

20 October 2018

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Dear Craig

PROPOSED KAIMAI WIND FARM: SECTION 92 REQUEST - RESPONSE TO TRAFFIC ASPECTS

1. Introduction

Kaimai Wind Farm (the Applicant) has made an application to Hauraki District Council (HDC) to establish a wind farm. The proposed site access is from Wrights Road, a paper road, which is located off Rawhiti Road within the Matamata-Piako District. Some of the Wind Farm construction requires over-dimension and overweight loads. Gray Matter Ltd has provided transportation advice for the proposal and prepared the Proposed Kaimai Wind Farm, Integrated Transport Assessment, Issue 2 (8 June 2018) to support the application. The assessment has considered the trips associated with the over-dimension and overweight loads but the specific considerations relating to the oversize permits (including routes that will be used) are dealt with by others. We understand these are dealt with by Tranzcarr elsewhere in the Section 92 responses.

This letter responds to the traffic related aspects of Hauraki District Council's queries (received via email) that you have asked us to respond to. Council's queries are shown as text in italics with our response directly below.

2. Hauraki District Council Queries (letter dated 2 August 2018) and Our Responses

2.1.

"The assessment provided is based on using the full length of Rawhiti Road, information provided elsewhere suggests the use of SH26 and the northern portion of Rawhiti Road. Can confirmation be provided as to which route will be used so appropriate assessment can be completed?"

The Gray Matter traffic assessment is on basis that only the SH26 north intersection and northern portion of Rawhiti Rd will be used for access through the construction contracts. This covers ordinary vehicular traffic, excluding those requiring permits.

We understand the applicant's turbine transportation specialists have advised that the transportation of the turbine and specialist equipment are likely to use the SH26 south intersection approaching the site along the southern section of Rawhiti Road. These vehicles will be subject to overdimension and/or overweight permits¹. The overdimension vehicle routes are dealt with by Tranzcarr elsewhere in the Section 92 responses.

2.2.

"Rule 8.4.1.3 (8) of the Hauraki District Plan sets out the level of detail required within a Transport Impact Assessment. The rule identifies the following:

¹ Refer to Vehicle dimensions and mass permitting manual (volume 1)
<https://www.nzta.govt.nz/resources/vehicle-dimension-and-mass-permitting-manual/vehicle-dimensions-and-mass-permitting-manual-volume-1/>

“(8) Where a Transportation Impact Assessment is required, it shall be at a level of detail appropriate to the scale of the activity, consider all relevant modes, and consider the network affected by the proposal at least including the intersections upstream and downstream. The assessment shall address the following matters:

(a) Description of the existing environment, including:

(i) The site, its location and existing activities

(ii) The surrounding road network – infrastructure capacity and condition, traffic volumes, traffic conditions, safety performance, any transport strategy considerations and the ability of the local network to safely and efficiently accommodate traffic.

(b) Location, type and scale of the proposal – traffic generation, transport modes, vehicle types, vehicle parking and manoeuvring layout and design standards, signage, pedestrian and cycle access, cycle parking, end of journey facilities, rail level crossings and consistency with any relevant transport strategies.

(c) Transportation Considerations – the extent to which particular roads will be affected in terms of safety, efficiency, pavement life and maintenance cost; on-site provision for parking; loading/servicing and queuing; safe and efficient provision for ingress/egress including capacity, separation and visibility. Note: Where fewer carpark spaces are proposed than required by the Standard in Rule 8.4.1.3, an assessment in terms of the matters in Rule 8.4.1.4(1)(a) shall be provided.

(d) Evaluation of Transportation Impacts – transportation effects, mitigation options and proposals for mitigation.

(e) Written approvals/comments from the relevant road controlling authority.

(f) Conclusions - transportation impact, mitigation proposed.”

In this instance no consideration has been given within the Gray Matter ITA in relation to the potential alternative use of Rotokohu Road for construction traffic and the like (it is mentioned as a potential issue within the consultation record), what this would mean in terms of safety, pavement life and maintenance costs.

Rotokohu Rd is not to be used during construction so there would be no construction traffic effects.

2.3.

“No consideration has been given to pavement life and maintenance costs in relation to Rawhiti Road either”.

3,570 truckloads of construction materials are expected with 288 of these loads being transported in over-dimension vehicles. Over the construction (expected 18 months) this is around 7,100 heavy vehicle trips added to Rawhiti Road. The existing traffic on Rawhiti Road is 282 vpd with 9% HVs (around 25 HVs/day).

Increasing the volume of heavy vehicles on a road can result in damage to the pavement, comprising:

- = Surface damage, where the loading on the pavement damages the integrity of the pavement surface, resulting in surface deformation or potholes, leading to further damage from water penetration or direct effects on the pavement or subgrade.
- = The increase in traffic will have minimal impact on the surface, except at high stress areas (such as turning at the intersections).
- = Accelerated subgrade damage which reduces the effective life of the pavement.

