

Our Ref: MJ: L.M00380.001.00.Flood

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Attention: Adam Terrill

Dear Adam

**RE: 57 BURGESS LANE, CALALA, NSW DUE DILIGENCE ASSESSMENT:
FLOODING**

This letter presents the outcomes of a due diligence assessment of the flooding constraints to developing a Battery Energy Storage System (BESS) at 57 Burgess Lane, Calala, NSW (the Site).

Site description and flood behaviour

The Site comprises three lots; 16/629969, 17/629969 and 3/524962 bounded by Burgess Lane to the west and Calala Lane to the north. As shown in Figure 1 Calala Creek runs through the north-east section of the Site while an unnamed minor watercourse flows through the centre of the Site.

The information provided in the planning certificates stipulates that the flood levels on the Site are unknown to Tamworth Regional Council and the Flood Planning Map (Figure 2) does not include Calala Creek or the unnamed watercourse. Further a review of the [NSW Flood Data Portal](#) also does not identify any flood projects that cover Calala Creek where flood levels can be sourced.

Based on LiDAR data captured in 2022, the Site slopes from elevations of above 420 m AHD at the southern boundary down to 391 m AHD along Calala Lane. At the proposed location of the BESS elevation range from 411 m AHD to 402 m AHD. Across and upstream of the Site there are a number of contour drains cut into the paddocks that direct flow to small dams located along the unnamed watercourse.

To the Site, Calala Creek has a contributing catchment of approximately 15 km². Given that the BESS is located approximately 7 m above Calala Creek, it is unlikely that it will become inundated in a 1% AEP event. However, extensive inundation is expected on the northern portion of the property which is much flatter. A further modelling assessment would be required to confirm this.

It is also expected that Inundation from overland flow draining towards the unnamed watercourse would also be minor as the contributing catchment only extends approximately 800 m upstream of the Site and the overland flow diverted to the unnamed watercourse via the upstream contour drains. It should be noted that there are two contour drains which run through the proposed BESS location which will result in active flow paths.

