Waverley Wind Farm Resource Consent Application

Section 42A RMA Planner's Report
April 2017

South Taranaki District Council

TABLE OF CONTENTS

Appendices

Appendix A	Summary of Submissions Received
Appendix B	Landscape Report – Julia Williams
Appendix C	Request For Further Information Response – Landscape
Appendix D	Roading and Traffic Report – Carolyn Copeland
Appendix E	Noise Report – Nigel Lloyd
Appendix F	Request for Further Information and Applicant's Response - Noise
Appendix G	Letter from Te Kaahui o Rauru
Appendix H	Proffered/Recommended Conditions of Consent

1 INTRODUCTION

1.1 The Proposal and Consents Sought

The application was lodged with the South Taranaki District Council in the name of Trustpower Limited. This company has now been separated into two New Zealand listed companies, one of which, Tararua Wind Power Limited (TWPL), has taken over as the applicant in this instance. TWPL ("the Applicant") seeks all necessary resource consents to construct, operate and maintain the Waverley Wind Farm ('WWF'), including a transmission line and all associated infrastructure, in an area of South Taranaki District near the Tasman Sea, to the southeast of the Whenuakura River, and southwest of Waverley, as generally indicated in Figure 1 below.

Figure 1
Locality of the Proposed Waverley Windfarm

The details of the land use consents being sought for the windfarm and the transmission line are set out on the statutory Form 9 submitted as part of the application.

A number of other resource consents are required, and have been sought, from the Taranaki Regional Council (TRC), encompassing discharges to air, land and water; water permits to take and use surface water and groundwater; permits to dam and divert water in association with the establishment of culverts and the draining and infilling of ponds; and land use consents required to construct drainage channels, infill ponds, remove and place culverts and clear vegetation. The TRC has considered and granted consent to the various consents sought, on a non-notified basis.

1.2 Section 42 RMA Report

Based on my qualifications and experience[1], I have been engaged by the South Taranaki District Council as the Consultant Reporting Planner for the subject application in order to provide it with advice regarding the processing of the application, to prepare this report and make a recommendation regarding a grant or refusal of consent to the application, and attend any hearings in respect of the application.

This report has been prepared pursuant to Section 42A of the RMA and considers all relevant territorial authority planning matters in relation to the WWF application.

In preparing this report, the approach enabled by Section 42A(1A) of the RMA has been taken, whereby the information included in the application has not been repeated here unnecessarily. Rather, this report focuses on matters where there may be further clarification/discussion required (by way of the hearing process). It also focuses on areas where there is a disagreement or lack of acceptance of a view or assessment put forth by the Applicant. This approach has been taken in an attempt to highlight the key issues for consideration by the decision making panel and to assist in streamlining the assessment and decision making process.

2 PROCESSING OF THE APPLICATION

The following is a brief chronology of the steps undertaken in the processing of the application.

	Step	**Date**
.1	Application received by STDC.	14 April, 2016
.2	Application assessed for completeness in accordance with s88 RMA.	27 April, 2016
.3	Notification Report (in accordance with sections 95A to 95F RMA) prepared and a determination made to notify the application.	6 May, 2016
.4	Application publicly notified.	18 May, 2016
.5	Submissions to application close	16 June, 2016
.6	S92 RMA Request for further information (RFFI) made to applicant.	12 July, 2016
.7	Applicant letter acknowledging RFFI and requesting that STDC exercise its discretion under RMA s37 and double the timeframe for processing from 75 to 150 working days, in order to allow the applicant sufficient time to undertake further assessments of effects and discussions with submitters.	20 July, 2016

[1] *I am a Principal at Good Earth Matters Consulting Limited, an environmental planning and engineering consultancy based in Palmerston North. I am a full member of the New Zealand Planning Institute and have over 38 years of experience in planning and resource management and regularly act as a reporting planner on behalf of local authorities and as an independent commissioner. In particular, I have acted as the District Reporting Planner for several wind farm developments in the Tararua District and as an Independent Commissioner for a major plan change related to wind farm development in Porirua City.*

	Step	Date
.8	Letter to applicant advising that the Council has exercised its discretion and doubled the timeframe within which it must complete any hearing of the application.	2 August, 2016
.9	Applicant response to RFFI, in respect of noise and landscape matters, is received.	19 October, 2016
.10	Applicant formally request suspension of the processing of the application under s91A RMA.	14 November, 2016
.11	Applicant requests that suspension of the processing of the application be lifted.	13 April, 2017
.12	Hearing date advised for the week commencing 22 May, 2017.	18 April, 2017
.13	Revised set of proffered conditions received from applicant.	13 April, 2017
.14	Letter received from Te Kaahui o Rauru withdrawing submissions and providing affected party written approvals.	21 April, 2017

3 THE PROPOSED ACTIVITY

3.1 General Description of the Proposed Activities

The Applicant proposes to construct, maintain and operate up to 48 wind turbines each with a maximum height of 160 metres, to develop ancillary infrastructure including internal access roads, an operations/maintenance building, an electricity substation/switchyard, and permanent wind monitoring masts. The Applicant also proposes, in order to facilitate connection of the wind farm to the National Grid, to construct and operate an above ground 110 kV transmission line that will run from the proposed substation/switchyard to an electricity substation operated by Transpower New Zealand Limited (Transpower) which is located on Mangatangi Road in Waverley. The WWF site comprises an area of approximately 980 hectares (ha). An in-depth and detailed description of the proposed activities is included in the application.

3.2 The Envelope Approach

The application has been prepared based on an 'envelope' approach, whereby the precise location of each turbine and its associated infrastructure has not yet been determined. Rather, the Applicant seeks any and all necessary resource consents to enable it to construct the turbines and associated infrastructure within a defined 'project envelope'. To this end, the project envelope covers the extent of the 'project site' (i.e. the land to which the application relates). Also contained within the project site is an 'Environmental Buffer Zone' (EBZ) within which turbines and infrastructure will NOT be located. The project site is approximately 980 ha, of which (at the time of lodgement) the project envelope comprised 805 ha and the EBZ comprised 175 ha. The applicant has advised (by letter dated 13 April, 2017) that the revised coastal EBZ has been enlarged to 234.5 ha.

Additionally, a 30 metre wide corridor has been identified within which the Applicant proposes to locate the 110 kv transmission line, where it crosses private land. The 30 metre corridor is not necessary near Waitangi Road where the applicant proposes to locate the transmission line within road reserve. It is noted that in this area, construction of the new transmission line will necessitate the undergrounding of an existing 11kv transmission line owned by Powerco. As identified by the Applicant, the undergrounding of the existing 11kv line is a permitted activity under the South Taranaki District Plan [Rule 14.01.1(a) and Performance Standard 14.02.1]. As such, this element of the proposal need not be considered further in this report. It is, however, also noted that the construction of the new 110kv transmission line is not a permitted activity under Rule 14.01.1(a), but rather is a limited discretionary activity under Rule 14.01.3(a), given its capacity of 130MVA. As such, the potential effects of the section of the transmission line to be located within road reserve must be bundled into the consideration of the proposal as a whole.

As explained in detail in the application, the project envelope has been identified in such a way so as to minimise, if not avoid, adverse environmental effects of the proposed activities. The Applicant has undertaken extensive work to identify limiting factors, including environmental and practical/logistical constraints, in order to develop a project envelope that it considers to be both environmentally sensitive as well as viable in terms of the technical requirements associated with constructing and operating a wind farm. In this way, and combined with the use of the EBZ, the need to avoid, remedy or mitigate potential adverse effects of the proposed activities, as required by the RMA, has been 'built in' to the proposal. The application outlines additional avoidance, remediation or mitigation measures where these are required to address specific potential adverse effects that cannot or have not been addressed through the process of identifying the project envelope and/or EBZ.

Therefore, the key purpose of this report is to assess whether or not the avoidance, remediation and mitigation measures embedded in the design of the wind farm and the additional ones proposed by the Applicant are appropriate (having regard to the relevant statutory planning provisions), to recommend any further measures deemed necessary, and to consider whether any residual adverse effects are acceptable in an overall s5 RMA assessment of the proposed activities as required under Part 2 of the RMA. It is noted that whilst the preparation of this report and the development of a recommendation has included an evaluation of the process by which the project envelope has been identified, this has been for the purpose of determining the nature and scale of the potential adverse environmental effects of the proposal, not for the purpose of determining the relative appropriateness or otherwise of the project site per se.

The use of an envelope approach provides the applicant with the flexibility that is sometimes necessary for a large scale wind farm development. This is not a unique approach in that it has been used by other wind farm developers, such as Genesis Energy for the proposed Castle Hill Wind Farm. In my view, this is an appropriate and acceptable approach to adopt, provided that we can be confident that a 'worst case' scenario of potential adverse effects is presented in the Application. This is particularly important with respect to the noise and visual effects assessments for dwellings closest to turbines and visual effects for dwellings closest to the proposed transmission line. These matters are examined in detail later in this report.

4 DISTRICT PLAN ACTIVITY STATUS

In making its application to the South Taranaki District Council, TWPL has used a conservative, 'bundling' approach to its assessment of the activity status of the proposed activities under the Operative District Plan (DP) and Proposed District Plan (PDP). Given the number, nature and scale of activities encompassed by this application, this is considered to be entirely appropriate. In brief, the application in its entirety is to be considered as a discretionary activity. Section 5 of the Application includes a detailed assessment of the rules of the DP and PDP which apply to the proposed activities. Where categories or definitions of activities are unclear or ambiguous (refer AEE sections 5.1.2.1 and 5.1.2.2) the applicant has deliberately gone with the most restrictive or conservative interpretation of a category and the rule(s) relating thereto. I concur with the applicant's assessment that the application is to be considered as a discretionary activity, under both the Operative and Proposed District Plans and that matters of interpretation regarding categories of activity are of little material consequence from a rule assessment point of view.

5 APPLICANT CONSULTATION

5.1 Prior to Lodgement

The application (section 7) describes the consultation undertaken by the Applicant prior to lodgement with the Council. In summary, this has included meetings with key stakeholders and owners of land adjacent to the project site as well as three public open days held in 2012. As detailed in section 7.4 of the AEE, the project was put on hold by Trustpower (now TWPL) until June 2015.

5.2 Post Lodgement

Since June of 2015 and following lodgement, Trustpower/TWPL staff have continued to consult with key stakeholders, adjacent landowners and submitters. In fact, the applicant formally requested the suspension of the processing of the application in November 2016 in order to allow it more time to consult with submitters, in particular Nga Rauru and Ngati Ruanui[2]. As indicated in the application, the primary focus of this ongoing consultation effort has been to further identify and clarify the concerns of submitters and to 'fine tune' the technical assessments and/or further develop mitigation measures to address these concerns.

5.3 Written Approvals

The Applicant sought and obtained written (RMA) approval to the application from the owners of land on which the project site is located (four landowners/landowner groups) and these approvals are attached to the application as Appendix 21. Two of these landowners, the Alexander Trust and Standalone Farms Ltd, also have part of the proposed 110 kV transmission line corridor on their properties and have provided written approval to this activity as well (i.e. they have provided written approval to the proposal in its entirety).

Written approvals have also been obtained from Te Kaahui o Rauru; Wai o Turi Marae, Whenuakura Marae, and Te Wairoa Iti Marae (Collective), as Ngaa Rauru Kitahi affiliated marae; Whenuakura Marae; Te Wairoa Iti Marae; Poiha Kemp Broughton; and the Waipipi Block Trustees and are attached as Appendix G to this report.

---

[2] *At the time of writing (of this report), the outcome of consultation with Ngati Ruanui, in respect of the production of a Cultural Impact Assessment (CIA), had not been advised to the Council.*

It would appear from the application, that written approval has not been sought from any of the potentially affected adjoining landowners, otherwise the outcome of any approach to such parties would have been documented in the application (AEE) as required by the RMA's 4th Schedule cl 6(1)(f).

With regard to the transmission line corridor, the Application does not include written approval from the other six landowners over whose property the proposed corridor is to be located. Whilst this is not necessary from an RMA consenting point of view, it is assumed that the necessary landowner approvals will be forthcoming. If not, the applicant will be placed in a position of having to either abandon the project or seek resource consent to an alternative transmission line route.

6 SUBMISSIONS

A summary of the submissions received by the STDC at the close of submissions on the 16th June, 2016 is attached to this report as Appendix A. Following their receipt, some submissions have either been withdrawn or the submitters no longer wish to be heard. Where this has occurred, the current status of the submission is noted in the summary table.

7 SECTION 104 RMA ASSESSMENT

7.1 Regulatory Framework

Section 5 of the application contains a comprehensive outline of the relevant statutory planning framework applying in this instance. As I have no reason to challenge either the provisions identified or the applicant's assessment and conclusion, section 5 is hereby adopted [as per RMA s42A(1B)(b)].

7.2 Assessment of Effects

Section 4 of the AEE provides a comprehensive assessment of the nature and scale of the actual and potential effects of the proposed activities on the environment. These effect assessments are informed by technical assessments, the details of which are appended to the AEE.

In the following section of this report, I have adopted the applicant's assessment as set out in Section 4 of the AEE and comment on the effects, as necessary, in the same order as identified by the applicant.

7.2.1 Positive/Economic Effects

The positive/economic effects of the proposal are set out in detail in Section 4.2 of the application. In summary, the proposal represents an opportunity to increase the renewable energy generation assets of New Zealand and will help to achieve the policy directions set out in the New Zealand Energy Strategy. The generation of electricity from wind is complementary to hydro-generation and as such the proposal has significant benefits in terms of diversifying and stabilising generation capacity on a national, if not a regional, level. Furthermore, the location of the site is advantageous in terms of assisting the applicant to manage (make best use of) its own hydro generation activities. There is expected to be a not inconsiderable, albeit short term, injection of capital into the Taranaki economy associated with the construction of the wind farm and transmission line.

For these reasons, it is considered that the proposal will have considerable positive economic and environmental effects (benefits) at a national level, and not insignificant positive economic effects at a regional level.

7.2.2 Landscape, Visual Effects and Natural Character Effects

Landscape, visual and natural character effects, which could arise from the construction and operation of the proposed wind farm and transmission line, have (together with noise effects) the most potential to cause significant adverse effects on the environment. To a degree, this is recognised by the number and content of submissions received in relation to these effects. In recognition of the significance of such matters, the Council engaged the services of Julia Williams, an experienced landscape architect to identify and assess the landscape and visual amenity value effects of the activities described in the application. Her report is attached to this report as Appendix B. Following an initial review of the Isthmus report and a consideration of the submissions relating to landscape and visual matters, it was determined that a S92 RMA request for further information would be made to the applicant. The applicant's response to this request is attached as Appendix C of this report.

In brief, Ms Williams concludes that any adverse effects on the biophysical landscape will largely be avoided due to the exclusion of development within the Environmental Buffer Zone (BFZ) and the relatively flat nature of the site. In relation to the rural character, she considers that the landscape will not be compromised given that the wind farm site is already modified by former iron sands mining and is relatively flat.

Ms Williams also concludes that construction effects with respect to landscape and amenity are low, with the exception of the possible location of the concrete batching plant.

In relation to effects on the natural character of the coastal environment, Ms Williams raises concerns about the relationship between the applicant's revised EBZ and the Proposed District Plan's Coastal Protection Area (CPA). She does not agree with the applicant's assessment that adverse effects on the CPA will be insignificant, given that a number of turbines appear to be located in this area. That being the case she is recommending (and I concur) that the EBZ/project site boundary be aligned with the Proposed CPA boundary to ensure that effects on the natural character of the coastal environment are less than minor.

With regard to the visual effects of the wind farm upon residents in the vicinity, Ms Williams concludes that these effects are not able to be fully assessed without further detail on the impact of the wind farm on residential amenity based on observations from within individual residential properties. That notwithstanding, she concludes that any identified adverse effects would have the potential to be mitigated by on-site planting within these properties and suggests that a condition be imposed requiring the applicant's offer of a planting assessment be extended to all dwelling houses within 3 km of the site that have been assessed (by the Isthmus Group) as being subject to 'moderate' visual effects and where alternative turbine layouts have the potential to increase such effects.

Whilst I understand the intent, I am not sure that such a condition could be imposed unless it were to be offered by the applicant (i.e. as an Augier condition). Whether the applicant would consider offering such a condition prior to or during the hearing of the application is a moot point, given that the tracked change version of the revised draft conditions received from the applicant on the 13th April, 2017 has materially changed the relevant landscape mitigation condition proffered.

This condition (#72 as lodged, now #98) reads as follows:

"LANDSCAPE MITIGATION

~~91~~.98.

At least 40 working days prior to the commencement of construction works authorised as part of this resource consent, the consent holder shall write to the owner(s) of the dwellings at the following addresses informing them of their entitlement to landscape mitigation: ~~if a wind turbine is to be located within [X] metres of their dwelling (as identified in the final turbine layout for the Waverley Wind Farm required in accordance with Condition 26):~~

DWELLING[7]	***PROPERTY***
53	*64 Rangikura Road*
54	*77 Rangikura Road (cnr Rangikura Road and Elsea Road)*
55	*120 Rangikura Road*
56	*169 Rangikura Road*
57	*Proposed residence on Waipipi Road*
61	*330 Peat Road*
92	*264 Rakaupiko Road*
93	*285A Rakaupiko Road*
96	*371 Rakaupiko Road*
97	*391 Rakaupiko Road*
98	*395 (A & B) Rakaupiko Road*
109	*Proposed residence on Waipipi Road*
110	*Private residence on Waipipi Road*
155	*147 Stewart Road*

Note: Conditions 98~~93~~ to 106~~71~~ of this resource consent shall not apply if alternative arrangements are agreed by contractual obligation between the consent holder and the property owner."

It would seem that these conditions, as originally offered (condition 72) could be suitably altered to achieve what Ms Williams is recommending as being necessary and appropriate. I would urge the applicant to consider this suggestion. Failing any desire to do that, it is important that the applicant explain the need for, and reasoning behind, the removal of the wording from the original proffered condition 72 to the current condition 98.

In relation to the transmission line, Ms Williams concludes that,

"The proposed transmission infrastructure will not look out-of-place in the rural landscape but will adversely affect the residential character of Waverley township and the landscape amenity of its residents where the transmission lines run along the residential edge of the town beside the recreation reserve land known as the Waverley Town Belt."

She considers that this adverse effect on the residents of Waverley can be managed in one of two ways, namely

1. **Avoided** by placing the transmission line underground;

   or

2. **Mitigated** by rerouting the transmission line to the substation to the west and north of Waverley and away from the residential area, notwithstanding this has the potential impact on the visual amenity of adjoining rural residents.

Notwithstanding that the costs of undergrounding would be considerably more than the current above ground proposal, Option 1 above is my preferred option, given that it would be within scope to make such a determination in light of submissions received from Waverley residents. Option 2 is more problematic in that any re-routing of the transmission line may have an adverse impact on adjoining rural residents who are not currently affected. If that were the case, a further resource consent application would be necessary to establish the transmission line over an alternative route.

Subject to the recommendations of Ms Williams being accepted, together with the mitigation measures recommended in the applicant's Landscape and Visual Assessment and the applicant's proffered conditions, I consider that there is no reason to not grant consent to the application based on the assessed landscape and amenity value effects.

7.2.3 Shadow Flicker and Blade Glint

Appendix 18 of the application includes a report which primarily assesses the potential effects of shadow flicker created during the operation of the wind turbines. It also makes a cursory reference to blade glint.

With regard to blade glint, the report explains that blade glint is not expected to be an issue at the WWF, provided an appropriate matte finish is used on the turbines. I concur with this statement. Provision of such a finish is addressed in condition 11 of the Applicant's proffered conditions for the Land Use Consent for the wind farm.

With regard to shadow flicker, the Applicant has provided a 'worst case' assessment of the potential effects of shadow flicker on dwellings in close proximity to the wind farm. To do this, an indicative turbine layout was used which took into account the location of surrounding dwellings and the topography of the site and surrounding areas. The shadow flicker assessment was based on an assumption that the turbines would be constantly "yawed to the worst case position of facing into or away from the sun". There are five existing or proposed dwellings which are potentially subject to shadow flicker effects as set out in Table 4.2 of the application. It is noted that all five of these dwellings are identified as also being subject to high or very high visual effects given their proximity to the project envelope.

The assessment concludes that any shadow flicker effects on these five dwellings will be minor and that no particular mitigation measures are necessary in this regard. This is based on the commonly used standard (Australian; no New Zealand standard exists) with a recommended maximum shadow flicker exposure limit of 30 hours per year at any dwelling.

Given the worst case scenario assessed and the conservative approach taken in the assessment, it is accepted that the potential shadow flicker effects of the proposal will be minor. In order to recognise the fact that the specific levels of shadow flicker that the five dwellings will be subject to may change according to the final turbine layout, the Applicant's proffered conditions for the Land Use Consent include two conditions (121 and 122) relating to shadow flicker. These require the Applicant to ensure that no dwelling will be subject to shadow flicker effects above 30 minutes per day and 30 hours/year maximum and to provide evidence of this to the Council by way of a Pre-Instalment Shadow Flicker Assessment prepared by a suitably qualified expert, prior to the commencement of any construction works. This is considered an appropriate means of ensuring that any shadow flicker effects on dwellings will be minor, given that the final turbine layout has not yet been determined.

7.2.4 Terrestrial Ecology

Section 4.5 of the applicant's AEE summarises the Ryder (2016) report on terrestrial ecological values. In respect of the wind farm site, the focus of the assessment is on vegetation, bats and lizards. The Ryder Report identifies that the development of the wind farm will result in the disturbance of pasture that has been established on previously mined land. This pasture is considered to be of no ecological significance. Whilst some native plants have been identified in various places across the site, the ecologically significant areas of indigenous terrestrial and riparian vegetation have all been excluded from the project envelope by means of the EBZ. The proposed infilling of the three largest ponds within the project site will result in the loss of some aquatic plant habitat but this loss is proposed to be offset in part by the proposed enhancement of the Waipipi Stream and the wetlands in the southeast corner of the site. In relation to bats and lizards, the Ryder report concludes that the potential effects of the proposal on bats and lizards will be negligible, particularly given the provision of an extensive EBZ. The location of works, including the construction of the transmission line, is primarily on land comprising exotic pasture. That being the case, the potential for adverse effects on the ecology of bats and lizards is deemed to be negligible and that no mitigation or monitoring is therefore necessary. I have no reason to not concur with this assessment and the measures proposed to enhance the Waipipi Stream and the wetlands.

7.2.5 Effects on Avifauna

A summary of the avifauna effects of the proposed activities is set out in section 4.6 of the AEE. A comprehensive and detailed assessment of the actual and potential effects associated with the operation of the wind farm and transmission line on avifauna is provided in Appendix 8 of the AEE (Boffa Miskell, 2016).

The Department of Conservation has lodged a submission in opposition to the granting of resource consents for the windfarm as proposed in the application as notified.

Specific biodiversity aspects of the application that concern the Department, are the risk of bird strike for the bird species which permanently reside in the local area and the bird species which migrate through the site and along the coastline. The displacement of birds and aquatic life when the ponds are in-filled as proposed is also a stated concern.

In terms of the decision being sought, the Department's submission seeks that a wide range of detailed conditions be imposed on any consent, should the Council be of a mind to grant consent (refer submission paragraph 23, pages 4 and 5).

In response to the Department's submission, the applicant has consulted the Department's representatives with a view to reaching agreement as to how the Department's concerns could be met. The outcome of this engagement with the

Department is summarised in an email received by the Council from the applicant's legal advisers (Chancery Green - Mr Jason Welsh) on the 13th April, 2017, as follows:

> *"• **The Department of Conservation** - the experts and representatives for Tararua Wind Power Limited and the Department of Conservation engaged in a series of caucus discussions. The result of those discussions is a revised set of proposed conditions on ecological matters which have been agreed amongst the parties. We understand that on the basis that the amended conditions of consent are proffered and imposed, the concerns of the Department of Conservation are fully addressed. It is further understood that the Department will enter an appearance with the Hearing Panel to confirm that position. The expert evidence to be called by Tararua Wind Power Limited will elaborate and provide an explanation of the changes to conditions, in particular those relating to avifauna."*

In light of this advice, and subject to the Department of Conservation confirming that its concerns will be fully met by the amended conditions of consent, I consider that the imposition of these conditions is appropriate and that no further conditions will be necessary to manage the potential effects of windfarm activities on avifauna.

Fish and Game New Zealand is concerned that the three ponds to be removed from the site currently provide gamebird hunting opportunities for 10 – 20 people. It has requested that the Council

> *"set conditions which avoid, remedy or mitigate any actual or potential adverse effects of the WWF on gamebird habitats (including wetland, freshwater and dune-land habitats) and recreational hunting opportunities, including (but not limited to) conditions which require:*
>
> - *The creation of an equivalent area of 3.7 hectares of open water wetland habitat on land outside the project envelope area, but in similar coastal locations within the Foxton Ecological District; or*
> - *Require a financial contribution to fund the creation of an equivalent area of 3.7 hectares of open water wetland habitat in similar locations within the Foxton Ecological District;*
> - *That gamebird species be included in post construction avian mortality monitoring."*

I consider that the conditions proffered by the applicant, following consultation with the Department of Conservation, are sufficient to manage the effects of the proposed activities on avifauna, including gamebirds. I do not accept that the offset conditions proposed by Fish and Game are necessary. Ponds on private land providing gamebird hunting opportunities exist at the pleasure of the landowner. Access to such ponds is not a right and ponds can presumably be created or destroyed by the landowner and/or occupier as land use needs dictate and in accordance with any regional or district plan rules. These ponds are not ONFs or identified wetlands, therefore I cannot see any justification for requiring them to be replaced elsewhere in the district.

7.2.6 Stormwater, Erosion and Sediment Effects

As identified in the applicant's AEE, the construction of the windfarm will result in material being disturbed and/or excavated across the project site (and in discrete areas of the EBZ in relation to culvert crossings). The nature of the relatively flat topography will limit the potential for erosion and related sedimentation effects on waterways. An Earthworks and Construction Management Plan (ECMP) is to be prepared before construction of the windfarm commences and measures proposed in this ECMP are to be implemented in accordance with the Taranaki Regional Council's "Guidelines for Earthworks in the Taranaki Region 2006". Stormwater, erosion and sediment discharges are also subject to conditions applying to resource consents recently granted to the applicant by TRC [e.g. Consent 10288-1.0, a discharge permit issued on the 19 October, 2016, to discharge stormwater and sediment associated with earthworks onto land and into the Waipipi Stream (Unnamed Stream 9) and various unnamed streams flowing into the sea].

I am therefore confident that the measures proposed by the applicant and reinforced by the conditions of consent will be sufficient to manage the effects of land disturbance activities on water quality and aquatic ecological values within the project site and surrounds.

7.2.7 Traffic and Transportation Effects

A summary of the potential traffic related effects is set out in section 4.9 of the AEE and a detailed Transportation Assessment Report (TAR), prepared by Traffic Design Group (Jan 2016), is appended to the AEE as Appendix Nine.

A Senior Roading Engineer with the STDC, Carolyn Copeland, has assessed the roading and traffic issues arising from the application and set out her findings in report which is attached to this report as Appendix D. She considers the TDG's TAR to be appropriate and sufficient to address any potential significant adverse effects on transportation.

As a Senior Roading Engineer for the STDC, acting in its capacity as the local Road Controlling Authority, Ms Copeland concludes that all transportation effects in relation to safety, capacity, efficiency, maintenance and related costs of the subject roads will be fully dealt with provided the applicant implements the recommendations contained within the applicant's (TDG) Transportation Assessment Report.

I support Ms Copeland's conclusion and recommendation.

7.2.8 Noise Effects

An overview of the applicant's noise assessment is to be found in section 4.10 of the AEE and a detailed report prepared by Hegley Acoustic Consultants is attached to the AEE as Appendix 10.

The Council engaged Mr Nigel Lloyd of Acousafe Consulting and Engineering Limited to identify and assess any adverse noise effects which could possibly be generated by the activities described in the application. His assessment report is attached to this report as Appendix E.

Following Mr Lloyd's and my initial review of the Hegley Report, a Section 92 RMA request for further information was made to the applicant. A significant portion of this request (see Section 2) involved matters of noise. A copy of the Council's request, by letter dated 12 July, 2016, is attached as Appendix F. The applicant's response to the requested noise information is also attached as Appendix F.

Mr Lloyd concludes his review by stating that he concurs with the applicant's Assessment of Noise Effects, namely that:

> *"• construction and maintenance activity noise can be managed to comply with the long-term noise limits in NZS 6803:1999 Acoustics - Construction Noise.*
>
> *• heavy construction vehicle activity should be restricted at night (10pm to 7am) where practical, to avoid sleep disturbance to residents. This includes both on the site and on local roads. The post -construction traffic noise will not be an issue.*
>
> *• The ANE assesses wind turbine noise against the provisions of NZS 6808:2010 and [~~I consider~~] that this is an appropriate approach. The ANE relies on historical background sound monitoring undertaken prior to the issue of the current wind farm noise Standard. I agree with the ANE that close examination of the results of this monitoring show some unexpected results. Given that the background sound levels could have changed in the ten years since that the monitoring was undertaken I recommend that no reliance be placed on these readings."*

Following his consideration of the applicant's Assessment of Noise Effects, the applicant's response to the Council's request for further information, and the submissions involving noise matters, Mr Lloyd has recommended amendments to the applicant's proffered consent conditions. I understand and accept the need for these amendments, as explained in Paragraph 67 of Mr Lloyd's report, and have recommended such amendments as part of this overall report.

7.2.9 Social, Tourism and Recreation Effects

Section 4.11 of the AEE provides a summary of these matters of effect. A detailed Recreation and Tourism Assessment Report (TRC Tourism 2016) is to be found in Appendix 11 of the AEE. This report concludes as follows:

> *"Trustpower can proactively mitigate the actual and potential effects of the proposed WWF on recreation and tourism. Keeping the community and recreational groups informed during construction and operation of the WWF will go a long way to providing such mitigation. Additionally, the Construction Traffic Management Plan will address some of the traffic related mitigation applicable to recreation and tourism users and facilities in Waverley. Overall, any adverse recreation or tourism effects will be minor and can be appropriately managed. The site will provide a point of interest and its tourism and recreation effects will overall be positive."*

I concur with this conclusion and consider that any actual or potential effects of the proposed activities on recreation and tourism can be adequately mitigated by means of the conditions of consent proffered by the applicant.

7.2.10 Heritage and Archaeological Effects

Section 4.12 of the AEE provides a summary of the assessment of the potential effects of the proposed windfarm activities as carried out by Heritage Solutions (2016). It is attached to the AEE as Appendix 12. I accept the conclusions of the Heritage Solutions Report that the likelihood of encountering archaeological sites on the windfarm site or in relation to the construction of the transmission line is highly unlikely. I do note, however, that the Heritage Solutions Report states that Trustpower (TWPL) will apply to Heritage New Zealand Pouhere Taonga for an archaeological authority to modify or destroy archaeological sites, notwithstanding the low possibility of encountering such sites.

7.2.11 Cultural Effects

Section 4.13 of the AEE describes the consultation that the applicant had carried out with Ngaa Rauru up until the time of lodgement of the application. It was agreed between the applicant and Ngaa Rauru that a Cultural Impact Assessment (CIA) would be prepared. The application states (AEE p.109) that *"It is anticipated the CIA will be finalised and available for wider circulation in May 2016"*. It was not available at this time.

Following notification of the application, a number of iwi submissions were received making reference to the need (inter alia) for CIAs [refer the attached Summary of Submissions, numbers 5 (now withdrawn), 12 (now withdrawn), 16, 17, 21 and 22].

These submissions included one from Te Kaahui o Rauru (Ngaa Rauru) and one from the Te Runanga o Ngati Ruanui Trust (Ngati Ruanui). The former opposed the application pending completion and consideration of a CIA. The latter opposed the application on the grounds (inter alia) that it had not been consulted, its statutory acknowledgement in respect of the Whenuakura River was not taken into account and the fact that the absence of a CIA renders the application incomplete. It requested that a full CIA be undertaken for, and by, Ngati Ruanui.

Following consideration of these submissions, the Council formally requested that a CIA (or CIAs, as appropriate) be submitted to the Council (refer RFFI letter dated 12 July, 2016 attached to this report as Appendix F)

At the time of drafting this report, a response to this request has been met in part.

A letter, received by the Council from Te Kahui o Rauru dated 21 April, 2017, advised that the following submitters now formally withdraw their submissions to the application:

- Te Kaahui o Rauru (#16)
- Wai o Turi Marae, Whenuakura Marae, and Te Wairoa Iti Marae (#17); and
- Poiha Broughton (#12)

In addition, the following parties provided their affected party written approvals:

- Te Kaahui o Rauru
- Wai o Turi Marae, Whenuakura Marae, and Te Wairoa Iti Marae (Collective), as Ngaa Rauru Kitahi affiliated marae; Whenuakura Marae;
- Te Wairoa Iti Marae;
- Poiha Kemp Broughton; and
- the Waipipi Block Trustees.

In signing the abovementioned letter, the parties listed above have acknowledged that they understand that the consent authority must not have regard to any adverse effects on them.

I understand that consultation with Ngati Ruanui is continuing. In the absence of a CIA, a response from the applicant with respect to the RFFI letter regarding CIAs, or any indication of the specific concerns of iwi and how these could be met, I am unfortunately not able to provide the Hearing Panel with any further comment or recommendation in this regard, other than to confirm the need to employ standard accidental discovery protocols.

I trust that Ngati Ruanui and the applicant will make their respective positions clear either prior to or at the hearing.

7.2.12 Effects on Aviation

Section 4.14 of the AEE provides an assessment of the affects of the proposed windfarm on aviation. The Civil Aviation Authority (CAA) considers that the windfarm will constitute a hazard in navigable airspace. The applicant is therefore proposing to install medium intensity aviation obstacle lighting (in accordance with CAA requirements) on the nacelles of the turbines in order to avoid or mitigate potential adverse effects on the safety of operational aircraft. I consider that compliance with CAA rules will be sufficient to mitigate or avoid any potentially adverse aviation effects.

