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14 October 2015
Our Ref: MDK203_A368

Attn: Liz Densely, Acting Director Development
Planning and Development
MID-WESTERN REGIONAL COUNCIL
86 Market Street
MUDGEE NSW 2850

Dear Madam,

RE: PLANNING PROPOSAL FOR "MENAH" TO ACHIEVE 2HA LOTS WITHIN LOT 3 DP587806 AND PART OF LOT 2 DP136904

Reference is made to the recently supported planning proposal for 2ha lots within "Menah" south of the railway line. Please accept this correspondence on behalf of Mr Michael de Kantzow also being the owner of the land in response to your request for information to enable Gateway Determination.

- **Information addressing Section 117 Direction 4.3 regarding flood prone land and 2.1 in relation to environment protection zones.**

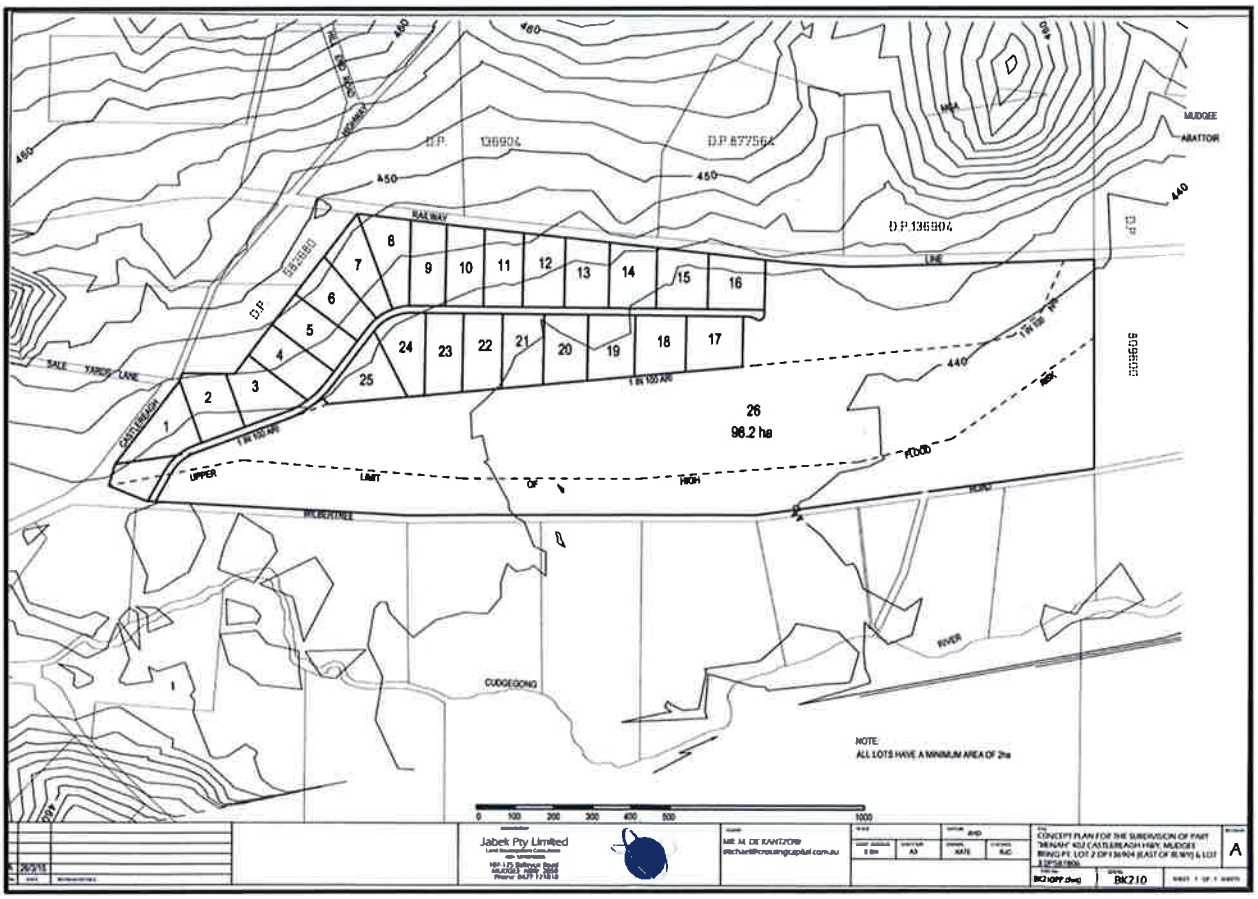
With regard to Direction 2.1 Environmental Protection Zones:
The land is currently zoned RU4 Primary Production Small Lots. The subject land does not include an environment protection zone pursuant to the Mid-Western Regional LEP 2012 (MWR LEP 2012). However, the lot title does include land that is mapped in the MWR LEP 2012 as within the Flood Planning Area (Flood Planning Map Active Street Frontages Map Visually Sensitive Land Map Sheet CL1_006). Though the proposed development concept excludes land that is below the 1 in 100 ARI.

