

10 September 2020

The Manager
Planning and Assessment
Department of Planning, Industry and Environment
Locked Bag 5022
PARRAMATTA NSW 2124

Dear Sir or Madam

Lake Hume Battery Energy Storage System
Application No: SSD-10460

I am writing to your office in relation to the application for the installation of a Battery Energy Storage System at Lake Hume.

Whilst I am supportive of renewable energy I have concerns with the design and location of the proposed development and I make this submission in objection to the application.

1. Introduction

I am the joint owner and resident of the property known as “Lanark” which is situated at 32 Trout Farm Road, Lake Hume Village. The property and home (RR01) is described in the EIS as “the closest receiver” to the BESS. The land, and property entrance, is directly adjacent to the proposed “Northern location” of the Meridian Hume BESS.

I have reviewed the information presented in the documents available on the Department of Planning website relating with the SSD Hume BESS Proposal (10460).

I understand the need to use more renewable energy for electricity generation; and the benefits of coupling a BESS to the Hume Hydro Plant and the twin connection lines to NSW and Victoria.

I support the plan for a BESS to be located at the Hume Hydro Station. I have no major concerns if this involved:

- good site selection and design accounting for its local surroundings,

- BESS construction and operation management that takes into account local landholders and residents, not impacting adversely on any particular individual(s) or environmental issue.

The Scoping Report identified and reported on two (2) site options; the “Southern location” and the “Northern location”. The EIS process selected the “Northern location”. The EIS collected additional impact information for this area, including noise/vibration modelling and drilling to obtain bore logs across the proposed excavation site.

I support a BESS being built on the” Southern location” as there is evidence that the location could/would meet the factors mentioned above.

I do not support a BESS being built at the “Northern location” as the evidence in the EIS material provided shows it does not meet the Planning SEARS criteria or factors mentioned above.

I have concerns that there were major shortfalls with the BESS site location selection process. The selection of the “Northern location” rather than the “Southern location”, has resulted in several avoidable impacts being imposed on owners/residents north of the Trout Farm Road, as well as Trout Farm Road users and Squirrel Gliders of that territory.

In selecting the “Northern location”, data presented shows the proponent (Meridian):

- has chosen the site that maximises adverse noise impacts on the surrounding community (landowners/three (3) existing residences north of Trout Farm Road), and therefore is not in accordance with the requirement to implement reasonable and feasible -
 - noise mitigation practices,
 - protection from battery failure (non normal operation),
 - adversely affecting land value, or
 - avoid impacting a population of an Endangered Species (Squirrel Gliders).

The impacts and concerns are documented in Annexure 1, Tables 1-3 below, including the socio economic impacts.

Maps and email referred to are in Annexure 2.

Both myself and my wife, Kaye Lucas, participated in a teleconference with the Meridian BESS Project Team to discuss the project, raise our concerns and ask questions. Following the meeting, Meridian offered us the opportunity to “*provide to Meridian any options and locations you would like Meridian to consider*” (email 27/8/2020). I accepted the offer preparing a map showing two alternative locations and accompanying descriptions. These were provided to Meridian on 2/9/2020. That

map, and email, are shown in the files named “BESS alternate location options meeting.png” and “Alternate Sites to Meridian 2-9-20”, (Annexure 2, pp24-25).

2. Conclusion

I support the idea of BESS’s and one being connected to the Hume Hydro plant/switchyard.

However, the present proposed “Northern location” is the wrong place for it. Cumulative evidence of SEARS’s general requirements and Key Issues do not support it, to the contrary.

Physical site constraints listed as eliminating other feasible locations are not detailed or mapped (eg subterranean infrastructure, unfavourable topography) or are contrary to the evidence provided (eg containing items of heritage significance),

There is no evidence of an objective process of assessing potential sites to justify the most appropriate location was selected.

No contact was made with land owners north of the Trout Farm road during the Scoping Report, or EIS, despite several on ground investigations occurring.

The EIS has not taken into account the actual use of land closest to the proposed site, (north of the Trout Farm Road). Consequently, the proposed Northern location land use conflicts with respect to existing land use and potential future surrounding land uses, and is inadequate.

Likely negative impacts of the development are numerous and varied:

- (i) Biodiversity – the northern location is very close to an Endangered Species (Squirrel Glider) hotspot. Noise/vibration during construction could be significant enough to tip the balance against the glider population rebuild after the losses of the 2019/20 drought and extreme heat. Southern location OK.
- (ii) Heritage – Surveys identified a PAD (PAD 001) covering the majority of the proposed Northern location. *“The project would ...result in the complete destruction of the area of (the) PAD”* (EIS, p 62). Southern location is clear.
- (iii) Noise – the three (3) residences north of the Trout Farm Road are the most affected by noise/vibration from a BESS at the proposed Northern location. During construction this will be above NML. During operation will depend on design and mitigation. The southern location has natural landform characteristics that will limit sound travel to the main residential/accommodation premises.

- (iv) Hazards – the inherent risks of BESS non-normal operation (battery incident) should be independent of the BESS location. However, in the event of an incident, the remotely monitored BESS at the Northern site is out of view from the Hydro Plant and Water NSW offices/workshop/accommodation, the furthest distance from the main automated access point and final access to the BESS is along a curved inclined unsealed track, raised 2 m above ground level (Design Plan, Appendix C).
- (v) Socio economic – amenity audio- 12 dB(A) above the NML and rated **moderately intrusive**, 30 dB(A) above the NML at our mailbox.
- (vi) Community safety - for the personal safety of users of the Trout Farm Road passing the BESS (vehicle and cyclists); and for ourselves or our visitors if we were outdoors; were a major incident to occur (ie not “normal operation”).
- (vii) Socio economic – economic (opportunity cost-personal and property value). A BESS so close to our property entrance, will almost surely cause its value to reduce. There is a risk we may lose the options to build second dwelling and son/family return to home block. Also the prospect of RU5 Zoning and separate titles to our two (2) sons (estate planning) reduced.

The southern location is the most suitable and justifiable location offered for the Hume BESS and is my preferred site for the development. It is believed the Pod configuration and Layout area could be orientated to achieve a practical BESS site. A rough sketch of this is marked “2” on the map “BESS alternate location options meeting.png”, attached.

OTHER OPTIONS

Initially options may have been proposed in the Water NSW Compound area but not considered. One has been suggested to Meridian marked “1” on “BESS alternate location options meeting.png”, Annexure 2, p 24.