7.2.13 Effects on Radio/Communication Services

Section 4.15 provides a summary of the potential effects of the windfarm on radio/communication services in the locality. A detailed assessment report by Rodgers Hulston and White Limited (2015) is attached to the AEE as Appendix 13. As described in the report a windfarm can generate adverse effects (interference) as a result of electro-magnetic interference (EMI), near-field effects, diffraction and reflection or 'scattering'.

The Rogers Assessment (Section 4 – Summary of Effects), for the most part considers the risk of any adverse effects beyond the site as low, very low or no risk. The assessment identifies that there is a moderate risk of Maritime VHF radio coverage from the Kuranui radio repeater being affected but that this is unlikely to be a problem in practice given coverage from other Maritime NZ repeaters in the area.

In the absence of any submissions from likely affected parties and the conclusions of the Rogers Report, I consider that no particular measures or conditions are required to manage any identified effect on radio/communication services.

7.2.14 Electromagnetic Effects on Human Health

Section 4.16 states as follows:

> *"All electro-magnetic fields from the WWF and the transmission line will comply with the relevant limits for general public and occupational exposure, set in the 2010 International Commission on Non-Ionizing Radiation Protection ('ICNIRP') Guidelines - which have been endorsed by the Ministry of Health. Minimisation of electromagnetic fields can be readily achieved by conventional engineering techniques.*
>
> *Compliance with ICNIRP Guidelines will ensure that there will be no risk to public health and safety from electro-magnetic fields. Overall, the design of the WWF and the transmission line will have no biological or health effects from electromagnetic fields, and there are no specific design or mitigation requirements other than compliance with the ICNIRP Guidelines to ensure that the effects are no more than minor."*

I concur with this statement.

7.2.15 Other Effects

Powerco Limited lodged a 'neutral' (not in support or opposition) submission expressing concern about the potential effects of the proposed transmission line works on its electricity and gas assets in the Waverley area. The submitter sought changes to the proffered land use consent condition #30 and additional specific conditions designed to address its concerns. By letter dated 31 March, 2017 the submitter advised the Council that it had been in discussions with the applicant about its concerns and as a consequence has now executed a private agreement between the parties. That being the case, the Council was advised that Powerco no longer wishes to be heard and supports the grant of a resource consent subject to the imposition of a condition requiring a Network Utilities Management Plan to be produced and submitted to the Council. This, and related consent conditions, are included in the applicant's proffered conditions as numbers 31 to 34.

8 STATUTORY PLANNING FRAMEWORK

Section 5 of the AEE sets out, and considers, the relevant statutory planning framework against which the resource consent application to the STDC is to be assessed. It considers (in reference to Section 5 of the AEE):

5.1 Resource Consent Requirements and Activity Status, including the following statutory planning documents:

- *STDC's Operative District Plan*
- *STDC's Proposed District Plan*
- *Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2012.*

5.2 Objectives and Policies of Relevant Planning Documents

Sections 5.2.1 to 5.2.9 of the AEE provide an assessment of the windfarm and the transmission line against the objectives and policies of the relevant statutory planning documents. The national, regional and district planning documents considered relevant to the project and assessed in the AEE, are as follows:

- *New Zealand Coastal Policy Statement;*
- *National Policy Statement on Freshwater Management;*
- *National Policy Statement for Renewable Electricity Generation;*
- *Taranaki Regional Policy Statement;*
- *Taranaki Regional Fresh Water Plan;*
- *Taranaki Regional Air Quality Plan;*
- *Taranaki Regional Soil Plan;*
- *Taranaki Regional Coastal Plan;*
- *Operative South Taranaki District Plan; and*
- *Proposed South Taranaki District Plan.*

As recognised in the AEE, the Council as the consent authority is only required to have regard to the relevant provisions of the statutory planning documents listed above, in accordance with S104(1) of the RMA, when considering a discretionary activity application.

The AEE also recognises (rightly in my opinion) *"… that there will be conflicting, objectives and policies within, and between, the various statutory planning documents [in]particular with respect to the provision of land use activities and development for social and economic wellbeing, and the protection of significant environmental or cultural values. In these circumstances it is appropriate to consider the conflicting objectives and policies subject to the relevant matters under Part 2 of the RMA."*

5.3 Conclusion" (refer page 159)

Sections 5.1 and 5.2 are adopted as a fair and reasonable assessment of the relevant statutory provisions. The Section 5.3 conclusion is adopted in part (paragraphs 1 and 4). Paragraphs 2 and 3 state as follows and are not accepted for the following reasons:

Paragraph 2 states:

"With respect to the statutory planning framework that applies to the WWF and the transmission line, it is concluded that the development of the project in the manner proposed by Trustpower will not be contrary to the overall management intentions specified in the objectives and policies of the relevant national, regional and district planning documents."

This would be a reasonable conclusion to reach were it not for the uncertainty relating to the relationship between the applicant's revised EBZ and the Proposed District Plan's Coastal Protection Area as outlined by Ms Williams in her report. If the provisions of the Proposed District Plan are to be given little if any weight (given that they are subject to appeals to the Environment Court) and weight is placed on Policy 4(h) in the Operative District Plan as suggested by the applicant, it follows that the statement in paragraph 2 could be considered acceptable.

Paragraph 3 states:

"It is also considered that particular attention has been given to designing the WWF and the transmission line route in a manner that appropriately avoids, remedies or mitigates potential adverse effects on the range of natural and physical resource values identified in the relevant statutory planning documents."

In light of the submissions received from residents of Waverley, the response to the Council's request for further information, and the reports of Ms Williams and Mr Lloyd, I am of the opinion that the proposed transmission line design and its route do not appropriately avoid, remedy or mitigate potential adverse effects with respect to the amenity values of the residents of Waverley who reside in close proximity to the land proposed for the siting of the transmission line.

9 THE RMA AND PART II

Consideration of the matters in Section 104(1) of the RMA is subject to Part 2 of the Act. Section 6 of the AEE outlines the relevant Part 2 matters that must be taken into consideration. I am comfortable in adopting Section 6 in its entirety, with one proviso, namely that the matter of the relationship between the EBZ, the CPA and the windfarm site is resolved to the satisfaction of the Hearing Panel and that the matter of the location of the transmission line around Waverley can be determined.

Subject to these two qualifications and the implementation of proffered and recommended conditions, I consider that overall the project site is an appropriate location for a windfarm and that its construction, operation and maintenance can be deemed to promote the sustainable management of natural and physical resources as envisaged by the S5 purpose of the Act.

10 CONDITIONS

10.1 Lapse Date and Term of Consent

Section 125 RMA provides that a resource consent lapses on the date specified in the consent or, if no date is specified, 5 years after the date of commencement of the consent if the consent has not been given effect to or an application made to the consent authority to extend the lapsing period.

In this instance the applicant has sought (refer pages 6 and 7 of the AEE) a ten (10) year lapse period. It also requests that all land use consents be granted in the name of "Trustpower Limited" in accordance with Section 134 of the RMA and that any grant of consent be subject to *"… a condition specifying that the consent may only be exercised by the consent holder, its successor, or any person acting under the prior written approval of the consent holder"*.

The applicant states (page 7 of the AEE) that *"… this condition is necessary given that Trustpower* [TWPL] *does not own the land upon which the WWF will be constructed and operated"*. I consider it appropriate and reasonable that any land use consent be granted specifically to TWPL but not for the reason stated by the applicant. In my opinion, the more important reason is that the applicant has undertaken considerable consultation with affected parties/submitters in good faith and agreed to either put in place measures to meet or ameliorate submitter concerns (which are to be secured by way of conditions) or agreement has been reached with individual submitters outside of the RMA process. If the consent were not specific to TWPL or a TWPL approved successor then these 'side agreements' may not be able to be implemented.

I also agree that a ten (10) year lapse period is appropriate for the reasons stated by the applicant (refer the AEE p.6) and is consistent with all the consented windfarm applications with which I am familiar.

10.2 Management Plans

To give effect to the measures outlined in the AEE and the proffered conditions, the applicant is relying on a suite of management plans to ensure compliance. Whilst management plans are a useful tool to describe how compliance is to be achieved, they should never be used to set compliance parameters (i.e the "what" is to be achieved). In this instance, I consider that the proffered conditions of consent, with recommended amendments, are sufficiently comprehensive, detailed and targeted to adequately put in place an adverse effects mitigation and avoidance framework which can reasonably be implemented by the use of management plans.

10.3 Proffered and Recommended Conditions

The applicant proposes a suite of measures in order to appropriately avoid, remedy or mitigate the actual or potential adverse effects of the proposed windfarm and its associated transmission line. These measures are detailed in the resource consent conditions and draft environmental management plans appended to the AEE as Appendices 14 (Consent Conditions), 19 (Draft Erosion and Construction Management Plan) and 20 (Draft Construction Noise Management Plan). Following consultation and agreement with various submitters, the applicant has revised the proffered Appendix 14 conditions as lodged. These revised, 'tracked changes', conditions were received on the 13th April, 2017 and are the conditions which have been considered and referenced by the Council's reporting officers.

As a consequence of their assessments of the effects of the proposed activities, a number of changes are recommended by the officers to the applicant's proffered conditions. The reasons for these changes are discussed in the body of this report. The officer recommended changes are highlighted in yellow in the accepted tracked change version of the applicant's 13 April, 2017 proffered conditions, attached to this report as Appendix H.

11 CONCLUSIONS AND RECOMMENDATION

11.1 Conclusions

The proposed Waverley Windfarm and its associated transmission line are discretionary activities. As such the Hearing Panel, acting on behalf of the Council as the consent authority, must consider the application and submissions received in respect of it and exercise its discretion as to whether it should grant or refuse consent and, if granting consent, whether conditions are required to ensure that any adverse effects are mitigated or avoided.

The windfarm is primarily located on land formerly mined for iron sands. It is therefore ideally suited to the construction and operation of a windfarm.

The effects on the environment of the proposed windfarm and transmission line have been comprehensively and thoroughly assessed by a wide range of subject specialists. For the most part the adverse effects will be minor or able to be avoided, remedied or mitigated by way of the applicant's proffered conditions of consent.

Where these proffered conditions are not adequate, or missing altogether, this report recommends amendments or additions to them, particularly in order to attempt to meet the concerns of submitters in relation to visual and noise effects of both the windfarm and the transmission line.

Subject to the imposition of conditions as discussed, I am of the opinion the Section 5 sustainable management purpose of the RMA is best served by granting consent to the application. I can see no reason why the Hearing Panel is not able to grant consent to the application. Therefore make the following recommendation.

11.2 Recommendation

THAT, pursuant to Sections 104, 104B and 108 of the Resource Management Act 1991, the South Taranaki District Council grant resource (land use) consent to Tararua Wind Power Limited to construct, operate and maintain the Waverley Windfarm and its associated transmission line, as described in the application by Transpower Limited (now Tararua Wind Power Limited) dated the 14th day of April 2016 (and held on Council file RML 16030) and amended in response to requests for further information, subject to the conditions proffered and recommended, as set out in Appendix H of this report.

Appendix A

SUMMARY OF SUBMISSIONS RECEIVED

SUMMARY OF SUBMISSIONS received by the South Taranaki District Council in respect of notified application RML 16030 lodged by Trustpower Limited to enable the construction, operation and maintenance of a Wind Farm and transmission line near Waverley, South Taranaki [*Status as at 21/04/17*]

	Name of Submitter/Organisation	Support/Neutral/Oppose Application	Wish to be heard	Summary of Submission	Dwelling ID as per Application (where applicable)
1	**Frazer Fieldes**	Oppose	?	Decline in property value of Submitter's property at Waipipi if proposal goes ahead and 'blemish on views to Taranaki'	N/A
2	**Sustainable Whanganui** *[Submission not accepted].*	*Submission not accepted, on the grounds that it was:* • *not in the correct form; and* • *not lodged with the STDC; and* • *not lodged by the Sustainable Whanganui Trust.*			
3	**NZWEA**	Support	Yes	Submitter seeks that various matters relating to the high level benefits of renewable electricity generation and existing case law relating to wind farms be considered appropriately by the Council within the relevant legislative framework. Submitter considers that the site has favourable wind conditions and that the proposal is consistent with relevant national policy. Submitter seeks that consent be granted to the application and that NZS6808:2010 be used as the basis for imposing any noise conditions on this grant.	N/A

	Name of Submitter/Organisation	Support/Neutral/Oppose Application	Wish to be heard	Summary of Submission	Dwelling ID as per Application (where applicable)
4	**Department of Conservation**	Opposes application in its current form	Yes	Submitter recognises the national level benefits of the proposal with regard to the NPSREG and the NZCPS but has significant concerns regarding biodiversity aspects of the application. Particular concerns relate to bird strike and mortality rates, displacement of birds and aquatic life resulting from the proposed infill of ponds on the project site and effects on freshwater fish and vegetation species associated with the ponds. Submitter considers there to be flaws in the approach to the assessment of these effects and therefore the avoidance, remediation and mitigation measure proposed are inadequate. Furthermore, proposed ecological offsets do not directly relate to the scale and type of potential effects. Submitter recognises that some of these issues can be addressed via any Ecological Monitoring and Management Plan(s) but considers that conditions of consent on any grant must include monitoring requirements, triggers and required response measures. Submission includes suggested conditions and Submitter is open to a pre-hearing meeting with the Applicant.	N/A
5	**Heritage New Zealand** *[Submission withdrawn, by letter dated 12/12/16].*	Neutral	No	Submitter concerned with impact on archaeological sites and potential adverse effects resulting from the proposed activities on historical and cultural values. Also concerned with the apparent lack of consultation with iwi (Ngati Ruanui) that have Statutory Acknowledgements in the District Plan which are relevant to the proposal. Seeks that issues regarding an Archaeological Authority and the Archaeological Discovery Protocol be addressed and that the applicant meaningfully consult with all relevant iwi.	N/A

	Name of Submitter/Organisation	Support/Neutral/Oppose Application	Wish to be heard	Summary of Submission	Dwelling ID as per Application (where applicable)
6	**Fish and Game**	Neutral (subject to particular conditions being imposed on any grant of consent)	Yes	Submitter is concerned with effects on wetland, freshwater and dune land habitat and in particular with effects of the proposed pond in-filling on gamebird species and hunting opportunities. Seek that conditions be set requiring either new open water wetland habitat be created or a financial contribution enabling this, and that gamebird species be included in the post construction avian mortality monitoring.	N/A
7	**Powerco Limited** *[Submitter no longer wishes to be heard – as advised by letter dated 31 March, 2017]*	Neutral (subject to particular conditions being imposed on any grant of consent)	*[No]*	Submitter is concerned about the potential effects of transmission line works in particular on its electricity and gas assets in the Waverley area. Considers information included in the application to be unclear with regard to these effects and invites consultation from the Applicant. Seeks changes to proffered Land Use Consent Condition 30 and additional specific conditions in order to address its concerns	N/A
8	**Tim and Lorraine Honeyfield**	Oppose (unless specific mitigation measures undertaken)	No	Submitter concerned with visual effects from the wind farm on view from Submitter's property to the sea and on-going noise effects from operation of turbines. Seeks that the application be refused unless specific mitigation options are presented to address visual and noise effects at Submitter's home	10
9	**Mike and Angela Connell**	Oppose	Yes	Submitter concerned with a decline in the value of their property because the proposed transmission line runs adjacent to it. Concerned with the visual impact of the line on the rural landscape and on views to Mt Taranaki. Also concerned with possible humming of insulators in moist weather conditions. Seeks that the transmission line be moved beyond harm of local residents or consent to the proposal be refused.	155(1-35) 43 Fookes Street, Waverley.

	Name of Submitter/Organisation	Support/Neutral/Oppose Application	Wish to be heard	Summary of Submission	Dwelling ID as per Application (where applicable)
10	**Nigel and Diane Alexander**	Oppose	Yes	Submitter concerned that the Applicant has not consulted with them prior to lodgement of the application. Submitter concerned with visual and noise effects on their property (adjacent to the project site), effects on resale value, disruption of day-to-day farming activities, traffic movements on a small rural road, and impacts on bird life (particularly a seagull colony on the project site).	62 and 63
11	**Paul Mitchell**	Oppose	Yes	Submitter is concerned with impacts of the proposal on views to the sea and noise effects on houses located on the Submitter's property, as well as on-going noise effects on cows and a general decrease in the quality of life particularly for Submitter's children. Also concerned with effects on migratory birds and seagulls.	93,94,95
12	**Poiha Kemp Broughton** *[Submission withdrawn by letter dated (?) April, 2017 and received by STDC by email dated 11 April, 2017].*	Oppose	Yes	Submitter concerned that past use of the site has had high impact and long term impacts (many of them negative) on collective marae and hapuu. Submitter seeks that a Cultural Impact Assessment be undertaken in order that the potential cultural impacts on the marae and hapuu may be fully understood.	Waipipi Section 75 Okotuku District: On coast surrounded by the proposed wind farm site; closest turbines are 23, 28 and 33.
13	**Robert and Anita Bremer**	Oppose?	Yes	A portion of the transmission line is proposed to be located within road reserve which runs adjacent to the boundary of the Submitter's property. Concerns relate to the environmental and aesthetic effects of the transmission line as well as damage and disruption to farming activities on the Submitter's property during construction of the line.	29 and 30

	Name of Submitter/Organisation	Support/Neutral/Oppose Application	Wish to be heard	Summary of Submission	Dwelling ID as per Application (where applicable)
14	**Robert Graeme Hayes**	Neutral	Yes	Submitter is concerned with the visual effects of the proposed above ground transmission line in the area of Swinbourne and Fookes Street, and the wider Waverley township, particularly in terms of impedance of the vista towards Mt Taranaki. Also concerned that the line with preclude future use of the Waverley Town Belt for recreational development (cycling and walking tracks). Seeks that the transmission be undergrounded and/or that the Applicant provide evidence as to why it is not reasonable practicable to do so	N/A
15	**Sally Sisson**	Oppose	Yes	Submitter concerned with aspects of the proposal relating to visual, noise, environmental, community and tourism effects, economic benefits and the need for the project. Particularly concerned with the visual impact of turbines on views to the Whenuakura River mouth from the Submitter's property.	103
16	**Te Kaahui o Rauru** *[Submission withdrawn by letter dated 21 April, 2017].*	Oppose (position subject to completion and consideration of Cultural Impact Assessment)	Yes	Submitter is in the process of completing a Cultural Impact Assessment in order to address its wide ranging concerns with the proposal as a whole and will review its position regarding the application upon completion of the Assessment.	N/A
17	**Wai o Turi, Whenuakura and Te Wairoa Iti Maraes** *[Submission withdrawn by letter dated 21 April, 2017].*	Oppose	Yes?	Submitter concerned that past use of the site has had high impact and long term impacts (many of them negative) on collective marae and hapuu. Submitter seeks that a Cultural Impact Assessment be undertaken in order that the potential cultural impacts on the marae and hapuu may be fully understood	Wai o Turi Marae – 102. Whenuakura Marae – 150. Te Wairoa Iti Marae - ?

	Name of Submitter/Organisation	Support/Neutral/Oppose Application	Wish to be heard	Summary of Submission	Dwelling ID as per Application (where applicable)
18	**Will Dickie**	Oppose	Yes	Submitter owns land adjacent to the project site. Concerns are about noise effects on staff houses as close as 500m to the site, visual effects throughout the Submitter's property, noise and visual effects on the Waipipi Subdivision, effects of the turbine locations on an airstrip on the Submitter's property, traffic effects including movements on rural roads and at a dangerous rail crossing, little actual benefit to the Taranaki Region once construction complete, output efficiency – generation estimates of the wind farm are overstated, visual impacts of the transmission line, consultation – little done to educate the public about the long term (positive or negative) effects of the wind farm.	Submitter owns remaining sections in the Waipipi Subdivision and a large block of farmland surrounding the site at its eastern end, including dwellings identified as 57, 109 and 110.
19	**Wind Farm Developments Limited**	Support	No	Supports development of wind farms in appropriate locations provided development is in accordance with industry best practice. Seeks that the application be approved subject to appropriate conditions and provided the material adverse effects can be avoided, remedied or mitigated.	N/A
20	**Maggie Lister**	Opposes application in current form	Yes	Submitter is concerned with adverse visual impacts of the proposed transmission line, particularly on the Waverley Green Belt in the area of Swinbourne and Fookes Street. Considers there to be risks to people and animals associated with the above ground line (not stated what these risks are) and that the Green Belt should be used for recreational purposes and mitigation planting should be undertaken there to screen views of the wind farm. Submitter seeks that the transmission line be undergrounded or that the wind farm be moved to a different location.	Street address is 43(a) and 45 Wilson Street Waverley.

	Name of Submitter/Organisation	Support/Neutral/Oppose Application	Wish to be heard	Summary of Submission	Dwelling ID as per Application (where applicable)
21	**Parininihi Ki Waitotara Inc (PKW Farms)**	Support	Yes	Submitter supports the proposal subject to its kaitiaki obligations being met and to the imposition of appropriate consent conditions to protect the environment and any other cultural aspects important to local iwi and hapu.	Within Project Site

	Name of Submitter/Organisation	Support/Neutral/Oppose Application	Wish to be heard	Summary of Submission	Dwelling ID as per Application (where applicable)
22	**Te Runanga o Ngati Ruanui Trust**	Oppose	Yes	Submitter is the mandated voice for members of 16 hapu that comprise Ngati Ruanui. The Statutory Acknowlegement afforded the Whenuakura River is part of the Crown Settlement with Ngati Ruanui in 2003 and reflects the Submitter's cultural, spiritual, historical and traditional association with the River. Submitter considers that the lack of consultation with it, the failure to take into account the relationship of Ngati Ruanui with the River and the absence of a Cultural Impact Assessment for Ngati Ruanui renders the application incomplete, particularly in terms of deficiencies relating to Sections 6,7 and 8 of the RMA and to requirements of the District Plan, the NZCPS and the NPSFM. Submitter further notes that there is no reference in the application to Ngati Ruanui's Iwi Management Plan. Submitter has particular concerns with the assessment of natural character of the River and its surrounds, the envelope approach used in the application and the associated difficulty with setting appropriate conditions, noise effects and particularly those on the Wai O Turi Marae, effects on avifauna species, effects on the Patea Township and Patea Beach, and effects of the concrete batching plant. Submitter considers that there is a lack of cumulative impact analysis and environmental offsetting. Submitter requests that a full Cultural Impact Assessment (for and by Ngati Ruanui) be undertaken and considers that a pre-hearing meeting is unlikely to be successful unless a series of meetings takes place in the first instance in order to address the deficiencies in the application as outlined in the submission.	102 (insofar as the submission relates to the Wai O Turi Marae)

Appendix B

LANDSCAPE REPORT – JULIA WILLIAMS

RMA S42A REPORT

DATE: 21 April 2017

TO: Hearing Committee

FROM: Julia Williams
Director, Drakeford Williams Ltd, Landscape Architects

SUBJECT: AN ASSESSMENT OF LANDSCAPE AND AMENITY VALUE EFFECTS IN RESPECT OF AN APPLICATION BY TARARUA WIND POWER LIMITED FOR A WINDFARM AND TRANSMISSION LINE BETWEEN PATEA AND WAVERLEY

INTRODUCTION

1. My name is Julia Anne Williams. I have been engaged by the South Taranaki District Council to prepare a landscape and visual assessment to assist the S42A Planner's report for this application.
2. I hold a Bachelor of Architecture from Auckland University and a Postgraduate Diploma in Landscape Architecture from Lincoln College. I am a Fellow of the New Zealand Institute of Landscape Architects and hold current Professional Registration. I am an Independent Commissioner with a current Certificate for Making Good Decisions.
3. I am a Director of Drakeford Williams Ltd, landscape architects. I have practised as a landscape architect for over thirty-five years. During that period I have undertaken numerous landscape assessment and planning projects.
4. I have acted in the capacity of Independent Commissioner for:
    - Wellington City Council's PC 32 Windfarms 2005;
    - Wellington City Council's PC 33 Ridgelines and Hilltops & Rural Area, in 2005;
    - Horowhenua District Council's PC 22 Outstanding Natural Features & Landscapes 2011/12;
    - Wellington City Council hearing for Long Gully Windfarm 2009; and
    - Taupo District Council hearing for Transpower WRK-WKM C Transmission Line 2011.
5. I have acted in the capacity of expert landscape architect for:
    - Wainui Bay, Golden Bay, Expert Panel Workshop on Coastal Natural Character and Outstanding Natural Landscapes and Features 2014;
    - EPA PekaPeka to Otaki 2013 Landscape Sec 42a Landscape Report for KCDC;
    - EPA MacKays to Peka Peka Expressway 2012 Sec 42a Landscape Report for KCDC;
    - Greater Wellington Proposed RPS (2009-11) Advice on natural character and landscape assessment;
    - Porirua City Plan Change 7 Windfarms (2009-10) plus Environment Court Appeal S42a Landscape Report; and
    - Turitea Wind Farm Proposal (2009) Sec 42a Landscape Report for BOI

PURPOSE OF REPORT

6. The purpose of this report is to identify and assess the landscape and visual amenity value effects in relation to the activities described in the application by Tararua Wind Power Ltd to construct a wind farm and transmission line between Waverley and Patea.
7. My scope of work is to:
    - Review and assess the evidence that concerns landscape and visual effects, based on the following information:

- Information in the Tararua Wind Power Ltd Application documents applicable to landscape and visual effects including the Landscape and Visual Assessment (the **Assessment**) and the accompanying visual simulations;
- The statutory context including supplementary information and expert witness evidence by Tararua Wind Power LTD and STDC that specifically relates to the natural values of the Whenuakura to Waipipi coastal landscape. This information was prepared for and presented to STDC during the hearings of submissions on the Proposed District Plan that took place during April to June 2016;
- Submissions that pertain to landscape and visual effects;
- The field work undertaken during the site visit on 7/8 July 2016 in the company of David Forrest, Nigel Lloyd and Blair Sutherland;
- Further design information provided in response to a s92 request on the form, size and layout of the transmission lines and poles to be used in the vicinity of Waverley; and
- The Revised Environmental Buffer Zone and Turbine Layout (Dwg1.001RevC) plans dated 13-04-17.

- Prepare a report discussing the validity of the application and expert evidence concerning landscape and visual effects;
- Form opinions based on the field work, my experience and my expertise on the conclusions drawn;
- Outline an independent opinion on the landscape and visual effects, with detailed reasons for this opinion; and
- Identify any short comings, gaps, errors or omissions in the Assessment.

OVERVIEW OF THE LANDSCAPE AND AMENITY VALUE EFFECTS ASSOCIATED WITH THE APPLICATION

8. Potential landscape and visual amenity effects include: effects on the biophysical landscape; effects on existing landscape character; effects on visual amenity including public views and views from private property; effects on the natural character of the coastal environment; effects on outstanding natural features or landscapes; and temporary construction effects.

9. The key issues arising from the proposed wind farm and transmission infrastructure are summarised in the Assessment in paragraphs 4-13. I support this summary in part, with the following provisos and or explanation:

(i) Paragraphs 8 - 10. The boundary of the revised EBZ no longer extends into areas identified in the proposed STDC District Plan as having outstanding natural coastal character. In this regard, effects on outstanding natural character have been mitigated by the adjustments to the EBZ boundary ; and

(ii) Paragraph 12. There is no specific assessment of the effects of the transmission lines on landscape character at the residential /urban interface along the west and north edge of Waverley township. This is a key landscape amenity issue for Waverley and its residents.

ASSESSMENT OF LANDSCAPE AND AMENITY VALUE EFFECTS

Biophysical Effects

10. The environmental consultants retained by Tararua Wind Power Ltd were asked to identify locations within the project site where the establishment of turbines, ancillary buildings, roads or earthworks should be avoided. Constraints relating to natural character and visual effects, archaeology, noise, and ecology were considered, and an Environmental Buffer Zone (EBZ) developed to avoid or minimise potential adverse effects in relation to each of these fields. Tararua Wind Power Ltd is proposing that no turbines, ancillary buildings, roads or earthworks occur within the EBZ, unless a specific exemption is provided for by way of the resource consent conditions for the WWF although dune planting and restoration may take place in the EBZ.

11. I have reviewed the Assessment of effects on the biophysical landscape from the wind farm, the transmission infrastructure and construction. Overall Isthmus concludes that effects will be largely avoided due to the exclusion of development inside the EBZ and the relatively flat topography. I agree with the assessment analysis although I regard the evaluation of '*minimal compared to other wind farms*' (LVA Paragraph 4) as irrelevant in the context of this specific application and project.

Effects on Landscape Character

Effects on landscape character relate to changes in land use and existing patterns and elements in the landscape, such as vegetation, waterbodies, landform, and settlement patterns.

Effects arising from the Windfarm

12. I agree with the assessment that:
    - The site itself is modified by the former sand mining and is located in a 'working' landscape characterised by productive rural activities. Post construction the existing farming activities will continue on the site, maintaining the underlying rural character;
    - The relatively flat topography in the vicinity of the Waverley 'project site' has a broad horizontal scale that can accommodate the proposed wind turbines without compromising the rural character of the landscape.

Effects arising from the Transmission Infrastructure

13. I agree with the assessment that:
    - The effects on rural character will be minimised by the use of relatively unobtrusive monopoles (as opposed to pylons or other lattice structures); and
    - The proposed line will not look out-of-place in the rural landscape.
14. I disagree with the assessment in the matter of:
    - Landscape character on the edge of Waverley. While the proposed line will not look out of place in the wider rural landscape, I do not agree with the assessment that Waverley residents have a greater expectation of structures and development compared to rural landscapes. Properties on Swinbourne Street and Fookes Street are sited opposite a 180m wide strip of land that encloses 3 sides of Waverley township, known locally as the Waverley Town Belt. Most of the land is recreation reserve although there is no reserve management plan relating to the area and it is not recognised in the District Plan. While the land has been and continues to be leased for grazing in several small lots, residents have an expectation of an undeveloped outlook on this land, albeit with a rural backdrop. The proposed transmission lines therefore adversely affect the landscape amenity of Waverley township.

15. Using the Isthmus rating scale, I would assess the effect on landscape character at the rural edge of Waverley as Moderate.

Effects on Visual Amenity

16. I have reviewed the assessment of effects on visual amenity from the wind farm and the transmission infrastructure.
17. I support the assessment methodology and the analysis of potential viewing audiences (LVA Paragraph 100). With regard to the photosimulations, I agree that:
    - The visual simulations have been constructed and reproduced in accordance with current best practice[1].

[1]Best Practice Guide Visual Simulations BPG 10.2. New Zealand Institute of Landscape Architects, November 2010

- They show a representative range of views from public places and indicative viewpoints from a number of residential sites.
- The site was viewed from a number of the photosimulation viewpoint locations and the simulations appeared to be accurate representations of the existing views and viewing distances.
- Given the project envelope and the yet-to be-determined siting of the turbines, the simulations provide a realistic guide to the visual effects of the turbines in four representative layouts.
- The simulations illustrate the theoretical visibility of the turbines but cannot reproduce real life. A number of factors can affect the visibility including sun glint on the blades, atmospheric conditions such as mist, haze, rain and sun or lack of it as due to the flat topography the backdrop to the turbines in almost every case is sky and not landform.

18. I note that the effects on public views are described as *degree of prominence* in Appendix A: Figures and photosimulations, and effects from private properties listed in the Appendix C: House Inventory are described as *visual effects*, although similar terminology is used to describe the magnitude of effects. A rating scale is provided (Paragraph 105.6) for the assessment of prominence from dwellings. Consistent terminology and clarification that the same scale has been used across the range of landscape and visual effects would have provided transparency to the overall assessment.

Effects arising from the Windfarm

19. I agree with the assessment in the matter of:
    - The size and scale of the structures. The wind turbines are up to 160m and are a different order of height to most other vertical elements in the landscape such as shelter belts or buildings. At the same time, it is difficult to compare their height to other turbines because of lack of vertical references;
    - The relatively flat topography and the scale of the turbines results in low visual impact ground effects in terms of the access roads, transformers and base pad. In other words the towers and turbines create the primary visual impacts;
    - The overall premise that a regular 'non-fanciful' layout is most likely and the use of worst-case scenarios where clustering turbines to the east, west and north end of the project envelop decreases effects from some viewpoints, and increases effects from others ie creates 'winners and losers' by increasing/decreasing the field of view, and creating denser and more noticeable clusters of turbines from some viewpoints;
    - Because of the relatively flat landform, potentially it is possible to screen direct views of the turbines by planting vegetation close to the viewpoint /site /window /outdoor living area; and
    - The magnitude of effects set out in the evaluation. Visual impacts are almost entirely in inverse proportion to viewing distance, with potential effects on visual amenity greatest for people who live closest to the site. This is illustrated in Appendix A: Figure 8 of the Landscape and Visual Assessment.

20. I disagree with the assessment in the matter of:

    - *The proposal to offer planting to residents whose visual amenity will be adversely affected.* I accept that in general, planting within the properties has the potential to mitigate significant effects on visual amenity. However I do not agree that it is possible to mitigate all significant effects on visual amenity for those properties identified as having high or greater adverse effects. Visual effects for individual properties have been evaluated based on desk-top analysis and road-side observation. The assessment cannot determine the specific effects on visual amenity for individual residents. Screening the turbines in views from one location on the property potentially may also screen valued views out to the sea, towards Mount Taranaki or towards sites of high cultural significance; and
    - *Detail on turbine location.* Lack of detail on turbine location within the project envelope creates uncertainty in terms of effects on visual amenity for the identified viewing audience. Based on the Summary of Effects of Worst Case Options from each Viewpoint (LVA page 53), House numbers

18, 51, 52, 62, 63, 91, 102, 103 and 150, all within 3km of the site, may expect greater visual impacts where turbine layouts vary from the standard 'non-fanciful' layout.

