Warragamba Dam Raising

Environmental Impact Statement – Chapter 18: Aboriginal Cultural Heritage

Version 10 September 2021, SMEC

Review – Phil Hunt, Archaeologist

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In referencing the Environmental Impact Statement (EIS) and its parts, this review uses the following abbreviations:

ACHAR - Aboriginal Cultural Heritage Assessment report (ACHAR)

CH18 – Chapter 18 of the EIS

AAR - Appendix 1 – Archaeological Assessment Report

CVA - Appendix 2 - Aboriginal Cultural Values Assessment report

1.0 INTRODUCTION

1.1 THE BRIEF

The Environmental Defenders Office (EDO) is acting for Ms Kazan Brown, a Gundungurra woman and traditional owner, for the area affected by the proposal to raise the wall at Warragamba Dam (Project). Kazan is concerned about the impact the Project will have on cultural heritage

The following has been prepared as an expert report to provide opinion on the adequacy of Chapter 18: Aboriginal Cultural Heritage of the EIS and the Aboriginal Cultural Heritage Assessment Report, prepared by Niche Environment and Heritage, which is Appendix K (and its appendices) to the EIS, and upon which Chapter 18 of the EIS relies. Specifically:

1. In your opinion, was the Aboriginal cultural heritage assessment (the report for which is Appendix K to the EIS) undertaken for the Project's EIS adequate?

2. In your opinion, does Chapter 18- Aboriginal cultural heritage accurately reflect the Aboriginal cultural heritage assessment?

3. In your opinion, are predictions of any likely impact on Aboriginal cultural heritage appropriate? Are any proposed mitigation measures adequate?

4. Please provide any further observations or opinions which you consider to be relevant, including in relation to the potential impacts of the Project on Aboriginal cultural heritage, as they relate to your expertise in this matter.

1.2 LIMITATIONS AND TERMS

This report addresses the Aboriginal archaeological and cultural heritage issues of the EIS. The review addresses only EIS information available on the project's public website. Material in the reports that have been removed on request by Registered Aboriginal Parties is not included in the review.

Comparative reviews include the author's knowledge of the area through previous visits and his own report (Hunt, 2014), along with other reports and publications.

The terms and definitions, such as *rock shelter*, *artefact*, *shell midden* and *potential archaeological deposit (PAD)* are as defined in the *Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW* (DEC, 2010), and *Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales* (DECW 2010).

1.3 AUTHOR

This report was prepared by: Phil Hunt, Archaeologist.

In this report I represent myself as an independent archaeologist and not on behalf of any organisation. I visited the Burragorang Valley on several occasions in the late 1990s early 2000s and came across and subsequently recorded over 20 Aboriginal archaeological sites. I prepared a report summarising my findings (Hunt, 2014). I came to understand that the region is extremely special, particularly in its Aboriginal cultural heritage. I made contact with Gundungurra traditional owners in early 2021 to offer assistance in regards to the information that I had learned from my visits. We have exchanged information but have not collaborated on this report.

I provide the following brief summary of my working experience as evidence that I am qualified to comment on the EIS. My resume is available on request.

I have worked in Aboriginal cultural heritage even prior to graduating in 1992 in different capacities, from archaeological survey, excavation, research, education and training, site conservation, and planning and assessment. I have been involved in conservation planning at different levels of government and have reviewed and contributed to the development of state and local environmental planning instruments, Aboriginal heritage potential zoning maps and planning procedures, site management recommendations, reviews of heritage local environmental plans, development control plans and educational and training programs. I have also been involved in reviewing permit, salvage and consent applications under the *National Parks and Wildlife Act*, reviewing nominations for the State Heritage Register of NSW under the *Heritage Act*, providing advice and evidence for Land and Environment Court hearings as expert witness, contributing to the development of plans of management, conservation strategies, policies,

acquisition/reservation priorities, regional studies and environmental impact assessment guidelines and preparing submissions on *Aboriginal place* nominations. I have been educated, trained and mentored by leading academics, archaeological professionals, Indigenous experts, government officers and local community members from around the world. While the statements and views here are my own, they reflect decades of influences from people highly skilled and insightful in their own fields of expertise.

From my work in Australia, England, Peru, and in relation to projects in Mongolia, Russia and Italy, I am familiar with and appreciative of the positive effects that governments have on successful heritage protection. I am also aware of the negative effects of poor decision making and policy development. My objective in this report is to help convey the extremely high significance of the Aboriginal cultural heritage of the project area and to give those who are not fully appreciative of it another opportunity to save this precious place from further damage.

1.4 UNIFORM CIVIL PROCEDURE RULES

I have read and agree to be bound by Division 2 of Part 31 of the Uniform Civil Procedure Rules 2005 and the Expert Witness Code of Conduct in Schedule 7. A copy of my Curriculum Vitae is attached to this Report.

1.5 THE EIS, CHAPTER 18 & APPENDIX K

The Aboriginal cultural heritage assessment is made up of separate investigations documented in the Aboriginal Cultural Heritage Assessment report (ACHAR) (Niche Environment & Heritage 2019, App.K).

The ACHAR includes a separate Archaeological Report (Appendix 1-Archaeological Assessment Report), Aboriginal Cultural Values Assessment report (Appendix 2) and other information. In referencing the EIS and its parts, this review uses the following abbreviations:

ACHAR - Aboriginal Cultural Heritage Assessment report (ACHAR)

CH18 – Chapter 18 of the EIS

AAR - Appendix 1 – Archaeological Assessment Report

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This author's review is for Chapter 18, the ACHAR and Appendix 1. I have not reviewed the other Appendices in detail, in particular Appendix 2 The Cultural Report.

LIST OF APPENDICES FOR APPENDIX K

2.0 EXPERT OPINION ON CHAPTER 18

2.1 Review of the Brief Topics

1) In your opinion, was the Aboriginal cultural heritage assessment (Appendix K to the EIS) undertaken for the Project's EIS adequate?

The author wishes to acknowledge that there has been an incredible amount of work and energy carried out in preparing the EIS. In many respects the EIS's ACHAR is exemplary and the ACHAR correctly finds that:

> The study area sits within a cultural landscape that is rare in eastern Australia for its preservation of detailed Dreaming stories and a combination of associated sites and places, including sites of archaeological and historical value, existing in a visually striking "natural" environment that imbues a strong sense of place.
>
> **The cultural landscape is assessed to be of very high significance (ACHAR, p.iV)**

And that:

> the Project would cause cumulative impact and loss of values on the Aboriginal cultural heritage of the region and local area (ACHAR, p.78).
>
> The Project is an incremental addition to a previous project (the dam construction) that has caused cultural trauma and significant loss of cultural heritage values (ACHAR, p.79). [and]
>
> will result in a reduction in the inter-generational equity afforded by the cultural landscape of the Study Area and its surrounds (ACHAR, p.81)

However, overall the EIS falls short in a number of areas, principally in relation to the assessment of significance. It is the author's opinion that the Aboriginal cultural heritage assessment, while correctly identifying the area's very high significance in parts, also undermines its own conclusions by understating the Aboriginal cultural heritage values and the likely impacts of the proposal. The various reports do not present a linked and coherent discussion of the significance of the area, rather it appears disjointed and clumsy. It is the significance of the area that is the most critical as this is the measure by which the Aboriginal cultural heritage values will be judged. For this reason I feel the report is inadequate.

Some main discussion topics are outlined below.

Quantity and Quality

There are just so many individual places and items of heritage significance that on their own would justify protection and should naturally encourage people to make every measure to avoid impacts. The quantity is staggering, with 334 (303 newly identified) archaeological sites alone. Yet the ACHAR downplays the incredible number of sites identified and recorded during this work, which is especially surprisingly given that it is still only a sample of the entire area. It is uncommon for a single project to produce such a large number of newly recorded sites. For example, in the 1980s Dr Val Attenbrow lead surveys and excavations in the Upper Mangrove Creek area, NSW, and identified 69 sites (Attenbrow, 2007). In 1993 I carried out a survey of forested country in Far East Gippsland, Victoria, surveying over 154km of tracks and exposures. 'Only' 157 sites were identified (Hunt, 1993). On the Cumberland Plain, in an area of the former ADI site at St Marys, the total number of surface sites in the central precinct area from decades of surveys totals 40 (McDonald, 2009). The vast majority of projects do not identify a large number of previously unrecorded

sites due to the characteristics of the research area, the time available for surveying and because of archaeological visibility (see below). The figure of 334 sites for the Project reinforces the importance of the area and underlies the inadequate assessment of significance. From only several visits to the Project area myself I identified 23 sites (my purpose for being there was not an archaeological survey but accompanying fauna assessment teams). I prepared a report to outline the significance of the area in terms of the number, variety and good condition of the sites that I came across and to highlight the importance of the region and its research opportunities (*Some Aboriginal Heritage Notes for the Burragorang Valley, NSW, 2014*). My recommendations at that time were:

- the Lake Burragorang catchment area should be subject to systematic Aboriginal heritage assessment.
- strong consideration should be given for methodologically based surveys that provide information on presence-absence, ie not just where artefacts/sites are found but where they are not being found.
- an assessment of the area should include Aboriginal history reviews.
- no new roads or tracks or larger scale earthworks should be carried out without a holistic understanding of the Aboriginal heritage of the area and implications for the likely loss of sites through such activities. (Hunt, 2014)

This was not cited in the EIS although it has been in the NSW Aboriginal Heritage Information Management System (AHIMS) report register since 2014.

