

7 September 2023

Lynley Fletcher
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Dear Lynley

Mount Munro: s92 Further Information Request – Landscape

This letter sets out my response to relevant aspects of a Further Information Request received from Horizons Regional Council, Greater Wellington Regional Council, Tararua District Council and Masterton District Council for the above project, dated 6 July 2023.

My response to this request covers, landscape and visual matters as well as related aspects of lighting and shadow flicker, insofar as they relate to my expertise. For completeness, I have set out the specific information request in full ahead of my responses below:

Landscape / Visual

- 1. The roading alignment included in the Tonkin + Taylor Indicative Roading Section Plan essentially adopts an alignment that is positioned central to the Turbine Consent Envelope and Turbine Exclusion Zone corridors. It is considered that the effects conclusions made within the Landscape Effects Assessment, in relation to the earthworks associated with the construction of the internal road network, are credible based on the demonstrated alignment and prepared visual simulations. However, there is the potential for a considerably larger scale earthworks within these proposed consent corridors, particularly when it is noted that the specified road width “don’t include feathered edges, drains, or removal of banks on the road shoulders to enable the transport of turbine blades”¹. Please confirm that the scale of earthworks (cut/fill), associated with the final alignment of the internal road layout, is consistent with the level of effect assessed in the Landscape Effects Assessment.*

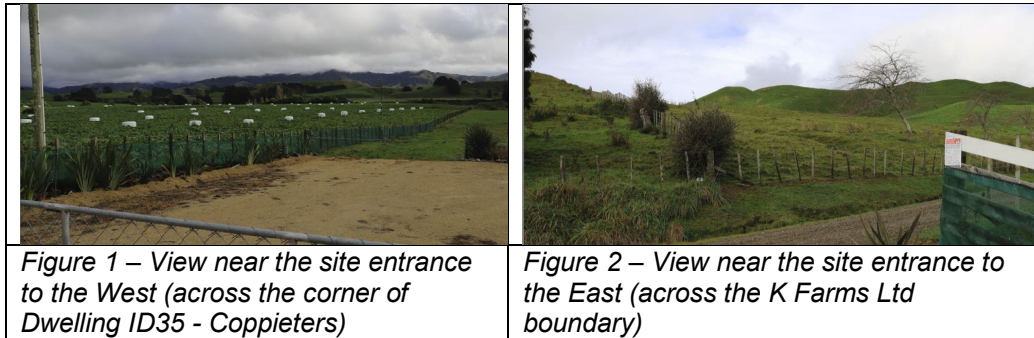
The earthworks modelling used in visual simulations was prepared by Tonkin and Taylor (v10.01). This includes an understanding of cut and fill batters where necessary to support an indicative access alignment and inform the assessment of potential landscape and visual effects. The dimensions in the report refer to road widths only. The full extent of earthworks included in the model incorporates indicative batter slopes which enable feathered edges, drains and removal of banks on the road shoulders to facilitate the transport of turbines.

Since the Landscape Effects assessment was lodged, I have been provided an update to the earthworks model (V10.04) as represented in Figures 4 and 6 of the Landscape and Visual Effects Assessment Graphic Supplement. This relates to facilitating access to the south of the laydown area along Old Coach Road and associated bridge crossing along Makakahi tributary as assessed. There is no change to the indicative internal earthwork’s layout as modelled or assessed within the windfarm.

¹ Appendix K - Landscape Effects Assessment (Boffa Miskell 2023); Section 4.2.5

I can therefore confirm that the scale of earthworks which have been assessed have incorporated an allowance for earth worked batters beyond the specified road widths and within identified exclusion zone corridors. Once completed, resulting batters will be re-established in grass. This understanding has informed the overall level of effect identified within the Landscape Effects Assessment.

2. *Additional information on the boundary treatment (for mitigation purposes) with the immediately adjacent properties along Old Coach Road (Figures 1 & 2) is requested. These two properties are in close proximity to the proposed site access, which is the beginning of the new internal access road and the location of the laydown area (including temporary site offices, amenities, security, parking, and potentially a permanent Services/O&M building).*



Figures 1 and 2 included in the s.92 request are taken from the same property located along Old Coach Road – owned by the Coppieters (WN43/255). The property to the east of Old Coach Road and visible in the foreground is owned by K Farms Limited (WN585/31). No dwellings are currently located on either property from which planting would provide a reduction in fixed views.