21. In my opinion the visual effects of the windfarm for residents cannot be fully assessed without further detail on:

    - An assessment of the impact of the windfarm on residential amenity based on observations from within the property and the resident's identified valued views; and
    - Further detail on the final turbine locations. If this is not feasible, assessment should be extended to include houses within 3km of the site that have been assessed as having *Moderate* visual effects, and where alternative turbine layouts have the potential to increase those effects.

Effects arising from the Transmission Infrastructure

22. I agree with the assessment in the matter of:

    - The main potential visual effects of the transmission lines will be on the visual amenity of individual properties;
    - The description of the poles as 'a moderately scaled-up version of conventional utility poles.'[2]
    - The main mitigating factor for Waverley residents will be the use of monopoles: and
    - Effects on visual amenity depend on distance from line and the orientation of the house; and effects will be higher for residents who have a pole located opposite their property.

23. I do not agree that:

    - *A mitigating factor for Waverley residents is that the line will be seen in the context of existing overhead services in the road reserve.* The poles may be only moderately larger than the existing power poles but have a 3m aerial atop the pole that extends height when seen in close views from neighbouring residential properties. They have a different form with three lines mounted vertically on 1.69m insulators, which makes the lines more visible than the traditional arrangement on the existing power poles, with lines mounted on horizontal cross arms. The infrastructure includes guy wires and timber barriers at ground level where there are angles in the line. The transmission lines duplicate the existing set of power poles and lines on the residential side of the street and introduce additional visual clutter into the Waverley landscape for both close and distant views. In this respect I note that the effects for the properties on the perimeter of Waverley with an expectation of an on-going rural outlook may be understated;
    - *There is a greater expectation of structures and development compared to rural landscapes for Waverley residents.* Houses on Swinbourne St, Fookes St, Chester St and at the western end of Weraroa Rd in particular are sited opposite land that is largely in recreation reserve. These residents have an expectation of an undeveloped outlook over this land;
    - *The only visual effects in the Waverley urban environment are the effects on individual properties.* Information in the s92 response describes a potential layout that has been designed to avoid poles directly in front of houses by placing them opposite property boundaries as far as is practicable. However the arrangement of the lines, the scale of the poles and their proximity to the street means they will have a strong visual presence in the Waverley community, particularly for views for people travelling along Swinbourne and Fookes Streets; and
    - *The main effects will be on visual amenity from Waverley dwellings.* There are a number of rural properties that potentially have distant views of the wind farm and more immediate views of the transmission lines. There has been no evaluation of the cumulative visual effects for these residents.

24. The plan *Figure 4: Waverley proposed 110kV Overhead Line Route* included in further information supplied in response to the s92 request illustrates a layout designed to reduce visual impacts by avoiding poles directly in front of houses and placing them opposite property side boundaries. While

[2] Section 92 Request –Transmission Line. Gavin Lister, Isthmus 25 August 2016.

effects for individual properties have the potential to be mitigated by this careful placement, effects on views from local streets and Swinbourne and Fookes Streets in particular remain unchanged.

25. The landscape and visual effects of the transmission infrastructure can be avoided by placing the transmission wires underground. Alternatively effects can be mitigated by re-routing the transmission lines to run them to the west and north of Waverley to the substation and away from the residential area, although this has the potential to impact on the visual amenity of adjoining rural residents.

Construction Effects

26. I concur with the assessment of biophysical effects in respect of temporary earthworks and culvert construction but do not agree with the assessment of visual effects.

27. I understand the concept of the project envelope however it creates uncertainty with regards to the location of construction works including a concrete batching plant that will be approximately 10m high and 100 m by 75 m. While I agree with the assessment that the viewing audience is low in this area, the structure will have effects on the visual amenity of residents who have views of the windfarm, and potential cumulative effects for those residents who simultaneously may view the turbines, transmission line and concrete batching plant during the period of construction.

28. In this regard, the lack of detail associated with layout within the project envelope creates uncertainty in assessing effects on visual amenity for the identified viewing audience

Effects on the Natural character of the Coastal environment

29. Assessment of effects on coastal character requires identifying the extent of the coastal environment, evaluation of the natural character of the coastal environment, identification of areas of Outstanding Natural Character (ONC) and the evaluation of effects on those ONC areas. Detail on the assessment for the Waverley coastline including background history, the documentation reviewed and comparative evaluation and mapping is included as **Appendix 1** to this report.

30. I agree with the assessment that:

- Effects on the biophysical components of natural character, that is both biotic and abiotic attributes, will be largely avoided by the location of the project site on a former sand mining area.
- With respect of experiential attributes, there will be adverse visual effects on the perception of natural character because the wind turbines will be a prominent backdrop to the coast environment when viewed from within the identified ONC areas, but effects are mitigated by the set-back of the turbines inland of the coastal dunes.

31. I also consider the relative remoteness and inaccessibility of the Whenuakura Estuary and Waipipi Dunes ONC areas from public access points to the coast provides additional mitigation by limiting potential close views of the turbines from the coastal edge and within the coastal environment.

32. I do not agree that the adverse effects will be insignificant, given that a number of turbines are located in the CPA and therefore in the coastal environment. Nor are effects reversible, given the scale of the groundworks required for the turbine foundation and installation.

Effects on Outstanding Natural Features and Landscapes

33. I agree with the assessment that:

- There are no potential ONF or ONL areas on or in close proximity to the project site.

COMMENTS ON MATTERS RAISED IN SUBMISSIONS

34. 14 of 22 submissions make reference to landscape and visual effects arising from the proposal. 5 of those have a more general focus on cultural values and the lack of an accepted CIA although Submission 16 makes specific reference to the visual effect of turbines on the marae.

The wind farm and turbines

35. Submissions 1, 8, 10, 11, 15, 18 objected to the potential landscape and visual effects of the windfarm.

36. Frazer Fieldes (1) opposes the proposal, noting that the turbines would blemish the view to Taranaki' from his section at Waipipi some 2.6km away. I note that views to Mt Taranaki lie to the northeast of the site and will be separated from the turbines by the pine plantation. The turbines are unlikely to overlay views to the mountain but have the potential to frame views.

37. Tim and Lorraine Honeyfield (8) Paul Mitchell (11) are concerned about the impact of the turbines on views of the sea from their land. The Honeyfields are 3.6km from the site and effects have been evaluated as *Moderate* to *Low*. Paul Mitchell owns two houses, 2.1 and 2.2 km from the site; visual effects are evaluated as *High* and *Moderate*.

38. Nigel and Diane Alexander (10) oppose the windfarm due to the effects of visual pollution. They live 2.3 km from the site and effects have been evaluated as *Moderate* to *High*. I note that they also live 0.66km from the transmission line where effects have been evaluated as *Low*.

39. Sally Sisson (15) opposes the windfarm because of the visual effects particularly on views to the Whenuakura River mouth from the Submitter's property. Ms Sissons lives 2.4km from site and effects have been evaluated as *Moderate*. I note that given the location of the house, she is unlikely to have views to Whenuakura River mouth and windfarm in the same field of vision.

40. Will Dickie (18) owns three rural properties 1.0-1.4km from the site and a number of sections at Waipipi subdivision and opposes the windfarm because of the visual effects of turbines and transmission lines. Mr Dickie will have unimpeded views to the site and effects have been evaluated as *High* to *Very high*. Mr Dickie's three properties are located close to the site and northwest of the pine plantation, where turbines potentially will intervene in views from living areas towards Mt Taranaki. However the sections at Waipipi will have similar views to those of Mr Fieldes; the turbines are unlikely to overlay views to the mountain but have the potential to frame views.

41. Submission 16 from Te Kaahui o Rauru objected to the visual effect of turbines on the marae. Wai o Turi Marae is 2.8km from the site and effects are evaluated as *Moderate – High.* Whenuakura Marae is 2.4m from the site and effects are evaluated as *Moderate*. The submission has now been withdrawn.

Significant adverse effects raised by submissions

42. All submitters will have potential views of the turbines from their properties although the magnitude of effects varies according to the viewing distance, the orientation of living areas, vegetation within the property and the final turbine layout. Only the first of these factors can be accurately measured from outside the property.

43. The AEE has worked through the assessment process and noted general change in effects depending on the turbine layout but without individual site assessment, local landscape nuance makes it difficult to predict which properties have views to the sea and whether the turbines affect those views

44. Views to Mt Taranaki are more predictable. For Mr Fieldes, views to Mt Taranaki lie to the northeast of the site and the pine plantation. Turbines are unlikely to intrude across the view but have the potential to frame view, particularly if the turbines sit within the east envelope. Mr Dickie's three properties are located close to the site and northwest of the pine plantation, where turbines potentially will intervene in views from living areas towards Mt Taranaki.

45. In summary, I support the submissions of Mr Mitchell (11), the Alexanders (10), and Mr Dickie, who I regard as the most affected of the submitters due to the proximity and relative orientation of his houses to the site.

Mitigation.

46. Mitigation is possible in every case where there is a specific viewshaft from the property to the windfarm. However I agree with Ms Sissons that (to paraphrase) no-one wants to *live in a house surrounded by shelter to hide the view of the turbines.*

47. Visual effects can be mitigated by planting within the individual property to screen the turbines. However planting will have to be designed on a case by case basis, and has the potential of also impacting residential amenity in terms of shading outdoor living areas or vegetable gardens, screening valued views through to other areas within the property or in the case of the Honeyfields and Paul Mitchell, it also screens views to the sea.

The Transmission lines

48. Submissions 9, 13, 14 and 20 objected to the potential landscape and visual effects of the transmission lines.

49. Mike and Angela Connell (9) are concerned with the visual impact of the line on views of the rural landscape and on views to Mt Taranaki.

50. Robert and Anita Bremer (13) oppose the Transmission lines due to their impact on landscape character and visual amenity.

51. Robert Hayes (14) and Maggie Lister (20) have concerns with the impact of the transmission lines on landscape character and visual amenity, as with as effects on recreational values. Robert Hayes objects to impact of the lines on the associative values attached to views of Mt Taranaki.

Significant adverse effects raised by submissions

52. I agree with all of the above submissions that there will be visual effects from the transmission infrastructure from both the poles and the transmission lines. However the subsequent redesign of the potential layout to avoid poles directly in front of houses mitigates the visual prominence of the transmission lines. The effects on individual properties have the potential to be *Moderately Low* to *Very Low*.

53. I agree with the above submissions that there will be effects on landscape character and rural amenity for Waverley residents as the transmission lines introduce additional visual clutter into both close and distant views from Waverley, at the interface between the rural and urban landscape.

54. Mt Taranaki and the Waverley Town Belt have high associative values for Waverley residents. I agree that the transmission lines and monopoles have the potential to cut across views to Mt Taranaki, and to disassociate the recreation reserve land from Waverley, although the infrastructure is unlikely to have adverse effects on the recreational values and potential of the land per se.

Mitigation

55. All landscape and visual effects can be avoided by placing the transmission wires underground.

56. Alternatively effects can be mitigated by re-routing the transmission lines to run them to the west and north of Waverley to the substation, well away from urban development, although this has the potential to impact on the visual amenity of adjoining rural residents.

PROFFERED CONDITIONS AND OTHER RECOMMENDED MITIGATION MEASURES

57. I support all the additional mitigation measures recommended in the applicant Landscape and Visual Assessment (paragraph 134).

58. Measures 134.1-134.3 and 134.5-134.6 have been included in the Application's proposed conditions. Measure 134.4 recommends facilities such as the concrete batching plant, and any construction yard facilities not required for on-going maintenance be removed once construction is completed. I agree and recommend that this is incorporated into the final Wind Farm Land Use section of the conditions.

59. I have reviewed the revised (13 April 2017) proffered Transmission Line Land Use Conditions and the Wind Farm Land Use Conditions and support those relevant to issues of landscape and visual mitigation.

60. I recommend that the EBZ/project site boundary is aligned with the Proposed Plan Coastal Protection Area boundary in order to mitigate effects on coastal natural character.

61. I recommend an additional condition to protect areas identified as having Outstanding Natural Character in the Proposed STDC District Plan from stock. Currently proposed condition 57 requires temporary fencing of the EBZ for the duration of the construction works with a fence that presents a visible barrier to any contractors or machinery from entering the EBZ. This condition should be amended to require a permanent fence along the coastal boundary of the project site unless the applicant can provide some alternative form of protection using fencing of a suitable quality so that it prevents stock from entering the ONC sites.

62. Given the lack of detail on the final turbine locations for layouts other than the Indicative Non-Fanciful Turbine Layout, the conditions should include a provision to extend the offer of planting to all houses within 3km of the site that have been assessed as having *Moderate* visual effects, and where alternative turbine layouts have the potential to increase those effects.

63. I recommend a condition that transmission lines on the outskirts of Waverley are placed underground in order to avoid adverse landscape and visual effects.

64. Alternatively effects can be mitigated by re-routing the transmission lines to run them to the west and north of Waverley to the substation, well away from urban development, although this has the potential to impact on the visual amenity of adjoining rural residents.

CONCLUSION AND RECOMMENDATIONS

65. I have reviewed the assessment of effects from the wind farm, the transmission infrastructure and construction.

66. Effects on the biophysical landscape will be largely avoided due to the exclusion of development inside the EBZ and the relatively flat topography.

67. The site is modified by the former sand mining and the relatively flat topography in the vicinity of the Waverley 'project site' can accommodate the proposed wind turbines without compromising the rural character of the landscape.

68. The visual effects of the windfarm for residents cannot be fully assessed without further detail on the impact of the windfarm on residential amenity based on observations from within the property and the resident's identified valued views. However effects have the potential to be mitigated by on-site planting within those properties

69. Given the lack of detail on the final turbine locations, the conditions should include a provision to extend the offer of planting assessment to all houses within 3km of the site that have been assessed as having *Moderate* visual effects, and where alternative turbine layouts have the potential to increase those effects.

70. Effects of the transmission infrastructure on visual amenity depend on distance from line and the orientation of the house. Effects will be higher for residents who have a pole located in proximity to their property. Visual amenity effects for individual properties can be mitigated by careful placement of the monopoles. However effects on public views from local streets and Swinbourne and Fookes Streets in particular remain unchanged.

71. The proposed transmission infrastructure will not look out-of-place in the rural landscape but will adversely affect the residential character of Waverley township and the landscape amenity of its residents where the transmission lines run along the residential edge of the town, beside the recreation reserve land known as the Waverley Town Belt.

72. The adverse landscape and visual effects of the transmission infrastructure can be avoided by placing the transmission wires underground. Alternatively effects can be mitigated by re-routing the

transmission lines to run them to the west and north of Waverley to the substation and away from the residential area, although this has the potential to impact on the visual amenity of adjoining rural residents.

73. Construction effects are very low with the exception of the potential location of the concrete batching plant. I recommend that the conditions include removal of the plant and associated construction yard facilities once construction is completed.

74. There are no identified ONF or ONL areas on or in close proximity to the project site.

75. In the issue of effects on natural coastal character and on areas of outstanding natural character, there will be adverse visual effects on the perception of natural character because the wind turbines will be a prominent backdrop to the coast environment when viewed from within the identified ONC areas. However given the lack of public access across the site, and the relative remoteness and inaccessibility of the site coastline and Whenuakura Estuary and Waipipi Dunes ONC areas from public access points to the coast, I consider effects on experiential attributes to be low.

76. Effects on biotic and abiotic attributes are largely avoided, particularly as ONC sites identified in the Proposed District Plan lie outside the project site and the revised EBZ boundary generally aligns with or lies inland from the CPA boundary. However a number of turbines are located within the Coastal Protection Area. I therefore recommend that the EBZ/project site boundary is aligned with the Proposed Plan Coastal Protection Area boundary in order to ensure that effects on coastal natural character are less than minor.

77. I have included a list of additional conditions in paragraphs 57-64 above. I consider these conditions and the mitigation recommended in paragraphs 72 and 76 will adequately address concerns of potential adverse effects.

APPENDIX 1: THE COASTAL ENVIRONMENT

REGULATORY BACKGROUND

In August 2015 the Council publicly notified the Proposed South Taranaki District Plan 2015 to replace the Operative South Taranaki District Plan 2004. The plan change has been through the public hearing process. Decisions were released on 5 November 2016. The period for appeals closed in December 2016 and Tararua Wind Power Limited is one of several appellants. To date, none of the appeals have yet been determined.

Tararua Wind Power (then 'Trustpower') Limited's submission and appeal focussed on the Coastal Environment. The most relevant matters in the Proposed District Plan for the Landscape and Visual Assessment are the determination of the Coastal Protection Area and the identification of areas of Outstanding Natural Character.

Tararua Wind Power (Then 'Trustpower') lodged resource consent applications with STDC and TRC on April 14 2016. Subsequently the hearings of submissions on the Proposed STDC District Plan took place during April – July 2016. The hearing of submissions on the Coastal Environment was held in June 2016. Rhys Girven of Boffa Miskell provided advice to STDC and Stephen Brown provided expert evidence for Tararua Wind Power Ltd.

COASTAL NATURAL CHARACTER

Assessment of effects on coastal character requires identifying the extent of the coastal environment, evaluation of the natural character of the coastal environment, identification of areas of Outstanding Natural Character (ONC) and the evaluation of effects on those ONC areas.

Overall documents reviewed included (in chronological order)

1) *'Draft South Taranaki Landscape Assessment*. Boffa Miskell 2014
2) *Draft Regional Landscape Study of the Taranaki Coastal Environment.* TDC 2015.
3) *'Natural Character Values Waverley Coastline'.* Report prepared by Stephen Brown as Appendix 6 in the Application AEE documentation. 30 November 2015;
4) *'Waverley Wind Farm Terrestrial and Freshwater Ecology Assessment*' report prepared by Ryder Consulting Ltd as Appendix 7 in the Application AEE documentation. February 2016;
5) *Landscape and Visual Assessment'.* Report prepared by *Gavin Lister of Isthmus* as Appendix 1 in the Application AEE documentation. 11 March 2016;
6) *'Waverley Wind Farm Assessment of potential collision risk to birds'.* Report prepared by Boffa Miskell as Appendix 8 in the Application AEE documentation. February 2016;
7) Section 42A Officers Report: Coastal Environment, Proposed South Taranaki District Plan, 2 June 2016;
8) Appendix 3 of the above: Stephen Brown Technical Information for the Submission of Tararua Wind Power Limited. (same report as 1) above). 30 November 2015;
9) Section 42A Officers Report Coastal Environment Final with Appendices, Proposed South Taranaki District Plan, 2 June 2016;
10) Appendix 2 of the above: Rhys Girvan (Boffa Miskell). Revised CPA and ONC mapped 13 May 2016;
11) Evidence of S Brown for Tararua Wind Power, hearing on 'Natural character mapping' Proposed South Taranaki District Plan. 10 June 2016 including Annexures 18-24 dated March 2016 (Note: pre-dating site survey undertaken in company of Rhys Girvan 29 April 2016);
12) Evidence of M Saunders Tararua Wind Power Ltd, hearing on 'Natural character mapping' Proposed South Taranaki District Plan. 10 June 2016

13) Supplementary Section 42A Officers Report: Coastal Environment, Proposed South Taranaki District Plan, 17 June 2016;
14) Appendix 2 of the above: Rhys Girvan (Boffa Miskell). Revised CPA and ONC mapping 16 June 2016; and
15) The Revised Environmental Buffer Zone and Turbine Layout (Dwg1.001RevC) plans dated 13-04-17.

My assessment is based on documentation and evidence provided by the following landscape architects:

- Gavin Lister of Isthmus for Tararua Wind Power Ltd, author of the LVA for the AEE
- Stephen Brown of Brown NZ Ltd for Tararua Wind Power Ltd, author of Natural Character Values for the AEE
- Rhys Girven of Boffa Miskell, who undertook the draft *South Taranaki Landscape Assessment* for STDC in 2014. This assessment informed the Proposed Plan.
- Rhys Girven of Boffa Miskell also provided input into the draft *Regional Landscape Study of the Taranaki Coastal Environment* for TRC.

1. Extent of the coastal environment.

The South Taranaki District Plan identifies an Operative Coastal Protection Area. The s42A report for the Proposed Plan notes (paragraph 47): *It is unclear on what basis the Coastal Protection Area in the Operative District has been defined, but it has been suggested that it generally followed the inland extent of remnant coastal landforms such as stabilised coastal dunes. This area was also defined prior to the 2010 NZCPS (Policy 1 in particular) and as a result needed to be re-evaluated to ensure its consistency.'* The Operative Coastal Protection Area covers the Waverley Wind Farm site and extends even further inland. All three landscape architects, Rhys Girvan explicitly, and Gavin Lister and Stephen Brown implicitly, agree that the Operative CPA does not/no longer defines the inland extent of the coastal environment.

The coastal environment has been mapped in the Draft South Taranaki Landscape Assessment. This mapping has been carried through into the Proposed Plan as the Coastal Protection Area (CPA). The inland extent of the coastal environment along the coastline has been identified primarily by landform[3], and along the coastline from Whenuakura to Waipipi is the line where the flat, mined land meets the hummocky dune landform, accepting that some dunes may have been modified during the mining and rehabilitation process. In short, the Proposed Plan CPA boundary lies much closer to the coastline.

Stephen Brown agrees with the methodology used to identify the coastal environment[4] for the Waverley site although disagrees with the use of 100m 'buffer' in other parts of the coastline. He has included a number of plans with his evidence at the recent hearings for the Proposed Plan, all of which have used the same delineation of the coastal environment as the Proposed Plan.

Gavin Lister[5] agrees with the methodology used in the draft STLA to identify the coastal environment but is of the opinion that the mapping does not precisely follow the actual features on the ground, and is offset into the former sand mining area by distances typically in the order of 100m – 300m. In April 2017 Tararua Wind Power Limited revised the extent of the EBZ along the coastal frontage of the project site, following a ground-truthing exercise by the landscape, geomorphology and ecology experts to identify the extent of the coastal environment. No additional evidence or analysis has been provided to support the revised EBZ/CPA boundary.

[3] Julia Williams in discussion with R Girvan July 2016
[4] SB Evidence 10 June 2016. Para 22
[5] Landscape and Visual Assessment, Application AEE. Para 48

Conclusion
No additional evidence or analysis has been provided to support the revised EBZ/CPA boundary. Given that all 3 landscape architects agree on the methodology used to identify the coastal environment and the 2 experts specifically evaluating the coastal environment agree on the extent of the coastal environment, it is my opinion that the mapping of the Whenuakura to Waipipi coastal environment line in the Proposed Plan should be upheld.

2. Methodology for assessing Coastal Natural Character

The methodology for evaluating coastal natural character has been evolving since the NZCPS was released in 2010. Boffa Miskell have developed a natural character evaluation framework based on abiotic, biotic and experiential attributes to assess the level of natural character within each identified coastal sector. The methodology has been workshopped in conjunction with DoC and has been employed throughout other parts of New Zealand including recent studies completed by Boffa Miskell within the Marlborough Sounds, Nelson and Waikato. This methodology has been used to evaluate and map the Waverley natural character in the Draft South Taranaki Landscape Assessment.

Gavin Lister's natural character assessment is directed by the NZCPS and Policy 13, and the methodology he employs refers directly to the terminology in Policy 13, although he also refers to the TDC draft Regional Landscape Study and the STDC Proposed Plan.

Stephen Brown concurs with the methodology used in the Draft South Taranaki Landscape Assessment, although retains reservations in respect of analysis of the Biotic Attributes assessment. He is of the opinion that more weight should be attributed to the retention of biotic systems that display ecological sequence and connectivity through multiple habitats.[6]

Assessment of the Waverley coastline has moved on since the WWF application was lodged, with Rhys Girvan and Stephen Brown each visiting and ground-truthing the site at a greater level of detail and exchanging evidence during the process of the Proposed Plan hearing.

Conclusion
Regardless of the weighting of the attributes, it appears that the methodology and terminology used in the Proposed Plan (based on the draft South Taranaki Landscape Assessment) is the preferred assessment methodology and represents current best practice.

3. Outstanding Natural Character

The Operative Taranaki Regional Coastal Plan identifies Whenuakura Estuary as having Outstanding Natural Value. The plan was adopted in 1997 and predates the 2010 NZCPS.

The natural character of the Whenuakura to Waipipi coastline was the subject of discussion at the recent hearings on the Proposed Plan. Prior to the hearings, the site was walked over by Rhys Girvan (Boffa Miskell landscape architect for STDC), accompanied by Stephen Brown (Tararua Wind Power's landscape architect), Mark Saunders (Tararua Wind Power's ecologist), Chris Fern (Tararua Wind Power's Environmental Advisor), Anne-Marie Broughton (Ngaa Rauru), Halema Jamieson (TRC's scientific officer - ecology) and Nathan Sutherland (STDC's Planner).

Following the walkover and groundtruthing, Rhys Girvan amended his evaluation of the coastline. Rhys Girvan and Stephen Brown presented their natural character mapping at the Proposed Plan hearing although their focus was on identifying areas of Outstanding Natural Character. For the

[6] SB evidence 10 June 2016 para 23

purposes of this s42A report, I regard these two sets of plans at the most relevant and up to date mapping of natural character at this point of time.

The amended South Taranaki Landscape Assessment maps, which identify only ONC areas along this coastline, splits the original ONC area into 2 sites of high to very high natural character, one at the Whenuakura Estuary, and one encompassing the Waipipi Dunes. Stephen Brown suggests that original ONC area should be split into 2 coastal corridors: an area of high natural character along Waipipi Dunes and main cliff lines; and an area of moderate natural character at the Whenuakura River margins and the dune corridor behind cliff-lines.

Mapping and evaluation differences indicate:

- While there is agreement that both Whenuakura Estuary and Waipipi dunes have elevated natural character values, there is no agreement or alignment on the extent and boundaries of the two areas.
- Stephen Brown attributes an overall value to the sites identified as having elevated natural character values, without expressly placing values on individual abiotic, biotic and experiential attributes;
- Rhys Girvan's evaluation rates each attribute individually, and the overall rating is an amalgamation of the values;
- Both landscape architects rely on other experts for evaluation of ecological attributes (terrestrial vegetation, freshwater habitat, birds and bats) and geomorphology. This is not necessarily explicit in Stephen Brown's AEE report and evidence presented at the Proposed Plan hearing, but is supported and clarified in Mark Saunder's AEE report and evidence at the same hearing.

Overall the differences in evaluation have been usefully summed up in the s42a report, Appendix 2[7] where Rhys Girvan identifies the following points of disagreement:

a) The degree to which assessment must apply a comparative scale considering the context of South Taranaki.
b) The need for areas of outstanding natural character to express a wider intact ecological sequence; and
c) The degree of influence of the adjoining modified agricultural landscape on the context and setting of areas identified as having outstanding natural character;

The differences have been summarised in the table below:

[7] Supplementary Section 42A Officers Report: Coastal Environment, Proposed South Taranaki District Plan, 17 June 2016;

a) Assessment must apply a comparative scale.

Rhys Girvan	Stephen Brown
His focus is on the value of these remnants within the context of the South Taranaki coastline, using an assessment process defined in the South Taranaki Landscape Assessment. This same comparative threshold has been employed throughout other parts of New Zealand including recent studies completed by Boffa Miskell within the Marlborough Sounds, Nelson and Waikato.	Has the overall impression of a district-wide coastline that is largely bereft of the natural coastal elements, patterns and systems that would once have flourished west and south of Mt Taranaki. He notes that as the Boffa Miskell findings currently stand, the distinct impression is left that some stretches of coastline have been identified as having high or outstanding natural character values simply because they are the best remnants that the South Taranaki District retains, not because they are 'close to pristine' objectively meet the threshold for being high or outstanding and therefore comprising true ONC Areas.

Whether or not I personally view 'Outstanding' as a stand-alone or comparative evaluation, it is my opinion the South Taranaki Landscape Assessment provides the following guidance and underpinning evaluative methodology (page 110, my bold font):

The following definitions have been established to assist with this evaluation:

'Outstanding' is a comparative evaluative term meaning to stand out, exceptional, pre-eminent, clearly superior to others in the same study context.

'Outstanding Natural Character': The coastal environment may be outstanding where it has high or very high levels of natural character.

For an area to have outstanding natural character it must exhibit a combination of natural elements, patterns and processes that are exceptional in their extent, intactness, integrity and lack of built structures (the 'clutter' factor) and other modifications ***compared to other areas in the South Taranaki District****. The vegetation, habitat and /or biodiversity of an area with outstanding natural character must have a very high level of indigenousness, and also the sequence of natural landforms should be largely intact.*

The evaluation is supported by the *Draft Regional Landscape Study of the Taranaki Coastal Environment,* undertaken in 2015 with study team participants with a wide range of backgrounds including marine biology, terrestrial ecology, geography, geology, geomorphology, hydrology and policy as well as local knowledge and familiarity with the Taranaki coastal environment. This more recent study upheld the Whenuakura to Waipipi evaluation within the context of the wider coastal environment in the Taranaki Region.

In the opinion of a wide range of experts and using abiotic, biotic and experiential attributes, the ONC areas identified in the wider TRC study are the best remnants that Taranaki retains and by inference, the best remnants the South Taranaki District retains and therefore fit the criteria for ONC evaluation set out in the STLA document.

b) The need for areas of outstanding natural character to express a wider intact ecological sequence.

Rhys Girvan	Stephen Brown
Does not consider an entire ecological sequence must be present in order to recognise outstanding natural character. With regard to the lack of presence of climax species, notes that the natural character values of this system have the ability to remain in such areas despite the removal of coastal forest from the rural production landscape further inland.	Accepts that parts of the Waverley coastline display a range of natural character values, but assesses the local coastal environment as being too modified, too infiltrated by both exotic and weed plant species, and too influenced by adjoining farmland, to be recognised as an area of ONC.

Landscape attributes are not the sole basis for natural character evaluation. As stated above, in the opinion of a wide range of experts who have evaluated a comprehensive range of attributes, the ONC areas identified in the wider TRC study are the best remnants that Taranaki retains and by inference, the best remnants the South Taranaki District retains and therefore fit the criteria for ONC evaluation set out in the STLA document.

If one was to extend the proposition that the attributes of a natural environment are influenced by an adjoining farmed landscape, there would be very few areas of ONC identified in New Zealand outside of national, regional and district parks and reserves.

Policy 13 of the NZCPS is focussed on the preservation of natural character. In this respect therefore, I accept the June 2016 revised mapping of the Whenuakura to Waipipi ONC areas.

c) The degree of influence of the adjoining modified agricultural landscape on the context and setting of areas identified as having outstanding natural character;

Rhys Girvan	Stephen Brown
Acknowledges that areas with outstanding natural character are bordered by modified farmland, but considers this context does little to impact on the remaining parts of this coastal environment which are overwhelmingly natural and retain an obvious sense of wildness and remoteness connected with the sea. Considers the development of such adjoining land may have the ability to avoid detraction from natural character values identified within outstanding natural character areas retained within the coast, depending on its nature and scale.	Includes the wider landscape context in assessment, and notes that the site is accessed via previously sand mined farmland, which 'flavours' the experience and removes any sense of linkage between the coastal edge and other habitats inland. Is of the view that context is an important consideration that Policy 13 of the NZCPS gives due weight to.

I do not agree that the identified ONC sites are 'accessed via previously sand mined farmland'. The reality is that the public can only access them from the coast (unless they have consent from the landowner to pass through the Waverley Wind Farm site). They also can be viewed from the sea or from elevated areas on the coastline to the north and south of the ONCs. In these circumstances, the inland farmed areas have very low or negligible visibility.

Having been into the Waipipi dunes, it is my opinion that given the size of the ONCs, it is quite possible to be within the area and not be aware of the inland farmed areas. At the interface of the duneland and farmland, the difference between the character of the two landscapes is pronounced and the sense of 'otherness' enhanced, although I note Rhys Girvan's caveat that this is dependent on the nature and scale of the neighbouring development.

Conclusion
I support the June 2016 revised mapping of the Whenuakura to Waipipi ONC areas, although I acknowledge that the Coastal Environment provisions in the Proposed District Plan are subject to appeals that are yet to be determined. I note the ONC sites identified in the Proposed District Plan fall within the Waverley Wind Farm EBZ, and therefore lie outside the project site.

4. Effects on the Natural character of the Coastal environment

Evidence from Rhys Girvan and Stephen Brown is focussed on evaluation of natural character of the coastline outside the Waverley Wind Farm site.

The revised STLA assessment for the ONC areas within the Waverley Coastal environment evaluates their experiential attributes as Very High with the following descriptions:
Whenuakura Estuary

- Minimal apparent modification throughout the estuary and margins which retains strong wild and scenic associations.
- Presence of birds amplifies perceived level of naturalness.

Waipipi Dunes

- Expansive series of unmodified dune landforms and coastal vegetation contribute a sense of wildness and isolation along an intact coastal edge.
- A sense of remoteness is amplified by limited access and the natural darkness of the night sky which retain a strong natural experience.

Only Gavin Lister (in the LVA) has assessed the effects of the windfarm on the natural character of the Whenakura to Waipipi coastal environment. He concludes that:

- Effects on the biophysical components of natural character, that is both biotic and abiotic attributes, will be largely avoided by the location of the project envelope.
- With respect of experiential attributes, there will be adverse visual effects on the perception of natural character because the wind turbines will be a prominent backdrop to the coast.

Overall I concur with the Lister assessment. The windfarm will be visible and audible from within the identified ONC areas due to the size and proximity of the turbines. However given the lack of public access across the site, and the relative remoteness and inaccessibility of the Whenuakura Estuary and Waipipi Dunes ONC areas from public access points to the coast, I consider the effects on experiential attributes to be low.

I also agree that effects on biotic and abiotic attributes are largely avoided, particularly as ONC sites identified in the Proposed District Plan now lie outside the project site.