Most sites in the ACHAR (272 of 334 or 81.4%) have been assessed to hold low scientific significance. There were 22 sites assessed as having moderate significance and a further 40 of high significance. (AAR: ii). The assessment of low significance for 81.4% of the recorded sites is unrealistic. The assessment of low significance given for the majority of open artefact scatters is also unrealistic. Both these assessments do not take full account of the potential for buried archaeological deposit, the low disturbance, low rates of graffiti, vandalism and damaging visitation of shelters, and the sheer number of surviving sites. Some of the repeated arguments of the archaeological report are that archaeological sites have low significance:

1. 'due to low number of artefacts present and the high number of other artefacts found within the Subject Area'
2. 'due to high number of open camp sites within the Project'
3. 'due to the low density nature of the artefact scatter, the moderate level of disturbance at the site has removed the archaeological integrity of the deposit, and the common nature of the raw material' (AAR-Annex 2 to 5)

Looking at the **first argument**, this suggests that a site has low significance because it has low artefact numbers and because there are so many other artefacts found in the Project area. While the AAR does note that sites in some instances are considered to have low potential for buried archaeological deposit, I do not accept that this is the case for the majority.

The issue of buried archaeological deposit is very important for both rock shelters and for open artefact scatters. The detection of artefacts is largely to do with exposure. If there is vegetation cover, soil cover and no exposure, it is almost impossible to find surface artefacts. Therefore artefacts that are discovered are almost entirely in an area of disturbance. Statistical analyses and careful excavation work has shown

that the quantity of artefacts found on the surface does not necessarily correlate with what is below the ground (eg James & Davidson, 1994; Mosig Way, 2017). Put another way, a few artefacts on the surface may be the tip of the iceberg. To suggest every site with a low artefact number is low significance is a massive oversimplification. Similarly, to say that because there is a high number of artefacts found in the area, that a site with only a few must only constitute low significance is also an oversimplification. With this kind of logic, the Aboriginal cultural heritage report would have assessed the open camp sites higher in earlier drafts of the EIS because fewer sites had been found, but this doesn't seem to be the case. The same logic is given for rock shelters with art, with axe grinding grooves and so on.

This concept is important and is discussed in more detail below in the context of archaeological dating.

Looking at the **second argument** above, that sites are given low significance by the EIS because there are many sites of that type. This is primarily on a local rarity/representative basis. Unfortunately, this too is based only on surface findings and there is no excavation data to provide a fuller picture. There are many 'tips of icebergs' being examined but the actual full extent of each iceberg is unknown. Even detailed examination of the artefact types, sizes, materials and other features has not been carried out. For example, the report notes a site that I initially recorded in 1998 and that is over 250m in extent with hundreds of artefacts was revisited but only a sample of 14 artefacts was recorded for the assessment (AAR: 51). While this particular site, Byrnes Bay OS-1, is actually assessed as having high significance in the AAR, the fact that only 14 artefacts were sampled for such a large site suggests the overall analysis of artefacts has been cursory and rushed. If an important site like this one which is in the inundation zone gets minimal attention, it suggests that the small scatters have not received enough attention either. Given that open artefact scatters are the main site type in the Project area and the main site type to be impacted, more work needs to be done to understand this archaeology.

The way the breakdown of assessment has been made is better suited to a project where a small number of sites are proposed for impact in a region where the archaeology is well understood, not where a very large number of sites in a largely unexplored region would be affected.

Looking at the **third example**, it is saying the artefacts visible on the surface are low density, moderately disturbed, and the artefactual stone material is common, therefore they have low significance. Given that there are stone cobbles in the Wollondilly River itself that are being used, it stands to reason that some materials will be common. The argument that this means they have less significance doesn't follow. One of the most important elements of this region is that there *is* raw material in good supply and conveniently accessible to the stone tool manufacturers. This is not something that lowers the significance, it raises it. One of the more difficult things for archaeologists to resolve is where material is being sourced. It has a major effect on modelling in terms of trade, movement, clan boundaries and stone tool technologies. If material is plentiful, it changes people's behaviour and the archaeological record is correspondingly different to surrounding areas. The Sydney coastal clans had little access to good stone material and therefore the material is 'expensive' in that it takes more effort to acquire (only accessing smaller pebbles, having to trade with neighbours, and so on). The plentiful supply of stone material in the Warragamba and Burragorang Valleys opens the real possibility that it was traded with coastal clans and perhaps elsewhere in NSW.

In terms of the low artefact numbers (or densities), again we are faced with the same dismissiveness in the EIS. Regarding disturbance, what is outside the area of disturbance needs to be factored in. An artefact scatter that is found on a dirt road is naturally disturbed. But the potential archaeological deposit (PAD) on either side of the road may be undisturbed and extensive. This can only be fully confirmed through archaeological subsurface testing. The hypothetical cross section in Figure 1 below demonstrates that a

track or other exposure may conflate the strata into a visible surface layer. This is disturbed but outside of the exposure there may be *in situ* stratified archaeological deposit.

FIGURE 1. CROSS SECTION OF HYPOTHETICAL OPEN SITE WITH TRACK. RED INDICATES ARTEFACTS.

The almost wholesale assessment of sites to low significance is simply nonsensical for a region where the archaeological story is largely unknown and given all the other heritage layers that are linked to it. The story places and the historical sources make this area extremely rare in SE Australia and give an opportunity to look at the connections between the archaeology and these other layers. It is hard to ignore the rich cultural information for the area, but this author's review concentrates on the archaeological findings. From my own recording of sites in the Burragorang area one of the most interesting things about the sites and artefacts that I was seeing was their uniqueness when compared to other parts of SE Australia. There is such potential for further research using what is on the surface, without the need for excavation if more time was given to artefact analysis and survey coverage. There are so many stories to tell and the EIS seems to have missed them. I identified the following research points in 2014 as a starter.

> Particular research points:
>
> - very large almost primary flaked stone was found at Byrnes Bay OS 1 & 2 near the river (now Lake Burragorang) suggesting the river pebbles are a source of banded chert etc
> - Joorilands Range OS 1 to the east and away from the river has many artefacts exhibiting retouch, usewear, backing. The size is smaller and would suggest more conservation of material and use of tools.
> - Rock shelters in Narrabeen but no doubt higher up in Hawkesbury sandstone (where I didn't visit).
> - Post-invasion Aboriginal use of the area prior to becoming dam catchment (Hunt, 2014 p.9)

Given that there is insufficient information on chronology, subsurface context and proper modelling of landform context, there is a high risk that any impact would destroy extremely rare, old, complex and irreplaceable heritage. A more appropriate approach of assessing the significance would be from a replaceability perspective. If they cannot regenerate, be replaced, be moved or replicated, then they are irreplaceable. Once the sites are damaged or destroyed, they cannot be returned to their former condition.

The AAR touches on important issues with the artefactual assemblage, such as the raw materials and the technological manufacturing context. Unfortunately, the extent of actual artefactual analysis is quite limited (AAR: 88-93). The large number of previously unrecorded sites may have constrained the archaeological work as for each site found there is quite a lot of work to do in recording it and processing the data. For example, the survey team made a decision to only record a sample of artefacts from larger sites. A total of 1765 artefacts was recorded. The analysis comes across as rather cursory and preliminary. The AAR confirms this:

> Raw material selection was found to be consistent with other projects across the region. The Subject Area did contain a wider range of technologies, including ground edge, grinding, bipolar, anvil rested and percussion flaking

It is therefore disappointing to think that this preliminary assessment of the stone artefact assemblage may be used to determine the fate of such a large area of a cultural landscape. The analysis typifies the whole EIS in its mixed messaging, pointing out how the Project area is typical or similar to adjacent areas or in some way unremarkable, but then being different and unusual.

> Raw material selection was found to be consistent with other projects across the region. The Subject Area did contain a wider range of technologies, including ground edge, grinding, bipolar, anvil rested and percussion flaking (AAR: 88). [and]
>
> The assemblage of complete flakes from the Warragamba surveys does not show any particular flaking strategy, although this could be the result of the relatively small sample. As noted above the manufacture of flaked stone artefacts appears to have been unconstrained by raw material availability (AAR: 91).

