



Ecological Solutions

2-4 Kayuga Close, Caves Beach - Ecological Impact Assessment

Property: 2-4 Kayuga Close, Caves Beach, New South Wales 2281 (Lots 3 and 4 in DP 251324)

IBRA Subregion: Wyong (Sydney Basin)

Date: 4th March 2026

Prepared For: Health Infrastructure NSW

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1. Introduction

Ecological Solutions Pty Ltd have been engaged to undertake an Ecological Impact Assessment for the proposed development of an Ambulance Station located at 2-4 Kayuga Close, Caves Beach, New South Wales 2281 (Lots 3 and 4 in DP 251324). The purpose of this report is to assess the proposed development against the relevant requirements of the NSW *Biodiversity Conservation Act 2016* (BC Act) and the federal *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

This assessment has been prepared to form part of a wider Review of Environmental Factors (REF) report and to inform the broader impact assessment under Division 5.1 of the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act).

2. Program Overview

The Caves Beach Ambulance Station project forms part of the broader NSW Ambulance Infrastructure Program (NSWAIP), a \$615.5 million investment by the NSW Government aimed at delivering 30 additional ambulance stations across Sydney, the Central Coast, Hunter and Illawarra regions. Led by Health Infrastructure in partnership with NSW Ambulance, the Program seeks to enhance emergency medical response capacity, improve workforce sustainability, and ensure contemporary working environments for paramedics. The initiative forms part of a wider commitment to strengthen NSW Ambulance frontline services, supporting the recruitment of more than 2,500 new staff, including 500 rural and regional paramedics, and the delivery of hundreds of new ambulances across the state. The NSWAIP will provide a network of modern, purpose-built ambulance stations designed to optimise response times and reduce operational costs.

3. Site Context

The Caves Beach site is located at 2-4 Kayuga Close, Caves Beach, within the Lake Macquarie local government area. It comprises two allotments legally described as Lots 3 and 4 in DP 251324, with a combined site area of approximately 3,906 square metres. The site is situated within a small, scale, established industrial area and has frontage to Kayuga Close ([Figure 1](#)). Two existing industrial sheds are situated on the site, which shall be demolished as part of the works. Surrounding land uses primarily consist of warehousing, storage, and vehicle repair services. An Ausgrid substation adjoins the site to the north, beyond which lie areas of low density residential development extending further north and east. The site's eastern rear boundary adjoins a narrow strip of land zoned RE1 Public Recreation, which contains Plains Gully. Plains Gully is a vegetated riparian corridor classified as a 2nd order stream under the Strahler system, acting as a tributary that runs north-south and connects to Black Neds Bay, Swansea Heads, and Swan Bay.

Subject Site 2-4 KAYUGA CLOSE,CAVES BEACH



Legend

 SubjectSite

0 10 20 m



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Base imagery: Drone imagery captured by Ecological Solutions on 18th Feb 2026.

Figure 1. Subject Site as observed on 18th February 2026

4. Site Scope of Works

The Caves Beach project will deliver a purpose-built, modern ambulance facility designed to support the operational requirements of NSW Ambulance and enhance emergency response capability within the region. The scope comprises:

- Demolition of existing structures
- Site preparation works
- Construction of a new single storey ambulance station for eight (8) ambulances bays
- Provision of staff amenities and storage spaces
- Eight (8) external car parking spaces plus one (1) accessible space, for operational and staff use
- Ambulance wash bay
- Stormwater and utilities works to support operational needs
- Landscaping works
- Driveway access to the adjoining street network.

5. Legislative Framework

The ecological impact assessment for this site is governed by the following key statutory instruments:

- *Environmental Planning and Assessment Act 1979* (EP&A Act)
- *Biodiversity Conservation Act 2016* (BC Act)
- *Water Management Act 2000* (WM Act)
- *State Environmental Planning Policy (Transport and Infrastructure) 2021* (TI SEPP)
- *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act (Cwth))

6. Methodology

6.1 Desktop Assessment

A desktop review was undertaken to determine the environmental and statutory constraints of the site. This included interrogating the NSW SEED (Sharing and Enabling Environmental Data) Portal, the NSW ePlanning Spatial Viewer, and the NSW Biodiversity Values Map and Threshold Tool. These databases were used to review the site's zoning, its proximity to the adjacent RE1 Public Recreation land and the Plains Gully riparian corridor, and its biodiversity certification or mapping status. The biodiversity value of the site was assessed against threatened flora and fauna recorded within a 10km radius of the site using the BioNet Atlas. A review of the Commonwealth EPBC Act Protected Matters Search Tool (PMST) was also conducted to verify the absence of standalone Commonwealth triggers.

