

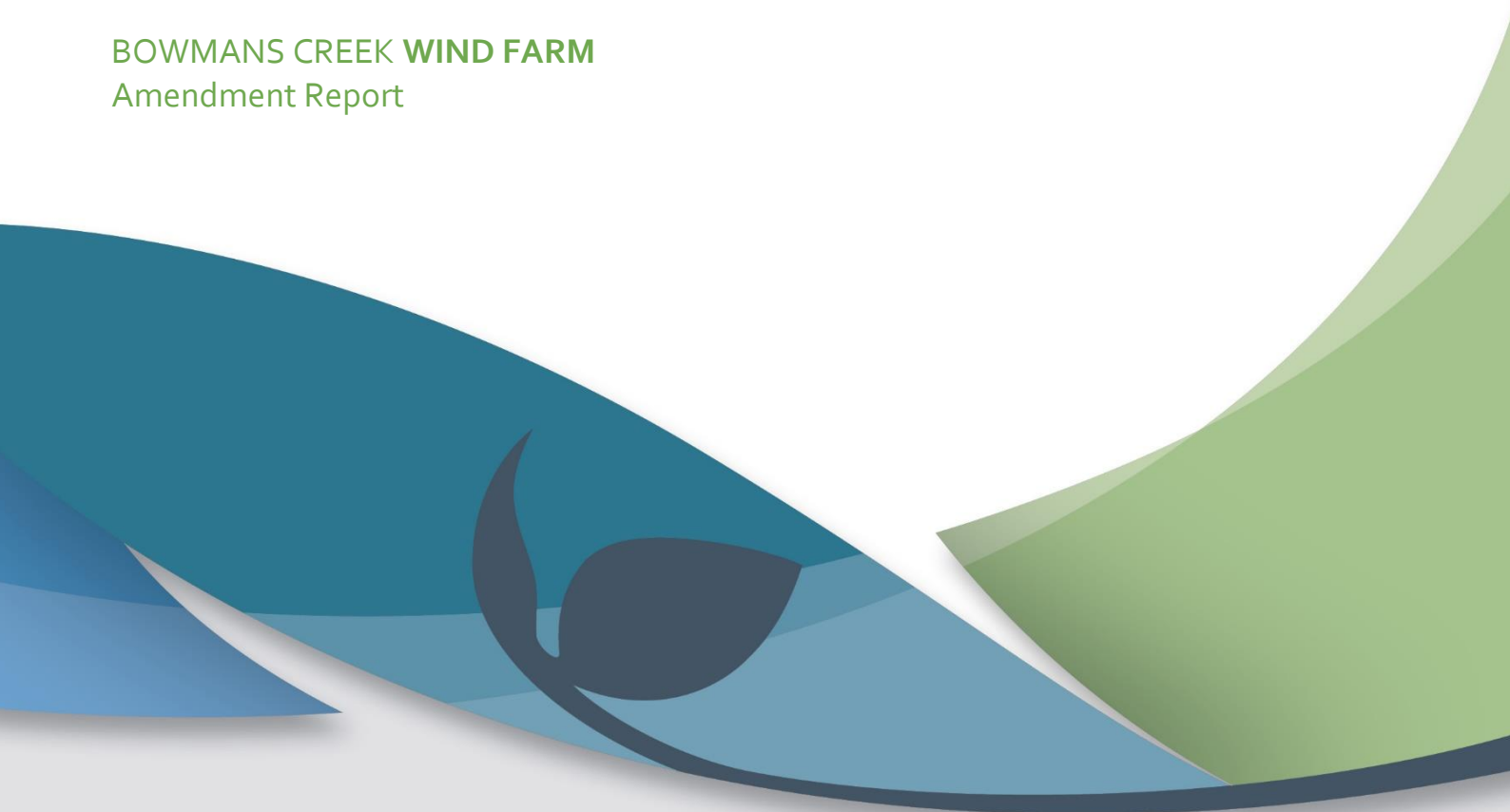
**APPENDIX D4**

**ABORIGINAL CULTURAL HERITAGE**

**ASSESSMENT REPORT**

**– TECHNICAL APPENDIX**

**BOWMANS CREEK WIND FARM**  
Amendment Report





View of the landscape near the proposed substation.

## **APPENDIX TECHNICAL REPORT: ACHAR**

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### **BOWMANS CREEK WIND FARM AMENDED PROJECT**

BOWMANS CREEK, NSW

SEPTEMBER 2021

Report prepared by  
OzArk Environment & Heritage  
for James Bailey & Associates  
on behalf of  
Epuron Projects Pty Ltd



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### **Acknowledgement**

OzArk acknowledge Traditional Owners of the area on which this assessment took place and pay respect to their beliefs, cultural heritage, and continuing connection with the land. We also acknowledge and pay respect to the post-contact experiences of Aboriginal people with attachment to the area and to the elders, past and present, as the next generation of role models and vessels for memories, traditions, culture and hopes of local Aboriginal people.

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# 1 INTRODUCTION

## 1.1 OVERALL MANAGEMENT OF ABORIGINAL OBJECTS

**Table 1-1** summarises the management recommendations of all sites discussed in the *Aboriginal Cultural Heritage Report (ACHAR)* in response to the impacts associated with the Amended Project (see **Section 1.3**). In this table those sites that will not be harmed by the Amended Project are not coloured, while those sites that may be avoided by project design are marked in green and those sites likely to be harmed by the Amended Project are in orange.

**Table 1-1: Summary of management measures.**

| AHIMS ID. Site Name                  | Overall scientific significance of site   | Management measure        | Management   |
|--------------------------------------|---|---------------------------|--|
| 37-3-1592. LID34                     | Low (isolated find)   | Will not be impacted      | Temporarily fence site if it is considered that it may be impacted (the site is located approximately 50 m south of the Survey Boundary)   |
| 37-3-1593. LID35                     | Low (isolated find)   | Will not be impacted      | Temporarily fence site with high visibility fencing for the duration of works in the area  |
| 37-3-1594. Coalhole Creek OS-01      | Low (low-density artefact scatter)  | Avoid with project design | Within the Survey Boundary but with a high chance for avoidance if spanned. If cannot be avoided, manage as a Group 1 site (surface artefact collection)                           |
| 37-3-1595. Bowmans Tributary OS-01   | Low-Moderate (low-density artefact scatter with some potential for subsurface deposits) | Will not be impacted      | No management required   |
| 37-3-1596 Bowmans Tributary IF-01    | Low (low-density artefact scatter)  | Will not be impacted      | No management required   |
| 37-2-6043. Hillcrest OS-01           | Low (low-density artefact scatter)  | Will not be impacted      | No management required   |
| 37-2-6044. Hillcrest OS-02           | Low (low-density artefact scatter)  | Will not be impacted      | No management required   |
| 37-3-1587. Albano Road OS-01         | Low (low-density artefact scatter)  | Will not be impacted      | Temporarily fence site   |
| 37-3-1588. Albano Road OS-02         | Low-Moderate (low-density artefact scatter with some potential for subsurface deposits) | Partial harm              | Conserve in landscape those portions of the site outside of the Survey Boundary.<br>Apply Group 2 management (limited manual excavation) to those areas within the Survey Boundary |
| 37-3-1589. Albano Road OS-03         | Low-Moderate (low-density artefact scatter with some potential for subsurface deposits) | Partial harm              | Conserve in landscape those portions of the site outside of the Survey Boundary.<br>Apply Group 2 management (limited manual excavation) to those areas within the Survey Boundary |
| 37-3-1590. Albano Road IF-01         | Low (isolated find)   | Will not be impacted      | Temporarily fence site   |
| 37-2-6263. Liddell Power Station-IF1 | Low (isolated find)   | Avoid with project design | Within the Survey Boundary but with a high chance for avoidance if spanned. If cannot be avoided, manage as a Group 1 site (surface artefact collection)                           |
| 37-2-6541. Liddell Power Station-IF2 | Low (isolated find)   | Will not be impacted      | Temporarily fence site   |



| AHIMS ID. Site Name               | Overall scientific significance of site  | Management measure        | Management   |
|-----------------------------------|--|---------------------------|--|
| 37-2-2021. ANT 4                  | Low (low-density artefact scatter)   | Will not be impacted      | No management required   |
| 37-2-2072. ANT 22                 | Low (very few or no tangible features). High cultural value as a potential ceremonial area | Avoid with project design | Installation of electricity poles and access tracks within 50 m of the site should be avoided.<br>Any felling of trees that are necessary within this buffer should be hand cleared and machinery should not enter the 50 m exclusion zone |
| 37-2-2029. Hunter Gas Project PAD | Low (assessed that there is a low potential for subsurface deposits)                       | Partial harm              | Conserve in landscape those portions of the site outside of the project impacts.<br>Apply Group 2 management (limited manual excavation) to those areas directly impacted  |

## 1.2 DESCRIPTION OF THE PROJECT

Epuron Projects Pty Ltd is seeking approval for the construction, operation, maintenance and decommissioning of the Bowmans Creek Wind Farm (Project).

The Project is located at Bowmans Creek, approximately 10 kilometres east of Muswellbrook.

Epuron seeks State Significant Development (SSD) Development Consent approval under Division 4.7 of Part 4 of the *Environmental Planning & Assessment Act 1979* (EP&A Act) for the Project (SSD 10315).

OzArk Environment & Heritage (OzArk) has been engaged by James Bailey & Associates Pty Ltd to provide specialist heritage assessment for the Project.

## 1.3 BACKGROUND

In April 2021, OzArk completed the ACHAR for the Project that was included in the Environmental Impact Statement (EIS) prepared over the Project.

