26 February 2025

Chelsea Sanchez
Manager, Approvals
WindLab

chelsea.sanchez@windlab.com
cc: tim.stuckey@windlab.com
will.lightbody@windlab.com
joseph.james@windlab.com

Dear Chelsea,

**Re: 240596 – Junction Rivers Wind Project Response to Submission-Heritage NSW agency comments**

Thank you for asking NGH Pty Ltd (NGH) to provide a response to submission in regard to the agency comments received from Heritage NSW for the assessment of Aboriginal Heritage for the Junction River Wind Project (SSD-30448824).

NGH has provided a response to address each of the comments received from Heritage NSW in Appendix A of this letter. This information is intended can be incorporated into the Submissions Report for the Project being prepared by Umwelt (Australia) Pty Ltd.

If you have any questions, please contact me or Matthew Barber on (02) 6280 5053. We would be pleased to discuss any aspect of this response with you further if required.

Yours sincerely,

**Kirsten Bradley**
Principal Heritage Consultant
NGH Pty Ltd

# Appendix A Agency submission- Heritage NSW

Heritage NSW requested additional information to inform its advice on whether the Aboriginal Cultural Heritage Assessment Report (ACHAR) adequately addresses the SEARs for the Junctions Rivers Wind Project (the Project), including the associated recommendations for the management of Aboriginal cultural heritage. The specific agency matters noted from Heritage NSW are shown in italics below and addressed by the Applicant in non-italic text.

1. ***Please provide copies of the AHIMS extensive search results.***

Copies of the updated AHIMS extensive search results over the Project Area and road upgrade locations undertaken in January 2025 are provided with the following AHIMS Client Service IDs: 967552, 967556 and 968523. Copies of the previous AHIMS extensive search results which have now lapsed their 12 month validity period have also been provided. These have the following AHIMS Client Service IDs: 871337, 780380, 856307, 856313, 858228 and 858202. All copies of the AHIMS extensive search results are provided as redacted information due to the culturally sensitive information provided within them (see A1.1).

2. ***Please provide further explanation of the assessment of potential archaeological deposits (PAD) for the identified sites. For example, the Archaeological Technical Report Appendix A "Site descriptions", includes sites 47-6-1174 and 47-6-1175 both described as artefact scatter located on a basal slope of a red sandy rise in proximity to an ephemeral water source. AHMS site 47-6-1173 is described as a hearth in the wall of a blow out with a nearby stone artefacts. The predictive model in the ACHAR describes these landforms as areas of high archaeological potential. Please provide an assessment of the surrounding landform of all the identified sites for potential subsurface archaeological deposit, as well as a detailed explanation in relation to the potential for subsurface material, and justification as to why test excavations should not occur prior to construction in the project area. Should adequate justification not be provided, Heritage NSW recommends that test excavations occur prior to any construction impacts in the project area.***

As part of the survey effort, which was undertaken with representatives from the Registered Aboriginal Parties (RAPs) for the Project, an assessment was made in the field at each recorded site with an understanding of the soils and archaeological modelling for the region in regard to the potential for intact substantial subsurface deposits to occur or not.

Prior to the survey assessment commencing, significant effort had been undertaken in relation to the proposed development design to ensure landforms with high archaeological potential (i.e. lunettes and source bordering dunes) were avoided. In addition to this (as noted in Section 6.1 of the ACHAR), further avoidance of archaeologically sensitive landforms (which included source bordering areas around black box swamp depressions and undisturbed raised red sandy areas with subsurface potential) and site types which were noted to have higher potential for undisturbed subsurface deposits (i.e. mounds) identified during the survey were avoided. The identified archaeologically sensitive landforms and site types which were avoided that had higher potential for undisturbed subsurface deposits was determined in line with the archaeological predictive model for the region.

The majority of the proposed development corridor has previously been subject to ground disturbance from agricultural activities such as ploughing which exposes Aboriginal objects but also disturbs the context of the objects. The sites (isolated finds, artefact scatters and hearths) which are proposed to be impacted by the development were recorded within erosion scalds, disturbed and/or deflated soils or blow outs on a hard claypan surface with limited to no subsurface potential. While some sites which are proposed to be impacted were recorded within proximity to ephemeral watercourses and/or on slightly raised red soils the sites within these landforms these sites were noted to be highly disturbed by previous farming practices and a number of natural erosional factors i.e. wind and water movement which was determined in consultation with the RAPs

who participated in the survey fieldwork to have low potential for subsurface deposits and not to warrant further archaeological investigation through test excavations.

As part of discussions with the RAPs and the Proponent, the approach for Aboriginal heritage for the Project was primarily to avoid impact to Aboriginal sites where possible. Subsequently, the development footprint was redesigned to avoid areas with high subsurface potential (such as lunettes and sandy rises). All of the previously recorded AHIMS sites, tree cultural sites, mounds and the majority of sites with hearth features (n=12) including the sites with identified areas of potential archaeological deposit (PAD) which included Burrawong WF AFT 5 (AHIMS 47-6-1192), Burrawong WF HTH 01 (47-6-1188), Burrawong WF HTH 03 (47-6-1169), Burrawong WF HTH 07 (47-6-1189), Burrawong WF HTH 10 (47-6-1193), Burrawong WF HTH 11 (47-6-1187) and Burrawong WF HTH 12 (47-6-1186), were placed within heritage exclusion zones or able to be avoided by the development design to ensure that they will not be impacted by the proposed development. As these sites with identified PAD will not be impacted by the proposed development, test excavation (which is in itself an impact) is not warranted.

We note that the reference in the comments to the site 47-6-1173 by Heritage NSW is an isolated find but believe the sites in questions should be site 47-6-1189, which matches the hearth description. This site is being avoided by the project and therefore not considered to require subsurface testing.

It is also noted that the results of the test excavations previously undertaken within and adjacent to the Project Area across a range of landforms, including on red sandy rises and basal slopes in proximity to an ephemeral water source, by Navin Officer Heritage Consultants Pty Ltd (NOHC) for the EnergyConnect Eastern Section (PEC-East) transmission line (NOHC 2022) were considered during the assessment of landforms and sites within the development footprint of the Project.

The (PEC-East) test excavation program was completed within the boundaries of the Project Area, though outside the development footprint of this Project (NOHC 2022). PEC-E-PAD05 was a PAD site recorded by NOHC within the boundary of the Junction Rivers Wind Project Area across either side of Condoulpe Creek, crossing a number of landforms which included flat plains, red sandy raised areas and rolling dunes. A total of 54 test pits which were 1m x 1m in dimension were excavated by NOHC within PEC-E-PAD05. Pit depths and soil profiles were noted to vary considerably across landforms excavated but were generally noted to be 20 to 40 cm in depth across the plain with deeper deposits between 50cm and 110cm in dune landforms. As noted above and in the ACHAR for the Project, source boarding dune landforms have been avoided by the development footprint for the Junction Rivers Wind Project. From the 54 test pits excavated at PEC-E-PAD05 no Aboriginal objects were recovered. The absence of cultural material from the test excavation of this area, was noted by NOHC to demonstrate that the area was no longer considered to be a PAD and has low potential for archaeological evidence of past Aboriginal land use. Furthermore, the testing of the PAD sites by NOHC of PEC-E-PAD04 and PEC-E-PAD06, which are located outside the Junction Rivers Wind Project Area, extended across similar landforms that are present within the development footprint for the Junction Rivers Wind Project Area. A total of 32 pits which were 1m x 1m in dimension were excavated across PEC-E-PAD04 and PEC-E-PAD06 within no Aboriginal objects also recovered.

The soil profiles noted in the NOHC (2022) from the testing within the Project Area were also confirmed by the information obtain from the eight borehole and 15 geotechnical test pits which were placed within the Project Area. The geotechnical testing undertaken noted that clay was generally reached at 20 to 40cm with the topsoils typically comprised of loose to medium dense clayey sand or sandy clay. Given this information, the results of the NOHC (2022) testing program, consideration of the existing levels of disturbance, the generally deflated nature of the soils at the sites which are proposed to be impacted, and comments from the RAPs who participated in the survey fieldwork, it was determined that text excavation is not warranted within the development footprint and sites proposed to be impacted by the Junction Rivers Wind Project as there is negligible potential for the presence of intact subsurface deposits with high densities of cultural material.

These conclusions apply to the sites noted by Heritage NSW, namely 47-6-1174 and 47-6-1175, both artefact scatters within disturbed contexts. NGH doesn't believe that these sites would contain significant subsurface deposits based on previous testing programmes and their context.

Further justification and consideration of subsurface potential at each of the site types which were recorded as artefact scatters, hearths and mounds sites has also been added to the site description table previously provided in the Archaeological Technical Report Appendix A “Site descriptions” which has been duplicated below in A1.2. As no areas of PAD were identified in association with any of the cultural tree sites or isolated stone artefact locations, these site descriptions have not been included in the updated tables below for this response.

3. ***The PDF of the ACHAR provided includes a Due Diligence Report regarding the road upgrades required as a part of the project. These road upgrades are located outside the project area of the provided ACHAR. A Due Diligence report does not address the requirements set out in the SEARs, issued 19 December 2023. Both requirements for 'assessment of the impact to Aboriginal cultural heritage items (archaeological and cultural) in accordance with the Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW (OEH, 2011) and the Code of Practice for the Archaeological Investigation of Aboriginal Objects in NSW (DECCW, 2010)' and provide evidence of consultation with Aboriginal communities in determining and assessing impacts, developing options and selecting options and mitigation measures ... with regard to the Aboriginal Cultural Heritage Consultation Requirements for Proponents (DECCW, 2010)' are not met. There is insufficient information provided for Heritage NSW to advise the Department on whether the management recommendations and archaeological assessment are adequate with regard to upgrades of the transport route. Please provide an ACHAR developed in accordance with the Aboriginal Cultural Heritage Consultation Requirements for Proponents (DECCW, 2010), the Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW (OEH, 2011) and the Code of Practice for the Archaeological Investigation of Aboriginal Objects in NSW (DECCW, 2010) for all the areas of proposed impact on the transport route.***

The information previously presented in the Due Diligence Report regarding the road upgrades for the Project has been converted into the format of an addendum ACHA to address agency comments provided by Heritage NSW to ensure compliance with the SEARs. No change to the proposed works, outcome of the desktop assessment results or recommendations have occurred beyond the change to the format. The conversion of the format of the Due Diligence Report into an addendum ACHA for the road upgrade works was noted to be an approach which was supported by Heritage NSW to sufficiently address this request during a meeting held on 21 January 2025 with the Proponent and the heritage consultant for the Project (NGH). Consultation regarding the road upgrades continued with the registered Aboriginal stakeholders (RAPs) for the Project throughout the assessment and previous provision of the ACHAR and Due Diligence Report. The consultation undertaken with all RAPs for the Project during the Due Diligence Report and provision of the conversion of the format of the report into the Addendum ACHA has been clearly document in A1.3.

## A1.1 AHIMS extensive searches

**Redacted due to culturally sensitivity.**

## A1.2 Site Descriptions- Artefact Scatters and Hearths- consideration of subsurface testing

| AHIMS# | Site ID | Description | Consideration of subsurface potential and if test excavation is warranted |
|---|---|---|---|
| **47-6-1188** | Burrawong WF AFT 1 | This artefact scatter was initially recorded as 15 stone artefacts comprising silcrete, quartz and fine-grain siliceous (FGS) materials in forms such as a hammerstone, flakes, blades, and flake fragments. This site is located on the basal to flat portion of a grey clay slope overlooking a dry soak. This site was recorded as part of the site inspection for the geotechnical investigation due diligence (NGH 2022) in the proposed location for Bore Hole 3. A number of additional artefacts were identified during the ACHA survey, and the area of the site expanded to encompass a total of 54 stone artefacts within an area of approximately 800 m (east/west) by 250 m (north/south). These artefacts were primarily silcrete flakes and flake fragments. Other raw materials include quartz, quartzite, FGS, sandstone and volcanic with artefact forms in addition to the flakes and flake fragments including cores, flaked pieces, grindstone and grindstone fragments, hammerstone, manuport, pestle and retouched artefacts. | This site was recorded in a disturbed surface context (disturbance from ploughing and intensive farming practices were evident) across a deflated grey clay soil. No subsurface potential was identified during recording of this site with RAP representatives and such soils are noted to have low potential for subsurface deposits.<br><br>Test excavation of this site is not warranted if impacts by the development cannot be avoided however surface collection was requested in the event the site cannot be avoided. |
| **47-6-1175** | Burrawong WF AFT 2 | This artefact scatter was recorded as part of the site inspection for geotechnical investigation due diligence (NGH, 2022) in the proposed location of TP05. The site is located on the basal slope of a red sandy rise overlooking an ephemeral soak. Several artefact types were identified, including several burnt clay balls, and stone tools comprising of silcrete, chert, and quartzite. The site recorded a total of 50+ artefacts. | This site was recorded in a highly disturbed surface context (disturbance from ploughing and intensive farming practices were evident). Given the extensive level of existing disturbance to this site there is limited potential for undisturbed deposits to occur regardless of the site being located on the basal slope of a red sandy rise overlooking an ephemeral soak. No subsurface potential was identified during the recording of this site with RAP representatives given the level of existing disturbance however surface collection was requested in the event the site cannot be avoided. |

| AHIMS# | Site ID | Description | Consideration of subsurface potential and if test excavation is warranted |
|---|---|---|---|
| | | | Test excavation of this site is not warranted if impacts by the development cannot be avoided. |
| **47-6-1174** | Burrawong WF AFT 3 | This low-density artefact scatter is located on the basal slope of a red sandy rise overlooking an ephemeral soak and situated approximately 122 m north of AFT 2. The site consists of a total of four stone artefact including a silcrete core, a silcrete flake, a volcanic flake and a silcrete flaked piece. | This site was recorded in a highly disturbed surface context (disturbance from ploughing and intensive farming practices were evident). Given the extensive level of existing disturbance to this site there is limited potential for undisturbed deposits to occur regardless of the site being located on the basal slope of a red sandy rise overlooking an ephemeral soak. No subsurface potential was identified during the recording of this site with RAP representatives given the level of existing disturbance however surface collection was requested in the event the site cannot be avoided.<br><br>Test excavation of this site is not warranted if impacts by the development cannot be avoided. |
| **47-6-1172** | Burrawong WF AFT 4 | This artefact scatter is in located on the basal to flat portion of a grey clay slope overlooking a dry soak, situated 400m west of AFT 1. Several artefact types were identified, including predominantly silcrete and fine grain silicious material with a small amount of quartz also present. Artefact types included, flakes, cores, retouched flakes, hammerstone, manuport and an axe. Typologies were silcrete, quartzite, FGS, quartz and volcanic. A total of 29 stone artefacts were recorded over an area of approximately 200 m (east/west) by 250 m (north/south). | This site was recorded in a disturbed surface context (disturbance from ploughing and intensive farming practices were evident) across a deflated grey clay soil. No subsurface potential was identified during recording of this site with RAP representatives and such soils are noted to have low potential for subsurface deposits.<br><br>Test excavation of this site is not warranted if impacts by the development cannot be avoided however surface collection was requested in the event the site cannot be avoided. |

| AHIMS# | Site ID | Description | Consideration of subsurface potential and if test excavation is warranted |
|---|---|---|---|
| **47-6-1192** | Burrawong WF AFT 5 | This site consists of an artefact scatter, with five hearth features and a mound feature across an area of approximately 80 m (east/west) by 370 m (north/south). A total of 37 stone artefacts were recorded which included flakes, broken flakes, cores and flaked pieces. A total of 5 hearth features with burnt clay were in the north and centre portion of the sit. The hearths ranged from small, localised features measuring 20 cm x 30 cm to large hearths with scatter clay heat retainers over a 12 m by 11 m area. The hearth features were generally in exposures around clay pans and found in association with stone artefacts. A single oven mound was recorded in the southern portion of the site which is approximately 13 m in length and 8.6 m wide which was partially intact in the centre but noted to be eroding around the edges This mound feature was noted to be associated with cooking activities and stone artefacts. | This site was identified during recording as having potential for in situ and intact subsurface deposits, particularly in and around the oven mound in the southern portion of the site as the mound feature was noted to have a portion which appears to remain intact and undisturbed by farming or erosional processes. The portion of the site across a deflated grey clay soil has very low potential for subsurface deposits.<br><br>If this site was unable to be avoided by the proposed development, then subsurface investigation would be required. This site was subsequently able to be avoided by a heritage exclusion zone and will not be impacted by the proposed development.<br><br>Given the avoidance of this site test excavation is not warranted. |
| **47-6-1170** | Burrawong WF AFT 6 | This very low density artefact scatter is located 80m southeast of AFT 5. This site constitutes of two artefacts, one quartz flake and one fine grained silicious broken flake. | This site was recorded in a disturbed surface context (disturbance from ploughing and intensive farming practices were evident) across a deflated grey clay soil. No subsurface potential was identified during recording of this site with RAP representatives and such soils are noted to have low potential for subsurface deposits.<br><br>Test excavation of this site is not warranted if impacts by the development cannot be avoided however surface collection was requested in the event the site cannot be avoided. |

| AHIMS# | Site ID | Description | Consideration of subsurface potential and if test excavation is warranted |
|---|---|---|---|
| **47-6-1191** | Burrawong WF HTH 01 | This hearth and mound site is located across an area approximately 100 m (east/west) by 230 m (north/south). A total of five hearth features were recorded which included small, isolated hearths within situ clay heat retainers to scattered and dispersed heat retainers over a 10 m x 15 m area. A singe oven mound was recorded at this site which was noted to be used for cooking which was 4.1 m in length by 4.7 m wide. | This site was identified during recording as having potential for in situ and intact subsurface deposits, particularly in the area of the oven mound in the north of the site as the mound feature was noted to have a portion which appears to remain intact despite some portions of the mound feature being noted as disturbed by farming or erosional processes.<br><br>The portion of the site across a deflated grey clay soil near the dam has very low potential for subsurface deposits.<br><br>If this site was unable to be avoided by the proposed development, then subsurface investigation would be required. This site was subsequently able to be avoided by a heritage exclusion zone and will not be impacted by the proposed development.<br><br>Given the avoidance of this site test excavation is not warranted. |
| **47-6-1171** | Burrawong WF HTH 02 | A single small hearth feature was recorded with clay heat retainers in the gateway of a vehicle track. Heat retainers in an area of 0.48 m by 0.5 m. | Heat retainers at this site were recorded in a disturbed surface context within a vehicle track in proximity to a constructed dam. The site had also been subject to erosion and trampling by livestock which had deflated soil profile.<br><br>No subsurface potential was identified during recording and the site had been included within a heritage exclusion zone which will not be impacted by the proposed development. |