6.2 Field Survey

An initial site inspection was undertaken on Wednesday, 18 February 2026 to visually verify the current condition of the site and map existing vegetation communities.

A subsequent targeted fauna inspection of the two vacant industrial sheds on site was undertaken on Wednesday, 4 March 2026. Both sheds were inspected on foot using a high-powered torch in order to determine the presence or otherwise of any threatened fauna, in particular, microbats.

7. Existing Ecological Environment

7.1 Flora, Fauna, and Habitat

The site is highly modified and currently utilised as an established industrial premises. Vegetation on the site is severely limited and historically modified.

During the site visit on 18 February 2026, it was determined that the only native vegetation present on the site consists of three planted *Callistemon* sp. cultivars utilised as landscaping features ([Plate 1](#)). The total planted vegetation present represents an area of approximately 120m² ([Figure 2](#)). The site lacks native canopy, structural mid-storey complexity, and natural groundcover.

With regards to fauna habitat, the site itself offers negligible foraging or breeding habitat for native fauna due to its highly modified nature ([Plate 2](#)). The property's eastern rear boundary interfaces with the vegetated Plains Gully riparian corridor (a 2nd order water course as per the Strahler classification system); however, the development footprint is positioned entirely within the existing disturbed lot boundaries to avoid direct impacts to this corridor ([Figure 3](#)).

During the targeted inspection on 4 March 2026, all areas of the two existing industrial sheds were accessed, and all potentially suitable microhabitats within the sheds were surveyed for any sign of microbat use ([Plate 3](#), [Plate 4](#)). No evidence was found that would suggest microbat species, or any native fauna for that matter, are using the structures for shelter or roosting. The smaller of the two sheds (the northern shed) was observed to contain potential pigeon nests in the easternmost room, which has an opening in the side wall ([Plate 5](#)).



Plate 1: Photograph capturing the three, historically planted *Callistemon* sp. At the front of the site.



Plate 2: Photograph demonstrating the limited vegetation present on site as well as one of the two industrial sheds proposed for demolition.



Plate 3. Internal survey of the northern shed.