ESSENTIAL design changes for me to accept and support a Northern Location BESS

If the Northern site is the only feasible site based on a comprehensive and detailed comparison against the Southern site (or any other feasible location near the Hume Power Station) for all environmental aspects, then there are some essential design

changes required to reduce risks and impacts of noise and battery failure (non-normal operation) and hopefully other socio economic impacts/costs. These include:

- adjust the BESS siting, and lower the BESS base level, to ensure Pod's rooflines, on the side facing the Trout Farm Road (east elevation?), are below excavation levels (by approx. 0.25 to 0.5 m),
- Construct bun walls, or solid concrete barriers, around the BESS Pad base area. Essential for the side facing the Trout Farm Rd (east elevation?), to have solid protection for sound, fire and possible explosion, to a height of approx. 0.25 to 0.5 m above the top of the height of all BESS pods,
- fencing type and location to be glider friendly,
- monitoring of gliders to confirm population numbers,
- sympathetic natural screening to ensure BESS is largely not visible from the Trout Farm Road or adjacent properties,
- an independent Authority to oversee sound monitoring (eg EPA).

3. Political Donations

As required by your guidelines I confirm that I have not made any political donations in the last two years.

If you have any questions or require any further information please do not hesitate to contact me on 0457 517 755 or via email on sklucas.albury@bigpond.com

Yours faithfully,

Stuart Lucas

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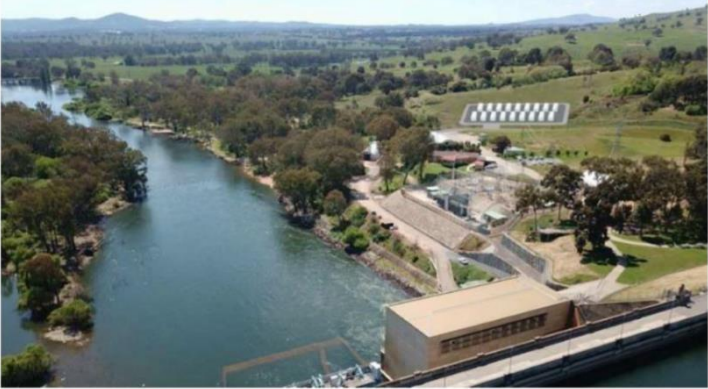
Annexure 1: The Hume BESS EIS SEARS and comments on how the EIS has addressed them. This contains three (3) tables.

Table 1: Hume BESS Planning Secretary’s Environmental Assessment Requirements General Requirements

Requirement	Comment
<p>A detailed constraints map identifying the key environmental and other land use constraints that have informed the final design of the development;</p>	<p>No single map is provided. A figure showing “Key environmental constraints” is provided in the EIS (Figure 4.2, p38). This solely addresses vegetation communities and squirrel glider activity. Another map, “Fig 4.1 Surrounding land use”, only shows residences and buildings, powerlines and LEP Planning Zones. No map information is presented identifying the key constraints nominated to have determined the site selection; <i>... subterranean infrastructure and unfavourable topography.</i></p> <p>The information presented is largely descriptive. With the exception of Heritage and Biodiversity, it is vague or at an inappropriate scale. For example, <i>.... are constrained by the presence of transmission easements, subterranean infrastructure, existing operational uses, unfavourable topography or at elevated risk of containing items of heritage significance</i> (EIS, p 36, Para 2). Transmission easements - Figure 1.1 in the Scoping Report clearly shows both the Southern and Northern locations outside the transmission line easement. Subterranean infrastructure –not described in detailed or shown on maps in the EIS material. Where is it? Is active or redundant? If active, could it easily be relocated? Unfavourable topography - not described in detailed or shown on maps in the EIS material. What are the actual constraints? Can they be worked around with a modified design?</p> <p>Only a few sentences are presented regarding the geology, landform and soils of the location options. The data sources are very course and are not of an appropriate local scale. Landform and soil information is interpreted from the 1:100,000 scale DPIE Soil Landscape mapping (1 cm on map equal 1 km on the ground). The geology information referenced, but not listed in the bibliography, is highly likely to be 1:250,000 scale mapping (1 cm on map equal 2.5 km on the ground).</p> <p>Necessary information such as site engineering properties is not provided for the two location options, just the Northern location. Although described and referenced, the bore log investigation results are not presented in the EIS or Appendices.</p>
<p>Justification of the development</p>	<p>Information presented in the submission shows a BESS at the Northern location causes more impacts and conflicts with adjacent potential land uses, the environment and indigenous heritage, than the Southern location.</p>