The confusion is understandable if the analysis is trying to fit the small sample that has not been given sufficient detailed recording and examination into a framework that is better suited to adjacent regions. If the archaeology is different, then the analytical approach needs to adapt. Again, the AAR acknowledges this but then seems overwhelmed by the reality of it and provides no mechanism to change the way the data is handled.

> Flaked artefacts are the most common class of artefact, accounting for 93% of the entire assemblage. Proportionally there are a high number of cores present in the assemblage, which may be explained by selection bias when sampling. There was a high number of axe (hatchet) or axe-fragments recorded during the survey. Again this may be explained partly by sampling bias for recording notable artefacts, but is also probably a reflection of the relatively intact nature of the archaeological record and the good levels of exposure and visibility below the FSL. Unlike many other areas in New South Wales the relative remoteness of the Subject Area means there was relatively little artefact collection in the past to remove conspicuous artefacts like axes. The richness and relative intactness of the stone artefact assemblage is demonstrated by the presence of all the utilitarian classes of stone artefacts that would have been being used by Aboriginal people in the study area in the past: flaked stone for sharp edged tools; hammerstones for making flaked stone; ground edge artefacts for durable hatchets/axes; and grinding stones for preparation of food, medicine or pigment (AAR: 89)…
>
> The survey results demonstrate that there is a rich and intact stone artefact assemblage in the study area. Artefacts are present in high frequencies in both open contexts and in rockshelters. The artefacts are of value in and of themselves as a material link in the cultural landscape, and may provide an avenue through future research to further understanding the past Aboriginal land-use of the study area (AAR: 94).

Having established that the area has a '*rich and intact stone artefact assemblage'*, derived only from a sample, the assessment then condemns the vast majority of sites to being of low significance. However, sites considered low significance could just as well be given higher significance assessments if the landscape features and archaeological visibility was more appropriately considered. For example, Joorilands Farm 1 is assessed as having high significance due to high artefact numbers and several scarred trees (AAR: 66). I would agree with the assessment, but I would also suggest that a contributing reason for the high number of artefacts is the excellent archaeological visibility of a track more or less running parallel with the terraced

area. If there were more exposures across the region on similar landforms, it would be expected that they too would show high artefact numbers. This kind of analysis is missing.

It is also important to understand the gaps between concentrations of sites. Firstly, we need to ask is it a real gap or just surface archaeological visibility (discussed further below). Secondly, the gaps between sites is also important to our understanding of what is happening across the landscape. Aboriginal tradition and law provided strict rules on the physical layout of a living space, and this will influence the archaeological record:

> …separate sleeping locations for families, men, women and young boys; a central location for dancing; and men's and women's areas. Within each separate area could be located one or more huts, wind breaks, a cooking area, hearths, a diurnal activity area and a swept (cleared) domiciliary area. (Owen, 2015: 75).

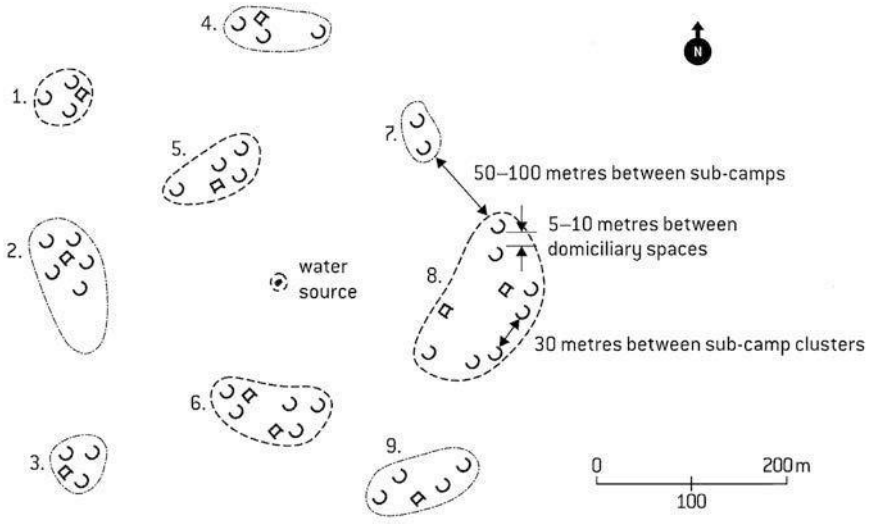

FIGURE 2. HYPOTHETICAL MODEL OF A CAMP LAYOUT, WITH DOMICILIARY SUB-CAMPS (OWEN, 2015: 76).

As the EIS noted above, there is a wide range of artefact types, including axes and axe fragments. There is also a high number of axe grinding grooves (which may also be seed grinding patches for processing grain into flour) in different contexts such as shelters and open sites. This combination of surviving evidence is extremely rare in SE Australia. For example, notable stone tools like axes have been picked up by collectors and the general public so this cultural landscape offers unparalleled opportunities to examine the different layers of Aboriginal cultural heritage and see their linkages. Unfortunately, the EIS offers us just a taste of what could be and then attempts to convince itself that despite all the unanswered questions and the need for further research the sites are largely of low significance. It is simply not logical. In terms of both quantity and quality of archaeological sites, they have much higher significance individually and collectively than attributed in the EIS.

Archaeologically Distinct

The EIS suggests that the archaeological story is similar to the adjacent Cumberland Plain. The Project area is not the same as the Cumberland Plain or the GBMWHA or coastal Sydney, the Illawarra or the Hunter Valley. It has its own unique and particular qualities that set it aside from these other regions. From an archaeological perspective there is a great story to tell about the material used for stone tools. Very large flakes are found closer to the Wollondilly River and further from the river the sites show much smaller and

more diverse assemblages. The river must be the source and it is also a major focus for much activity. This is also the area that has been already most affected by the current dam and will be further affected by the proposal.

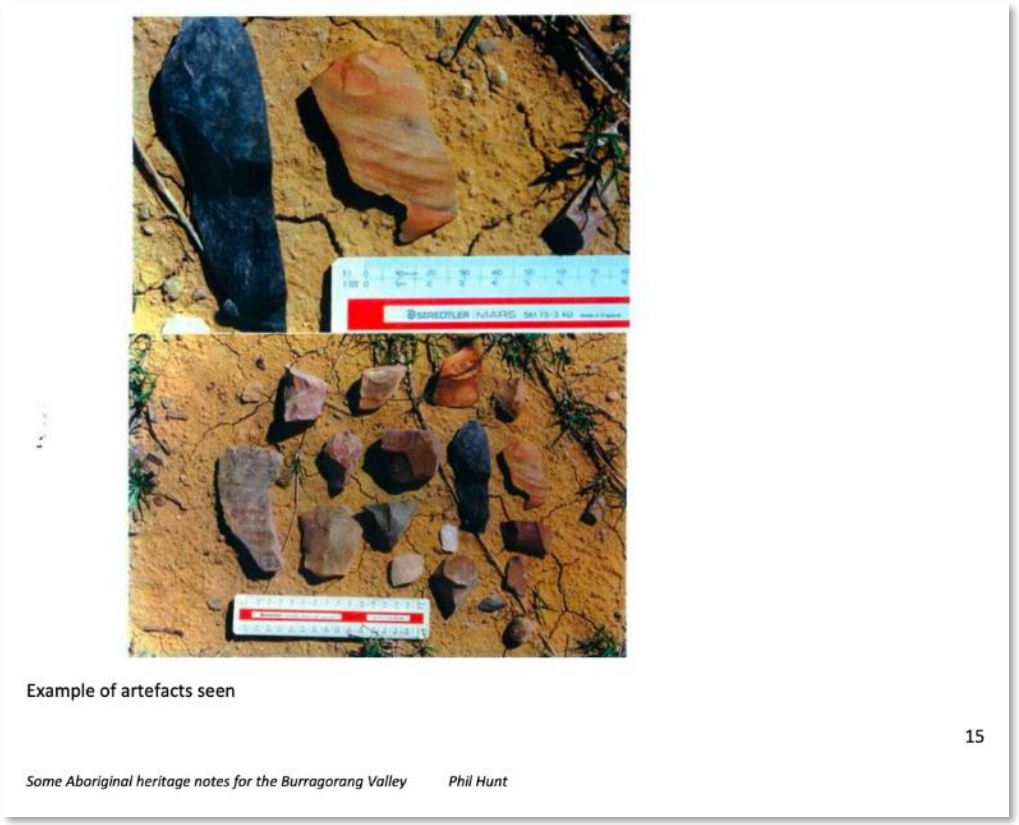

FIGURE 3. PHOTOS OF UNUSUALLY LARGE ARTEFACTS NEAR RIVER, RECORDED BY AUTHOR, IN 2014 REPORT

FIGURE 4. PHOTOS OF SMALLER ARTEFACTS 3KM FROM RIVER, RECORDED BY AUTHOR, IN 2014 REPORT

The EIS only refers to the main stone material as chert and does not discuss its context in much more depth. From my visits, it appears that this chert (also described regionally as tuff) is locally derived and plentiful. It is not the classic silcrete found on the Cumberland Plain and beyond and it is clearly not traded from the Hunter Valley as the artefacts are too big and there are too many. The archaeological distance-decay

model, also pointed out in the EIS (AAR: 90), suggests that the further from a stone source the smaller and more worked the artefacts become. The EIS only refers to this model in terms of cortex (the outer layer of original weathered stone that can still be attached to some artefacts after the knapping or manufacturing process). Figure 3 above shows very large artefacts near the Wollondilly River, without cortex, and illustrates the stone is so plentiful that they can be very large and have no outer cortex. This means the material is effectively 'inexpensive' and can in a sense be used generously as there is plenty more available. Conversely, Figure 4 shows a site over 3km from the river where the size is smaller and more curated. In the Sydney area, the artefacts found are generally of a smaller size suggesting the source material may be restricted and also the availability more limited. There may be chronological issues as well.