The proposed heavy vehicles (total 7,100 trips) is 284 days at the existing HV count (7100/25 HV/day = 284 days) travelling on Rawhiti Road. The majority of the trucks will be ordinary vehicular traffic travelling along the northern section of Rawhiti Road (around 2.6km from SH26 intersection).

Mitigation could be in the form of a pavement overlay to ensure adequate pavement thickness or bringing forward the pavement renewal. Since the construction traffic is over a relatively short duration (in relation to the expected life of a pavement (nominal 25 years, typical NZ 40 years)) and given the existing low volume of traffic there is a risk of sudden and severe pavement deterioration and other issues such as edge break. The main risk areas are likely to be at the intersections where there will be additional stresses from

manoeuvring. We consider in this case it would be best managed with a condition requiring pavement survey before and after the construction and the contractor required to monitor the pavement and remedy/management of surface defects such as potholes during the construction phase.

Maintenance of state highways is fully funded by NZTA and therefore any costs resulting from the additional traffic from the proposal on the state highway will not affect MPDC or HDC ratepayers.

2.4.
No written approval or comments from the relevant road controlling authorities have been provided, being NZTA, Matamata-Piako District Council as well as Hauraki District Council.

Can any evidence of consideration of the above points please be provided?

Matamata Piako District Council have provided their comments and we address these in Section 4 below. We have submitted the ITA to NZTA for their comment on the SH26-Rawhiti Rd intersection. HDC transport staff were present at a joint site visit. Conversations with the RCAs are ongoing.

2.5.
P1 Gray Matter report - Potential Effects Summary – none of the potential effects on the physical road are addressed. No assessment of Rotokohu Road is provided at all, although it is mentioned as a potential path for construction vehicles and post construction traffic in various other reports.

Rotokohu Rd is not to be used during construction. 1-2vpd operational traffic is negligible and within typical existing activities daily variations in traffic. There will be no noticeable traffic effects.

As outlined in section 2.3 above, we consider the pavement and maintenance effects on Rawhiti Road would be best dealt with through a consent condition requiring pavement condition surveys and maintenance requirements.

2.6.
P3 The Gray Matter report should also assess against the provisions of the Matamata Piako District Plan given that a large portion of the transportation activities will occur within that District.

We have considered the traffic provisions of the Matamata Piako District Plan. The proposed access includes upgrading the existing paper road (Wrights Road) and follows the general alignment of the paper road parcel. The proposed access road crosses into Hauraki District before it crosses the boundary from the paper road into private property.

Noting that the MPDC staff have raised that the proposed access is an intersection (refer item 4.4 below), subject to the Rawhiti Road/Wrights Road intersection upgrade, we consider that the relevant provisions of the District Plan for General access standards (all roads) (refer 9.1.2 vii) will be met.

2.7.
P10 The two transport reports provided need to agree on which route and which Rawhiti Road intersection is to be used for site/turbine access. This will assist with determination of directly affected parties.

Refer 2.1 above.

3. Revised Trip Generation

The Gray Matter ITA trip generation included aggregate being transported to the site (trip generation assessment of 255 vpd peak and 121vpd average).

We have been advised by the applicant that the proposal now includes sourcing aggregate from within the site. This will reduce the external trips to 218 vpd (peak) and 104 vpd (average). This is total trips on the external road network and includes all traffic, including the oversize loads.

Type	TOTAL Trips/loads	Peak daily traffic (vpd)	Average (annual) daily traffic (vpd)
Car trips ^[2]	49,275 trips	190	90
Truck trips	6,858 trips	27	13
Over-dimension trips ^[3]	288 loads	1.1	0.5
Total	56,710 trips	218	104

Table 1: Revised Trip Generation (aggregate all sourced on site)

4. MPDC Consultation

MPDC have provided their comments (received via email 26/9/18) and these are included with our comments in Table 2.

	MPDC Feedback	Our Comments
4.1	<p>The windfarm and all associated infrastructure within the Matamata-Piako District (transmission lines, crossings over surface of water (S 12), quarries, signage, earthworks and cleanfilling outside roading corridor (S 2.2.9 and S4.12), wind turbines, accessory structures) will need to be shown in relation to the Hauraki / Matamata-Piako District Boundaries and assessed against the relevant rules of the Matamata-Piako District Plan to enable a determination to be made if any of the proposed work and structures associated with the windfarm trigger the requirement for landuse consents to be obtained from MPDC.</p>	<p>This comment is related to the potential for consenting and should be dealt with by planning specialists.</p>
4.2	<p>The Tranzcarr Report that outlines the transport route from the Port of Tauranga contains several inaccuracies and there are some issues with the route proposed in the report. I have summarised those inaccuracies and issues below.</p> <p>1 The designated route in the Transcarr Report states that the full route is via S/H's with the exception of Rawhiti Rd. This is incorrect. The planned route turns off S/H 24 and onto the following Matamata Piako DC roads;</p> <ul style="list-style-type: none"> • Tower Rd • Manawaru Rd • Alexandra Rd • Stanley Rd South • And Lipsey St and Burgess St in Te Aroha township. <p>MPDC are unlikely to grant access over the first 4 roads mentioned above. The route will need to be changed to use S/H 24, S/H 27 (Matamata to Tatuani) and S/H 26 to and through Te Aroha. However, NZTA may have issues with the loads at the S/H 24 – S/H 27 round-a-bout. If the applicant can't negotiate this intersection they will need to investigate an alternative route (eg S/H 29 and S/H 27)</p> <p>2 Looking at the proposed axle loading resulting from the tower units and the Leibherr 1750 wheeled crane, a full structural engineers report will be required on the following bridges;</p> <ul style="list-style-type: none"> • Br 230 on Rawhiti Rd • Br 71 on Rawhiti Rd • Br 237 on Wright Rd <p>o The timber deck, one lane bridge (Br 72) on Rawhiti Rd (just north of Wright Rd) will not be able to be crossed by any loads</p>	<p>These comments relate to the overdimension routes and the Tranzcarr report.</p> <p>We understand these are dealt with elsewhere in the Section 92 response.</p>