<p>focusing on:</p> <ul style="list-style-type: none"> • site selection, and 	<p>Are the nominated constraints of the Southern location severe enough to justify eliminating and imposing these additional impacts and conflicts?</p> <p>The selection of the Northern location over any other locations is deficient in the method used to assess potential sites; and the information presented to allow consideration of the alternatives. There is no evidence of an objective assessment method with regard to comparing and quantifying the relative constraints of the two alternative sites proposed in the Scoping Report; or impacts on nearby residents, existing and future land use, biodiversity and heritage.</p> <p>The Scoping Report (13 April 2020) made no recommendation on site choice. Under 2.1 Location, (p 1, par 4), it states - <i>“Two areas within the site are currently under consideration.”</i> and <i>“Justification of the selected location would be provided in the EIS.”</i></p> <p>The EIS justifies the site selection and its suitability under Section 1.3 Site and Surrounds, saying <i>“The selected location is the Northern Area, selected due to subterranean infrastructure within the southern area introducing constructability issues.”</i> (p 4, last para).</p> <p>Under Section 4.3 Alternatives Considered, the EIS says <i>“Two areas within the WaterNSW landholding were considered in the Scoping Report as part of the preliminary environmental assessment. The preferred location was selected as it is a permissible land use within the zone. The other areas of the WaterNSW landholding (referring to land outside the two areas) are constrained by the presence of transmission easements, subterranean infrastructure, existing operational uses, unfavourable topography or at elevated risk of containing items of heritage significance (EIS, p 36, Para 2).</i></p> <p>No description or discussion is provided for any of these listed constraints, for the Northern or Southern location options, or are comparisons made between the two.</p> <p>There is some evidence a third site location may have been considered ie <i>“The other areas ...”</i>. The statement about (indigenous) heritage is false, and the reverse is true (see Indigenous heritage below).</p> <p>It is difficult to see how Biodiversity, Indigenous Heritage and the bore log investigations support the Northern location selection decision.</p> <p>Relating to Biodiversity, the Scoping Report, Section 4.2, says .. <i>“Consideration of the impact of the Project on biodiversity values is provided in Section 5.2 and concludes no significant impacts to Biodiversity Values are likely”</i> (p 14, last para).</p> <p>Section 5.2.2, Issues for consideration of the EIS, says ..<i>“Considering the highly disturbed nature of the landscape within which the development sits, there are not expected to be any indirect impacts that will adversely affect areas of vegetation that will be retained”</i>. Neither site location options have significant biodiversity issues.</p>
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	<p>In relation to Indigenous Heritage, the Scoping Report says .. <i>“Initially only the southern site was surveyed.” “The southern location option has been subject to survey in the presence of Registered Aboriginal Parties and assessment has confirmed that no, or negligible, archaeological potential remains”</i>. (Section 5.1.3, Recommendations, p 29).</p> <p>After later surveying the northern site, the EIS says .. <i>“ One area of potential archaeological deposit (PAD) was identified in the Project disturbance footprint. ... named ‘Hume PAD 001’ and is located on the top of the linear ridge in survey unit 3 (Figure 8.3)”</i>. (Section 8.3.1 Survey Results, p 60).</p> <p>Figure 8.3 confirms PAD001 to be a major part of the Northern site excavation area (also see Appendix C, Design plan).</p> <p>Under Section 8.3.3, Construction, it states <i>“The Project would represent a direct impact to Hume PAD 001, resulting in complete destruction of the area of (the) PAD.”</i></p> <p>Table 8.1, Reference AH01 directs. <i>“A program of test excavation would be carried out on Hume PAD 001 to assess the nature and significance ...” and “If Aboriginal cultural heritage material is identified during the test excavation program, the location where these objects were found would be registered as an Aboriginal site. Approval to impact this Aboriginal site would need to be obtained prior to project construction works commencing.”</i></p> <p>Reference AH02 adds .. <i>“In the event that Aboriginal objects are discovered within the Project area during construction project works being carried out, all work in the area will be halted immediately, and the unexpected finds protocol (Appendix E of ACHAR) will be implemented.”</i></p> <p>Was the Southern location the early preferred site?</p> <p>There is evidence indicating the Southern location was the early preferred site.</p> <p>1/ The Indigenous heritage survey were first done only on the Southern site. 2/ Public images of the BESS located at the Southern location</p> <p>3/ Following an inquiry to the BESS Info line (10 July 2020) an email response to us included:</p> <ul style="list-style-type: none">• FAQ fact sheet on pdf (email 10 July 2020), and• Hyperlink for the BESS Site website (viewed 10 July 2020). <p>5/ At that date, both documents included a picture titled <i>“Artist’s impression of Battery Energy Storage System”</i>. This clearly shows the BESS located at the Southern location adjacent the Water NSW access road (Meridian Energy Hume Hydro and Battery Power Project FAQ July 2020.pdf, Annexure 2, p 27).</p> <p>6/ The Scoping Report says<i>“The nearest residential receptor is located approximately 200 m from the development site and 90 m from the existing site entry”</i>. (Section 2.2 Surrounding Land use, p5). That is not RR01.</p>
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<ul style="list-style-type: none"> the suitability of the proposed site with respect to potential land use conflicts with existing and future surrounding land uses (including existing land use, residential development, ... 	 <p>Artist's impression of the battery energy storage system</p> <p>The assessment of site location option does not include the suitability of the BESS with respect to potential land use conflicts with existing and future surrounding land uses for properties north of the Trout Farm Road. The EIS uses the terms Land Zoning and Land use are they are much the same. Land Zoning and land use are a matter of scale and what landowners actually use the land for. Albury LEP RU2 Zoned land can have a wide range of land uses including extensive agriculture, aquaculture, farm stay accommodation, secondary dwellings or Home based childcare (Albury LEP 2010, p14).</p> <p>The land use of our 4 ha property is Rural Lifestyle. We are retired spending most of our time home and outside the house around the block. Our neighbour's property is a Trout Farm. These land uses are not listed, or considered, in the site selection process (see Section 10.2 Existing Environment, p69).</p> <p>Proposed second dwelling</p> <p>A second dwelling for our property has been an option and planned since the 1980's. The initial owners designed the fencing and tree planting with this aim and we have continued on with that.</p> <p>This dwelling would become the closet residence to the proposed Northern location during the BESS operation period (20 yrs minimum).</p>
<p>Likely impacts of the development on the environment, focusing on the specific issues identified below,</p>	<p>These have largely been discussed above.</p> <p>An important impact the BESS is likely to have is the effect on the Squirrel Glider population north of the Trout Farm Road.</p>

<p>including -</p> <ul style="list-style-type: none"> • impacts at all stage of the development, • land use conflict and • feasible alternatives. 	<p>Monitoring by the Friends of the Lake Hume Gliders (FLHG) show numbers dropped during 2019. These results, and field observations of dead gliders, indicate the glider population in this area has been placed under pressure by the 2019/20 drought and extreme heat.</p> <p>The Northern location is very close to these gliders and noise/vibration during construction could be significant enough to tip the balance against the glider population rebuilding.</p> <p>Feasible Alternatives</p> <p>The southern location is not only a feasible alternative, but when considering all the information available, it comes out the best site option.</p> <p>The <i>“borehole logs from recent site investigation indicates the presence of granite at approximately 0.7m to 1.7m depth</i> (EIS, p 99). These bore logs undertaken above by Aitken Rowe Geotechnical Engineering, (2020) are not provided in the EIS. However a photo in the EIS taken at this location indicates hard rock is present across the area and close to the surface (see Figure 11.2, Photo VP 04 (EIS, 79).</p> <p>Interpretation of the Design Plan (Appendix C) shows excavation of the “West Elevation” to a depth up to 3m deep. This is likely to create a lot of concern and mechanical effort to excavate. Consideration should therefore be given to the “Southern location” or a new location.</p> <p>During our teleconference with the Meridian BESS Project it was anticipated there would be difficulties excavating the rock at the Northern location. This would result in noise/vibration issues. There was a response from Meridian that the design was being changed largely to a “piling” method rather than extensive excavation. If this is correct, a complete new set of noise and visual data needs to be provided.</p> <p>Following our meeting, Meridian sent us an email which finished by saying <i>“We ask that you also provide to Meridian any options and locations you would like Meridian to consider”</i>. I responded to this offer providing two options. The map provided to Meridian (BESS alternate location options meeting.png), and accompanying email, are shown in Annexure 2, p 24-25).</p>
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Table 2: Hume BESS Planning Secretary’s Environmental Assessment Requirements – Key issues

