



# **Attachment 4 to Item 2.1.1.**

---

## **Flood Letter**

Date of meeting: 20 June 2024  
Location: Council Chambers or audio-visual link  
Time: 10am



22 January 2024

Victor Ding  
Site Logic  
Caitshua Pty Ltd  
HWT Tower, Level 6, 40 City Road  
Southbank, VIC 3006

Dear Victor,

**Re: Flood Compliance Report – 1341 St Albans Road, Central MacDonald - Telco Facility**

This letter is a flood compliance report for the proposed development of a new 40 m monopole Telco Facility located at 1341 St Albans Road, Central Macdonald NSW 2775. It describes the nature of flooding on the site and the requirements of the flood-related planning instruments that currently apply to the site.

This flood assessment is based on the following documents:

- Detailed Flood Advice - Hawkesbury City Council dd. 21 November 2023 (Att. 1).
- Hawkesbury Local Environmental Plan 2012 (HLEP 2012).
- Flood Policy 2020, version 2 amended 29/06/2021 - Hawkesbury City Council.
- Schedule of Flood Related Development Controls, version 1 of July 2021 – Hawkesbury City Council (The Schedule).
- Design drawings NSW100010 Issue 1 dd. 03/08/23 - by Amplitel.

This report is structured to respond to Hawkesbury City Council's response to DA No. PAN-372103 dated 28 September 2023 and focuses on council's comments made under "Application of Schedule of Flood Related Development Controls", i.e.:

*In order to support an application submitted on land that is located within the area affected by the 1 in 100 year flood and subject to Council's Flood Policy 2020 and Associated Schedule of Flood Related Development Controls you will be required to provide the following information as part of your application:*

1. *Determine what flood information is available for the site, including flood levels and velocity of flood waters. (Available from Council on Payment of Applicable Fee);*
2. *Determine what hazard categories (H1 - H6) and which hydraulic classification (Floodway or Flood Storage) applies to the site. (Available from Council on Payment of Applicable Fee);*
3. *Review Table 2 – Compatibility of Land Uses with Hazard Categories within the Schedule of Flood Related Development Controls to determine if your development is compatible or not with the hazard category of the site;*
4. *Address how the development meets the relevant development controls in this 'Schedule of Flood Related Development Controls'.*



5. *Submit all information to Council for assessment having regard to Section E - Information Required of this Schedule.*

### **The Proposed Development**

The client proposes to replace a 20m high, small cell telecommunications facility with a new 40m unmanned Class 10B Telstra mobile telecommunications facility within an existing allotment located at 1341 St. Albans Road, Central Macdonald NSW 2775 (Lot 2, DP 630711), see Figure 1. The allotment for the proposed development is an area of 10 x 15 m near the southeastern boundary of the site (Figure 2). The site is adjacent to Macdonald River which runs approximately 400 m to the east of the proposed development location. The Macdonald River is a tributary to the Hawkesbury River which meets approximately 7 km south of the site. The site is bounded by St. Albans Road approx. 60m to the east, a public school to its south and an existing property to the north.

The development application proposes to remove the existing Telstra small cell facilities and associated fencing; to construct a new 40 m high monopole structure and associated services and infrastructure on a proposed 10 m x 15 m compound area; and to upgrade the existing 53m x 5m site access track to be levelled up with St. Albans Road (Figure 3). The proposed facilities will be built on the existing 9.5 m AHD ground level with the ancillary equipment shelter to be mounted on pier footing 500 mm above ground (Figure 4).

#### Topography

The proposed development site is level at 9.5 m AHD (Figure 4). The surrounding area slopes steeply upwards towards the south and west, and gradually slopes down towards the north and east towards the MacDonald River (Figure 5).

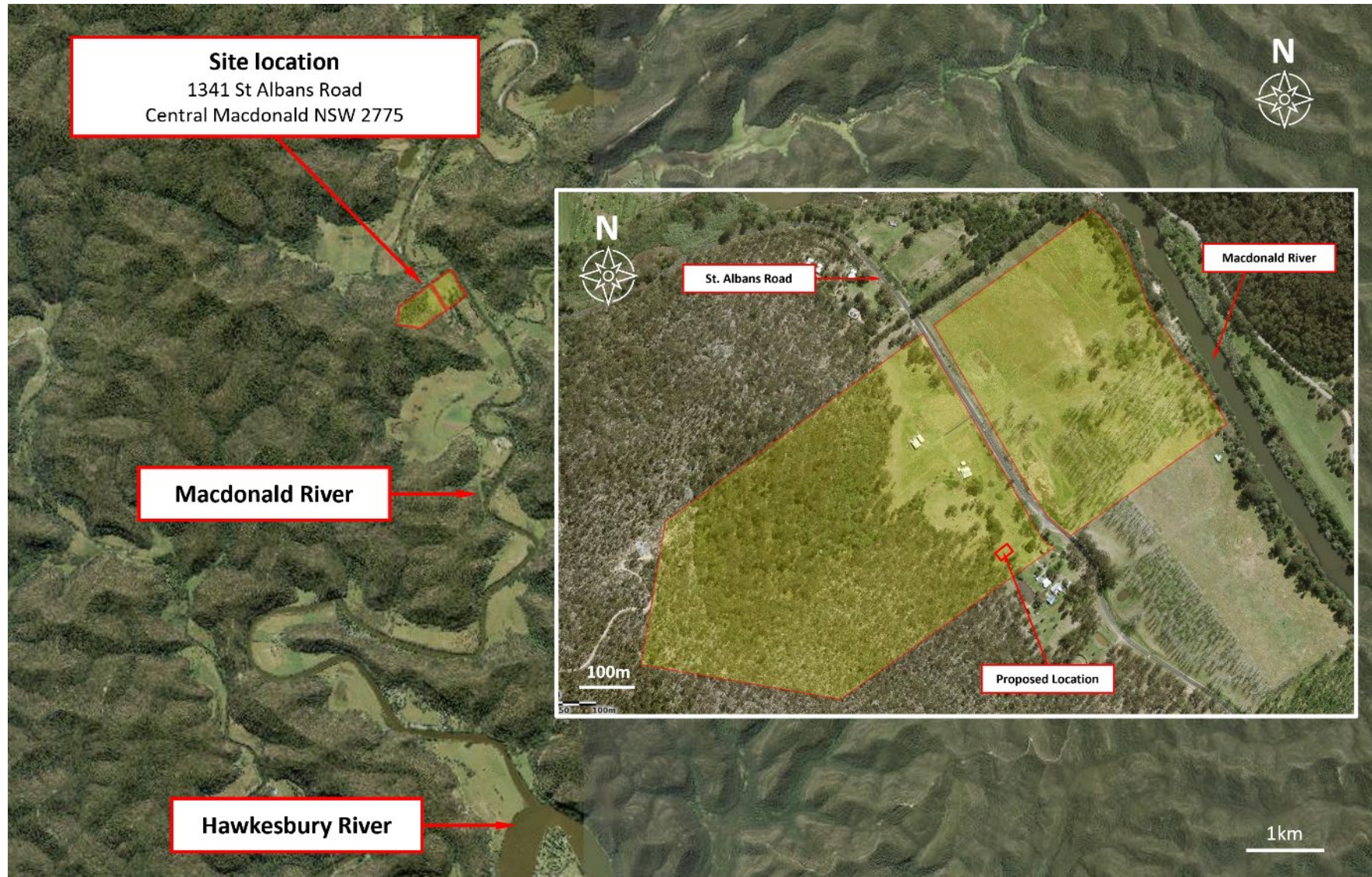


Figure 1 Site location and context (source: amended from Six Maps, NSW Govt. Spatial Services).