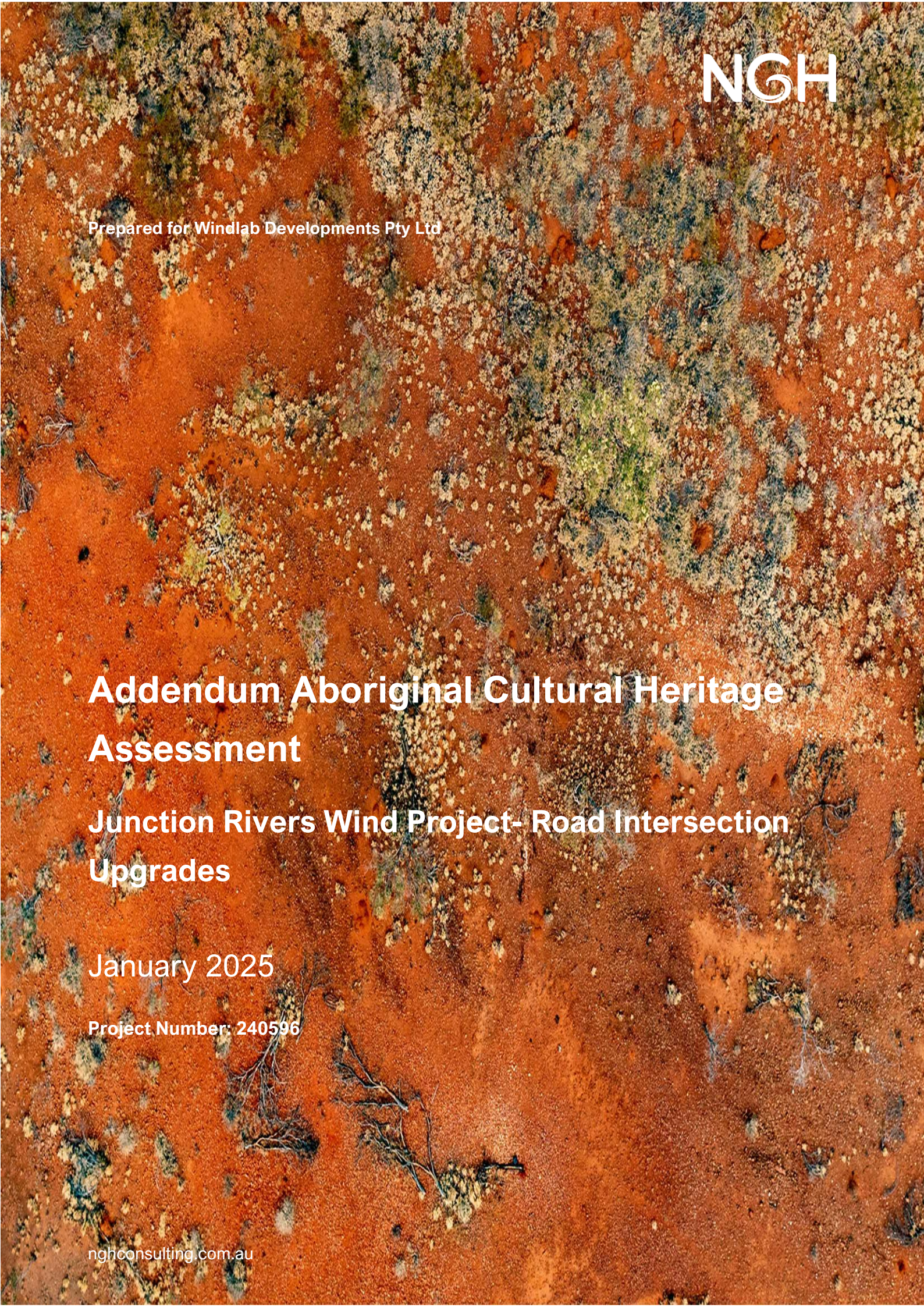
| AHIMS# | Site ID | Description | Consideration of subsurface potential and if test excavation is warranted |
|---|---|---|---|
| **47-6-1169** | Burrawong WF HTH 03 | Two small, localised hearth features were recorded adjacent to a track on a slight rise within grey clays. One of these hearth features was noted to be in situ and possible to be suitable for testing. | Subsurface potential was identified at one of the hearth feature in this site which was located in slightly raised soils which appeared to be relatively undisturbed. The second hearth feature at this site was noted to be distributed and located within deflated grey clays with low potential for subsurface deposits.<br><br>If this site was unable to be avoided by the proposed development, then subsurface investigation would be required. This site was subsequently able to be avoided by a heritage exclusion zone and will not be impacted by the proposed development.<br><br>Given the avoidance of this site test excavation is not warranted. |
| **47-6-1190** | Burrawong WF HTH 04 | A single small hearth feature was recorded with clay heat retainers adjacent to a soak which has been subject to erosion. | This site had heat retainers recorded in a disturbed eroded surface context. No subsurface potential was identified during recording and the site had been included within a heritage exclusion zone which will not be impacted by the proposed development. |
| **47-6-1168** | Burrawong WF HTH 05 | A single small hearth feature was recorded with clay heat retainers which has been subject to erosion and stock damage. | This site had heat retainers recorded in a disturbed eroded surface context.<br><br>No subsurface potential was identified during recording and the site had been included within a heritage exclusion zone which will not be impacted by the proposed development. |
| **47-6-1167** | Burrawong WF HTH 06 | Two small, localised hearth features were recorded within an area approximately 25 m (east/west) by 10 m (north/south). Both were noted to have subject to erosion. | This site had heat retainers recorded in a disturbed eroded surface context in deflated grey clay soils. No subsurface potential was identified during recording of this site with RAP representatives and such soils are noted to have low potential for subsurface deposits.<br><br>Test excavation of this site is not warranted if impacts by the development cannot be avoided. |

| AHIMS# | Site ID | Description | Consideration of subsurface potential and if test excavation is warranted |
|---|---|---|---|
| **47-6-1189** | Burrawong WF HTH 07 | Two small, localised hearth features were recorded within an area approximately 10 m (east/west) by 10 m (north/south). Both were noted to be eroding from a blow out with one of these features noted to still have an in situ section in the wall. | Heat retainers at this site were recorded scattered across a highly eroded area, however one of these hearth features was recorded as being partially intact within the upper 20cm of deposit in the wall of an erosion blow out before the soil deposit went onto clay. Despite the portion of one of these features being recorded within the section of the wall it was determined during the site inspection that this site with RAPs that it had limited potential to add further information to our understanding of Aboriginal occupation of the areas given that no other evidence of cultural material i.e. stone artefacts, were recorded in the immediate or surrounding areas which had very high visibility. Furthermore, it was evident through the inspection of the soil profile visible in the erosion blow outs that this area has a shallow soil deposit. Given this it was determined that test excavation of this site is not warranted.<br><br>This site has however been included within a heritage exclusion zone and will not be impacted by the proposed development. |
| **47-6-1166** | Burrawong WF HTH 08 | A single hearth feature approximately 2 m by 1.5 m in area was recorded with clay heat retainers. | Heat retainers at this site were recorded a disturbed eroded surface context. It was determined during the site recoding of this site with RAPs that it had limited potential to add further information to our understanding of Aboriginal occupation of the areas given that no other evidence of cultural material i.e. stone artefacts, were recorded in the immediate or surrounding areas which had very high visibility. Furthermore, it was evident through the inspection of the soil profile visible in the erosion blow outs in proximity to this site that this area has a shallow soil deposit. Given this it was determined that test excavation of this site is not warranted.<br><br>This site has however been included within a heritage exclusion zone and will not be impacted by the proposed development. |

| AHIMS# | Site ID | Description | Consideration of subsurface potential and if test excavation is warranted |
|---|---|---|---|
| **47-6-1165** | Burrawong WFH HTH 09 | A single hearth feature with a small in situ area of burnt clay was recorded within a scatter of clay heat retainers across an area of 10 m by 5 m. | Heat retainers were recorded in deflated grey clays soil which have low potential for subsurface deposits. While a small area of in situ burnt clay heat retainers was recorded it was determined during the recording of the site with RAPs that there was no associated subsurface potential given the soils present. Test excavation of this site is not warranted if impacts by the development can't be avoided. |
| **47-6-1193** | Burrawong WF HTH 10 | A single hearth feature was recorded with clay heat retainers in the wall of a blow out in proximity to a single silcrete blade. Clay heat retainers spread across an area of 1m by 0.8 m. | Heat retainers and a stone artefacts were recorded in a highly eroded area of a blowout. It was determined during the site inspection with RAPs that this site had limited potential through a test excavation program to add further information to our understanding of Aboriginal occupation of the area given the degree of disturbance and erosion in the areas which had exposed cultural material, had already sufficiently provided an understanding of the presence of small heath features and very low densities of stone artefacts in the areas. Given this it was determined that test excavation of this site is not warranted. This site has however been included within a heritage exclusion zone and will not be impacted by the proposed development. |
| **47-6-1187** | Burrawong WF HTH 11 | This hearth and low density artefact scatter is located across an area approximately 550 m (east/west) by 140 m (north/south). A total of seven hearth features were recorded which were generally small, localised hearths with *in situ* clay heat retainers with surrounding dispersed heat retainers. The artefacts recorded in included two distal silcrete fragments, a silcrete flake and a quartzite flake. | Some subsurface potential in intact parts of hearth features located across this site were recorded, including within slightly raised red soils which appeared to be relatively undisturbed.<br><br>If this site was unable to be avoided by the proposed development, then subsurface investigation would be required. This site was subsequently able to be avoided by a heritage exclusion zone and will not be impacted by the proposed development.<br><br>Given the avoidance of this site test excavation is not warranted. |

| AHIMS# | Site ID | Description | Consideration of subsurface potential and if test excavation is warranted |
|---|---|---|---|
| **47-6-1186** | Burrawong WF HTH 12 | This hearth and mound site is located across an area approximately 5 m (east/west) by 150 m (north/south) and included scattered clay heat and a single oven mound which was noted to be used for cooking. | This site was identified during recording as having potential for in situ and intact subsurface deposits, particularly in and around the oven mound feature.<br>If this site was unable to be avoided by the proposed development, then subsurface investigation would be required. This site was subsequently able to be avoided by a heritage exclusion zone and will not be impacted by the proposed development. Given the avoidance of this site test excavation is not warranted. |
| **47-6-1185** | Burrawong WF HTH 13 | Two small, localised hearth features were recorded within an area approximately 60m (east/west) by 30m (north/south). | Two heat retainer features were recorded in surface erosion feature within a deflated landform. It was determined during the recording of the site with RAPs that there was no associated subsurface potential given the deflated soils present. Test excavation of this site is not warranted if impacts by the development can't be avoided. |

## A1.3 Addendum ACHA



Prepared for Windlab Developments Pty Ltd

# Addendum Aboriginal Cultural Heritage Assessment

## Junction Rivers Wind Project- Road Intersection Upgrades

January 2025

**Project Number: 240596**

# Document verification

| | |
|---|---|
| Project Title: | Junction Rivers Wind Project- Road Intersection Upgrades |
| Project Number: | 240596 |
| Project File Name: | 240596 Junction Rivers Wind Project Addendum ACHAR Final v3.0 |

| Report type | Revision | Date | Prepared by | Approved by |
|---|---|---|---|---|
| Due Diligence | Draft v1.0 | 30/01/2024 | Brendan Fisher | Kirsten Bradley |
| Due Diligence | Final v1.0 | 29/02/2024 | Brendan Fisher | Matthew Barber |
| Due Diligence | Draft v2.0 | 10/04/2024 | Brendan Fisher | Kirsten Bradley |
| Due Diligence | Final v2.0 | 29/04/2024 | Brendan Fisher | Kirsten Bradley |
| Addendum ACHA | Final v3.0 | 30/01/2025 | Dr Tessa Bryant | Kirsten Bradley |

NGH Pty Ltd is committed to environmentally sustainable practices, including fostering a digital culture and minimising printing. Where printing is unavoidable, NGH prints on 100% recycled paper.

*We acknowledge the traditional owners of this land and pay our respect to Elders past, present and emerging. We recognise that the First Nations peoples of Australia have traditionally managed the resources of this land in a sustainable way, and that they are the original stewards of the Australian environment.*

**The information previously presented in the Aboriginal Heritage Due Diligence Assessment for these proposed road upgrade works has been formatted into an addendum Aboriginal Cultural Heritage Assessment (ACHA) as part of the Response to Submission for the Junction Wind Farm Project to address agency comments provided by Heritage NSW. No change to the proposed works, outcome of the desktop assessment results or recommendations which were previously present in the Aboriginal Heritage Due Diligence Assessment have occurred.**

# Table of contents

## Figures



## Tables

## Appendices

# Acronyms and abbreviations

| | |
|---|---|
| ACHA | Aboriginal Cultural Heritage Assessment |
| ACHCRP | Aboriginal Cultural Heritage Consultation Requirements for Proponents |
| AHIMS | Aboriginal Heritage Information Management System |
| AHIP | Aboriginal Heritage Impact Permit |
| DECCW | (Former) Department of Environment, Climate Change and Water (formerly responsible for heritage, now superseded by Heritage NSW) |
| EIS | Environmental Impact Assessment |
| EP&A Act | *Environmental Planning and Assessment Act 1979* (NSW) |
| ESD | Ecologically Sustainable Development |
| Heritage Act | *Heritage Act 1977* (NSW) |
| Heritage NSW | Heritage NSW, within the NSW Department of Climate Change, Energy, the Environment and Water |
| IBRA | Interim Biogeographic Regionalisation for Australia |
| ICOMOS | International Council on Monuments and Sites |
| km | kilometres |
| LALC | Local Aboriginal Land Council |
| LGA | Local Government Area |
| m | metres |
| NGH | NGH Pty Ltd |
| NPW Act | *National Parks and Wildlife Act 1974* (NSW) |
| NSW | New South Wales |
| OEH | (Former) Office of Environment and Heritage (NSW) (now Heritage NSW) |
| PAD | Potential Archaeological Deposit |
| Project Area | The four proposed road intersection upgrade/ blade swept path areas within NSW being assessed in this report which includes a 10-metre buffer that was applied to the work areas. As such, the actual impact area is proposed to be smaller than the Project Area assessed. |
| RAP | Registered Aboriginal Party |
| SHI | State Heritage Inventory |
| SEARs | Secretary's Environmental Assessment Requirements |
| SSD | State Significant Development |
| The Project | Junction River Wind Project |
| Windlab | Windlab Developments Pty Ltd – the Proponent |

# Executive summary

## Introduction

NGH Pty Ltd (NGH) was commissioned by Windlab Developments Pty Ltd (Windlab) (the Proponent) to undertake an Aboriginal Cultural Heritage Assessment (ACHA) to address potential impacts by the proposed Junctions Rivers Wind Project (the Project) on Aboriginal cultural heritage in New South Wales (NSW) as part of the Environmental Impact Assessment (EIS) required for this State Significant Development (SSD). As part of the public exhibition process for the EIS, agency advice was provided. Heritage NSW responded to the public exhibition of the EIS for the Project noting that the Aboriginal Heritage Due Diligence report provided for the road upgrades is not in a reporting format which conforms to the Secretary's Environmental Assessment Requirements (SEARs) for the Project (SSD-30448824). In consultation with Heritage NSW, it was determined that the assessment provided in the Aboriginal Heritage Due Diligence report would be converted into the format of an addendum ACHA to ensure compliance with the code and guidelines noted for the assessment of Aboriginal heritage in the SEARs for the Project.

Ground disturbance works at four proposed road intersection upgrade/blade swept path areas (the Project Area) are required within NSW to facilitate the safe haulage of material and the movement of vehicles to the Project's entrance as listed below.

- Intersection of the Murray Valley Highway and Sturt Highway, Euston
    - Potential hardstand required.
- Intersection of Sturt Highway (Corner of 49 Court Street, Balranald Hospital Lot) and the Sturt Highway, Balranald
    - Potential hardstand required.
- Intersection of Yanga Way and the Balranald-Moulamein Road, Yanga; and
    - Potential hardstand required.
- Intersection of the Balranald-Moulamein Road and Arundel Road, Kyalite.
    - Potential vegetation trimming required to accommodate blade swept path.

Each of the four proposed road intersection upgrade/ blade swept path areas have a 10 metre (m) buffer applied as part of the assessment of the Project Area. As such, the actual impact area is proposed to be smaller than the Project Area assessed in this report.

This addendum ACHA is to provide information specifically about the nature, extent, potential and significance of any Aboriginal sites within the four road intersection upgrade/ blade swept path areas and is designed to be read in conjunction with the ACHA for the Project (see NGH 2024a). It is intended that this addendum ACHA will be submitted as part of the Response to Submissions for the Junctions Rivers Wind Project (SSD-30448824).

## Aboriginal community consultation

The Aboriginal consultation for this addendum ACHA was continued with the registered Aboriginal parties (RAPs) for the Junction Rivers Wind Project that were identified during the ACHA. For details of the previously undertaken consultation see the ACHA for the Project (NGH 2024a). Notification of the need to undertake a desktop assessment of road upgrade areas for the Project was sent to all Registered Aboriginal Parties (RAPs) on the 28th of March 2024. A copy of the Aboriginal Heritage Due Diligence report (NGH 2024b) was provided to all RAPs on the 29th of April 2024. No comments on the report or its recommendations were provided by the RAPs. A copy of this addendum ACHA which has converted the information provided in the Aboriginal Heritage Due Diligence report (NGH 2024b) to an addendum ACHA format (this report) was provided to all the RAPs for the Project for their records in February 2025.

## Desktop Assessment

Based on the proposed scale of works, level of previous disturbance and generally accepted poor visibility within the road reserves of the four road upgrade areas, it was determined that a desktop assessment was an appropriate level of assessment in the instance for these works.

Each of the proposed road intersection upgrade/blade swept path areas were determined to be highly disturbed by the previous construction and ongoing maintenance of roads and associated drainage works. The desktop assessment concluded that no known Aboriginal objects or sites will be impacted by the proposed works and each area had negligible potential for Aboriginal objects to occur due to the level of existing disturbance.

## Impact Assessment

No previously recorded AHIMS sites are located within or in close enough proximity to any of the four proposed intersection upgrade/ blade swept path work areas and no cultural values have been identified to date by the local Aboriginal community for these areas. Given the levels of previous disturbance, it was concluded that there was negligible potential for Aboriginal objects to occur at each of the locations assessed. Therefore, the impact to the Aboriginal Heritage values for these proposed intersection upgrade/ blade swept path work areas are nil.

## Mitigation of Harm

As there are no know Aboriginal objects or sites within or directly adjacent to the four proposed intersection upgrade/ blade swept path work areas mitigation is not warranted however, an unexpected finds procedure for Aboriginal objects should be developed as part of the Cultural Heritage Management Plan (CHMP) for the Project to deal with the inadvertent discovery of Aboriginal objects.

## Recommendations

It is recommended that:

1. As no known Aboriginal objects are located within the four road intersection upgrade areas (all of which were assessed to have negligible potential for subsurface cultural deposits), further investigation for Aboriginal heritage is not warranted at the areas assessed in this report.
2. All works must be limited to the areas assessed by this document. Any activity proposed outside of the current assessment area will also be required to be subject to an Aboriginal heritage assessment.
3. When the intersection works are commenced in accordance with the approval of the Junction Rivers Wind Project (SSD-30448824) all relevant Conditions of Consent for the Project must be followed, including for the approved transportation route.
4. If any items suspected of being Aboriginal in origin are discovered during the work, all work in the immediate vicinity must stop and the unexpected finds procedure for Aboriginal objects for the SSD Project must be followed.

All Aboriginal objects and places in NSW are protected under the *National Parks and Wildlife Act.* It is an offence to disturb an Aboriginal object or site without appropriate consent.