Requirement	Comment
Biodiversity	<p>A Squirrel Gliders population exists in the area of the proposed locations <i>“important movement corridors are known around the north and south of the development site.”</i> (EIS, p 51). and <i>“The Squirrel Glider may also be indirectly impacted by fencing and infrastructure associated with the development that is constructed within or close to known movement corridors around the development site. This includes injury and mortality caused by collision with barbed-wire fences. Measures to minimise the potential for impact have been discussed in this report”</i> (EIS, p 52).</p> <p>A figure titled “Key environmental constraints” is provided in the EIS (Figure 4.2, p38). This solely addresses vegetation communities and squirrel glider activity. A series of recommendations are presented and these need to be implemented.</p> <p>One of the major long term effects the BESS could have is on the Squirrel Glider population north of the Trout Farm Road. Monitoring by the Friends of the Lake Hume Gliders (FLHG) show numbers dropped during 2019. These results, and field observations of dead gliders, indicate the glider population in this area has been placed under pressure by the 2019/20 drought and extreme heat.</p> <p>The Northern location is very close to these gliders and noise/vibration during construction could be significant enough to tip the balance against the glider population rebuilding.</p> <p>A BESS at the “Sothern location” would result in <u>much</u> less impact on the glider population than the Northern Location.</p>
Heritage	<p>Both proposed locations were assessed for Indigenous heritage issues.</p> <p>The Scoping Report says .. <i>“Initially only the southern site was surveyed.” “The southern location option has been subject to survey in the presence of Registered Aboriginal Parties and assessment has confirmed that no, or negligible, archaeological potential remains”.</i> (Section 5.1.3, Recommendations, p 29).</p> <p>After later surveying the northern location, the EIS says .. <i>“ One area of potential archaeological deposit (PAD) was identified in the Project disturbance footprint. ... named ‘Hume PAD 001’ and is located on the top of the linear ridge in survey unit 3 (Figure 8.3)”.</i> (Section 8.3.1 Survey Results, p 60).</p> <p>Figure 8.3 confirms PAD001 to be a major part of the Northern site excavation area (also see Appendix C, Design plan).</p> <p>This has raised a lot of concern and the requirement to modify the BESS construction process at the Northern location.</p> <p>Under Section 8.3.3, Construction, it states <i>“The Project would represent a direct impact to Hume PAD 001, resulting in complete destruction of the area of (the) PAD.”</i></p> <p>Table 8.1, Reference AH01 directs .. <i>“A program of test excavation would be carried out on Hume PAD 001 to assess the nature and</i></p>

	<p><i>significance ...” and “If Aboriginal cultural heritage material is identified during the test excavation program, the location where these objects were found would be registered as an Aboriginal site. Approval to impact this Aboriginal site would need to be obtained prior to project construction works commencing.”</i></p> <p>Reference AH02 adds .. <i>“In the event that Aboriginal objects are discovered within the Project area during construction project works being carried out, all work in the area will be halted immediately, and the unexpected finds protocol (Appendix E of ACHAR) will be implemented.”</i></p>
<p>Land</p>	<p>The EIS follows the premise Land Zoning and Land use are much the same. For example, “The BESS is permissible in RU2 Zoned areas under Clause 34 of State Environmental Planning Policy (Infrastructure) 2007 (ISEPP), (EIS, p xv). So, as the site of the BESS is located in the appropriately LEP Land Zone, therefore there are no significant land use conflicts.</p> <p>Actual land use</p> <p>Land Zoning and land use are a matter of scale. Land use is what landowners actually use the land for. Albury LEP RU2 Zoned land can have a wide range of land uses including extensive agriculture, aquaculture, farm stay accommodation, secondary dwellings or home based childcare (Albury LEP 2010, p14).</p> <p>The land use of our 4 ha property is a Rural Lifestyle block. We are retired spending most of our time at home and outside the house around the block.</p> <p>Our western neighbour’s property is a Trout Farm (RU2 Special Agriculture, Aquaculture). These land uses are not listed, or considered in the site selection process (see Section 10.2 Existing Environment, p69).</p> <p>Proposed land uses - “Lanark “second dwelling</p> <p>A second dwelling for our property has been an option and planned since the 1980’s. The initial owners designed the fencing and tree planting with this aim and we have continued on with that.</p> <p>We spoke with Council staff about this in 2010 when the Albury Draft LEP was released. We have again communicated with Council regarding this since becoming aware of the BESS proposal. The site of the second dwelling would be in the front paddock, marked “planned future 2nd dwelling” on “Figure Project site and Lucas home(s)”, (Annexure 2, p 29).</p> <p>This dwelling would become the closet residence to the proposed Northern location during the BESS operation period (20 yrs. minimum).</p>
<p>Visual</p>	<p>Our block has magnificent views for a 270 degree arc. One of those views is from our “Snow view Paddock, where we have our picnics and bonfires; and is the site of the proposed second dwelling.</p> <p>The BESS is in a direct line below the snow view from the second dwelling site.</p>

	<p>Under the Design in Appendix C, the BESS pods are shown sunken at the top by up to 3m, being mostly visible from the west and north west. The BESS would be visible from the bottom south west parts of our block (eg Mailbox Paddock), but thankfully with mitigation measures largely obscured on the reminder.</p> <p>A suggestion at the Meridian Project Team meeting was really concerning regarding lost visual amenity. <i>“Due to bore log investigation results finding extensive Granite rock at the Northern location, the design may be changed. Instead of excavating the rock and lowering the base level, Meridian may do less excavation and use piling to level the pods”</i> (pers comm.). Thankfully this was clarified incorrect by email later.</p> <p>The pod height must not be raised from the design levels. To reduce visibility, lowering them 0.5 m would be beneficial. Any raising of the pod height could significantly change their visibility and the viewshed modelling presented in Figure 11.1 (EIS, p 75), requiring it to be re-run.</p>
Noise/vibration	<p>One of the wonderful things about our property is the general quietness and the sounds of nature. The sounds of the Ibis rookery near the River, the frogs in the pond, the tweet of wrens and parrots, the sounds of the River and water from the Dam valve or the power station.</p> <p>Noise is assessed for our property at the receiver point RR01, the nearest residence to the proposed site. However, we are retired and spend the majority of the day time hours working around our property. For example, we walk the dog around the boundaries daily or more. We often eat outside and entertain visiting family and friends outside, regularly as “picnics” enjoying the property’s magnificent views and sounds.</p> <p>Noise estimates provided at our home (RR01) during construction are 57 dB(A), 12 dB(A) above the NML, rated moderately intrusive (EIS, p 83).</p> <p>EIS sound Figures 6.1 to 6.3, show noise estimates of:</p> <ul style="list-style-type: none"> • 65 dB (A), 20 dB(A) above the NML in our the middle “Snow View “paddock, and • 75 dB(A), 30 dB(A) above the NML in our entrance/front “Mailbox Paddock (interpreted from Appendix H, pp 16-18). <p>We have <u>major concerns</u> about noise and vibration generated by excavation of rock, “drilling rig” and other equipment used and methods. Borehole investigations found Granite rock at 0.7m m-1.7m (Section 14.2.3 Soils, p 99). Evidence of the shallow hard rock can be seen in Figure 11.2, Photo VP 04 (EIS, p 79).</p> <p>We are concerned excavation of this rock will involve:</p> <ul style="list-style-type: none"> • drilling/blasting • need for a percussion hammer to get through the approximately 1.3 m - 2.3 m of rock. <p>Our teleconference with the Meridian BESS Project Team revealed that a piling driver may also be involved to place BESS pods on site. These general short impact noises are not accounted for in the noise estimates.</p> <p>The adoption of the Northern location maximises the adverse noise impacts on our residential dwelling (RR01) and other Trout Farm Road</p>