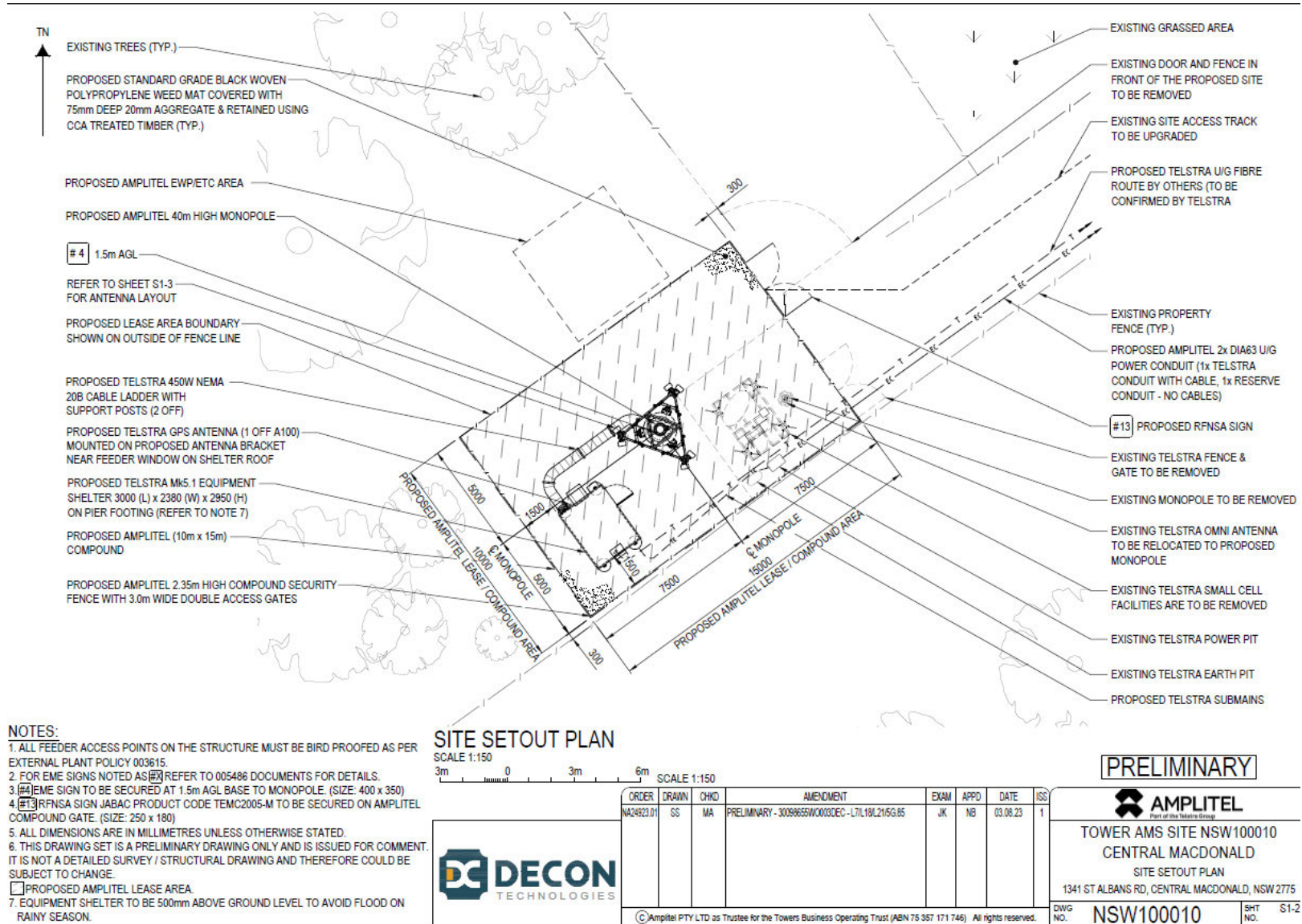


Figure 2 Site Setout Plan (source: DWG No. NSW100010 Issue 1 dd 03/08/23, Sheet S1-2)

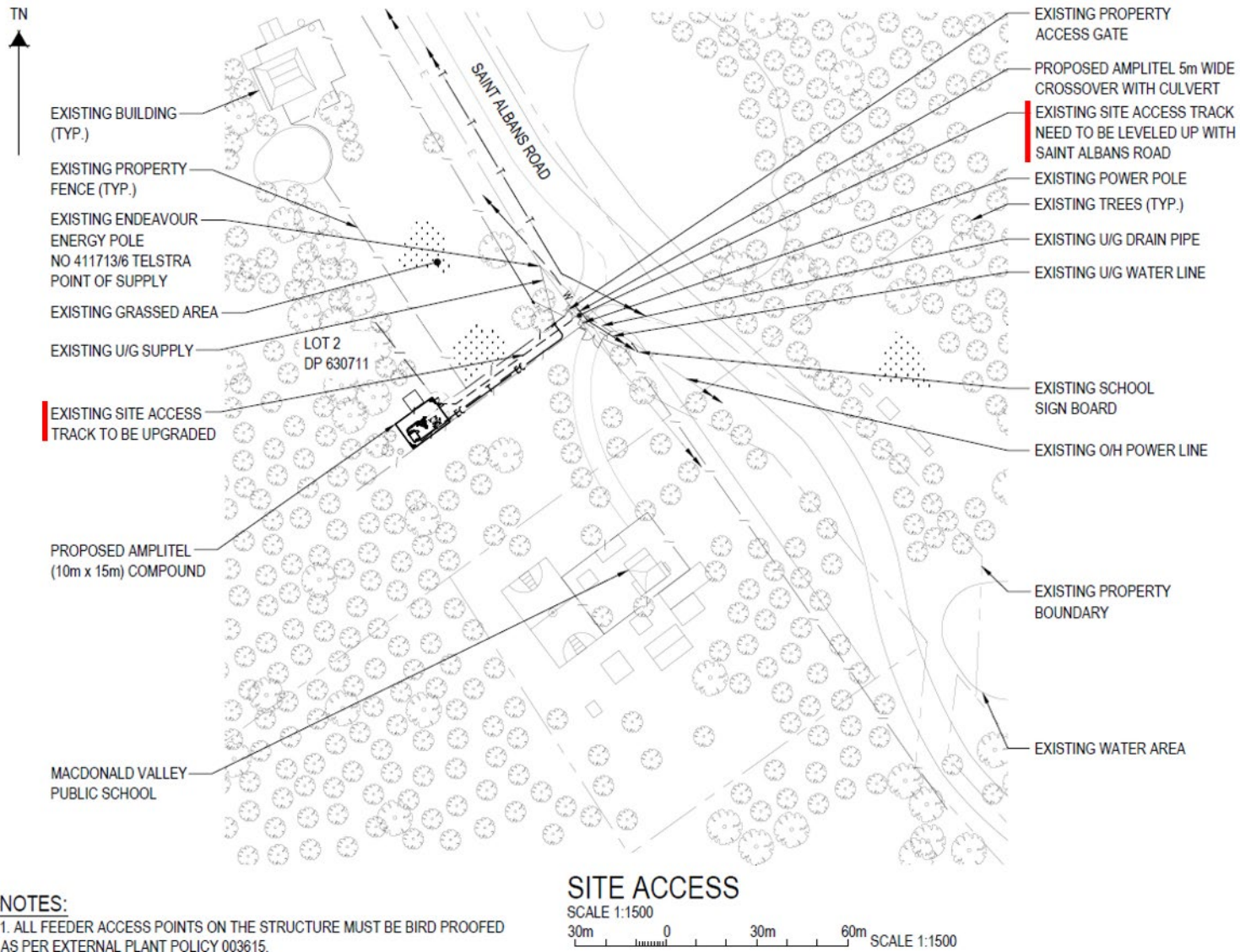


Figure 3: Site Access Plan (source: DWG No. NSW100010 Issue 1 dd 03/08/23, Sheet S1)