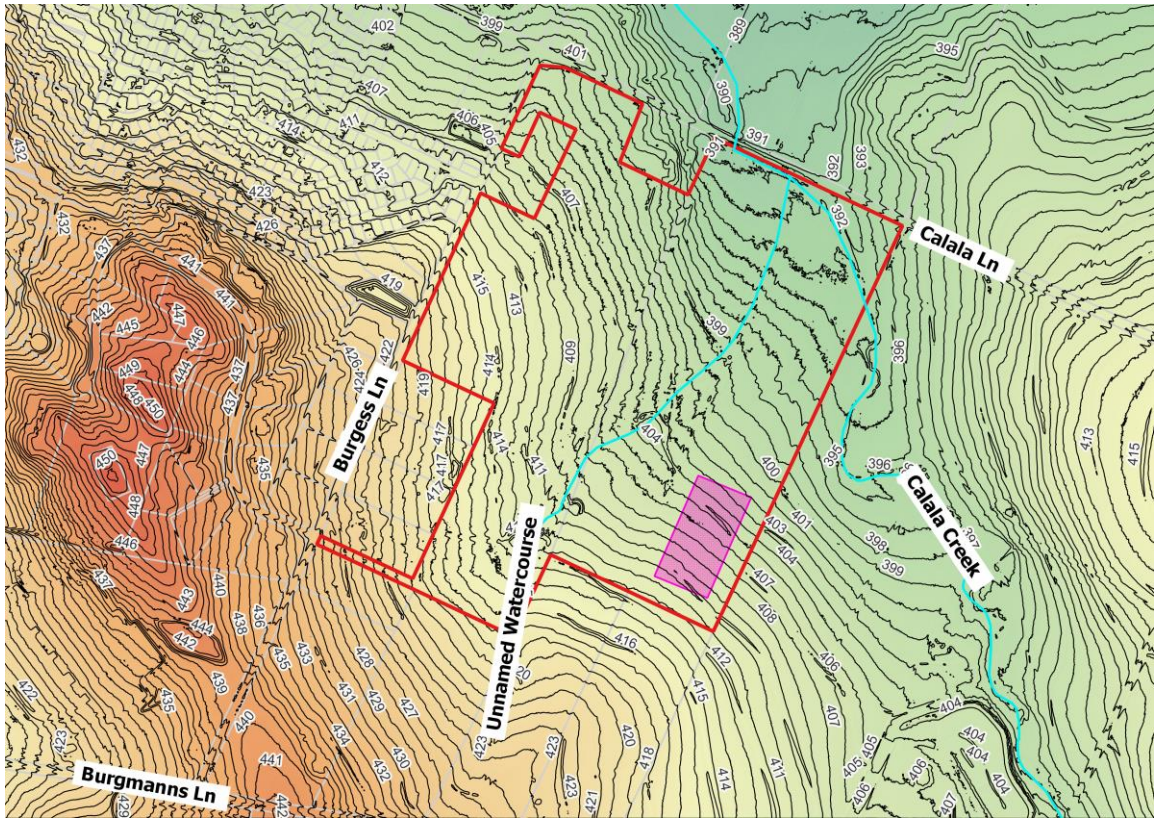


Figure 1 – Site layout and proposed BESS location

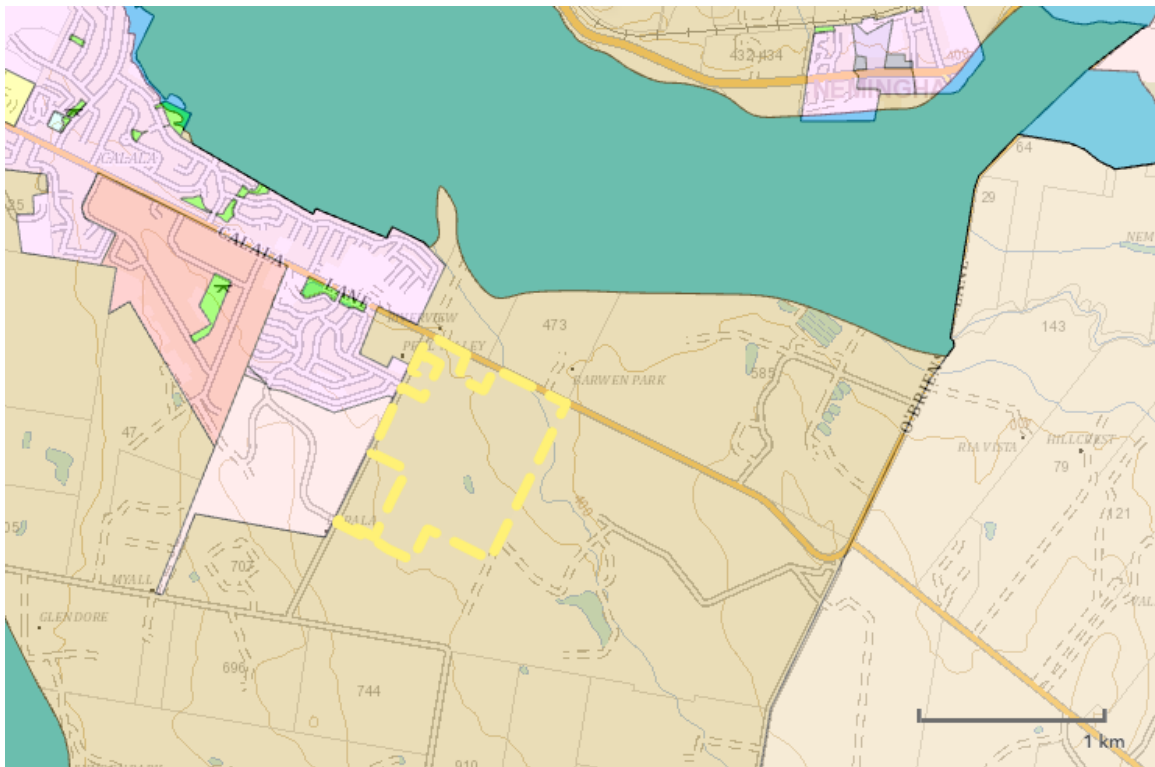


Figure 2 – Flood Planning Map (ePlanning Spatial Viewer)

Planning requirements

The planning certificates identified the Site as been located in Flood Affected Land and is such subject to the requirements set out in the Tamworth Regional Local Environment Plan 2010 and the Tamworth Regional Development Control Plan 2010.