Through discussions with Meridian, it is understood that a future dwelling may be constructed by the Coppieters on their property in the future, the timing of which is yet to be determined. Having visited this property it was evident that a future dwelling would likely be orientated to face north-west towards the Makakai River and away from the windfarm resulting in moderate-high effects². If a dwelling is constructed adjacent to this boundary with potential views into the construction compound, however, I agree planting along the intervening boundary may assist with establishing a meaningful reduction in intervisibility during construction and ameliorate potential for higher adverse visual effects.

As with all nearby properties within which planting is employed to reduce views from dwellings, I consider any planting should be developed through agreement with affected landowners as part of seeking to ensure this provides an appropriate outcome. This is discussed within existing recommendations included in para. 7.1.3 of the Landscape Effects Assessment. In some contexts, planting may not be necessary or desirable. To ensure any agreed planting is effectively established, I consider conditions should ensure this engagement will occur with this landowner and result in planting illustrated on an agreed plan being implemented in the first available planting season following works commencing.

K Farms Limited has no identified fixed views from dwellings and is not therefore considered more sensitive in terms of its existing working rural context with respect to the northern boundary of the internal access road or laydown area. Accordingly, no additional planting is considered necessary along the northern boundary of the Site as part of integrating these rural properties and within what will remain part of a working rural landscape within which the windfarm is proposed.

² Assessed as dwelling ID35 in Appendix 3 of the Landscape Effects Assessment.

3. *The proposed on-site concrete batching plant(s) has not been definitively identified and is an activity that warrants its own effects considerations. It is difficult to understand the potential level of landscape and visual effect associated with this activity in the absence of a defined location(s). Please provide further detail on the proposed location(s) of the on-site concrete batching plant(s) and an associated landscape and visual assessment and any associated mitigation measures required to accommodate this facility.*

The batching plant is a temporary structure, required for the construction of the turbine and mast foundations. It is understood that this would only be in operation for around 30 days, over a 3–4 month window. The application as lodged currently allowed for the concrete batching plant to be located anywhere within the Turbine Envelopment, or the Turbine Exclusion Zones.

In response to this further information request, Meridian have reviewed where the batching plant may be located given its scale and flat site conditions required. This has restricted the areas available to those along the main ridges, or saddles on the access roads. A likely location has also been identified along the main ridgeline in the vicinity of turbine 7.

The concrete batching plant will occupy an area of approximately 100m by 60m. All structures required are below a maximum height of 7m and surrounded by a fence. The temporary structures associated with the concrete batching plant include the following (indicative dimensions included in brackets):

- Control room and storage building (6m long x 3m high x 3m wide);
- Portacoms for office and amenities (6m long x 3m high x 3m wide);
- Mobile batching plant unit which includes, but is not limited to, hoppers, aggregate storage bins, compressor, cement silos and conveyors (18m long x 4m wide x 7m high);
- Additional cement storage silo (6m long x 3m wide x 3m high);
- Diesel storage facility;
- Water tank;
- Aggregate stockpile area (50m x 20m);
- Generator.

During construction, the concrete batching plant is expected to remain largely contained within the broader working landform supporting the wider windfarm and at least 800 metres from the nearest offsite dwelling. If constructed within the indicative location, some temporary views of structures and activity may be available of this elevated area, including limited lighting, however this is over 1.2 kilometres from the nearest offsite dwelling. Any lighting effects have also been assessed to avoid any obtrusive light spill or excessive glare.

As a result of the additional timeframes and defined locations, any temporary adverse effects resulting from the concrete batching plant are considered to be limited and well absorbed in the surrounding working rural context within which it may appear, resulting in no material change in the level of nature of identified effects.

4. *Please provide comment on the potential visual effect of the Terminal Substation adjacent to State Highway 6, noting that this location may also house the Services/O&M Building. While this area is well screened by the existing roadside shelterbelt when travelling south, when travelling north (Figure 2) there will be a reasonably open view toward the proposed substation footprint. This aspect of the proposal provides for a main envelope up to 7m in height and poles/gantries up to 18m in height), and likely security style fencing. Have you considered any potential mitigation (such as a planted buffer area)?*

Any effects from State Highway 6 of the Terminal Substation / O & M Building when travelling north will remain transient in the context of a working rural landscape and are not considered to result in potential for any significant adverse effects. Whilst I agree there will be a reasonably open view when travelling north along State Highway 6, this is then rapidly obscured by existing shelter planting when passing adjacent this site. Any transient views which occur will therefore remain well integrated within their surrounding rural context which includes existing wider utilitarian influences. This location also ensures no significant views from any surrounding dwellings.