From the above, I would suggest that there is a high likelihood that material found on the Cumberland Plain and further towards coastal Sydney may have been traded from the Project area. This could change the way we have seen stone material traded, which has generally focussed on western Sydney silcrete, Hunter Valley indurated mudstone and coastal materials. I have personally found an artefact of similar material in a recently recorded site in Strathfield. Further investigations are required to fill in the gaps in our knowledge about the role this area has in the wider region.

The area is also very amenable to non-destructive research. In just a few visits and with no intention to look for Aboriginal sites, as noted above, I myself identified 23 sites (Hunt, 2014). The sites were mostly artefact scatters but also a rock art site. The varied locations, the different characteristics of the sites, and their condition all suggested to me at the time that this is a special place. The large number of sites found by the EIS team is a testament of what can be achieved due to the unique geographic features of the project area. Being in a rain shadow seems to allow for better archaeological visibility. The combination of geological features suitable for rock art, rock engravings, axe grinding grooves as well as containing a major river valley along with the good preservation of environmental features all provide excellent conditions for the survival of Aboriginal heritage. On the adjacent Cumberland Plain most of the artefacts and camp sites can only be found through archaeological excavation and most landscapes have had significant disturbance and modification over the last two centuries.

There is an underappreciation in the EIS of the less rugged upper Burragorang area, which also appears to be the area of largest proposed inundation impact. This area contains more of the gently sloping land that survives above the dam level. While most of the former farmland has been inundated, the upper catchment still contains some of these precious landscapes. This is discussed more below.

The slope categories for open sites seem to be unrealistic where the majority are on quite moderate slopes (AAR: 86). The 23 sites that I recorded previously were associated with fairly level to flat landform features. This kind of anomaly could be reviewed if archaeological survey coverage was captured in more detail, as recommended in my 2014 report.

> The information provided in the site cards and this report is but a small window into an incredibly interesting Aboriginal landscape. I have no doubt that an organised and well-prepared team carrying out a strong methodologically-based survey of the area, especially during drought when the water level is newly lowered, would provide a very important study for the region and the state. Given the differing geologies, landscapes, vegetation communities and the fact that the area is effectively a rural area that would normally be privately owned and locked off to such study, it offers a valuable opportunity to look at a range of potential Aboriginal occupation strategies. There is also important historical connections to the area for Aboriginal communities (Hunt, 2014, p.3).

It is important to know the difference between searching for sites and doing 'methodologically-based' surveys that attempt to quantify where sites are and where they are not. Presence-absence. The EIS does not provide this level of analysis and therefore our understanding of the archaeological material is limited. Questions remain in terms of whether the overall sample and archaeological visibility captures the variations of occupation. What is visible, what may be buried, what factors are limiting the view of surface artefacts or rock outcrops, what may be smaller transient camps or tool manufacturing sites compared to home bases, is the difference in size of artefacts closer to the river statistically real or is it because of better archaeological visibility? We can't tell from the data provided. Carrying out more careful recording of survey coverage can provide insights into which particular landform has higher site density and higher artefact density. For example, in my survey of East Gippsland forest country, some of the highest site and artefact densities came from landforms that had the smallest overall survey coverage (Hunt, 1993). If we had not carefully recorded survey coverage in detail these important landscapes could have been overlooked simply because more sites and artefacts were being found in areas of better visibility and where more ground was walked.

The large volume of sites found in the Project area and the amount of work just to record them at a basic level should not be overlooked, however, making the decision to categorise so many sites as having low significance is at best premature. The data that could have been captured using more careful collection of survey conditions (archaeological visibility) could then have been reviewed against environmental factors such as vegetation, aspect, landform type, slope, distance from water and so on with more precision. Without this type of detailed analysis, the carrying out of archaeological test excavation is more crucial, and this is also absent from the EIS.

Considering the amount of archaeological work done on the Cumberland Plain, including excavation and dating, there are sufficient differences already demonstrated to suggest that the Project area is distinctive and this needs further highlighting before making sweeping assessments of low significance.

Archaeological Dating and Subsurface Deposit

There is insufficient discussion about the paucity of archaeological dates. It is impossible to fully understand the significance of the region if thousands of years of Aboriginal stories are compressed to a two dimensional 'pre' and 'post' invasion discussion. The EIS notes that the oldest date for the Cumberland Plain is 36,000 years and 12,000 for the eastern Blue Mountains (AAR: 14). It is highly likely that older dates will emerge with more excavation and sampling as the amount of excavation work in the more rugged landscapes has been less. Notwithstanding what is and what could be, in terms of the Project area we have no dates at all. This is barely raised as an issue in the EIS, yet it is crucial if decisions are being made over the destruction of large areas of a cultural landscape that is largely still unknown. We can look at the destruction of Juukan Gorge, dated to 46,000 years, as an example of decisions that were made with insufficient information and then allowed to stand once further information was obtained.

There is also insufficient acknowledgement and discussion of the potential for buried archaeological deposit. For example, archaeological work on the adjacent Cumberland Plain and elsewhere suggests that many of the artefact scatters would be very large and complex sites if subject to subsurface excavation (see James & Davidson, 1994)[1].

[1] Dr Ros James also assisted in the preparation of a research design with state government staff, including Margrit Koettig and myself, which was made a condition of an excavation program during assessments and salvage during the Rouse Hill

Recent excavations at Lake George, NSW, have similarly shown that test excavation can miss important clusters of material if the sampling is too small or infrequent. In the diagram below, it shows the initial test square in bold. Quartz was the highest artefact material in this first square, followed by silcrete and chert. With the excavation expanded, it is clear that the original square under-represented the overall artefact density across the site, the silcrete artefacts and to a lesser extent the chert artefacts.

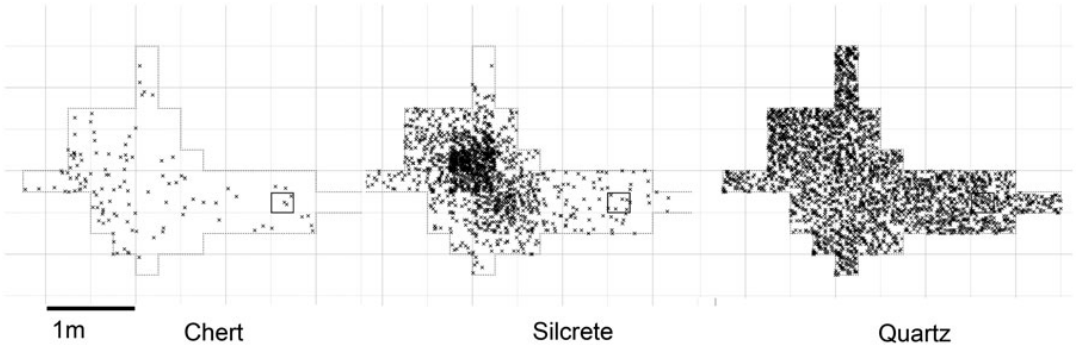

FIGURE 5. IF ONLY A SMALL EXCAVATION SAMPLE WAS DONE MUCH COULD BE MISSED (WAY, 2017: P5)

Dr Amy Way who directed the excavation concluded:

> This study thus demonstrates that widely spaced test-pits, as specified in the Code [of Practice, DEC 2010] , cannot be relied upon to detect small concentrations, and if detected, cannot be relied upon to provide an accurate representation of those concentrations. (Way, 2017: 9)

Therefore if even test excavation can underestimate the extent and complexity of an open site, relying on surface scatters alone can be problematic when making assessments of significance.

The archaeological modelling is also seemingly preoccupied with slope categories and doesn't explore some of the other significant elements of the region, such as the existence of large quantities of raw material for stone tools.