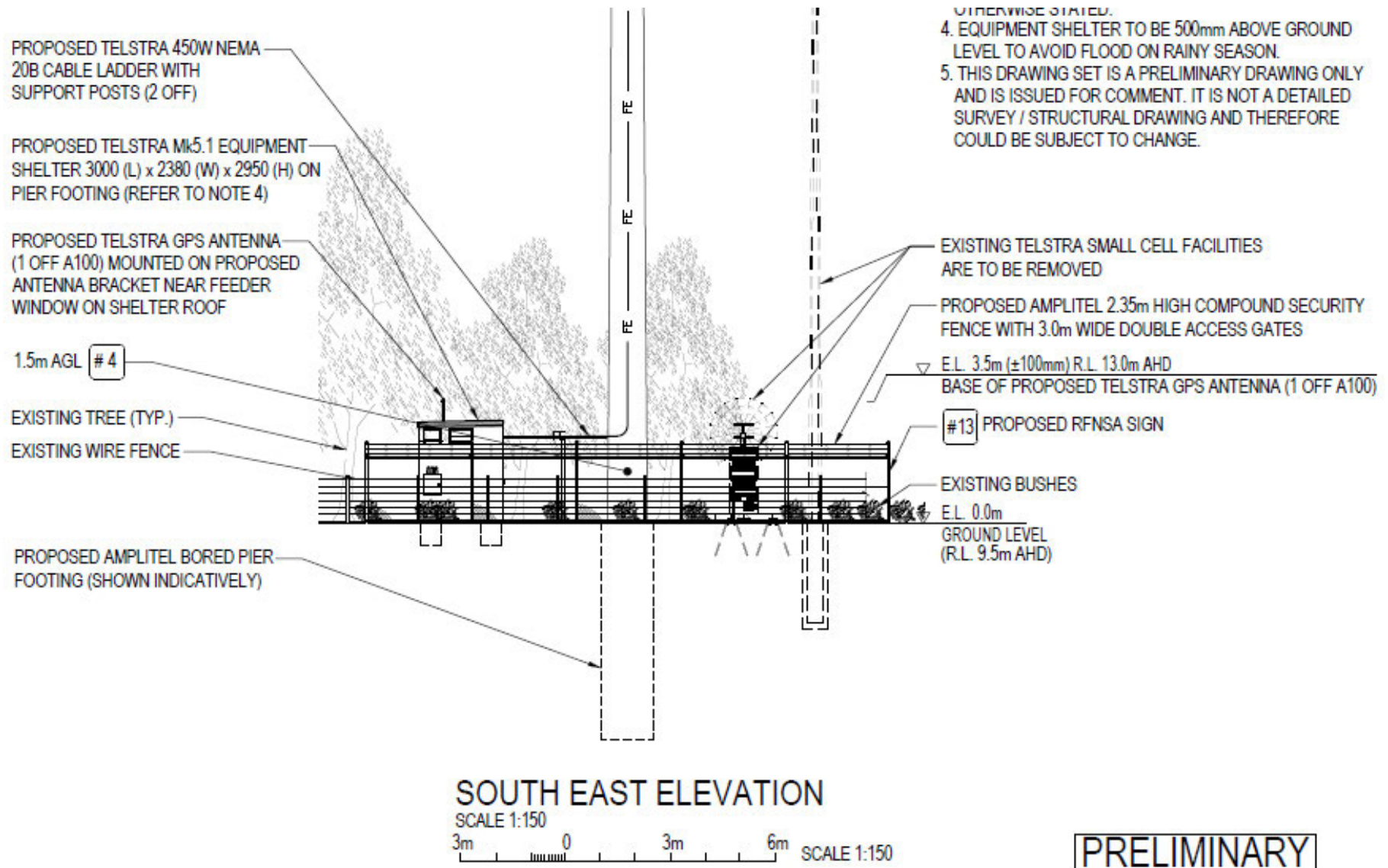


Figure 4: Proposed development elevation (source: DWG No. NSW100010 Issue 1 dd 03/08/23, Sheet S3)





Figure 5: Area topography (levels in m AHD)



## Flood Impacts

This section addresses point 1 of council's response to DA No. PAN-372103.

A Detailed Flood Advice Certificate for the site has been acquired from Hawkesbury City Council (Attachment A) which provides flood information from the site based on Council-adopted flood studies related to "... riverine flooding from the Hawkesbury-Nepean River, MacDonald River and Colo River..." and which excludes flooding from other sources such as creeks and local drainage systems.

The site is subject to riverine flooding from the Macdonald River which flows southward along the eastern boundary, and from the Hawkesbury-Nepean River which the Macdonald River meets approximately 7 km downstream. Table 1 summarises the indicative values for flood levels and peak flood velocities across the lot provided by Council's Flood Advice Certificate. It is important to emphasize that the figures reported in Table 1 apply to the whole cadastre lot, and not necessarily to the relatively small portion of the lot where the proposed development would be located. This is particularly relevant to the interpretation of the peak flow velocities, which would likely be reached in proximity to the Macdonald River, and lower velocities would likely be experienced at the location of the proposed development.

Table 1: Summary of flood levels at 1341 St. Albans Road, Central Macdonald NSW 2775 (Lot 2, DP630711)

Flood Event	Approximate Flood Level	Estimated Peak Flood Velocities
20% AEP	RL 7.2 m AHD	0.9 m/s
5% AEP	RL 9.2 m AHD	1.3 m/s
1% AEP	RL 11.3 m AHD	1.6 m/s

Importantly, the Flood Advice Certificate specifically notes:

- That the values provided are estimates only and that **substantial variations from the values provided may occur on site**, for the flow velocities in particular; and
- That the information provided **should be used as a guide only** and that council recommends that a **large safety margin** is incorporated into all designs based on the information provided.

The Flood Advice Certificate suggests that Flood Hazard Categories range from H1 to H6 across the lot and does not provide information regarding the site's hydraulic classification. Council's adopted Flood Planning Level is the flood level for the site's 1% AEP flood event, i.e. 11.3 m AHD.

### Flooding and the proposed redevelopment

This section responds to point 2 of council's response to DA No. PAN-372103.