The ACHAR drew on a significant amount of survey for the Project that was completed from November 2019 to February 2021 in four survey sessions. Each team of surveyors during Fieldwork Sessions 1 and 2 consisted of two archaeologists and two members of the Aboriginal community. In the first session of survey there were two teams working independently, and in the second session there was one team. Fieldwork Sessions 3 and 4 consisted of one archaeologist and one member of the Aboriginal community. This equated to 64 person days of survey.

The EIS was placed on exhibition between 31 March 2021 and 11 May 2021. During this period 166 submissions were received from stakeholders, including 19 from government agencies and 148 from members of the public. A Submissions Report (James Bailey & Associates 2021) has been prepared to respond to the issues raised by these stakeholders.

In addition to this, in response to submissions and further detailed planning, several refinements are proposed to the Project layout (Amended Project). This includes removing four wind turbine

generators (WTGs), relocating three others, as well as removing sections of access tracks and power reticulation infrastructure, along with the minor repositioning of other lineal infrastructure, to reduce ecological, visual, and other impacts.

The Amended Project design has resulted in an overall decrease in the extent of ground disturbance that will be associated with the Project. However, the Amended Project design includes some locations for Project components that were not surveyed as part of the preparation of the ACHAR.

This Appendix Technical Report to the ACHAR addresses those areas now proposed for impact that were outside of the Survey Boundary at the time the EIS was completed. It also addresses the few submissions received, over the exhibition of the EIS, that comment on Aboriginal cultural heritage.

The ACHAR should be consulted for all information dealing with Aboriginal community consultation up to 26 March 2021, environmental and archaeological context, survey results, and controls for the avoidance and minimisation of harm to Aboriginal sites and cultural heritage values associated with the Project.

#### **1.4 PROPOSED WORK**

The Amended Project is similar to that set out in Section 1.5 of the ACHAR. However, in the Amended Project redesign, the following changes have been made:

- Deletion of four WTGs, including WTG 10, 33, 60 and 61, hence a reduction from 60 WTGs to 56 WTGs
- Re-siting of WTG 8, 9, and 32
- Minor adjustments of several WTGs (micro siting up to 100 metres [m])
- Removal and relocation of site access tracks because of changes to the WTG layout and in response to individual landholder concerns
- A 10.4 kilometre (km) net reduction in underground power reticulation
- A 13.5 km net reduction in overhead power reticulation
- An overall reduction of project disturbance footprint of approximately 97.6 hectares (ha).

While the Amended Project has reduced the impact area, there are now areas that are proposed for impact that were not surveyed for the EIS. These areas are:

1. A 1.6 km portion of Albano Road in the north of the Project Boundary
2. A new access track in the north of the Project Boundary that extends for approximately 4.5 km

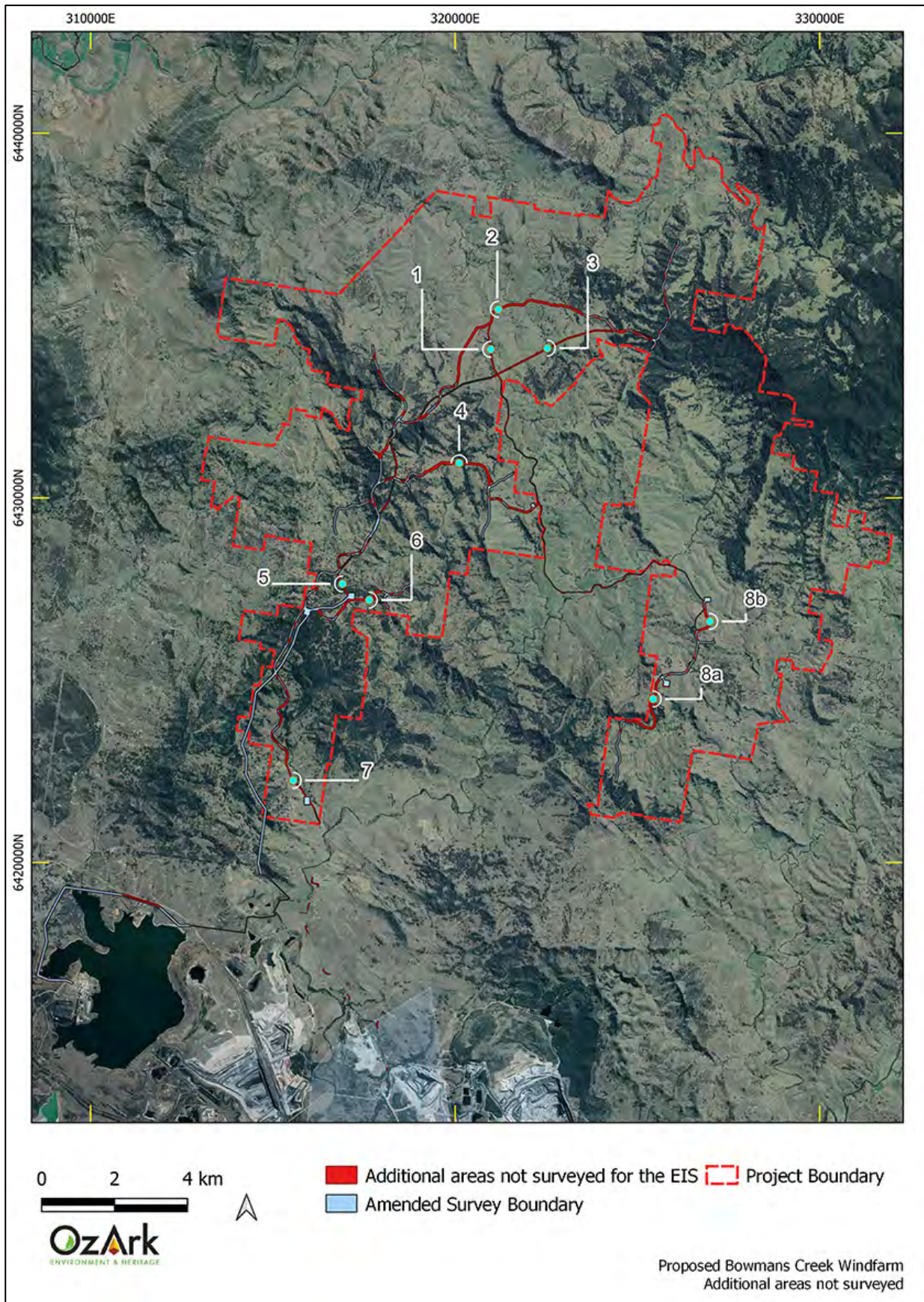
3. A new corridor for overhead electricity reticulation in the north of the Project Boundary that extends for approximately 3.6 km
4. A new access track in the centre of the Project Boundary that extends for approximately 2.2 km
5. A new corridor for overhead electricity reticulation in the centre of the Project Boundary that extends for approximately 650 m
6. A new access track in the centre of the Project Boundary that extends for approximately 760 m
7. A new access track to the north of the O&M facility that extends for approximately 1.3 km
8. A new portions of access track in the east of the Project Boundary that extend for a total of approximately 3 km.

All other additional areas are very close to areas previously surveyed and are not considered a major addition to the areas already surveyed.

**Figure 1-1** shows the additional areas numbered according to the list above. Each of these areas will be discussed in more detail in this report.



Figure 1-1: Major additional areas not surveyed for the EIS.



## 1.5 STUDY AREA

The study area for this Appendix Technical Report to the ACHAR are areas associated with the Amended Project that were not surveyed for the ACHAR. The major areas outside of previously surveyed landforms are listed in **Section 1.4** and each of these areas will be described below following the numbering established in **Section 1.4** and shown on **Figure 1-1**.

### Areas 1, 2, and 3 (Figure 1-2)

The additional areas are in steeply undulating landforms. Samples of this landform type were surveyed in nearby areas; however, the additional impacts are to the north and south of the areas previously surveyed. The landforms are cleared and have been used for long-term grazing. The additional impact areas cross several waterways that are within steep, V-shaped valleys without any evidence of creek flats or terraces.

### Area 4 (Figure 1-3)

Area 4 consists of a new portion of access track. Rather than crossing a ridge as was surveyed for the EIS, the new alignment follows gentler gradients to the north. The new alignment is within cleared and grazed paddocks and is entirely contained within sloping landforms. The alignment crosses a seasonal waterway, better termed a gully, within a steep, V-shaped valley.

### Areas 5 and 6 (Figure 1-4)

The additional areas include the alignment of an overhead electricity corridor (Area 5) and the alignment of access track (Area 6). Area 5 is within a steep, V-shaped valley where there is remnant vegetation due to the steepness of the terrain. Area 6 is within cleared, grazed paddocks and crosses slopes and a minor ridge line. Area 5 crosses a seasonal waterway, while Area 6 avoids any waterway crossings.

### Area 7 (Figure 1-5)

Area 7 consists of a new alignment of access track that is entirely within clear, grazed paddocks. The new alignment crosses undulating landforms with some moderately steep slopes. The alignment crosses a seasonal waterway in an area that has relatively gentle gradients when compared to other landforms in the alignment.

### Area 8 (Figure 1-6)

Area 8 consists of two portions of new access track. Area 8a crosses undulating landforms with some steep gradients. In the western portion the alignment is along a narrow ridge and steep V-shaped valley that contains some remnant vegetation. Elsewhere the alignment crosses cleared, grazed paddocks. Area 8b is a short section of track within steep slopes. Area 8b is entirely within cleared, grazed paddocks.



Figure 1-2: Digital elevation model of Areas 1, 2 and 3.