# 1. Introduction

NGH Pty Ltd (NGH) was commissioned by Windlab Developments Pty Ltd (Windlab) (the Proponent) to undertake an Aboriginal Cultural Heritage Assessment (ACHA) to address potential impacts by the proposed Junctions Rivers Wind Project (the Project) on Aboriginal cultural heritage in New South Wales (NSW) as part of the Environmental Impact Assessment (EIS) required for this State Significant Development (SSD). As part of the public exhibition process for the EIS, agency advice was provided. Heritage NSW responded to the public exhibition of the EIS for the Project noting that the Aboriginal Heritage Due Diligence report provided for the road upgrades is not in a reporting format which conforms to the Secretary's Environmental Assessment Requirements (SEARs) for the Project (SSD-30448824). In consultation with Heritage NSW, it was determined that the assessment provided in the Aboriginal Heritage Due Diligence report would be converted into the format of an addendum ACHA to ensure compliance with the code and guidelines noted for the assessment of Aboriginal heritage in the SEARs for the Project.

Ground disturbance works at four proposed road intersection upgrade/blade swept path areas (the Project Area) are required within NSW to facilitate the safe haulage of material and the movement of vehicles to the Projects entrance as listed below and shown in Figure 1-1 and Figure 1-2).

- Intersection of the Murray Valley Highway and Sturt Highway, Euston
    - Potential hardstand required.
- Intersection of Sturt Highway (Corner of 49 Court Street, Balranald Hospital Lot) and the Sturt Highway, Balranald
    - Potential hardstand required.
- Intersection of Yanga Way and the Balranald-Moulamein Road, Yanga; and
    - Potential hardstand required.
- Intersection of the Balranald-Moulamein Road and Arundel Road, Kyalite.
    - Potential vegetation trimming required to accommodate blade swept path.

Each of the four proposed road intersection upgrade/ blade swept path areas have a 10 metre (m) buffer applied as part of the assessment of the Project Area. As such, the actual impact area is proposed to be smaller than the Project Area assessed in this report. The intersection upgrade works would involve ground surface disturbing works, as well as vegetation removal.

This addendum ACHA is to provide information specifically about the nature, extent, potential and significance of any Aboriginal sites within the four intersection road upgrade areas and is designed to be read in conjunction with the ACHA for the Project (see NGH 2024a). It is intended that this addendum ACHA will be submitted as part of the Response to Submissions for the Junctions Rivers Wind Project (SSD-30448824).

## 1.1 Statutory context

The statutory context of the Project Area is the same as for the original ACHA for the Project (NGH 2024a).

## 1.2 Objectives of assessment

The four road intersection upgrade/blade swept path areas assessed in this addendum ACHA require ground disturbance works for them to meet the relevant transport standards. The purpose of this report is to assess the impacts to Aboriginal objects and cultural values within the four road intersection upgrade/blade swept path areas and provide management strategies that may mitigate any impacts to Aboriginal heritage. This conforms to the intention of the SEARs, including Aboriginal community consultation.

The objectives of the assessment were to:

- Continue Aboriginal consultation for the Project as specified in clause 60 of the National Parks and Wildlife Regulation 2019, using the consultation process outlined in the ACHCRP;
- Assess the possible impacts on any Aboriginal objects and cultural values at the four road intersection upgrade/blade swept path areas, and
- Provide management recommendations in regards to Aboriginal heritage.

## 1.3 Report format

This addendum ACHA report was prepared in accordance with the following guidelines:

- *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW* (OEH 2011);
- *Code of Practice for the Archaeological Investigation of Aboriginal Objects in New South Wales* (OEH 2010a); and
- *Aboriginal Cultural Heritage Consultation Requirements for Proponents* (OEH 2010b).

The addendum ACHA is designed to be read in conjunction with the ACHA for the Project (NGH 2024a) as the environmental context and cultural context for this assessment is primarily the same and not duplicated within this report unless information is required to be included which was not previously noted or has been updated since the original ACHA was undertaken.

## 1.4 Project Personnel

The initial Due Diligence assessment for these works was carried out by qualified archaeologist Brendan Fisher of NGH. This included background research, mapping and the completion of report. NGH Principal archaeologist Kirsten Bradley and NGH Technical Director - Heritage Matthew Barber reviewed the report for quality assurance.

The information in the Due Diligence assessment was converted into this addendum ACHA by Dr Tessa Bryant. This report was reviewed by NGH archaeologists Kirsten Bradley for quality assurance purposes.

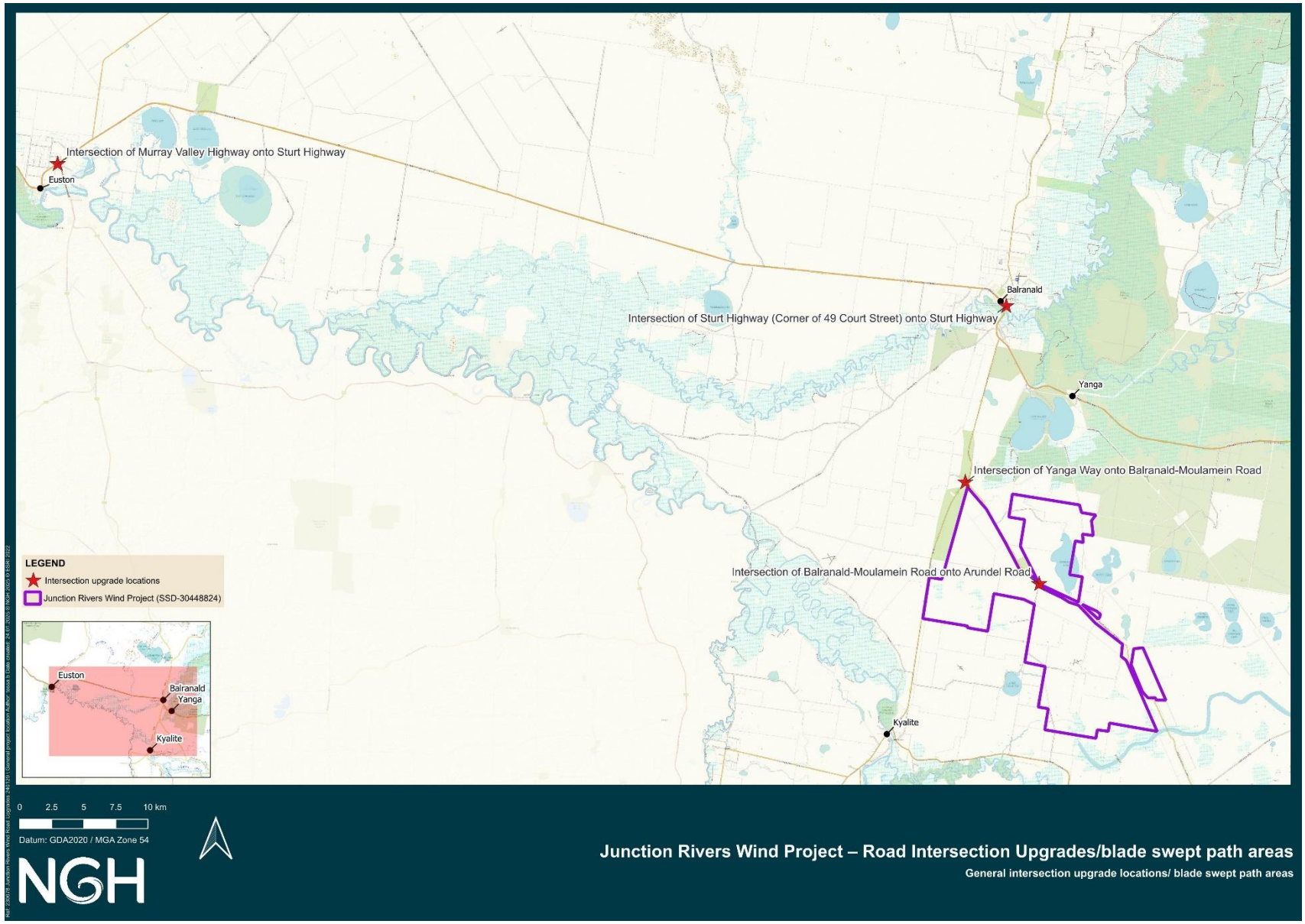



Figure 1-1 General location of Project Area.

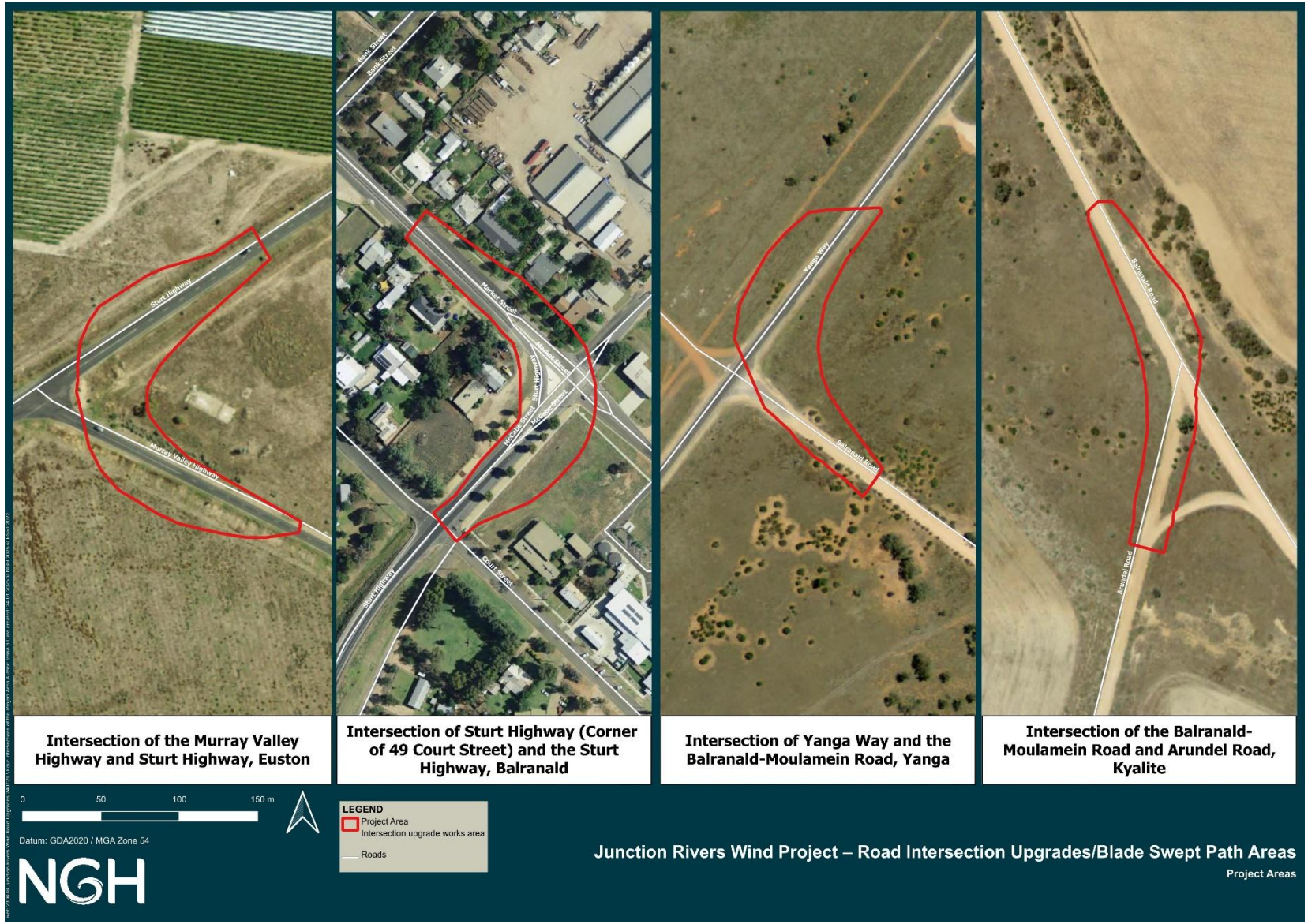



Figure 1-2 Four intersection work areas with a 10m buffer showing the Project Area subject to this assessment.

# 2. Description of the area

## 2.1 Project location

The Project Area of the four separate road intersection upgrade areas/ blade swept path locations are located across the region of Balranald in western NSW. Table 2-1 below outlines the location and potential works required at the four road intersections upgrade areas/ blade swept path locations being assessed in this report. The general location of each of these proposed work areas is shown in Figure 1-1 while a close up of each of the intersection work areas is shown in Figure 1-2. It is important to note that the Project Area being assessed in this report includes a 10 metre (m) buffer on the proposed impact area. As such, the actual impact area will be smaller than the Project Area shown in Figure 1-2.

The proposed design plans at each of the locations is shown in Figure 2-1 to Figure 2-4.

Each of these proposed intersection upgrade areas/ blade swept path locations are primarily situated within the boundary of the existing road reserve and have been identified during the assessment of the proposed haulage transportation route for the Junction Rivers Wind Project (SSD-30448824). The intersection upgrade works would involve ground surface disturbing works, as well as vegetation removal to ensure these intersections meet the required road safety guidelines for the movement of oversized and over mass vehicles in NSW.

Table 2-1 Four intersection upgrade areas/ blade swept path locations in NSW assessed in this report.

| Suburb | Local Government Area (LGA) | Section of road | Required to facilitate vehicle procedure or movement | Potential works required |
|---|---|---|---|---|
| Euston | Balranald Shire Council | Murray Valley Highway onto Sturt Highway | Right hand turn | Large hardstand |
| Balranald | Balranald Shire Council | Sturt Highway (Corner of 49 Court Street, Balranald Hospital Lot) onto Sturt Highway | Right Hand turn | Large hardstand |
| Yanga | Murray River Council | Yanga Way onto Balranald-Moulamein Road | Left Hand Turn | Large hardstand |
| Kyalite | Murray River Council | Balranald-Moulamein Road – Arundel Road | Site entrance | Vegetation trimming/removal |


Figure 2-1 Proposed design for works at the intersection of the Murray Valley Highway and Sturt Highway, Euston (Rex J Andrews 2024).


Figure 2-2 Proposed design for works at the intersection of Sturt Highway in the township of Balranald (Rex J Andrews 2024).


Figure 2-3 Proposed design for works at the intersection of Yanga Way onto Balranald-Moulamein Road (Rex J Andrews 2024).

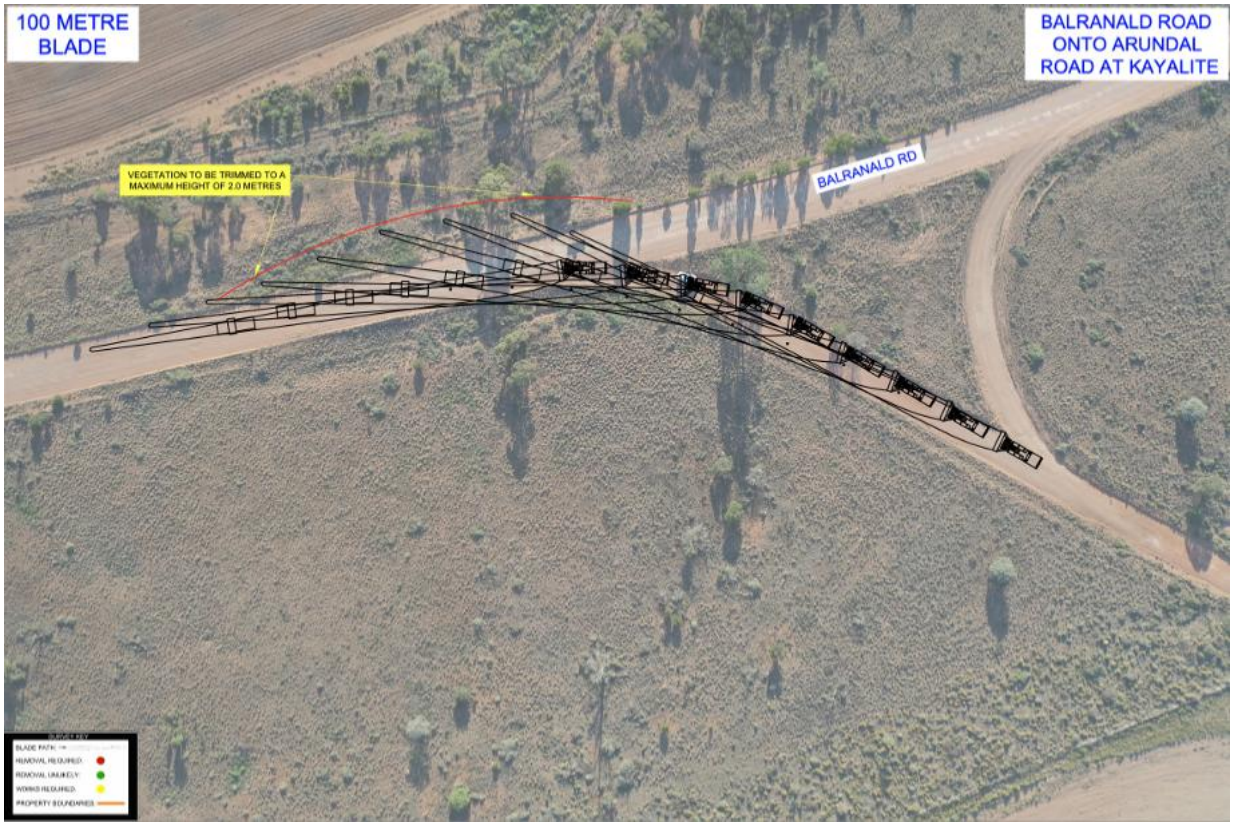



Figure 2-4 Proposed design for works at the intersection of Balranald Road onto Arundel Road (Rex J Andrews 2024).

## 2.2 Environmental context

Understanding the landscape context of the Project Area may assist us to better understand the archaeological modelling of the area and assist in identifying local resources which may have been used by Aboriginal people in the past. This information can then potentially be used to predict the nature of Aboriginal occupation across the landscapes within the Project Area and the wider region.

Factors that are typically used to inform the archaeological potential of landscapes include the presence or absence of resources that would have been used by Aboriginal people including water, animal and plant foods, stone and other resources. The landscape context assessment for the Project Area is based on several classifications that have been made at national, regional and local levels to help us better understand the archaeological modelling of the Project Area. These site location factors are based on the geology, topography, hydrology, flora and fauna and past land disturbances within and adjacent to the Project Area. Where possible this information references the ACHA (NGH 2024a) for the Project, however in instances where this is not possible or relevant supplementary information has been provided in this addendum.

### 2.2.1 Geology, soils and topography

Understanding the geological character, soils and topography of the local area can assist with understanding what, if any, raw stone materials may have been available for the manufacture and maintenance of stone tools or for use as shelter, if subsurface deposits of archaeological material are likely to occur and identify landforms which may have been a focus of Aboriginal occupation.

The National Interim Biogeographic Regionalisation for Australia (IBRA) system identifies all four proposed work areas as located within the South Olary Plain Subregion of the Murray Darling Depression Bioregion which is described below in Table 2-2.

Table 2-2 IBRA Subregion descriptions (DE&E 2016).

| Unit | Geology | Landforms | Typical Soils | Vegetation |
|---|---|---|---|---|
| South Olary Plain | Quaternary aeolian sands and lake sediments | Dunefields, sandplains, dry lakes and groundwater basins. | Deep siliceous and calcareous red to yellow sands, sandy earths, brown texture contrast soils on dunes and sandplains. Saline, gypseous and calcareous clays on lake beds, mixed sands and pelleted clays in lunettes. | Diverse mallee on sands with; pointed mallee, congoo mallee, red mallee, lerp mallee, slender-leaf mallee, yorrell, white cypress pine, mallee cypress pine, belah, rosewood, with porcupine grass and diverse shrubs. Belah, rosewood, black bluebush, pearl bluebush, old man saltbush, on sandplains and heavier soils. Black box fringing depressions, halophytes on salinas, and chenopod shrublands on lunettes, sometimes with white cypress pine |

The NSW 1:1500K simplified surface geology shows all four proposed work areas comprises of Quaternary Woorinen Formation (Qdw) which consists of poorly consolidated red-brown sands. Further landscape mapping as part of the Mitchell landscapes system (DECC 2002) notes that the four work areas are located within the Murrumbidgee Depression Plains, Murray Channels and Floodplains and the Murrumbidgee Channels and Floodplains as detailed in Table 2-3.