In response to further information provided through this s.92 request, I acknowledge that lighting of the substation and O and M building may also occur. Building and exterior lights will only be on at night when occupancy has been detected. Switchyard lighting will have 20m high poles with each pole top floodlight providing a target of 30 lux average for site operations and maintenance. When present this has been designed to remain well below AS/NZS 4282:2019 limits of 20%. Accordingly, I agree any visual effects associated with this aspect of the windfarm will remain low and less than minor.

Based on this more detailed assessment, I therefore consider the potential for any limited visual effects which may occur would be readily reduced through the addition of a planted buffer along the southern boundary of the Site between the existing shelter belt and required setbacks from the existing 110kV line. I consider the extension of the existing shelter belt to achieve a fast-growing screen along this boundary would remain in keeping with the surrounding rural landscape and would provide additional mitigation which further addresses any concerns in this context.

Lighting

35. *Please quantify the anticipated actual and potential lighting effects that may be visible from beyond the site in terms of likely receivers, potential frequency, duration and nature (e.g., light spill, glare, intermittent switching and light sweep [headlights, mobile plant lights]). Matters to address include:*

a. Construction Phase

- i. Temporary buildings*
- ii. Access roads*
- iii. Carparks*
- iv. Security*
- v. Concrete Batching Plant*
- vi. Vehicles on access roads (headlight sweep)*
- vii. Mobile machinery (headlights, working lights & hazard lights)*
- viii. Any other light sources*

b. Operational Phase

- i. Permanent buildings*
- ii. Access roads*
- iii. Carparks*
- iv. Security*
- v. Vehicles on access roads (headlight sweep)*
- vi. Functional lighting (if any) and aircraft warning lights on the wind turbine structures*
- vii. Any other light sources*

36. *Please also quantify the anticipated sky glow effects.*

37. *Please provide any proposed mitigation associated with actual and potential lighting effects.*

I have reviewed the additional lighting detail as set out in the Assessment of Environmental Effects for Proposed Lighting: Mt Munro Wind Farm Project prepared by Stephenson and Turner (August 2023). Within this assessment, lighting concept designs for temporary and fixed lighting have been prepared to address the potential frequency, duration and nature of night-time effects. This covers both the construction phase and the limited lighting as required

during operation, including the requirement for low and medium intensity aviation lighting in accordance with CAA standards which employs directional lighting to limit effects below. Accordingly, any potential night-time effects which remain visible from surrounding rural dwellings will remain limited.

In all instances, I consider lighting has been designed to minimise potential for obtrusive light spill, glare and sky glow effects. As a consequence, this ensures lighting will meet or exceed the 8-lux permitted standard at the site boundary in the Tararua and Wairarapa Combined District Plans and manages potential for adverse effects. From a landscape perspective, I consider proposed temporary and limited permanent lighting will remain well integrated within this working rural environment and within which low-level lighting will not appear out of character. The Site is also located outside the Combined Wairarapa District Plans Dark Sky Management Area within which greater night-time sensitivity may occur. Accordingly, I consider the findings of the lighting assessment are plausible and accept that any lighting effects will be no more than minor.

Shadow Flicker

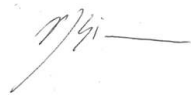
42. *The proposed shadow flicker condition has limits calculated in accordance with the EPHC "National Wind Farm Development Guidelines – Draft" July 2010 (draft Guidelines). However, the assessment/proposed conditions do not provide sufficient clarity on how existing barriers such as trees and shelterbelts are taken into account in assessing compliance with the limit. Please provide further clarification.*

As set out in paragraph 6.6.3 of the LEA, the identified hours of shadow flicker do not take account of the orientation or presence of sheds or windbreaks around the buildings which may restrict direct effects between wind turbines and affected dwellings. This therefore represents a worst-case scenario based on bare ground topography when assessing compliance with the limits in terms of hours per day.

I trust the above sets out a clear response to Council's queries. Please do not hesitate to contact me should you have any additional requests.

Yours sincerely

BOFFA MISKELL LTD



Rhys Girvan

Senior Principal: Landscape Planner