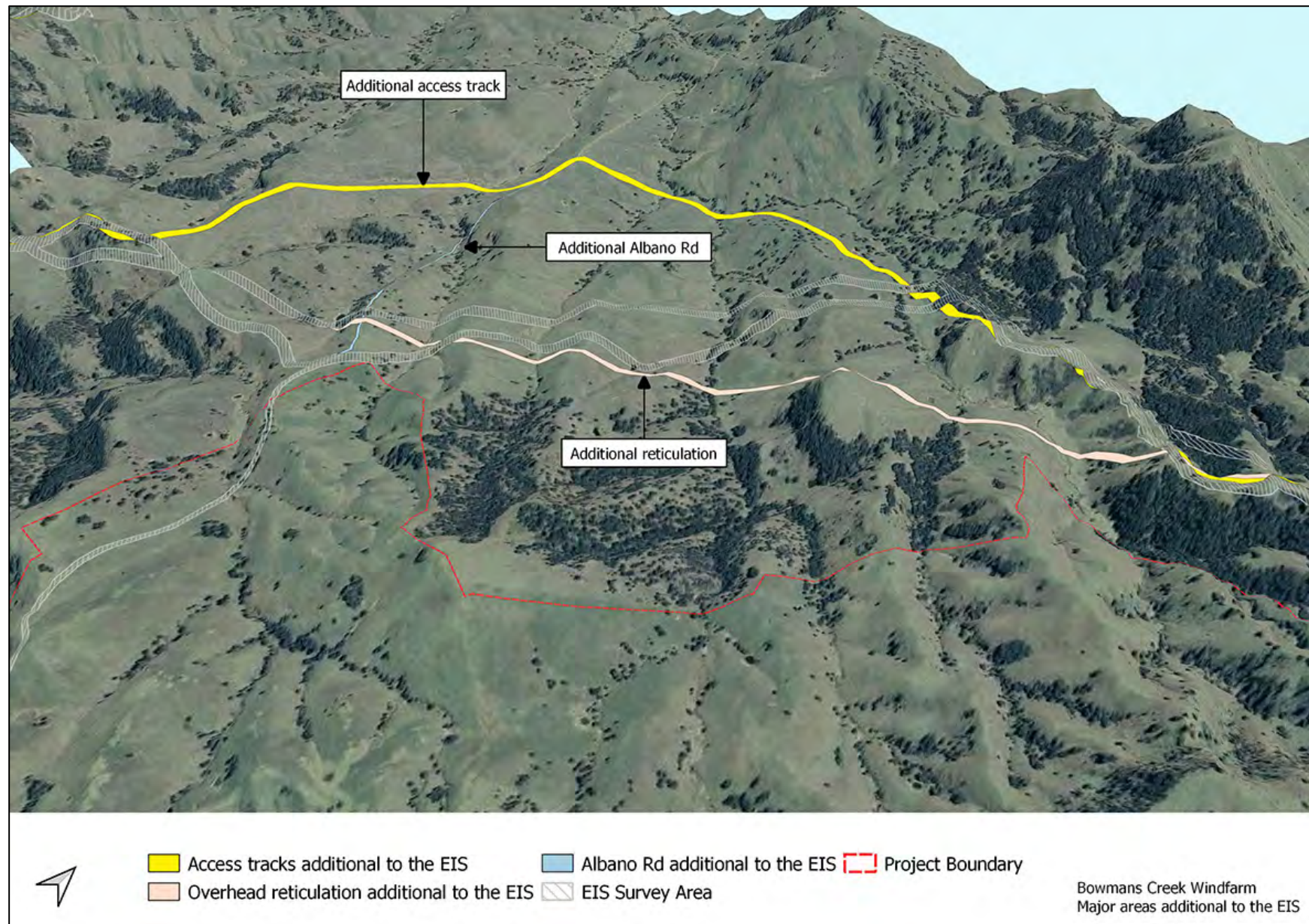




Figure 1-3: Digital elevation model of Area 4.

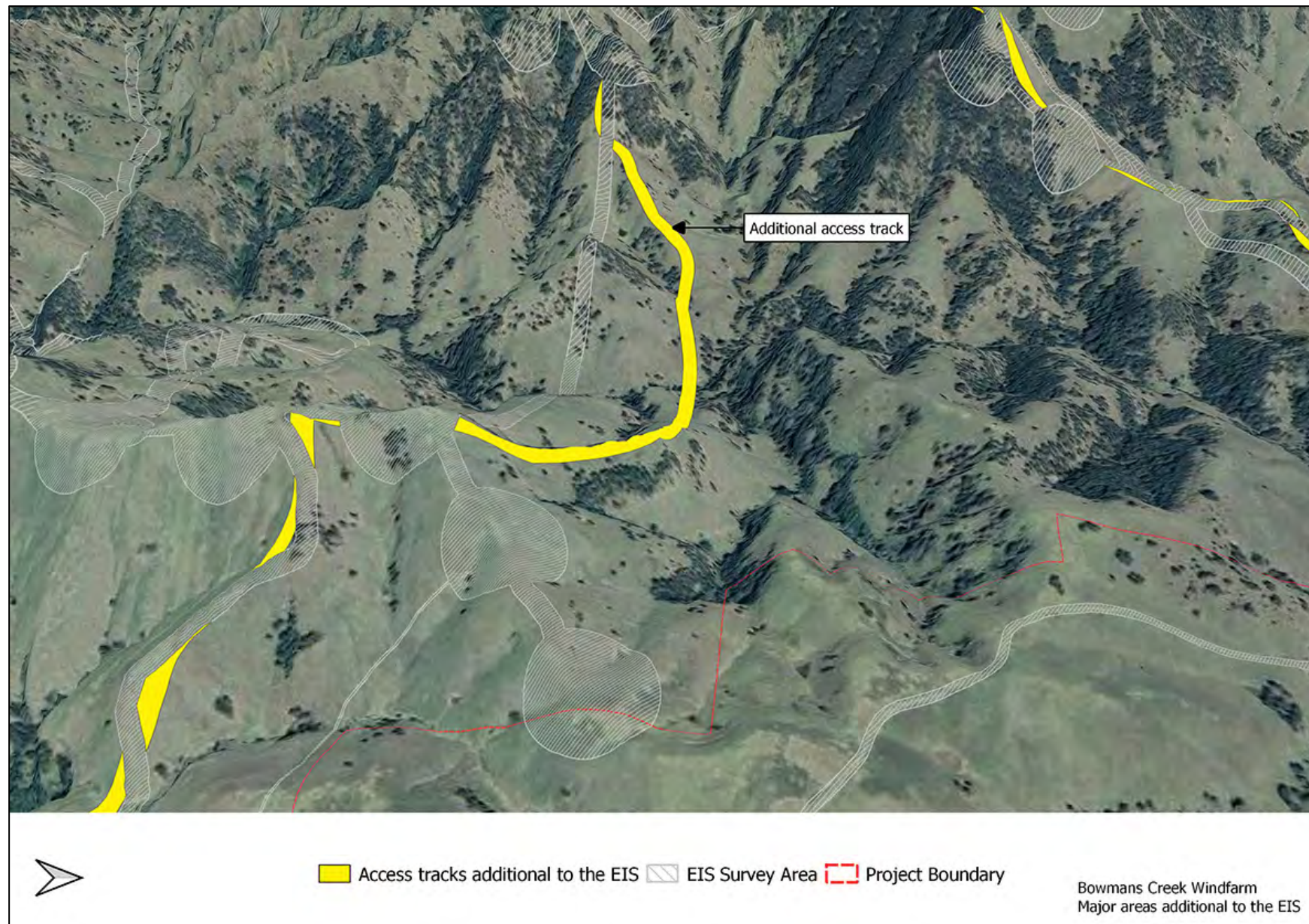




Figure 1-4: Digital elevation model of Areas 5 and 6.