Table 2-3 Description of the Mitchell Landscape relevant to the proposed work areas

| Proposed work areas | Soil landscape | Description |
|---|---|---|
| Intersection of the Murray Valley Highway and Sturt Highway, Euston | Murray Channels and Floodplains | Active channels and seasonally inundated floodplains of the Murray streams in Quaternary alluvium. Grey silty clays to brown clays or red-brown texture contrast soils. |
| Intersection of Sturt Highway (Corner of 49 Court Street, Balranald Hospital Lot) and the Sturt Highway, Balranald | Murrumbidgee Channels and Floodplains | Quaternary alluvium on seasonally inundated floodplains that consist of grey and brown clays with some areas of low sandy rises. |
| Intersection of Yanga Way and the Balranald-Moulamein Road, Yanga;<br>Intersection of the Balranald-Moulamein Road and Arundel Road, Kyalite. | Murrumbidgee Depression Plains | Quaternary alluvial plains with numerous circular depressions interpreted as high floodplains or low terraces beyond the reach of average floodwaters. Grey to brown clays and clay loams with linear patterns of sandy prior streams. |

In earlier work on the NSW landscape, parts of western NSW were also divided into land systems (Walker 1991) with this mapping extending across the four proposed work areas. Based on land system mapping compiled in “Land Systems of Western New South Wales” (Walker 1991) the proposed work areas are within either the Condouple land system which is characterised as a sandplain between dunefields on the Riverine Plain near Balranald or on the Murrumbidgee land system which is characterised as alluvial floodplains. Both these land systems are described in Table 2-4.

Table 2-4 Description of the land systems in western NSW relevant to the Project Area (Walker 1991).

| Proposed work area | Land system name | Description | Soil and Vegetation | Landform and geomorphology | Summary |
|---|---|---|---|---|---|
| Intersection of the Balranald-Moulamein Road and Arundel Road, Kyalite. | Condoulpe (Cd) | Sandplains and dunefields with mallee | Mallee. Plain and flats of predominantly solonized brown soils and areas of red earths; dunes of deep brownish sands; drainage basins of grey cracking clays; generally dense to scattered belah and mallee; areas of dense edible chenopods; drainage basins of dense black box, nitre goosefoot and dillon bush; variable speargrass, annual saltbushes and forbs. | Sandplain of Quaternary aeolian material with large areas of east-west trending dunes; relief to 5m; open flats, terminal drainage basins, locally depressed to 2m. | Sandplain between dunefields and the Riverine Plain near Balranald |
| Intersection of Sturt Highway Balranald | | | | | |

| Proposed work area | Land system name | Description | Soil and Vegetation | Landform and geomorphology | Summary |
|---|---|---|---|---|---|
| Intersection of Yanga Way and the Balranald-Moulamein Road, Yanga;<br><br>Intersection of the Murray Valley Highway and Sturt Highway, Euston | Murrumbidgee (Mc) | Floodplains with black box and/or river red gum | Southern Riverine Woodlands. Plains with grey cracking and non-cracking clays; lunettes and rises of deep brownish sands; backplains of scalded yellow texture-contrast soils; moderate to dense black box, lignum, old man saltbush and nitre goosefoot; rises, lunettes and backplains with clumped mallee, white cypress pine, prickly wattle and scattered shrubs; abundant forbs and grasses. | Alluvial plains. Floodplain of grey fine-textured Quaternary alluvium with small rises, relief to 3 m; backplains, scalded levees and swamps. Riverside lunettes of deep sands; relief to 10 m. Irregularly inundated by flooding. | Higher terraces of the Murrumbidgee Murray, lower Lachlan and Wakool Rivers. |

Given the geological, soil and topographic data noted in this section, it is clear that there is very little topographic variation within each of the four road intersection upgrade areas with all four intersection areas primarily located on flat floodplain landforms with negligible variation in height.

In general, the natural soil profiles within the four intersection work areas are expected to be predominantly made up of silty or cracking clays, these soils tend to have low potential for subsurface archaeological deposits. However, any red sandy deposits have high potential for Aboriginal objects. Other archaeological assessments in the region have also noted that very few Aboriginal sites were located in the Condoulpe landform which is the main land system at two of the work areas (the intersection of the Balranald-Moulamein Road and Arundel Road, Kyalite and the intersection of Sturt Highway to the corner of 49 Court Street, Balranald Hospital Lot in the township of Balranald). None of the four intersection work areas would be expected to have undisturbed soil deposits present and none have natural stone outcrops suitable for the manufacture or maintenance of tools.

### 2.2.2 Hydrology

The two major water sources located near the four intersections of the Project Area are the Murrumbidgee and Murray Rivers. Lake Yanga and several other small lakes, including Condoulpe Lake and Lake Talbetts and channels, including Forest Creek, are also situated near portions of the Project Area.

All the natural streams and bodies of water in this area are non-perennial. However, in pre-European times, the region would have been subject to seasonal flooding. The Murrumbidgee River would flood and through a distributary system of anastomosing channels, including Forest Creek, water would spread out across the plain. Channels would have assisted in the distribution of the floodwaters into a myriad of seasonal wetlands and lakes. The water eventually made its way west and south, passing through what is now Yanga National Park and re-entering the Murrumbidgee River near Balranald as well as emptying into the Edwards River. The Murrumbidgee River then flows into the Murray River. The town of Euston sits on the Murray River.

These creeks and rivers would have acted as vital waterways in the past and be a reliable and predicted event used to harness certain resources such a fish, water birds and plants. Dry soaks are also known in the region to have provided water sources into the dryer months acting as refugia for animals and people.

Out of the four proposed work areas only the proposed works at the intersection of Sturt Highway (Corner of 49 Court Street, Balranald Hospital Lot) in the township of Balranald is located within 200m of a watercourse, the Murrumbidgee River. The distance of each of the proposed work areas to the nearest watercourse is provided in Table 2-5 below.

Table 2-5 Nearest watercourse to the proposed work areas

| Proposed Works area | Distance to water | Name of nearest water source |
|---|---|---|
| Intersection of the Murray Valley Highway and Sturt Highway, Euston | 1.3 km south-east | Murray River |
| Intersection of Sturt Highway (Corner of 49 Court Street, Balranald Hospital Lot) and the Sturt Highway, Balranald | 170m west | Murrumbidgee River. |
| Intersection of Yanga Way and the Balranald-Moulamein Road, Yanga; and | 800m south-west | Unnamed first order watercourse following into a man-made dam. |
| Intersection of the Balranald-Moulamein Road and Arundel Road, Kyalite. | 1.6km north-east | Condoulpe Lake |

### 2.2.3 Flora and fauna resources

The information provided herein is intended as a generalised summary of the endemic flora and fauna and is not to be used as a substitute for detailed ecological and biodiversity studies.

Much of the proposed four work areas have been cleared during the construction and maintenance of the roads. The remaining vegetation is represented by the landscapes in Land systems of Western NSW (Walker 1991) as described in Table 2-4. These species would have provided a wide variety of resources for the manufacturing of wooden implements, medicine and food, as well as habitats for animals that were also used for food. If mature native trees remain, there is a possibility that scarred trees may be present as eucalyptus, Yellow Box and Black Box trees are known to have been favoured species for the extraction of bark for use as canoes, shields, and containers by Aboriginal people. The native vegetation communities pre European settlement would have also provides numerous habitat types for fauna. Canopy trees provide foraging and nesting/resting habitat for birds and arboreal fauna. The mid-storey provides foraging and nesting habitat for smaller birds, as well as refuge for small-medium sized mammals and reptiles. Ground cover plants, logs and fallen leaves also provide shelter and foraging habitat for terrestrial fauna. The Murrumbidgee and Murray Rivers would also have provided significant subsistence resources in the form of various species of fish, birds and plants.

Review of satellite imagery and google earth street view identified that no mature native trees suitable for bark extraction are present within any of the three proposed intersection upgrade work areas noted below.

- Intersection of the Murray Valley Highway and Sturt Highway, Euston
- Intersection of Yanga Way and the Balranald-Moulamein Road, Yanga; and
- Intersection of the Balranald-Moulamein Road and Arundel Road, Kyalite.

However, several native eucalyptus trees are present within the proposed works area at the intersection of Sturt Highway (Corner of 49 Court Street, Balranald Hospital Lot) in the township of Balranald however, these are noted to be planted street trees and therefore are not part of the original vegetation mosaic.

### 2.2.4 Historic land use

Each of the four road intersection upgrade areas has primarily been used as public roads with associated infrastructure for over the last 50 years. Historic aerial imagery of each intersection shows that each area has been used as roads since at least the 1950's as shown in Plate 2-1 to Plate 2-6. Further review of the parish maps over each intersection upgrade area also shows that the intersections and roads have been present for at least 100 years, with the 1873 Parish map of Balranald clearly showing what is now the intersection of the Sturt Highway (corner of 49 Court Street) in the township of Balranald, existing originally as the intersections of Court Street and Market Street with McCabe Street (see Plate 2-7 with the works area in Balranald circled in red). The parish maps over each of the intersection upgrade areas is shown in Plate 2-7 to Plate 2-10.

Due to this historic disturbance and land use the intersections along the Sturt Highway, Balranald Road, Arundel Road, and the Murray Valley Highway which form the Project Area being assessed in this report, have been noted to have been subject to a number of disturbances associated with the construction and maintenance of these roads over a long period of time.

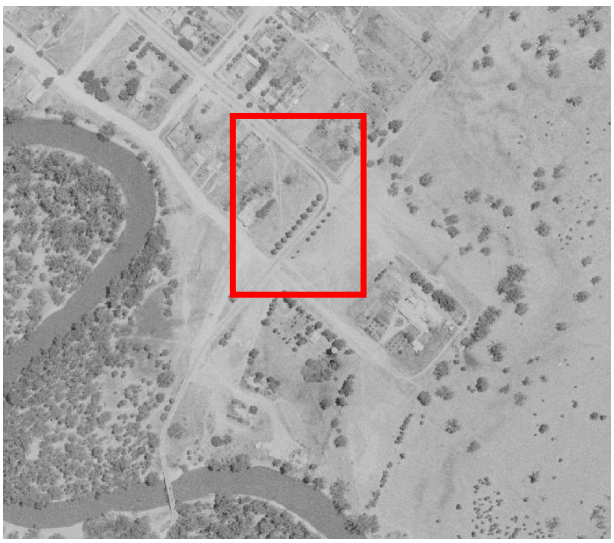


Plate 2-1 Historical aerial image of the intersection of Sturt Highway (Corner of 49 Court Street) in the township of Balranald dated 1955.

Plate 2-2 Historical aerial image of the intersection of Sturt Highway (Corner of 49 Court Street) in the township of Balranald dated 1997.

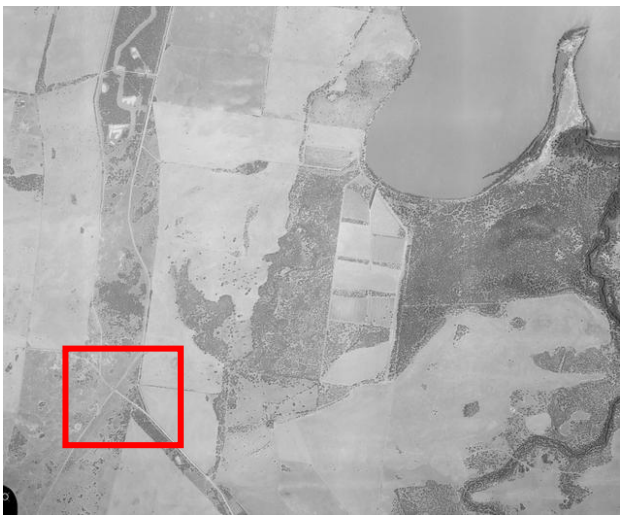


Plate 2-3 Historical aerial image of the intersection of Yanga Way and the Balranald-Moulamein Road, Yanga dated 1991.

Plate 2-4 Historical aerial image of the intersection of the Balranald-Moulamein Road and Arundel Road, Kyalite dated 1961.

Plate 2-5 Historical aerial image of the intersection of the Murray Valley Highway and Sturt Highway, Euston dated 1973.

Plate 2-6 Historical aerial image of the intersection of the Murray Valley Highway and Sturt Highway, Euston dated 1993.

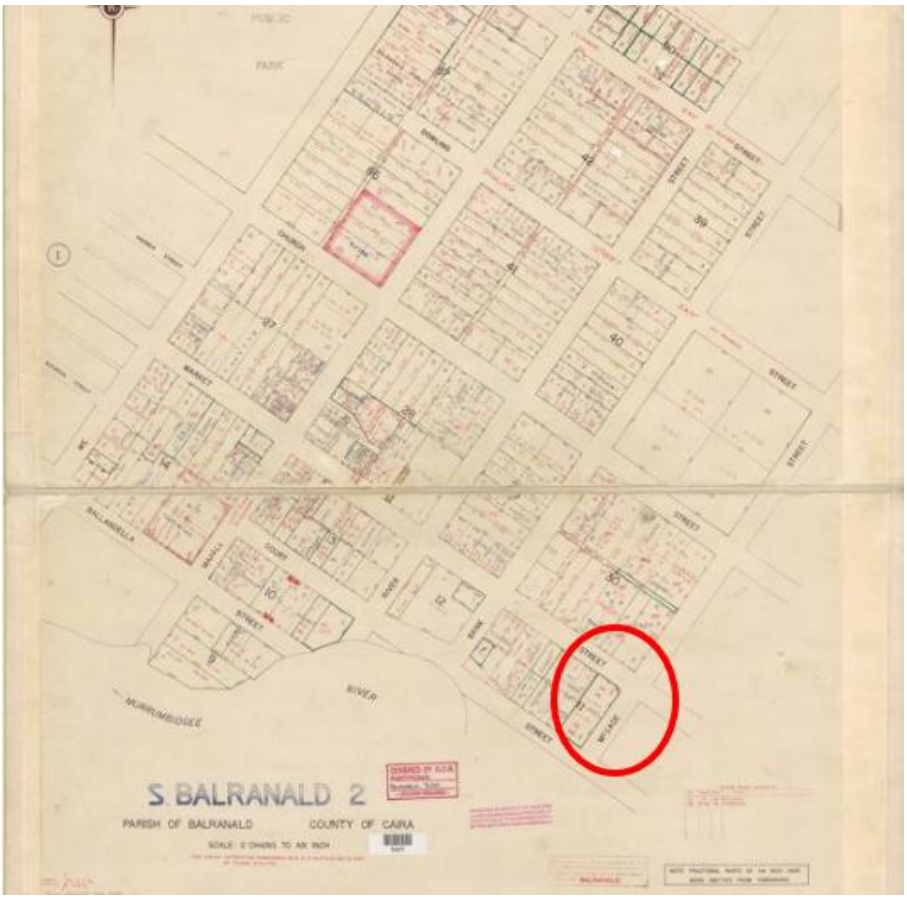



Plate 2-7 Parish of Balranald map dated 1873 with the intersection of the Sturt Highway (corner of 49 Court Street) in the township of Balranald circled in red.

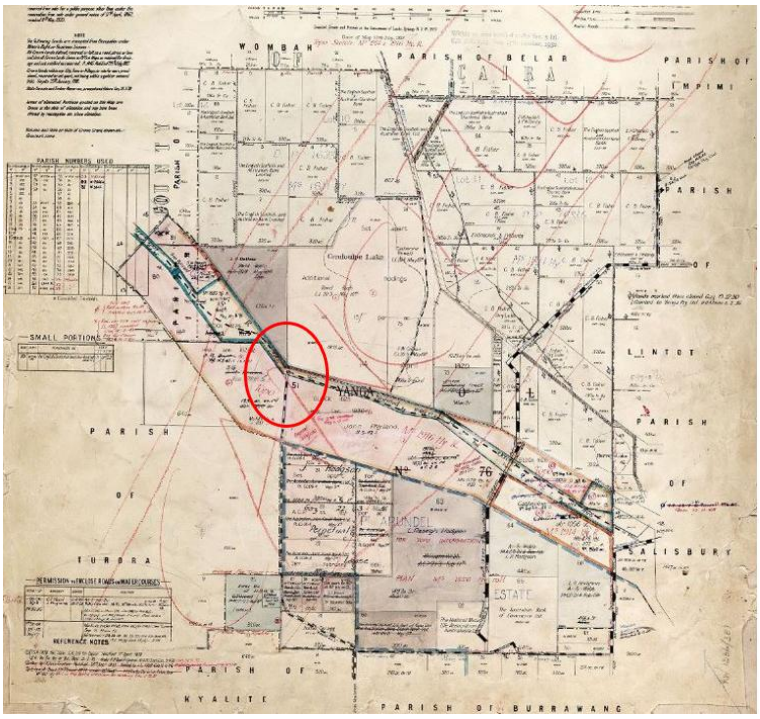



Plate 2-8 Parish of Condoulpe map dated 1928 with the intersection of the Balranald-Moulamein Road and Arundel Road, Kyalite circled in red.

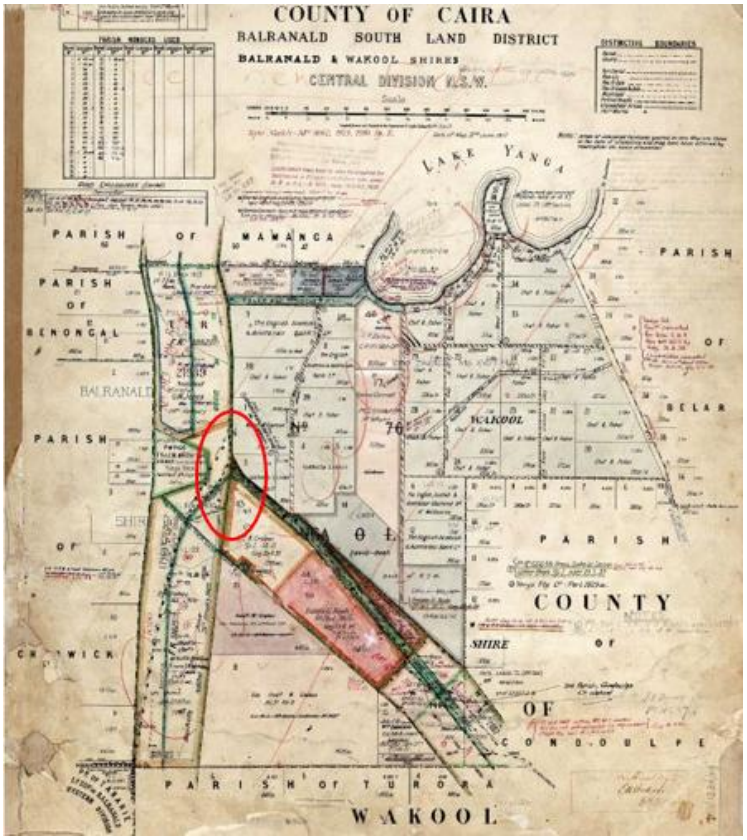



Plate 2-9 Parish of Wombah map dated 1920 showing the intersection of Yanga Way and the Balranald-Moulamein Road, Yanga circled in red.

