figure 5



The 53-55 Donnison St development rooftop is therefore 53m/174ft below the highest adjacent terrain; and directly behind it. Although pilots may descend below their minimum altitude of 1060ft AMSL in executing their visual approach to the Gosford Hospital HLS, they will not descend as low as 207ft in the vicinity of 53-55 Donnison St, West Gosford. This would be a most unsafe and unnecessary action as they would be likely to hit the terrain of Presidents Hill before striking any building in the area.

There is no reason why a helicopter would fly so low over a populous area when a wider track could be taken over clearer land descent to such a low level could be left until much closer to the hospital. The addition of cranes (generally assumed to be an additional 12m in elevation for a hammerhead crane) will not change the probability of a helicopter coming in contact with either the building or the crane. The risk will remain constant.

The development at 53-55 Donnison St, West Gosford is of little consequence to the missed approach procedure for the RNP 340 approach. In the event that the helicopter does not become visual at the MAPt (GXSSM) it will execute a missed approach by turning onto a track of 013° and fly for two nautical miles to the fly-by waypoint GXSSH from whence it will adjust track to 015° and climb to the minimum safe altitude of 2300 feet above mean sea level. Refer to Figure 3.

Image 5 below demonstrates the missed approach tracking arrangement in relation to the Gosford Hospital and the development site. It is vitally important that the helicopter turns inside the high terrain of Rumbalara Reserve which acts to shield it from any potential collision with buildings close to the CBD. It is therefore very safe to conclude that the missed approach procedure will not be impacted by the development at 53-55 Donnison St, West Gosford.

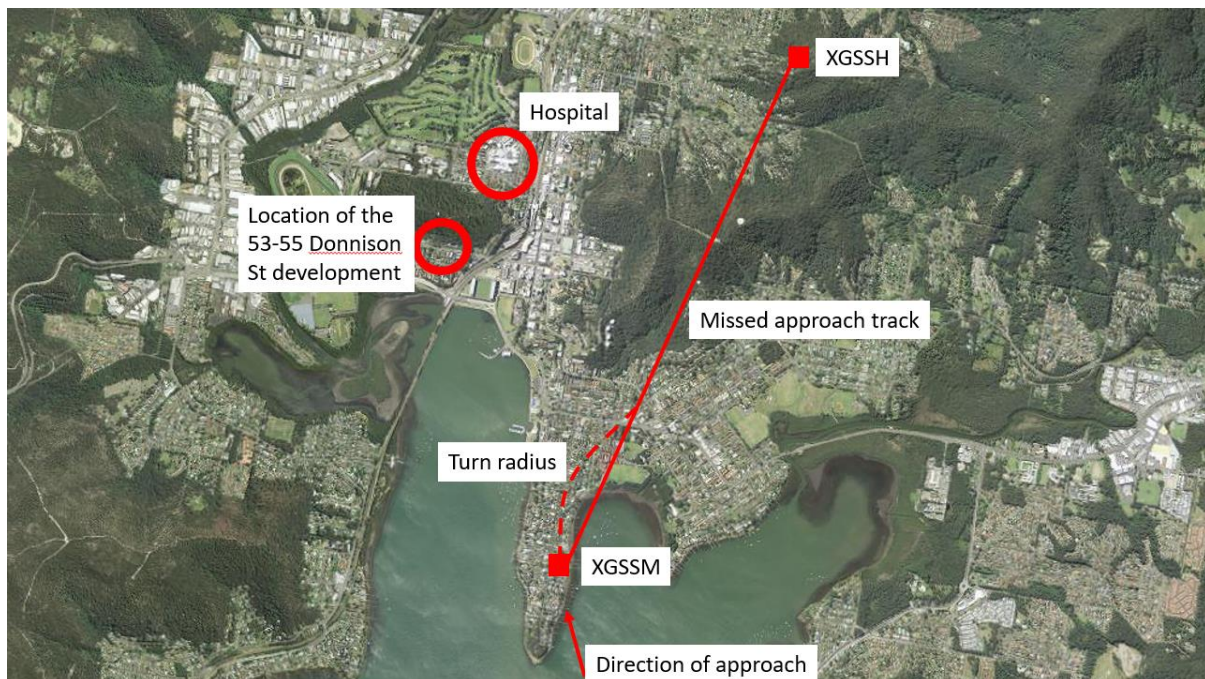


Image 5

The conclusion from reviewing survey data and instrument approach for the Gosford Hospital HLS is that the development at 53-55 Donnison St, West Gosford will have no impact on the approach and departure paths to and from the HLS, including the RNP 340 instrument approach and its missed approach procedure.

This does not, however, completely address the matter. A previous version of Reference F stated that “a structure must be marked when more than 150 m higher than the surrounding terrain. Surrounding terrain means the area within 400 m of the structure. Structures above 90 m may need to be marked, and inconspicuous structures 75 m above ground level should also be marked.” This requirement has been superseded but remains relevant advice. This development, at a maximum elevation of RL 62.8 is generally around 27 m above ground level at its highest point. As this is lower than 90 m/75 m above ground level, it does not meet the advice to have any specific aviation obstruction lighting.

AviPro notes, further, that although the developed building at 53-55 Donnison St, West Gosford will not be inconspicuous, the crane which will be used to build it will be. The maximum height of the crane is likely to be in the vicinity of 27m above ground level, which is below the 75 m height for recommended temporary obstruction lighting. There is therefore no regulatory requirement for the construction crane to be lit to an aviation standard, however this does not imply that it is not good practice. Reference D states 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)

The LED jib fluoro lights are to be LED weather proof emergency fluoro controlled via a PE cell with a minimum 90 minute battery back-up.”

It should be noted that at an approximate elevation of RL 75 and being more than 500 m from the Gosford Hospital HLS, this crane would not be considered as an obstacle to helicopter arrivals and departures at the Gosford Hospital HLS whether it was lit or not. It is too low to be of specific concern given the number other similar obstacles in the vicinity.

Reference G 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. This development does not require notification.



In summary, AviPro advises that:

- a. the development at 53-55 Donnison St, West Gosford will have no impact on the approach and departure paths to and from the Gosford Hospital HLS,
- b. the development at 53-55 Donnison St, West Gosford will have no impact on the RNP 340 instrument approach and its missed approach procedure,
- c. a crane or cranes used in the construction of 53-55 Donnison St, West Gosford will have no impact on the approach and departure paths to and from the Gosford Hospital HLS,
- d. a crane or cranes used in the construction of 53-55 Donnison St, West Gosford will have no impact on the RNP 340 instrument approach and its missed approach procedure,
- e. aviation obstruction lighting is not required on the 53-55 Donnison St, West Gosford building once developed,
- f. aviation lighting in accordance with NSW Health GL2020\_014 Guidelines for Hospital HLS in NSW will not be required on a crane or cranes during construction, and
- g. This development, once built, does not need to be advised to CASA through AirServices Australia as a tall structure.

Sincerely,

A handwritten signature in blue ink, appearing to read "Steve Graham".

Steve Graham

**Managing Director**

**AviPro**

**Aviation Management and Safety Advisors**

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