There remains the question of the relationship between the revised EBZ and the Proposed Plan CPA. The revised EBZ boundary generally aligns with or lies inland from the CPA boundary, with the exception of an area in the northwest corner of the site, adjacent to the Whenuakura River, where Turbine 1 is located and in the vicinity of Turbines 40 and 45. Turbines 7, 10, 16, 22 and 48 also appear to be located within the CPA or very close to the CPA boundary. The plan below is an indicative overlay of a number of plans to illustrate the relationship between the revised EBZ, the Proposed Plan CPA, the ONC sites and the turbine layout.

Figure 1: Working Comparison Analysis showing the revised EBZ, the Proposed Plan CPA, the ONC sites and the turbine layout. (Attached as an A3 plan to report)

Without being provided with additional evidence to support the Applicant's revised EBZ/CPA boundary, particularly in the vicinity of Turbines 1, 10, 16, 22, 40 and 45 that appear to lie inside the CPA and Turbines 7 and 48 that appear to lie on the boundary of the CPA, I conclude that there may be potential adverse effects on the natural character of the coastal environment.

Appendix C

REQUEST FOR FURTHER INFORMATION RESPONSE – LANDSCAPE

isthmus

PROPOSED WAVERLEY WIND FARM

S92 REQUEST – TRANSMISSION LINE

Client:	Trust Power
Project:	Proposed Waverley Wind Farm
Code:	3605
Report:	Section 92 Request – Transmission Line
Status:	Final
Date:	25 August 2016
Author:	Gavin Lister
	Isthmus
	PO Box 90 366
	Auckland 1142
	+64 9 309 7281
	+64 27 435 7844
	gavin.lister@isthmus.co.nz

1 MEMO

1.1 This memo responds to the following section 92 request:

"A number of submitters have expressed concerns about the adverse visual impact of the proposed transmission line, particularly in relation to the Waverley Township. The application lacks detail of the proposed monopoles.

It is indicated that the monopoles have a maximum height of 22.0m above ground level, but no information is provided as to the diameter or profile of the poles. They appear to be about 450mm diameter if scaled off the plan provided on page 12 of the Isthmus simulations but are not necessarily symmertical in cross-section. They could appear as elongated power poles and in scale with existing poles, or they could be a similar size to a telecommunication cell tower mast.

Given the nature of the submissions, it is considered necessary that this information be provided, as well as more detail regarding any proposed use of arms, guy wires and double poles in close proximity to houses, particular in the urban environment around Waverley."

1.2 Further design work has been carried out for the vicinity of Waverley to enable more precision on the effects. The following drawings are attached from ElectroNet Services:

- Figure 1: 17m Stresscrete pole
- Figure 2: 17m Stresscrete 110kV with aerial earth
- Figure 3: 110kV guy set
- Figure 4: Waverley proposed 110kV overhead line route

Height and appearance of poles

1.3 The poles will be 'Stresscrete' concrete poles 14m high above ground level (i.e. 17m including below-ground footing). The broader face of the poles taper from 550mm at ground level to 300mm at the top. The narrower side, which faces the road, tapers from 400mm at ground level to 225mm at the top.

1.4 The poles are similar in appearance to those commonly used for local utility services throughout New Zealand, including within Waverley. Utility poles are commonly around 10m high (and are sometimes up to 12m high). While the proposed 110kV poles will be taller than typical power poles, they will be a similar order of scale. To put it another way, they will appear as a moderately scaled-up version of conventional utility poles.

1.5 The main difference is that on 'normal' power poles the conductors (wires) are strung between cross arms. In this case the conductors will be attached to insulators mounted on the side of the power pole – i.e. the three 'wires' will be arranged vertically on one side of the pole (referred to as an 'E arm')

1.6 In addition, in the vicinity of the substation, a thin earth-wire for lightening protection will be carried on 3m 'aerial earth extensions' mounted on top of the

poles. The extension arm will be approximately 100mm wide, so will have the appearance of a secondary element on top of the main pole. The earth wire will be installed between the substation and the intersection of Fookes and Swinbourne Streets.

1.7 Guys will be used as depicted on Figure 3 where there are angles in the line. Guy wires are in the order of 15mm diameter (i.e. they are reasonably thin), and are fixed to 'deadman' anchors under the ground. Post and rail frames are to be used at the anchor points to prevent people walking into the guys. In some instances (for example near the intersection of Fookes and Chester Streets) a pole is guyed in two directions, in other instances (for example adjacent to the intersection of Fookes and Swinbourne Streets) a pair of poles approximately 30m apart will be used, each guyed to take the strain in one direction of the line. Visually such guy wires read as secondary elements – the power poles themselves being the more prominent elements.

Layout in vicinity of Waverley

1.8 The layout in the vicinity of Waverley is depicted on Figure 4.

1.9 The most prominent poles will be the angles at the corners of Waverley:

- Three poles will be used to make the right angle at the intersection of SH3 and Swinbourne Street. The nearest house is 124 Weraroa Road/2 Swinbourne Street. The angle pole will be on the opposite corner of the intersection approximately 28m from the house. The second pole will be opposite the garage on this property approximately 22m away. To put the effects into perspective, there is an existing power pole on the same side of the street in front the property.

- Two poles will be used to make the right angle at the north-west corner of Waverley. This location is opposite an empty section and a row of pine trees.

- One pole, guyed in two directions, will be used in the north-east corner of Waveley, near the intersection of Fookes Street and Chester Street. The pole is some 70m from the nearest house (43 Chester Street). Once again, to put this in perspective, there are existing power poles in the foreground on the opposite side of the street.

1.10 Otherwise, the poles will be spaced between 90m and 110m apart along Swinbourne and Fookes Streets. The layout has been designed to reduce visual impacts, for instance by avoiding poles directly in front of houses and placing opposite property boundaries as far as practicable while maintaining a reasonably consistent spacing.

Submissions relating to visual effects of transmission line

1.11 Four submissions raised matters relating to the transmission line.

Submission	*Address*	*Comment*
9	43 Fookes Street	The property is located mid-span between two poles. It has a small building that is located right on the intersection (presumably a former shop). The nearest pole to this building is approximately 40m away on the opposite side of the intersection, while the nearest pole to the main house is approximately 60m away. To put into perspective, there are existing foreground power poles on both the Fookes Street and Gloag Street frontages.
13	1404 Main Road North	The line will be approximately 200m south of the house, aligned alongside the railway line. It appears that it will be beyond trees. It is acknowledged that there will be visual effects from parts of the property other than the vicinity of the house. In that regard the transmission line will be seen in the context of the railway line.
14	21 Bear Street	The property is some 300m away from the transmission line and will not be directly affected.
20		The submission does not list a street address.

Gavin Lister
Isthmus
25 August 2016

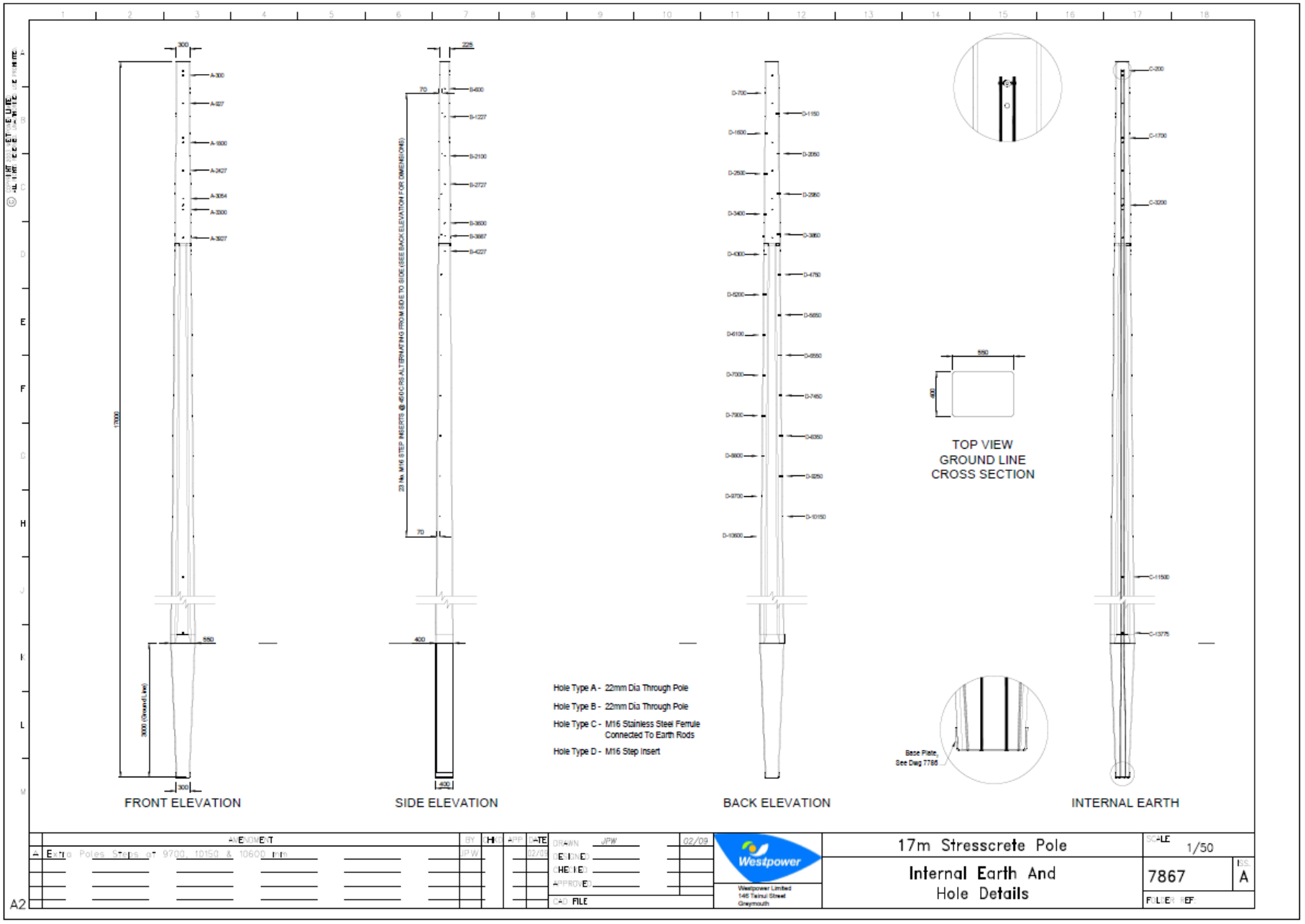


Figure 1: 17m Stresscrete pole

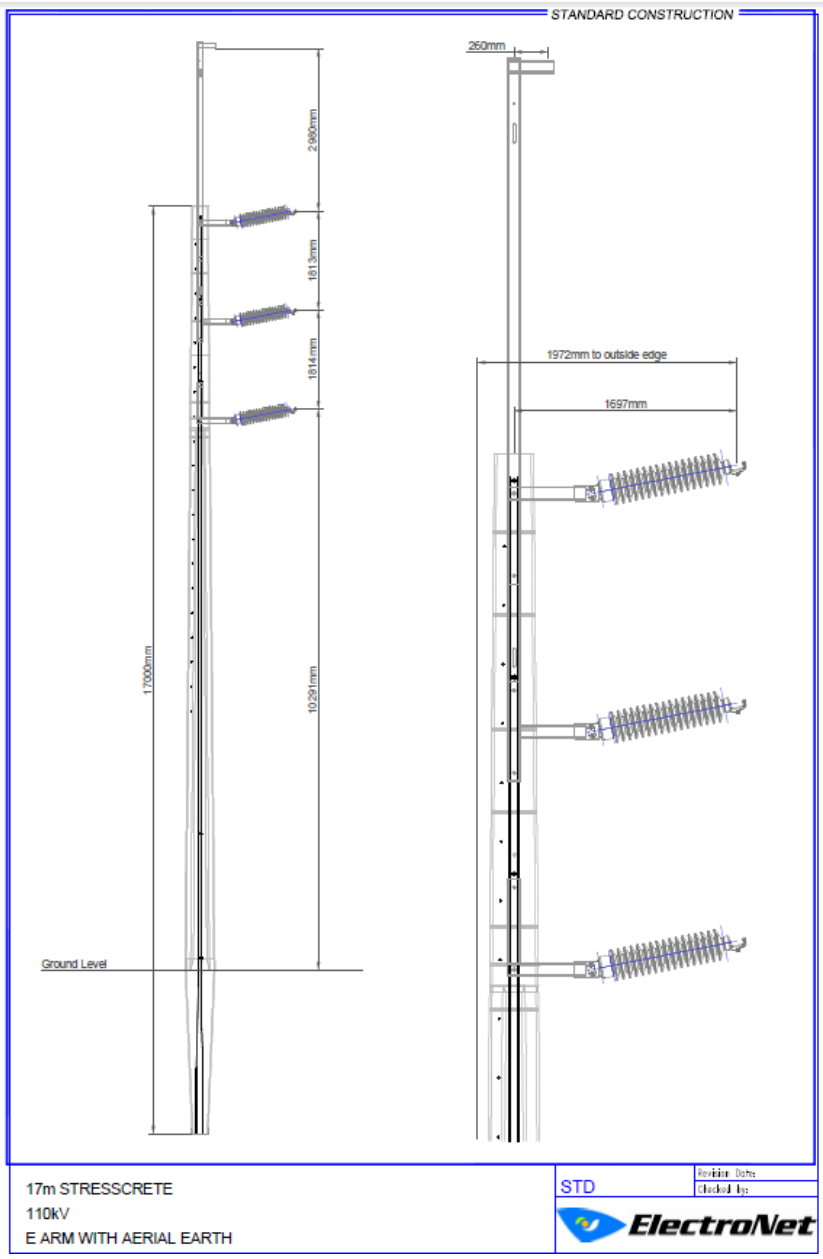


Figure 2: 17m Stresscrete 110kV E-arm with aerial earth

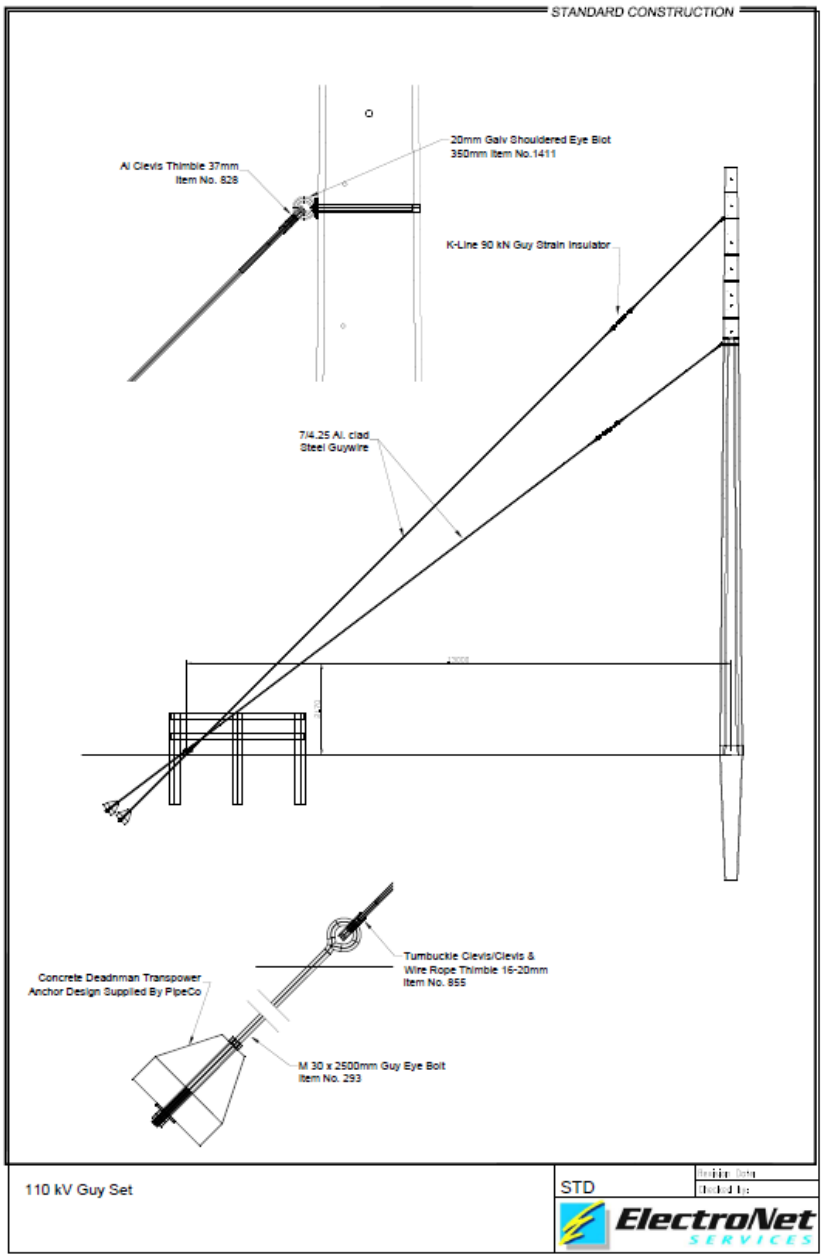


Figure 3: 110kV guy set

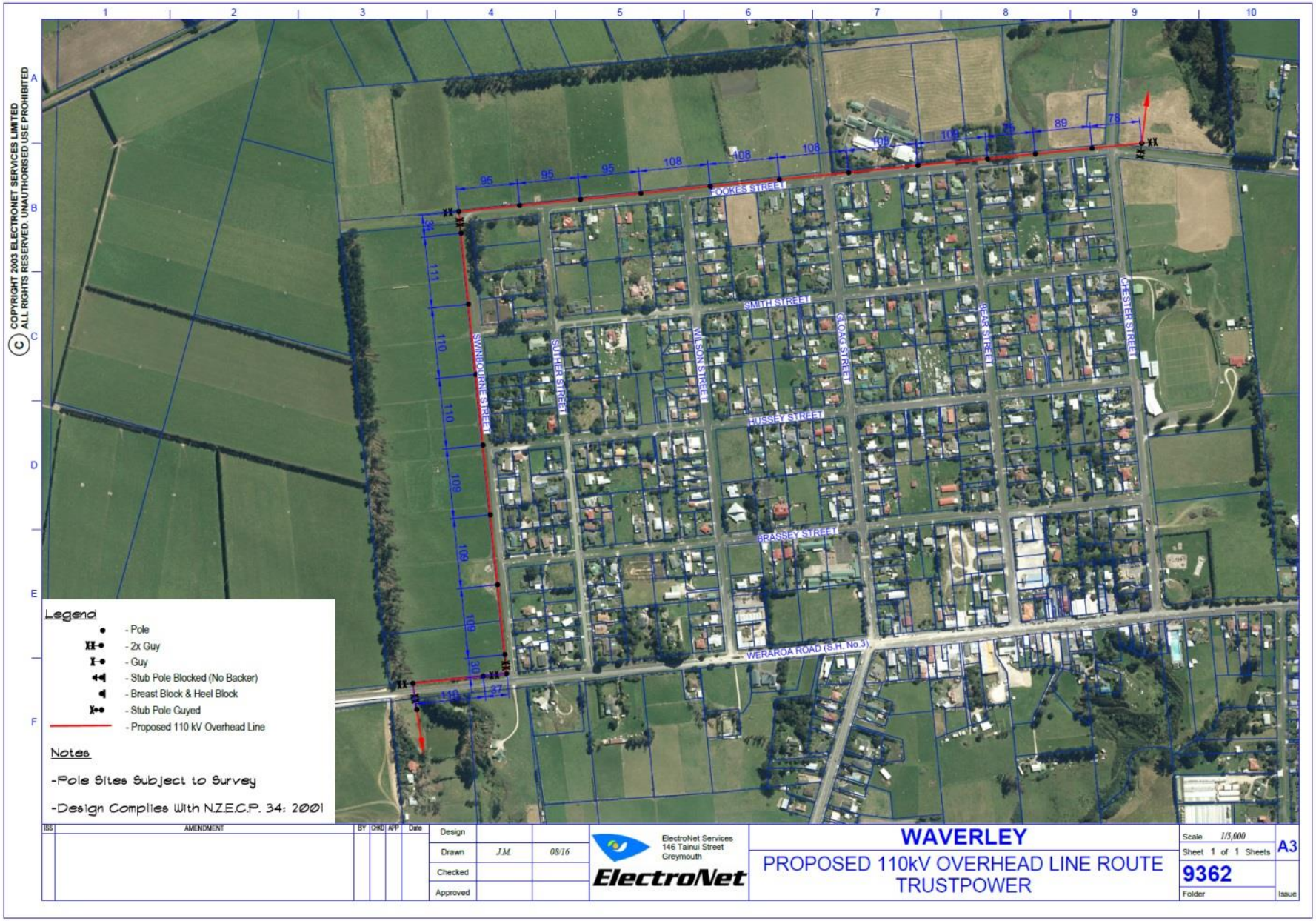


Figure 4: Waverley proposed 110kV overhead line route

Appendix D

ROADING AND TRAFFIC REPORT – CAROLYN COPELAND

South Taranaki District Council

Report

To	Hearing Committee
From	Senior Roading Engineer, South Taranaki District Council – Carolyn Copeland
Date	10 April 2017
Subject	**Assessment Of Roading And Traffic Issues In Respect Of An Application By Tararua Wind Power Limited For A Proposed Windfarm And Transmission Line Between Patea And Waverley**

Introduction

1. My name is Carolyn Copeland. I am the Senior Roading Engineer for the South Taranaki District Council. I am the holder of a National Certificate in Highway Engineering, including papers in Traffic Engineering. I am also a current member of IPENZ and have over 10 years' experience working as a Roading Engineer for local authorities.
2. The South Taranaki District Council (STDC) road network consists of 1622km of roads serving a population of approximately 27,000 residents. STDC is the Local Road Controlling Authority for roads in the vicinity of Tararua Wind Power Limited's proposed windfarm.
3. As the road controlling authority the STDC is keen to support any initiative that boosts economic performance for its ratepayers and road users. To thrive, industries located within the District require an efficient and well maintained transport network. The current standard of STDC's roading network for roads in the vicinity of the proposed windfarm is considered to be fit for its current purpose. However, some upgrading work (as described in the application) will be necessary to make the road network in the vicinity of the site suitable to enable the construction and maintenance of the proposed windfarm and its associated transmission line.
4. I am familiar with the roading network in the vicinity of the proposed windfarm site and transmission line route.

Purpose of the Report

5. The purpose of the report is to identify and assess the traffic and roading issues in relation to the activities described in the application by Tararua Wind Power Limited to construct a wind farm and a transmission line between Waverley and Patea. This assessment has only taken into consideration the effect on local STDC roads.

Overview of Traffic and Roading Issues associated with the Application

6. The proposed application for a windfarm located within the Patea / Waverley area will have a significant localised effect on STDC's roads, resulting in a permanent change of the nature of the roads utilised. The key issues for STDC in relation to the application are:

    a) Safety for the road users
    b) Capacity and efficiency of the network
    c) Accelerated degradation of the roading network from increased traffic, particularly heavy traffic during construction
    d) Associated increased costs for maintaining the road network to the required standard

Assessment of Traffic and Roading Issues

7. STDC as the Road Controlling Authority in general supports the application, specifically the preferred option detailed in the applicants Transportation Assessment Report section 9.3, with one way traffic utilising Ihupuku Road. The preferred option has recommended steps to avoid, eliminate or mitigate the significant transportation issues that would arise from the proposal.

8. The applicant's Transportation Assessment Report recognises the need to upgrade the roads to STDC's requirements. The basic requirements are detailed later in this report.

9. Full plans of the road upgrade and transmission line details are required to be submitted to STDC's Roading Manager for approval at least 40 working days prior to commencing construction. This upgrade of the existing roads, taking into account the advice contained within this Assessment Of Roading And Traffic Issues Report should address all key issues for STDC for transportation.

10. Within 40 working days of the road construction being completed the applicant shall submit a full and complete set of as built plans to the STDC Roading Manager.

11. Prior to construction commencing the applicant shall confirm to STDC Roading Manager in writing that the adjacent road controlling authorities (NZTA and Kiwirail) have approved the applicant's plans for road upgrades.

12. The applicant has noted in its Transport Assessment Report that 150-300mm of base course could be expected in the existing carriageway. STDC wish to advise that a maximum of 150mm of base course should be expected and advise that thorough testing should be undertaken to confirm the status of existing pavement and underlying subgrade and that detail be incorporated into the applicants pavement design.

Road Legalisation

13. The Transportation Assessment Report (TAR) notes that the existing road alignment for the most part falls within the road reserve, but in several locations the carriageway lies within private land. STDC expect to address the road legalisation issues outside of the RMA process in a joint consultative process with the adjacent property owner and the applicant.

14. STDC as the Road Controlling Authority for the access roads require the applicant to upgrade the roads to comply with the following:

    a) a minimum design life of 50 years as defined by Austroads Guide to Pavement Technology
    b) line marking standards as defined by NZTA RTS 5, categories A, C, F and J
    c) signage installed as appropriate to comply with MoTSaM Guidelines for Installation of Curve Warning and Advisory Speed Signs
    d) minimise where possible further encroachment onto private property
    e) at all times all works shall comply with STDC, Taranaki Regional Council and NZTA National policies and guidelines.

15. All Access Category Roads (Ihupuku and Peat Roads) shall be upgraded to achieve the following:

    a) A minimum of 6.0m sealed width
    b) 7.2m sealed width on any corner that would require signage as detailed on MoTSaM Guidelines for Installation of Curve Warning and Advisory Speed Signs
    c) 0.5m unsealed shoulders

16. All Primary Collector Category Roads (Oturi and Waverley Beach Roads) shall be upgraded where necessary to achieve the following:

    a) 7.2m sealed width as a minimum
    b) 0.5m unsealed shoulders

17. Site entrance design shall include the following signage, installed from both directions, during the construction phase:

    a) Signage detailed below shall be permanently mounted on posts
    b) WK11 signage with a T217 supplementary
    c) TZ1X or TZ2X as determined by the CTMP

18. STDC's District Plan only requires 2.0m of seal extended from the edge of seal at the entranceway. However due to the high level of construction works, STDC recommend to mitigate potential adverse effects of detritus being deposited on the carriageway, that extending this seal further into the entranceway beyond the level of the required minimums, to a total length of 25m may mitigate any detritus being deposited on the carriageway by vehicles involved in the applicants site construction works.

19. Road construction works shall only be undertaken during daylight hours, as defined by the period bounded by civil twilight, Monday to Friday and Saturday until 12pm.

20. Shellrock that meets NZTA M/4 is considered adequate for the purpose of upgrading the roads. If the applicant elects to use shellrock the first coat two coat seal shall be of a crack resistant type, ie polymer. The applicant shall also provide a second coat seal, for all seal types, which will be undertaken within 12 months of the initial sealing.

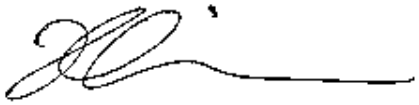
21. The applicant shall meet any costs associated with upgrading any private infrastructure, eg stock crossings, fences etc, located within road reserve to the satisfaction of STDC.

22. The applicant shall enter into a Road Maintenance Agreement with STDC, which will be given effect for the duration of the construction phase of the project and for one year following the completion of the construction phase.

Conclusion and Recommendation

23. I consider that the application and the Transportation Assessment Report is generally appropriate and sufficient to address any potential significant adverse effects on Transportation.

24. Provided the applicant gives effect to the recommendations contained within the applicants Transportation Assessment Report, STDC, as the Road Controlling Authority will consider that all transportation effects in regards to safety, capacity, efficiency and maintenance costs in respect to the subject roads to be fully dealt with. That being the case I recommend that the application be granted, subject to the imposition of any conditions deemed necessary to ensure any transportation related effects are avoided, mitigated, or eliminated in accordance with the recommendations and measures proposed by the applicants Transportation Assessment Report.



Carolyn Copeland
Senior Roading Engineer

[Reviewed by]
Vincent Lim
Roading Manager

Appendix E

NOISE REPORT – NIGEL LLOYD

RMA S42A REPORT

DATE:	19 April 2017
TO:	Hearing Committee
FROM:	Nigel Robert Lloyd Director of Acoustic Services, Acousafe Consulting & Engineering Ltd
SUBJECT:	AN ASSESSMENT OF NOISE EFFECTS IN RESPECT OF AN APPLICATION BY TRUSTPOWER LIMITED FOR A WINDFARM BETWEEN PATEA AND WAVERLEY AND TRANSMISSION LINE TO WAVERLEY

INTRODUCTION

1. My name is Nigel Robert Lloyd. I am an acoustical consultant with Acousafe Consulting & Engineering Limited, a position I have held for 30 years.
2. I have a degree in mechanical engineering gained at the University of Wales, University College Cardiff in 1976.
3. Prior to my current position, I was employed by the Industrial Acoustics Company in the UK as an acoustical consultant between 1977 and 1980 and then spent five years as the Department of Labour noise control engineer in New Zealand, advising the safety inspectorates on occupational noise management and control. I have a total of 40 years' experience as a noise control engineer/acoustical consultant.
4. I am a Member of the Acoustical Society of New Zealand and I have completed a 'Making Good Decisions' course.
5. I have advised Council on a range of noise matters since the mid-1990s and I gave advice at that time on noise issues for the Operative District Plan and, subsequently, on the latest Proposed District Plan.
6. I have advised various Councils (including Palmerston North City Council, Tararua District Council and Wellington City Council) on a number of Wind Farm applications including:
   a) Te Rere Hau,
   b) Tararua 3,
   c) Motorimu,
   d) Turitea (including at the Board of Inquiry hearing),
   e) Castle Hill,
   f) Puketoi,
   g) West Wind, and
   h) Mill Creek.
7. For each of these wind farm applications I advised during the resource consent and, in a number of instances, during the development and compliance testing stages.
8. I confirm that I have read the 'Code of Conduct for Expert Witnesses' contained in the Environment Court Practice Note 2014. My evidence has been prepared to comply with that Code and I have not omitted to consider material facts known to me that might alter or detract from the opinions I express.
9. As part of the current assessment process, I visited the site of the proposed wind farm on 7th July 2016 and I also made a visit on 20th March 2008 regarding the previous wind farm application.

PURPOSE OF REPORT

10. To identify and assess the noise effects in relation to the activities described in the application to construct a wind farm between Waverley and Patea and a transmission line between the site and Waverley.
11. The resource consent application is by Trustpower for the installation and operation of a wind farm at a rural coastal site some 6 km south west of the township of Waverley off Peats Road and Rangikura / Dryden Road. The application seeks consent to establish a wind farm with a maximum of 48 wind turbine generators (**WTGs**) and with a maximum installed capacity of 135MW. The application and assessment has been undertaken based on a project envelope (rather than fixed positions) with the final layout to be determined at the detailed design stage.

12. The Assessment of Noise Effects (**ANE**) has been undertaken by Hegley Acoustic Consultants (**HAC**), Report Number 8946 dated February 2016. The report relies, to a degree, on background sound readings undertaken by Malcolm Hunt Associates (**MHA**) which was included in that company's Noise Impact Assessment of a previous wind farm proposal at this site; MHA report number 89.05.0707 dated July 2007. That monitoring is now well out of date and, at least in part, of questionable worth.

13. HAC has also provided a response to Council's request for further information. The HAC response is dated 23 August 2016. A draft Construction Noise Management Plan (**DCNMP**) has also been prepared by Hegley Acoustic Consultants (report No 8946/2) and is included in the application.

14. I also refer to the Isthmus response to the S92 request dated 25 August 2016 which identifies the location of the transmission line poles.

15. This review identifies potential noise issues and recommends amendments to the proffered draft noise conditions in the event that consent is granted to all or part of the wind farm. The draft conditions are included in the Consultant Planner's S42A report and are designed to control noise to the limits set out in NZS6808:2010 *Acoustics – Wind Farm Noise* whilst controlling any special audible characteristics that may be present. The issues of low background sound levels are also discussed.

OVERVIEW OF THE NOISE EFFECTS ASSOCIATED WITH THE APPLICATION

16. It is recognised that there can be a great deal of public concern regarding wind farm noise and that there is likely to be conflicting information provided regarding the potential impacts both of the operational noise and any special audible characteristics that may be associated with the wind farm.

17. The noise issues are summarised as follows:
    a) Sound emissions from the construction (and decommissioning) of the wind turbine generators (WTGs), including the construction of the roading network within the wind farm and construction traffic on the site and on the public roading network;
    b) Wind farm maintenance;
    c) Sound emissions from the WTGs themselves;
    d) The transmission line.

DISTRICT PLAN

18. The proposed wind farm is in the Rural Zone of the South Taranaki District. There are no separate Objectives, Policies or Rules for wind farms in the Operative District Plan.

19. **Objective 5** of the Plan is to maintain and where practicable improve the environment around people's homes, farms, business activities and community facilities.

20. **Policy 5(h)** is to control noise emissions at levels acceptable to the community.

21. Environmental noise is specifically mentioned under the Objectives and Policies section of the Operative District Plan (Section 5.1) which recognises the potential for noise to have a significant impact on the amenity of any neighbourhood environment and the potential for impacts on sleep.

22. The Operative District Plan noise rules for the Rural Zone are set out in Section 2 of the ANE along with the Proposed Plan provisions. Also of relevance to the transmission line are the Rural Zone rules as they apply to the Residential Zone of Waverley. This is found in Rule 10.02.1(ii) as follows:

    > Noise generated by any activity (except those that are exempt under 10.01.4) in the Rural Zone shall not exceed the following limits when measured at or within the boundary of any Residential Zoned site:
    >
    > 7am to 10pm 50dBA L_{10}
    > 10pm to 7am 40dBA L_{10}
    > 10pm to 7am 70dBA L_{max}

23. In addition to Rule 11.2.2(1) in the Proposed District Plan, Rule 11.2.2(2) sets out noise limits between the Rural Zone and Residential Zone as follows:

    > Noise generated by any activity in the Rural Zone shall not exceed the following noise limits at any point within any Residential Zoned site:
    >
    > 7am to 7pm 50dB $L_{Aeq\ (15\ min)}$
    > 7pm to 10pm 45dB $L_{Aeq\ (15\ min)}$
    > 10pm to 7am 40dB $L_{Aeq\ (15\ min)}$
    > 10pm to 7am 70dB L_{Amax}

This is relevant for the transmission line as it passes close to the Waverley Residential Zone.