	<p>houses. The noise assessment guidelines require consideration of reasonable and feasible mitigation measures at locations such as our residence where there is likely significant noise impact.</p> <p>However the EIS has not considered the acoustic benefits of adopting the Southern location, where increased separation distance and topographic shielding would significantly reduce the adverse noise impacts.</p> <p>Is the noise being monitored/overseen by an independent party (eg NSW EPA)?</p>
Water	<p>Erosion and sediment control measures are described. The southern location would require less new road building and would not extend to the northern adjacent depression and catchment. Result: the southern location would require less road construction, would have less total road batter erosion risk and deliver less additional runoff and sediment to Carex wetland.</p>
Hazards and risks	<p>The EIS states the BESS is safe under “normal operations”.</p> <p>We have moderate concern_for personal safety if we were at the front of our property; and similar for the safety of users of Trout Farm Road, if a major incident occurred (i.e. not “normal operation”).</p> <p>Web searches reveal many major incidents have occurred in South Korea, Europe and America. Most recently the Arizona fire, which involved Fluence BESS pods, the Company supplying pods for the Lake Hume BESS.</p> <p>Risks of BESS operations are significant enough that insurance companies are looking at them closely. A reputable source, Alliance Insurance Risk Consulting, did a review in TECH Talk, Volume 26. More recently AIG Energy Industry Group AIG Energy Industry has documented the risks of BESS and their required management, (<i>Lithium-ion Battery Energy Storage Systems: The risks and how to manage them, AIG 2018</i>). These both say there are risks that MUST be managed thoroughly and operators must be vigilant.</p> <p>Specialist skills are required to extinguish and adequately cool the pods if thermal runaway occurs even if isolated to a single pod. A lot of water is required over a long period of time to adequately cool the cores to eliminate the continued danger. A suggested method is to completely submerge affected pod(s) in large containers of water.</p> <p>Have local fire Brigades been organised to have this training and equipment? How many people?</p> <p>The pods are new and evolving technology and being imported from overseas. There needs to be clear accountability of responsibility for the BESS Pod’s supply, installation and operation, as it is our understanding that in regard to the recent Arizona fire, the supplier and installer of the battery pods were separate companies, with each party now blaming the other for the fire and subsequent consequences.</p> <p>Is the supply and install contract a Turn key contract?</p> <p>The proposed Northern BESS site is 15 km from Albury. Access to the Northern location BESS site is via two (2) security /locked gates, then leads up a curving gravel formed road, that has edge batters up to 2 m above ground level. Access is cumbersome under good conditions. Night access during winter or rain would be risky for first responders.</p>
Waste	<p>The switchyard at the Hydro Plant has a runoff storage tank and oil water separator. Apparently this was integral to saving the Murray River from toxic waste contamination during the transformer fire back in 2012). The design for runoff control (Appendix C) only considers soil sediment. The EIS does not mention contaminated water that may be generated by extinguishing a major fire event at the BESS.</p>

	Has this been considered?
Socio economic	The significance of Socio economic issues to me warrants separate attention (See Table 3 BESS Socio economic Impacts on 32 Trout Farm Rd).
Consultation	<p>The SEARS Requirements under “Consultation” states</p> <p><i>“During the preparation of the EIS, In particular, you must undertake detailed consultation with affected landowners surrounding the development ... The EIS must describe the consultation process and the issues raised, and identify where the design of the development has been <u>amended in response</u> to these. (SEARS, p3).</i></p> <p><i>The EIS says ...“Community consultation for the project commenced in (late) June 2020. Consultation included letters to residents and businesses in the nearby Lake Hume Village. Letters provided .. an 1800 number and project website was established”. (p 43).</i></p> <p>The 1800 number was contacted on receiving the letter notification from Meridian. No additional information was able to be provided apart from the Q and A .pdf (discussed above in Table 1, above).</p> <p>Not all surrounding landholders received notification of the BESS. The Trout Farm apparently didn’t receive the initial notification. The landowner of the adjacent “Hawksview” property rang me the morning of 8th September to find out about the BESS, having only heard of the proposal that morning. Hawksview land is adjacent the BESS sites and Sewerage Works, abutting the Trout Farm Road and Murray St.</p> <p>Detailed consultation with affected landowners surrounding the development has not occurred. It was not possible for adjacent landowners on the Trout Farm Road to have any input into the EIS, or have designs of the development amended prior to the EIS exhibition. Owners of “Hawksview” may not have had an opportunity to comment on the EIS exhibited.</p>

Table 3 BESS Socio economic Impacts on 32 Trout Farm Rd residents

Matters		Social Impact defined	Impact concerns (re: Table 4, DPE 2017)	Characteristics (re:Table 5, DPE 2017)
Amenity	Acoustic	Way of life	<p>One of the wonderful attributes of our property is the general quietness and the sounds of nature. The sounds of the Ibis rookery near the River, the frogs in the pond, the tweet of wrens and parrots, the sounds of the River and water from the Dam value and power station.</p> <p>Noise is assessed for our property at the receiver point RR01, the nearest residence to the proposed site. However, we are retired and spend the majority of the day time hours working around our property. For example, we walk the dog around the boundaries daily or more. We often eat outside and entertain day visiting family and friends outside, regularly as “picnics” enjoying the property’s magnificent views and sounds.</p> <p>Noise estimates provided at the home (RR01) during construction are 57 dB(A), 12 dB(A) above the NML and rated moderately intrusive (EIS, p 87).</p> <p>EIS sound Figures 6.1 to 6.3, show noise estimate of:</p> <ul style="list-style-type: none"> • 65 dB (A), 20 dB(A) above the NML in our the middle “Snow View “paddock, and • 75 dB(A), 30 dB(A) above the NML in our entrance/front “Mailbox Paddock (interpreted from Appendix H, pp 16-18). <p>We have <u>major concerns</u> about noise and vibration generated by excavation of rock, the “drilling rig” and other equipment use and methods.</p> <p>Borehole investigations found Granite rock at 0.7m m-1.7m (Section 14.2.3 Soils, p 99). Evidence of the shallow hard rock can be seen in Figure 11.2, Photo VP 04 (EIS, p 79).</p>	<p>Impact beyond the site affecting both land owners north of Trout Farm Rd; and all Trout Farm road users.</p> <p>Impact occurs over the 9 month construction period.</p> <p>Moderately intrusive Impact occurs over the 8 weeks construction period (Append H, Table 5).</p> <p>Concerns very intrusive Impact occurs over the 8 week construction period</p>