The proposed development is situated on a ground level of 9.5 m AHD (Figure 4, Figure 5). At the adopted Flood Planning Level of 11.3 m AHD this will present a flood depth of 1.8 m at this location in the 1% AEP flood. The peak flow velocity in this event is provided only for the whole cadastre lot and equals 1.6m/s. Finally, council's flood certificate for the subject cadastre lot states that the lot is affected by hydraulic hazards ranging from H1 to H6.

However, the proposed redevelopment location is significantly smaller than the cadastre lot within which it sits. While the exact hazard level applicable to the proposed redevelopment cannot be obtained without a more detailed flood modelling exercise, this may be either H4 or H5 based on the peak depth provided in Council's flood certificate, as per Figure 6.

As such, this letter conservatively assumes that the proposed redevelopment is affected by a hydraulic hazard of H5. A H5 flood hazard category is defined as being “... unsafe for vehicles and people. All building types vulnerable to structural damage. Some less robust building types vulnerable to failure ...”

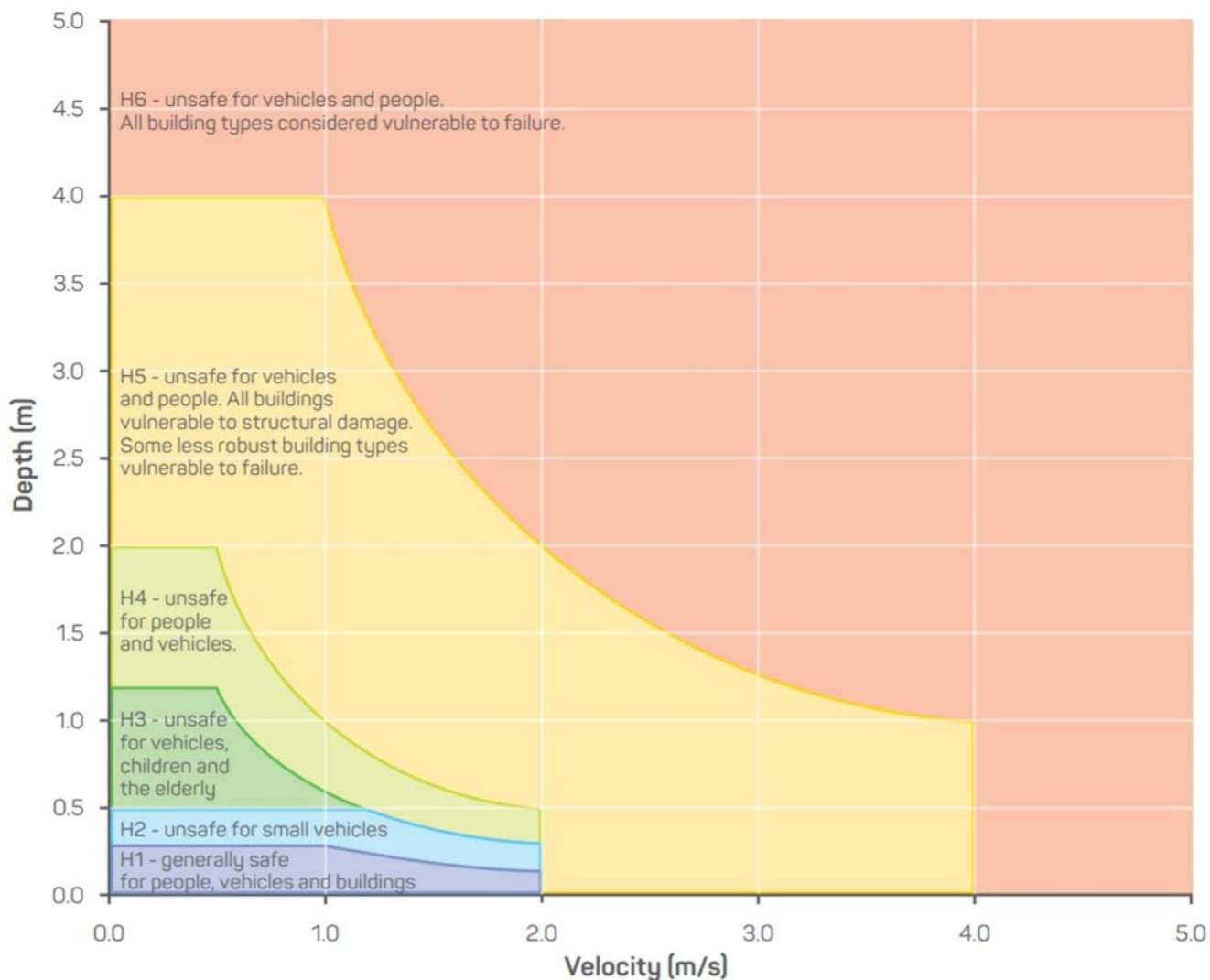


Figure 6: Flood hazard vulnerability curves (Smith et al., 2014).

### The Hawkesbury Local Environmental Plan (LEP) 2012 Requirements

The *Hawkesbury Local Environmental Plan 2022* is the primary legal planning instrument for guiding land use and planning decisions made by Council. The provisions of *Clause 5.21 Flood Planning* are extracted in Table 2, with responses pertaining to this site. Note that several points in this table also apply to the discussion of the Development Control Plan (DCP) requirements in the following section.



Table 2:Hawkesbury Local Environmental Plan 2012 Clause 5.21 Flood Planning

Clauses	Comments Pertaining to the Site
5.21 Flood planning	
<i>(1) The objectives of this clause are as follows—</i>	
<i>(2) Development consent must not be granted to development on land the consent authority considers to be within the flood planning area unless the consent authority is satisfied the development—</i>	
<i>(a) is compatible with the flood function and behaviour on the land, and</i>	<p>Flood function of the proposed redevelopment location is not provided in the available flood information. However, an analysis of the site location and local topography suggests that the proposal will interest an area of backwater flooding.</p> <p>The proposed works classify as “redevelopment of an existing, lawful incompatible development” under the Hawkesbury City Council Flood Policy 2020 and must comply with the policy’s applicable requirements, which were introduced by Council to ensure that the relevant LEP requirements are fulfilled.</p> <p><b>Compliance to be determined by approving authority</b></p>
<i>(b) will not adversely affect flood behaviour in a way that results in detrimental increases in the potential flood affectation of other development or properties, and</i>	<p>The proposed development involves the removal of existing structures at ground level and fences to be replaced with new structures with a similar footprint and construction. The proposed new compound building (3000 (L) x 2380 (W) x 2950 (H)) is small and will not result in adverse flooding impacts. As shown in Figure 5, the compound is not located in the main flowpath and will not obstruct regional floodwater (essentially, the compound is located in a minor backwater area). Ground levels increase immediately downstream of the compound; therefore, the compound will not obstruct flow and will not cause any material adverse impacts. Any potential impacts will be extremely localised and not materially or adversely affect adjacent properties. Additionally, the small building will be constructed on a pier footing which will minimise potential impacts from overland flow and regional flooding.</p> <p><b>Compliant.</b></p>
<i>(c) 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, and</i>	<p>The proposed redevelopment is for an unmanned telecommunications facility, replacing an existing facility of the same nature. Outside of incidental planned maintenance visits, no people will be on site as a matter of course.</p> <p><b>Compliant.</b></p>
<i>(d) incorporates appropriate measures to manage risk to life in the event of a flood, and</i>	<p>The proposed redevelopment is for an unmanned telecommunications facility, replacing an existing facility of the same nature. Outside of incidental planned maintenance visits, no people will be on site as a matter of course. If such visits have the same frequency as in pre-development conditions, risk to life will not be made worse than it currently is. However, if the proposed development increases the frequency with which people may be on site, it is possible that Council may request a Flood Emergency Response Plan to demonstrate that such additional risk is adequately managed.</p> <p><b>Compliance to be determined by approving authority</b></p>