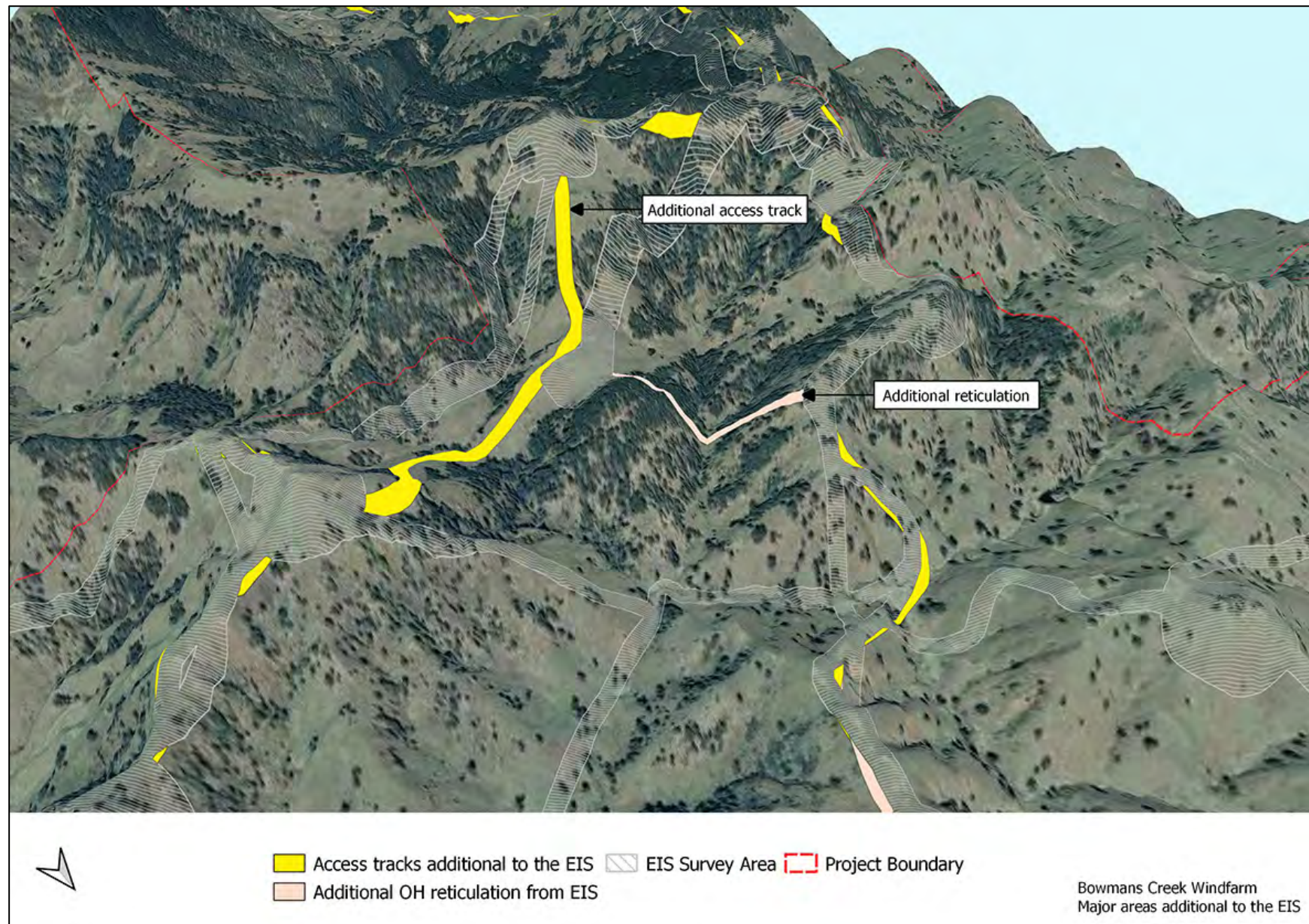




Figure 1-5: Digital elevation model of Area 7.

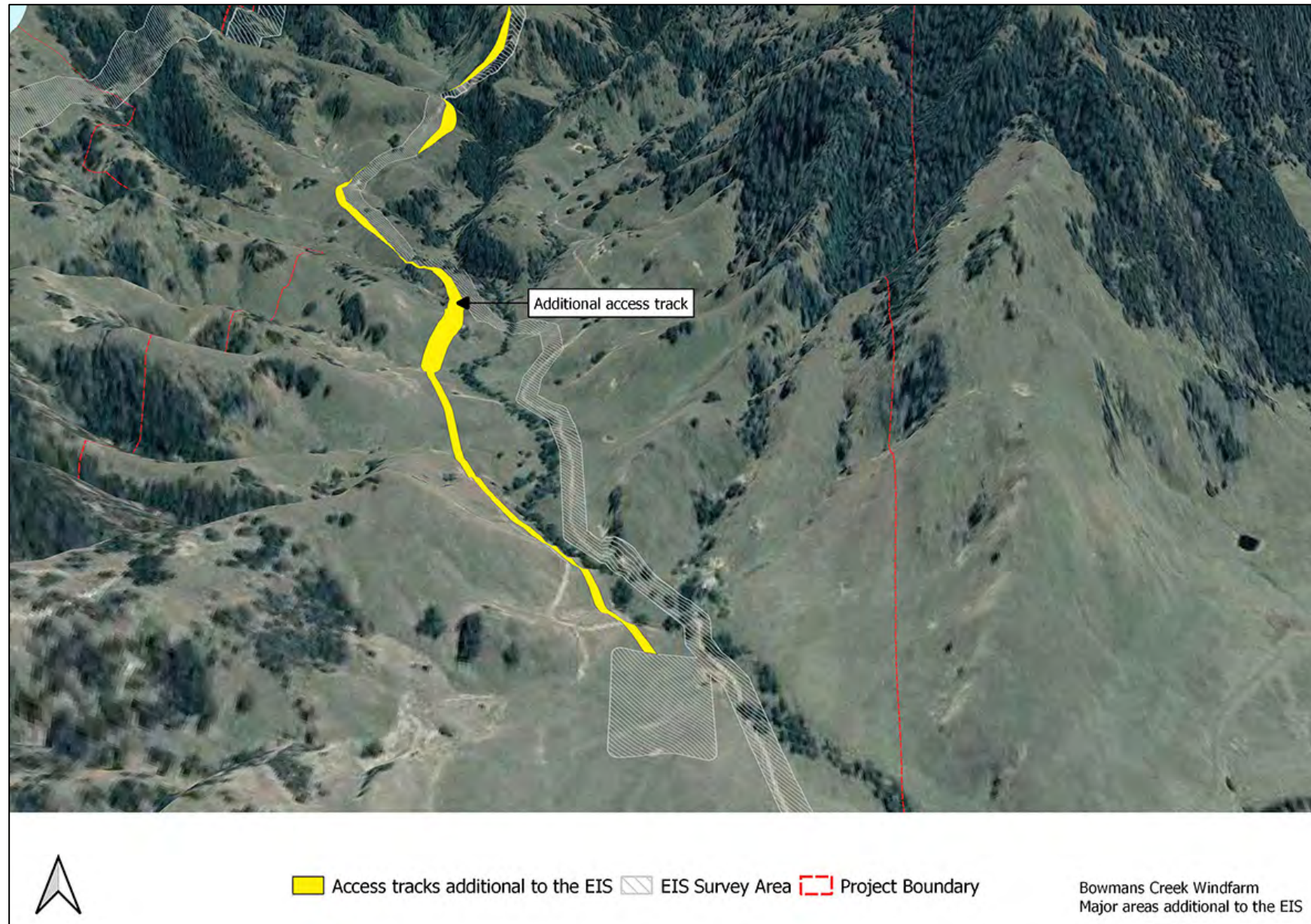
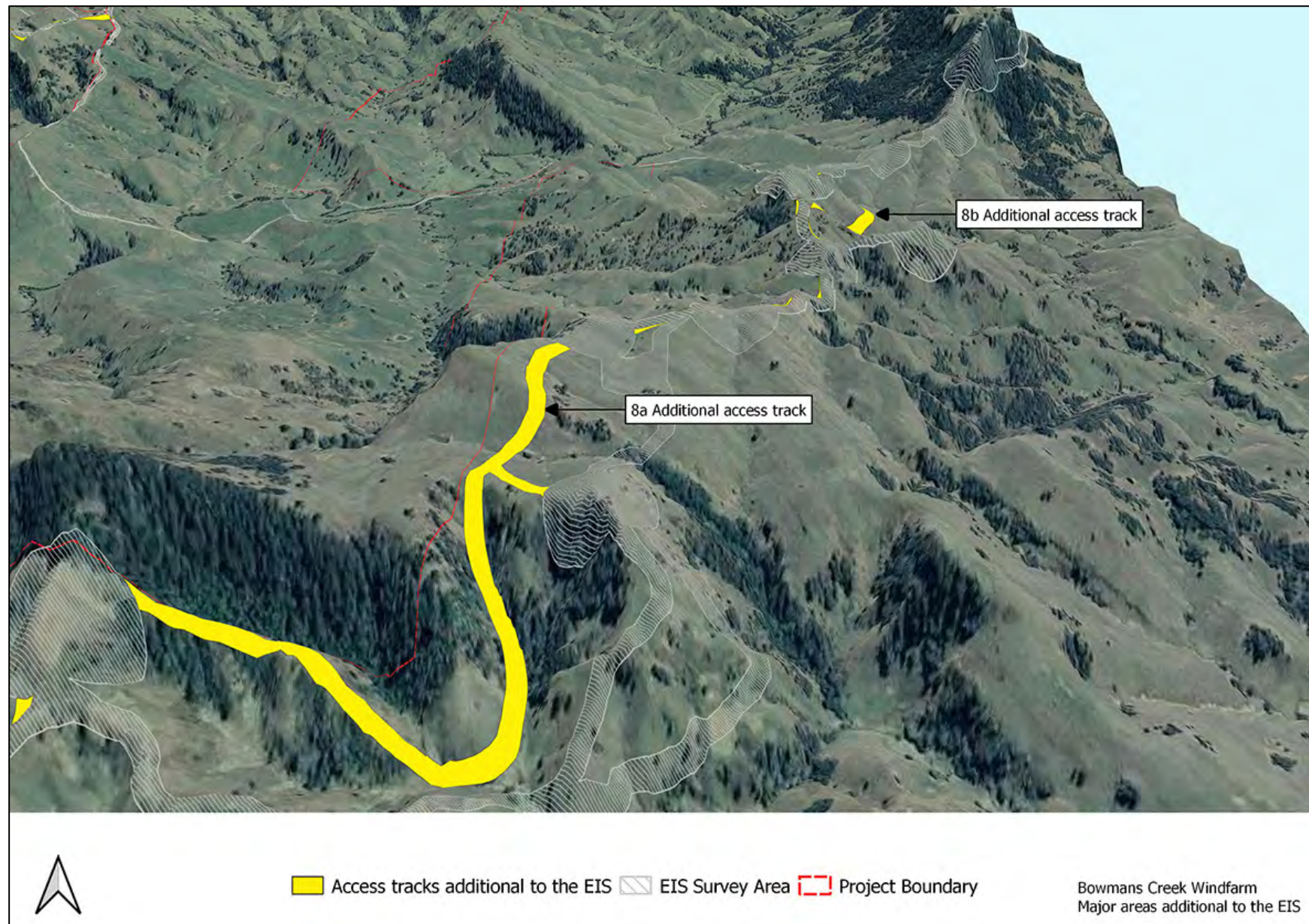




Figure 1-6: Digital elevation model of Area 8.