Plate 4. Internal survey of the southern shed

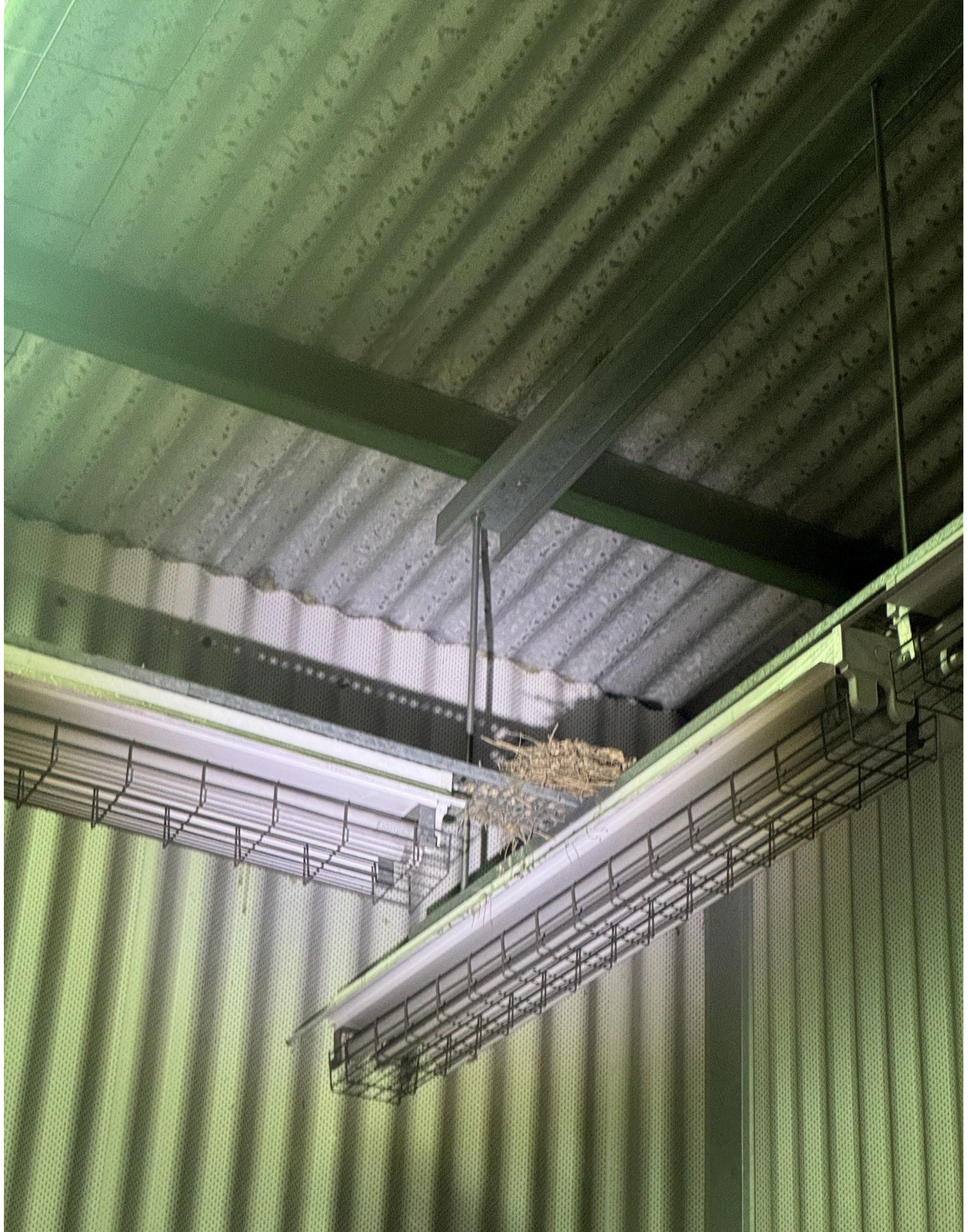


Plate 5. Likely feral pigeon nests observed within the northern shed.

Vegetation Mapping



Legend

-  SubjectSite
-  Planted Native Vegetation

0 10 20 m



Base imagery: Drone imagery captured by Ecological Solutions on 18th Feb 2026.



Figure 2. Vegetation mapped on site as at 18 February 2026

8. Impact Assessment and Statutory Considerations

8.1 Direct and Indirect Impacts on the Existing Ecosystem

The proposed development footprint has been designed to utilise the existing highly modified areas of the site, adhering to the principles of the impact avoidance, minimisation, and mitigation hierarchy.

Direct Impacts: Direct impacts to biological diversity and existing flora are highly restricted. The proposal involves the removal of two of the planted *Callistemon* sp. cultivars, equating to approximately 60m² of vegetation clearing (canopy cover). The remaining *Callistemon* sp. cultivar (representing approximately 60m²) is proposed to be retained ([Figure 3](#)).

Prescribed Impacts: Under the *Biodiversity Conservation Regulation 2017*, prescribed biodiversity impacts include impacts on the habitat of threatened species that are not associated with the clearing of native vegetation (such as human-made structures). The targeted inspection on 4 March 2026 confirmed that there is no evidence of microbats or native fauna utilising the industrial buildings. While potential pigeon nests were observed in the northern shed, a precautionary approach will be adopted to ensure any opportunistic fauna are identified and relocated prior to works commencing, reducing prescribed impacts to negligible.

Positive Impacts (Ecological Integrity and Biodiversity):

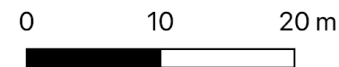
The proposal involves the introduction of new landscaping incorporating locally indigenous native species. Through the implementation of this native landscaping, there will be a net increase in vegetation on the site as opposed to its current degraded state. This will provide an overall enhancement to local biodiversity value and improve the ecological amenity of the site.