Clauses	Comments Pertaining to the Site
<p><i>(e) will not adversely affect the environment or cause avoidable erosion, siltation, destruction of riparian vegetation or a reduction in the stability of riverbanks or watercourses.</i></p>	<p>The proposal concerns the redevelopment of existing telecommunications infrastructure with new, upgraded telecommunications infrastructure of a similar nature and with a similar footprint. The distance from the river is such that there will not be avoidable erosion, siltation, destruction of riparian vegetation or a reduction in the stability of riverbanks or watercourses.</p> <p>The applicant may need to demonstrate that any other environmental impacts are adequately managed.</p> <p><b>Compliance to be determined by approving authority</b></p>
<p><i>(3) In deciding whether to grant development consent on land to which this clause applies, the consent authority must consider the following matters—</i></p>	
<p><i>(a) the impact of the development on projected changes to flood behaviour as a result of climate change,</i></p>	<p>Although the available flood information does not provide any detail, as a general consideration changes to weather events associated with climate change may cause more frequent inundation at the site.</p> <p>As previously discussed, the proposed compound is small and replaces an existing compound of similar size. Given the local topography, the compound will not result in adverse or material flood impacts to adjacent properties. This applies to current and future climate flood conditions.</p>
<p><i>(b) the intended design and scale of buildings resulting from the development,</i></p>	<p>The proposed redevelopment of the site concerns a reconfiguration and upgrade of existing facilities.</p>
<p><i>(c) whether the development incorporates measures to minimise the risk to life and ensure the safe evacuation of people in the event of a flood,</i></p>	<p>The proposed redevelopment is for an unmanned telecommunications facility, replacing an existing facility of the same nature. Outside of incidental planned maintenance visits, no people will be on site as a matter of course. If such visits have the same frequency as in pre-development conditions, risk to life will not be made worse than it currently is. However, if the proposed development increases the frequency with which people may be on site, it is possible that Council may request a Flood Emergency Response Plan to demonstrate that such additional risk is adequately managed.</p>
<p><i>(d) the potential to modify, relocate or remove buildings resulting from development if the surrounding area is impacted by flooding or coastal erosion.</i></p>	<p>Council may request:</p> <ul style="list-style-type: none"> <li>- to demonstrate that alternative locations for the proposed redevelopment outside the floodplain or above the FPL have been considered, and the reasons why these have been discarded.</li> <li>- to demonstrate that flooding has been considered when designing the proposed redevelopment, as per the Hawkesbury City Council Flood Policy 2020</li> </ul>

### **The Hawkesbury City Council Flood Policy 2020 and the associated Schedule of Flood Related Development Controls Requirements**

As per the advice from Hawkesbury City Council dated 28 September 2023 regarding Development Application No PAN-372103, the site is subject to Council’s Flood Policy 2020 and the associated Schedule of Flood Related Development Controls Requirements.



There are different requirements related to flooding based on the nature of the development. We have reviewed these and we believe that the proposed works fall under the definition of “redevelopment”, as this is defined as follows: “A *Redevelopment* involves the rebuilding of an existing development to include changes to the original development, and includes house raising.”

However, it is also possible that Council may decide to consider this a “new development” as it entails the demolition of the existing facility a construction of a new one. The remainder of this letter assumes that the proposed works would be considered by Council as a “redevelopment”.

The applicable flood development controls contained in the latter document are based on the Hazard Category in which a development will be situated. As previously discussed, in the absence dedicated flood model results, this letter conservatively assumes that the site is affected by a hazard of H5. Hydraulic Hazard H5 is defined as being “... *unsafe for vehicles and people. All building types vulnerable to structural damage. Some less robust building types vulnerable to failure ...*” (Figure 6).

The use of flood hazard categories in council’s Schedule of Flood Related Development Controls Requirements (The Schedule) is, as noted in this document:

*... a general classification and other factors should be taken into consideration when locating and designing development... (page 5 of The Schedule).*

And the compatibility of any re-development of existing structures needs to consider whether it will (The Schedule, page 5):

- *Maintain or lower density, both in form and occupancy*
- *Reduce the exposure to floodwaters and the potential for damage by*
  - *Using flood proof building design and construction*
  - *Locating on higher land*
  - *Raising floor levels and habitable floor levels*
  - *Maintain existing flow paths to ensure other properties are not adversely affected by new buildings*
  - *Not increase the reliance on emergency management through consideration of the emergency management difficulties in the area.*

*Table 2 of The Schedule – Compatibility of Land Uses with Hazard Categories*

This section responds to point 3 of council’s response to DA No. PAN-372103.

According to Table 2 of The Schedule, a “Telecommunications facility” land use is incompatible with any hazard category, including Hazard Category H5 (Figure 7). Therefore, the proposed works fall under the category of redevelopment of ***existing lawful Incompatible Development in Hazard Category H5.***



**Table 2**

**Compatibility of Land Uses with Hazard Categories**

**Legend:** X – Incompatible  
C – Compatible

**Note:** Other factors need to be taken into consideration when determining the hazard category, such as access to safe evacuation facilities and the available warning times.

Land Use	Hazard Category					
	H1	H2	H3	H4	H5	H6
<b>Critical Uses and Facilities</b> <ul style="list-style-type: none"> <li>• Emergency services facilities</li> <li>• Public administration building that may provide an important contribution to the notification or evacuation of the community during flood events (e.g. SES Headquarters and Police Stations)</li> <li>• Hospitals</li> <li>• Telecommunications facility</li> <li>• Electricity generating works</li> <li>• Water treatment facility</li> </ul>	X	X	X	X	X	X

Figure 7: Land use vs hazard category (source: Schedule of Flood Related Development Controls)

**Section D of The Schedule – Development Controls**

This section responds to point 4 of council’s response to DA No. PAN-372103.

As the proposed development concerns the redevelopment of an existing telecommunications facility, the development controls set out in Section D Part 5.2 “Additions and alterations to, or the Redevelopment of, existing lawful Incompatible Development in Hazard Category 5” apply. Table 3 responds to the clauses set out here.