## 2 PREDICTIVE MODELLING

The assessment of the additional areas not surveyed for the EIS has been completed at a desktop level only. However, as extensive landforms near and around the additional areas were surveyed for the EIS, the archaeological characteristics of the additional areas can be confidently predicted.

The survey for the EIS consisted of a substantial survey effort that extensively sampled the landforms of the Survey Boundary. In the ACHAR (p. 98), the survey results were summarised as:

*13 sites were recorded during the survey: eight artefact scatters with a low–moderate artefact density and five isolated artefacts.*

*All sites were recorded in Survey Unit 2 which consists of lowland landforms in the south of the Survey Boundary or areas along Albano Road within the broad Bowmans Creek valley. Some sites, such as Coalhole Creek OS-01 were within topography that is included in Survey Unit 1 (hills and valleys) but the site itself is on level terrain associated with the Coalhole Creek valley. Therefore, it is regarded that the site is within Survey Unit 2, although it is surrounded by Survey Unit 1 landforms.*

Further, when investigating the previously recorded sites near the Survey Boundary, the ACHAR (p. 98) notes:

*...previously recorded sites were plotted against slopes less than 10 degrees and distance to water. It was shown that there was a strong tendency for sites to be recorded in topography with slopes less than 10 degrees and that artefact scatters are almost exclusively recorded in landforms with a gentler topography. In terms of distance to water it was seen that there was not a strong correlation between previous site recordings and proximity of water.*

All the additional areas not surveyed for the EIS are in:

- Survey Unit 1 landforms
- Landforms where no sites were recorded during the survey for the EIS
- Topographies generally consisting of slopes steeper than 10 degrees
- Landforms distant to permanent or semi-permanent water
- Landforms that have undergone disturbances from vegetation clearing and long-term grazing.

The archaeological potential of each additional area not surveyed for the EIS is shown in **Table 2-1**.

**Table 2-1: Archaeological potential of the unsurveyed areas.**

| Area | Proposed impact                   | Landform type  | Likelihood to contain Aboriginal objects  |
|------|-----------------------------------|--|---|
| 1    | Road widening                     | Slopes. No waterway crossings  | Very low likelihood to contain Aboriginal objects as the area is either side of Albano Road in moderately steep landforms.  |
| 2    | Access track                      | Undulating moderately steep. No level areas. Some crossings of minor waterways | Very low likelihood to contain Aboriginal objects due to the nature of the landforms. While the alignment crosses a minor waterway, it is in a V-shaped valley and unlikely to have landforms conducive to Aboriginal occupation. Culturally modified trees will not be recorded due to widespread clearing.  |
| 3    | Overhead electricity reticulation | Undulating moderately steep. No level areas. Some crossings of minor waterways | Very low likelihood to contain Aboriginal objects due to the nature of the landforms. While the alignment crosses a minor waterway, it is in a V-shaped valley and unlikely to have landforms conducive to Aboriginal occupation. Culturally modified trees will not be recorded due to widespread clearing.  |
| 4    | Access track                      | Minor ridge and slopes. One crossing of a minor waterway                       | Very low likelihood to contain Aboriginal objects due to the nature of the landforms. While the alignment crosses a minor waterway, it is in a V-shaped valley and unlikely to have landforms conducive to Aboriginal occupation. Culturally modified trees will not be recorded due to widespread clearing.  |
| 5    | Overhead electricity reticulation | Steep V-shaped valley  | Very low likelihood to contain Aboriginal objects due to the steep nature of the landforms. While there is remnant vegetation in this area, it is unlikely that the area will contain culturally modified trees due to the steep nature of the landforms. The waterway crossing has no associated creek flats or terraces.                                    |
| 6    | Access track                      | Ridge, steep slopes. No waterway crossings                                     | Very low likelihood to contain Aboriginal objects due to the steep nature of the landforms. The termination of the ridge, both to the east and to the west was surveyed for the EIS and no sites were recorded. Culturally modified trees will not be recorded due to widespread clearing.  |
| 7    | Access track                      | Slopes   | Very low likelihood to contain Aboriginal objects due to the sloping nature of the landforms. Identical landforms on the eastern side of the valley were surveyed for the EIS and no sites were recorded, even in flatter landforms near Cedar Creek. Culturally modified trees will not be recorded due to widespread clearing.                              |
| 8    | Access track                      | Slopes and minor ridges  | Very low likelihood to contain Aboriginal objects due to the sloping nature of the landforms. Identical landforms to the east were surveyed for the EIS and no sites were recorded. While there is remnant vegetation in the west of this area, it is unlikely that the area will contain culturally modified trees due to the steep nature of the landforms. |

## 2.1 CONCLUSION

The survey for the EIS comprehensively sampled the landforms of Survey Unit 1 within which the major additional areas are located. This Survey Unit consists of slopes, sometimes very steep, narrow localised ridges, and V-shaped valleys. The landforms are largely cleared and have been grazed for many years. While remnant vegetation is located on the steepest slopes, this does not consist of old-growth vegetation but areas that have probably been cleared, or at least logged, in the past. Waterways are best described as headwaters and would generally only hold water on a seasonal basis. Waterways in Survey Unit 1 lack creek flats, terraces, or other areas suitable for Aboriginal occupation.

The extensive survey within Survey Unit 1 failed to record any Aboriginal objects in these landforms. This was entirely due to the nature of the landforms being generally too steep for



camping activities and distant to reliable sources of water. The nature of the area's ridges is that they are not extensive to provide a 'pathway' through the landscape. The ridges are localised and while there may be a stretch for several hundred metres of ridge landforms, these landforms terminate in a steep V-shaped valley before the next ridge system begins.

Aboriginal community who assisted the survey said that the landforms of Survey Area 1 were very unlikely to have been extensively used by their ancestors and noted that the Project Area was between topographies more commonly used in the past, namely the more defined ridge systems in Mount Royal National Park and the flat valley floor of the Hunter Valley.

Given the knowledge gained for the survey that has taken place, the observed landform characteristics of the additional areas seen from digital elevation models (**Figure 1-2** to **Figure 1-6**), and the views of the Aboriginal community, it is assessed that the additional areas have a very low potential to contain Aboriginal objects.

### 3 RESPONSES TO SUBMISSIONS

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The public exhibition of the EIS raised two submissions to the ACHAR. Both will be responded to below.

#### 3.1 SUBMISSION FROM HERITAGE NSW

In the submission from Heritage NSW, the following was received:

*The current version of the ACHAR does not include comments received during the Registered Aboriginal Party review period dated 11 March 2021 to 26 March 2021. In order to satisfy the requirements of the SEARs a final version of the ACHAR with any comments received during this period is required.*

##### 3.1.1 Response

On page 22 (Section 3.1.4), the ACHAR states:

*This draft was sent on 11 March 2021 with a request that any comments or questions be raised by 26 March 2021.*

*No comments arising from the review of the revised ACHAR were received by the closing date for review.*

In Appendix 1 of the ACHAR the community consultation log is presented. The final date in this log is 11 March 2021 recording the Registered Aboriginal Parties (RAPs) who were sent the project update that is noted in the Heritage NSW submission.

As no RAP responses were received in the review period, no further entries were made to the consultation log and the log presented in Appendix 1 of the ACHAR is a complete record of all consultation related to the Project.

#### 3.2 SUBMISSION FROM P96

In the submission from P96, the following was received:

*No consideration or mention of the Notice of an application for the preservation and protection of a specified area described as the "Ravensworth Estate" and including Bowmans Creek and Glennies Creek, in the Hunter Valley. "The Ravensworth Estate" includes the proposed easement for the powerlines and subdivision.*

##### 3.2.1 Response

The Specified Area as defined in the Section 10 application under the *Aboriginal and Torres Strait Islander Heritage Protection Act 1984* includes a portion of the overhead electricity line, a portion of the underground electricity line, a construction compound/batching plant, an access track, as well as some minor locations for road works along Hebden Road. All areas, except for a portion

of access track north of the construction compound, have been surveyed (see **Figure 1-5** for the additional area that is unsurveyed). OzArk was aware at the time of the survey of the values that have been identified in the Specified Area and took care to observe any attributes associated with these values within the Survey Boundary. No tangible items associated with these values were observed, and it is concluded that the project will not impact the values ascribed to the Specified Area. As the impacts are occurring within areas previously cleared and farmed, it is assessed that these actions have removed or altered the aesthetic values ascribed to the Specified Area. The specific values within the Specified Area that are identified as significant and the impacts to these values from the Amended Project are discussed in **Table 3-1**.