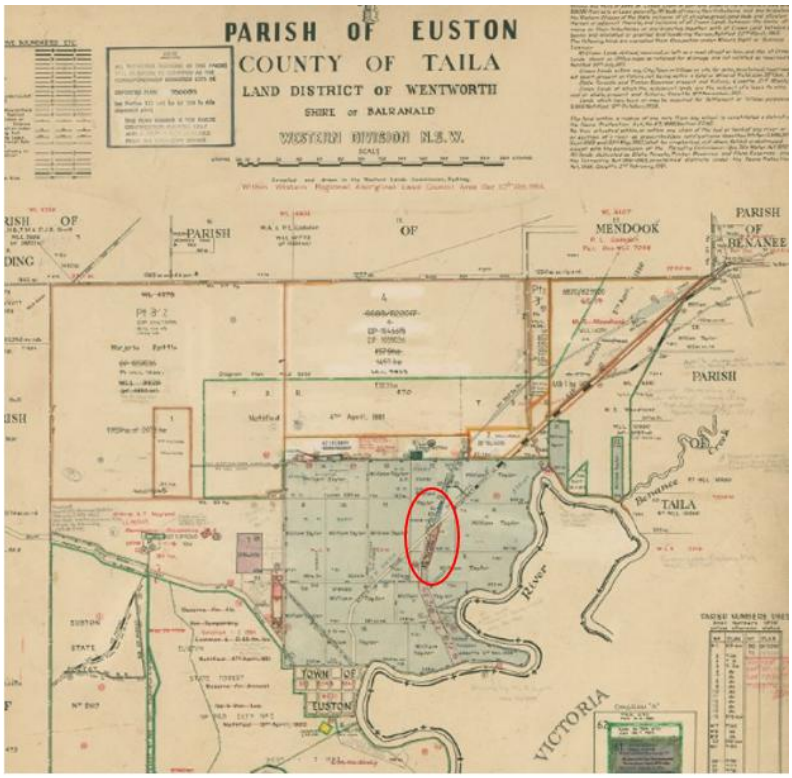



Plate 2-10 Parish of Euston map dated 1984 showing the intersection of the Murray Valley Highway and Sturt Highway circled in red.

### 2.2.5 Landscape context

Most archaeological surveys are conducted in a situation where topographic variation can lead to differences in the assessment of archaeological potential and site modelling for the location of Aboriginal objects. The four road intersection upgrade areas that comprise the Project Area are primarily within the disturbed road corridor of existing roads. Historic use and disturbances of each road intersection upgrade area during the initial construction and subsequent ongoing maintenance of these roads and their associated infrastructure and table drains means there is little natural ground surfaces remaining and landforms have more likely been modified, indicating there is low potential for Aboriginal objects to remain within them.

## 2.3 Cultural context

### 2.3.1 Ethnographic setting

The cultural context of the Project Area is the same as for the original ACHA for the Project (NGH 2024a).

### 2.3.2 AHIMS search

The Aboriginal Heritage Information Management System (AHIMS) is a database of previously recorded Aboriginal heritage sites in NSW. A search provides basic information about any sites previously identified within a search area. However, a register search is not conclusive evidence of the presence or absence of Aboriginal heritage sites, as it requires that an area has been inspected, and details of any sites located have been added to the register. As a starting point, the search will indicate whether any sites are known within or adjacent to the investigation area.

Extensive searches of the AHIMS database were undertaken to cover the four intersection areas initially on the 19th and 29th of January 2024 however as AHIMS searches only have 12 months of validity three new searches were undertaken on the 21st and 23rd of January 2025 for this addendum ACHA. As the Yanga Way and Balranald-Moulamein Road and Arundel Road are located in close proximity to the Junction Rivers Wind Farm Project Area these intersection work areas were both covered by the extensive search that covered the Junction Rivers Project Area. The details of these three updated extensive AHIMS searches are provided in Table 2-6.

Table 2-6 Breakdown of extensive AHIMS searches over the intersection works areas

| Project Area | Client Service ID | AHIMS search area | Aboriginal objects | Aboriginal places |
|---|---|---|---|---|
| Intersection of the Murray Valley Highway and Sturt Highway, Euston | 967552 | Lat, Long -34.5835, 142.7222 to Lat Long -34.5482, 142.784 | 22 | 0 |
| Intersection of Sturt Highway (Corner of 49 Court Street, Balranald Hospital Lot) and the Sturt Highway, Balranald | 967556 | Eastings: 733307 – 737307 Northings: 6161542 – 6165542 (GDA Zone 54) | 21 | 2 |
| Junction Rivers Wind Farm Project Area including intersection of Yanga Way and the Balranald-Moulamein Road, Yanga; and Intersection of the Balranald-Moulamein Road and Arundel Road, Kyalite | 968523 | See black outline in Figure 2-6. | 112 | 0 |

There was a total of 155 Aboriginal sites and two declared Aboriginal Places recorded across the three extensive AHIMS search areas that covered the intersection work areas. Table 2-7 below shows the breakdown of site types recorded across the three extensive AHIMS searches completed as part of this assessment while Figure 2-5 and Figure 2-6 show the location of the AHIMS sites in relation to the Project Area. In addition to the AHIMS sites there are 23 trees of cultural value (Tree cultural sites) recorded as part of the ACHA for the Project (NGH 2024a). None of these trees are within 200m of the project area for the addendum ACHA.

The AHIMS Registrar was contacted by NGH on the 21st of January 2025 regarding the restricted sites within the search area near the township of Euston. It was confirmed via email from an AHIMS representative on the 22nd of January 2025 that the nine restricted sites in the AHIMS extensive search with the client ID 967552 (near Euston) would not be impacted by any works within the road upgrade areas for the intersection of the Murray Valley Highway and Sturt Highway.

None of the Aboriginal sites or places are located within and/or adjacent to any of the four work areas however, two sites occur within ~200m of the Sturt Highway intersection in the township of Balranald and a single site occurs within ~200m of the Balranald-Moulamein Road and Arundel Road works. These sites are summarised in Table 2-8 below and shown in Figure 2-5 and Figure 2-6.

Aboriginal Places are declared places that have special significance to Aboriginal people. The two Aboriginal places noted in the AHIMS extensive search of the intersection of Sturt Highway (Corner of 49 Court Street, Balranald Hospital Lot) and the Sturt Highway in the township of Balranald are listed below. Neither of these places will be impacted by the proposed works, with both of these Aboriginal places located over 600m east of the proposed works within the township of Balranald.

- Dippo Ceremonial Ground, Gazette Date: 19/10/2001.
- The Island (Poonyea), Gazette Date: 04/08/2022.

Table 2-7 Breakdown of previously recorded Aboriginal sites in the region

| Site type | Number |
|---|---|
| Modified tree | 57 |
| Artefact (1 or more) | 47 |
| Hearth | 16 |
| Restricted | 9 |
| Shell | 5 |
| Artefact (1 or more) and Hearth | 4 |
| Burial | 4 |
| Hearth and Potential Archaeological Deposit (PAD) | 4 |
| Earth Mound | 3 |
| Earth Mound and Hearth | 2 |
| Aboriginal Ceremony and Dreaming and Burial | 1 |
| Potential Archaeological Deposit (PAD) | 1 |
| Artefact (1 or more), Earth Mound and Hearth | 1 |
| Artefact (1 or more) and Earth Mound | 1 |
| **Total** | **155** |

Table 2-8 Sites within ~200m of the intersection work areas

| AHIMS | Site name | Site type | Distance to project (m) | Site status on AHIMS |
|---|---|---|---|---|
| 47-6-0058 | Yanga Creek Mound 1 | Earth mound | 35m north of the intersection of Sturt Highway (Corner of 49 Court Street, Balranald Hospital Lot) and the Sturt Highway, Balranald works. No site card or report is associated with this site, and it is believed that the GPS location is inaccurate given the site refers to a location at Yanga Creek. The nearest point of Yanga Creek to the intersection works area is approximately 1,200m to the south-east. NGH contacted AHIMS to determine if there is any additional information on this site and it was confirmed by AHIMS that there was no site card or report linked to this site. | Valid |
| 47-6-0015 | Police Paddock Scarred Tree | Scarred tree | 170 m east of the intersection of Sturt Highway (Corner of 49 Court Street, Balranald Hospital Lot) and the Sturt Highway, Balranald works | Valid |
| 47-6-1153 | Burrawong 22 | Isolated Find | 175 m south east of the intersection of the Balranald-Moulamein Road and Arundel Road, Kyalite works. Recorded during survey for the ACHA (NGH 2024) for this Project. | Valid |

### 2.3.3 Additional searches

Other heritage register searches were also undertaken to identify any items or places in proximity to the Project Area, with a focus on the Project Area and surrounding landscape. The following resources were used as part of this assessment:

The *NSW State Heritage Inventory* (SHI), includes items on the State Heritage Register and items listed by state agencies and local Government, to identify any items currently listed within or adjacent to the proposal site. The results of the NSW SHI database search indicated there are two previously recorded Aboriginal Places listed under the *National Parks and Wildlife Act* within the vicinity of the Project Area (Balrnalad township) as mentioned in the results of the AHIMS search. The two Aboriginal Places are Dippo Ceremonial Ground, Gazette Date: 10/19/2001 and The Island (Poonyea), Gazette Date: 04/08/2022. As previously mentioned, neither of these Aboriginal Places will be impacted by the proposed intersection upgrade works for the Sturt Highway intersection in Balranald. The Dippo Ceremonial Ground is also listed on the Balranald LEP 2010 (listing I4, listed 09/07/2010) and will not be impacted by the proposed works.

The results of the NSW SHI database search indicated there are no previously recorded heritage sites listed under the *NSW Heritage Act* within the vicinity of the Project Area.

No other known previously recorded heritage sites are located within or adjacent to the Project Area.

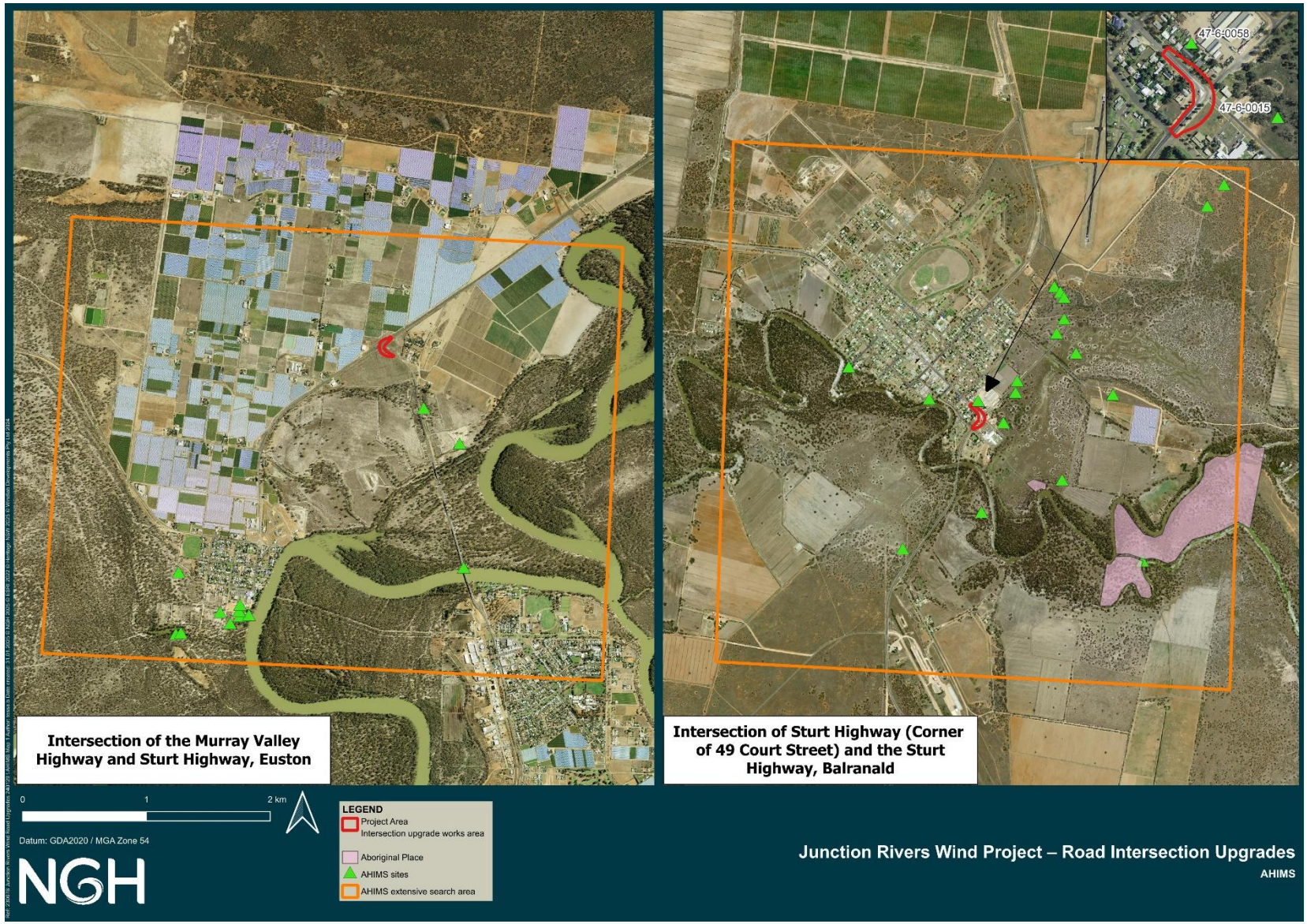



Figure 2-5 AHIMS sites surrounding the Project Area- Map 1 of 2.

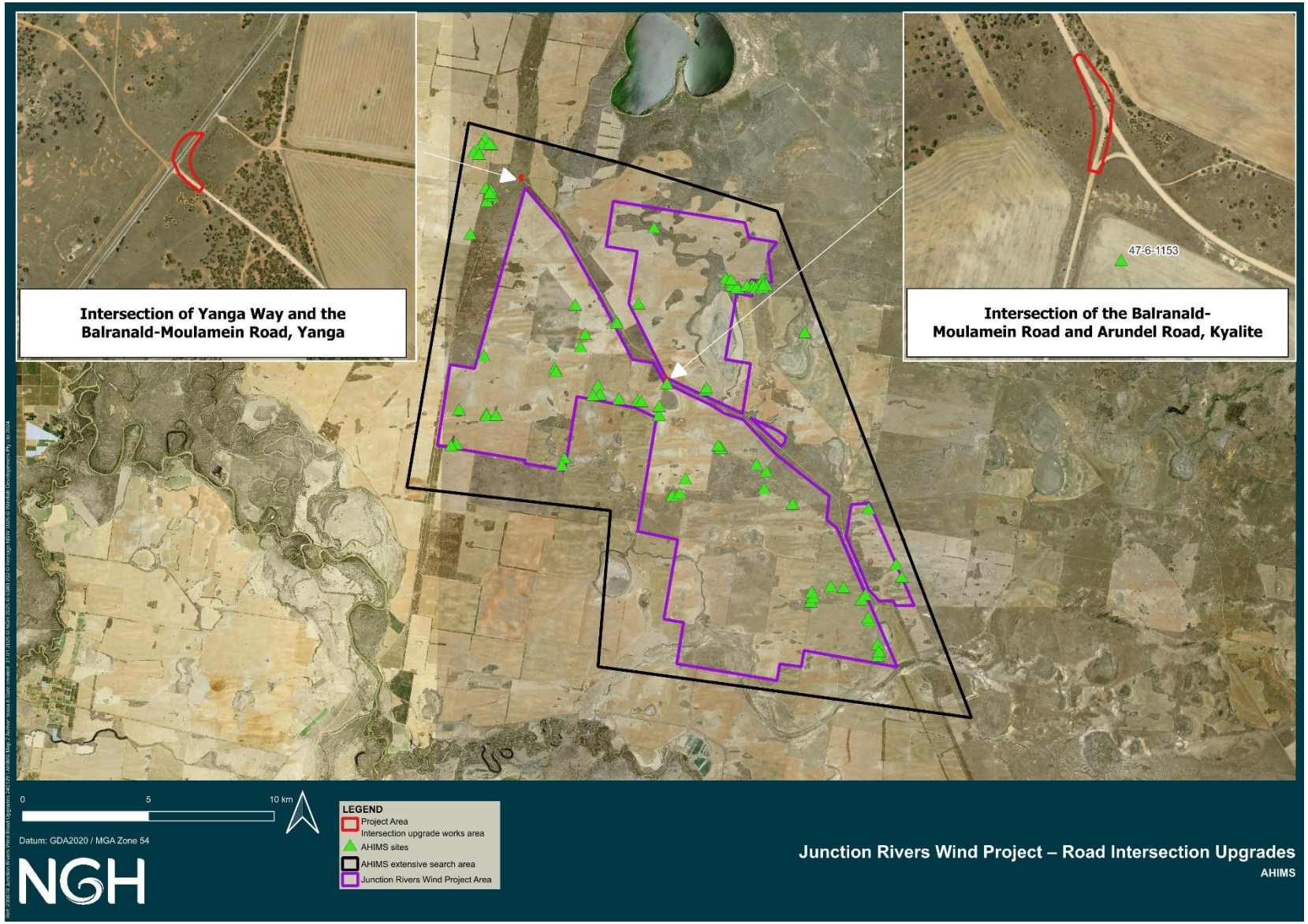



Figure 2-6 AHIMS sites surrounding the Project Area- Map 2 of 2.

### 2.3.4 Regional archaeological record

Aboriginal people have occupied what we now know as the Australian continent for at least 40,000 years and perhaps 65,000 years and beyond (Clarkson et al 2017). There have been no dated excavations in the Balranald area, although the archaeological evidence from Lake Mungo, 100 km to the north-west of Balranald and 90km north-east of Euston, provides ample evidence of Aboriginal occupation dating back 40,000 years (Mulvaney & Kamminga 1999; Hiscock 2007).

Within the broader region, several studies have been undertaken that have resulted in a range of Aboriginal sites being recorded that show that the riverine landforms and lunette lake systems in the Murray Basin are rich in Aboriginal cultural material. The major relevant studies are summarised below.

The Willandra Lakes World Heritage Area is a series of dry lake basins within a dune system, approximately 100 km north-west of Balranald. Lake Mungo is part of the Willandra Lakes World Heritage Area that has been subject to ongoing archaeological research since the discovery of one of the world's oldest cremated human remains, Mungo Woman (Mungo I), in the late 60's (Tumney 2011). The 1974 discovery of a Pleistocene burial surrounded by ochre stained sands referred to as Mungo Man (Mungo III) (Bowler and Thorne 1976) further established the Willandra Lakes area as an important area that adds to the understanding of the early Aboriginal occupation in Australia. These burials are dated to 42,000 years BP and are the oldest known human remains in Australia and some of the earliest remains of modern humans outside of Africa (Tumney 2011). Studies undertaken in the Willandra Lakes area indicates that most burials occur within sand dunes created from paleo-channels near permanent and ephemeral water sources.