24. I agree with the ANE that NZS 6808:2010 *Acoustics – Wind Farm Noise* provides appropriate assessment criteria against which to make an assessment of this proposed wind farm.

25. The ANE (Section 2) correctly sets out the Operative District Plan noise limits found in 10.02.1. It should be noted that these limits apply "*at or within the boundary of any Rural Zoned site".* The District Plan does not apply the limits at the notional boundary of a neighbouring dwelling. The notional boundary is "*a line 20 metres from any side of a dwelling or the legal boundary where this is closer to the dwelling*". This is relevant because the applicant's recommended conditions apply at the *notional boundary* rather than the *site* boundary. This is important in this project because the construction of the wind farm may be undertaken at some time in the future. Given that the construction of dwellings is a permitted activity in the Rural Zone, then applying the receiver location at the site boundary gives some certainty to the applicant (and neighbours to the site) as to where the noise limits apply.

26. This is also a relevant subject when considering where the noise limits for the operational aspect of the wind farm should apply.

27. The Council's Decisions, following the Proposed District Plan hearing on submissions, were dated and publicly notified on the 5th November 2016. The Proposed District Plan as amended following the Council's decision on submissions (20.5.13) sets out the following matters that need to be used to assess land use applications for wind farms:

    a) The provisions for safeguards and contingencies in relation to noise effects, particularly concerning:
        i. The confirmation of the manufacturer's noise emission levels for the actual turbines to be used at the wind farm when these have been determined;
        ii. The early identification and remedy of any special audible characteristics present when the WTGs commence operation;
        iii. Changes to background sound levels that may occur between the time consent is granted and when the wind farm is constructed;
        iv. Effective noise monitoring programmes to demonstrate compliance, beyond the commissioning stage;
        v. Procedures for addressing turbine malfunctions;
        vi. Community liaison and methods of dealing with complaints;
        vii. Reporting these matters to the Council.
    b) The ability to manage and control construction noise using the provisions of NZS 6803:1999 Acoustics – Construction noise.
    c) [deleted].
    d) The extent of any consultation with the appropriate iwi having regard to Kaitiakitanga, and taking into account the principles of the Treaty of Waitangi, including:
        i. Whether the applicant has had regard to the matters raised by the relevant iwi during consultation.
        ii. Whether the applicant has addressed any adverse effects raised by the relevant iwi through consultation.
        iii. Whether the relevant iwi has had the opportunity to visit the proposed development site prior to lodgement of the resource consent application.

28. While the Proposed District Plan remains subject to appeal the matters set out in paragraph (a) and (b) are a useful check list as to an assessment and noise control procedure.

NZS 6808:2010

29. The critical noise limits and high amenity provisions of NZS 6808:2010 are also set out in the ANE. This proposed wind farm is different from other wind farms in New Zealand in that it is located in the coastal plain. All other wind farms in this country are located on hillsides and ridgelines, thus taking advantage of the compression of the wind flow as it rises up the hill. The ANE is correct where it states that there are no gullys or other sheltered areas where the ambient sound levels would be significantly low at times when the wind farm would be exposed to high winds.

30. The concern with relatively flat land, though, is with any wind gradient that forms. Such a wind gradient could result in higher wind speeds being present at the top of the turbine blades than at ground level. This is caused

by the friction of the surface of the land and sea. This phenomenon was first recognised by G.P. van den Berg[1] who observed (in Europe) the following occurring in stable wind conditions:

a) The background sound levels being low at receivers compared to wind farm noise levels;

b) The actual turbine noise occurring at the top of the WTGs with greater wind speed at higher elevations;

c) A higher likelihood of special audible characteristics being generated (amplitude modulation); and

d) the focusing effect of sound waves, particularly downwind, in stable wind conditions.

31. This phenomenon was not originally dealt with in the ANE and the subject was raised with the applicant in Council's request for further information (from GoodEarthMatters) in early July 2016. The need is to ensure that the adverse noise effects reported by van den Berg are avoided or mitigated at the proposed wind farm.

32. The predicted wind farm noise levels in the ANE are close to or at the baseline noise limit recommended by NZS 6808:2010. As such any special audible characteristics (tones or amplitude modulation) will cause the noise limits to be exceeded. This may be at times when the background sound levels are low at receiver locations. It is in the applicant's interest to measure wind shear at the proposed wind farm at the same time as background sound monitoring is undertaken. I propose that this be included in the background sound measurement regime by way of conditions.

ASSESSMENT OF NOISE EFFECTS

Construction Noise

33. Construction noise levels are predicted in Section 4.1 of the ANE. The wind farm construction activities are remote from the nearest residential dwellings. I concur with the ANE findings that NZS 6803:1999 *Acoustics – Construction Noise* can be relied upon to manage and control construction noise.

34. According to the ANE it is proposed to have one or two concrete batching plants on the site. A concrete batching plant would be at a fixed site for a major part of the duration of the construction works. The overall site is large enough for each of these concrete batching plants to comply with the Rule 10.02.1 of the District Plan (rather than the construction noise limits). I therefore consider this Rule to be more appropriate to control the noise from such plants. The concrete batching plant will generate ongoing noise from concrete manufacturing which differs from construction activity noise which is more transient in nature.

35. The ANE considers the noise of construction traffic in Section 5. The ANE considers that, although the existing traffic flows will increase significantly on local roads during the construction phase, the resultant noise levels will still be low. The key observation is that construction traffic will only operate during the daytime and thus sleep disturbance will be avoided. This important consideration is included in the DCNMP which provides for a restriction on truck movements (where practical) to between 7am and 10pm to avoid possible sleep disturbance. The only period when there may be trucks into the night is when a concrete pour is running late. This is a reasonable approach provided that the night-time trucking activity is the exception rather than the rule.

36. I concur with the ANE that after the construction phase the noise from daily traffic flows will be negligible.

Operational Noise

37. The ANE includes analysis of the MHA background sound monitoring results done in 2007. I have a number of concerns about the use of these, not the least being that the background sound levels were undertaken prior to the issue of the current wind farm noise Standard NZS6808:2010.

38. The analyses in Figures 7 to 10 of the ANE appear to have been undertaken using daytime and night-time results combined, whereas best practice is to determine the wind farm noise limit by separating out the night-time background sound monitoring. This then allows compliance monitoring to be more accurately achieved.

39. Also, there is no indication whether there is any variation between sound levels in the "upwind" and "downwind" scenarios and there is a very poor correlation between the wind speeds and background sound levels at Assessment Site #4 (Figure 10). The results do not appear to be relevant at this site.

40. My concern is that there may be times when the background sound levels are very low when the wind speeds at the wind farm are sufficient for the wind farm to be operating. Take Figure 8 for Assessment Site 2 for example. This table contains daytime and night-time background sound levels which skews the "*typical level L_{A90}"*. What can be seen is a high incidence of measured levels in the range 18 dB to 22 dB L_{A90}. This is even up to wind speeds of 13 m/sec when the WTGs would be operating at maximum capacity. The predicted noise level at Assessment Site #2 (dwelling ID #62) is 32 dB $L_{A90\ (10\ mins)}$, which is unlikely to cause a significant noise impact even with low background sound levels. However, the other dwelling in this direction is ID #61 (330 Peat Road) for which the predicted wind farm noise is 39 dBA $L_{A90\ (10\ mins)}$. No background sound monitoring has been

[1] The sound of high winds: the effect of atmospheric stability on wind turbine sound and microphone noise. G.P. van den Berg

undertaken for this dwelling and, while it is closer to the coast than Assessment Site #2, it is still 3 kilometres away. It can be seen that if the night-time background sound levels are regularly less than 20 dBA at 330 Peat Road then the generation of 39 dBA from the wind farm will be quite noticeable at this location. A lack of background sound monitoring makes it difficult to know exactly what the impact on this dwelling will be or whether a high amenity noise criterion should be considered. Such high amenity noise criteria would be applied where the District Plan promotes a higher degree of protection for amenity related to the sound environment of a particular area. This is not the case in the Rural Zone of the Operative District Plan.

41. There are three other locations to the east of the subject wind farm site where future dwellings are proposed. These are ID #57, #109 and #110 with #110 being closest to the proposed wind farm. The sites are within about 500 metres of the coast and, as a result, the background sound levels should generally not fall to very low levels.

42. The ANE places no reliance on a relaxation of the 40 dB $L_{A90\ (10\ mins)}$ baseline noise criterion recommended by NZS6808:2010 and argues that there is no pressing need to undertake background sound monitoring for the resource consent hearing. I consider that this approach, and the outcome, should be reflected in conditions by promoting the 40 dB $L_{A90\ (10\ mins)}$ noise limit as the principal criterion.

Transmission Line Noise

43. The main area where transmission line noise could generate noise issues is as it passes close to the Residential Zone in Waverley. It is unclear from the ANE whether the wind noise and corona discharge noise can comply with the District Plan night-time L_{10} noise limit. This is 40 dBA L_{10}. The ANE does not recognise this limit. Further confirmation is required in this respect and a separate condition is recommended for transmission line noise as received in the residential zone.

COMMENTS ON MATTERS RAISED IN SUBMISSIONS

44. A number of submitters raise concerns about noise. In the following comments, I rely on the Summary of Submissions provided to me by GoodEarthMatters and prepared by them in consultation with the Council:

Submission 3 - NZWEA

45. The New Zealand Wind Energy Association supports the use of NZS 6808:2010 and considers that the Standard should be adopted in its entirety without any requirement for additional modifications or additions and cites the Environment Court Decision for Mill Creek Wind Farm[2].

46. I advised Wellington City Council in respect of the Mill Creek Wind Farm application and I can state that there are significant differences between that wind farm and this one. In the first instance, Meridian Energy had undertaken up-to-date background sound monitoring in the vicinity of Mill Creek, which has not been undertaken at Waverley. Even so, Meridian Energy were required (Condition 21) to test three of the WTG's prior to the completion of the wind farm. This was to ensure that there were no special audible characteristic generated. This had been the issue at West Wind and had caused widespread complaint after the start-up of that wind farm. The monitoring was needed to avoid a repeat of this undesirable circumstance.

47. I have relied upon the Mill Creek Wind Farm Decision in a number of my recommended amendments to the proffered conditions.

Submission 8 – T & L Honeyfield

48. These submitters are concerned about the noise pollution on their home.

49. The submitters' dwelling is ID #10 in the application and the Figure 21 of the ANE predicts wind farm noise at the dwelling to be 28 dB $L_{A90\ (10\ mins)}$. This would make the wind farm sound distantly audible for this submitter during quieter times.

Submission 9 – M & A Connell

50. These submitters are concerned about the noise from the proposed transmission line and particularly the hum from the pole insulators. The ANE assumes that dwellings in the Rural Zone will be more than 100 metres from the transmission lines and that any corona discharge (with light rain) or wind noise will therefore be adequately mitigated. No mention is made by HAC though, of the dwellings on Fookes Street, Waverley, where the transmission line will pass close to dwellings located on the opposite side of the road. Of some assistance is the 25 August 2016 response from Isthmus to the S92 Request which identifies that the nearest pole to this submitter's closest building is approximately 40 metres. The resultant noise levels are predicted to be such that any adjustment for special audible characteristics will cause the District Plan noise limits to be exceeded. Further advice is sought as to whether the design of the pole and insulators will ensure that resulting noise levels will be acceptable at all residential dwellings in the Waverley township. If the transmission line was to be

[2] EC Decision No [2012] NZEnvC 27

undergrounded then this would not be required. I recommend that the District Plan noise limits for the Residential Zone apply to the transmission line noise in Waverley.

Submission 10 – N & D Alexander

51. This submitter is concerned about the noise pollution on the submitter's homes and possible disruption to day-to-day and normal farm practice.

52. The submitter's dwellings are ID #62 and #63 in the application and the ANE predicts that the wind farm noise will be 32 dB $L_{A90\,(10\,mins)}$. While this will be audible it is well within the maximum guideline limits set out by NZS 6808:2010. Figure 25 shows that the wind farm noise level is approximately 50-55 dBA at the wind farm boundary. This predicted noise level would not have a significant impact on the submitters' land or impact on residential amenity close to the dwellings.

Submission 11 – P Mitchell

53. These submitters are concerned about the effect of noise on their houses. These are dwellings ID #93, #94, and #95 in the application and the ANE predicts that the wind farm noise will be 32 dB $L_{A90\,(10\,mins)}$. This is a similar impact to that experienced at the previous submitter's dwellings.

Submission 13 – R & A Bremer

54. These submitters are in the Rural Zone (Dwelling ID #29 & 30) and are concerned that the transmission line (in the railway designation), dissects their property and may impact on their amenity. As far as noise is concerned, the transmission line is far enough from the dwellings (more than 100 metres), that wind noise and corona discharge noise should not exceed the Operative District Plan noise limits. I consider that the District Plan noise rules are not appropriate for the transmission line and the alternative is to ensure that the line is at least 100 metres from existing rural dwellings (as stated in the ANE). I recommend therefore that this setback be adopted by conditions for the transmission line in respect of rural dwellings.

Submission 15 - S. Sisson

55. This submitter is concerned about noise during the construction and post construction stages. I understand that the submitter resides at dwelling ID #103 in the application which is approximately 2 kilometres from the wind farm site at the closest point. The ANE predicts this submitter to be exposed to wind farm noise levels of approximately 26 dB $L_{A90\,(10\,mins)}$. This would make the wind farm distantly audible on an otherwise quiet night.

56. Construction noise would occur mostly in the daytime and, as such, should not impact significantly on this submitter.

Submission 18 – W Dickie

57. This submitter owns land to the immediate east of the site and includes prospective house sites. The dwellings are ID #57, #109 and #110 which are the nearest receivers to the wind farm in this direction. The ANE predicts that the wind farm noise will be 39 dB $L_{A90\,(10\,mins)}$ at site #110 which leaves little in the way of safety factor and no ability for the wind farm to generate special audible characteristics. Any such characteristic would be penalised such that the noise limits would be exceeded both at this dwelling and at dwelling ID #61 where the predicted noise level is 40 dB $L_{A90\,(10\,mins)}$. It is important that the wind farm noise is measured and assessed at these dwellings (if the owners' permissions can be obtained for this monitoring) to ensure that dwellings further from the wind farm will not experience noise levels that are greater than predicted in the ANE. The compliance testing should be undertaken at these particular sites even if written consent is obtained from the owners of ID #110 and #61.

Submission 22 - Te Runanga O Ngati Ruanui Trust

58. The Trust raises the issue of whether the noise of the wind farm can be masked by other environmental sounds and considers this to be illogical. NZS 6808:2010 provides two sets of noise criteria, the greater of which applies. These criteria are that the noise levels should not exceed 40 dB $L_{A90\,(10\,mins)}$ when those levels are averaged over a set period of time or the background sound level plus 5dB if this is greater. This is because the human ear naturally compares the sound of interest to the background sound level in determining how loud it is.

59. The principle of the background plus approach for assessing wind farm noise is that it becomes more difficult to perceive the wind farm if the wind causes the surrounding trees and foliage to raise the background sound levels. It becomes difficult to monitor the wind farm if the background sound levels are higher than the wind farm noise. The ANE predicts that the wind farm will not generate more than 40 $L_{A90\,(10\,mins)}$ (on average) from any of the wind farm layouts that were modelled at any of the existing dwellings (or sites where future dwellings have been identified). On that basis, the ANE does not rely on the background plus approach except in the manner in which the background would add to the wind farm noise thus causing the measured sound level to

exceed 40 dB $L_{A90\,(10\,mins)}$. It is for this reason that it is important to reliably establish the background sound levels for key locations prior to the wind farm starting to operate.

60. The Trust is concerned about the impact of the wind farm noise on potentially sensitive cultural sites and without understanding why this would occur I consider it to be outside the area of my expertise.

CONCLUSION AND RECOMMENDATION

61. I concur with the ANE that construction and maintenance activity noise can be managed to comply with the long-term noise limits in NZS 6803:1999 Acoustics – Construction Noise.

62. I also agree that heavy construction vehicle activity should be restricted at night (10pm to 7am) where practical, to avoid sleep disturbance to residents. This includes both on the site and on local roads. The post-construction traffic noise will not be an issue.

63. The ANE assesses WTG noise against the provisions of NZS 6808:2010 and I consider that this is an appropriate approach. The ANE relies on historical background sound monitoring undertaken prior to the issue of the current wind farm noise Standard. I agree with the ANE that close examination of the results of this monitoring show some unexpected results. Given that the background sound levels could have changed in the ten years since that the monitoring was undertaken I recommend that no reliance be placed on these readings.

64. I have recommended amendments to the applicant's draft consent conditions. I have read the amended conditions in the consulting planning officer's report and I concur with the recommended amendments in that report:

65. I would summarise the need for conditions as follows:

    a) NZ 6803:1999 should be relied upon to measure and assess construction and maintenance activity noise both at the wind farm site and from the transmission line construction;

    b) The Construction Noise Management Plan should be provided to Council 60 working days before the construction commences (rather than 20) to allow time for endorsement. I consider that 20 days is insufficient for a project of this scale;

    c) NZS 6803:1999 comprehensively sets out the matters that should be considered by a noise management plan and reference should be made to the relevant sections of the Standard;

    d) Night-time use of heavy construction vehicles needs to be restricted as far as practical;

    e) For the non-WTG activities on the site, including concrete batching plant activities, the noise shall be measured and assessed in accordance with the Operative District Plan i.e. "*at or within the boundary of any other Rural Zoned site*". This cannot apply to the transmission line in the Rural Zone which runs along the boundaries of sites;

    f) The transmission line is stated to not pass within 100 metres of rural dwellings. As an alternative to establishing a noise limit for transmission line noise in the Rural Zone (which would not be practical) a 100 metre set back is proposed between the transmission line and any dwelling (in the Rural Zone). Otherwise, the transmission line noise (wind and corona discharge) will be controlled by reference to the District Plan noise limits for dwellings in the Residential Zone and it is unclear from the ANE whether this can be achieved;

    g) The background sound monitoring that is referred to in the ANE is inadequate and out-of-date. The ANE relies on the wind farm noise being able to comply with 40 dB $L_{A90\,(10\,mins)}$ and this should be reflected in the conditions. There is no reliance made on the background plus approach used in the wind farm noise Standard.

    h) It is still necessary to include the background plus concept in the conditions because the background sound level may be greater than 40 dB $L_{A90\,(10\,mins)}$. The wind farm noise will add to the background sound level and may exceed the limit even if, alone, it complies. It is important therefore that the background sound levels are carefully measured at key locations in the area to allow a comprehensive compliance assessment to be made of the wind farm noise;

    i) The background sound levels must be measured before significant construction works commence or they will be influenced by construction noise. The key times for both background sound and compliance monitoring is at night;

    j) The assessment location for wind farm noise is important. The Mill Creek Wind Farm Decision stated "*The assessment positions shall be at the notional boundary of residential dwellings existing or consented or able to be constructed as a permitted activity at the time consent is granted for Project Mill Creek".* Given the Wind Energy Associations endorsement of this Decision, and that the District Plan provides for dwellings as a permitted activity in the Rural Zone then I consider that it is reasonable to follow the Environment Court's lead;

k) The Mill Creek Wind Farm also identified Annex C to ISO 1996-2:2007 as the appropriate standard to assess tonal sounds because NZS 6808:2010 provides for alternatives in this respect;

l) I consider it to be important that the Wind Farm Noise Management Plan, the Pre-instalment Assessment and the Noise Prediction Report all be prepared prior to the installation of any WTG. The investigations leading up to the identification of appropriate WTGs should all be undertaken as part of the detailed design stage, rather than just prior to the commissioning of the wind farm. The reports should be provided to Council prior to the installation of any of the WTGs;

m) As stated above the background sound monitoring is an important part of the compliance procedure. A mistake was made at another wind farm where attempts were made to undertake background sound monitoring while construction took place. This should be avoided;

n) The ANE predicts that noise limits will be achieved at the closest neighbouring dwellings and dwelling sites and this establishes the noise levels likely to be received at dwellings further from the wind farm. I recommend that specific locations be established to control overall noise emissions and these locations would apply irrespective of ownership or written consent being provided. This prevents residents further from the wind farm being exposed to higher noise levels than those predicted in the ANE;

o) The ANE states that the WTGs will not be stall regulated and this should be provided for by condition. Te Apiti Wind Farm has stall regulated WTGs which, historically, resulted in some noise issues. Modern WTGs are pitch regulated i.e. the blades change their angle to the wind to assist with regulating the speed. It is important to condition against stall regulated turbines being used, to prevent older style WGTs from being relocated to this site.

66. I consider that these amendments to the proffered conditions provide an appropriate and sufficient basis to address any potential significant adverse effects and to ensure that adverse noise effects are appropriately avoided or mitigated.

Appendix F

REQUEST FOR FURTHER INFORMATION AND APPLICANT'S RESPONSE - NOISE

goodearthmatters
sustainable solutions enabling communities
56 Queen Street | PO Box 1268 | Palmerston North 4440 | New Zealand
P 06 353 7560 | contact@goodearthmatters.com | goodearthmatters.com

Project Ref: 19003

12 July 2016

Trustpower Limited
Private Bag 12023
Tauranga Mail Centre
TAURANGA 3143

Attention: Christopher Fern
Environmental Advisor

Dear Chris

WAVERLEY WINDFARM RESOURCE CONSENT APPLICATION (RML 16030) REQUEST FOR FURTHER INFORMATION

As you are aware, we have been engaged by the South Taranaki District Council to prepare a S42A Planner's Report in respect of the abovementioned application (ref: RML 16030). In order to complete this report, we require, pursuant to S92 of the Resource Management Act 1991, further information to that presented with the application, as follows:

1. Cultural Impact Assessment(s)

Several submitters (Heritage New Zealand; Poiha Kemp Broughton; Te Kaahui o Rauru; Wai o Turi, Whenuakura and Te Wairoa Iti Maraes; Te Runanga o Ngaati Ruanui Trust) make reference to the absence of a Cultural Impact Assessment (CIA) as part of the Assessment of Effects on the Environment (AEE) submitted with the application.

For this reason, is hereby requested that a CIA (or CIAs, as appropriate) be undertaken and submitted to the Council. The provision of this information will enable the Council's Reporting Officers to report appropriately and fully to those persons delegated the responsibility to hear submissions and make decisions in respect of the application. It will also allow other submitters and the applicant to prepare fully for the hearing of submissions.

2. Noise Assessment

2.1 The application includes an Assessment of Noise Effects by Hegley Acoustic Consultants (The Hegley Report) Report No 8946 (Appendix 10).

A submission from Mr Will Dickie is concerned about noise effects on staff houses as close as 500 metres to the site. There is marginal compliance predicted in Figure 23 of the Hegley Report at dwelling 110. In order to confirm that compliance can be achieved, the following information is sought:

1. What is the distance between dwelling 110 (and other dwellings within 1.5 kms) and the envelope boundary?
2. Is it possible for the turbines in the "Turbines to the East" scenario to be built closer to the envelope boundary (they are set back from this boundary by some distance)?

3. What is the predicted noise level at dwelling 110 with the turbines very close to the envelope boundary (as is the case in the Turbines to the North and West scenarios)?
4. Would different wind turbines generate more noise than that assumed in Table 1 of the Hegley Report for the Siemens wind turbine SWT-3.0-113?

2.2 The proposed Waverley Wind Farm site is the first in New Zealand to be located on level ground (rather than on hillsides). The Hegley Report identifies that this topography is different and comments that "there is not the potential that houses may be in a gully and screened from the wind (and hence experience low noise levels)".

The New Zealand Standard relies on the synchronisation of local background sound levels with the wind farm wind speed to determine the noise criteria. What the Hegley Report does not consider though is the van den Berg effect (ie the effect of atmospheric stability on wind turbine noise generation and propagation at times of low receiver background sound levels). G.P. van den Berg investigated wind farms from which complaints were being received, particularly in the late evening and at night.

His conclusions were that the cause of these complaints was that stable wind conditions caused the wind farm noise to be more perceptible at night when such wind conditions are more likely to occur. This is caused by a number of factors including:

a) The stable wind conditions result in wind speeds being greater at higher level causing the turbines to be operating when wind speeds at lower levels are light (and background sound levels less).
b) Special audible characteristics being generated, described as a 'thumping' impulsive sound (amplitude modulation),
c) Sound being propagated downwind and focussed further from the wind farm.

There is no apparent assessment undertaken of the wind gradient on the site nor any commentary on the height that the wind speed is assumed. The wind gradient would identify when the wind was high at the top of the turbines but potentially low at ground level (as naturally occurs in stable wind conditions) and what impact this would have on:

a) The background sound levels at receivers compared to wind farm noise levels,
b) The actual turbine noise with higher wind speed at the top of the wind turbines,
c) The likelihood of special audible characteristics being generated (amplitude modulation), and
d) the focusing effect of sound waves, particularly downwind, in stable wind conditions.

The need is to ensure that the adverse noise effects reported by van den Berg are avoided or mitigated at the proposed wind farm. An assessment of the wind gradient on the site is requested, as is comment on the height at which wind speed is assumed.

2.3 The Hegley Report includes analysis of the Malcolm Hunt Associates background sound monitoring undertaken and results reported in 2008. These background sound levels were undertaken prior to the issue of NZS6808:2010. The analyses in Figures 7 to 10 appear to have been undertaken using daytime and night-time results combined, whereas best practice is to determine the wind farm noise limit using the night-time background sound monitoring only. This then allows compliance monitoring to be more accurately achieved. There is no indication whether there is any variation between background sound levels in the "upwind" and "downwind" scenarios. In addition, there is a very poor correlation between the wind speeds and background sound levels at Site 4 (Figure 10). The results do not appear to be relevant at this site.

Further information and/or clarification in this regard is requested.

3. Landscape and Visual Amenity Value Effects Assessment

A number of submitters have expressed concerns about the adverse visual impact of the proposed transmission line, particularly in relation to the Waverley Township. The application lacks detail of the proposed monopoles.

It is indicated that the monopoles have a maximum height of 22.0 m above ground level, but no information is provided as to the diameter or profile of the poles. They appear to be about 450 mm diameter if scaled off the plan provided on page 12 of the Isthmus simulations but are not necessarily symmetrical in cross-section. They could appear as elongated power poles and in scale with existing poles, or they could be a similar size to a telecommunication cell tower mast.

Given the nature of the submissions, it is considered necessary that this information be provided, as well as more detail regarding any proposed use of arms, guy wires and double poles in close proximity to houses, particularly in the urban environment around Waverley.

Pursuant to Section 88C of the Resource Management Act 1991, the 'statutory clock' is stopped until such time as the requirements under the Act, pertaining to a response to this request (refer S92A), have been met.

Please contact us if you have any questions or concerns in respect of the above request. Otherwise we shall await your response.

Yours faithfully

David Forrest
On behalf of the South Taranaki District Council as the Consent Authority

HEGLEY ACOUSTIC CONSULTANTS

1/355 Manukau Road
Epsom, Auckland 1023
PO Box 26283
Epsom, Auckland 1344

T: 09 638 8414
E: hegley@acoustics.co.nz

23 August 2016

Christopher Fern
Environmental Advisor
Trustpower Limited
Private Bag 12023
Tauranga Mail Centre
TAURANGA 3143

Dear Chris

WAVERLEY WINDFARM RESOURCE CONSENT APPLICATION

As requested I have reviewed the further information requested by Council. The following sets out the information sought followed by my response.

2.1.1. What is the distance between dwelling 110 (and other dwellings within 1.5kms) and the envelope boundary?

The distance from dwelling 110 and the envelope boundary is 999m.

Figure 1 attached, as prepared by Isthmus, shows the houses located within 1500m of the envelope boundary with a summary of the results to all of these dwellings shown in Table 1.

House	Distance	House	Distance
50	1327	96	1305
51	1457	97	1199
54	1484	98	986
55	1355	109	1373
57	1318	119	999
61	963	155	1367

Table 1. Distance to Houses within 1500m of Envelope Boundary

2.1.2. Is it possible for the turbines in the "Turbines to the East" scenario to be built closer to the envelope boundary (they are set back from this boundary by some distance)?

As shown on Figure 1 the answer is, no. The design has assumed the wind turbines are located at the closest possible location to the site boundary, or the boundary of the proposed environmental buffer when undertaking the noise predictions.

2.1.3. What is the predicted noise level at dwelling 110 with the turbines very close to the envelope boundary (as is the case in the Turbines to the North and West scenarios)?

There a number of design scenarios that have been assessed with the aim to establish the highest potential noise level at each dwelling that could occur. For dwelling 110 the highest noise level that could occur at this site is with all turbines operating at maximum noise output and located as close as possible to the dwelling. That is, the wind turbines are all located as close as practical to the eastern end of the wind farm. The results for this scenario are shown on Figure 23, which represents the worst case (highest noise levels) at the notional boundary of dwelling 110 and as shown in the column headed Figure 23, East of Table 2 the level at the most exposed notional boundary of dwelling 110 is 39dB $L_{A90(10min)}$. This level is within the design requirement of NZS6808:2010 of not exceeding the background sound level by more than 5dB, or a level of 40dB $L_{A90(10\ min)}$, whichever is the greater. From this the lowest design level is 40dB and depending on the final assessment prior to building the wind farm the background sound +5dB may exceed 40dB so providing a further factor of safety.

It is noted the Proposed Plan adopts the site boundary to assess noise from general noise in the area rather than the notional boundary. However, as set put in the original noise assessment report, the District Plan adopts the use of NZS 6802:1991 Assessment of Environmental Sound to assess general noise. NZS6802 was not developed to control specific noise sources such as wind turbines and as monitoring for wind farms must be undertaken in windy conditions this is outside the scope of NZS6802, which is based on relatively calm conditions to assess noise. As set out in the forward of NZS 6808: 2010 *Acoustics – Wind Farm Noise* "the purpose of this Standard is to provide suitable methods for the prediction, measurement, and assessment of sound from wind turbines". Also, NZS6808 defines a noise sensitive location as any point within the notional boundary … Thus, the noise assessment has adopted the notional boundary of the houses in the area.

2.1.4. Would different wind turbines generate more noise than that assumed in Table 1 of the Hegley Report for the Siemens wind turbine SWT-3.0-113?

There are no turbines that are practical to use at this site that generate more noise than that assumed in the assessment. The only known noisier turbines are 6 – 7.5MW and these turbines are not considered to be a practical option for the site.

By including a condition of consent (as set out in the noise assessment report) that recommends that the sound power rating of the WTGs to be installed does not exceed the background sound ($L_{A90\ (10min)}$) plus 5dB or a level of 40dB $L_{A90\ (10\ min)}$, whichever is the greater at the notional boundary of any dwelling will provide a further level of confidence of long term compliance.

2.2 The proposed Waverley Wind Farm site is the first in New Zealand to be located on level ground (rather than on hillsides). The Hegley Report identifies that this topography is different and comments that "there is not the potential that houses may be in a gully and screened from the wind (and hence experience low noise levels)".

The New Zealand Standard relies on the synchronisation of local background sound levels with the wind farm wind speed to determine the noise criteria …

There is no apparent assessment undertaken of the wind gradient on the site nor any commentary on the height that the wind speed is assumed. The wind gradient would identify when the wind was high at the top of the turbines but potentially low at ground level (as naturally occurs in stable wind conditions) and what impact this would have on:

a) *The background sound levels at receivers compared to wind farm noise levels,*

b) *The actual turbine noise with higher wind speed at the top of the wind turbines,*

c) *The likelihood of special audible characteristics being generated (amplitude modulation), and*

d) *The focusing effect of sound waves, particularly downwind, in stable wind conditions.*

The need is to ensure that the adverse noise effects reported by van den Berg are avoided or mitigated at the proposed wind farm. An assessment of the wind gradient on the site is requested, as is comment on the height at which wind speed is assumed.

It is assumed the above concerns relate to the report "The sound of high winds: the effect of atmospheric stability on wind turbine sound and microphone noise" by GP van den Berg.

The degree of any wind gradient on the site is a meteorological effect and will be addressed by an expert in that field. With respect to the noise aspects of the assessment the following is relevant to this site.

The van den Berg report makes a number of observations by adopting generalisations. One important point is that the report makes a number of observations such as "people complained about noise from wind turbines that according to wind developers and acoustic consultants they should not even be able to hear" and "complained about annoying turbine sound at distances where they are not even expected to be able to hear the sound".

The effects appear to be based on an assessment undertaken at around 400m – 1500m from the closest wind turbine. The actual level is not given and the fact the approach seems to be one of audibility rather than a specific noise level makes it difficult to assess. In New Zealand audibility is not the test for any form of noise control. As set out above, it appears from the report the residents may have been given the expectation from acoustic consultants that they should not even be able to hear the wind turbines.

There is no such suggestion in this case that residents within 1.5km will not hear the noise. The proposed design is to comply with a level of up to 40dB $L_{A90(10\ min)}$.

An area of concern appears to relate to the reported condition that the wind speed at ground level may be zero but there will be sufficient wind at turbine height to drive the turbine. Under these conditions it seems the residents expected zero noise but received up to 18dB above the level predicted by the developers. The van den Berg report does not appear to be saying the noise will exceed the design level we have adopted and that design level is considered in NZS6808 as being reasonable. In fact, the report states the design limits are not exceeded, only that the conditions are different to what the residents were advised. There is no suggestion in this case that any unrealistic expectations have been given to the residents. To the contrary, the upper limit for any possible wind farm layout has been given in the noise assessment.

Overall I consider the concern raised by Council to be unwarranted, as no false expectations have, or will be, given to residents in this area. Further, the van den Berg report is for sites a minimum of 40km from the coast so these sites would not receive background sea noise such as the west coast of New Zealand would generate at the subject site.