The Tamworth Regional Council adopts a Flood Planning Level of the 1% AEP + 0.5 m freeboard.

The Tamworth Regional Development Control Plan 2010 does not specify a Flood Planning Level for Industrial Development rather it states that development shall incorporate measures to seal or flood proof buildings, to avoid activities or fittings susceptible to flood damage. It is noted that the Title and Planning Due Diligence Report (Draft version Issued 11 April 2022) completed by K&L Gates that as a State Significant Development the provisions of the Tamworth Development Control Plan 2010 will not apply.

The relevant planning requirements include:

- **Tamworth Regional Local Environment Plan 2010**
 - Development must not adversely affect flood behaviour in a way that results in detrimental increases in the potential flood affectation of other development or properties
 - Development will not adversely affect the safe occupation and efficient evacuation of people or exceed the capacity of existing evacuation routes for the surrounding area in the event of a flood
 - Development incorporates appropriate measures to manage risk to life in the event of a flood
- **Tamworth Regional Development Control Plan 2010**
 - For development of existing lots, where flood free vehicle access is not possible, the development must be able to achieve safe wading criteria; Velocity ≤ 2 m/s and Velocity + 3.333 x Depth ≤ 2.667 m²/s (Figure L1 of the NSW Floodplain Development Manual)
 - No building or work shall be permitted on flood affected land where in the opinion of Council, such building or work will obstruct the movement of floodwater or cause concentration or diversion of floodwaters
 - Development on flood affected land must be structurally capable of withstanding the effects of flowing floodwaters including debris and buoyancy forces
 - Council may require that all electrical installations and wiring be above the flood standard

Key Considerations

The key flooding consideration for development of a BESS at the Site are:

- There is no existing flood level or extent information available for the Site. A review of the topography of the Site and surrounds suggests that:
 - Flooding from Calala Creek is likely to result in significant inundation of the northern portion of the Site adjacent Calala Lane but is not expected to inundate, or inundate to a significant depth in the 1% AEP the south-east corner of the Site where the proposed BESS is located
 - Due to the small contributing catchment, and the existing contour drain works it is not expected that significant inundation would occur from the unnamed watercourse in the 1% AEP event.
 - There are existing contour drains through the location of the proposed BESS, requiring localised stormwater works to manage overland flow.

This flood behaviour needs to be confirmed through flood modelling

- The Tamworth Regional Council adopts a Flood Planning Level of the 1% AEP + 0.5 m freeboard. While it is unclear if this level applies to BESS' there are no documented additional requirements for critical infrastructure or power supply developments to exceed this requirement. This means that:
 - It is not expected that extensive fill or raising of the electrical equipment will be required to meet the minimum requirements of the Flood Planning Level at the proposed location of the BESS
- Given that significant inundation is not expected in the south-east corner of the Site, significant filling of the floodplain is not expected, there are no existing buildings adjacent to the proposed location of the BESS and there is available space on the Site for drainage works adverse flood impacts on neighbouring properties should be able to be managed
- Access/egress considerations to the Site include:
 - The below is based on the General Development Requirements in Tamworth Regional Development Control Plan 2010 and may not be directly relevant to a BESS in operation as access/egress may not need to be maintained
 - Access southwards to Burgmanns Lane is expected to remain flood free or meet the safety criteria
 - Access westwards to Burgess Lane will need to cross the unnamed watercourse which likely require drainage works to meet the safety criteria and prevent flood damage to the access track
 - Access northwards Calala Lane is unlikely to meet the access/egress criteria and would require significant drainage works on the track to do so (Calala Lane may not meet the safety criteria)

In summary it is considered that construction of the BESS on the Site would be feasible. Confirmation of the Flood Planning Level with flood modelling will be required to establish minimum design level requirements but this is not expected to be a constraint.

I trust this satisfies your requirements. Please do not hesitate to contact the undersigned should you have any further questions.

Yours faithfully,



Michael South
Director