Indirect Impacts (Air, Water, Hydrology, and Connectivity):

Potential indirect impacts during the short-term construction phase are primarily associated with the site's proximity to Plains Gully, a 2nd order watercourse adjoining the eastern boundary. Without mitigation, construction activities have the potential to impact local air quality (via dust generation) and local water/hydrology (via sediment-laden runoff). However, there are no anticipated or expected impacts to the watercourse, its hydrology, or its function as a corridor for habitat connectivity/fragmentation as a result of the proposed development, assuming all relevant environmental mitigation measures (such as robust erosion and sediment controls) are strictly implemented and maintained.

[illegible]

 SubjectSite
 Vegetation Removed
 Vegetation Retained



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Base imagery: Drone imagery captured by Ecological Solutions on 18th Feb 2026.

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8.2 Further Site-Specific Assessment (5-Part Test) and BOS

The biodiversity value of the site was assessed against threatened flora and fauna recorded within a 10km radius of the site. Given the highly modified nature of the site and the fact that the only native vegetation present consists of 120m² of planted horticultural cultivars (of which only 60m² is proposed for removal), the site is considered unsuitable for sustaining any threatened species, populations, or ecological communities.

Furthermore, a review of the NSW Biodiversity Values Map and Threshold Tool confirms that the subject site is not mapped as containing high biodiversity value. Combined with the negligible area of planted vegetation clearing proposed (approx. 60m²), the proposed development does not trigger the Biodiversity Offsets Scheme (BOS).

Based on the site conditions observed, the assessing Ecologist's professional opinion is that the proposal is highly unlikely to significantly impact any listed threatened entities such that a local population would be placed at risk of extinction. Consequently, an Assessment of Significance (5-part test) under Section 7.3 of the *Biodiversity Conservation Act 2016* is not required. A Biodiversity Development Assessment Report (BDAR) or Species Impact Statement (SIS) is also not required.

8.3 Water Management Act 2000 – Waterfront Land

The subject site is located within 40 metres of a mapped watercourse (Plains Gully) and therefore constitutes “waterfront land” for the purposes of the *Water Management Act 2000*.

Public Authority Exemption: Under the *Water Management (General) Regulation 2021* and as detailed in the Department of Climate Change, Energy, the Environment and Water (DCCEEW) *Controlled activity approval exemptions* fact sheet, activities carried out by or on behalf of a public authority are exempt from the requirement to obtain a Controlled Activity Approval. As this proposal is being delivered by Health Infrastructure NSW (a State government public authority), a Controlled Activity Approval is not required.

Protection of Waterfront Land: While formally exempt from approval, the proposal has been designed to respect and protect the adjacent riparian corridor. The existing interface with the watercourse currently comprises concrete hardstand associated with the former industrial development. The proposed works involve the demolition of this hardstand and the construction of an ambulance station with associated landscaping. Importantly:

- No works are proposed within the bed or banks of the watercourse.
- No excavation, filling, regrading, or structural works are proposed within the channel.
- No obstruction or redirection of flows is proposed.
- No removal of native riparian vegetation is required.
- The proposal includes soft, locally indigenous landscaping adjacent to the watercourse, which will replace existing impervious hardstand, thereby improving site permeability, filtering stormwater, and enhancing the overall riparian condition.

Given the absence of direct impacts to the bed and banks and the beneficial replacement of

hardstand with landscaped treatment, the proposal will not result in adverse impacts to waterfront land. Consequently, no further concurrence or approval from DCCEEW is required for these works.

8.4 Commonwealth Considerations (EPBC Act)

Given the site is completely modified and lacks suitable habitat for any Matters of National Environmental Significance (MNES) identified in the PMST, no MNES will be impacted. A referral to the Commonwealth is not required.