			<p>We are concerned excavation of this rock will involve:</p> <ul style="list-style-type: none"> • drilling/blasting? • need for a percussion hammer to get through the 1.3 m - 2.3 m of rock. 	
Community	Safety	Surroundings/Fears & Aspirations	<p>The EIS states the BESS is safe under “normal operations”. We have moderate concern for personal safety if we were at the front of our property; and similar for the safety of users of Trout Farm Road, if a major incident occurred (ie not “normal operation”). Web searches reveal many major incidents have occurred in South Korea, Europe and America.</p> <p>This was discussed in Table 2, Hazards and Risks.</p> <p>I am concerned for users of the Trout Farm Road when in close proximity to the proposed Northern location BESS. Road users will be approximately 30m from the bottom north west corner of the BESS. At that location the base level will be raised with approximately 2m of fill and similar to the road height.</p> <p>Accidents</p> <p>The “Trout Farm hill bend” is notorious for vehicle accidents, with many accidents going unreported. The road boundary fence is currently in disrepair, after a vehicle smashed through it only being stopped from going through the second Water NSW fence, by hitting a tree head on. Additional railing will be needed to protect the BESS from late night would be race car drivers.</p> <p>Road users</p> <p>The Trout Farm Road has become the major connector road between North East Albury/Victorian Murray peninsula areas and Wodonga East/towns to the East of Wodonga. It carries a lot of traffic at particular times, namely school and Army contractor start and finish times.</p>	Risk low, very high ramification, fear, life of the project

			<p>School buses and Army personal buses are part of the vehicle traffic at those times, as shown by the photo below. This shows an Albury school bus and a Wodonga/Victorian Murray peninsula bus crossing, with other heavy traffic also visible.</p> 	
	Health	Health & Wellbeing	<p>Similar to “safety” above, <u>moderate concern</u>, but more medical and mental health related.</p> <p>Videos show both white toxic fumes and flames/thick black smoke coming from BESS pods. For example, https://www.youtube.com/watch?v=IEIPzxj37dw</p> <p>Toxic fumes and smoke are likely to be directed towards our property as a result of any winds blowing off Lake Hume (see Section 12.1.2 Meteorology, EIS p82.</p>	Risk low, high ramification, life of the project
	Cohesion, capital & resilience	Way of life	LEP Zoned RU2 land includes a large range of permitted land use within the general description from extensive agriculture to	Noise and vibration certain, Moderately intrusive Impact

			<p>aquaculture, B & B's and child care (Albury LEP 2010, 14).</p> <p>Our property is a small lifestyle block. We made it our home to ensure our children were raised gaining practical farm related skills and also gained hands on experience enhancing natural habitat and to foster native fauna. We have increased the bird species count from 80 to over 110.</p> <p>Our family plays an active part in the small permanent community of Lake Hume Village. We support the local Café and Restaurant all-year-round; our boys caught the school bus daily, and worked in the Lake Hume Café.</p> <p>We are members of the Bellbridge-Lake Hume Rotary Club, the local Woolshed-Thurgoona Land and founding members of the "Friends of the Lake Hume Gliders" group.</p> <p>A BESS at the Northern location will negatively impact on our family and visitors; and how we react in our community.</p>	<p>occurs over the 8 -48 weeks construction period</p> <p>Impact extent unknown, life of the project</p>
	Housing	Way of life	<p>Our home consists of a large house designed for outdoor living, including a tennis court and 10 acres of land with spectacular views. We enjoy 270 degree views across the Hume Dam wall and Lake Hume, down the Murray River, across the forested floodplain to the Wodonga and Albury hills, and across farmland to Mount Hawk (see picture file "Lanark sale 2003", Annexure 2, p 30).</p>	<p>Moderately intrusive Impact occurs over the 8 -48 weeks construction period</p> <p>Impact extent unknown, life of the project</p>
Economic	Opportunity cost	Personal & property rights	<p>With the selection of the proposed northern location we are concerned about loss of future personal and property benefits.</p> <p>Personal A proposed second dwelling on our property will be the closest residence to the BESS during operational life of the BESS (see file "Project site and Lucas home(s).png", Annexure 2, p 29).</p> <p>This impact relates to potential lost opportunity in the future building</p>	<p>Some impact, ripple effect on family, degree unknown, major ramifications, life of project or longer</p>

			<p>a second dwelling on the property for a son (and his family) to return home to run a business from the property. We would build the 2nd dwelling and live here to enjoy a close relationship with grandchildren and they enjoy a similar upbringing to their father.</p> <p>Property asset value</p> <p>We, and others, are concerned our property would reduce in value as a result of the BESS being located adjacent to the Trout Farm, and so close to us.</p> <p>Furthermore, although our land is presently classified as Zoned RU2, it is adjacent to RU5 Village land.</p> <p>The original owners designed the property as two “blocks” with the aim of a future second dwelling, probably for one of their sons to take over the management of the their Trout Farm and live on site. We have continued that goal.</p> <p>The second dwelling would be in the front paddock, marked “planned future 2nd dwelling” on “Figure Project site and Lucas home(s)”, Annexure 2, p 29.</p> <p>The real estate agents made a point of this in promoting the property, emphasising a secondary dwelling is a “Permitted Land Use with Consent”.</p> <p>In the past we have had discussions with Albury Council, relating to RU5 Village Zoning around Lake Hume Village of which they initially proposed (Draft LEP 2010).</p> <p>If the BESS is located at the northern location we are concerned an application for Consent to build a second dwelling may now not be allowed due to the adjacent BESS.</p> <p>We spoke with Council staff about this in 2010 when the Albury Draft LEP was released. We have again communicated with Council regarding this since becoming aware of the BESS proposal.</p>	<p>Impact on Trout Farm Rd properties almost certain, life of the project, the degree of property value on our “Prestige Lifestyle property” is expected to be substantial</p> <p>Impact very likely, life of the project, the degree of property value change and family resilience is expected to be substantial</p>
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			<p>The response was they would need to see evidence <i>“that any assessment of the proposed Meridian Battery Facility would have considered impacts on adjoining lands prior to a consent (with conditions) being issued.”</i> (email).</p> <p>Similarly, the opportunity for future RU5 Zoning to allow separate title to facilitate estate asset transfer to out two (2) sons may also be lost.</p>	
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Annexure 2: Maps/images and email content referred to in the text

There are Three (3) as “attached” are presented below.