> The predominant pattern of occupation observed was that the large majority of the artefact sites (Open Camp Sites and Isolated Finds) were located at lower elevations within close proximity to the former watercourses, alluvial flats and banks now occupied by Lake Burragorang; a pattern that is consistent with resource modelling throughout the region and predicted to be the case within Section 7 of this assessment (AAR: 87).

Archaeological modelling has been confirming the above findings for decades, ie open camp sites are more often found on more gentle slopes within proximity to watercourses, and rock shelters are found in suitable outcrops, usually on steeper slopes due to geological patterns. What is less well known are the more subtle differences between sites in the same landform categories, and in relation to specific environmental

Infrastructure Consortium works in 1999-2000 and was the catalyst for a new methodology for open site excavation using much larger open area excavations – see also McDonald, 2005).

variables, such as sources of stone material, changes in vegetation type, and so on. This is missing in the EIS and is therefore missing from the assessment of significance. Looking at the Stream Order Model more carefully and the Economic Resource Model would provide more understanding of the context of each site and could then more properly provide a framework for assessing a site's significance. For example, archaeological investigations at Leppington have provided the opportunity to review different models, helping to improve predictability '*of potential to the majority of landforms with major archaeological sites*' (Owen & Cowie, 2017: 12).

> The Economic Resource Model focuses on locations with high value food and/or economic resources, as well as their connection to landscape texture change … and ecotones (Owen & Cowie, 2017: 4).
>
> …larger economic zones (areas with a high potential for resources) have a higher potential for continued and long-term use. It is likely that dense and/or varied archaeological deposits would be formed within and/or adjacent to the zone (Owen & Cowie, 2017: 5).

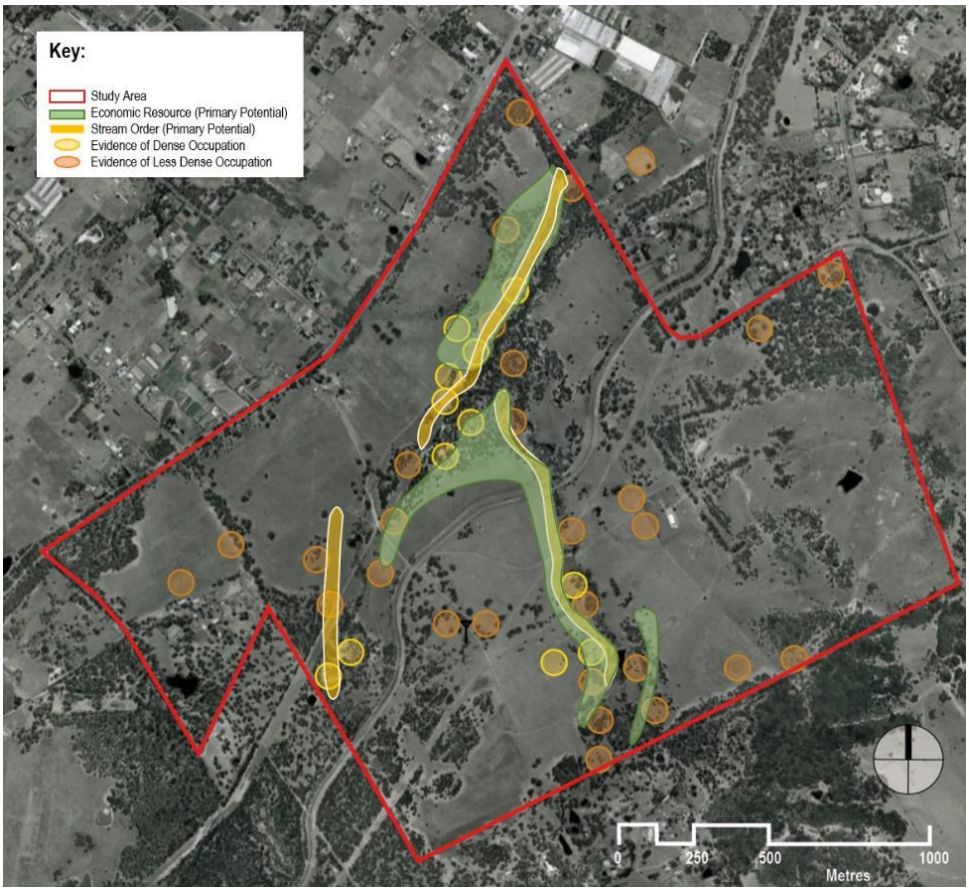

Figure 10 Application of the two predictive models, contrasted with the outcome of archaeological excavations—dense archaeological evidence was present inside the yellow circles, less dense inside the orange circles. Areas with no archaeological evidence or a 'background scatter' are all other areas (after Owen et al. 2016). Domiciliary spacing of evidence is apparent within the core archaeological zone. (Basemap source: Nearmaps 2016)

FIGURE 6. COMPARING STREAM ORDER & ECONOMIC RESOURCE MODELS (OWEN & COWIE, 2017: 11).

The EIS only provides a basic understanding of how the archaeological sites fit into the landscape while missing the important elements that are different and unusual about the region. Dismissing so many sites

as low significance without a chronology and without exploring the unique features of the Project area is a great flaw in the EIS.

2) In your opinion, does Chapter 18- Aboriginal Cultural Heritage accurately reflect the Aboriginal cultural heritage assessment?

It is the author's opinion that Chapter 18 – Aboriginal Cultural Heritage fails to adequately address the issues of significance and downplays the very high consideration that the ACHAR gives for most elements of the Aboriginal cultural heritage values. For example, the ACHAR states clearly that:

> The proposal will harm the cultural landscape within which it is located, including Aboriginal objects at archaeological sites; sites and places associated with Dreaming stories; cumulative impacts on waterways of cultural value; and living and cultural places within the study area. The entirety of the land adjacent to the PUIA (particularly above the PUIA) is considered to be a cultural landscape of very high significance, and demonstrably contains many thousands of objects and many places of significance to the Aboriginal community. There are no proposed areas of exclusion from harm within either the dam wall construction site or the PUIA. (ACHAR, p.66).

In contrast, one argument in Chapter 18 is that the dam wall proposal will be potentially beneficial by reducing flood depths on Aboriginal cultural heritage downstream (CH18-12). It is giving more weight to sites that have been regularly inundated by a natural process for thousands of years and have survived, while suggesting directly damaging and destroying sites upstream is a reasonable outcome. Historical sources from the early days of the British colony show references to very large flooding events across the Nepean-Hawkesbury River catchment (eg Karskens, 2020). The damage that the current dam has caused to slopes unused to inundation is already apparent (see photo below).

FIGURE 7. ARTEFACTS ERODING FROM OPEN SITE ON THE SHORES OF LAKE BURRAGORANG (HUNT, 2014).

Another statement in the Chapter that undermines the complexity and uniqueness of the Project area is:

> Due to the rugged nature of the landscape, most sites suitable for Aboriginal occupation and transient use comprise of sandstone overhangs (CH18-3)

This sweeping statement dismisses one of the most unusual and special parts of the Project area, the more gentle parts of the Warragamba and Burragorang Valleys which had pre-invasion importance at many levels and that later became farmland for both non-Aboriginal and local Aboriginal people and have very high significance on that level too. While much has been inundated, there are still areas of former farmland that are rare in Australia in this protected context.

Farming Country

The Greater Blue Mountains World Heritage Area (GBMWHA) mainly protects Hawkesbury Sandstone country and landscapes that could be considered 'wilderness' or wild or rugged in one way or another. This land has been bypassed by farmers as the soils are poor and thin. The forestry industry found the timber marginal at best. There was little economic benefit to be had from these landscapes that dominate the greater Sydney region. While I was working for the National Parks and Wildlife Service in the 1990s, I often came across the view from natural heritage staff that the main reason why so much of this type of landscape had been protected for environmental conservation was because its exploitable economic value was so low. By contrast, the Project area includes previously highly sought after agricultural land. Its location within the water catchment means it is one of the few prime agricultural landscapes that has survived both urbanisation and modern agricultural practices that involve significant land modification.

Around NSW and Australia, the best country for Aboriginal people was often the first land to be taken from them and turned to farms. What we have been putting into the reserve system has been more often than not 'back country' to the prime hunting, gathering, cultivating lands. The Project area contains some of this prime country that is normally locked up in private agricultural property or turned into new subdivisions. It's absence in the GBMWHA is more an indication on the general tendency to value 'wilderness' highly and the tendency to have a simplistic view of the range of Aboriginal cultural heritage.

Looking around the Sydney region and across NSW, it is difficult to find a similar area of farming country that is actually protected from ongoing agriculture, mining and urbanisation. The Project area is highly rare in this context and highly significant.