2.3 The Hegley Report includes analysis of the Malcolm Hunt Associates background sound monitoring undertaken and results reported in 2008. These background sound levels were undertaken prior to the issue of NZS6808:2010. The analyses in Figures

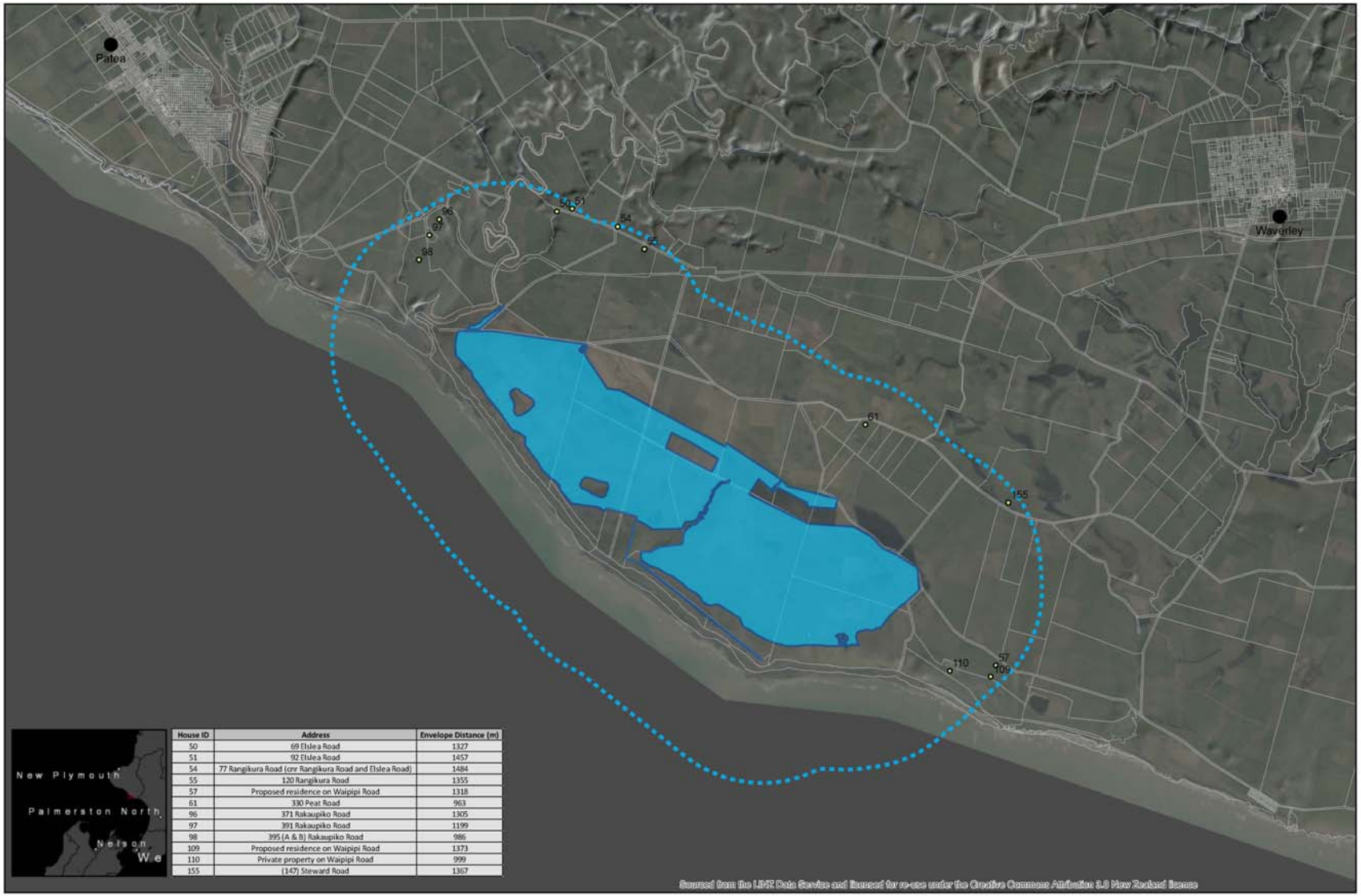
> *7 to 10 appear to have been undertaken using daytime and nighttime results combined, whereas best practice is to determine the wind farm noise limit using the night-time background sound monitoring only. This then allows compliance monitoring to be more accurately achieved. There is no indication whether there is any variation between background sound levels in the "upwind" and "downwind" scenarios. In addition, there is a very poor correlation between the wind speeds and background sound levels at Site 4 (Figure 10). The results do not appear to be relevant at this site.*

The measurements are relevant, as they were undertaken on site. However, it is agreed they should not be used to determine the $L_{A90\ (10\ min)}$ level for any “background +5dB” design level for the wind farm and nor have they. As set out in the original noise assessment report and the proposed noise conditions, “the Consent Holder shall engage an appropriately qualified and experienced acoustical consultant to … prepare an assessment of background sound levels in accordance with the requirements of NZS6808 prior to the commencement of any construction work”. Regardless, the outcome of any such monitoring will not alter the proposed design level of 40dB as this is the lowest design level for this area as set out in NZS6808.

Should you have any questions regarding the above please do not hesitate to contact me.

Yours sincerely
Hegley Acoustic Consultants

Nevil Hegley



House ID	Address	Envelope Distance (m)
50	69 Elslea Road	1327
51	92 Elslea Road	1457
54	77 Rangikura Road (cnr Rangikura Road and Elslea Road)	1484
55	120 Rangikura Road	1355
57	Proposed residence on Waipipi Road	1318
61	330 Peat Road	963
96	371 Rakaupiko Road	1305
97	391 Rakaupiko Road	1199
98	395 (A & B) Rakaupiko Road	986
109	Proposed residence on Waipipi Road	1373
110	Private property on Waipipi Road	999
155	(147) Steward Road	1367

Figure 1. House Locations within the 1500m Envelope Boundary

Appendix G

LETTER FROM TE KAAHUI O RAURU

TE KAAHUI O RAURU
NGAA RAURU KIITAHI IWI
14 FOOKES STREET
PO BOX 18, WAVERLEY 4544
PHONE: (06) 346 5707

21 April 2017

Blair Sutherland
Planning Manager
South Taranaki District Council

By email: blair.sutherland@stdc.govt.nz

RESOURCE CONSENT APPLICATIONS BY TARARUA WIND POWER LTD FOR THE WAVERLEY WIND FARM ("WWF")

Introduction

This letter is on behalf of Te Kaahui o Rauru ("TKOR"); Wai o Turi Marae; Whenuakura Marae; Te Wairoa Iti Marae; Poiha Broughton; and the Trustees of the Waipipi (Section 75 Okotuku District) Ahu Whenua Trust (together, the "Parties"). (For the avoidance of doubt, this letter does not purport to be on behalf of any other persons or groups/entities.)

Submissions in opposition to the proposed WWF were made by the following Parties:

- TKOR;
- Wai o Turi Marae, Whenuakura Marae, and Te Wairoa Iti Marae (collectively); and
- Poiha Broughton.

Withdrawal of submissions

Tararua Wind Power Ltd ("TWP") has been in discussions with the Parties. As a result of those discussions, the Parties have executed a private agreement with TWP, which (among other things) contributes to addressing the concerns raised in submissions by the above Parties such that the following Parties formally withdraw their submissions:

- **TKOR;**
- **Wai o Turi Marae, Whenuakura Marae,** and **Te Wairoa Iti Marae** (collectively); and
- **Poiha Broughton.**

Affected party written notice

In addition, the following Parties also provide their affected party written notice, including with respect to s104(3)(a)(ii) of the Resource Management Act 1991:

- TKOR;
- **Wai o Turi Marae, Whenuakura Marae, and Te Wairoa Iti Marae (Collective), as Ngaa Rauru Kitahi affiliated marae; Whenuakura Marae;**
- **Te Wairoa Iti Marae;**
- **Poiha Kemp Broughton; and**
- **the Waipipi Block Trustees.**

For the avoidance of doubt, all the above Parties confirm that:

- they have had the opportunity to review the WWF application material and plans and to understand the proposal and its potential adverse effects on them; and
- in signing this letter, they understand that the consent authority must not have regard to any adverse effects on them.

TE KAAHUI O RAURU by:

Pahunga Martin Davis, Tumu Whakarae

Contact details for signatory:

tumu.whakarae@rauru.iwi.nz

WAI O TURI MARAE by:

Archie Koro Hurunui, Wai o Turi Marae Trustees Committee

Contact details for signatory:

archie.hurunui@xtra.co.nz

WHENUAKURA MARAE by:

Anne-Marie Broughton, Chair of Whenuakura Marae & trustees Committee

Contact details for signatory:

am.broughton@xtra.co.nz

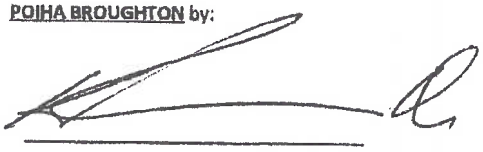
TE WAIROA ITI MARAE by:

I NAN PIRIKAHU-Smith Chair of Marae Committee

Name

Contact details for signatory:

POIHA BROUGHTON by:



Poiha Broughton

Contact details for signatory:

kbro@xtra.co.nz

ARCHIE HURUNUI; NGAPARI BARRY NUI; WHETURANGI WALSH-TAPIATA; NARLENE ANN NGANEKO IOANE; LOVIE LUKE; AND TONI MARAMA WILLIAMS AS TRUSTEES OF THE WAIPIPI (SECTION 75 OKOTUKU DISTRICT) AHU WHENUA TRUST by:

_____

[ ] [ ]

Name *Title*

Contact details for signatory:

POIHA BROUGHTON by:

_____

Poiha Broughton

Contact details for signatory:

kbro@xtra.co.nz

ARCHIE HURUNUI; NGAPARI BARRY NUI; WHETURANGI WALSH-TAPIATA; NARLENE ANN NGANEKO IOANE; LOVIE LUKE; AND TONI MARAMA WILLIAMS AS TRUSTEES OF THE WAIPIPI (SECTION 75 OKOTUKU DISTRICT) AHU WHENUA TRUST
by:

_____

[ARCHIE HURUNUI] [WAIPIPI TRUSTEE CHAIRPERSON]

Name *Title*

Contact details for signatory:

POIHA BROUGHTON by:

_____

Poiha Broughton

Contact details for signatory:

kbro@xtra.co.nz

ARCHIE HURUNUI; NGAPARI BARRY NUI; WHETURANGI WALSH-TAPIATA; NARLENE ANN NGANEKO IOANE; LOVIE LUKE; AND TONI MARAMA WILLIAMS AS TRUSTEES OF THE WAIPIPI (SECTION 75 OKOTUKU DISTRICT) AHU WHENUA TRUST by:

N.B. _____

[Ngapari Barry Nui] [Waipipi Trustee]

Name *Title*

Contact details for signatory:

ngapari5115@yahoo.com

POIHA BROUGHTON by:

_____

Poiha Broughton

Contact details for signatory:

kbro@xtra.co.nz

ARCHIE HURUNUI; NGAPARI BARRY NUI; WHETURANGI WALSH-TAPIATA; NARLENE ANN NGANEKO IOANE; LOVIE LUKE; AND TONI MARAMA WILLIAMS AS TRUSTEES OF THE WAIPIPI (SECTION 75 OKOTUKU DISTRICT) AHU WHENUA TRUST
by:

Whetu Walsh-Tapiata

Whetu Walsh-Tapiata / Trustee-Secretary

Name *Title*

Contact details for signatory:

Whetu Walsh-Tapiata whetu2@hotmail.com
027-432-1156

POIHA BROUGHTON by:

_____

Poiha Broughton

Contact details for signatory:

kbro@xtra.co.nz

ARCHIE HURUNUI; NGAPARI BARRY NUI; WHETURANGI WALSH-TAPIATA; NARLENE ANN NGANEKO IOANE; LOVIE LUKE; AND TONI MARAMA WILLIAMS AS TRUSTEES OF THE WAIPIPI (SECTION 75 OKOTUKU DISTRICT) AHU WHENUA TRUST by:

N Ioane

[Narlene A.N Ioane] [Trustee]

Name *Title*

Contact details for signatory:

nanioane@xtra.co.nz

POIHA BROUGHTON by:

Poiha Broughton

Contact details for signatory:

kbro@xtra.co.nz

ARCHIE HURUNUI; NGAPARI BARRY NUI; WHETURANGI WALSH-TAPIATA; NARLENE ANN NGANEKO IOANE; LOVIE LUKE; AND TONI MARAMA WILLIAMS AS TRUSTEES OF THE WAIPIPI (SECTION 75 OKOTUKU DISTRICT) AHU WHENUA TRUST by:

17 April 2017

Name LOVIE LUKE

Title WAIPIPI TRUSTEE

Contact details for signatory:

luvlukey@hotmail.com

POIHA BROUGHTON by:

_____

Poiha Broughton

Contact details for signatory:

kbro@xtra.co.nz

ARCHIE HURUNUI; NGAPARI BARRY NUI; WHETURANGI WALSH-TAPIATA; NARLENE ANN NGANEKO IOANE; LOVIE LUKE; AND TONI MARAMA WILLIAMS AS TRUSTEES OF THE WAIPIPI (SECTION 75 OKOTUKU DISTRICT) AHU WHENUA TRUST by:

_____

[Toni Marama Williams] [Waipipi Trustee]

Name *Title*

Contact details for signatory:

toni.williams041@yahoo.co.nz

Appendix H

PROFFERED/RECOMMENDED CONDITIONS OF CONSENT

[APPLICANT PROFFERED CONDITIONS AS AT 13/04/17 WITH OFFICER RECOMMENDED CHANGES].

CONSENT AUTHORITY:	South Taranaki District Council
CONSENT HOLDER:	Tararua Wind Power Limited
CONSENT TYPE:	Land Use Consent
ACTIVITY AUTHORISED:	The construction, operation and maintenance of a single circuit 110 kV transmission line between the Waverley Wind Farm and an electrical substation on Mangatangi Road, Waverley
SITE LOCATION:	Between Peat Road / Dryden Road and Mangatangi Road, Waverley
CONSENT DURATION:	Unlimited

GENERAL

1. The construction, operation and maintenance of the single circuit transmission line as part of the Waverley Wind Farm shall be undertaken in general accordance with the information provided in *"Waverley Wind Farm – Resource Consent Applications and Assessment of Environmental Effects"* dated April 2016 and any other documentation relevant to the resource consent applications, including responses to requests for further information from the South Taranaki District Council in accordance with section 92 of the Resource Management Act 1991. In the event of any conflict or discrepancy between these documents and the conditions of this resource consent, the conditions shall be determinative.

2. Pursuant to section 125(1) of the Resource Management Act 1991, this resource consent will lapse if not given effect to within 10 years of the commencement of this resource consent.

3. Pursuant to section 134(1) of the Resource Management Act 1991, this resource consent may only be exercised by the consent holder, its successor, or any person acting under the prior written approval of the consent holder.

4. The consent holder shall ensure that all contractors engaged in undertaking activities authorised by this resource consent are made aware of the conditions of this resource consent relevant to their work area and the measures required for compliance with the conditions.

5. The consent holder shall notify the Group Manager - Environmental Services, South Taranaki District Council ~~at least 15 working days prior~~ as to the commencement date of construction works authorised as part of this resource consent, at least 15 working days before such works commence.

6. The consent holder shall at all times construct, operate and maintain the transmission line in accordance with all management plans submitted to, and endorsed by, the Group Manager- Environmental Services, South Taranaki District Council as part of the conditions of this resource consent.

TRANSMISSION LINE CHARACTERISTICS

7. The transmission line and associated infrastructure shall be entirely located within the road / rail reserve and private properties identified in Table 1.4 of *"Waverley Wind Farm – Resource Consent Applications and Assessment of Environmental Effects"* dated April 2016 and shall follow the alignment identified in Figure 1 of Appendix A to the Landscape and Visual Assessment by Isthmus Group appended to "*Waverley Wind Farm – Resource Consent Applications and Assessment of Environmental Effects"* dated April 2016. A 30 metre wide transmission corridor may be utilised where the transmission line is located on private land.

8. The transmission line shall have a maximum of three conductors and a maximum voltage not exceeding 110 kV / 130 MVA.

9. The transmission line shall be supported on monopoles with a maximum height of 22 metres above ground level.

10. Notwithstanding Condition 9 above, double pole structures may be utilised to support the transmission line where topographical or technical constraints limit the utilisation of monopole structures. All double pole structures shall also have a maximum height of 22 metres above ground level.

11. Where the transmission line and associated infrastructure is located in the road reserve along Swinbourne Street and Fookes Street, ~~all monopoles~~ it shall be placed ~~in the pole~~ underground. ~~locations identified in the map entitled *"Proposed 110 kV Overhead Line Route – Trustpower"*, attached to the further information response provided to the South Taranaki District Council on 19 October 2016.~~

PLANS

12. At least 40 working days prior to the commencement of construction works authorised as part of this resource consent, the consent holder shall provide the Group Manager - Environmental Services, South Taranaki District Council with a set of final design drawings for the single circuit transmission line. The final design drawings shall, as a minimum, include:

    (a) The alignment of the transmission line from the Waverley Wind Farm to the electrical substation on Mangatangi Road, Waverley;

    (b) The location of all pole structures, including the identification of all double pole structures; and

    (c) The specifications of all pole structures.

13. Within 40 working days of construction of the transmission line being completed, the consent holder shall provide the Group Manager - Environmental Services, South Taranaki District Council with a set of as-built plans of the transmission line and all pole structures.

EARTHWORKS AND CONSTRUCTION

14. At least 20 working days prior to the commencement of construction works authorised as part of this resource consent, the consent holder shall submit an Earthworks and Construction Management Plan to the Group Manager – Environmental Services, South Taranaki District Council to certify that the plan meets the objectives in Condition 14(a) to (d). The Earthworks and Construction Management Plan shall be prepared by an experienced and appropriately qualified person and shall provide for the following objectives:

    (a) Minimise the volume of earthworks required for the construction of the transmission line;

    (b) Maximise the effectiveness of erosion and sediment control measures associated with earthworks by minimising sediment generation and sediment laden runoff;

    (c) Minimise the overall area of disturbance so as to reduce the potential impact on any vegetation, streams, ponds, wetlands and potential archaeological features along the alignment of the transmission line; and

    (d) Ensure control and / or mitigation of the adverse effects of any dust emissions.

15. In order to achieve the objectives established in Condition 14 above, the Earthworks and Construction Management Plan shall, as a minimum, address the following matters:

    (a) An explanation of how the Earthworks and Construction Management Plan shall be implemented and the associated roles, responsibilities and contact details for the principal persons responsible for management during the construction period;

    (b) A clear description of the planned staging of works and the description of earthworks in each stage, including detailed site plans;

    (c) Confirmation of the volumes of earthworks required;

    (d) The engineering controls, supervision and certification that will be applied to each stage of development;

    (e) The specific erosion and sediment control measures that will be applied to each stage of earthworks;

    (f) The specific dust control measures that will be applied to each stage of earthworks;

(g) The engineering and management procedures for the disposal of excess / unsuitable materials; and

(h) Details on the frequency of inspections and monitoring of all stormwater, dust, erosion and sediment control measures throughout each stage of construction works, including details of the experienced and appropriately qualified person responsible for inspections and monitoring.

16. All earthworks required for the construction of the transmission line shall be undertaken in accordance with the Taranaki Regional Council's "*Guidelines for Earthworks in the Taranaki Region, 2006*."

NOISE

Construction Noise

17. Noise from all construction works associated with the establishment of the transmission line shall be measured and assessed in accordance with the requirements and limits of "*NZS6803:1999 Acoustics – Construction Noise*."

18. At least 20 working days prior to the commencement of construction works authorised as part of this resource consent, the consent holder shall submit a Construction Noise Management Plan to the Group Manager - Environmental Services, South Taranaki District Council to certify that the plan meets the objectives in Condition 18(a) to (d). The Construction Noise Management Plan shall be generally in accordance with section 8 and the relevant annexures of *"NZS6803:1999 Acoustics – Construction Noise",* which detail the relevant types of construction to which the Construction Noise Management Plan is to apply, and the procedures that will be carried out to ensure compliance with the standard. The objectives of the Construction Noise Management Plan shall be to ensure construction works are:

(a) Designed and implemented to comply with the requirements of *"NZS6803:1999 Acoustics – Construction Noise"*; and

(b) Implemented in accordance with the requirements of section 16 of the Resource Management Act 1991, so as to adopt the best practical option to ensure the emission of noise from the project site does not exceed a reasonable level.

19. In order to achieve the objectives established in Condition 18 above, the Construction Noise Management Plan shall, as a minimum, address the following matters:

(a) The operating hours for the construction works and any time restrictions on the operation of particular machinery and equipment;

(b) Details on the machinery and equipment to be utilised during the construction works, any required mitigation measures associated with the operation of the machinery and equipment;

(c) Predictions of sound levels from the machinery and equipment to be utilised during the construction works;

(d) Details on the noise monitoring programme to be undertaken during the construction works (if necessary);

(e) The procedure for the reporting of any exceedances of *"NZS6803:1999 Acoustics – Construction Noise"* to the Group Manager - Environmental Services, South Taranaki District Council; and

(f) The procedures for the reporting and logging of noise related complaints, including the need for additional monitoring following the receipt of noise complaints.

20. The Construction Noise Management Plan shall be prepared by an appropriately qualified and experienced acoustical consultant.

Operational Noise

21. ~~Noise from the operation of the transmission line shall not exceed a limit of 45 dBA L_{10} when measured within the notional boundary of any dwelling that exists or is consented at the time of grant of this resource consent.~~ Transmission lines shall not be constructed within 100 metres of a Rural Zoned dwelling existing at the date of issue of this resource consent. Noise generated from the transmission line shall not exceed the following limits when measured at, or within, the boundary of any Residentially Zoned site:

7.00 am to 10.00 pm	50 dBA L_{10}
10.00 pm to 7.00 am	40 dBA L_{10}
10.00 pm to 7.00 am	70 dBA L_{max}

Except where otherwise expressly provided for, noise shall be measured in accordance with the requirements of "NZS6801:1991 Measurement of Sound" and assessed in accordance with the requirements of "NZS6802:1991 Assessment of Environmental Sound".

TRAFFIC

22. The routes, vehicle types, traffic movements and traffic generation related to the construction, operation and maintenance of the transmission line shall be in general accordance with those described in the Transportation Assessment by Traffic Design Group appended to *"Waverley Wind Farm – Resource Consent Applications and Assessment of Environmental Effects"* dated April 2016.

Construction Traffic Management Plan

23. At least 20 working days prior to the commencement of construction works authorised as part of this resource consent, the consent holder shall submit a Construction Traffic Management Plan to the Group Manager - Environmental Services, South Taranaki District Council to certify that the plan meets the objectives in Condition 23(a) to (g). The objectives of the Construction Traffic Management Plan shall be to:

    (a) Ensure all specific legislative requirements (e.g. statutes, regulations and / or bylaws) and consent conditions in relation to construction traffic are adhered to;

    (b) Encourage a culture of road safety awareness and commitment;

    (c) Ensure best practice in transport safety;

    (d) Ensure emergency services are not obstructed;

    (e) Minimise disruption to the surrounding community, farming operations and rural services;

    (f) Minimise traffic generation; and

    (g) Encourage the participation of the surrounding community in maximising safety and minimising disruption.

24. In order to achieve the objectives established in Condition 23 above, the Construction Traffic Management Plan shall, as a minimum, address the following matters:

    (a) The construction programme and the associated traffic volumes estimated for the construction of the transmission line;

    (b) Driver protocols aimed at ensuring safe driving practices and full compliance with the law, including speed limits, appropriate following distances, observing engine braking restrictions, and affording priority to other traffic;

    (c) The traffic management measures to be implemented at intersections, level crossings, stock crossings and access points to local properties;

    (d) The timing of construction traffic to minimise disruption to, and potential safety issues, for the operation of school bus services;

    (e) Requirements for the monitoring of construction traffic;

    (f) Communication arrangements with affected residents, South Taranaki District Council, New Zealand Transport Agency, schools, emergency services and other key stakeholders, including provision of prior notice of traffic arrangements and any road closures; and

    (g) The ongoing review and evaluation of the contents of the Construction Traffic Management Plan throughout the period of construction works.

25. The Construction Traffic Management Plan shall be prepared by a suitably experienced and qualified traffic engineer and in consultation with the New Zealand Transport Agency and the Group Manager – Engineering Services, South Taranaki District Council.

26. The consent holder shall distribute copies of the Construction Traffic Management Plan to emergency services and landowners / occupiers with access to the local construction traffic routes.

HEALTH AND SAFETY

27. In those areas along the transmission line where the public has access, electric and magnetic fields' strength shall comply with the guidelines for public exposure to electric and magnetic fields as published in 1998 by the International Commission on Non-Ionizing Radiation Protection (ICNIRP).

28. All works authorised by this resource consent shall be designed to comply with NZS6869:2004 *"Limits & Measurement Methods of Electromagnetic Noise from High Voltage A.C. Power Systems, 015 to 1000 MHZ"*.

NETWORK UTILITIES

29. Prior to the commencement of any construction works over State Highway 3 and the Marton – New Plymouth Railway Line, the consent holder shall install safety nets to ensure that conductor stringing does not adversely affect the safe and efficient utilisation of the state highway and railway network.

30. The location and design of the safety nets shall be determined in consultation with the New Zealand Transport Agency and KiwiRail. A copy of the design plans for the safety nets shall be provided to the Group Manager – Environmental Services, South Taranaki District Council prior to the safety nets being erected.

31. At least 20 working days prior to the commencement of construction works authorised as part of this resource consent, the consent holder shall submit a Network Utilities Management Plan to the Group Manager - Environmental Services, South Taranaki District Council to certify that the plan meets the objective in Condition 31(a). The Network Utilities Management Plan shall be prepared by the consent holder in consultation with those network utility operators with infrastructure that will be directly affected by the project. The objective of the Network Utilities Management Plan shall be to:

    (a) Ensure that enabling works, design, construction and ongoing operational works associated with the 110 kV transmission line alignment and associated buffer area adequately take account of, and include measures to address the safety, integrity, protection and relocation of existing network utilities, where necessary.

32. The purpose of the certification is for the Group Manager - Environmental Services, South Taranaki District Council to:

(a) Confirm that the appropriate liaison with infrastructure providers has occurred and that their concerns have been taken into account; and

(b) Confirm that the Network Utilities Management Plan meets the requirements of conditions 33 and 34 below.

33. In order to achieve the objectives established in Condition 31 above, the Network Utilities Management Plan shall, as a minimum, address the following matters:

(a) The methods the consent holder will use to liaise with all infrastructure providers who have existing utilities that are directly affected by, or located in close proximity to the project including the process for:

(i) Seeking network utility provider approval of proposed works where their assets are affected;
(ii) The process for obtaining any supplementary authorisations (e.g. easements and/or resource consents; and
(iii) Protocols for inspection and final approval of works by network utility providers.

(b) The methods the consent holder will use to enable infrastructure providers to access existing network utilities for maintenance at all reasonable times, and to access existing network utilities for emergency works at all times, during which construction and ongoing activities associated with the project are occurring;

(c) The methods the consent holder will use to ensure that all construction personnel, including contractors, are aware of the presence and location of the various existing network utilities which traverse, or are in close proximity to, the project, and the restrictions in place in relation to those existing network utilities. This shall include plans identifying the locations of the existing network utilities and appropriate physical indicators on the ground showing specific surveyed locations;

(d) How the consent holder will meet the costs for any project-related works that are required in order to protect, relocate and/or reinstate existing network utilities. Such methods shall be consistent with the provisions of the Electricity Act 1992, the Gas Act 1992 and the Telecommunications Act 2001;

(e) The methods the consent holder will use to ensure that provision, both physical and legal, is made for future maintenance access to utilities to a standard at least equivalent to that currently existing;

(f) Measures to be used to accurately identify the location of existing network utilities;

(g) Measures for the protection, relocation and/or reinstatement of existing network utilities;

(h) Measures to ensure the continued operation and supply of essential infrastructural services. Such measures shall include, but need not be limited to, a requirement for any new or relocated electrical or gas infrastructure to be made operational prior to the termination of the existing electrical or gas lines;

(i) Measures to provide for the safe operation of plant and equipment, and the safety of workers, in proximity to existing network utilities;

(j) Earthworks management procedures (including depth and extent of earthworks and dust management), for earthworks in close proximity to existing network utilities; and

(k) Emergency management procedures in the event of any emergency involving existing network utilities.

34. The Network Utilities Management Plan shall be implemented so that enabling works, design and construction of the project adequately take account of, and include measures to address, the safety, integrity, protection, and relocation of existing Network Utilities where necessary. The consent holder shall adhere to the relevant requirements of the Network Utilities Management Plan at all times during any construction works and ongoing works/activities associated with the project.

ARCHAEOLOGY

35. At least 20 working days prior to the commencement of construction works authorised as part of this resource consent, the consent holder shall submit an Accidental Discovery Protocol and Management Plan to the Group Manager - Environmental Services, South Taranaki District Council to certify that the plan meets the objectives in Condition 35(a) and (b). The Accidental Discovery Protocol and Management Plan shall be prepared by a suitably experienced and qualified archaeologist and in consultation with Ngaa Rauru and Heritage New Zealand. The objectives of the Accidental Discovery Protocol and Management Plan shall be to:

(a) Minimise the effects of construction works on any koiwi, taonga or archaeological features within the alignment of the transmission line consent; and

(b) Ensure construction works are designed and implemented in accordance with the requirements of the Heritage New Zealand Pouhere Taonga Act 2014.

36. In order to achieve the objectives established in Condition 35 above, the Accidental Discovery Protocol and Management Plan shall, as a minimum, address the following matters:

(a) Preconstruction protocols that may be carried out;

(b) Protocols for notification of relevant parties and site management procedures in the event any koiwi, taonga or archaeological features are uncovered at any time;

(c) Contact details for relevant parties;

(d) The procedures to be adopted during construction in potentially sensitive locations within the alignment of the transmission line; and

(e) Training procedures for all site staff and contractors.

37. The requirements of the Accidental Discovery Protocol and Management Plan established in Condition 35 above, shall only apply for those areas within the alignment of transmission line not subject to an archaeological authority obtained under the Heritage New Zealand Pouhere Taonga Act 2014.

Note: If required, the consent holder is responsible for obtaining archaeological authorities under section 44 of the Heritage New Zealand Pouhere Taonga Act 2014 prior to the commencement of construction works authorised as part of this resource consent.

COMPLAINTS

38. The consent holder shall maintain and keep a Complaints Register to record any complaints about construction works and the operation of the transmission line received by the consent holder in relation to traffic, noise, radio reception interference, or any other environmental effects. The register shall record, where this information is available, the following:

(a) The date, time and duration of the incident that resulted in the complaint;

(b) The location of the complainant when the incident was detected;

(c) The possible cause of the incident; and

(d) Any corrective action taken by the consent holder in response to the complaint, including the timing of the corrective action.

39. The Complaints Register shall be available to staff and authorised agents of the South Taranaki District Council and to members of the Consultative Group (established under Resource Consent [Land Use Consent for the Wind Farm] / Condition X) at all reasonable times upon request. Complaints received by the consent holder that may ~~infer~~ imply non-compliance with the conditions of this resource consent shall be forwarded to the Group Manager - Environmental Services, South Taranaki District Council within 48 hours of the complaint being received.

REVIEW

40. Pursuant to sections 128 to 131 of the Resource Management Act 1991, the South Taranaki District Council may one year after the commencement of this resource consent, and at five yearly intervals thereafter, serve notice on the consent holder of its intention to review any or all of the conditions of this resource consent for any of the following purposes:

    (a) To review the effectiveness of the conditions of this resource consent in avoiding, remedying or mitigating any adverse effects on the environment that may arise from the exercise of this resource consent (in particular, the potential adverse environmental effects in relation to archaeology, noise, earthworks, traffic and roading effects);

    (b) To address any adverse effects on the environment which have arisen as a result of the exercise of this resource consent that were not anticipated at the time of commencement of this resource consent, including addressing any issues arising out of complaints; and

    (c) To review the adequacy of, and necessity for, any of the monitoring programmes or management plans that are part of the conditions of this resource consent.

CHARGES

41. The consent holder shall pay to the South Taranaki District Council:

    (a) All required administration charges fixed by the South Taranaki District Council pursuant to section 36 of the Resource Management Act 1991 in relation to the administration, monitoring and inspection of this resource consent; and

    (b) All other charges authorised by regulations.

[APPLICANT PROFFERED CONDITIONS AS AT 13/04/17 WITH OFFICER RECOMMENDED CHANGES].

CONSENT AUTHORITY:	South Taranaki District Council
CONSENT HOLDER:	Tararua Wind Power Limited
CONSENT TYPE:	Land Use Consent
ACTIVITY AUTHORISED:	The construction, operation and maintenance of the Waverley Wind Farm
SITE LOCATION:	Peat Road and Dryden Road, Waverley
CONSENT DURATION:	Unlimited

GENERAL

1. The construction, operation and maintenance of the Waverley Wind Farm shall be undertaken in general accordance with the information provided in *"Waverley Wind Farm – Resource Consent Applications and Assessment of Environmental Effects"* dated April 2016 and any other documentation relevant to the resource consent applications, including responses to requests for further information from the South Taranaki District Council in accordance with section 92 of the Resource Management Act 1991. In the event of any conflict or discrepancy between these documents and the conditions of this resource consent, the conditions shall be determinative.

2. Pursuant to section 125(1) of the Resource Management Act 1991, this resource consent shall lapse if not given effect to within 10 years of the commencement of this resource consent.

3. Pursuant to section 134(1) of the Resource Management Act 1991, this resource consent may only be exercised by the consent holder, its successor, or any person acting under the prior written approval of the consent holder.