Furthermore, a series of 123 fossilised footprints, known as the Garnpang footprint trackway, were recorded that were impressed into hardened sediment dated to 23,000+1000 BP and 19,200+1000 BP (Webb et al 2006). A number of stone artefacts, human and faunal remains, shell middens, quarries, clay and stone heat retainers and hearths have been recorded across the Willandra Lakes World Heritage Area (Tumney 2011). Tumney's (2011) analysis of three stone artefact assemblages along the Lake Mungo lunette noted that silcrete was the most common lithology utilised for the manufacture of stone tools with lesser amounts of quartzite, quartz and sandstone. Tumney also noted the presence of a soil carbonate or calcrete nodules that occur more frequently on lunettes to have been used as heat retainers in some of the recorded hearths.

During the 1970's and 80's archaeological research in the Murray Valley region between the Edwards and Murray Rivers focused on burials and mounds. Simmons (1980) identified 75 mounds, 17 scarred trees and a range of other site types including isolated artefacts, hearths, shell middens and burials. Mounds were the most common site type that generally consisted of abundant clay nodules in association with burnt fragments of shell or bone, while the scarred trees in the area were generally all mature River Red Gums. The sites identified by Simmons were all located in close proximity and/or associated with the floodplains, anabranches and lake systems of the Murray Valley and clearly showed the importance of aquatic resources to the local Aboriginal populations in the region.

Sample surveys undertaken by Pardoe and Martin (2001) within the Murrumbidgee Province covered an area of approximately 30,000 square kilometres, extending from Balranald to Narrandera and Booligal to Jerilderie. Using an analysis of landforms and identifying gaps in the archaeological knowledge based on the sites recorded in the AHIMS database, they found that there was a bias in the distribution of sites along major waterways and some landforms such as lunettes, but there were also large gaps where no sites had been recorded. Pardoe and Martin surveyed 61 sample areas or quadrants from 22 Stations or locations across their project area. This resulted in 347 new sites being recorded. The major site types (over 90%) were scarred trees (26.2%), mounds (24.2%), open sites (14.4%), ovens (12.4%), burials (7.8%) and hearths (6.1%). Pardoe and Martin analysed their results in order to develop a predictive model for site distribution across the Murrumbidgee Province. They found that mounds varied in size, from 4 m-140 m in diameter and height also varied from 2 cm to 2 m. Mounds were most commonly found along floodplain creeks within River Red Gum and Black Box vegetation communities. They found that as well as being situated along the major rivers, they were also located on the plains to the north and south of the Murrumbidgee, such as around the

edge of depressions such as lakes and swamps and also on palaeochannel features. Mounds were often characterised as being situated on elevated ground such as lunettes, levees and dunes where silty sandy soil was prevalent (Pardoe and Martin 2001:82-87). Burials occurred mostly as individuals within mounds but there were six locations where more than one burial was recorded. Most of the burials were observed as highly fragmented bone disturbed by rabbit activity. Scarred trees were found to be quite variable in the size of the scar with the largest scars being on River Red Gums. Scars were classified into three groups, ceremonial- which were associated with a known burial, extraction- used in extracting food such as honey or grubs, and functional- all other types. The latter varied in size from 0.18 m to 3.6 m in length and width from 0.09 m to 0.55 m with an average width of 0.38 m.

Pardoe and Martin (2001) developed a predictive model of site distribution based on their results and an analysis of variables through the use of GIS mapping. They examined proximity to water and found that no sites were more than 12 km from a major river channel (in this case the Murrumbidgee River, and the Yanco, Box and Mirool Creeks). They also found that 75% of sites were within 3.3 km of such water courses. An assessment of proximity to minor stream was made difficult by the presence of irrigation channels in their GIS layer but nevertheless, they also found that the average distance from a minor stream was 1.8 km and 75% of sites recorded were within 2.2 km (Pardoe and Martin 2001:106).

Martin's PhD thesis (2006) examined the spatial, temporal and socio-cultural relationships of mounds in order to establish a model of human behaviour that could explain the linking of environment, spatial and temporal patterns and cultural change in the archaeology of the Hay Plain. She undertook excavations of two mound complexes, one at the Tchelery property, and one at Ravensworth property about 60 km and 70 km northeast of the current assessment area respectively. The Tchelery mounds were situated northwest of Dry Lake on grey cracking clays. Martin dated the mound to 4,010±170 BP (Martin 2006:119) and the Ravensworth 3 mound was dated to between 4,100±70 BP and 3,860±60 BP (Martin 2006:96). Martin concluded that mound building commenced in the region about 4,300 years ago but there was an increase in mound building after 2,000 BP and that there was a deliberate focus on wetland plants such as *Typha* and *Triglochin* that were baked and steamed in the mounds, along with animal foods.

Martin (2010) also conducted a detailed archaeological survey and modelling project for the Rivers Environmental Restoration Program (RERP). This project area was also focused on the Lowbidgee and concentrated on areas downstream (west) of Maude, areas to the east and west of Oxley on the Lower Lachlan floodplain, the Great Cumbungi Swamp and the western side of the Murrumbidgee north of Balranald. The project utilised GIS modelling to identify areas of archaeological potential and gaps in the archaeological record and targeted field survey to these locations. They recorded 1,306 archaeological features at 1,186 locations with the major site types being mounds (41%), scarred trees (21.7%), hearths (12.7%), artefacts (11.5%), shell middens (5.4%) and burials (4%). The conclusions for the project were that in broad terms there appeared to be a difference in the distribution of sites across the riverine plain. Martin identified that mounds and burials were concentrated on the lower western side of the plain while ovens and artefact scatters were more common on the higher eastern side of the plain. Martin thought the difference was related to the character of the hydrological regimes, because mounds were related to the ecological diversity of the dependable wetlands as food sources. She found that mounds were situated on the higher sand bodies and paleochannels present in the western part of the plain (Martin 2010:78). The RERP survey found burials to be in similar landforms to those identified by Bonhomme, namely lunettes, source bordering dunes, river levees and prior stream levees as well as sand bodies within the clay floodplain.

Several archaeological investigations have also been conducted across the region as part of development applications which been summarised below to provide further information to inform an indication of site modelling for the areas being assessed in this report.

Edmonds (1997) identified four Aboriginal sites during the survey for Binbinette Station, approximately 40 km south-east of the current assessment area, including a scarred tree, a midden with an associated scarred tree and two extensive campsites. The two campsites had stone artefact assemblages dominated by quartzite flakes and *in situ* hearths with burnt clay heat retainers on severely scalded soils. It was estimated

that both campsites contained over 1,000 artefacts. The soil around the hearths with clay heat retainers was noted as being eroded up to 15 cm in depth which created a series of mounded hummocks and clay pans. These clay pans fill up with water after rain and provide a temporary water source. Edmonds suggested that these temporary water sources may have made the area an attractive camping place during winter rains as Aboriginal groups ventured further away from the rivers during autumn and winter months to hunt on the plains. Edmonds concluded from this survey that landforms associated with a water source (including temporary clay pans) were the most archaeologically sensitive and that plains have low archaeological sensitivity.

Kamminga (2010) examined potential Aboriginal artefacts from three surface sites and an isolated find within Yanga National Park and three collections held by the National Parks and Wildlife Service (NPWS) housed at Yanga Homestead. Two of the stone artefact scatters, Waugorah Road and Lintot Lake, were confirmed to be Aboriginal in origin and comprised of 12 and 54 artefacts respectively. Kamminga noted that the raw material types identified within the Yanga assemblages were mostly quartzite, with lesser numbers of silcrete, quartz, sandstone.

Landscape conducted a preliminary cultural heritage assessment of the Atlas-Campaspe Mine area which is located approximately 100 km northwest of the current assessment area and developed a predictive site model based on the desktop research for the distribution of archaeological sites in the area over various landscapes (as cited in Niche 2012:34). It was predicted that stone artefacts and hearths would be the most common site types in the area which would likely be located near relict lake basins or clay pans that may intermittently hold water. The likelihood of encountering scarred trees, shell middens and burials was assessed as low as these site types are generally found near more permanent water sources. Burials were most likely to occur in bordering dunes and lunettes adjacent to rivers and lakes. Landscape noted that silcrete stone sources have previously been recorded in the Willandra Lakes Region and that silcrete outcrops may occur in areas such as dry lakebeds (as cited in Niche 2012:38).

In 2012 Niche undertook field survey for the Atlas-Campaspe Mine projects using the Landscape predictive model noted above. The field survey included inspection of the proposed mine approximately 90 km north of Balranald and the proposed Ivanhoe Rail Facility. No sites were previously recorded in the project area despite the close proximity to the Mungo National Park and Willandra Lakes Region World Heritage Area. The survey of the proposed development corridor identified 78 Aboriginal sites within the Atlas-Campaspe Mine area and 22 Aboriginal sites within the Ivanhoe Rail Facility. A number of areas of high and moderate Aboriginal heritage value were also identified, consequently the development corridor was modified to allow the conservation of some areas. Niche identified a number of isolated finds, artefact scatters, hearths and a modified tree. The majority of stone artefacts were retouched tools manufactured from silcrete which is common in the area. Fewer chert, sandstone and quartzite artefacts were also recorded. The sites recorded in the Atlas-Campaspe Mine area were all generally located on the margins of ephemeral depressions. A raised dune on the eastern edge of a lake depression near the proposed works footprint was also noted to have archaeological potential. The proposed transport route surveyed had the highest number of sites and it was suggested that this density of sites was reflective of the close proximity to more permanent water sources in the area. Niche concluded that the sandplain and dune fields assessed contained few traces of past land use by Aboriginal people while the playas and relict lake areas contained an abundance of Aboriginal objects.

Niche (2015) undertook survey for the Balranald Mineral Sands Project for Iluka Resources Limited for the proposed development of a mineral sands mine 12 km north-west of Balranald between 2012 and 2014. A total of 548 sites were identified over the course of the project. A database of sites for the project was created that is referred to as the Balranald Project Aboriginal Heritage Database. Analysis of site distribution and density was used to classify areas as having high, moderate or low archaeological risk to assist in the management of the mine. Niche predicted that stone artefacts and hearths were the most likely site type to occur in the project area while middens, modified trees and burials were less likely to occur. Niche also predicted that mounds were unlikely to occur in the project area. During the field survey an emphasis was

placed on visually inspecting alluvial plains, playas and basins while sand plains, sand dunes and areas with reduced archaeological visibility had less of an emphasis placed on them. While 11 land systems were identified and surveyed within the Balranald Mineral Sands Project, very few Aboriginal sites were located in the Condoulpe landform. Niche noted that there was a strong correlation between the location of sites and dunes, rises, lunettes and exposures associated with depressions or a decrease in elevation in the landscape. The majority of sites (approximately 52%) contained between one to 10 stone artefacts with only eight of the recorded sites containing over 200 artefacts. Silcrete artefacts were dominant and accounted for 93.5% of the recorded assemblage. The bulk of the stone artefacts recorded were complete flakes, broken flakes and angular fragments. Retouched flakes or tools formed 7.9% of the assemblage with a number of tool types identified including burins, burrens, piecers and assorted scrapers. Niche (2015) concluded that within the project area sites fell into either short term occupation or single activity sites or specific long term seasonal nodal sites.

Barber (2015) undertook an archaeological survey for the purpose of identifying and recording Aboriginal sites and cultural values of the Nimmie-Caira area, an area of 867 sq. km between Maude and Balranald. The purpose of the study was to identify sites to assist the future land and water management of the area. Furthermore, it was designed to engage the local Aboriginal communities to enhance and share their knowledge by providing opportunities for involvement in the surveys and recording of archaeological features. Due to the sensitivity of the wetland landscape that made up most of the area, the survey served two purposes. Firstly, it would examine a range of environments and undertake survey to obtain an understanding of likely archaeological resources of the area, to develop site models and clarify the distribution of archaeological features in the landscape. Using both soil mapping, vegetation mapping and sample survey blocks, areas of high, medium, and low archaeological potential were identified. The second aim of the study was to ensure that the area had enough data in relation to the location and type of Aboriginal heritage sites so that the area could be managed effectively in the future. Barber (2015) used GIS to examine environmental data and aerial photography to select a range of survey sample areas for pedestrian survey. A total of 68 separate survey sample areas were examined over a period of 30 days; the total ground coverage of these surveys was 31.68 $km^2$, 3.65% of the 867 $km^2$ of the Proposal Area. However, despite being such a small percentage of the total area, the surveys recorded 469 Aboriginal heritage features as shown in Table 2-9 below. Barber also noted that another 39 recordings were made where the archaeologists did not consider the features to be Aboriginal in origin but where the Aboriginal community considered them to be Aboriginal heritage sites; these features were simply called ‘Cultural locations’.

Table 2-9 Breakdown of feature types found within the Nimmie-Caira area (Barber 2015).

| Feature Type | Number | Percentage of Total Features |
|---|---|---|
| Artefact occurrences* | 83 | 17.67 |
| Burial | 40 | 8.53 |
| Hearth | 84 | 17.91 |
| Mound | 103 | 21.96 |
| Modified tree (including ring trees) | 46 | 9.81 |
| Isolated Finds# | 113 | 24.09 |

** Includes artefacts grouped within 50m of other feature types, eg. Mounds*

*# Includes either isolated or small clusters of artefacts situated more than 50m from another feature*

Barber (2015) also made mention that the 40 burials were all found within a mound or a sand body that was elevated above the floodplain, which itself was usually close to other archaeological evidence; none of these

burials were intact. Furthermore, Barber had expected the mounds to be the most common feature recorded during the survey, they occurred more frequently in association with waters, especially the Uara, Nimmie and Pollen waterways. They most often occurred on the banks of creeks or on elevated sand bodies and lunettes on the edge of the relict lakes in the area. Their size also varied greatly, from only 2 m in length to nearly 160 m. The hearths were an archaeological feature that contained clay heat retainers but without association to a mound. Some of these features were loosely related while isolated clusters spread across several metres. Both the more spread-out features and the discreet and confined clusters were recorded as hearths. The 46 modified trees that were recorded included four Ring trees. Eleven of the modified trees were identified as River Red Gums (*E. camaldulensis*), while 35 were Black Box (*E. largiflorens*). A total of 46 scars were recorded including six possible rings on the four Ring trees. Only nine of these trees were recorded as dead along with four as dying, the remainder were alive (although two were 'lying down' and one had partially fallen). There were 504 stone artefacts recorded in 193 locations and were most often found in association with mounds. The erosion of these mounds had provided a good opportunity to find stone artefacts, Barber noted that the mounds likely contained more artefacts buried within. Some artefacts were also found in isolated locations far removed from other archaeological features. This could be the result of travel or could potentially represent the very temporary use of that location.

The Nimmie Caira surveys also identified that sites could remain in the landscape, even after intensive agricultural activities. For example, stone artefacts and other material such as burnt clay were recorded within irrigation bays and on channel banks. It was also found that erosion, often because of rabbit infestation, caused significant impacts to mounds, but that cultural material was still identifiable in a landscape context. The land use by Aboriginal people clearly showed widespread activity across multiple soil and vegetation units but higher ground, associated with elevated palaeochannels, lunettes, sand dunes and plains were clearly preferred. While lower lying areas such as lignum and Nitre Goosefoot wetland vegetation did contain some cultural material, it was generally in lower frequency and in smaller site areas (Barber 2015). Further survey at Nimmie Caira by NGH in 2019 recorded an additional 62 mound sites along Uara Creek. The purpose of the survey was obtaining baseline data to assist the Nari Nari Tribal Council in managing heritage locations within Nimmie Caira. The report also provided options for the longer-term management of sites (NGH 2019).

### 2.3.5 Local archaeological studies

There have been several assessments conducted in proximity to the proposed work areas which are described in detail below. Where possible the studies undertaken in proximity to the intersection of Yanga Way onto Balranald -Moulamein Road and at near the intersection of Balranald - Moulamein Road onto Arundel Road are shown in Figure 2-7.

In 2003 Edmonds (2003a) surveyed the proposed Euston Levee on behalf of the Balranald Shire Council. The background studies suggested that the bank of the river had high potential for Aboriginal objects, with modified trees noted as the most likely site type to be present. Four new sites were recorded during the survey which included three modified trees and a shell midden site. Additional modified trees were noted to be present south and west of the assessment out which were not recorded as they were located 100m or more from the levee alignment suggesting modified trees are a prevalent site type along the river and adjacent floodplain.

In 2003 Edmonds (2003b) undertook assessments, including subsurface testing, for the proposed Robinvale Bridge replacement across the Murrray River at Robinvale. The earlier surveys for this project undertaken by Edmonds had previously recorded three new sites on the NSW floodplain/riverbank and three areas of potential archaeological deposit (PAD). The PADs were all located within river terrace landforms on the floodplain. Auguring was undertaken at two of the PADs proposed to be impacted. A total of 18 holes were placed and excavated using a 50mm diameter auger. No subsurface cultural material was recovered, and

the nature of the sediment was noted to suggest that the terraces were subject to inundation on a regular basis.

In 2003, Edmonds (2003c) surveyed the proposed Balranald Levee on behalf of the Balranald Shire Council. The project area for that project was situated on the Condoulpe and Riverland land systems and ran for approximately 3.4 km along the Murrumbidgee River. The predictive model suggested that culturally modified trees, middens and camps sites were the most likely site types to be identified with the high riverbanks and the margins between the Condoulpe and Riverland land systems the most archaeologically sensitive landscapes in the study area. A total of 12 sites were recorded, including 10 modified trees and two shell middens.

Wakool Indigenous Corporation (2016a) undertook a due diligence archaeological investigation for the proposed Balranald Floating Pontoon on the northern bank of the Murrumbidgee River, near the Balranald Road Bridge, for the Balranald Shire Council. No Aboriginal sites or objects were recorded during the survey.

Wakool Indigenous Corporation (2016b) also undertook a due diligence archaeological investigation for the proposed Kyalite floating Pontoon on the northern bank of the Wakool River, near the Kyalite Road Bridge, for the Balranald Shire Council. The proposed works area covered an area approximately 20 x 30 metres along a steep slope subject to inundation during flood events. Although no Aboriginal sites or objects were recorded during the survey a known shell midden (AHIMS #is 47-8-0004) was located approximately 10 m south of the project area. The close proximity of AHIMS #is 47-8-0004 suggested the possible presence of subsurface material and it was recommended that an AHIP be granted prior to works commencing.

NGH Environmental (2016) surveyed 800 ha for the proposed Sunraysia Solar Farm near Balranald approximately 1.5 km west of the Balranald Road and Arundel Road intersection of the current assessment as shown in Figure 2-7. The survey recorded three sites comprising two clusters of burnt clay recorded as ovens and a site complex of seven stone artefacts and three hearths. They noted that the absence of scarred trees, which is another common site type in the area, was not surprising as the Proposal Areas had been cleared of native vegetation for cropping purposes and that most scarred trees occurred near permanent water sources, of which there were none. The nature of the archaeological material within this landscape suggested that Aboriginal use of the landscape was intermittent. The results of this assessment indicated that while sites can occur throughout the landscape, even in areas of highly disturbed farming activities, there is a dominance of Aboriginal cultural material recorded within the Perekertin landscape system and in relativity undisturbed landscapes in the area. The Perekertin landscape is characterised as a transitional area on the riverine plain. This project now has SSD approval.