FIGURE 7. COMPARE THE UPPER (SOUTHERN) CATCHMENT LIGHTER GREEN AREAS WITH THE BUSHLAND OF 'WILDERNESS' AND THE URBAN AND RURAL FOOTPRINTS OF GREATER SYDNEY

3) In your opinion, are predictions of any likely impact on Aboriginal cultural heritage appropriate? Are any proposed mitigation measures adequate?

The AHCAR correctly notes the difficulties conveying Aboriginal cultural heritage values to regulatory regimes.

> **9.3.2 Impacts of temporary inundation on cultural values**
>
> The cultural landscape of Country must be understood as a whole rather than as a series of disconnected points. Despite the clear difficulties of aligning this understanding of Country with regulatory regimes it is an essential element in achieving an assessment of cultural significance and impact that reflects Aboriginal cultural values. The potential impacts are temporary in their physical duration as they relate directly to flooding events, however, they have the potential to cause permanent harm through physical impacts to the sites (as discussed in 9.2.4) and potential alterations to the waterways and ecology of the Study Area. (ACHAR, p.76)

In comparing the upstream area of the dam to the downstream area, the EIS notes:

> The areas below the FSL of Warragamba Dam have been heavily impacted, however most of the study area has been exposed to limited disturbance or modification, having been protected as either a national park/state conservation area and a water catchment Special Area (Ch18-14)
>
> …harm or impact with mitigating circumstances is one of the least preferred options for management of cultural heritage values as it does not achieve a conservation outcome, and therefore is not aligned with the principles of inter-generational equity (ACHAR, p.84).

It is the author's opinion that the reports both highlights the very high significance of the area and the irreversible harm to those values that would ensure if the project went ahead, while downplaying them at the same time. It can't be both.

The Heart of the Region

What to some may appear to be a relatively small impact on an already compromised area is actually a critical impact to the core area of the region. The most important area is the valley bottoms and the river margins, and then the lands that extend up and out. The Project area proposes to damage this heartland.

> "*The large alluvial flats in this neighbourhood, along the Wollondilly, were, I was informed, great gathering grounds for the various tribes from many miles round, even those of Goulburn and Shoalhaven participating*." (Robert Etheridge, 1893, in CVA, 2021: 23).

The story places, the waterholes, the Dreaming Track, the farms, the selections, the source of stone tool material, rock art sites, burials, camp sites and houses. The invaluable flatter lands. So much of what was and is important lies along the rivers and the proposal to extend this is neither small in area nor minor in comparative effect. The EIS confirms that most archaeological modelling shows more activity within 200m of a waterway:

> Site and artefact distribution were found to vary across the Subject Area and variations to patterns reported in projects in the wider region were observed. The predominant pattern of occupation observed was that the large majority of the artefact sites (Open Camp Sites and Isolated Finds) were located at lower elevations within close proximity to the former watercourses, alluvial flats and banks now occupied by Lake Burragorang; a pattern that is consistent with resource modelling throughout the region and predicted to be the case within Section 7 of this assessment. (AAR: 87)

There are similar references in the reports, even if they are not always clearly expressed or quite acknowledged, to demonstrate the rarity and special qualities of the Project area and this makes the claims of acceptable mitigation a nonsense.

Less Disturbance and Damage

Due to the closure of the area for the water catchment there has been much, much less damage and modification to the landscape and thus to the archaeological resource than other parts of NSW and Australia. Across the Sydney region the area has had longer periods of agricultural, urban, commercial and industrial activity. Every road, track, transmission easement, drainage project etc leaves impacts. In terms of rock art, we see the damage to shelters and rock engravings that are closer to the urban area or public access. This has increased during the COVID pandemic due to lockdowns and increased local park visitation. More legal and illegal tracks, more rock climbing, more pedestrian visitation, more vandalism (AHO, 2021: 17). In coastal areas sites are being lost through coastal erosion from rising seas and waves generated by boating traffic (eg 30% of midden sites in northern Sydney are suffering significant coastal erosion – AHO 2019).

There are few places where Aboriginal cultural heritage places are safe from harm and interference. Yet the project area is pristine in comparison. Its ongoing protection within the water catchment area means the ongoing war of attrition elsewhere in the region is largely avoided. Whenever new sites come up on the public radar and visitation increases, whether for sightseeing, rock climbing, school holiday gatherings, camping excursions or any other reason, the sites invariably become degraded and damaged. Often this is irreversible damage. Once a site has damage, it automatically loses value in an assessment of significance based on a site's condition.

FIGURE 8. GRAFFITI REMOVAL & SHELL MIDDEN EROSION, MIDDLE HARBOUR, SYDNEY (PHOTOS: P. HUNT, NOV 2021)

One of the most distressing things for Aboriginal people and Aboriginal heritage practitioners is to see new damage from visitation at a site. It means more work to repair what is reparable, it means long delays as there are so few able to carry out the work. It means a higher risk of repeated damage. It means the significance of the site is already downgraded. Of the 1000 registered sites in northern Sydney that makes up the Aboriginal Heritage Office where I work, the number of sites that are free from graffiti, previous development or infrastructure damage, and impacts from visitation or erosion are almost nil. The sites in the best condition are the most difficult to access and the least known about (AHO, 2020: 11). The sites in the Project area are much, much less affected and less likely to be. The restrictions to public access make them even more rare as it future-proofs them in an era where conservation areas are progressively being opened up to increased and different use from the public.

The proposal to destroy so many sites and the connectivity of this precious cultural landscape is therefore quite distressing.

Mitigation

The traditional owners and Aboriginal communities are extremely concerned that the emphasis is on mitigation rather than prevention. For example, Gundungurra traditional owner Kazan Brown wrote:

> All recommendations are written as if the project has been approved already. There are no recommendations that discuss the project not proceeding. These recommendations are tokenistic and do nothing to save, preserve or record our culture. (CVA: 160)

It is my opinion that the project should not go ahead due to the irreversible impacts on Aboriginal heritage. However, mitigation is a component of the EIS and should be addressed. The various mitigation measures (AAR: 168) have some merit in terms of further detailed recording and assessment work, which would add to our collective knowledge and understanding of the area and as a benchmark for future monitoring and management/maintenance work that will be required. The mitigation measures pale in comparison with the benefits of protecting the heritage as it is. For Aboriginal people, mitigation appears to be a poor second as a result of the destruction of their heritage. Instead of having a campsite or a cemetery where they can visit and continue their custodial responsibilities, they receive some bags of remains and a report.

The 1989 previous recommendation (ACHAR: 62, 84) for an in-house archaeological specialist to carry out further work in the area is warranted. Given the extent of the archaeological sites and the benefit of additional recording and monitoring, this would have merit. However, the priority should be given for Indigenous positions, whether an archaeologist or Aboriginal heritage officers or rangers. A model along the lines of the Aboriginal Heritage Office (www.aboriginalheritage.org), with Aboriginal staff and other specialists reporting to an Aboriginal manager, may be an option. It could be a shared team over several agencies, such as National Parks and local councils, that could provide opportunities for a range of activities in and outside the catchment area including site recording, monitoring, conservation, land management, cultural burning, etc. Priority should be given for traditional owners to work on Country. However, the employment of Aboriginal people should not be as mitigation but in terms of land management generally. Aboriginal people looking after their Country should not be a mitigation measure for losing their cultural heritage. The ACHAR acknowledges the limitations of mitigation.

> … harm or impact with mitigating circumstances is one of the least preferred options for management of cultural heritage values as it does not achieve a conservation outcome, and therefore is not aligned with the principles of inter-generational equity (ACHAR: 84).

4) Please provide any further observations or opinions which you consider to be relevant, including in relation to the potential impacts of the Project on Aboriginal cultural heritage, as they relate to your expertise in this matter.

The fundamental problem with the EIS report is that it attempts to justify the destruction of so many Aboriginal cultural heritage places and the further degradation of places of historic and spiritual significance by lowering their individual significance or by downplaying it. The following information is provided to show why the report fails to properly address the importance of both individual sites and places and their collective significance.

The Legislation

If we strip back the legislative framework around Aboriginal heritage for NSW and think about the multi-layered heritage values that are contained within the Project area and consider the extent and irrevocable effect of the proposed impacts, this can help us to understand why Aboriginal cultural heritage is at great risk from the Project.

The NSW Constitution (Constitution Act 1902)

> (2) Parliament, on behalf of the people of New South Wales, recognises that Aboriginal people, as the traditional custodians and occupants of the land in New South Wales--
>
> > (a) have a spiritual, social, cultural and economic relationship with their traditional lands and waters, and
> >
> > (b) have made and continue to make a unique and lasting contribution to the identity of the State.

The proposed impacts will greatly impair this relationship not just for the Gundungurra who are traditional owners of the Project area but for all other communities who are watching. The extent of the proposed impacts suggests their contribution is not taken seriously.