**Table 3-1: Analysis of impacts to the identified values of the Specified Area.**

| Significance identified in the Specified Area  | Likely impact from the Project   |
|--|--|
| <p>Represents an area where the conflicts occurred during the early colonisation of the Hunter Valley", including how it "contains a landscape of an open massacre of the Wonnarua people"</p>   | <p>The history of resistance and conflict associated with the colonial occupation of the Hunter Valley has been documented by Dr Mark Dunn (<i>The Convict Valley: The bloody struggle on Australia's early frontier</i>. Allen and Unwin, 2020). The massacre identified in the significance associated with the Specified Area has been extensively researched and an exact location for this event is unknown.</p> <p>While this does not preclude the possibility that it occurred in or near the Project Boundary, there is no evidence to suggest that it did.</p> <p>During the survey, no evidence of this early colonial conflict was noted in the Survey Boundary.</p> |
| <p>Represents [an] area where ceremonies were carried out by the Wonnarua people" and is thus "sacred to our people", including "several places" used for rituals associated with "bora" (male initiation) ceremonies or with "women's business ceremonies"</p>  | <p>The Aboriginal community, including representatives for the Applicant for the Section 10 application, assisted the survey. At no location within the Survey Boundary was it suggested that ceremonial places were located within the Survey Boundary.</p>   |
| <p>"It is a spiritual place to us that must be protected so we can pass on to our children (future generations) for an understanding of our people's practices of the past there is an "obligation ... to preserve for future generations the story line that flows through the river, creeks and tributaries of the whole area: including how "forefathers ... followed the creek lines and carried out ceremonial rituals along the route"</p> | <p>The Survey Boundary impacts minor areas associated with Bowmans Creek including where the Survey Boundary is within the existing Albano Road where it crosses Bowmans Creek and where Bowmans Creek will be underbored for the electricity powerline where Hebden Road crosses Bowmans Creek.</p> <p>The Project will therefore not impact this value any more than has already occurred through the construction of Albano and Hebden Roads.</p>   |
| <p>"The area is part of a transit route"; along Bowmans Creek there are "two fish traps" and a "women's birthing place"</p>  | <p>As noted above, the Project will not additionally impact Bowmans Creek and this value will not be impacted. The sites mentioned in the Specified Area are not known to exist within the Survey Boundary.</p>  |
| <p>"Our people have used the area for thousands of years", including recently by "members of the [native title] claimant group", and, "As such, this is one of the few in Wonnarua Country that can demonstrate ongoing occupation and use by a hunter-gatherer society"</p>   | <p>This intangible value will not be impacted by the Project as it exists in an area that has been within private ownership for a long period of time and has been subjected to long-term grazing and landform modification.</p> <p>While occupation of the area by traditional Aboriginal people is undisputed, the survey results indicate that the Survey Boundary was not intensively occupied and no evidence of recent occupation (i.e. knapped glass objects etc.) were recorded.</p>   |
| <p>"To ensure that our cultural and heritage values are protected"</p>   | <p>A major aim of the survey was to ensure that this value was understood, and every effort made to ensure cultural values were conserved in the landscape. There is an overall low level of harm to known Aboriginal objects arising from the Amended Project (of the 16 sites considered in the EIS, five will potentially be impacted although three will only be partially harmed, and a further two are likely to be avoided). Eleven sites will not be harmed by the Amended Project. The result is that most of the known sites within the Survey Boundary will be conserved.</p>   |

| Significance identified in the Specified Area  | Likely impact from the Project  |
|--|---|
| "We have a responsibility [to] do all we can, to stop the never ending destruction, of our Country" by "uncontrolled agricultural and coal mining practices". As such, the "area contains a landscape of ongoing conflict" | OzArk understands this point of view, however, it is considered that the Amended Project does not materially impact significant Aboriginal cultural heritage vales. |

Although not specifically mentioned in the submission, it is noted that the Statement of Heritage Impact for the Ravensworth Estate prepared for the Glendell Continued Operations Project (Lucas Stapleton Johnson & Partners Pty. Ltd. 2019) identifies two areas associated with the former Bowman estate: the place and the Ravensworth Estate core remains. The only Project impacts in either of these areas are minor road works along Hebden Road and there will be no impact to any surviving component within the Place or the Ravensworth Estate core remains.



## 4 MANAGEMENT FOR THE AMENDED PROJECT

### 4.1 IMPACT ASSESSMENT

The changes to the Survey Boundary for the Amended Project have resulted in some small changes to the likely impacts arising from the Amended Project and, therefore, the management required to ensure that Aboriginal cultural values are appropriately considered.

In summary, the ACHAR considered 16 sites. Of these, the Amended Project is likely to harm five sites, although it will only partially impact three sites and there is a high likelihood that a further two sites will be avoided through micro-siting components associated with the electricity transmission line (ETL). One site, ANT 22 is within the Survey Boundary but harm to the site will be avoided through management. Including ANT 22, the Amended Project will avoid 11 known sites.

This is a decrease of impact as three sites that were identified in the ACHAR as likely to be harmed (LID34, ANT 4, and Liddell Power Station-IF2) are now outside the Survey Boundary and will not be harmed by the Amended Project. Further, one site that was listed in the ACHAR as likely to be totally destroyed (Hunter Gas Project PAD) is now considered as likely to be partially destroyed as it will only be impacted where ground disturbing components of the ETL will be sited, leaving all other areas of the potential archaeological deposit (PAD) intact.

The impact assessment for the Amended Project is shown in **Table 4-1** and this table supersedes Table 8-4 in the ACHAR.

**Table 4-1: Amended Project impact assessment.**

| AHIMS ID  | Site Name               | Type of Harm in the EIS<br>(Total / Partial/ None) | Type of harm in the Amended Project<br>(Total / Partial/ None) | Amended Project Consequence of Harm<br>(Total/Partial/No Loss of Value) | Likelihood of avoidance by the Amended Project                    |
|-----------|-------------------------|--|--|---|---|
| 37-3-1592 | LID34                   | Total  | None   | No loss of value  | Will be avoided   |
| 37-3-1593 | LID35                   | None   | None   | No loss of value  | Will be avoided   |
| 37-3-1594 | Coalhole Creek OS-01    | Total  | Total  | Total loss of value   | High likelihood for avoidance through micro-siting ETL components |
| 37-3-1595 | Bowmans Tributary OS-01 | None   | None   | No loss of value  | Will be avoided   |
| 37-3-1596 | Bowmans Tributary IF-01 | None   | None   | No loss of value  | Will be avoided   |
| 37-2-2021 | ANT 4                   | Partial  | None   | No loss of value  | Will be avoided   |
| 37-2-2029 | Hunter Gas Project PAD  | Total  | Partial  | Partial loss of value   | Only portions directly impacted by ETL components will be harmed  |
| 37-2-2072 | ANT 22                  | None   | None   | No loss of value  | Within the Survey Boundary but will be avoided through management |

| AHIMS ID  | Site Name                 | Type of Harm in the EIS (Total / Partial/ None) | Type of harm in the Amended Project (Total / Partial/ None) | Amended Project Consequence of Harm (Total/Partial/No Loss of Value) | Likelihood of avoidance by the Amended Project                    |
|-----------|---------------------------|---|---|--|---|
| 37-2-6043 | Hillcrest OS-01           | None  | None  | No loss of value   | Will be avoided   |
| 37-2-6044 | Hillcrest OS-02           | None  | None  | No loss of value   | Will be avoided   |
| 37-3-1587 | Albano Road OS-01         | None  | None  | No loss of value   | Will be avoided   |
| 37-3-1588 | Albano Road OS-02         | Partial   | Partial   | Partial loss of value  | Low likelihood for avoidance                                      |
| 37-3-1589 | Albano Road OS-03         | Partial   | Partial   | Partial loss of value  | Low likelihood for avoidance                                      |
| 37-3-1590 | Albano Road IF-01         | None  | None  | No loss of value   | None  |
| 37-2-6263 | Liddell Power Station-IF1 | Total   | Total   | Total loss of value  | High likelihood for avoidance through micro-siting ETL components |
| 37-2-6541 | Liddell Power Station-IF2 | Total   | None  | No loss of value   | None  |

## 4.2 MANAGEMENT OF RECORDED ABORIGINAL SITES

With reference to Section 9.2 of the ACHAR, the following changes are necessary to consider the altered Survey Boundary for the Amended Project.

### 4.2.1 Sites within the ETL easement portion of the Survey Boundary

Reference: Section 9.2.1.1 of the ACHAR

The overall aim of site avoidance through the micro-siting of ETL components as set out in the ACHAR remain valid. However, instead of seven sites in the category, there are now four sites within the ETL corridor for the Amended Project. Management at each of these four sites is set out in **Table 4-2** that supersedes Table 9-1 of the ACHAR.

**Table 4-2: Sites that may be impacted by the ETL construction.**

| AHIMS ID  | Site Name              | Site type                      | GDA East | GDA North | Management strategy  |
|-----------|------------------------|--------------------------------|----------|-----------|--|
| 37-3-1594 | Coalhole Creek OS-01   | Artefact scatter: 34 artefacts | 314697   | 6420643   | The site occupies a low point in the local topography, and it should be possible to place electricity structures so that the site is spanned. Access tracks will have to remain to the east of the Survey Boundary to avoid the site.<br><br>If this site is harmed by the Amended Project, the site should be salvaged by a collection of all surface artefacts (Group 1 management). The methodology of this management, if required, is set out in Section 9.3.1 of the ACHAR |
| 37-2-2029 | Hunter Gas Project PAD | PAD                            | 310105   | 6419190   | The PAD occupies a low point in the local topography, and it should be possible to place electricity structures so that the PAD extent is spanned.<br><br>If any area within the PAD is harmed by the Amended Project, limited archaeological excavation will be undertaken to investigate the nature of the PAD at the locations where ground disturbing impacts are sited. The methodology of such an investigation, if  |

| AHIMS ID  | Site Name                 | Site type       | GDA East | GDA North | Management strategy  |
|-----------|---------------------------|-----------------|----------|-----------|--|
|           |                           |                 |          |           | required, is set out in Section 9.3.2 of the ACHAR   |
| 37-2-2072 | ANT 22                    | Ceremonial ring | 309677   | 6419268   | <p>If there are no direct impacts within the 50 m buffer the potential intangible and tangible values of this site will be conserved.</p> <p>Direct impacts include the installation of electricity poles and access tracks within 50 m of the site, and these should be avoided. It is acceptable for the electricity wires to be overhead within this 50 m buffer.</p> <p>Any felling of trees that are necessary within this buffer should be hand cleared and machinery should not enter the 50 m exclusion zone (i.e. any timber will have to be left where it falls, or, preferably, manually dragged out of the buffer area).</p> |
| 37-2-6263 | Liddell Power Station-IF1 | Isolated find   | 308766   | 6418308   | <p>The site occupies a low point in the local topography, and it should be possible to place electricity structures so that the site is spanned. Access tracks will have to remain to the west to avoid the site.</p> <p>If this site is harmed by the Amended Project, the site should be salvaged by a collection of all surface artefacts (Group 1 management). The methodology of this management, if required, is set out in Section 9.3.1 of the ACHAR.</p>  |

#### 4.2.2 Sites within the Transport Route Disturbances

Reference: Section 9.2.1.2 of the ACHAR

The impact to the two sites in this category (Albano Road OS-02 and Albano Road OS-03) remain unchanged in the Amended Project and Section 9.2.1.2 of the ACHAR should be referred to for recommended management at these sites.