Table 3: Hawkesbury City Council Schedule of Flood Related Development Controls Requirements for Section D Part 5.2 “Additions and alterations to, or the redevelopment of, existing lawful incompatible Development in Hazard Category 5”

Clauses	Comments Pertaining to the Site
<b>Permissibility</b>  <i>H5.18 Additions and alterations to, or the redevelopment of, existing lawful incompatible development must not be located within a higher Hazard Category that that in which the existing development is situated.</i>	<p>The proposed redevelopment and the existing development are approximately in the same location within the lot and our estimate based on the flood data provided by Council and the local topography suggest that they are likely subjected to the same hydraulic hazard category H5 (conservative assessment) or H4.</p> <p>It is noted that, despite the outcome of our analysis as mentioned above, Council may still request that the applicant undertakes a detailed flood modelling exercise to demonstrate that the same hazard category applies to the existing and new development.</p> <p><b>Compliance to be determined by Council</b></p>



Clauses	Comments Pertaining to the Site
<p><i>H5.19 The redevelopment of existing lawful incompatible development must, as far as practicable, be designed, located and constructed to minimise the impacts of flooding on the building and improve risk to life factors when compared to that of the existing development.</i></p>	<p>The proposed development shall be designed and engineered to meet this criterion.</p> <p><b>Applicable: Applicant to demonstrate that flooding has been considered in the design, so far as is reasonably practicable</b></p>
<p><i>H5.20 Additions to, or the redevelopment of existing lawful Incompatible Development must not be located within a floodway area.</i></p>	<p>Flood function classification was not provided by Council, however our analysis of the local topography suggests that the parts of the proposed redevelopment falling outside the footprint of the original development are not located in the main flow path, but in a minor backwater area.</p> <p>It is noted that, despite the outcome of our analysis as mentioned above, Council may still request that the applicant undertakes a detail flood modelling exercise to demonstrate that the site is not located within a floodway.</p> <p><b>Compliance to be determined by Council</b></p>
<p><i>H5.21 Additions and alterations to, the redevelopment of, and ancillary development to existing lawful Incompatible Development, must demonstrate that the development will not increase flood effects elsewhere, having regard to:</i></p> <ul style="list-style-type: none"> <li>• <i>Loss of flood storage;</i></li> <li>• <i>Changes in flood levels and velocities caused by changes to flow paths;</i></li> <li>• <i>The cumulative impact of development within the floodplain;</i></li> <li>• <i>The development withstanding forces from floodwater, impacts from debris, and buoyancy forces</i></li> </ul>	<p>The proposed development involves the removal of existing structures at ground level and fences to be replaced with new structures with a similar footprint and construction. The proposed new compound building (3000 (L) x 2380 (W) x 2950 (H)) is small and will not result in adverse flooding impacts. The compound is not located in the main flow path and will not obstruct regional floodwater (essentially, the compound is located in a minor backwater area). Ground levels increase immediately downstream of the compound; therefore, the compound will not obstruct flow and will not cause any material adverse impacts. Any potential impacts will be extremely localised and not materially or adversely affect adjacent properties. Additionally, the small building will be constructed on a pier footing which will minimise potential impacts from overland flow and regional flooding.</p> <p><b>Compliant</b></p>
<p><i>H5.22 Additions and alterations to, or redevelopment of, existing lawful incompatible development must not increase the residential occupancy of the land i.e. no additional bedrooms are permitted.</i></p>	<p>The proposed redevelopment is non habitable.</p> <p><b>Compliant (not applicable).</b></p>
<p><i>H5.23 An increase in the number of caravan sites (both long-term and short term sites) within existing lawful caravan parks is not permitted in Hazard Category H5.</i></p>	<p>The proposed redevelopment is not a caravan park.</p> <p><b>Compliant (not applicable).</b></p>





Clauses	Comments Pertaining to the Site
<p><i>H5.24 An increase in the number of attendees at childcare centres or respite day care centres is not permitted within Hazard Category H5.</i></p>	<p>The proposed redevelopment is not a childcare centre or a respite day care centre.</p> <p><b>Compliant (not applicable).</b></p>
<p><i>H5.25 Additions to, or the redevelopment of, existing lawful uses located within and incompatible Hazard Category must not increase the size of the original building as approved and constructed at the commencement of Flood Policy 2020 by more than 20m<sup>2</sup>, unless the additional floor area is a second storey addition that does not include additional bedrooms and does not increase the footprint of the existing building.</i></p>	<p>The proposed redevelopment's footprint exceeds the footprint of the existing development and is located within an incompatible Hazard Category, however the floor area of the equipment shelter, which is not habitable, is less than 20m<sup>2</sup>.</p> <p><b>Compliant.</b></p>
<p><i>H5.26 Ancillary development, such as garages and outbuildings, associated with existing lawful uses located within an incompatible Hazard Category must not exceed 20m<sup>2</sup> in total area for all ancillary development, other than:</i></p> <ul style="list-style-type: none"> <li>• <i>Farm buildings and other buildings ancillary to the purpose of uses</i></li> </ul>	<p>The proposed redevelopment includes construction of an equipment shelter of 3.00 m x 2.38 m, i.e. 7.2 m<sup>2</sup> (Figure 2), which is below the 20m<sup>2</sup> limit set by this criterion.</p> <p><b>Compliant.</b></p>
<p><i>Land Levels</i></p>	
<p><i>H5.27 Additions to, or the redevelopment of, existing lawful incompatible development must not be located on any land lying at a level lower than 3.0 metres below the Flood Planning Level (1:100 ARI flood level for the land), other than where it is demonstrated that the works will reduce risk to life and/or improve building resilience and evacuation.</i></p>	<p>The proposed redevelopment is situated on a ground level of 9.5 m AHD which is 1.8 m below the 11.3 m AHD FPL.</p> <p><b>Compliant.</b></p>
<p><i>H5.28 Any non-habitable buildings ancillary to existing lawful Incompatible Development (such as garages, carports, animal shelters and other outbuildings) must not be erected on any land with Hazard Category H5 that lies at a level lower than 3.0 m below the Flood Planning Level (1:100 ARI flood level for the land), other than:</i></p> <ul style="list-style-type: none"> <li>• <i>Farm buildings and other buildings ancillary to the purposes of uses listed as Agricultural Uses 2 in Table 2 of this Schedule.</i></li> </ul>	<p>The proposed redevelopment is situated on a ground level of 9.5 m AHD which is 1.8 m below the 11.3 m AHD FPL.</p> <p><b>Compliant.</b></p>



Clauses	Comments Pertaining to the Site
<p><i>H5.29 Farm buildings and other buildings ancillary to existing incompatible agricultural uses may be located on land lying more than 3.0 metres below the Flood Planning Level (1:100 ARI flood level for the land) subject to meeting the requirements of (where relevant):</i></p> <ul style="list-style-type: none"> <li>• <i>Demonstrating that the development will not increase flood effects elsewhere, having regard to:</i> <ul style="list-style-type: none"> <li>○ <i>Flood storage,</i></li> <li>○ <i>Changes in flood levels and velocities caused by changes to flow paths;</i></li> <li>○ <i>The cumulative impact of development within the floodplain, and</i></li> <li>○ <i>The development withstanding forces from floodwater, impacts from debris, and buoyancy forces;</i></li> </ul> </li> <li>• <i>Development Control H5.39</i></li> <li>• <i>Development Control H5.40, and</i></li> <li>• <i>Development Control H5.41</i></li> </ul>	<p>The proposed redevelopment is not ancillary to agricultural uses.</p> <p><b>Compliant (not applicable).</b></p>
<i>Floor levels</i>	
<p><i>H5.30 All habitable floor levels must be no lower than the Flood Planning Level (1:100 ARI flood level for the land). Where this is not practical due to compatibility with the height of adjacent buildings, or compatibility with the floor level of existing buildings, or the need for access for persons with disabilities, a lower floor level may be considered. In these circumstances, the floor level must be as high as practical, and, when undertaking alterations or additions no lower than the existing floor level.</i></p>	<p>The proposed redevelopment has no habitable floor levels.</p> <p><b>Compliant (not applicable).</b></p>
<p><i>H5.31 All floor levels of non-habitable buildings ancillary to existing lawful Incompatible Development must be no lower than 3.0 metres below the Flood Planning Level (1:100 ARI flood level for the land) when located within Hazard Category H5.</i></p>	<p>The proposed redevelopment includes construction of an equipment shelter which will be constructed on 500mm piers bringing the floor level up from 9.5 m AHD ground level to 10 m AHD, i.e. 1.3 m below FPL.</p> <p><b>Compliant.</b></p>