9. Impact Mitigation Measures and Recommendations

The proposal has considered and applied the principles of the impact avoidance, minimisation, and mitigation hierarchy. To manage potential direct impacts to fauna and indirect impacts to the adjacent Plains Gully (2nd order Strahler stream), the following standard and site-specific environmental management practices should be implemented:

- **Pre-demolition Fauna Clearance:** While a targeted survey on 4 March 2026 confirmed the absence of microbats, potential pigeon nests were identified in the northern shed. It is recommended that a suitably qualified ecologist is on site prior to demolition works in order to clear the area of fauna and relocate any inhabiting fauna as required.
- **Compensatory Native Landscaping:** There is expected to be ample room for compensatory landscape plantings to be incorporated into the proposed development. It is recommended that these plantings consist of locally indigenous native species to ensure a net-positive outcome for local biological diversity. Plant selection must be appropriate for their setting within the future development to prevent the need for future removal (i.e., avoiding the planting of large canopy trees too close to the new structures).
- **Soil, Water, and Hydrology Management:** Implement a robust Erosion and Sediment Control Plan (ESCP) in accordance with the 'Blue Book' (Managing Urban Stormwater: Soils and Construction) prior to any ground disturbance. This is critical to prevent sediment-laden runoff from entering and degrading the hydrology and water quality of the adjoining Plains Gully riparian corridor to the east.
- **Air Quality Management:** Implement standard dust suppression measures (e.g., dampening exposed soils, covering stockpiles) during demolition and earthworks to mitigate short-term impacts on local air quality and prevent dust settling on the adjacent native vegetation within the RE1 zone.
- **Weed Management:** Ensure standard weed management protocols are followed for all machinery entering and exiting the site to prevent the introduction or spread of weeds into the adjoining RE1 conservation area and riparian corridor.

10. Conclusion

The proposed ambulance station at 2-4 Kayuga Close, Caves Beach is situated on highly disturbed, industrially developed land. Site inspections conducted in February and March 2026 confirmed that native vegetation is limited to 120m² of planted *Callistemon* sp. cultivars (with only 60m² proposed for removal), and that the existing industrial sheds do not harbour roosting microbats or native fauna. The proposal has demonstrated sufficient consideration of the impact avoidance, minimisation, and mitigation hierarchy, and will result in a net increase in local biodiversity values through the implementation of new native landscaping.

Provided the recommended mitigation measures are implemented—specifically the pre-demolition ecological clearance of the sheds and strict sedimentation controls to protect the adjacent 2nd order watercourse (Plains Gully)—it is the assessing Ecologist's professional opinion that the proposal will not result in any significant adverse impacts on the existing ecosystem, air, water, or habitat connectivity. As the works are being undertaken by a public authority, they are exempt from requiring a Controlled Activity Approval under the *Water Management Act 2000*. Furthermore, the proposal is highly unlikely to impact any listed threatened entities such that a local population would be forced into extinction, and therefore, no further statutory assessments (such as a 5-part test under Section 7.3 of the BC Act 2016) are required.

11. References

Legislation

- *Biodiversity Conservation Act 2016* (NSW)
- *Environment Protection and Biodiversity Conservation Act 1999* (Cth)
- *Environmental Planning and Assessment Act 1979* (NSW)
- *State Environmental Planning Policy (Transport and Infrastructure) 2021* (NSW)
- *Water Management Act 2000* (NSW)

Books and Reports

- Department of Climate Change, Energy, the Environment and Water (NSW), *Controlled activity approval exemptions* (Fact Sheet, 2022)
- Landcom, *Managing Urban Stormwater: Soils and Construction* (4th ed, 2004) vol 1

Web Pages and Databases

- Department of Climate Change, Energy, the Environment and Water (Cth), 'Protected Matters Search Tool', *EPBC Act Protected Matters Search Tool* (Web Page, 2026)
<<https://pmst.awe.gov.au/>>
- Department of Climate Change, Energy, the Environment and Water (NSW), 'Biodiversity Values Map and Threshold Tool', *NSW Government* (Web Page, 2026)
<<https://www.environment.nsw.gov.au/biodiversity/biodiversity-values-map.htm>>
- Department of Planning, Housing and Infrastructure (NSW), 'NSW ePlanning Spatial Viewer', *NSW Planning Portal* (Web Page, 2026)
<<https://www.planningportal.nsw.gov.au/spatialviewer>>
- NSW Government, 'SEED Map', *Sharing and Enabling Environmental Data* (Web Page, 2026)
<<https://geo.seed.nsw.gov.au/>>