^[2] Car trips are assumed. 30 staff 3-4 trips per staff member per day for duration of construction.

^[3] An over-dimension load generates an over-dimension trip in and a truck trip leaving site

	MPDC Feedback	Our Comments
	exceeding a gross weight of 44,000kg or individual axle loads of over Class 1.	
4.3	The intended long term use of Wright Road in relation the project will need to be clarified (e.g. is Wright Road going to be used for maintenance vehicles and the delivery of say, replacement turbine blades etc.)	Routine maintenance vehicles are expected to be in the order of 1-2vpd and mainly utility vehicles/small trucks. This is within typical existing activities daily variations in traffic. There will be no noticeable traffic effects. The transportation of any replacement turbine blade would need an overdimension permit and pilot vehicles. This matter should be dealt with by heavy haulage specialists.
4.4	Reference is made in the Gray Matter Report – Draft 1, 21 February 2018 to the need for an upgrade of a vehicle crossing to provide access to the site from Rawhiti Road. This will need to be reassessed as an upgrade of the Wright Road / Rawhiti Road intersection.	We accept that this is an intersection and should be subject to a condition requiring detailed design. The design vehicles will not change.
4.5	We understand an acoustic report has been completed. Will the operation of the turbines comply with the MPDC District Plan noise provisions?	This is not applicable to traffic. We understand noise effects have been dealt with in the Chiles report, Appendix 10 of the application attachments, and in the S92 response.
4.6	Will the onsite quarries continue to operate after the commissioning of the windfarm and how will they be accessed?	The Gray Matter assessment did not consider any external loads from onsite quarries. However, our understanding is that any quarries developed on the site would only be operational during the construction phase and would then be closed.

Table 2: MPDC Feedback and Gray Matter comments

5. Recommendations

To address the concerns raised relating to traffic, we suggest that conditions of consent should allow for:

= Prior to construction – Detailed design

- Prior to commencing detailed design, consult with the relevant road controlling authorities (Hauraki DC, Matamata Piako DC and NZ Transport Agency) to determine their requirements.
- The consent-holder shall have prepared detailed designs for intersection and road improvements in accordance with the requirements of the relevant road controlling authorities for:
 - SH26 – Rawhiti Road (north) intersection to be upgraded in accordance with NZ Transport Agency Planning Policy Manual, Diagram E
 - Rawhiti Road/Wright Road intersection in accordance with the Waikato Regional Technical Specifications and MPDC standards and guidelines
 - Managing access along Wright Road during and after construction.
- The completed detailed designs for public roads shall be presented to the relevant RCA including:
 - A completed independent road safety audit
 - a brief design report summarising how the requirements of the relevant road controlling authorities have been met;

= Prior to construction –

- Intersection Improvements - No wind farm construction other than survey and geotechnical investigation shall take place until the following road upgrades have been implemented at the consent-holder's cost and are operational:
 - SH26 – Rawhiti Road (north) intersection
 - Rawhiti Road/Wright Road intersection
 - Wright Road sections accessible to the public
 - A Construction Traffic Management Plan, including:
 - communications strategy - local landowners and occupiers affected by construction works and by traffic on Rawhiti Road
 - temporary traffic management plan in accordance with COPTTM, prepared following consultation with the relevant road controlling authorities (Hauraki DC, Matamata Piako DC and NZ Transport Agency).
 - contractual commitment and method for directing all ordinary vehicular traffic (contractors and staff) to the site to use the northern SH26 intersection, unless specifically permitted.
 - Overview of management of timing and overdimension loads
 - confirmation of suitability and management methods for overweight/oversize vehicles that may require to use the south intersection of Rawhiti Road/SH26 to avoid the bridge.
 - An Inspection and Maintenance Plan for Rawhiti Road including:
 - methodology for pavement condition surveys and
 - maintenance requirements during the wind farm construction.
- = During Construction
- Implementation of the plans above.

Please do not hesitate to contact us if you have any further questions.

Yours sincerely



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Civil/Transportation Engineer



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Transportation Engineer