The United Nations Declaration of the Rights of Indigenous Peoples

> Article 25: Indigenous peoples have the right to maintain and strengthen their distinctive spiritual relationship with their traditionally owned or otherwise occupied and used lands, territories, waters and coastal seas and other resources and to uphold their responsibilities to future generations in this regard.

The proposed impact of such a large area of land, further impacts to the waterways and the impacts to spiritual places strongly undermines the principle of Article 25.

The Burra Charter

> 'Place' includes locations that embody spiritual value (such as Dreaming places, sacred landscapes, and stone arrangements), social and historical value (such as massacre sites), as well as scientific value (such as archaeological sites). In fact, one place may be all of these things or may embody all of these values at the same time. (Aust Icomos; 2013a: 2) …
>
> *Guidance*: A place should be considered in its wider physical, social or spiritual context. It should not be assessed in isolation. A group of individual places with shared histories, common social associations, or complementary aesthetic characteristics may form a larger 'place' or a serial place. (Aust Icomos; 2013b: 8) …
>
> Cultural significance is the sum of the qualities or values that a place has, including the five values—aesthetic, historic, scientific, social and spiritual—that are listed in Article 1.2 of the Burra Charter. Through the processes of investigating the place and assessing each of these values, we can clearly describe why a place is important. This is the first step towards ensuring that our decisions and actions do not diminish its significance. (Aust Icomos; 2013b: 1) …

> Places of cultural significance enrich people's lives, often providing a deep and inspirational sense of connection to community and landscape, to the past and to lived experiences. They are historical records, that are important expressions of Australian identity and experience. Places of cultural significance reflect the diversity of our communities, telling us about who we are and the past that has formed us and the Australian landscape. They are irreplaceable and precious. These places of cultural significance must be conserved for present and future generations in accordance with the principle of inter-generational equity. (Aust Icomos; 2013: 1)

It would be difficult to find another place in the wider region where so many different elements of Aboriginal cultural heritage combine, entwine and exist in such good condition, protected from the usual small and large scale impacts that are hastening their demise. The ACHAR recognises the rarity and special qualities but the overall EIS seems to downplay them.

National Parks and Wildlife Act

> Section 84 Aboriginal places
>
> The Minister may, by order published in the Gazette, declare any place specified or described in the order, being a place that, in the opinion of the Minister, is or was of special significance with respect to Aboriginal culture, to be an Aboriginal place for the purposes of this Act.

There is currently an application for an Aboriginal heritage place nomination for the Project area. There is no doubt even from the underwhelming significance assessment within the EIS that it '*is or was of special significance with respect to Aboriginal culture*'.

Many other places have been given state heritage listing or Aboriginal place (AP) gazettal with less collective heritage. If we review the legislation it is clear that the EIS makes a very poor case.

We can take the rock engravings known as 'Moon Rock' in Belrose, northern Sydney, as an example. This is a large rock engraving site with many groups and individual engraved images. It is a significant site in the region but lacks many of the layers of significance of the Project area. There is no traditional owner associated stories linked to the engravings. It has a confined geographical context. The historical information relating to the site is only from the current era of Aboriginal people being involved in heritage management. Unfortunately, the site is also periodically subject to damage from visitors, such as mountain bikers (Morcombe, 2015).

Another example is the Australian Hall (Cyprus-Hellene Club), where the first national protest of Aboriginal people took place, on the 150th anniversary of the First Fleet arrival. Known as the 'Day of Mourning and Protest', it is the historical information and fabric of the building related to that meeting that is significant. It was a single event in 1938 at that location. It is a very important event, the beginning of the contemporary Aboriginal Political Movement. The Project area clearly has much more traditional, historical and archaeological information and material and is deserving of being listed as well.

A third example is Earlwood Aboriginal Art Site near the Cooks River, Sydney. It is the only surviving shelter like it in that region of Sydney. It has rare painted image types for the region and it demonstrates the ongoing efforts of Aboriginal people to protect their heritage. It is highly significant. The Project area has many more layers of cultural heritage, including rare Aboriginal rock art sites such as the Kerswell Hill shelter with art (Warragamba-116) (AAR: 97; Smith, 2019).

Place Name	Listing	Traditional stories	Historical	Archaeological features	Size
Moon Rock, Belrose	Aboriginal place (NPW)	No	No	Yes (1)	Small
Earlwood Art Site	State Heritage List (HA)	No	No	Yes (3)	Small
Cyprus-Hellene Club/Australian Hall, Sydney	State Heritage List (HA)	No	Yes	Yes (1, built)	Small
Project area	**Under review**	**Yes (multiple)**	**Yes (multiple)**	**Yes (multiple)**	**Very large**
NPW=National Parks and Wildlife Act, HA=Heritage Act					

TABLE 1: EXAMPLE OF ABORIGINAL HERITAGE LISTED PLACES COMPARED WITH PROJECT AREA

Other Key Issues

The project area is very special for many reasons as noted above, but here is a summary of some additional points:

Cultural Knowledge

Most of the Sydney area and many other regions in NSW to greater and lesser degrees, suffer from the loss of Aboriginal oral history and reliable pre-invasion cultural knowledge. The project area has a staggering amount of this precious information, held in family memory and in documents and commentaries (eg Smith, 2017). The detail of this information is at a high standard and yet impossible to put a value on. It is worthwhile mentioning again the importance of the river valley and the river itself as an extremely important part of the stories and activities. Further impacts to the river valleys exacerbates the destruction already inflicted and reduces the legacy this generation can offer to those that come after.

> Through the aggravation of previous harm the Project will have a detrimental effect to quality or benefit that the cultural landscape – and its intangible and tangible contributory values – may provide to the Aboriginal community and will result in a reduction in the inter-generational equity afforded by the cultural landscape of the Study Area and its surrounds.
>
> The RAPs have advised through the submission process that the Study Area and all sites within and surrounding it have high cultural significance. The Project is seen by the RAPs as a further accumulation of impacts to Aboriginal cultural heritage that has previously been affected by the original development of the Warragamba Dam (ACHAR: 81).

Irreversible

The impacts that are proposed cannot be undone. It is not possible to return or rehabilitate the Aboriginal cultural heritage values if people in the future change their minds about their value. Trees can be grown, some vegetation communities can eventually recover, but the destruction of archaeological sites is irreversible.

In 2020 the world came to understand the limitations of existing Aboriginal cultural heritage management when Rio Tinto destroyed the 46,000 year old site at Juukan Gorge. This is world heritage. For the project area very few people considered there would be so many archaeological sites in this area, let alone all of the cultural knowledge. Yet there has been no archaeological excavation that has provided a timescale for these sites and it is therefore impossible to give a chronology for the region. The destruction of sites without fully knowing what is being destroyed is not dissimilar to what occurred at Juukan Gorge. Most of the project area has been excluded from the GBWHA but many, myself included, would argue that it could be included on Aboriginal cultural heritage values alone.

Intergenerational Equity

Each site that is destroyed means future generations of Australians cannot have access to this resource. It would appear that more and more Australians today have a greater appreciation of Aboriginal Australia than previous generations. If this trend continues, our society today has a responsibility to hand on as much as possible because it will be valued more in the future. To destroy so much cultural heritage in one project is catastrophic for so many people today and it will be a greater loss for those in the future. Climate Change and the increase in extreme weather events is also damaging Aboriginal heritage that has survived thousands of years of previous climatic stresses (Shepherd, 2021; Wesley, 2021). It is more important than ever to safeguard what is already protected rather than further use up future generations' inheritance.

Disproportionate Burden

The EIS process is asking Aboriginal people to be involved in the identification and review of *their* heritage by third parties with the primary objective of finding ways to facilitate the development and provide mitigation for all losses and damages. It is asking them to go to the cherished parts of their homeland, reveal what is most important, explain why these things have value, confess the pain and suffering for what has already been lost, and then accept that many of these places will be destroyed and further compromised. In recognition of their loss they may receive the modern equivalent of some coloured beads and metal axes as 'mitigation'. This is an unfair burden to place on a community that is too often told they must give up the most to solve problems not of their making and not in their best interests.

The EIS notes some Aboriginal people declined to participate in the process stating their '*unwillingness to participate is the result of the legacy of dispossession and loss from the original Warragamba Dam project and distrust of NSW government and processes of assessment*' (ACHAR: iii). Criticisms by Aboriginal people included misrepresenting or misleading facts.