All lots will have building sites available that are able to comply with the Mid-Western Regional Development Control Plan 2013. The remaining land outside of the proposed 2ha lots will remain as a rural lot with the same RU4 zone. The proposal does not reduce the environmental protection standards that apply to the land. The proposed concept and proposal is not inconsistent with the direction.

With regard to Direction 4.3 Flood Prone Land
Council staff reported that only land that is fully outside the 1 in 100 year flood level is considered suitable for rural residential development (ref Report to Ordinary meeting 20 May 2015), which was endorsed by Council. This is consistent with the concept for development as proposed. In this regard the planning proposal is consistent with the NSW Flood Prone Land Policy.

The direction requires that planning proposals "*must not rezone land within the flood planning areas from Special Use, Special Purpose, Recreation, Rural or Environmental Protection Zones to a Residential, Business, Industrial, Special Use or Special Purpose Zone*". This proposal seeks to rezone land from a Rural zone to a Residential zone, however the flood planning area within the MWR LEP 2012, based on the 1 in 100 ARI, has been adopted as the limit of the developable land subject to the planning proposal. Therefore the proposal complies with this aspect of the direction. Also the proposal does not seek any amendment to the current LEP provisions with regard to the flood planning area. Or seek any amendment to the flood planning levels adopted in the MWR DCP 2013 (which are consistent with the Floodplain Development Manual).

The concept plan below demonstrates that a 2ha minimum can be applied to the land outside the flood planning area.



The concept has ensured that the provisions of the DCP 2013 can be implemented and relevant provisions regarding flooding can be achieved for all lots involved. All lots have an existing RL greater than the 1 in 100 ARI. The planning proposal is consistent with the objectives of the Direction. The adopted DCP 2013 is consistent with the principles of the Floodplain Development Manual 2005. Development can be carried out without increasing flood hazard both on and off the subject land. Dwellings are permitted in the Low risk precinct and the proposal is commensurate with the hazard at the site. Overall the planning proposal is not inconsistent with the direction.

- **Information regarding water supply having regard to the impacts on groundwater. It is noted that the planning proposal states that "the land is not proposed to be serviced by reticulated water or sewer" (pg. 25), though the assessment of on-site effluent disposal impacts (pg. 20) is based on the assumption that no domestic groundwater bores will be located on the site.**

It is envisaged that the proposed future residential development would rely on rainwater for potable supply. If rainwater collection is limited by the size of storage tanks or roof catchment areas or a lack of rain, drinking water supplies may need to be augmented with carted water. Alternately a bore to provide non-potable uses (i.e. outdoors and toilet flushing) could be provided. Use of recycled (or reclaimed) water for garden irrigation may also occur in this style of residential development.

When considering the suitability of a water source for use, there were several factors that have been considered including:

- What sources of water are available in the area of 'Menah'? The sustainability of the supply and local groundwater vulnerability.
- Is it more economically viable to use one or another water supply considered? (such as the cost of drilling a bore or installation of rainwater tanks and associated plumbing)
- Will the source provide sufficient quality and quantity of water to meet household needs?
- Will the water require ongoing treatment?
- Is ongoing sampling of the water supply required and what are the logistics involved? The extent of maintenance required (such as parts, labour or the need for external assistance).

Key factors are discussed.

Possible sources of potable and other domestic supply that have been considered include:

- Existing domestic bores/wells;
- New domestic bore;
- Reticulated town water supply; and
- Combination of rainwater and bore;
- Rainwater.

The existing wells were considered in the review of effluent management and the subject land prepared by Mr Martin Haege of Geolyse (2015), included within the Planning Proposal. It was identified that 3 or 4 existing wells (depending on final lot layout) would be within the 250m buffer to onsite effluent disposal systems. The Report manages this through the proposed conversion of the authorised purpose to stock and irrigation. If new domestic bores were introduced the same issue of buffer distance between a bore and on-site sewerage disposal would need to be addressed.

The provision of reticulated services was not considered to be consistent with the type of rural residential lot proposed to be created. Further, at this time town water services are not readily available to the land. Overall the provision of reticulated services is not economically feasible to the land at this lot size and would likely lead to the creation of a smaller lot size. Also demand for this type of serviced lot was not identified in the URS, and as such reticulated servicing was not considered suitable for water supply for lots of min. 2ha. It is considered that with reticulation of services, will come the creation of opportunity for overwatering, which is not a good environmental outcome (especially for sites with onsite effluent disposal).

(Water treatment and installation costs are expected to be standard and not affected by site locality and not a determining factor).