Biosis (2017a & 2017b) undertook an ACHA for the Limondale Sun Farm in Balranald approximately 1 km west of the Balranald Road and Arundel Road intersection of the current assessment area as shown in Figure 2-7. There were five previously recorded AHIMS sites within the site boundary. The survey of the study area located a further 11 Aboriginal sites, including artefacts scatters, hearths, earth mounds and a scarred tree. Two of the Aboriginal sites also had historical objects indicating that they are post-contact sites. The Aboriginal sites recorded within the assessment area were predominantly identified on red sandy rises in disturbed (ploughed and trackways) contexts within the Murrumbidge Scalded Plain landscape. The identification of only one site within the Mallee Cliff soil landscape was expected given that this landscape was noted to have the least archaeological potential. Biosis noted that the location of sites within the study area seems to bear little correlation with their relationship to modern water sources as there was no drainage or creek lines in the study area and none of the sites were located in close proximity to water. The generally poor condition of sites within the study area was noted to be the result of the historic agricultural disturbance and land use history of the area. All stone artefacts identified during the survey were silcrete, which is a common material for the area. This project now has SSD approval.

Navin Officer Heritage Consultants Pty Ltd (NOHC) undertook an ACHA (NOHC 2022) for the Project EnergyConnect Eastern Section (PEC-East) in NSW from the Buronga substation to Wagga Wagga substation. The PEC-East project recorded 105 Aboriginal sites within the heritage survey area with an additional 11 sites previously recorded as well as identifying 45 areas of PAD. Isolated finds were the most

common site type recorded across the PEC-East project followed by artefact scatters, modified trees, hearths with few mounds, middens and sites with multiple features. Sites were most commonly recorded on alluvial plains and flat plains and were identified near or across high order perennial watercourses. Three areas of PAD were identified in proximity or within the Junction Rivers Wind Project Area. PEC-E-PAD05 is within the northern portion of the Junction Rivers Wind Project Area. Test excavation within this PAD recovered no stone artefacts or cultural material and this area was subsequently found to not be a PAD and NOHC argued that Condolupe Creek was not a focus of past Aboriginal land use (NOHC 2022:129). The other two PADs one to the west and one to the east of the Junction Rivers Wind Project Area similarly had no stone artefacts or cultural material recovered and were found to not be PAD. None of the previously recorded PADs were within and/or directly adjacent to any of the four intersection upgrade areas being assessed in this report. The portion of the PEC-East project alignment near the Junction Rivers Wind Project is shown in Figure 2-7.

NGH Pty Ltd (2021) undertook a due diligence assessment for two proposed met mast locations on behalf of Windlab within the boundary of the Junction Rivers Wind Project Area (Location 1 [Lat: -34.8139, Lon: 143.5613], Location 2 [Lat: -34.8772, Lon: 143.6451]). The two met mast locations (see Figure 2-7) inspected were found to be highly disturbed, predominantly from extensive agricultural cultivation. However, a single silcrete stone artefact was identified on the upper slope of a sandy rise. The due diligence assessment refers to this site as Burrawong 1. Harm was avoided to the place through redesign of the met mast location and the installation of a no-go zone around this site to ensure no inadvertent harm.

NGH Pty Ltd (2022) undertook a due diligence assessment for 15 test pit and eight bore hole locations for geotechnical investigations for the proposed Junction Rivers Wind Project (see Figure 2-7). The survey for the due diligence was undertaken at the same time as the survey undertaken for this ACHA in March 2022. Visibility was approximately 99% across the proposed locations for the geotechnical investigations. These areas were found to be highly disturbed, predominantly from extensive agricultural cultivation. Despite the high levels of disturbance, two stone artefact scatters (Burrawong AFT 1 and Burrawong AFT 2) and five isolated stone artefacts (Burrawong 2, Burrawong 3, Burrawong 4, Burrawong 5. Burrawong 6) were identified. Secondary locations were proposed for geotechnical investigations to avoid harm to the identified sites.

NGH Pty Ltd (2024a) completed an ACHA for the Junction Rivers Wind Project, which includes a portion of the works areas at the intersection of the Balranald-Moulamein Road and Arundel Road, Kyalite as shown in Figure 2-7. This assessment was also adjacent to the proposed works at the intersection of Yanga Way and the Balranald-Moulamein Road, Yanga. During the survey undertaken for the Junction Rivers Wind Project ACHA the following archaeological features and cultural sites were recorded by NGH: stone artefacts, hearths, oven mounds and tree cultural sites. A summary of the Aboriginal site types and cultural sites recorded during the field survey are provided in the table below. Most of the stone artefacts recorded during the Junction Rivers Wind Project ACHA were manufactured from silcrete which is a common material for the area followed by quartz and quartzite artefacts with a lesser number of sandstone, fine-grained silicious material, volcanic material, chert and granite. The majority of stone artefacts identified during the survey were flaked pieces and flakes followed by lesser number of broken flakes, cores, grindstone fragments, hammerstones, manuports, blades, and an axe, a muller and a pestle.

Based on the site types, archaeological features and cultural sites recorded during the assessment (see Table 2-10), it was noted by NGH (2024a) that it is likely that the area as a whole was used intermittently over long periods of time for camping while water remained in the landscape, as indicated by the presence of hearths, mounds and stone artefacts. Sites that consist of both hearths/mounds and stone artefacts indicate that camping, cooking and tool manufacturing activities were undertaken in these areas. Looking at the spatial distribution of these features and the landforms within the Project Area it was noted by NGH that the hearth and earth mound features tend to be focused along the outer boundaries of black box swamps and depression areas which in the past would have been desirable locations for camping. Furthermore, the majority of the sites with stone artefacts are located in slightly elevated areas of red gravely sands rather than in the low lying grey cracking clays of the flood plains. The tree cultural sites recorded were generally noted

to be located in association with Black Box depressions and areas of remnant vegetation. It was noted by NGH (2024a) that the Aboriginal cultural material recorded within the Junction Rivers Wind Project ACHA Project Area is reflective of the use of the area by small family groups on multiple occasions as they moved through the landscape exploiting the increased range of available resources associated with the prolonged presence of water after annual flooding. The spatial analysis of the sites recorded clearly shows that sites with multiples features and/or a density of cultural material recorded tended to be focused along the outer boundaries of black box swamps, depression areas and paleochannels, thus confirming the modelling of the area and that access to resources, in particular water, were favourable locations utilised for camping.

Table 2-10: Site types recorded during NGH (2024a) survey for the Junction Rivers Wind Project ACHA.

| Site Type | Number | % |
|---|---|---|
| Isolated finds | 37 | 46.25 |
| Tree cultural site | 24 | 30 |
| Hearths | 9 | 11.25 |
| Artefact scatter | 5 | 6.25 |
| Hearth and mound | 2 | 2.5 |
| Hearth and Artefact | 2 | 2.5 |
| Artefact Scatter, Hearth and mound | 1 | 1.25 |
| **Total** | **80** | **100** |

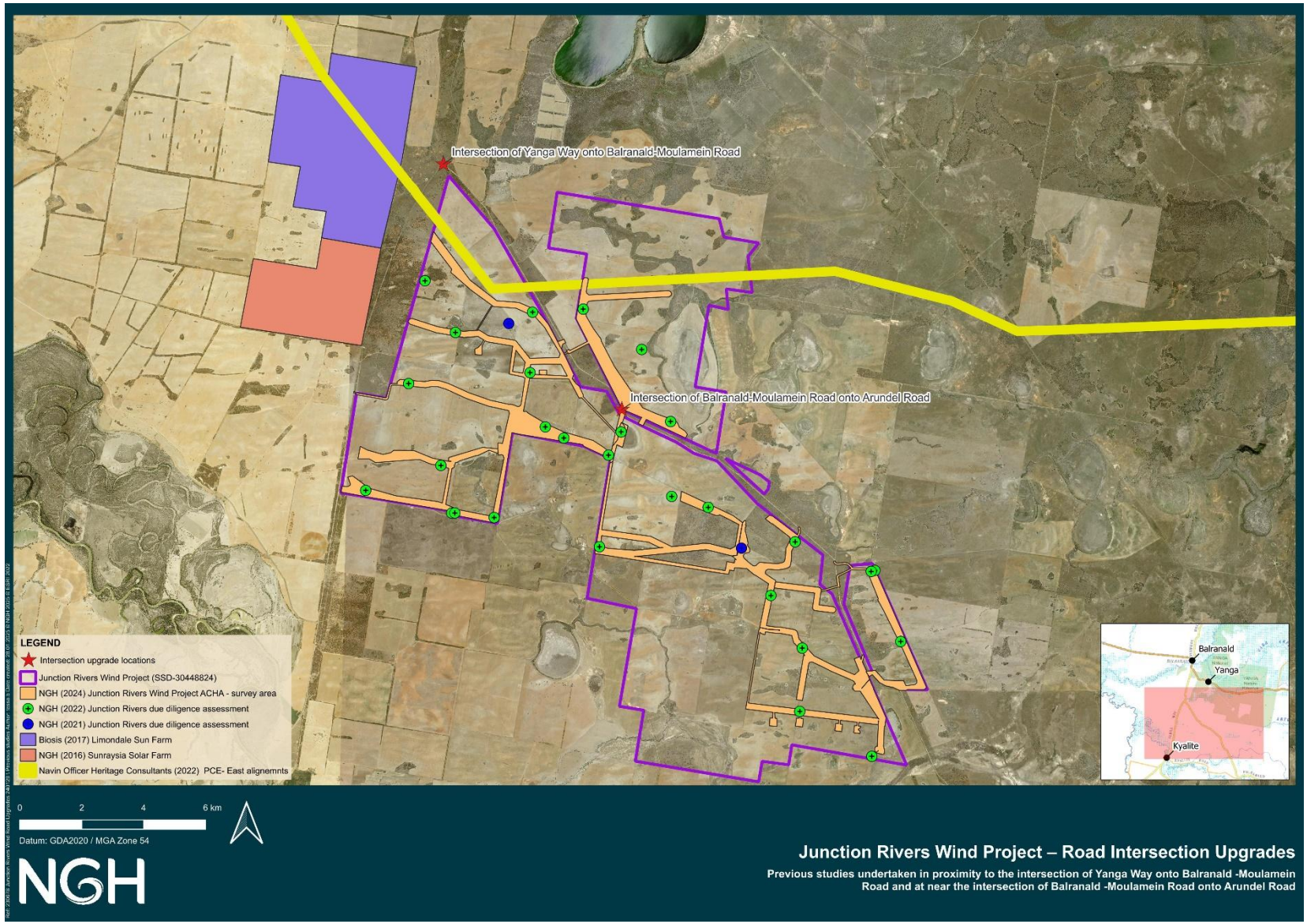



Figure 2-7 Previous studies undertaken in proximity to the intersection of Yanga Way onto Balranald -Moulamein Road and at near the intersection of Balranald -Moulamein Road onto Arundel Road.

### 2.3.6 Summary of archaeological context and site location model

Based upon the desktop assessment, using satellite imagery, google earth street view, topographic data and previous archaeological studies, it appears that there is low potential for Aboriginal objects to occur within any of the four intersection road upgrade areas given the historic use and disturbances of each area during the initial construction and subsequent ongoing maintenance of these roads and their associated infrastructure and table drains.

Regardless, a number of site types have been recorded in the wider region which include modified trees, artefacts scatters, isolated stone artefacts, hearths, mounds and burials. In particular across the Balranald region, elevated red sandy areas within a markedly flat landscape are considered to likely contain Aboriginal sites. Paleochannels, relict lake and lunette features and areas on the margins of wetlands and black box drainage depressions, including where stands of trees are present are also known to contain sites. Additionally, any old growth mature native trees have the potential to have been culturally modified. It is considered that while as a whole the wider Balranald region would have provided resources, shelter, water and food for Aboriginal people any slightly elevated red sandy raised areas (which are considered micro topographic features within a markedly flat landscape) in proximity to water sources have a higher potential to contain cultural material. It is also however reasonable to expect that Aboriginal people ventured away from these resources to utilise the broader landscape, but the current archaeological record of that activity is limited.

Considering the predictive modelling and known sites within the region, the site types most likely to occur within the four intersection road upgrade areas are Aboriginal stone artefacts (in low densities and/or as isolated finds) and scarred trees (on mature native tree). However, consideration of the past land use and the disturbance of each of the proposed work areas must be considered when assessing the potential for such sites to remain. An outline of predicted Aboriginal objects within the four activity areas assessed in this report is provided in Table 2-11 below.

Table 2-11 Aboriginal site prediction statements

| Site type | Site description | Potential |
|---|---|---|
| Modified trees | Trees that have undergone cultural modification. These require the presence of mature native trees and are likely to be concentrated along major waterways and around swamps or depression areas. | Potential to occur within areas where there are remnant mature native trees, and dead or fallen mature trees. While there are patches of remnant vegetation within and adjacent to the intersection upgrade areas this tends to be young or new vegetation. However, several mature native trees are present within the proposed works at the intersection of Sturt Highway (Corner of 49 Court Street, Balranald Hospital Lot) in the township of Balranald. However, this feature is unlikely to occur at the intersection of Sturt Highway (Corner of 49 Court Street, Balranald Hospital Lot) in the township of Balranald as and these trees appear to be part of deliberate street tree planting (as evident in the 1955 aerial images of the area). |

| Site type | Site description | Potential |
|---|---|---|
| Isolated artefacts | These sites consist of a single artefact and can occur anywhere. As Aboriginal people traversed the entire landscape for thousands of years, such finds can occur anywhere and indicate the presence of isolated activity, dropped or discarded artefacts from hunting or gathering expeditions or the ephemeral presence of short-term camps. | Low potential to occur due to the significant ground disturbance which has occurred during the construction and maintenance of the existing roads. Given the disturbance of all four proposed work areas any isolated finds would likely be displaced and not located in their original context. |
| Stone artefacts scatters | Artefact scatter sites can range from high-density concentrations through to sites containing two artefacts. The size of these sites usually correlates with proximity to sources of fresh water. Representing camp sites or flaking and maintenance activity can occur across the landscape, usually in association with some form of resource or landscape. Water bodies, such as rivers, ephemeral creeks or clay pans can also be a focus of Aboriginal occupation. | Low potential to occur due to significant ground disturbance which has occurred during the construction and maintenance of the existing roads. Given the disturbance of all four proposed work areas any remnant low density scatters would likely be displaced and not located in their original context. |
| Hearths/Ovens | Are identified by burnt clay used for heat retainers. Some are recorded in the district in association with resource locations. However, they could occur either independently or in association with other Aboriginal cultural features such as artefact scatters. Hearths are generally considered to be limited, one-off use or reused but few times and are smaller concentrations. Ovens are considered to represent larger features, often extending over a larger area and can include other material such as bone. | Similar sites have been recorded within region however they tend to be adjacent to major water sources. Given that only the proposed works at the intersection of Sturt Highway (Corner of 49 Court Street, Balranald Hospital Lot) in the township of Balranald is located near a major water source and in consideration of the existing disturbances of the areas this site type if considered unlikely to occur. |
| Mounds | Are accumulations of heat retainer ovens that have built up over time. They are typically round or oval in shape and range in length from just a few metres to over 100 m and range in height from 0.1 m to 2 m. They are identified by the presence of baked clay heat retainers, which have usually been brought to the location from a nearby source of natural clay such as a lakebed, swamp or drainage line. | Mounds are generally found in proximity to wetland areas such as lakes, swamps and creeks, often elevated above these areas by being situated on sandy rises, lunettes, source bordering dunes and paleochannels. Mounds are likely to contain a range of other archaeological features such as bone, shell, stone artefacts and burials. This feature has been recorded in the region however given the existing distance of the areas during the construction and maintenance of the existing roads such site are unlikely to occur. |

| Site type | Site description | Potential |
|---|---|---|
| Burial | Ancestral Aboriginal burials are generally found in elevated sandy contexts or in association with rivers and major creeks. | Very unlikely to occur due to historic disturbances as well as the absence of sand dune landforms within any of the four proposed work areas. |
| Potential Archaeological Deposits (PADs) | Potential subsurface deposits of archaeological material | PADs have potential to occur in areas that are likely to have reasonable subsurface deposits in archeologically sensitivity landforms. This feature has been recorded in the region however given the existing distance of the areas during the construction and maintenance of the existing roads this site type is unlikely to occur. |

### 2.3.7 Limits on information

With regard to the limitations of the information available, archaeologists rely on Aboriginal parties to divulge information about specific places with cultural or spiritual significance in situations where non archaeological or intangible values may be threatened by development. To date, we have not been told of any such specific places within the four intersection road upgrade areas. There is always the potential for such places to exist but insofar as the current proposal is concerned, no such specific places or values have been identified to date.

# 3. Aboriginal community consultation

The consultation for this addendum ACHA was continued with the registered Aboriginal stakeholders for the Junction Rivers Wind Project. The consultation with Aboriginal stakeholders for this project was undertaken in accordance with Section 60 of the *National Parks and Wildlife Amendment (Aboriginal Objects and Aboriginal Places) Regulation 2019* and following the process outlined in the *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010* (ACHCRP). For details of the previously undertaken consultation the ACHA for the Project (NGH 2024a).

The Registered Aboriginal Parties for the Project are:

- Bangerang Aboriginal Corporation
- John Jackson
- Yarkuwa Indigenous Knowledge Centre
- Pappin Family Aboriginal Corporation
- Wakool Indigenous Corporation
- Balranald Local Aboriginal Land Council (LALC)

On 28th March 2024 an email with a Project update and notification that an assessment, proposed to be a desktop due diligence assessment, was required for a few minor intersection upgrades which may be required within NSW to facilitate the safe turning of heavy vehicles during the proposed construction phase of the Project was sent to RAPs. The email advised that a copy of the assessment once complete would be provided for review and comment. No responses were received about the proposed due diligence for the road upgrade areas or the desktop methodology proposed.

The due diligence report for the road intersection upgrades (NGH 2024b) was sent to the RAPs on the 29th April 2024 by email requesting comments. The accompanying email provided the following details: the desktop assessment report concluded that the four intersection work areas can proceed with caution within the area assessed, that the works must occur in accordance with the approval of the Junction Rivers Wind Project and follow all relevant Conditions of Consent and that if any items suspected of being Aboriginal in origin are discovered during the intersection works the unexpected finds procedure must be followed. It was noted that the report will form supporting documentation for the proposed road intersection upgrade areas within NSW for this Project. No comments were received on the report or its recommendation from any of the RAPs. The only response received was from a RAP asking about progress for the Junction Rivers Wind Farm project and when fieldwork for salvage would be, which NGH replied that this would take place after Project approval.

A project update to ensure continued consultation for the Junction Rivers Wind Farm was sent to all RAPs by the Proponent on the 7th November 2024.

In consultation with Heritage NSW, it was determined that the assessment provided in the Aboriginal Heritage Due Diligence report (NGH 2024b) would be converted into the format of an addendum ACHA to ensure compliance with the code and guidelines noted for the assessment of Aboriginal heritage in the SEARs for the Project. Notification of the addendum ACHA based on the Aboriginal Heritage Due Diligence report (NGH 2024b) for the road upgrades was sent by email to the RAPs in February 2025.

For details of the previously undertaken consultation see the ACHA (NGH 2024a). A summary of actions carried out for the current addendum ACHA and Aboriginal Heritage Due Diligence report is detailed below with the consultation log for this report provided in Appendix A. It should be noted that consultation for the Project is deemed continuous based on Heritage NSW's policy in that contact with the RAPs throughout the ACHA and this Addendum has not exceeded six months.

# 4. Archaeological investigation results

Based on the proposed scale of works, level of disturbance and generally accepted poor visibility within the road reserve of the four road upgrade areas, it was determined that a desktop assessment was an appropriate level of assessment in this instance for these proposed intersection works. The assessment process for the addendum ACHA was a desktop exercise, using available information such as the AHIMS search results and relevant archaeological reports to develop or refine a model of Aboriginal site prediction based on the type of activity proposed and the level of disturbance of the area. To supplement the assessment satellite imagery, google earth street view, topographic data, the review of the archaeological context and the environmental location and photos of these areas were reviewed.