4. The consent holder shall ensure that all contractors engaged to undertake activities authorised by this resource consent are made aware of the conditions of this resource consent relevant to their work area and the measures required for compliance with the conditions.

5. The consent holder shall notify the Group Manager - Environmental Services, South Taranaki District Council ~~at least 15 working days prior~~ as to the commencement date of construction works authorised as part of this resource consent, at least 15 working days before such works commence.

6. The consent holder shall at all times construct, operate and maintain the Waverley Wind Farm in accordance with all management plans submitted to, and endorsed by, the Group Manager - Environmental Services, South Taranaki District Council as part of the conditions of this resource consent.

WIND FARM AND TURBINE CHARACTERISTICS

7. The maximum number of wind turbines in the Waverley Wind Farm shall not exceed 48.

8. The maximum wind turbine height (to the vertically extended blade tip) shall be 160 metres at finished ground level.

9. All wind turbines utilised within the Waverley Wind Farm (including any replacement wind turbines that are installed during the life of the wind farm) shall be of a similar size and type and have three blades. For the avoidance of doubt the wind turbines shall not be stall regulated.

10. Lattice style pylon towers shall not be used for the wind turbine structures.

11. All wind turbines and turbine blades used within the Waverley Wind Farm shall be finished with the same industry standard low reflectivity finishes and in an off-white colour.

12. Each wind turbine may include one externally housed transformer unit located adjacent to the base of the turbine. The maximum height of any externally housed transformer unit shall be 2.5 metres at finished ground level and the maximum building footprint shall not exceed 25 m^2.

13. All wind turbines, turbine platforms, hard stand areas and externally housed transformer units authorised as part of this resource consent shall be located within the project site boundaries as defined in Figure 1 of Appendix A to the Landscape and Visual Assessment by Isthmus Group appended to "*Waverley Wind Farm – Resource Consent Applications and Assessment of Environmental Effects*" dated April 2016. However, no wind turbines, turbine platforms, hard stand areas or externally housed transformer units shall be located within the Environmental Buffer Zone as defined in the figure by Isthmus Group dated April 2017.

14. Wind turbines within the project site boundaries as defined in Figure 1 of Appendix A to the Landscape and Visual Assessment by Isthmus Group appended to *"Waverley Wind Farm – Resource Consent Applications and Assessment of Environmental Effects"* dated April 2016 shall be spaced so that an ellipse drawn around each wind turbine and orientated to the prevailing wind at 315 degrees from due north, with the long axis being four times the diameter of the rotor and the narrow axis being 2.5 times that diameter, does not overlap the ellipse drawn around any other wind turbine identified in the final turbine layout for the Waverley Wind Farm required in accordance with Condition 26.

15. No wind turbines, turbine platforms or externally housed transformer units (but excluding hard stand areas) shall be established on any road reserve within the project site boundaries as defined in Figure 1 of Appendix A to the Landscape and Visual Assessment by Isthmus Group appended to *"Waverley Wind Farm – Resource Consent Applications and Assessment of Environmental Effects"* dated April 2016, except where the approval of the Group Manager – Corporate Services, South Taranaki District Council has been provided in writing.

16. All wind turbines shall be set back at least one blade length from the project site boundaries and Environmental Buffer Zone, as defined in Figure 1 of Appendix A to the Landscape and Visual Assessment by Isthmus Group appended to *"Waverley Wind Farm – Resource Consent Applications and Assessment of Environmental Effects"* dated April 2016 and the figure by Isthmus Group dated April 2017, so that wind turbine blades do not encroach the airspace outside the project site boundaries and the Environmental Buffer Zone.

SUPPORTING INFRASTRUCTURE

17. The maximum number of wind monitoring masts in the Waverley Wind Farm shall not exceed six, including the two wind monitoring masts already erected within the project site boundaries as at the date of granting this resource consent.

18. The maximum height of each wind monitoring mast shall be 110 metres at finished ground level or the hub-height of the installed wind turbines, whichever is the greater.

19. The maximum height of the concrete batching plant shall be 10 metres at finished ground level and the maximum working area associated with the concrete batching plant shall not exceed 7,500 m^2.

20. The maximum height of the operations and maintenance building shall be five metres at finished ground level and the maximum building footprint shall not exceed 600 m^2.

21. The maximum height of the electricity substation / switchyard building shall be five metres at finished ground level, with gantry structures and lighting / lightening arrestors not exceeding 22 metres in height. The maximum building footprint of the electricity substation / switchyard, inclusive of car parking, shall not exceed 10,000 m^2.

22. During the construction of the Waverley Wind Farm the maximum width of the internal access road network within the project site boundaries as defined in Figure 1 of Appendix A to the Landscape and Visual Assessment by Isthmus Group appended to *"Waverley Wind Farm – Resource Consent Applications and Assessment of Environmental Effects"* dated April 2016 shall not exceed 10 metres, with an additional 1 metre shoulder on either side. Following the completion of construction works for the Waverley Wind Farm all internal access roads shall be rehabilitated to a maximum width of 5 metres, with an additional 0.5 metre shoulder on either side.

23. All supporting infrastructure to the Waverley Wind Farm authorised as part of this resource consent shall be located within the project site boundaries as defined in Figure 1 of Appendix A to the Landscape and Visual Assessment by Isthmus Group appended to "*Waverley Wind Farm – Resource Consent Applications and Assessment of Environmental Effects"* dated April 2016. However, no supporting infrastructure to the Waverley Wind Farm shall be located within the Environmental Buffer Zone as defined in the figure by Isthmus Group dated April 2017.

24. Notwithstanding Condition 23 above, culvert crossings (both new and replacement) and associated internal access roads (including underground 33 kV transmission lines and fibre optic cabling) may be constructed, operated and maintained within the Environmental Buffer Zone at the six locations identified in section 3.6.4 of "*Waverley Wind Farm – Resource Consent Applications and Assessment of Environmental Effects"* dated April 2016.

PLANS

25. At least 40 working days prior to the commencement of construction works authorised as part of this resource consent, the consent holder shall provide the Group Manager - Environmental Services, South Taranaki District Council with a set of final design drawings for the Waverley Wind Farm. The final design drawings shall, as a minimum, include:

    (a) The layout and spacing of the wind turbines;

    (b) The specifications of the wind turbines, turbine platforms, foundations and hard stand areas;

    (c) The location and specifications of all supporting infrastructure;

    (d) The layout and pavement composition of the internal access road network; and

    (e) The location of all fill disposal sites.

26. Within 40 working days of construction of the Waverley Wind Farm being completed (or after each stage, if the Waverley Wind Farm is constructed in stages), the consent holder shall provide the Group Manager - Environmental Services, South Taranaki District Council with a set of as-built plans for the following:

    (a) All wind turbines, turbine platforms and foundation areas;

    (b) The internal access road network;

    (c) All fill disposal sites;

    (d) All permanent supporting infrastructure site; and

    (e) Engineering survey plans and sections of major earthworks.

EARTHWORKS AND CONSTRUCTION

27. At least 20 working days prior to the commencement of construction works authorised as part of this resource consent, the consent holder shall submit an Earthworks and Construction Management Plan to the Group Manager - Environmental Services, South Taranaki District Council to certify that the plan meets the objectives in Condition 27(a) to (g). The Earthworks and Construction Management Plan shall be prepared by an experienced and appropriately qualified person and shall provide for the following objectives:

    (a) Minimise the volume of earthworks required for the construction of the Waverley Wind Farm;

    (b) Maximise the effectiveness of erosion and sediment control measures associated with earthworks by minimising sediment generation and sediment laden runoff;

(c) Minimise the overall area of disturbance so as to reduce the potential impact on any vegetation, streams, wetlands and potential archaeological features within the project site boundaries;

(d) Ensure control and / or mitigation of the adverse effects of any dust emissions;

(e) Minimise the effects, and introduction, of weeds;

(f) Ensure that fill disposal sites are contoured to reflect the surrounding sand dune landforms; and

(g) Rehabilitate and re-vegetate worked areas so that they are returned to pasture or their existing vegetative cover.

28. In order to achieve the objectives established in Condition 27 above, the Earthworks and Construction Management Plan shall, as a minimum, address the following matters:

(a) An explanation of how the Earthworks and Construction Management Plan shall be implemented and the associated roles, responsibilities and contact details for the principal persons responsible for management during the construction period;

(b) A clear description of the planned staging of works and the description of earthworks in each stage, including detailed site plans;

(c) Detailed measures for groundwater control and subsoil drainage;

(d) Detailed measures for the draining and infilling of ponds;

(e) Confirmation of the volumes of cut, fill and unsuitable material;

(f) The location and design of fill disposal sites within the project site boundaries;

(g) The engineering controls, supervision and certification that will be applied to each stage of development;

(h) The specific erosion and sediment control measures that will be applied to each stage of earthworks;

(i) The engineering and management procedures for material sources, use, disposal and treatment, stockpiling, fill placement and disposal of unsuitable materials;

(j) The specific dust control measures that will be applied to each stage of earthworks and fill disposal sites;

(k) The measures to contain / manage contaminant runoff and stormwater runoff from the concrete batching plant;

(l) The measures to ensure that worked areas are rehabilitated and re-vegetated as soon as practicable following earthworks, including:

(i) The identification of the vegetation or pasture types and re-vegetation material and techniques to be used for rehabilitation purposes;
(ii) The programme and timing of re-vegetation and maintenance activities so that stabilised surface coverage of 80% is achieved;
(iii) The retention of surface cover in order to reduce the effects from sediment-laden stormwater runoff;
(iv) Contouring of side-throw material and grading out or feathering of any cut / fill batters to merge with the landform contours, where appropriate; and
(v) The identification of weed management activities to be undertaken.

(m) Details on the frequency of inspections and monitoring of all stormwater, dust, erosion and sediment control measures throughout each stage of construction works, including details of the experienced and appropriately qualified person responsible for inspections and monitoring.

29. All earthworks required for the construction of the Waverley Wind Farm shall be undertaken in accordance with the Taranaki Regional Council's "*Guidelines for Earthworks in the Taranaki Region, 2006*."

30. No earthworks or construction works authorised as part of this resource consent shall occur within the Environmental Buffer Zone as defined in the figure by Isthmus Group dated April 2017, except where necessary to give effect to Conditions 24 and 63(d).

NOISE

Construction and Maintenance Noise

31. Noise from all construction and maintenance works associated with the Waverley Wind Farm shall be measured and assessed in accordance with the requirements and limits of "*NZS6803:1999 Acoustics – Construction Noise*."

32. At least ~~20~~ 60 working days prior to the commencement of construction works authorised as part of this resource consent, the consent holder shall submit a Construction Noise Management Plan to the Group Manager - Environmental Services, South Taranaki District Council to certify that the plan meets the objectives in Condition 32(a) and (b). The Construction Noise Management Plan shall be generally in accordance with section 8 and the relevant annexures of *"NZS6803:1999 Acoustics – Construction Noise",* which detail the relevant types of construction to which the Construction Noise Management Plan is to apply, and the procedures that will be carried out to ensure compliance with the standard. The objectives of the Construction Noise Management Plan shall be to ensure construction works are:

(a) Designed and implemented to comply with the requirements of *"NZS6803:1999 Acoustics – Construction Noise"*, as measured and assessed in accordance with the long term noise limits set out in the standard; ~~and~~

(b) Implemented in accordance with the requirements of section 16 of the Resource Management Act 1991, so as to adopt the best practical option to ensure the emission of noise from the project site does not exceed a reasonable level; and

(c) Restrict night-time (10pm to 7am) heavy vehicle traffic movements occurring onsite and off-site (between the site and State Highway 3) unless necessary for the completion of a concrete pour where this work extends outside the scheduled time due to unforeseen circumstances.

33. In order to achieve the objectives established in Condition 32 above, the Construction Noise Management Plan shall include those matters set out in Section 8 and Annex E of NZS 6803:1999 *Acoustics – Construction Noise* and shall, as a minimum, address the following matters:

(a) The operating hours for the construction works and any time restrictions on the operation of heavy vehicles, ~~particular~~ machinery and equipment;

(b) Details on the machinery and equipment to be utilised during the construction works, and any required mitigation measures associated with the operation of the machinery and equipment;

(c) Predictions of sound levels from the machinery and equipment to be utilised during the construction works;

(d) Details on the noise monitoring programme to be undertaken during the construction works;

(e) The procedure for the reporting of any exceedances of *"NZS6803:1999 Acoustics – Construction Noise"* to the Group Manager - Environmental Services, South Taranaki District Council; and

(f) The procedures for the reporting and logging of noise related complaints, including the need for additional monitoring following the receipt of noise complaints.

34. The Construction Noise Management Plan shall be prepared by an appropriately qualified and experienced acoustical consultant.

Operational Noise (Non-Wind Turbine Related)

35. Noise generated from all other activities within the project site boundaries as defined in Figure 1 of Appendix A to the Landscape and Visual Assessment by Isthmus Group appended to "*Waverley Wind Farm – Resource Consent Applications and Assessment of Environmental Effects"* dated April 2016, other than wind turbine operation and construction activities, shall not exceed the following limits when measured at, or within, the boundary of any other Rural Zoned site ~~the notional boundary of any residential dwelling either existing or consented at the date of issue of this resource consent (excluding residential dwellings on properties on which wind turbines are to be located or where the property owner has provided their written approval)~~:

7.00 am to 10.00 pm	55 dBA L_{10}
10.00 pm to 7.00 am	45 dBA L_{10}
10.00 pm to 7.00 am	75 dBA L_{max}

Except where otherwise expressly provided for, noise shall be measured in accordance with the requirements of *"NZS6801:1991 Measurement of Sound"* and assessed in accordance with the requirements of *"NZS6802:1991 Assessment of Environmental Sound".*

Operational Noise (Wind Turbines)

36. The wind turbines shall be designed, constructed, operated and maintained so that sound levels from the Waverley Wind Farm comply with the requirements of *"NZS6808:2010 Acoustics – Wind Farm Noise."* For the avoidance of doubt, this condition shall require the wind turbines to be designed, constructed, operated and maintained so that the Waverley Wind Farm sound levels ($L_{A90\ (10\ min)}$) shall not exceed the background sound ($L_{A90\ (10min)}$) plus 5 dBA or a level of 40 dB ($L_{A90\ (10\ min)}$), whichever is the greater.

    The wind farm sound level shall not exceed 40 dB $L_{A90\ (10\ mins)}$ once the contribution of the background sound is removed from post-installation measurements in accordance with 7.5 of NZS 6808:2010.

37. Wind farm sound shall be measured and assessed in accordance with *"NZS6808:2010 Acoustics – Wind Farm Noise".* ~~within the notional boundary of any residential dwelling either existing or consented at the date of issue of this resource consent (excluding residential dwellings on properties on which wind turbines are to be located or where the property owner has provided their written approval)~~.
    The assessment positions shall be at the notional boundary of residential dwellings existing or consented or able to be constructed as a permitted activity at the time consent is granted for the Waverley Wind Farm. [*Note: refer Mill Creek Wind Farm EC Decision Condition 38*].

Note: For the avoidance of doubt, and for the purpose of compliance with Condition 37, the "Reference Test Method" shall be adopted for testing whether the Waverley Wind Farm has tonal special audible characteristics, as prescribed as Annex C to ISO 1996-2:2007, in accordance with Appendix B of "NZS6808:2010 Acoustics – Wind Farm Noise."

38. Prior to the installation of any ~~At least 20 working days prior to the commissioning of the first~~ wind turbine authorised as part of this resource consent, the consent holder shall submit a Noise Management Plan to the Group Manager - Environmental Services, South Taranaki District Council to certify that the plan meets the objectives in Condition 38(a) and (b). The objectives of the Noise Management Plan shall be to ensure:

    (a) The operation of the Waverley Wind Farm complies with the requirements of Condition 36 of this resource consent; and

    (b) Operational noise from the Waverly Wind Farm is managed in accordance with the requirements of section 16 of the Resource Management Act 1991, so as to adopt best practical option to ensure the emission of noise from the project site does not exceed a reasonable level.

39. In order to achieve the objectives established in Condition 38 above, the Noise Management Plan shall, as a minimum, address the following matters:

    (a) An assessment of background sound levels in accordance with the requirements of *"NZS6808:2010 Acoustics – Wind Farm Noise"* prior to the commencement of any construction work;

(b) Wind turbine selection, having regard to the sound power level predictions obtained in accordance with section 6.2 and the special audible characteristics in Clause 5.4.1 of "*NZS6808:2010 Acoustics – Wind Farm Noise";*

(c) Procedures for ensuring compliance with the noise conditions of this resource consent, including noise compliance testing, methods for addressing non-compliance, designated contact persons, and complaints procedures;

(d) Procedures for addressing turbine malfunctions that cause material noise effects beyond typical operational noise;

(e) Requirements for post construction noise monitoring and assessment; and

(f) Provisions regarding the review, and updating, of the Noise Management Plan.

40. The Noise Management Plan shall be prepared by an appropriately qualified and experienced acoustical consultant.

41. The consent holder shall pay all reasonable costs associated with acoustic compliance testing or assessment undertaken in accordance with this resource consent.

Pre-Instalment Assessment

42. Prior to the installation of any ~~At least 20 working days prior to the commissioning of the first~~ wind turbine authorised as part of this resource consent, the consent holder shall provide the Group Manager - Environmental Services, South Taranaki District Council with an Acoustics Emissions Report ~~which confirms~~ to certify that the wind turbines will comply with the requirements of Condition 36 of this resource consent.

43. Prior to the installation of any ~~At least 20 working days prior to the commissioning of the first At least 20 working days prior to the commissioning of the first~~ wind turbine authorised as part of this resource consent, the consent holder shall provide a Noise Prediction Report to the Group Manager - Environmental Services, South Taranaki District Council to certify in accordance with *"NZS6808:2010 Acoustics – Wind Farm Noise"* (in particular Sections 8.1 and 8.4.2). The Noise Prediction Report shall:

(a) Demonstrate, based on the sound power levels for the selected wind turbines, that the limits in Condition 36 of this resource consent can be complied with; and

(b) Include the finalised 35 dBA contour for the Waverley Wind Farm.

44. Prior to any wind farm construction work (other than geotechnical or other exploratory surveys) commencing on the wind farm the consent holder shall engage an appropriately qualified and experienced acoustic consultant to undertake pre-installation background noise surveys at positions identified by the consent holder in consultation with the Group Manager – Environmental Services, South Taranaki District Council. Pre-installation background sound level measurements shall be made at all assessment locations required by Condition 37 that are within the 35 dB ($L_{A90\ (10\ min)}$) wind farm noise contour predicted by the Noise Prediction Report (required by Condition 43). The assessment locations may be grouped as described by 7.1.5 NZS 6808:2010. *For the avoidance of doubt, previous background sound monitoring is now out of date and should not be used in any way.* ~~The positions selected for background~~

~~noise surveys shall be in addition to those positions surveyed as part of the Noise Assessment by Hegley Acoustics appended to *"Waverley Wind Farm – Resource Consent Applications and Assessment of Environmental Effects"* dated April 2016. The positions selected for background noise surveys shall be in addition to those positions surveyed as part of the Noise Assessment by Hegley Acoustics appended to "Waverley Wind Farm – Resource Consent Applications and Assessment of Environmental Effects" dated April 2016.~~ The surveys shall be undertaken, and results assessed, in accordance with sections 7 and 8.2 of *"NZS6808:2010 Acoustics – Wind Farm Noise".* Prior to any wind farm construction work being undertaken, the results of the survey shall be provided to the Group Manager - Environmental Services, South Taranaki District Council for endorsement acting in a technical certification capacity.

Compliance Testing

A compliance assessment report shall be prepared in accordance with Section 8.4.1 of NZS 6808:2010 by a suitably qualified independent person agreed to by the Council and shall be submitted to the Compliance Monitoring Officer for endorsement acting in a technical certification capacity. Measurement positions used for compliance testing shall include (but not be limited to):

Site #61 – 330 Peat Road
Site #110 – [address?]
Site #54 - 564 Waverley Beach Road
Site #97 – 391 Rakaupiko Road

Alternative positions shall be selected if the owner/occupiers do not allow monitoring to take place at any of these sites.

Peer Review

The consent holder shall share the results of long term monitoring with Council in the event that this is required for peer review of any of the reports described above. The Council may have any plan or report reviewed by an independent expert at the consent holder's cost.

TRAFFIC

45. The routes, vehicle types, traffic movements and traffic generation related to the Waverley Wind Farm shall be in general accordance with those described in the Transportation Assessment by Traffic Design Group appended to *"Waverley Wind Farm – Resource Consent Applications and Assessment of Environmental Effects"* dated April 2016.

Construction Traffic Management Plan

46. At least 20 working days prior to the commencement of construction works authorised as part of this resource consent, the consent holder shall submit a Construction Traffic Management Plan to the Group Manager - Environmental Services, South Taranaki District Council to certify that the plan meets the objectives in Condition 46(a) to (g). The objectives of the Construction Traffic Management Plan shall be to:

(a) Ensure all specific legislative requirements (e.g. statutes, regulations and / or bylaws) and consent conditions in relation to construction traffic are adhered to;

(b) Encourage a culture of road safety awareness and commitment;

(c) Ensure best practice in transport safety;

(d) Ensure emergency services are not obstructed;

(e) Minimise disruption to the surrounding community, farming operations and rural services;

(f) Minimise traffic generation; and

(g) Encourage the participation of the surrounding community in maximising safety and minimising disruption.

47. In order to achieve the objectives established in Condition 46 above, the Construction Traffic Management Plan shall, as a minimum, address the following matters:

(a) The construction programme and the associated traffic volumes estimated for each construction phase;

(b) Driver protocols aimed at ensuring safe driving practices and full compliance with the law, including speed limits, appropriate following distances, observing engine braking restrictions, and affording priority to other traffic;

(c) The details of the intended traffic arrangements and provision for the delivery of over-dimension and over-weight loads to the Waverley Wind Farm;

(d) The nature and timing of road / intersection improvements to be implemented;

(e) The traffic management measures to be implemented at intersections, level crossings, stock crossings and access points to local properties;

(f) The timing of construction traffic to minimise disruption to, and potential safety issues for, the operation of school bus services;

(g) Requirements for the monitoring of construction traffic;

(h) Signage to warn drivers approaching the Waverley Wind Farm;

(i) Communication arrangements with affected residents, South Taranaki District Council, New Zealand Transport Agency, schools, emergency services and other key stakeholders, including provision of prior notice of traffic arrangements and any road closures; and

(j) The ongoing review and evaluation of the contents of the Construction Traffic Management Plan throughout the period of construction works.

48. The Construction Traffic Management Plan shall be prepared by a suitably experienced and qualified traffic engineer and in consultation with the New Zealand Transport Agency and the Group Manager – Engineering Services, South Taranaki District Council.

49. The consent holder shall distribute copies of the Construction Traffic Management Plan to emergency services and landowners / occupiers with access to the local construction traffic routes.

Physical Road Improvements

50. Prior to the commencement of construction works authorised as part of this resource consent, the consent holder shall upgrade the intersection of State Highway 3 and Peat Road to safely accommodate all of the expected construction traffic that will utilise the intersection. The upgrade of the intersection of State Highway 3 and Peat Road shall be undertaken in accordance with Austroads Design Guidelines (Austroads Part 4A: Unsignalised and Signalised Intersections) and the Transportation Assessment by Traffic Design Group appended to *"Waverley Wind Farm – Resource Consent Applications and Assessment of Environmental Effects"* dated April 2016. The upgrade of the intersection shall also be undertaken to the satisfaction of the New Zealand Transport Agency.

51. Prior to the commencement of construction works authorised as part of this resource consent, the consent holder shall upgrade the width of Peat Road so that it is capable of safely providing for two-way traffic along the construction traffic route. In addition, the pavement strength of the section of Peat Road to be utilised for construction traffic shall be upgraded. The improvements to Peat Road shall be undertaken in accordance with the New Plymouth District Council's Code of Practice for Infrastructure 2009: Part 3 Roads and to the satisfaction of the Group Manager – Engineering Services, South Taranaki District Council.

52. The consent holder shall, in consultation with the Group Manager – Engineering Services, South Taranaki District Council, undertake and agree the results of a baseline survey of the condition of all local roads to be used for construction traffic prior to the commencement of construction works authorised as part of this resource consent.

53. The consent holder shall:

    (a) Maintain the roads to be used by construction traffic in accordance with the relevant performance standards utilised by the South Taranaki District Council; and

    (b) Ensure that on completion of construction activities for the Waverley Wind Farm, the roads used by construction traffic are in no worse condition to that which existed prior to the commencement of construction.

54. Prior to the commencement of construction works authorised as part of this resource consent, the consent holder shall obtain an over-dimension and / or over-weight load permit from the relevant issuing authority(s) for any over-dimension or over-weight loads travelling to the Waverley Wind Farm. The consent holder shall abide by the requirements of any such permit issued. The consent holder shall also provide the Group Manager - Environmental Services, South Taranaki District Council with a copy of any over-dimension and / or over-weight load permits issued.

Signage

55. Prior to the commencement of construction works authorised as part of this resource consent, the consent holder shall erect signage along the margin of State Highway 3 informing approaching drivers from the east and the west of the potential visibility of the Waverley Wind Farm, as well as the potential to encounter construction traffic. The final location of the signage shall be determined in consultation with the New Zealand Transport Agency, the Group Manager – Environmental Services, South Taranaki District Council and the Consultative Group to be established under Condition 128 of this resource consent.

56. The signage informing approaching drivers shall be maintained for the duration of the construction works and for a period of 12 months following the commissioning of the Waverley Wind Farm.

ECOLOGICAL MANAGEMENT / MITIGATION

Fencing

57. Prior to the commencement of construction works authorised as part of this resource consent, the consent holder shall ~~temporarily~~ fence the boundaries of the Environmental Buffer Zone as defined in the figure by Isthmus Group dated April 2017, with a permanent stock proof fence. ~~The temporary fences shall be maintained by the consent holder for the duration of the construction works and should be of suitable quality so that it presents a visible barrier to any contractors or machinery from entering the Environmental Buffer Zone.~~

58. Prior to the commencement of construction works authorised as part of this resource consent, the consent holder shall fence off the section of the Waipipi Stream identified in the Environmental Buffer Zone as defined in the figure by Isthmus Group dated April 2017. The fencing shall be maintained by the consent holder for the life of the Waverley Wind Farm and should be of a suitable quality so that it prevents stock from entering the Waipipi Stream and its riparian margins.

59. Prior to the commencement of construction works authorised as part of this resource consent, the consent holder shall fence off the wetlands identified as EV1 and EV3 in the Terrestrial and Freshwater Ecology Assessment by Ryder Consulting Limited appended to *"Waverley Wind Farm – Resource Consent Applications and Assessment of Environmental Effects"* dated April 2016. The fencing shall be maintained by the consent holder for the life of the Waverley Wind Farm and should be of suitable quality so that it prevents stock from entering the wetlands.

Ecological Monitoring and Management Plan

60. At least 80 working days prior to the commencement of construction works authorised as part of this resource consent, the consent holder shall provide the Department of Conservation (Director, Operations, Central North Island) with the opportunity to review and comment on the draft Ecological Monitoring and Management Plan required in accordance with Conditions 62 and 63.

61. In the event that no written comments are received from the Department of Conservation (Director, Operations, Central North Island) on the draft Ecological Monitoring and Management Plan within 40 working days of it being provided by the consent holder, the consent holder may assume that no written comments will be forthcoming from the Department of Conservation (Director, Operations, Central North Island).

62. At least 20 working days prior to the commencement of construction works authorised as part of this resource consent, the consent holder shall submit an Ecological Monitoring and Management Plan to the Group Manager - Environmental Services, South Taranaki District Council to certify that the plan meets the objectives in Condition 62(a) to (e). The Ecological Monitoring and Management Plan shall be prepared by a suitably experienced and qualified person and shall provide for the following objectives:

    (a) Restore the ecological values of the Waipipi Stream within the project site boundaries of the Waverley Wind Farm;

    (b) Restore the ecological values of the wetlands identified as EV1 and EV3 in the Terrestrial and Freshwater Ecology Assessment by Ryder Consulting Limited appended to *"Waverley Wind Farm – Resource Consent Applications and Assessment of Environmental Effects"* dated April 2016;

    (c) Translocate and establish a successful population of fennel-leaved pondweed (*Stuckenia pectinata*), blunt pondweed (*Potamogeton ochreatus*) and horse's mane weed (*Ruppia polycarpa*) from the farm ponds to be drained and infilled to a location(s) within the Environmental Buffer Zone as defined in the figure by Isthmus Group dated April 2017;

    (d) Capture and translocate native fish, koura and eels from the farm ponds to be drained and infilled to suitable habitat within the Environmental Buffer Zone as defined in the figure by Isthmus Group dated April 2017; and

    (e) Create or enhance foraging habitat for shag and other waterbird species to compensate for the loss of the 2.6 hectare farm pond that is to be drained and infilled.

63. In order to achieve the objectives established in Condition 62 above, the Ecological Monitoring and Management Plan shall, as a minimum, address the following matters:

    (a) A clear description of the timing of any restoration works proposed;

    (b) The detailed measures proposed to restore the ecological and amenity values of the Waipipi Stream, including via the implementation of stock fencing as required in accordance with Condition 58 above;

    (c) A planting plan for the riparian margins of the Waipipi Stream, which includes details on the proposed indigenous plant species to be planted and intended planting densities;

(d) The detailed measures proposed to restore the ecological and amenity values of the wetlands identified as EV1 and EV3 in the Terrestrial and Freshwater Ecology Assessment by Ryder Consulting Limited appended to *"Waverley Wind Farm – Resource Consent Applications and Assessment of Environmental Effects"* dated April 2016, including via the infilling of drains and the implementation of stock fencing as required in accordance with Condition 59 above;

(e) The detailed measures proposed to translocate fennel-leaved pondweed (*Stuckenia pectinata*), blunt pondweed (*Potamogeton ochreatus*) and horse's mane weed (*Ruppia polycarpa*) 12 months prior to the draining and infilling of the farm ponds;

(f) The detailed measures proposed to capture and translocate native fish, koura and eels from the farm ponds prior to their draining and infilling in accordance with the permit obtained from the Ministry for Primary Industries;

(g) The detailed measures proposed, and at what location(s), to create or enhance foraging habitat for shag and other waterbird species in order to compensate for the loss of the 2.6 hectare farm pond that is to be drained and infilled;

(h) Requirements for monitoring, and annual reporting, of on-site enhancement works (including riparian revegetation, plant survival rates and the success of the translocation of aquatic plants); and

(i) Requirement for monitoring and reporting of all other ecological surveys or programmes occurring on site.

64. The consent holder shall contribute $25,000 (CPI adjusted from the date of grant of this resource consent) per annum to the Ashburton River / Hakatere Shorebird Management Programme from the commencement of operation of the Waverley Wind Farm, and until such time as the Waverley Wind Farm is decommissioned. The purpose of the contribution is to compensate for the mortality predictions of the individual species identified in Condition 81, while also recognising the benefits of the contribution to other bird species. The consent holder shall provide written verification of the contribution to the Group Manager – Environmental Services, South Taranaki District Council within 10 working days of the payment being made to the programme annually.

65. In addition to Condition 64, the consent holder shall make a one-off contribution of $25,000 to the Ashburton River / Hakatere Shorebird Management Programme at the commencement of operation of the Waverley Wind Farm in order to assist with establishment and administration costs for the programme. The consent holder shall provide written verification of the contribution to the Group Manager – Environmental Services, South Taranaki District Council within 10 working days of the payment being made to the programme.

66. In the event that the Ashburton River / Hakatere Shorebird Management Programme ceases:

    (a) Prior to the commencement of operation of the Waverley Wind Farm, the consent holder shall contribute the $25,000 (CPI adjusted from the date of grant of this resource consent) per annum required in accordance with Condition 64 and the one-off contribution of $25,000 required in accordance with Condition 65 to any other programme administered or endorsed by the Department of Conservation; or

    (b) During the operation of the Waverley Wind Farm, the consent holder shall contribute the $25,000 (CPI adjusted from the date of grant of this resource consent) per annum required in accordance with Condition 64 to any other programme administered or endorsed by the Department of Conservation.

EXPERT PANEL AND BIRD COLLISION MONITORING

Establishment of Expert Panel

67. At least 80 working days prior to the commencement of construction works authorised as part of this resource consent, the consent holder shall submit the names and curriculum vitae of four independent experts with appropriate qualifications and experience in the monitoring of avifauna ecology and / or risk assessment to the Group Manager – Environmental Services, South Taranaki District Council. Two of the experts shall be nominated by the Department of Conservation (Director, Operations, Central North Island), and two shall be nominated by the consent holder.

68. Notwithstanding Condition 67 above, the two experts nominated by the Department of Conservation (Director, Operations, Central North Island) may be employees of, or contractors to, the Department of Conservation.

69. The Group Manager – Environmental Services, South Taranaki District Council shall select two experts from the names provided by the consent holder to form an expert panel in accordance with Condition 70 below. One expert must be from the names submitted by the Department of Conservation (Director, Operations, Central North Island), and one expert must be from the names submitted by the consent holder.

70. The consent holder shall establish the expert panel within five working days of the selection of the two experts by the Group Manager – Environmental Services, South Taranaki District Council. The expert panel shall be maintained for the duration of the bird collision monitoring required in accordance with Condition 80 below.

71. In the event that either member of the expert panel is unable, for whatever reason, to continue in their role in accordance with this resource consent, the party which nominated the expert shall submit the name and curriculum vitae of a replacement expert with appropriate qualifications and experience in the monitoring of avifauna ecology and / or risk assessment to the Group Manager – Environmental Services, South Taranaki District Council for approval.