Rainwater was considered the most logical and feasible water supply option. This is based on:

- Similar situations:
  - Consistency with existing standards adopted for similar rural dwellings in the Mid-Western Regional area. Other rural dwellings and smaller lots in villages in the Mid-Western LGA have not been required to have a bore where reticulated services are not available.
  - The existing homestead at 'Menah', has not required 'top up' to its rainwater supply in the past (including periods of low rainfall) within the period of occupation by the current owners (20yrs+).
  - Consideration of other nearby LGA rural residential development control plans, e.g.: Lithgow Council - where 2ha lots have been permitted for several years. The DCP requires rainwater tanks for potable supply.
  - A recent example of a successful subdivision of similar min. 2ha lots near the Mudgee town was considered, developed in the past 7 years. (E.g.: Only one of the 8 lots in Robertson Road in south Mudgee have a bore for domestic purposes. The lots are developed with varied dwelling styles and sizes with rainwater tanks for potable supply).
- Also based on similar 2ha lots in Mudgee, the land type takes on a unique setting where watered landscaped areas are minimal (compared to 4000m^2 lots with reticulated services, which typically have larger watered lawn areas). The Geolyse assessment determined that the development would have minimal impact on the site water cycle. The report assumes that the additional run off created from dwelling roofs would be harvested and reused as the main water supply.
- Calculations of water demand. Geolyse have carried out preliminary calculations for consideration by the proponent. Using the DUES Rainwater Tank Model and assuming a 200m^2 roof area and 20 years of rainfall and temperature data for Mudgee, shows the following:
  - Total demand of approximately 219,150 L/year (Average Daily Demand 600L/day) (which represents internal water use as per the effluent report). This would require some annual top up if a bore was not available to account for some outdoor (non-potable) demand.
  - For the 2ha size lot it is typical that a shed would be also constructed on the lot (without increasing the water demand). A scenario assuming a 250m^2 roof area and tank size/arrangement for nil overflow, the average top up is 17,075 L/year and the tank water system is about 90% reliable. This is considered an acceptable level of security of supply.

- Ulan Water Pty Ltd provide local water cartage services to the Mudgee region. Ulan Water use a water tanker of 15,000L capacity for 'top up' deliveries to dwellings and mine sites. With this in mind, any individual rainwater tank installed should have a minimum capacity of 22, 500L to account for practicalities of top up to allow filling of a full load. (The above scenario would require two (2) top up events based on total rainwater tank capacity of approx. 80,000L).

- BASIX applies to the development of all new homes in NSW. Water use is a key component of sustainable building design. The future dwellings will have support in the need to consider water supply and design according to demand and roof size and install the appropriate tank sizes. Rainwater Tank Design and Installation Handbook (Australian Rainwater Industry Development Association) can be referred to, as well as 'The BASIX Rainwater Harvesting System Guidelines' which provides a whole of house approach to the design and installation of rainwater harvesting systems. The BASIX also recognises stormwater and greywater diversion and treatment systems, which may provide garden irrigation options.

Overall, the most sustainable water supply option identified was through appropriately sized and installed rainwater tank(s). The future dwellings will be able to include a static volume of water for fire-fighting. The supply is consistent with the appropriate standards for water demand (volume) (Note: The DUES model and NSW Office of Water guideline "*How much water do I need for my rural property*?" do not vary significantly).

The land is mapped as 'groundwater vulnerable' in the Mid-Western Regional LEP 2012. Appropriately the alluvial aquifer systems associated with the Cudgegong River have been sought to be protected in the proposed development. Achieving minimal impacts to groundwater and change to the water cycle can be achieved through the minimisation of reliance on groundwater for supply and through minimising potential for recharge to occur. The sustainability of the water supply has been considered with regard to site specific circumstances.

The findings of the review of effluent management and the subject land prepared by Mr Martin Haege of Geolyse (2015) included within the Planning Proposal, considered ground water vulnerability. With regard to onsite effluent management, it was "noted that only 709m^2 was required to achieve a hydraulic balance for the site". Therefore the assumed 1,400m^2 irrigation area in the report for the 2ha (20, 000m^2) site would ensure a low annual application rate and low potential for leaching. In addition to this the conversion of existing wells/bores to 'stock and irrigation' will ensure that the buffer distances are achieved. New bores are not required or proposed to provide a sustainable and reliable internal potable water supply, also ensuring the on-site effluent disposal systems are not overly limited.

It has been sought to clarify the water supply proposed and provide information regarding water supply having regard to the impacts on groundwater. We believe that it is reasonable to assume that a 3-4 bedroom house with shed is the likely house size (with roof area of approx. 250m^2) for the type of development. Overall, the level of servicing is commensurate with that expected, based on similar examples discussed and is appropriate for the style of living arrangement proposed in the zone.

Please do not hesitate to contact the undersigned on 0439 724 980 if you require any further information.

Yours faithfully

EMMA YULE
For MINESPEX PTY LTD