Each of the proposed four intersection upgrade work areas/ blade swept path areas is highly disturbed by the previous construction and ongoing maintenance of the roads and associated table drains. Plate 4-1 to Plate 4-8 show the images of each works area which has been sourced from google earth street view. These images clearly show the high levels of disturbance present within each of the road areas which require works which justifies this as being a desktop assessment rather than requiring further pedestrian survey. Plate 4-9 to Plate 4-16 also show photos of each of these locations.

The review identified that no old growth native trees suitable for bark extraction are present within any of the three proposed intersection upgrade work areas, with the only exception to this being the more modern planted trees along the Sturt Highway in the township of Balranald (as evident in the 1955 aerial images of the area).

The review of the works associated with the Murray Valley Highway and Sturt Highway revealed an area of generally low archaeological potential and a history of disturbance including the presence of multiple underground services. This area is considered to have very low archaeological potential.

While the proposed works at the intersection of Sturt Highway (corner of 49 Court Street, Balranald Hospital Lot) in the township of Balranald are within 200m of the Murrumbidgee River, based on current evidence and available imagery, as well as noting that underground services are within the road reserve and adjacent private property it was concluded that there is negligible potential for Aboriginal objects and/or subsurface archaeological deposits to be present given the level of disturbance.

The majority of the proposed works area at the intersection of Yanga Way and the Balranald-Moulamein Road adjacent to the location of the Junction Rivers Wind Project (SSD-30448824) was previously subject to vehicle survey by NGH archaeologists and RAPs during the fieldwork conducted for the Junction Rivers Wind Project ACHA (NGH 2024a) which revealed an area to be of low archaeological potential and subject to a history of disturbance. This area is considered to have very low archaeological potential.

The majority of the proposed works area at the intersection of the Balranald-Moulamein Road and Arundel Road adjacent to the location of the Junction Rivers Wind Project (SSD-30448824) was previously subject to vehicle survey by NGH archaeologists and RAPs during the fieldwork conducted for the Junction Rivers Wind Project ACHA (NGH 2024a), with no Aboriginal objects or areas of potential archaeological deposit were recorded within and/or in proximity to this proposed intersection upgrade work area/ blade swept path areas.

No known Aboriginal objects or areas of potential archaeological deposit (PAD) are within and/or in proximity to these proposed work areas. It was determined that the proposed intersection upgrade/ blade swept path work areas have negligible potential for Aboriginal objects to occur at each of the four locations due to the level of existing disturbance.


Plate 4-1 View northwest along Balranald Road at the intersection of Arundel Road (from Google Earth Street view).


Plate 4-2 View southeast along Balranald Road towards the intersection of Arundel Road (from Google Earth Street view).


Plate 4-3 View south along Yanga Way towards the intersection with the Balranald-Moulamein Road (from Google Earth Street view).


Plate 4-4 View west along Balranald-Moulamein Road at its intersection with Yanga Way (from Google Earth Street view).


Plate 4-5 View south of the Sturt Highway towards the intersection with the Murray Valley Highway (from Google Earth Street view).


Plate 4-6 View west along the Murray Valley Highway towards the intersection with the Sturt Highway (from Google Earth Street view).


Plate 4-7 View north from the southern boundary of the intersection of Sturt Highway (corner of 49 Court Street) in the township of Balranald (from Google Earth Street view).


Plate 4-8 View east at the northern intersection of Sturt Highway towards the Balranald Hospital Lot in the township of Balranald (from Google Earth Street view).

Plate 4-9 View of the intersection of Murray Valley Highway and Sturt Highway, Euston (NGH ecology team photo). Note services.

Plate 4-10 View of the intersection of Murray Valley Highway and Sturt Highway, Euston (NGH ecology team photo). Note services.

Plate 4-11 View of the intersection of Murray Valley Highway and Sturt Highway, Euston (NGH ecology team photo).

Plate 4-12 View of the intersection of Murray Valley Highway and Sturt Highway, Euston (NGH ecology team photo).

Plate 4-13 View of the intersection of Sturt Highway in the township of Balranald (NGH ecology team photo). Note planted trees.

Plate 4-14 View of the intersection of Sturt Highway in the township of Balranald (NGH ecology team photo). Note planted trees.

Plate 4-15 View of intersection of the Balranald-Moulamein Road and Arundel Road (Rex J Andrews 2024.

Plate 4-16 View of the intersetcion of Yanga Way onto Balranald-Moulamein Road (Rex J Andrews 2024).

# 5. Cultural heritage values and statement of significance

## 5.1 Assessment criteria

The assessment of the significance of Aboriginal archaeological sites is currently undertaken largely with reference to criteria outlined in the ICOMOS Burra Charter (Australia ICOMOS Burra Charter, 2013). Criteria used for assessment are:

- ***Social or Cultural Value***: In the context of an Aboriginal heritage assessment, this value refers to the significance placed on a site or place by the local Aboriginal community –either in a contemporary or traditional setting.
- ***Scientific Value***: Scientific value is the term employed to describe the potential of a site or place to answer research questions. In making an assessment of scientific value issues such as representativeness, rarity and integrity are addressed. All archaeological places possess a degree of scientific value in that they contribute to understanding the distribution of evidence of past activities of people in the landscape. For example, flaked stone artefact scatters, larger sites or those with more complex assemblages are more likely to be able to address questions about past economy and technology, giving them greater significance than smaller, less complex sites. Sites with stratified and potentially in situ sub-surface deposits, such as those found within rock shelters or depositional open environments, could address questions about the sequence and timing of past Aboriginal activity, and will be more significant than disturbed or deflated sites. Groups or complexes of sites that can be related to each other spatially or through time are generally of higher value than single sites.
- ***Aesthetic Value***: Aesthetic values include those related to sensory perception and are not commonly identified as a principal value contributing to management priorities for Aboriginal archaeological sites, except for art sites.
- ***Historic Value***: Historic value refers to a site or places ability to contribute information on an important historic event, phase or person.
- ***Other Values***: The Burra Charter makes allowance for the incorporation of other values into an assessment where such values are not covered by those listed above. Such values might include Educational Value.

All sites or places have some degree of value, but of course, some have more than others. In addition, where a site is deemed to be significant, it may be so on different levels or contexts ranging from local to regional to national, or in very rare cases, international. Further, sites may either be assessed individually, or where they occur in association with other sites the value of the complex should be considered.

## 5.2 Significance assessment

### 5.2.1 Social or cultural value

While the true cultural and social value of Aboriginal sites can only be determined by local Aboriginal people, as a general concept, all sites hold cultural value to the local Aboriginal community.

### 5.2.2 Scientific (archaeological) value

Given that there are no known Aboriginal sites or area of PAD within the intersection road upgrade areas there are no scientific values to evaluate. In the unlikely event that unexpected finds are encountered during works, they would be located within disturbed contexts and therefore would not provide any further

contextual information about Aboriginal occupation of the area other than their existence within the landscape.

### 5.2.3 Aesthetic value

The modified and heavily disturbed landscape of the road reserves at these work locations detracts from any aesthetic values that may exist within this landscape. There are no aesthetic values.

### Historic value

There are no known historic values associated with the Project Area.

### Other values

There are no other known heritage values associated with the Project Area.

### 5.2.4 Statement of significance

There are no known scientific, aesthetic, historic or other values associated with the three road upgrade areas.

There are no specific cultural values known with regards to the intersection road upgrade areas assessed in this report.

# 6. Impact assessment and mitigation of harm

## 6.1 Proposed development activity

The proposed work to be undertaken for the road intersection upgrades/ blade swept path locations at four locations in NSW to facilitate the safe haulage of material and movement of oversize and over mass vehicles along the transportation route associated with the Junction Rivers Wind Project will involve, but not be limited to the following:

- The construction of large road hardstands to facilitate the required either right hand or left hand turn.
- Vegetation removal and/or trimming.
- New road alignment and markings.
- Establishment of gravel road foundations.
- Bitumen sealing.
- Drainage and erosion control.
- Temporary stockpile and laydown areas.

These activities would require the use of heavy machinery and would cause significant ground disturbance.

## 6.2 Assessment of harm

No Aboriginal archaeological sites are known to be located within or directly adjacent to any of the road intersection upgrade areas assessed in this addendum ACHA. Therefore, the assessment of harm for these works are nil.

## 6.3 Impacts to Values

The values potentially impacted by the development of the proposed four intersection road upgrade areas are any social and cultural values attributed to the area by the local Aboriginal community.

As described in this report, no Aboriginal archaeological sites are known to be located within the four intersection road upgrade areas and no cultural values have been identified to date by local Aboriginal community for these areas. Therefore, the impact to the Aboriginal Heritage values for these road upgrade works are nil. No values have been identified that would be affected by the development of the four intersection road upgrade areas.

## 6.4 Measures to avoid harm

Based on this assessment it is not considered necessary to prevent development at any of the four intersection road upgrade areas assessed in this report as there are no known Aboriginal objects present within or directly adjacent these locations. All these locations are noted to have been subject to significant historical disturbance through the construction and maintenance of the existing sealed roads.

## 6.5 Mitigation of harm

Mitigation can be in the form of minimising harm, through slight changes in the development plan or through direct management measures of Aboriginal objects. As there are no known Aboriginal objects or sites within or directly adjacent to the four intersection road upgrade areas and therefore mitigation is not warranted.

An unexpected finds procedure for Aboriginal objects should be developed as part of the Cultural Heritage Management Plan (CHMP) for the Project, to deal the inadvertent discovery of Aboriginal objects.

## 6.6 Consideration of ESD principles

The consideration of the principles of Ecologically Sustainable Development (ESD) and the use of the precautionary principle was not required to be undertaken when assessing the harm to sites and the potential for mitigating impacts on Aboriginal heritage within the four intersection road upgrade areas for the Project which are assessed in this addendum ACHA as no Aboriginal sites, areas of potential for cultural deposits or cultural values were identified. We therefore argue that the overall cumulative impact on the archaeological record for the region for these four intersection road upgrade areas is considered likely to be nil given that no Aboriginal sites or cultural values were identified.

# 7. Recommendations

The recommendations are based on the following information and considerations:

- Results of the previous archaeological assessment of the Project Area (NGH 2024a, NGH 2024b);
- Consideration of results from other local archaeological studies;
- Results of the continued consultation with the registered Aboriginal parties;
- Land use and disturbance assessment;
- Appraisal of the proposed development, and
- Legislative context for the development proposal.

It is recommended that:

1. As no known Aboriginal objects are located within the four road intersection upgrade areas (all of which were assessed to have negligible potential for subsurface cultural deposits), further investigation for Aboriginal heritage is not warranted at the areas assessed in this report.
2. All works must be limited to the areas assessed by this document. Any activity proposed outside of the current assessment area will also be required to be subject to an Aboriginal heritage assessment.
3. When the intersection works are commenced in accordance with the approval of the Junction Rivers Wind Project (SSD-30448824) all relevant Conditions of Consent for the Project must be followed, including for the approved transportation route.
4. If any items suspected of being Aboriginal in origin are discovered during the work, all work in the immediate vicinity must stop and the unexpected finds procedure for Aboriginal objects for the SSD Project must be followed.

All Aboriginal objects and places in NSW are protected under the *National Parks and Wildlife Act.* It is an offence to disturb an Aboriginal object or site without appropriate consent.

# 8. References

Australian ICOMOS Incorporated, 2013. T*he Burra Charter: The Australia ICOMOS Charter for Places of Cultural Significanc*e, *2013.*

Barber, M 2015, *Nimmie-Caira Aboriginal Cultural Heritage Survey*, Unpublished report to the NSW Department of Trade and Investment, Regional Infrastructure and Services.

Biosis 2017a. Limondale sun farming project, NSW Aboriginal cultural heritage assessment report. Report for Overland Sun Farming Company. Authors: A. Atkinson, R. Morris & M. Smith, Biosis Pty Ltd, Wollongong. Project no. 23049.

Biosis 2017b. Balranald sun farming project, NSW archaeological report. Report for Overland Sun Farming Company. Authors: A. Atkinson, R. Morris & M. Smith, Biosis Pty Ltd, Wollongong. Project no. 23049.

Bowler, J. and A. Thorne 1976 Human remains from Lake Mungo: discovery and excavation of Lake Mungo III. In Kirk and Thorne (eds) The Origins of the Australians, pp. 127-138. Australian Institute of Aboriginal Studies: Canberra.

Clarkson, C., Jacobs, Z., Marwick, B., Fullagar, R., Wallis, L., Smith, M., Roberts, R.G., Hayes, E., Lowe, K., Carah, X. and Florin, S.A., 2017. Human occupation of northern Australia by 65,000 years ago. Nature, 547(7663), pp.306-310.

DECC 2002, *Descriptions for NSW (Mitchell) Landscapes: Based on Descriptions compiled by Dr. Peter Mitchell*, NSW National Parks and Wildlife Service, A Report prepared for the Department of Environment and Climate Change.

DECCW. (2010). *Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW.* Retrieved from https://www.environment.nsw.gov.au/research-and-publications/publications-search/code-of-practice-for-archaeological-investigation-of-aboriginal-objects-in-nsw

DECCW. (2010). *Due Diligence Guidelines for the Protection of Aboriginal Objects in NSW.* DECCW. Retrieved from https://www.environment.nsw.gov.au/research-and-publications/publications-search/due-diligence-code-of-practice-for-the-protection-of-aboriginal-objects-in-new-south-wales

DE&E 2016, 'Interim Biogeographic Regionalisation for Australia (IBRA), Version 7 (Subregions)'.

Edmonds, V. 1997 An Archaeological survey of a Proposed Gypsum Mine on Binbinette Station, Northwest of Moulamein, Western NSW. Report prepared for Northern Gypsum, Kerang.

Edmond 2003a Cultural Heritage Assessment for the Euston Levee, Western NSW. Unpublished report for SKM on behalf of Balranald Council.

Edmond 2003b Subsurface testing Robinvale Bridge Replacement, NSW Floodplain, near Euston. Unpublished report for TfNSW.

Edmond 2003c Cultural Heritage Assessment for the Balranald Levee, Western NSW. Report prepared for Balranald Shire Council.

Hiscock, P 2007, *Archaeology of ancient Australia*, Routledge.

Martin, S. 2006 Inscribing the Plains: Constructed Conceptualised and Socialised Landscapes of the Hay Plain, Southeastern Australia. Unpublished PhD thesis, University of New England, Armidale.

Martin, S. 2010 Archaeological Research, Characterisation and Predictive Modelling Project. Part of the Recording of Aboriginal Use and Values on the Lowbidgee and Lower Lachlan Rivers Wetlands Under the NSW Rivers Environmental Restoration Program (RERP). Report to Department of Environment Climate Change and Water.

NGH Environmental 2016, *Aboriginal Cultural Heritage Assessment Balranald Solar Farm*, Consulting report to Maoneng Australia Pty Ltd.

NGH Environmental 2019 Aboriginal Cultural Heritage Summary report: Nimmie Caira. Unpublished report for the Nari Nari Tribal Council.

NGH Pty Ltd 2021, *Burrawong Met Mast Due Diligence Assessment.* Unpublished Report to WindLab Developments Pty Ltd.

NGH Pty Ltd 2022, Burrawong Wind Farm Geotechnical Investigations Aboriginal Heritage Due Diligence Assessment, Unpublished Report for WindLab Developments Pty Ltd.

NGH Pty Ltd 2024a. Aboriginal Cultural Heritage Assessment Report - Junction Rivers Wind Project. Report for Windlab Developments Pty Ltd.

NGH Pty Ltd 2024b. Aboriginal Heritage Due Diligence Assessment - Junction Rivers Wind Project – Road Intersection Upgrades. Report for Windlab Developments Pty Ltd.

Niche 2012 Atlas- Campaspe Mineral Sands Project Aboriginal and Non-Aboriginal Cultural Heritage Assessment. Report prepared for Cristal Mining Australia Limited.

Niche 2015 Balranald Minerals Sands Project Aboriginal Cultural Heritage Assessment. Report prepared for Iluka Resources Limited.

NOHC, 2022. Revised Aboriginal Cultural Heritage Assessment Report – EnergyConnect (NSW-Eastern Section) Buronga to Wagga Wagga, NSW. Report to WSP Australia Pty Ltd for Transgrid.

NSW Government. (2019). *National Parks and Wildlife Regulation 2019.* Retrieved from https://legislation.nsw.gov.au/view/html/inforce/current/sl-2019-0408

OEH. 24 April 2009. Due Diligence guidelines for protection of Aboriginal objects in NSW. Accessed online.

OEH, 2010. NPWS Act 1974. *Fact Sheet 1*. September 2010.

OEH 2010. NPWS Act 1974. *Fact sheet 2*. September 2010.

Pardoe, C. and Martin, S. 2001 Murrumbidgee Province Aboriginal Cultural Heritage Study. AACAI Monograph No. 4.

Rex J Andrews 2024 ROUTE STUDY: Junction Rivers Wind Farm (OPT B), EX PORT ADELAIDE.

Simmons, S. 1980 Site survey of the floodplains between the Murray and Wakool Rivers, NSW. Records of the Victorian Archaeological survey 10: 57-86

Tumney, J. 2011 Environment, landscape and stone technology at Lake Mungo, southwest New South Wales, Australia. Unpublished PHD La Trobe University.

Wakool Indigenous Corporation 2016a, *Balranald Floating Pontoon Due Diligence/ Report prepared for Balranald Shire Council.*

Wakool Indigenous Corporation 2016b Kyalite Floating Pontoon Due Diligence. Report prepared for Balranald Shire Council.

# Appendix A Consultation log and documentation

**Redacted – available on request to Heritage NSW**

**NGH Pty Ltd**

NSW • ACT • QLD • VIC

ABN 31 124 444 622  ACN 124 444 622

E: ngh@nghconsulting.com.au

**GOLD COAST**

2B 34 Tallebudgera Creek Road
Burleigh Heads QLD 4220

T. (07) 3129 7633

**SYDNEY REGION**

Unit 17, 21 Mary Street
Surry Hills NSW 2010

T. (02) 8202 8333

**BEGA**

Suite 11, 89-91 Auckland Street
(PO Box 470)
Bega NSW 2550

T. (02) 6492 8333

**MELBOURNE**

Level 14, 10-16 Queen Street
Melbourne VIC 3000

T: (03) 7031 9123

**TOWNSVILLE**

Level 4, 67-75 Denham Street
Townsville QLD 4810

T. (07) 4410 9000

**BRISBANE**

T3, Level 7, 348 Edward Street
Brisbane QLD 4000

T. (07) 3129 7633

**NEWCASTLE - HUNTER & NORTH COAST**

Level 1, 31-33 Beaumont Street
Hamilton NSW 2303

T. (02) 4929 2301

**WAGGA WAGGA - RIVERINA & WESTERN NSW**

35 Kincaid Street (PO Box 5464)
Wagga Wagga NSW 2650

T. (02) 6971 9696

**CANBERRA**

Unit 8, 27 Yallourn Street
(PO Box 62)
Fyshwick ACT 2609

T. (02) 6280 5053

**SUNSHINE COAST**

Building 1, 30 Chancellor Village Boulevard
Sippy Downs  QLD  4556

T:  13 54 93

**WODONGA**

Unit 2, 83 Hume Street
(PO Box 506)
Wodonga VIC 3690

T. (02) 6067 2533