

2 September 2024

Mr David Kamel
Director
Creative Vision Pty Ltd
Level 2
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INTERIM AVIATION SAFEGUARDING ASSESSMENT FINDINGS: 135 BADGERYS CREEK RD

Dear David,

Avlaw Aviation Consulting Pty Ltd (Avlaw) has been engaged to prepare an Aviation Safeguarding Assessment to supplement a State Significant Development Application (SSDA) related to a series of developments at 135 Badgerys Creek Rd in Bradfield, herein referred to as "the site". Work has only recently commenced on preparing this deliverable, however in the interim, Avlaw has been asked to prepare a brief letter documenting key findings to date.

This request was in direct response to the scheduling of an initial scoping meeting with the Department of Planning, Housing and Infrastructure (DPHI) that is due to take place on 2 September 2024. The aviation restrictions impacting the developments at the site are expected to be discussed, hence the preparation of this letter to help inform those discussions.

The scope of Avlaw's engagement has been based on the guidelines and principles contained within the National Airports Safeguarding Framework (NASF), which are in place to protect developments that can adversely impact aircraft operations and that could introduce hazards with the potential to compromise the safety, regularity or efficiency of aviation operations from proceeding or appropriately mitigated. In doing so, this by default addresses the Western Sydney Aerotropolis Plan (2020) and Western Parkland City SEPP, the DCP as well as SEARs that are expected to be issued.

The prescribed airspace of Western Sydney International Airport (WSA) and in particular the Obstacle Limitation Surfaces (OLS) are of particular interest to DPHI and expected to be the primary hazard of concern, thus why it is discussed in more detail in this letter. In any case, a summary of Avlaw's interim assessment against each of the guidelines contained in the NASF (including prescribed airspace) are tabulated below.

Western Sydney Airport	
Aviation hazard	Preliminary findings
NASF Guideline A - Noise	Site is outside any ANEC
NASF Guideline B - Windshear and Turbulence	Site is outside the trigger area that would require additional assessment
NASF Guideline C - Wildlife	Within 3km buffer zone – land use is compatible
NASF Guideline D - Wind Turbines	N/A given the proposed land use
NASF Guideline E - Lighting	Site is outside Lighting Planes A-D
NASF Guideline F - Protected Airspace	Built and temporary structures penetrate the OLS
NASF Guideline G - Aviation Facilities	Site is outside Building Restricted Area Airservices Australia will conduct a more detailed assessment
NASF Guideline H - Helicopter Landing Sites	No existing helicopter operations are adversely impacted
NASF Guideline I - Public Safety Areas	Site is outside the assessment area that limits land use

Prescribed airspace

It is important to note from the outset that Avlaw's assessment is based on a two-runway operation, with reference to single runway operations (i.e. when the airport opens until 2040-2050) made where relevant.

At the time of writing, only the OLS for WSA has been declared and enshrined into legislation to form its prescribed airspace. The brief provided to Avlaw which formed the basis for its assessment with respect to the proposed heights of built and temporary structures at the site are summarised below:

- Built structures all the way to the edge of the site at 162.138m AHD
- Elevation of crane jib at its maximum radius (60m) = 183.398m AHD
- Elevation of each crane at its minimum radius (25.9m) = 228.798m AHD

Avlaw's findings with regards to the OLS are as follows:

- The site is covered by the OLS for WSA, specifically the Inner Horizontal Surface (126m AHD)
- The proposed buildings and indicative crane heights described above will penetrate the OLS, which Avlaw believes should be approved, subject to specific conditions (e.g. lighting, marking)

The figures on the following page show the results of Avlaw's modelling of the OLS from first principles.