#### 4.2.3 Requirement for further fieldwork

Reference: Section 9.2.2 of the ACHAR

The recommendation for further survey of the area along Albano Road discussed in Section 9.2.2 of the ACHAR remains valid and will require survey prior to any impacts associated with the Amended Project.

In addition to that noted in the ACHAR, it is recommended that all additional areas shown on **Figure 1-2** to **Figure 1-6** require survey with RAPs prior to impacts associated with the Amended Project. Although these areas were assessed in **Section 2** as having low potential to contain Aboriginal objects, this predicative modelling requires testing in the field as there may be micro-topographies, such as localised benches within sloping landforms, that are not noticeable at a desk-top level that could contain Aboriginal objects.

#### 4.2.4 Requirement for management to avoid Aboriginal sites

Due to the changes to the Survey Boundary for the Amended Project, several sites are located near the Survey Boundary and will require fencing for the duration of the works in that area to

ensure that they are not impacted. **Table 4-3** details those sites that should have high visibility fencing installed prior to any works commencing in the vicinity. It would be advantageous to obtain the advice from a suitably qualified archaeologist to ensure that the correct location is fenced.

**Table 4-3: Sites requiring fencing to prevent inadvertent harm.**

| AHIMS ID  | Site Name                 | GDA East | GDA North | Management Strategy  |
|-----------|---------------------------|----------|-----------|--|
| 37-3-1593 | LID35                     | 314197   | 6418086   | The site is located approximately 1 m north of the Survey Boundary. Temporarily fence site with high visibility fencing for the duration of works in the area  |
| 37-3-1592 | LID34                     | 314202   | 6418024   | The site is located approximately 50 m south of the Survey Boundary. Temporarily fence site with high visibility fencing for the duration of works in the area if it is considered that it may be impacted |
| 37-3-1587 | Albano Road OS-01         | 325775   | 6428172   | The site is located approximately 5 m north of the Survey Boundary. Temporarily fence site with high visibility fencing for the duration of works in the area  |
| 37-3-1590 | Albano Road IF-01         | 324175   | 6427570   | The site is located approximately 5 m north of the Survey Boundary. Temporarily fence site with high visibility fencing for the duration of works in the area  |
| 37-2-6541 | Liddell Power Station-IF2 | 310289   | 6419152   | The site is located approximately 12 m south of the Survey Boundary. Temporarily fence site with high visibility fencing for the duration of works in the area   |
| 37-2-2072 | ANT 22                    | 309677   | 6419268   | The site is recommended for avoidance although it is within the Survey Boundary.<br>The site should be temporarily fenced with high visibility fencing for the duration of works in the area               |

#### 4.2.5 Synthesis of all management recommendations

The Amended Project has redefined the management required at several sites. The new management recommendations are shown on **Table 4-4** and this table supersedes Table 9-3 in the ACHAR.

The management recommendations for Group 1 and 2 sites as set out in the ACHAR (Section 9.3) remain valid.

In summary, impacts associated with the Amended Project are:

- Eleven sites will be avoided by the Amended Project (including ANT 22)
- Five sites have potential to be harmed by the Amended Project. These sites consist of:
  - Two sites that have potential to be avoided during the ETL design
  - One site that may only be partially harmed by the ETL construction
  - Two sites that will only be partially harmed by works along Albano Road.

Sites that are within or near the Survey Boundary are shown on **Figure 4-1** and **Figure 4-2**.

**Table 4-4: Management of all sites included in this investigation.**

| AHIMS ID  | Site Name               | GDA East | GDA North | Management  | Management Group if impacted |
|-----------|-------------------------|----------|-----------|---|------------------------------|
| 37-3-1592 | LID34                   | 314202   | 6418024   | Outside of the Survey Boundary. Will not be impacted.<br>Temporarily fence site with high visibility fencing for the duration of works in the area if it is considered that it may be impacted (the site is located approximately 50 m south of the Survey Boundary)  | Will not be impacted         |
| 37-3-1593 | LID35                   | 314197   | 6418086   | Outside of the Survey Boundary. Will not be impacted.<br>Temporarily fence site with high visibility fencing for the duration of works in the area  | Will not be impacted         |
| 37-3-1594 | Coalhole Creek OS-01    | 314697   | 6420643   | Within the Survey Boundary but with a high chance for avoidance if spanned by the ETL.<br>If able to be avoided, temporarily fence site with high visibility fencing for the duration of works in the area.<br>If cannot be avoided, manage as a Group 1 site.  | Group 1                      |
| 37-3-1595 | Bowmans Tributary OS-01 | 321743   | 6421723   | Outside of the Survey Boundary. Will not be impacted.<br>Site is distant to the Survey Boundary, therefore no management required.  | Will not be impacted         |
| 37-3-1596 | Bowmans Tributary IF-01 | 322216   | 6421206   | Outside of the Survey Boundary. Will not be impacted.<br>Site is distant to the Survey Boundary, therefore no management required.  | Will not be impacted         |
| 37-2-6043 | Hillcrest OS-01         | 311149   | 6419120   | Outside of the Survey Boundary. Will not be impacted.<br>Site is distant to the Survey Boundary, therefore no management required.  | Will not be impacted         |
| 37-2-6044 | Hillcrest OS-02         | 311249   | 6419159   | Outside of the Survey Boundary. Will not be impacted.<br>Site is distant to the Survey Boundary, therefore no management required.  | Will not be impacted         |
| 37-3-1587 | Albano Road OS-01       | 325775   | 6428172   | Outside of the Survey Boundary. Will not be impacted.<br>Temporarily fence site with high visibility fencing for the duration of works in the area  | Will not be impacted         |
| 37-3-1588 | Albano Road OS-02       | 324620   | 6427761   | Low probability for avoidance.<br>Those portions of the site outside of the Survey Boundary will not be harmed by the Project and will be conserved in the landscape (see ACHAR Figure 6 18).<br>Harm will be avoided by fencing off the boundary of the Survey Boundary in these areas and ensuring that areas beyond the Survey Boundary are a no-go zone for all activities associated with the Project including vehicle movements and lay-down areas | Group 2                      |

| AHIMS ID  | Site Name                 | GDA East | GDA North | Management  | Management Group if impacted                                  |
|-----------|---------------------------|----------|-----------|---|---|
| 37-3-1589 | Albano Road OS-03         | 323759   | 6427462   | <p>Low probability for avoidance.</p> <p>Those portions of the site outside of the Survey Boundary will not be harmed by the Project and will be conserved in the landscape (see ACHAR Figure 6 20). Harm will be avoided by fencing off the boundary of the Survey Boundary in these areas and ensuring that areas beyond the Survey Boundary are a no-go zone for all activities associated with the Project including vehicle movements and lay-down areas</p>   | Group 2   |
| 37-3-1590 | Albano Road IF-01         | 324175   | 6427570   | <p>Outside of the Survey Boundary. Will not be impacted.</p> <p>Temporarily fence site with high visibility fencing for the duration of works in the area</p>   | Will not be impacted  |
| 37-2-6263 | Liddell Power Station-IF1 | 308766   | 6418308   | <p>Within the Survey Boundary but with a high chance for avoidance if spanned by the ETL.</p> <p>If able to be avoided, temporarily fence site with high visibility fencing for the duration of works in the area.</p> <p>If cannot be avoided, manage as a Group 1 site.</p>   | Group 1   |
| 37-2-6541 | Liddell Power Station-IF2 | 310289   | 6419152   | <p>Outside of the Survey Boundary. Will not be impacted.</p> <p>Temporarily fence site with high visibility fencing for the duration of works in the area.</p>  | Will not be impacted  |
| 37-2-2021 | ANT 4                     | 310366   | 6419306   | <p>Outside of the Survey Boundary. Will not be impacted.</p> <p>Site is distant to the Survey Boundary, therefore no management required.</p>   | Will not be impacted  |
| 37-2-2072 | ANT 22                    | 309677   | 6419268   | <p>Within the Survey Boundary but will be avoided by the Amended Project.</p> <p>Installation of electricity poles and access tracks within 50 m of the site should be avoided. It is acceptable for the electricity wires to be overhead within this 50 m buffer.</p> <p>Any felling of trees that are necessary within this buffer should be hand cleared and machinery should not enter the 50 m exclusion zone (i.e. any timber will have to be left where it falls, or, preferably, manually dragged out of the buffer area).</p>  | Will not be impacted if management procedures can be achieved |
| 37-2-2029 | Hunter Gas Project PAD    | 310105   | 6419190   | <p>Within the Survey Boundary but with a high chance for avoidance if spanned by the ETL.</p> <p>Works within the PAD extent should be avoided.</p> <p>If able to be avoided, temporarily fence the PAD extent with high visibility fencing for the duration of works in the area.</p> <p>If works are required within the PAD area shown on ACHAR Figure 6 30, limited test excavation will be required prior to the works commencing to determine the nature of the PAD. Excavation should only take place at the locations where ground disturbing impacts are proposed.</p> | Group 2   |



Figure 4-1: Sites within or near the Survey Boundary (north).