72. The role of the expert panel is to assist the Group Manager – Environmental Services, South Taranaki District Council with the following:

    (a) The provision of advice and assistance to the consent holder in respect of the consent holder's responsibilities in accordance with this resource consent in relation to the monitoring and management of potential adverse effects on bird species;

    (b) The provision of oversight, and input into, the implementation of the conditions of this resource consent relating to potential adverse effects on bird species on behalf of the Group Manager – Environmental Services, South Taranaki District Council; and

    (c) The provision of advice and assistance to the consent holder and the Group Manager – Environmental Services, South Taranaki District Council in the event of any bird strike mortality events.

73. The consent holder shall meet the reasonable costs incurred by the expert panel in undertaking its duties as set out in Condition 72 above, subject to normal business practices of invoicing and accounting.

Bird Collision Monitoring Plan

74. At least 60 working days prior to the commencement of construction works authorised as part of this resource consent, the consent holder shall submit the draft Bird Collision Monitoring Plan required in accordance with Conditions 76 and 77 below to the expert panel for review and comment.

75. The expert panel shall provide its written comments (if any) on the draft Bird Collision Monitoring Plan to the consent holder at least 40 working days prior to the commencement of construction works authorised as part of this resource consent.

76. At least 20 working days prior to the commencement of construction works authorised as part of this resource consent, the consent holder shall submit the Bird Collision Monitoring Plan (including all written comments provided by the expert panel and the consent holder's response to those comments) to the Group Manager – Environmental Services, South Taranaki District Council to certify that the plan meets the objective in Condition 76(a). The Bird Collision Monitoring Plan shall be jointly prepared by a suitably experienced and qualified avian expert and a suitably experienced and qualified bio-statistician, and shall provide for the following objective:

    (a) Measure the rates of bird mortality from collisions at the Waverley Wind Farm.

77. In order to achieve the objective established in Condition 76 above, the Bird Collision Monitoring Plan shall describe the methods for recording the frequency of collisions resulting in mortality for all bird species. These methods shall be statistically robust and include, but not be limited to, the following:

    (a) Calculating the probability and rate of bird carcass loss to scavengers, decomposition and other causes, taking into account temporal, environmental and other sources of variation;

    (b) Calculating the probability of carcass detection by searchers, which may include searching assisted by suitably-trained dogs, taking into account temporal, environmental, searcher identity and other sources of variation;

(c) A data collection and analysis regime specifying the timing, location and duration of monitoring at a statistically derived number of wind turbines and wind monitoring masts, taking into account the statistical properties of the avian data presented in the Assessment of Potential Risk to Birds by Boffa Miskell appended to "*Waverley Wind Farm – Resource Consent Applications and Assessment of Environmental Effects"* dated April 2016, and other sources of relevant information. The purpose of the data collection and analysis regime is to ensure that a reliable estimate of bird strike mortality at all wind turbines and wind monitoring masts is obtained;

(d) Methods to account for carcass loss and detection probability when estimating rates of mortality across the Waverley Wind Farm;

(e) Methods to accurately record the condition (partial, full or feather spot) and cause of death; and

(f) Methods to record, and electronically store, audit and backup data.

78. In addition to the requirements specified in Condition 77, the Bird Collision Monitoring Plan shall:

(a) Specify that all carcasses found within the project site boundaries as defined in Figure 1 of Appendix A to the Landscape and Visual Assessment by Isthmus Group appended to "*Waverley Wind Farm – Resource Consent Applications and Assessment of Environmental Effects"* dated April 2016 shall be labelled with a unique number, bagged and frozen for future reference and possible necropsy of native species by a trained veterinarian, to determine cause of death, when this is not apparent. A copy of the associated data sheet for each carcass will be replicated, bagged and frozen with the carcass at all times. All carcass shall be photographed as found and mapped using GPS location on a detailed map of the search area showing the location of the wind turbines and associated facilities, such as internal access roads and wind monitoring masts;

(b) Identify additional measures that may be implemented by the consent holder in order to avoid, remedy, mitigate and / or compensate for the potential adverse effects of the Waverley Wind Farm on bird species in the event that the bird mortality for any individual species listed in Condition 82 equals or exceeds the Mitigation Review Threshold for the individual species; and

(c) Specify the methodology that will be utilised to identify applicable turbines for the purpose of Condition 92(b) below.

79. As part of the certification of the Bird Collision Monitoring Plan in accordance with Condition 76 above, the Group Manager – Environmental Services, South Taranaki District Council may seek advice and comment from the expert panel on the appropriateness of the methods proposed by the consent holder to achieve the objective of the Bird Collision Monitoring Plan.

Bird Collision Monitoring

80. Bird collision monitoring shall commence immediately following the commencement of operation of the Waverley Wind Farm and continue for a period of ten years (or until an alternative date as determined by the Group Manager – Environmental Services, South Taranaki District Council in accordance with Condition 90) and at the frequencies specified in the Bird Collison Monitoring Plan.

81. Bird collision monitoring shall be measured against the following mortality predictions for the listed individual species:

Species	Conservation Status	Predicted Mortality[1]	Mitigation Review Threshold[2]	Immediate Review Threshold[3]
Nationally Critical or Nationally Endangered Species				
Black stilt	Critical	NP[4]	0.5	2
Australasian bittern	Endangered	NP	0.5	2
Reef heron	Endangered	NP	0.5	2
Black-billed gull	Critical	NP	0.5	2
Black-fronted tern	Endangered	NP	0.5	2
Any other nationally critical or nationally endangered species		NP	0.5	2
Nationally Vulnerable Species				
New Zealand dabchick	Vulnerable	NP	2	5
New Zealand dotterel	Vulnerable	NP	2	5
Caspian tern	Vulnerable	NP	2	5
Wrybill	Vulnerable	NP	2	5
Banded dotterel	Vulnerable	NP	2	5
Red-billed gull	Vulnerable	NP	2	5
Any other nationally vulnerable species		NP	2	5
At Risk Species				
White-fronted tern	Declining	NP	5	10
Godwit	Declining	NP	5	10
New Zealand pipit	Declining	NP	5	10
Brown teal	Recovering	NP	5	10
Variable oystercatcher	Recovering	NP	5	10
Fluttering shearwater	Relict	NP	5	10
Northern diving petrel	Relict	NP	5	10

1 Based on pre-construction mortality modelling.

2 Based on a five-year rolling annual mean of bird mortality adjusted in accordance with Condition 77.

3 Based on actual bird mortality recorded over a 12-month period between 1 June and 31 May.

4 'NP' means no prediction.

Black shag	Naturally uncommon	NP	5	10
Little black shag	Naturally uncommon	NP	5	10
Royal spoonbill	Naturally uncommon	NP	5	10
North Island fernbird	Declining	NP	5	10
Spotless crake	Relict	NP	5	10
Pied stilt[5]	Declining	1	5	20
Pied oystercatcher[6]	Declining	3	10	20
Any other at risk species		NP	5	10

Note: The conservation status specified in Condition 79 is that stated in the publication "Robertson, H.A.; Dowding, J.E.; Elliott, G.P.; Hitchmough, R.A.; Miskelly, C.M.; O'Donnell, C.J.F.; Powlesland, R.G.; Sagar, P.M.; Scofield, R.P.; Taylor, G.A. 2013: Conservation status of New Zealand birds, 2012. New Zealand Threat Classification Series 4." Department of Conservation, Wellington. 22 p.

82. In the event that the conservation status of any of the individual bird species listed in Condition 81 changes as a result of an amendment to the New Zealand Threat Classification as published by the Department of Conservation, then the Mitigation Review Threshold and Immediate Review Threshold for the new, relevant threat classification shall apply.

83. A draft annual monitoring report shall be jointly prepared by a suitably experienced and qualified avian expert and a suitably experienced and qualified bio-statistician, and be provided to the expert panel for review and comment within 20 working days of the anniversary of the commencement of bird collision monitoring. The annual monitoring report shall present, summarise and analyse the data collected in the preceding year and report on the operation of the Waverley Wind Farm against the objective of the Bird Collision Monitoring Plan and the mortality predictions for the individual species set out in Condition 81 above.

84. The expert panel shall provide its written comments (if any) on the draft annual monitoring report to the consent holder within 20 working days of receipt of the report from the consent holder.

85. The consent holder shall submit the annual monitoring report (including all comments from the expert panel and the consent holder's response to those comments) to the Group Manager – Environmental Services, South Taranaki District Council within 60 working days of the anniversary of the commencement of bird collision monitoring. A copy of the annual monitoring report shall also be provided to the Department of Conservation (Director, Operations, Central North Island).

---

5 Review thresholds differ from other species based on modelling and to reflect Conditions 64 and 65.

6 Review thresholds differ from other species based on modelling and to reflect Conditions 64 and 65.

86. Upon receiving the annual monitoring report the Group Manager – Environmental Services, South Taranaki District Council may seek advice and comment from the expert panel on the data presented in the report and the operation of the Waverley Wind Farm against the objective of the Bird Collision Monitoring Plan and the mortality predictions for the individual species set out in Condition 81 above.

Bird Collision Monitoring Review

87. On the fifth anniversary of the commencement of operation of the Waverley Wind Farm the consent holder shall commission a bird collision monitoring review report by a suitably experienced and qualified avian expert that:

    (a) Reviews the results of the monitoring required in accordance with the Bird Collison Monitoring Plan against the mortality predictions for the individual species specified in Condition 81 above;

    (b) Considers whether the monitoring required in accordance with the Bird Collision Monitoring Plan needs to continue, and if so at what frequency; and

    (c) Considers whether any additional mitigation and / or compensation, as identified in the Bird Collision Monitoring Plan, needs to be implemented by the consent holder in the event that bird mortality for any individual species listed in Condition 81 has equalled or exceeded the Mitigation Review Threshold for the individual species.

88. The consent holder shall submit the draft bird collision monitoring review report to the expert panel for review and comment. The expert panel shall provide its written comments (if any) on the draft bird collision monitoring review report to the consent holder within 20 working days of receipt of the report from the consent holder.

89. The consent holder shall submit the bird collision monitoring review report (including all comments from the expert panel and the consent holder's response to those comments) to the Group Manager – Environmental Services, South Taranaki District Council within 20 working days of the receipt of written comments from the expert panel. A copy of the bird collision monitoring review report shall also be provided to the Department of Conservation (Director, Operations, Central North Island).

90. The Group Manager – Environmental Services, South Taranaki District Council shall review the bird collision monitoring review report, subject to any advice from the expert panel, and determine whether:

    (a) The monitoring required in accordance with the Bird Collision Monitoring Plan needs to continue, and if so at what frequency;

    (b) Any additional mitigation and / or compensation, as identified in the Bird Collision Monitoring Plan, that should be implemented by the consent holder in the event that bird mortality for any individual species listed in Condition 81 has equalled or exceeded the Mitigation Review Threshold for the individual species; and

(c) There is a need to serve notice on the consent holder of its intention to review any of the ecological management / mitigation / compensation conditions of this resource consent in accordance with sections 128 to 131 of the Resource Management Act 1991 where there is not an agreement between the consent holder and the expert panel as to the need for, or quantum of, any additional ecological management / mitigation / compensation.

91. Where there is agreement between the consent holder and the expert panel over the need for, or quantum of, any additional ecological management / mitigation / compensation, the consent holder shall implement such agreement.

Immediate Review

92. In the event that the bird collision monitoring required in accordance with the Bird Collision Monitoring Plan and Condition 80 identifies that the mortality of any individual bird species listed in Condition 81 has equalled or exceeded the Immediate Review Threshold for that individual species, then the consent holder shall:

(a) Notify the Group Manager – Environmental Services, South Taranaki District Council and the expert panel within 24 hours of becoming aware of the exceedance; and

(b) Immediately suspend the operation of the applicable wind turbine(s), as identified by the suitably experienced and qualified avian expert responsible for bird collision monitoring at the Waverley Wind Farm.

93. The suitably experienced and qualified avian expert responsible for bird collision monitoring at the Waverley Wind Farm shall undertake an investigation and complete a draft report on the possible cause of the bird mortalities within 10 working days of the consent holder notifying the Group Manager – Environmental Services, South Taranaki District Council. The draft report shall be immediately provided to the expert panel for review and comment.

94. The consent holder shall convene a meeting with the expert panel within five working days of their receipt of the draft report on the possible cause of the bird mortalities. The purpose of the meeting shall be to:

(a) Review and discuss the findings of the draft bird mortality investigation report;

(b) Consider whether any additional monitoring is required to further consider the potential cause of bird mortality;

(c) Consider whether any additional mitigation and / or compensation, as identified in the Bird Collision Monitoring Plan, needs to be implemented by the consent holder; and

(d) Consider whether it is appropriate for the applicable wind turbine(s) suspended in accordance with Condition 92(b) to re-commence operations, and whether there is a need for further controls on the interim operation of the relevant wind turbines (e.g. limiting operations at particular times of the day / season or in particular wind / weather conditions).

95. The consent holder shall submit the bird mortality investigation report (including all comments from the expert panel from the meeting and the consent holder's response to those comments) to the Group Manager – Environmental Services, South Taranaki District Council within five working days of convening a meeting with the expert panel in accordance with Condition 94. A copy of the bird mortality investigation report shall also be provided to the Department of Conservation (Director, Operations, Central North Island).

96. The Group Manager – Environmental Services, South Taranaki District Council shall, upon receipt of the bird mortality investigation report and as a matter of urgency, but subject to any advice from the expert panel, determine in consultation with the consent holder whether:

(a) It is appropriate for the applicable wind turbine(s) suspended in accordance with Condition 92(b) to re-commence operations, and whether there is a need for further controls on the interim operation of the relevant wind turbines (e.g. limiting operations at particular times of the day / season or in particular wind / weather conditions);

(b) Consider whether any additional monitoring is required and at what frequency;

(c) Any additional mitigation and / or compensation, as identified in the Bird Collision Monitoring Plan, needs to be implemented by the consent holder; and

(d) There is a need to serve notice on the consent holder of its intention to review any of the conditions of this resource consent in accordance with sections 128 to 131 of the Resource Management Act 1991 where there is not an agreement between the consent holder and the expert panel as to the matters specified in Conditions 95(a) to (d).

97. Where there is agreement between the consent holder and the expert panel over additional ecological management / mitigation / compensation, the consent holder shall implement such agreement.

LANDSCAPE MITIGATION

98. At least 40 working days prior to the commencement of construction works authorised as part of this resource consent, the consent holder shall write to the owner(s) of all dwellings within 3 kms of the site that have been assessed by the Isthmus Report as being subject to *moderate* visual effects, and the dwellings at the following addresses, informing them of their entitlement to landscape mitigation:

DWELLING[7]	PROPERTY
53	64 Rangikura Road
54	77 Rangikura Road (cnr Rangikura Road and Elsea Road)
55	120 Rangikura Road
56	169 Rangikura Road
57	Proposed residence on Waipipi Road

[7] As identified in Appendix C of the Landscape and Visual Assessment by Isthmus Group appended to *"Waverley Wind Farm – Resource Consent Applications and Assessment of Environmental Effects"* dated April 2016.

61	330 Peat Road
92	264 Rakaupiko Road
93	285A Rakaupiko Road
96	371 Rakaupiko Road
97	391 Rakaupiko Road
98	395 (A & B) Rakaupiko Road
109	Proposed residence on Waipipi Road
110	Private residence on Waipipi Road
155	147 Stewart Road

Note: Conditions 98 to 106 of this resource consent shall not apply if alternative arrangements are agreed by contractual obligation between the consent holder and the property owner.

99. The written offer required by Condition 98 above shall inform the owner(s) of the dwelling that they may request the consent holder to undertake landscape mitigation relating to views from dwellings on the property prior to, or after, construction of the Waverley Wind Farm.

100. Within 40 working days of the commissioning of the first wind turbine as part of the Waverley Wind Farm, the consent holder shall repeat the offer required by Condition 98 above to the owner(s) of any dwelling who have not already accepted the offer. The consent holder shall expressly state that the offer shall remain valid for 12 months following the commissioning of the first wind turbine as part of the Waverley Wind Farm.

101. Where requested by the owner(s), the consent holder shall undertake landscape mitigation by means of on-site planting on those properties to mitigate the effects of the Waverley Wind Farm on views from dwellings. The mitigation techniques shall be set out in a property specific concept plan and will typically consist of trees planted within the general vicinity of the dwelling to intercept views towards the Waverley Wind Farm. The concept plan shall, where practicable, be amended in response to the owners' preferences.

102. Following approval of the concept plan by the owner(s), the consent holder shall implement the concept plan at a practicable time agreed between the consent holder and the owner(s), but preferably during the first planting season (May – September) following the approval of the concept plan.

103. Subject to Condition 104 below, the consent holder shall maintain the planting for 12 months following the completion of the planting.

104. In the event that any owner(s) advises the consent holder that they wish to maintain the planting themselves, the consent holder shall pay the owner(s) the sum of money allocated in the cost estimate for maintenance set out in the approved concept plan.

105. In the event that any owner(s) advise the consent holder that they wish to implement the concept plan themselves, the consent holder shall pay the owner(s) the sum of money allocated in the approved concept plan on the agreement that the owner(s) shall carry out the planting themselves.

106. A copy of each concept plan, and confirmation that the works have been implemented and maintained (or that arrangements have been made for the owner(s) to implement and / or maintain the planting themselves in accordance with Conditions 104 and 105 above), shall be provided to the Group Manager – Environmental Services, South Taranaki District Council within 20 working days of the completion of such works or arrangements.

ARCHAEOLOGY

107. At least 20 working days prior to the commencement of construction works authorised as part of this resource consent, the consent holder shall submit an Accidental Discovery Protocol and Management Plan to the Group Manager - Environmental Services, South Taranaki District Council for endorsement acting in a technical certification capacity to certify that the plan meets the objectives in Condition 107(a) and (b). The Accidental Discovery Protocol and Management Plan shall be prepared by a suitably experienced and qualified archaeologist and in consultation with Ngaa Rauru and Heritage New Zealand. The objectives of the Accidental Discovery Protocol and Management Plan shall be to:

    (a) Minimise the effects of construction works on any koiwi, taonga or archaeological features within the project site boundaries of the Waverley Wind Farm; and

    (b) Ensure construction works are designed and implemented in accordance with the requirements of the Heritage New Zealand Pouhere Taonga Act 2014.

108. In order to achieve the objectives established in Condition 107 above, the Accidental Discovery Protocol and Management Plan shall, as a minimum, address the following matters:

    (a) Preconstruction protocols that may be carried out;

    (b) Protocols for notification of relevant parties and site management procedures in the event any koiwi, taonga or archaeological features are uncovered at any time;

    (c) Contact details for relevant parties;

    (d) The procedures to be adopted during construction in potentially sensitive locations; and

    (e) Training procedures for all site staff and contractors.

109. The consent holder shall ensure that a suitably experienced and qualified archaeologist is on site to monitor construction works (particularly surface clearing, trenching, and the formation of the internal access road network and foundation excavations) in the vicinity of the unmodified coastal dunes, Whenuakura River and the Waipipi Stream.

110. The consent holder shall ensure the archaeologist is given the opportunity to examine any archaeological deposits disturbed by construction works in the locations identified in Condition 109 above. The archaeologists shall make recommendations to the consent holder with respect to further examination of any archaeological deposits where appropriate. The consent holder shall implement the recommendations of the archaeologist and also notify the Group Manager – Environmental Services, South Taranaki District Council of these recommendations.

111. The requirements of the Accidental Discovery Protocol and Management Plan established in Condition 107 above, along with Conditions 109 and 110 above, shall only apply for those areas within the project site boundaries of the Waverley Wind Farm not subject to an archaeological authority obtained under the Heritage New Zealand Pouhere Taonga Act 2014.

Note: If required, the consent holder is responsible for obtaining archaeological authorities under section 44 of the Heritage New Zealand Pouhere Taonga Act 2014 prior to the commencement of construction works authorised as part of this resource consent.

112. The consent holder shall provide an opportunity for a representative of Ngaa Rauru to be present on site during any examinations of archaeological deposits of potential significance to either iwi.

DUNE MANAGEMENT

113. At least 20 working days prior to the commencement of construction works authorised as part of this resource consent, the consent holder shall submit a Dune Management Plan to the Group Manager - Environmental Services, South Taranaki District Council to certify that the plan meets the objectives in Condition 113(a). The objective of the Dune Management Plan shall be to:

    (a) Avoid or mitigate the risk of dune instability within the project site boundaries as defined in Figure 1 of Appendix A to the Landscape and Visual Assessment by Isthmus Group appended to "*Waverley Wind Farm – Resource Consent Applications and Assessment of Environmental Effects"* dated April 2016.

114. In order to achieve the objectives established in Condition 113 above, the Dune Management Plan shall, as a minimum, address the following matters:

    (a) The construction management controls to be utilised by the consent holder, in addition to those set out in the Earthworks and Construction Management Plan required in accordance with Conditions 27 and 28 if necessary, in order to avoid or mitigate potential adverse effects on dune landforms within the project site boundaries as defined in Figure 1 of Appendix A to the Landscape and Visual Assessment by Isthmus Group appended to "*Waverley Wind Farm – Resource Consent Applications and Assessment of Environmental Effects"* dated April 2016;

    (b) The location of areas of bare sand within the project site boundaries as defined in Figure 1 of Appendix A to the Landscape and Visual Assessment by Isthmus Group appended to "*Waverley Wind Farm – Resource Consent Applications and Assessment of Environmental Effects"* dated April 2016 based on ground mapping;

(c) The areas of bare sand that should be monitored, the monitoring methodology to be utilised (e.g. observation and photography), and the frequency of the monitoring to be undertaken by the consent holder (e.g. annual, quarterly, monthly); and

(d) The mitigation planting (e.g. tauhinu or sand coprosma) and fencing measures that will be utilised to stabilise the movement of migrating dunes if necessary.

AIR TRAFFIC SAFETEY

115. The consent holder shall advise the Civil Aviation Authority at least six months prior to the commissioning of the first wind turbine as part of the Waverley Wind Farm of the finalised geographical co-ordinates of the sites where the wind turbines are to be installed.

116. The five wind turbines with the highest elevation above mean sea level, along with those wind turbines around the perimeter of the project site boundaries as defined in Figure 1 of Appendix A to the Landscape and Visual Assessment by Isthmus Group appended to "*Waverley Wind Farm – Resource Consent Applications and Assessment of Environmental Effects"* dated April 2016, shall be lit with aviation obstacle lighting as follows:

(a) The spacing between the wind turbines fitted with aviation obstacle lighting must not exceed 1,850 metres;

(b) All aviation obstacle lighting will have an intensity of not less than 1,600 candela of red light as defined in Civil Aviation Rule Part 77, Appendix B10;

(c) All aviation obstacle lighting must flash between 20 and 60 times per minute; and

(d) All aviation obstacle lighting must be located on, or above, the top of the nacelle of the wind turbine and shall be visible from all directions but must be shielded below the horizontal plane.

117. No later than five working days after the construction of all wind turbines is completed (or after each stage, if the Waverley Wind Farm is constructed in stages), the consent holder shall submit a registered surveyor's determination of the height and position of the wind turbines to the Civil Aviation Authority. The consent holder shall also submit proof of compliance with the aviation obstacle lighting standards set out in Condition 115 above. All correspondence to the Civil Aviation Authority in relation to this condition shall be copied to the General Manager – Environmental Services, South Taranaki District Council.

118. Should the consent holder decide not to proceed with the Waverley Wind Farm, the consent holder shall notify the Civil Aviation Authority within five working days of its decision.

COMMUNICATION SERVICES

119. The consent holder shall undertake an independent assessment, prepared by a person qualified in communication reception, of television reception at any residential dwelling either existing or consented at the date of issue of this resource consent located within the intended coverage area, if it receives any complaints (within 12 months of the first wind turbine as part of the Waverley Wind Farm being commissioned) from occupants of that dwelling that post construction television reception is impaired. If the television reception quality is found to be impaired as a result of the operation of the Waverley Wind Farm, the consent holder shall undertake the best practicable measures to provide reasonable television reception.

120. The consent holder shall undertake an independent assessment, prepared by a person qualified in radio reception and transmission, of radio reception if it receives any complaints (within 12 months of the first wind turbine as part of the Waverley Wind Farm being commissioned) from users of radio transmitters that post construction radio reception or transmission is impaired. If the radio transmission quality is found to be impaired as a result of the operation of the Waverley Wind Farm, the consent holder shall undertake the best practicable measures to provide reasonable radio reception.

SHADOW FLICKER

121. The consent holder shall ensure that shadow flicker effects at any residential dwelling existing or consented at the date of issue of this resource consent (and outside of the project site boundaries as defined in Figure 1 of Appendix A to the Landscape and Visual Assessment by Isthmus Group appended to "*Waverley Wind Farm – Resource Consent Applications and Assessment of Environmental Effects"* dated April 2016) arising from the operation of the Waverley Wind Farm shall be no greater than 30 minutes per day, and a total of 30 hours per year.

122. At least 20 working days prior to the commencement of construction works authorised as part of this resource consent, the consent holder shall submit a Pre-Instalment Shadow Flicker Assessment to the Group Manager - Environmental Services, South Taranaki District Council. The Pre-Instalment Shadow Flicker Assessment shall be prepared by an appropriately qualified consultant and demonstrate that the proposed numbers, layout and type of wind turbines to be used in the Waverley Wind Farm will comply with the shadow flicker limits specified in Condition 121 above.

HAZARDOUS SUBSTANCES / CONTAMINANTS

123. At least 20 working days prior to the commencement of construction works authorised as part of this resource consent, the consent holder shall submit a Contaminant Spill Contingency Management Plan to the Group Manager - Environmental Services, South Taranaki District Council for endorsement acting in a technical certification capacity to certify that the plan meets the objectives in Condition 123(a) and (b). The Contaminant Spill Contingency Management Plan shall be prepared by a suitably qualified and experienced person and provide for the following objectives:

    (a) Ensure measures are implemented on the site of the Waverley Wind Farm in order to minimise the potential risk, and effects, of a spill of hazardous substances, fuels or other contaminants; and

(b) The use, handling or storage of hazardous substances during the construction, operation and maintenance of the Waverley Wind Farm complies with the requirements of Hazardous Substances and New Organisms Act 1996 and its associated regulations.

124. In order to achieve the objectives established in Condition 123 above, the Contaminant Spill Contingency Management Plan shall, as a minimum, address the following matters:

(a) The identification of designated bulk fuel storage, contaminant storage facilities and re-fuelling locations;

(b) Measures to ensure that all contaminant storage or designated re-fuelling areas are bunded or contained in such a manner so as to prevent the discharge of contaminants;

(c) Requirements for all mobile fuel tankers to carry spill kits;

(d) Details on the contents of the spill kits;

(e) Records of the names of operators trained in spill response and remediation;

(f) Measures to ensure that all machinery is regularly maintained in such a manner so as to minimise the potential for leakage of contaminants;

(g) Measures to ensure that no machinery is cleaned, stored or refuelled within 20 metres of the bed of any water body;

(h) Measures to ensure that all contaminants are removed from the site at the end of the construction works, except for those required for the on-going maintenance and operational activities at the Waverley Wind Farm;

(i) Details of an internal and external notification procedure in the event of a spill of contaminants; and

(j) The identification of measures to be undertaken to remediate a contaminant spill, including instructions for removing and disposing of contaminated material in a manner suitable to ensure no further contamination occurs.

125. The transformers and radiators in the electrical substation / switchyard building shall be located on pedestal foundations and enclosed by bunds. The bunds must be designed with sufficient capacity to retain all of the oil utilised in each of the transformers.

126. Electric and magnetic field levels at the project site boundaries as defined in Figure 1 of Appendix A to the Landscape and Visual Assessment by Isthmus Group appended to "*Waverley Wind Farm – Resource Consent Applications and Assessment of Environmental Effects"* dated April 2016 shall not exceed the limits in the International Commission on Non-Ionising Radiation Protection (ICNIRP) guidelines endorsed by the New Zealand Ministry of Health.

FIRE MANAGEMENT

127. At least 20 working days prior to the commencement of construction works authorised as part of this resource consent, the consent holder shall submit a Fire Management Plan to the Group Manager - Environmental Services, South Taranaki District Council to certify that the plan meets the objective in Condition 127(a). The Fire Management Plan shall be prepared by a suitably qualified and experienced person and provide for the following objective:

    (a) Ensure measures are implemented on the site of the Waverley Wind Farm in order to minimise the potential risk, and effects, of fire.

128. In order to achieve the objective established in Condition 127 above, the Fire Management Plan shall, as a minimum, address the following matters:

    (a) The identification of potential sources of combustion and fire during the construction, operation and maintenance of the Waverley Wind Farm;

    (b) Measures to minimise or prevent the potential for fire during the construction, operation and maintenance of the Waverley Wind Farm;

    (c) Sources of water for fire-fighting purposes and / or fire retardants across the site of the Waverley Wind Farm;

    (d) Protocols for the management of different fire events (e.g. grass fires, mechanical fires) across the site of the Waverley Wind Farm; and

    (e) Training procedures for all site staff and contractors.

COMMUNITY CONSULTATION / COMMUNICATION

129. The consent holder shall establish and publicise a toll-free telephone number so that members of the public may raise matters with, or make an enquiry of, the consent holder during the construction of the Waverley Wind Farm.

130. At least 40 working days prior to the commencement of construction works authorised as part of this resource consent, the consent holder shall establish and co-ordinate a Consultative Group for the Waverley Wind Farm. Subject to Condition 132 below, this group is to be consulted, as a minimum, at least six monthly during the construction phase and over the first two years of the operation of the Waverley Wind Farm. Thereafter, the frequency of consultation is to be determined by a majority of the Consultative Group itself. Individual Consultative Group members may, with the agreement of the Group Manager - Environmental Services, South Taranaki District Council, call meetings at shorter intervals to deal with any interim matters that need to be addressed before the next scheduled meeting.

131. The objective of the Consultative Group will be to facilitate information flow between the consent holder's management team and the community, and will be an on-going point of contact between the consent holder and the community. The functions of the Consultative Group shall also include acting as a forum for relaying community concerns about the construction and on-going operation of the Waverley Wind Farm to the consent holder's on-site management team, developing acceptable means of addressing (where possible) and managing those concerns, and reviewing the implementation of measures to resolve and manage community concerns.

132. The consent holder shall be responsible for convening the meetings of the Consultative Group and shall cover the direct costs associated with the establishment and operation of the meetings. The consent holder shall be responsible for the keeping and distribution of the Consultative Group's minutes to all participants in the Consultative Group. A person independent of the consent holder shall chair the meeting. The chair of the Consultative Group shall be appointed by the Group Manager - Environmental Services, South Taranaki District Council.

133. The consent holder shall notify its intention to establish a Consultative Group for the Waverley Wind Farm project by public notice. The consent holder shall invite, as a minimum, the following parties to participate in the Consultative Group:

    (a) A representative of property owners and occupiers on local roads identified for use by construction traffic;

    (b) An elected representative of the South Taranaki District Council;

    (c) A delegate of the Department of Conservation (Director, Operations, Central North Island);

    (d) A representative each from Ngaa Rauru and Ngati Ruanui; and

    (e) Local residents.

    No owner or occupier of any property on which the Waverley Wind Farm is located may be a member of the Consultative Group. The consent holder shall not be in breach of this condition if any one or more of the parties specified above do not wish to be members of the Consultative Group or to attend any particular meeting.

134. The Consultative Group shall cease to exist when a 75% majority of the Consultative Group vote that it is no longer necessary.

135. At least 20 working days prior to the commencement of construction works authorised as part of this resource consent, the consent holder shall publicly advertise the temporary closure of the informal access route through the site of the Waverley Wind Farm to the Tasman Sea and the Whenuakura River. The public notice shall be advertised in the *"South Taranaki Star"* and provide details on the expected duration of the access restrictions.

COMPLAINTS

136. The consent holder shall maintain and keep a Complaints Register to record any complaints about construction works and operation of the Waverley Wind Farm received by the consent holder in relation to traffic, noise, dust, television or radio reception interference, shadow flicker or any other environmental effects. The register shall record, where this information is available, the following:

    (a) The date, time and duration of the incident that resulted in the complaint;

    (b) The location of the complainant when the incident was detected;

    (c) The possible cause of the incident; and

(d) Any corrective action taken by the consent holder in response to the complaint, including the timing of the corrective action.

137. The Complaints Register shall be available to staff and authorised agents of the South Taranaki District Council and to members of the Consultative Group at all reasonable times upon request. Complaints received by the consent holder that may infer non-compliance with the conditions of this resource consent shall be forwarded to the Group Manager - Environmental Services, South Taranaki District Council within 48 hours of the complaint being received.

DECOMMISSIONING AND SITE REHABILITATION

138. If any of the wind turbines cease to operate for a continuous period of more than 24 months, the consent holder shall remove from the site all above ground structures associated with the operation of that wind turbine (including the turbine tower, wind turbine generator and externally housed transformer unit). The site of each wind turbine generator shall be restored and re-vegetated as pasture within 12 months of any wind turbine being removed.

REVIEW

139. Pursuant to sections 128 to 131 of the Resource Management Act 1991, the South Taranaki District Council may one year after the commencement of this resource consent, and at five yearly intervals thereafter, serve notice on the consent holder of its intention to review any or all of the conditions of this resource consent for any of the following purposes:

(a) To review the effectiveness of the conditions of this resource consent in avoiding, remedying or mitigating any adverse effects on the environment that may arise from the exercise of this resource consent (in particular, the potential adverse environmental effects in relation to ecology, archaeology, noise, earthworks, traffic and roading, visual, landscape and amenity effects);

(b) To address any adverse effects on the environment which have arisen as a result of the exercise of this resource consent that were not anticipated at the time of commencement of this resource consent, including addressing any issues arising out of complaints; and

(c) To review the adequacy of, and necessity for, any of the monitoring programmes or management plans that are part of the conditions of this resource consent.

CHARGES

140. The consent holder shall pay to the South Taranaki District Council:

(a) All required administration charges fixed by the South Taranaki District Council pursuant to section 36 of the Resource Management Act 1991 in relation to the administration, monitoring and inspection of this resource consent; and

(b) All other charges authorised by regulations.