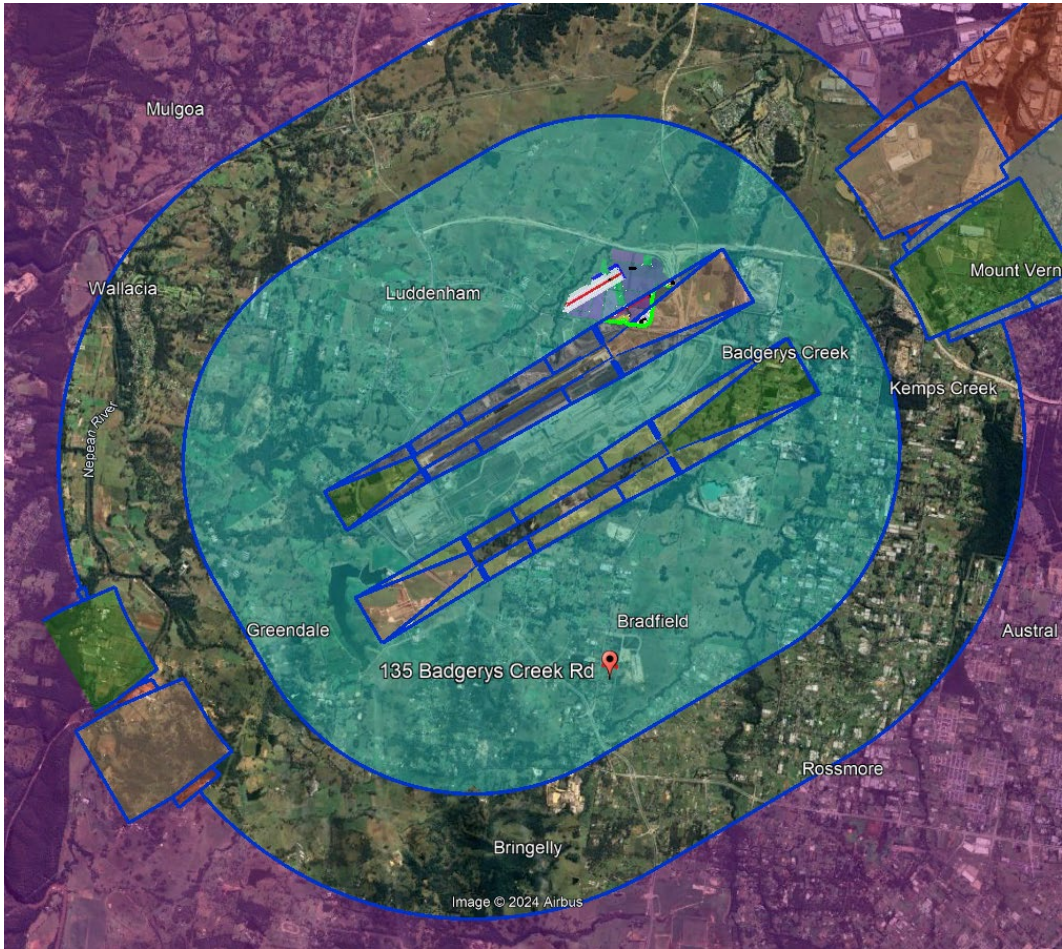


Figure 1: OLS based on two runway operations (site indicated by red pin)

Note: the northern runway will be the first to open by the end of 2026, with the second to follow circa 2040-2050



Figure 2: Built structure penetrating the WSA OLS (126m AHD at the site)

Another key component of prescribed airspace relates to Instrument Flight Procedures (IFP), also known as Procedures for Air Navigation Services - Aircraft Operations or PANS-OPS. Detailed design of airspace and specific flight paths is ongoing at the time of writing, with more details expected to be published as we near the opening of WSA, which is currently expected to take place by the end of 2026.

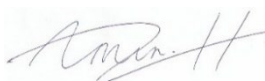
In the interim, in order to assess whether proposed built structures of cranes are likely to penetrate the anticipated PANS-OPS surfaces, a number of assumptions based on what is known about WSA and worst-case scenarios have been used to conclude whether the heights proposed at the site are likely to be supported by aviation stakeholders. These are discussed below:

- The site is perpendicular to the runways at WSA, so there will not be regular flight paths directly over the site (i.e. aircraft are expected to be aligned with the runways 10NM out)
- Given the site is perpendicular to the runways, aircraft will not be turning in its direction as they will need to achieve greater obstacle clearance than if they were to fly straight ahead (preferred for large aircraft anyway). This is based on international standards which Australia is a party to. Without a need to avoid parallel traffic (because there's only one runway in use), aircraft will be flying straight in and out of the airport (i.e. not circling), and even if aircraft do double back after departing, it won't be after they've achieving a turn height, which will be greater than what will impact what's being proposed at the site
- There are two runways proposed for WSA, with the first to open further away from the site than the second runway (expected to open 2040-2050 i.e. after construction of all stages at the site is completed). The worst-case scenario which would impact the site (based on a two-runway operation) would be an aircraft conducting a missed approach on the southern runway (i.e. runway 23L which will not be open during construction anyway), and then turning left towards the site to avoid parallel traffic on the northern runway. Based on certain assumptions, this would limit the height of structures at the site to 165m AHD, but as explained, this scenario is N/A given the timing of construction
- There are other aspects to how aircraft will be operating at WSA which relate to noise sharing, but we don't believe this will impede what is being proposed at the site

Therefore, when WSA opens (by the end of 2026), only one runway will be in use (i.e. the northern runway or runway 05L/23R) and the PANS-OPS surfaces relating to operations for this runway are not expected to be penetrated by the building or crane heights mentioned above.

Ultimately, aviation stakeholders including WSA Corporation, the Civil Aviation Safety Authority (CASA), Airservices Australia and the Department of infrastructure, Transport, Regional Development, Communications and the Arts (Department) will be involved in the aviation approval process and determine if the proposed built and temporary structures at the site are approved. In the interim, Avlaw's assessment is that the proposed heights should be supported.

Yours sincerely,



Amin Hamzavian
Managing Director