Clauses	Comments Pertaining to the Site
<p><i>H5.32 Where the lowest floor area is elevated above ground level (where raised building construction is used), the undercroft area must not be enclosed. No walls, doors, blockwork, cladding or the like is to be affixed around or within the undercroft area. Decorative features will be considered on merit.</i></p>	<p>The proposed redevelopment includes construction of an equipment shelter which will be constructed on 500mm piers – the undercroft area shall not be enclosed.</p> <p><b>Applicable: applicant to demonstrate that this condition is satisfied</b></p>
<p><i>H5.33 Undercroft areas may be used for car parking purposes.</i></p>	<p>The proposed redevelopment includes no undercroft areas of that nature.</p> <p><b>Compliant.</b></p>
<p><i>H5.34 An undercroft area shall not exceed 2.1 metres above ground level. Any slab installed for car parking purposes shall be at ground level to maintain a clearance of 2.1 metres to the underside of the lowest floor area.</i></p>	<p>The proposed redevelopment includes no undercroft areas of that nature.</p> <p><b>Compliant.</b></p>
<p><i>H5.35 Where required by Hawkesbury City Council, an area must be provided within a building on the land for the storage of goods, valuable possessions or potentially hazardous or polluting materials at a level above the Flood Planning Level (1:100 ARI flood level for the land).</i></p>	<p>No such requirement exists for this proposed redevelopment.</p> <p><b>Compliant (not applicable).</b></p>
<b>Cut and Fill</b>	
<p><i>H5.36 Importation of fill to the land/property and/or excavation works, are not permitted, other than to facilitate development for the purposes of:</i></p> <ul style="list-style-type: none"> <li>• <i>environmental protection works;</i></li> <li>• <i>bank restoration/stabilisation works;</i></li> <li>• <i>boat ramps.</i></li> </ul>	<p>The proposed redevelopment includes upgrading of the access track including a “leveling up” with St. Albans Road. No details of cut and fill works are available.</p> <p><b>Applicable: applicant to demonstrate that this condition is satisfied</b></p>
<p><i>H5.37 A balance of cut and fill must be used on the site to create a level building platform or driveway access on land. Cut and fill must not exceed a depth of 1 metre of cut or 1 metre of fill in these situations.</i></p>	<p>The proposed redevelopment includes upgrading of the access track including a “leveling up” with St. Albans Road. No details of cut and fill works are available.</p> <p><b>Applicable: applicant to demonstrate that this condition is satisfied</b></p>
<b>Building</b>	
<p><i>H5.38 All additions, alterations or replacement buildings must be constructed using flood compatible building materials.</i></p>	<p>Design drawings for the proposed redevelopment do not mention flood compatibility of suggested materials. Material to be used for the monopole is not yet specified.</p>



Clauses	Comments Pertaining to the Site
	<b>Applicable: applicant to demonstrate that this condition is satisfied</b>
<p><i>H5.39 An engineering report, prepared by a suitably qualified and experienced structural engineer, must be provided to demonstrate that new buildings and structures are able to withstand forces from floodwater, impacts from debris, and buoyancy forces (See Section E – Information Required of this Schedule).</i></p>	<p>The Client shall obtain a certificate from a structural engineer demonstrating that this requirement is fulfilled.</p> <p><b>Applicable: applicant to demonstrate that this condition is satisfied</b></p>
<i>Emergency Management</i>	
<p><i>H5.40 An Evacuation Capability Assessment must be provided for any additions or redevelopment of existing lawful Incompatible Development that result in an intensification of occupancy of the site, such as an increase in the number of employees (See Section E – Information Required of this Schedule).</i></p> <p><i>Note: An increase in the number of residents or the number of attendees of an existing lawful Incompatible Development (e.g. increase in number of bedrooms in a residence, residential care facility or group home, children at childcare centres, or additional sites within a caravan park) is not permitted within Hazard Category H5.</i></p>	<p>The applicant must demonstrate that the proposed redevelopment will not increase the number of attendees to the site with respect to existing conditions (e.g. maintenance schedule)</p> <p><b>Applicable: applicant to demonstrate that this condition is satisfied</b></p>
<p><i>H5.41 A Site Flood Emergency Response Plan must be provided when elements of the development, including vehicular and pedestrian access are below the Flood Planning Level (See Section E – Information Required of this Schedule).</i></p>	<p>The proposed redevelopment is for non-habitable use. It is not clear if the new facility will increase the frequency with which workers may be on site (e.g. for maintenance).</p> <p>Regardless, as the site is below the Flood Planning Level, Council may request that a Flood Emergency Response Plan is provided.</p> <p><b>Compliance to be determined by Council</b></p>



Clauses	Comments Pertaining to the Site
<p><i>H5.42 Where it has been demonstrated that evacuation of a property located within the MacDonald Valley or Colo Valley is not possible, 'sheltering in place' may be considered for residential and sensitive development subject to a refuge being provided on land having a level above the Probable Maximum Flood. The refuge must either be located on the subject land, or be a community provided building previously approved for use as a flood refuge. Details of the capacity of the building, the likely time period of isolation, the provision of food, fresh water and effluent disposal facilities, as well as other necessary supplies (such as batteries, radio, torch, first aid kit, medication, candles etc) must be provided with any development application. In addition, should the development rely on a community provided refuge, details in regard to the distance the development is located from the refuge, the identification of hazards along the route between the development and the refuge and demonstrating that the refuge can be accessed during flood events up to and including the 1:100 ARI flood event, is also to be provided.</i></p>	<p>Only applicable if Council requests a Flood Emergency Response Plan. Given the nature of the redevelopment, shelter in place would not be an option.</p> <p><b>Compliance to be determined by Council</b></p>

**Section E of The Schedule – Information Required**

This section responds to point 5 of council’s response to DA No. PAN-372103.

Section E “*Information Required*” of The Schedule sets out the specific information which is to be supplied in addition to the submission requirements. These are:

- (a) All applications shall be accompanied by a survey plan showing:
- The position of existing building(s) and proposed building(s);
  - The existing ground levels to Australian Height Datum around the perimeter of the building and contours (with a contour interval of 0.5m) of the site; and
  - The existing and proposed floor levels to Australian Height Datum.

**Applicable: to be provided by the applicant.**

- (b) A plan showing the route(s) that can be taken to gain access from the development to the Regional Flood Evacuation Route is to be provided with any development application.