> These issues reflect the very reason why our family chose not to participate in the cultural assessment process. Important and publicly accessible information has been omitted or ignored, impacts have been downplayed or are incorrect, and the report is misleading and factually incorrect. Further, our cultural history has been whitewashed in this report and in some cases ignores available relevant information with no links to actual research or facts. (Kazan Brown email in CVA 17 App. E, p.170)

Aboriginal people have been forced to give up their land and culture on many occasions. Every new immigrant who has arrived in Australia has known that Aboriginal people, all across the entire continent, lost their rights to their own land when the English claimed part of it in 1788. Yet the Gundungurra and neighbouring groups were still living and adapting on their own territory, as they have always done, well after that date. That 1788 myth has allowed subsequent governments and communities to justify each successive attack and forced dispossession. Each time when Aboriginal lands were attractive to newcomers, the First Australians were the ones whose needs were disregarded and who were forced to

change their ways. When Aboriginal people adapted, they would soon face yet another cataclysmic political decision that weighed their rights against another group[2]. Each time Aboriginal people were considered by those in power to be a smaller number and a lower priority. Each time the decision was made at the expense of Aboriginal people, ostensibly because a greater number of people or a "more important" people were more needy.

In terms of the protection of heritage against development, there are many cases that are held up as benchmarks to show the maturing of Australian society in its capacity to hold onto irreplaceable places and landscapes. The Green Bans, Kellys Bush, historic buildings at the Rocks, the Gordon below Franklin dam in Tasmania. If we were to ask a member of the public to name any place protected primarily for its Aboriginal cultural significance, how many would they be able to off the top of their head? If looking at the whole of Australia, most people might say Uluru. Yet as the debate about whether tourists should be permitted to climb the rock has been so lengthy, it might be an indication that its protection was driven not so much for the Aboriginal cultural heritage values and the interests of the traditional owners but more so to facilitate its management as a tourist destination.

The Gundungurra were eventually out-numbered and overpowered during the frontier wars of the early colonial period. They lost control of their own land, yet they have never given up trying to protect it despite the odds. They didn't give up when the laws prohibited them from gaining title of land, or when the bones of their relations were dug up and removed (Smith, 2017: 43, 49). They didn't give up when they were placed under the Aborigines Protection Board or later when the St Joseph's Church lease was given up. They have continued to make their wishes known. Yet our NSW society has followed its own tradition of taking whatever it feels is needed regardless of the cost to the original and true owners. It seems an increasing number of NSW residents feel it is time to change this tradition.

There is increasing discussion of the importance of cultural heritage in relation to health and well-being for Indigenous people, from seeing its destruction, from living in the occupying culture's culture and in terms of access (Lilley, 2021).

> **Key Finding 2**: Government agencies should be encouraged to recognise that the Aboriginal understanding of wellbeing differs from conventional definitions, particularly with respect to the greater explicit consideration of cultural and heritage issues. (Allen Consulting Group, 2006, P.21)

From these examples, the effect of the Project on Aboriginal cultural heritage should not be taken lightly, nor should it be seen only as an impact that *is proposed* and that *may be*. The entire EIS process has been traumatic for Aboriginal people, as evidenced in their correspondence in the EIS. The final words should be with those who have the greatest connection and the most to lose:

> When specifically considering permanent damage to cultural sites, the report deliberately misleads readers in its use of language by adopting a standard phrase '*the potential impacts are temporary in their physical duration*' This phrase must be read very closely and carefully, as it is deliberately misleading. The phrase leaves readers with the impression that sites will only be temporarily impacted. Actually the phrase means that sites will be *permanently* impacted, but by a *temporary* event- it is deliberately misleading language.

[2] Eg. The returned soldier settlement scheme after WW1&2 which saw many Aboriginal reserves revoked and given to returning soldiers (Goodall, 1996).

> The Report knowingly misrepresents the facts. It acknowledges the wall will be raised 14 m, is aware of the PMF, and is aware that short-term flooding constitutes permanent damage to many of the cultural values being assessed (e.g. art). However by adopting a PUIA (rather than correctly using the future PMF) .in assessing all damage the report knowingly misrepresents the impacts on cultural assets (Kazan Brown in CVA: Appendix E).

Social Injustice and Disadvantage

The term disadvantage is often used in reference to Aboriginal communities.

> 2. The Parties also acknowledge the strength of Aboriginal and Torres Strait Islander people in sustaining the world's oldest living culture. Aboriginal and Torres Strait Islander people and their cultures have prevailed and endured despite too many experiencing entrenched disadvantage, political exclusion, intergenerational trauma and ongoing institutional racism. (CGP, 2020 p.2)

If we look at the history, from the moment Europeans arrived and as immigration has continued to the present day, Aboriginal communities have been forced into situations where they are disadvantaged. Despite being on their own land, handing down knowledge and laws in a continuity of tens of thousands of years, the new laws of the land made them the outsiders. Even if they had wanted to argue the case, the new laws were in English and the legislation was built on a tradition from the other side of the planet. New diseases made old medicines ineffective. New land management practices, fierce weaponry and an unstoppable flow of new immigrants made holding onto the resources essential for life increasingly untenable. Water, food, shelter, the absolute essentials, could be taken from you in moments. Each generation lost what was essential for a good life and given a lesser opportunity in exchange. At each dispossession, more fell into misery and despair. Intergenerational trauma is a difficult process to reverse when wider society doesn't understand the causes of disadvantage and when the hurdles are so high. There are so many people alive today who had their family Aboriginality hidden from them by their parents and grandparents simply to protect them from the worst aspects of the society that they were forced to live with. Those who remained openly Indigenous had to contend with the stigma and the many disadvantages that went with it. The history of the Project area contains these oft repeated patterns of dispossession, exclusion and disadvantage. The EIS and many others, such as Jim Smith's *The Aboriginal People of the Burragorang Valley* (2017), have shown that the Project area has much historical information to highlight this. And again, Aboriginal people have stood firm in their wish to have their wishes respected.

> Based on a predictive archaeological landscape model the PUIA is predicted to contain a total of 174 archaeological sites, comprised of 117 open sites with stone artefacts and 51 rockshelter sites and at least 3 other site types. The EUIA is predicted to contain 578 archaeological sites, again comprising mostly of open sites, at a predicted 458 open sites and 109 rockshelter sites and at least 11 other sites. Outside the EUIA and above the PUIA, in the zone of very low risk from the project, there are predicted to be 370 archaeological sites. The Registered Aboriginal Parties (RAPs) have advised through the submission process that all sites have high cultural significance. Further to this the majority of the RAPs consider the proposal to raise the Warragamba Dam wall; for the temporary storage of flood waters; as an unacceptable impact for the future preservation of tangible and intangible connections to their cultural landscape; and have called for an immediate stop to the project (AAR: iii).

Based on the predictions, an estimated 1,122 archaeological sites (including areas of lower risk – and in an era of uncertain natural extremes this seems an optimistic assessment) would be impacted (AAR: 108). This is in addition to what has already been impacted by the original dam project. The argument of the EIS is to provide protection for homes in western Sydney. What is again sadly ironic is that this process will destroy more of the former homes of Aboriginal people. The homes, the land and livelihoods and economic opportunities possible for the people of the Warragamba and Burragorang Valleys were taken in the past.

The 2020 Closing the Gap multi government and Aboriginal peak body partnership has outlined a new direction which is hoped to help reverse the levels of disadvantage that Indigenous peoples experience every day.

> c. Decision-making is shared between government and Aboriginal and Torres Strait Islander people. Shared decision-making is:
>
> > i. by consensus, where the voices of Aboriginal and Torres Strait Islander parties hold as much weight as the governments (CGP, 2020: 6)

Yet again we see laws, plans, policies and extraordinary resources being poured into a proposal that will further dispossess Aboriginal people from their traditional lands and their cultural heritage. It puts Aboriginal people at a disadvantage again because their heritage is weighed against many other issues and other people's priorities. We can ask again, at what point is it possible to choose to take the side of Aboriginal people first? Selfishly, it should also be seen as putting the rest of the NSW community and future generations first as well because they will all benefit from the protection and connection with this priceless, irreplaceable world heritage.

3.0 CONCLUSION

It is the author's opinion that the Aboriginal cultural heritage assessment, while correctly identifying the area's very high significance in parts, also undermines its own conclusions by understating the Aboriginal cultural heritage values and the likely impacts of the proposal. The various reports do not present a linked and coherent discussion of the significance of the area, rather it appears disjointed and clumsy. It is the significance of the area that is the most critical as this is the measure by which the Aboriginal cultural heritage values will be judged. For this reason I feel the report is inadequate. The Warragamba – Burragorang area is a highly significant and rare Aboriginal cultural heritage landscape. A much larger component could justifiably be included in the adjacent world heritage area and it would be an embellishment. In terms of NSW legislation, best practice heritage frameworks and the EIS itself, it is unequivocally special. The EIS clearly provides the reason why the Project area is precious.

> The study area sits within a cultural landscape that is rare in eastern Australia for its preservation of detailed Dreaming stories and a combination of associated sites and places, including sites of archaeological and historical value, existing in a visually striking "natural" environment that imbues a strong sense of place.
>
> **The cultural landscape is assessed to be of very high significance (ACHAR, p.iV)**

Phil Hunt

References

The EIS:

CH18 – Chapter 18 of the EIS

Appendix K

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