1. BESS alternate location options meeting.png (marked in purple)

Please ENLARGE images to view.



1. Alternate Sites to Meridian 2-9-20 (copy of email)

Good afternoon Justine,

I refer to our teleconference held on Thursday, 27 August 2020.

I confirm that Meridian are to provide further details regarding the project as set out in your attached email.

Would you please advise when you will be in a position to provide this additional information. Our clients will require this further information to enable them to finalise their submission to the project. I note that submissions close on Thursday, 10 September 2020.

Whilst we are awaiting the further information from Meridian our clients have continued to review the material available for the project and undertaken further investigations regarding the proposed site for the battery. Our clients instruct us that having reviewed the material and upon looking at the aerial maps that they have identified two (2) separate locations that could be suitable for the battery to be installed (see attached hand drawn diagram). I will discuss below in further detail these alternate sites.

Alternate Site – Option 1

This option proposes the use of land within the Water NSW Works compound. The benefit of this site is that it is in close proximity to the hydro plant and switchyard. Additionally, there is direct access to the site off the existing main entrance. Whilst our clients note this area was not previously considered, or eliminated early, they have reviewed the aerial maps and consider there is space for the battery to be installed. Please see markings on attached plan marked 1.

Alternatively, if space was a constraint to using this location our clients would propose that the modules that make up the battery be grouped in two separate blocks. Please see markings on attached plan marked 1(i) and 1(ii) for proposed splitting of modules.

The benefit of this proposed site is the location of the batteries and the access to the site.

Alternate Site – Option 2

This option proposes a modified use of the original Southern site that was considered for the development. Whilst our clients acknowledge that there is certain infrastructure in this location, a review of the aerial maps shows a similar space is available as the presently proposed “Northern site” footprint, consequently there is space for the battery to be installed. Please see markings on attached plan marked 2.

Alternatively, if space was a constraint to using this location our clients would propose this can be addressed by installing the modules in two separate blocks (as marked on the attached plan 2(i) and 2(ii)) or alternatively as a line of modules. Our clients are of the understanding that the battery system installed at Ballarat was in a linear arrangement rather than the modules being grouped together in a block style set up.

The benefit of this site is that the development would be somewhat obscured by the natural formation of the land which would reduce the visual and acoustic impact to our clients and their adjoining neighbours and road users of Trout Farm Road. By locating the development in the Southern site would save Meridian the costs of undertaking screening work to obscure the development from site for our clients and the additional costs of constructing an access road. Additionally, the EIS indicates that a heritage and biodiversity study has already been undertaken in this area so no further studies are likely to be necessary.

If the proposal is to proceed in the Northern location as proposed there will be a need for the pods to be installed on pilings which our clients anticipate will be higher than proposed in the Design Plans and Elevation diagrams which will likely require further noise and visual studies to be undertaken.

Our clients reiterate their previous advice that they are supportive of renewal energy and battery systems, they do however ask that you take into consideration their concerns particularly regarding noise and visual impacts and consider the above alternate sites.

Would you please advise whether Meridian would be willing to reconsider the location of the battery.

Kind Regards,

Travis Johnson | Senior Lawyer

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Document Exchange: 5804 Albury **Tel:** (02) 6021 2844 | **Fax:** (02) 6021 6075

Email: tjohnson@kellmoore.com.au | **Website:** <http://www.kellmoore.com.au>

2. Meridian Energy Hume Hydro and Battery Power Project FAQ July 2020



Hume Hydro and Battery Power FAQs

Who is Meridian Energy Australia?

We are an electricity generator and retailer dedicated to making a difference by helping to reduce reliance on fossil fuels. We sell electricity through our wholly owned subsidiary, Powershop Australia. We operate across the eastern states of Australia and New Zealand.

Our electricity is generated from 100% renewable energy sources including hydro and wind power. We have wind farms and hydro power stations across Australia, to help secure a safe and reliable energy market.

Since 2018 we have owned and operated the Hume Hydro Power Station (HPS). The HPS is currently our largest hydro power station in Australia based on annual energy production, transmitting power to both Albury in NSW and Wodonga in Victoria.



Artist's impression of the battery energy storage system

What is the project?

We are proposing to build a new 20MW battery energy storage system alongside the existing Hume hydro power station located at the Hume Dam approximately 20km upstream of Albury-Wodonga. This will be an Australian first in battery and hydro power co-location. The battery is proposed to be installed north-west of the dam on WaterNSW land near Trout Farm Road.

We are currently in the planning phase of the project. This phase has included field investigations to inform the Environmental Impact Statement (EIS) and liaising with the local community and key stakeholders.

Why install a battery energy storage system?

The existing hydro power station generates energy when water from the Hume Weir is released through the dam, spinning turbines which are connected to a generator. The generator converts the energy from mechanical to electrical energy. The electric energy is then transferred via power lines to power the local community and homes in Albury and Wodonga.

The water released from the Hume Weir is managed by the Murray-Darling Basin Authority daily. During periods of peak electricity demand more water cannot be released to generate electricity to supply the energy market. By installing a battery alongside the Hume Power Station, we can charge it during times of low energy demand, say in the middle of the night or early hours of the morning, store the energy in the battery and then release it into the market during periods of peak electricity demand. The battery storage technology will increase the power capacity of the existing hydro power station by 30 – 35%.

How does a battery energy storage system work?