**The proposed redevelopment is for non-habitable use. It is not clear if the new facility will increase the frequency with which workers may be on site (e.g. for maintenance).**

**Regardless, Council may request that a plan showing the evacuation routes is provided**



(c) The evacuation Capability Assessment is to:

- Demonstrate the available route(s) from the development to the Regional Flood Evacuation Route;
- Determine the available time for evacuation;
- Identify at what point and time the access route is cut off;
- Identify whether the proposed development will be capable of self-evacuation or whether it will rely on emergency services to assist in the evacuation of occupants, such as seniors housing, residential care facilities, group homes, or correctional centres;
- Determine whether evacuation from the site can be achieved within the Effective Warning Time; and
- Demonstrate that evacuation of the site will not adversely impact on existing evacuation capabilities.

**The Evacuation Capability Assessment will not be required if the applicant can demonstrate that the new facility will not increase the frequency with which there will be people on site (e.g. workers) with respect to the existing facility. Alternatively, Council is likely to require the preparation of an Evacuation Capability Assessment meeting the requirements above.**

(d) A Site Flood Emergency Response Plan should relate to the land use and site conditions in conjunction with flood behaviour expected to be experienced at the site in a 1:100 ARI flood event. The plans should consider the following specific actions:

- Preparing for a flood;
- Responding when a flood is likely, including evacuation routes and when to leave;
- Responding during a flood, including what to do when isolated; and
- Recovery after a flood.

The flood plan should be consistent with the relevant NSW SES “Floodsafe” Guide.

**The proposed redevelopment is for non-habitable use. It is not clear if the new facility will increase the frequency with which workers may be on site (e.g. for maintenance).**

**Regardless, as the site is below the Flood Planning Level, Council may request that a Flood Emergency Response Plan is provided. The plan will have to meet the requirement above.**

(e) For development in areas where an existing catchment-based flood study is not available, a flood study using a fully dynamic one or two dimensional model will be required, prepared in a manner consistent with the most current publication of “Australian Rainfall and Runoff” and the “Floodplain Development Manual” (FDM). From this study, the following information shall be submitted in plan form for the pre-developed and post-developed scenarios:

- Water surface contours;
- Velocity vectors
- Velocity and depth product contours;
- Flood profiles for the full range of events for full development including all structures and works (including revegetation).

The flood study must be prepared by a suitably qualified and experienced hydrological engineer.



**Council flood certificate implies that a catchment-based study is available for this area. Council may request that an additional flood study is prepared by the applicant if they are not satisfied with the level of detail provided by the existing study.**

(f) Where the controls for a particular development proposal require an assessment of structural soundness during a 1:100 ARI flood event, the following impacts must be addressed having regard to the likely depths and velocities of flood waters:

- Hydrostatic pressure;
- Hydrodynamic pressure;
- Impact of debris; and
- Buoyancy forces.

Note that the foundations of buildings need to be included in the structural analysis.

The engineering report must be prepared by a suitably qualified and experienced structural engineer.

**Applicable. The stability certificate from the structural engineer will have to cover the above items.**

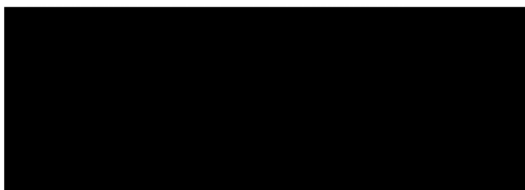
### **Conclusion**

This letter has set out the flood compliance considerations for the proposed redevelopment (DA No. 372103) at 1341 St. Albans Road, Central Macdonald NSW 2775 (Lot 2, DP 630711), based on current LEP and Development Controls applicable to the site as advised by Hawkesbury City Council.

The proposed redevelopment complies with most of the provisions of the existing LEP and Development Controls, noting that additional actions and studies may need to be undertaken by the Client to achieve full compliance, as detailed in this document.

Yours faithfully

For [Water Technology Pty Ltd](#)



Filippo Dall'Osso  
Principal

Enclosures: 1

N:\Jobs\24050097\_1341 St Albans Road, Central Macdonald Telco Facility\Deliverables\Reporting\Flood Compliance Report\24050097\_L01v02\_Flood Compliance Report.docx



## **Attachment 1 | Flood Information Certificate**



# Flood Advice - Detailed

## Applicant

Water Technology Pty Ltd  
Suite 3  
Level 1 20 Wentworth Street  
PARRAMATTA NSW 2124

FLA0130/23

## Date of Advice

**Date of Advice:** 21 November 2023

This advice is only valid as at the date of issue.

## Location

**The flood advice applies to the following property:** Lot 2 DP 630711  
1341 St Albans Road CENTRAL MACDONALD NSW  
2775

## Council Adopted Flood Planning Level

**The adopted 1% AEP (Annual Exceedance Probability)**

RL 11.3m AHD (Note 1a)

## Applicable Flood Related Development Controls and Information

### Estimated Property Natural Ground Levels (NGL)

NGL range from RL 4.0m to RL 237.0m AHD.

### Flood related Development Control

The property is subject to the following Council Flood related development control:

- Clause 5.21 of the Hawkesbury Local Environmental Plan 2012; and
- Council's Flood Policy 2020.

**Note:** Some State or Regional Environmental Planning Instruments may also contain flood related development controls which affect the land.

### Flood Hazard Category (based upon the 1% AEP flood planning level)

H1, H2, H3, H4, H5, and H6

### Flood Hydraulic Classification

unknown

## Estimated Peak Flood Velocities

Estimated flood velocities for the 20%, 5% and 1% AEP flood events are shown in the table below.

Flood Event	Approximate Flood Level (Note 1a, b)	Estimated Peak Flood Velocities (Note 1a, b, c)
20% AEP (1:5 year ARI)	RL 7.2m AHD	0.9m/s
5% AEP(1:20 year ARI)	RL 9.2m AHD	1.3m/s
1% AEP(1:100 year ARI)	RL 11.3m AHD	1.6m/s

### Note 1:



- a) Flood information provided relates to riverine flooding from the Hawkesbury-Nepean River, MacDonal River and Colo River. This information does not relate to flooding from other sources such as creeks and local drainage systems.
- b) The values are estimates only and **substantial variations from the values provided (for velocities in particular) may occur on site.**
- c) The information provided should be used as a **guide only** and **council recommends a large safety margin be incorporated into all designs** based on the above information.

## Information Source

<b>Flood Levels</b>	Flood levels are sourced from Council adopted flood studies current at the date of this advice.
<b>Property Levels</b>	Property levels are taken from Council's Digital Terrain Model mapping and as such are approximate only. To determine accurate site levels a survey will be required to be undertaken by a Registered Surveyor.
<b>Flood Velocities</b>	Flood Velocities are derived from Council adopted flood studies current at the date of this advice. They are estimate velocities based on the information available to Council at the time of issue of this advice.
<b>Flood Hazards</b>	Flood hazard categories are a key tool used to determine flood severity and for assessing the suitability of future land uses. They are determined based on the available information to Council at the time of issue of this advice and Council recommends confirmation of the Flood hazards categories based on accurate ground surface levels and footprint of the development in which it is situated.

## Enquiries

This advice is not intended to address the requirements for flood control lots under Clause 3.5 of the State Environmental Planning Policy (Exempt and Complying Codes) 2008.

More information about flood related development controls is available on Council's website or by contacting Council's Duty Officer on (02) 4560 4444 or via email: [council@hawkesbury.nsw.gov.au](mailto:council@hawkesbury.nsw.gov.au).

---

Simon Heung  
**Development Engineering Coordinator**