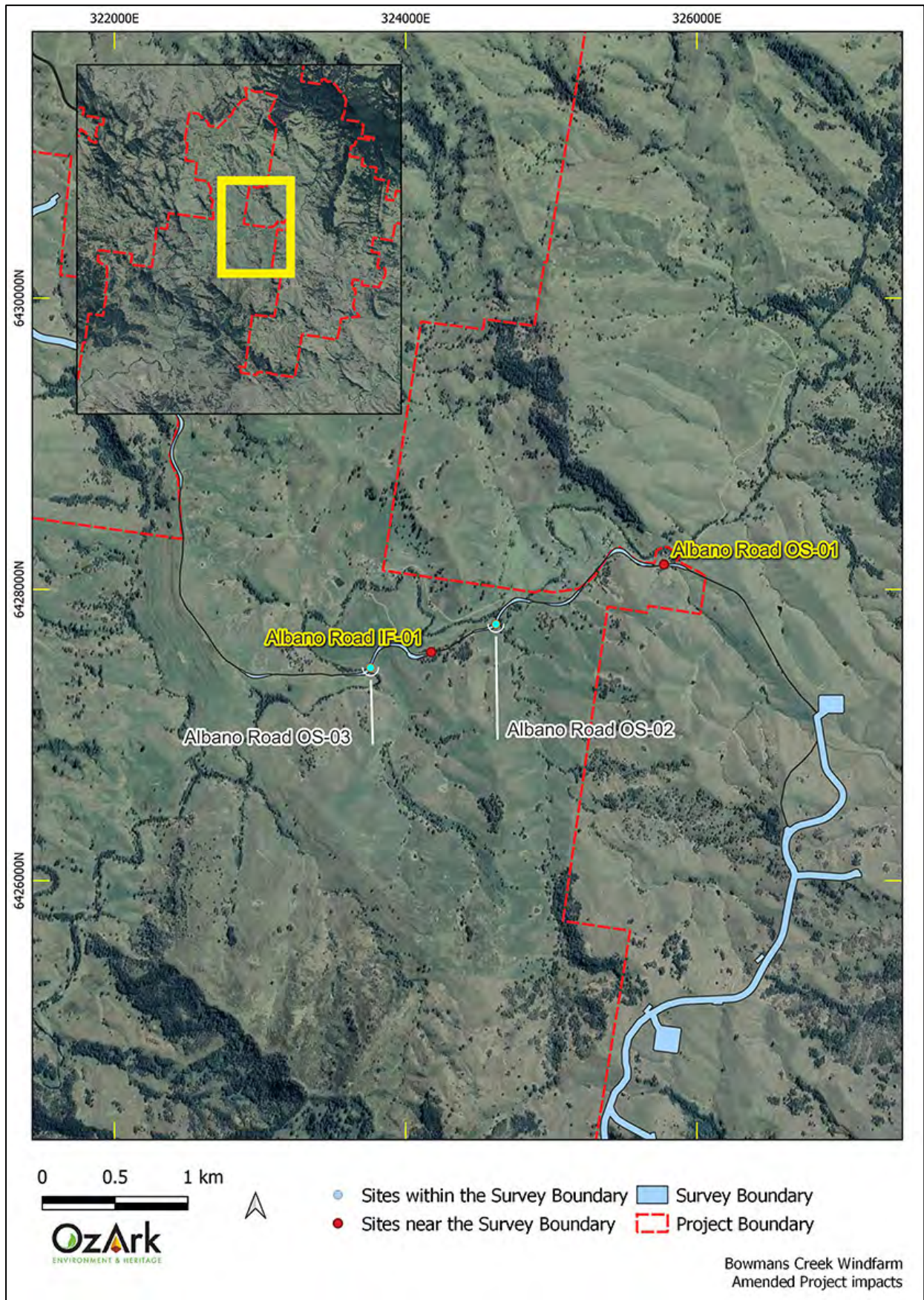
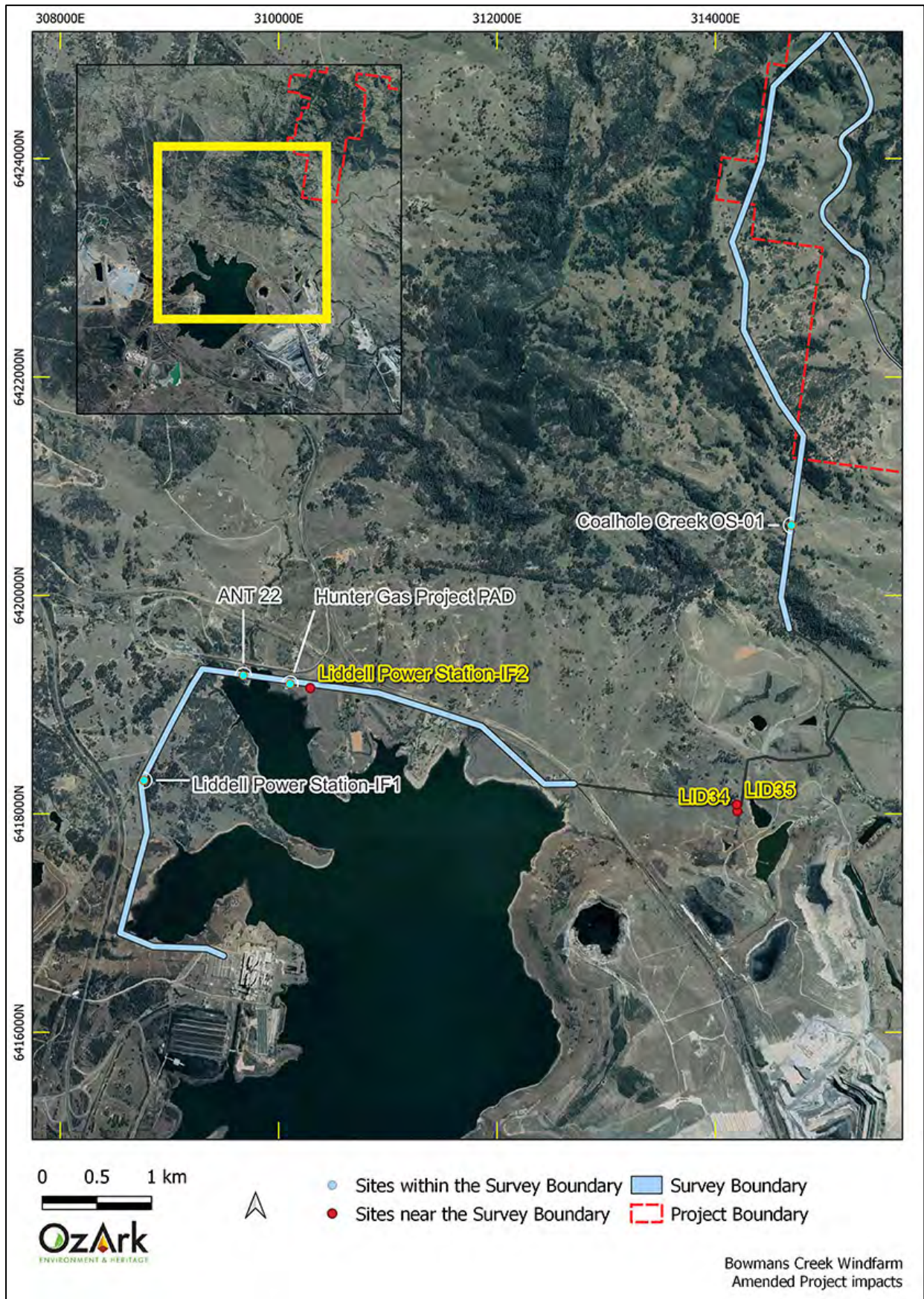




Figure 4-2: Sites within or near the Survey Boundary (south).





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## 5 RECOMMENDATIONS

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These recommendations supersede those presented in Section 10 of the ACHAR.

1. Before works commence, the portions of the Survey Boundary not surveyed will require survey by an archaeologist and members of the Aboriginal community. See **Section 4.2.3** for further details.
2. As many sites as is possible should be avoided in the final design of the ETL and access tracks. Further details on these potential avoidance measures are provided in **Section 4.2.1**.
3. Those sites that can be avoided should be protected from inadvertent damage during the works by temporarily fencing the site as set out in **Section 4.2.4**.
4. Those sites that are not able to be avoided should be managed by the procedures set out in **Section 4.2.5** and **Table 4-4**.
5. Before any works on the Amended Project begin, an Aboriginal Cultural Heritage Management Plan (ACHMP), approved by the Department of Planning, Industry and Environment and prepared in consultation with the RAPs, will need to be developed. The ACHMP will quantify the exact sites to be impacted, the methods by which they will be managed and the fate of any artefacts that are recovered prior to the works. The ACHMP will also provide a protocol for unanticipated finds and the discovery of human skeletal material.