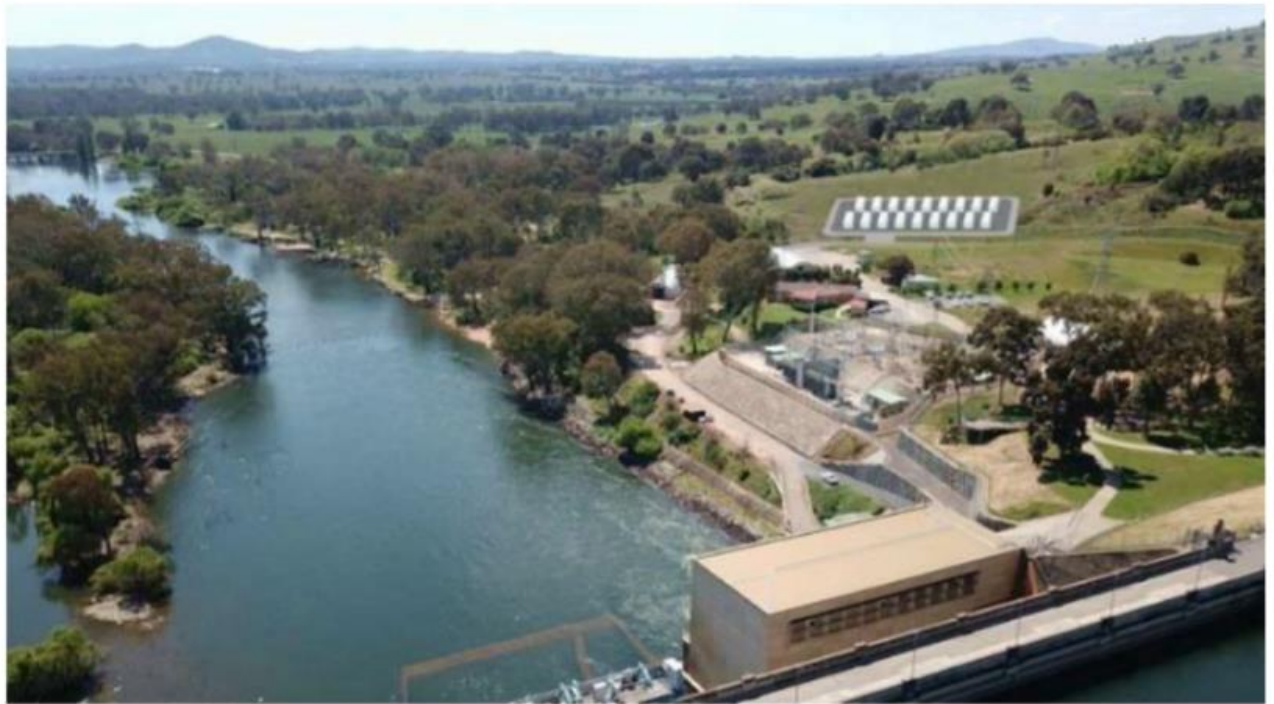
Batteries are an energy storage technology that absorb and release energy on demand. Energy can be drawn from a resource, stored for later use and fed into the market within a fraction of a second. Existing battery projects in Australia have proven the technology as a source of flexibility and stability for the energy market.

How will this project impact the Hume Hydro Power Station?

The proposed battery will not impact how the HPS and dam currently operate. The battery will be able to charge from the HPS during times of low energy demand.

The electricity will be transmitted to Albury and Wodonga via existing transmission lines. The battery would be connected via underground cables to the existing substation.

Enlarged image



Artist's impression of the battery energy storage system

3. Project site and Lucas home(s)

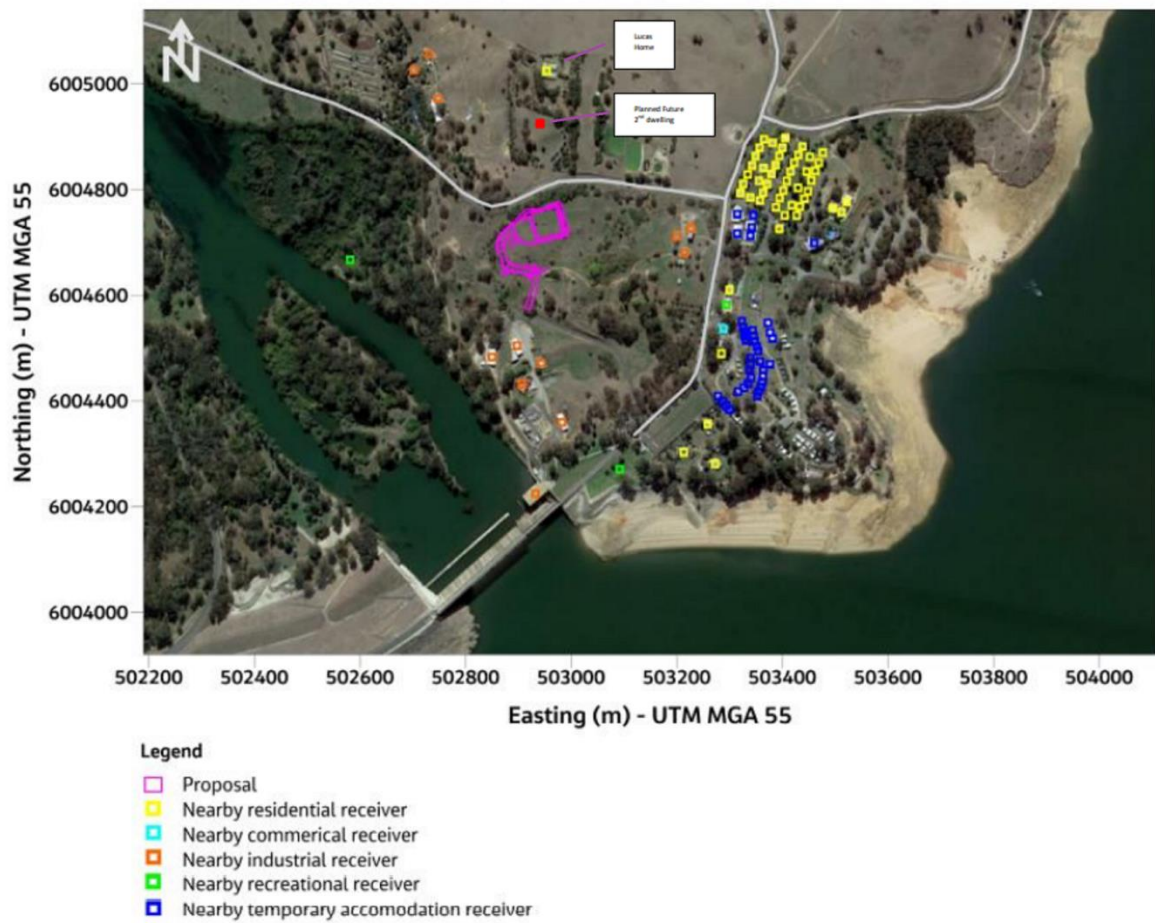



Figure 12-1: Project location and nearby receivers

4. Lanark Lifestyle 2003

STEAN NICHOLLS

FOR SALE



“LANARK”, HUME WEIR
SUPERB LIFESTYLE PROPERTY

The first time this spectacular lifestyle property has been offered to the market. Absolutely unique large country residence on 9.2 acres situated 15km from Albury/Wodonga and less than 1km from Hume Resort. Enjoying spectacular views of the Murray River, Hume Dam and distant winter snows. Includes tennis court, established orchard, central courtyard and wide verandahs for outdoor entertaining. Features huge fireplace, natural timber ceilings, in-floor heating, airconditioning, farm-style kitchen adjoining large family room, 4 bedrooms, study, storeroom, 2 bathrooms, 2 car garage, workshop & drive through carport, town water supply and decorative pond plus automatic in-ground irrigation system. Native bird paradise. For further details contact the exclusive agents.

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STEAN NICHOLLS SN

All stated dimensions and areas are approximate. Particulars herein are for information only and do not constitute any representation by the owner or the agent.