



STAFF REPORT

TO: Environment & Planning Subcommittee

FROM: Jack Andrew, Co-ordinator Land Use Consents, and
Graham Caradus, Co-ordinator Regulatory Services

REFERENCE: RM090766

SUBJECT: **NETWORK TASMAN - REPORT EP10-02-01** - Report prepared for hearing of 22 February 2010

1. SUMMARY OF PROPOSAL

The application is a Notice of a Requirement to Designate land for Network Tasman for the construction and operation of a 66kV electricity substation with associated underground power cables. Network Tasman's objectives are to meet its obligations under the Electricity Act to plan and provide for future electricity demands.

The 6330 m² site is a triangular shaped parcel currently held within a 10.7732ha property (Lot 3 DP 19345, CT NL11C/1072). This property (Lot 3 DP19345) is currently in the process of title issue after recent subdivision (RM070915). While this may be confusing for practical purposes the triangular shaped parcel comprising some 6,330 square metres is held within Lot 5 LT 406152. Network Tasman has an agreement to purchase this parcel and an application for subdivision will be made following the designation being confirmed.

The site is located approximately 250m south west of the intersection of Swamp Road and Factory Road at Riwaka. The location (from Council's GIS) is shown on Appendix1 at the end of this report.

Network Tasman proposes to house the substation equipment in a barn-style building. The building will be 600 square metres in area and have a maximum height of 10 metres (which is over the 7.5 metre permitted height restriction for the zone but within the 12.5m controlled activity building height). The building is to be finished in recessive colours with landscaping.

The substation building will be connected to two nearby 66kV electricity transmission lines by underground cables. The two 66kV transmission lines are owned by Transpower. One 66kV transmission line runs across the adjacent land to the south and west of the site and another across hills to the west of the site. The substation will step this voltage down to 11kV for connection by underground cable into the existing local distribution network.

The site allocated for the substation is currently unoccupied by buildings.

The site is within the Rural 1 zone which is a working rural zone designed to provide for farming and horticultural activities. The area surrounding the site is used for intensive horticultural production and lifestyle/pastoral farming. The nearest dwellings are located on elevated sites to the west and south-west of the site. The nearest dwelling on an elevated site is the Hay's dwelling which is approximately 150 metres from the proposed substation while the nearest dwelling near the Factory Road/Swamp Road intersection is approximately 240 metres away (Humphries dwelling).

2. REQUIREMENT AND DESIGNATION

The terms 'requirement' and 'designation' may cause confusion but in simple terms they are part of the same process, with the requirement being the notice, hearing and decision-making phase initiated by an authority that has financial responsibility for a public work that it wants shown as a designation on the Council's planning maps and records.

2.1 Network Tasman's requiring authority status

Network Tasman Limited is a Network Utility Operator as defined in Section 166 of the Resource Management Act 1991. Network Utility Operators may be approved by the Minister for the Environment as Requiring Authorities.

Network Tasman Limited was formerly known as Tasman Energy Limited. Tasman Energy Limited was made a Requiring Authority by the Minister for the Environment on 24 January 1995 and notice appeared in the New Zealand Gazette on 9 February 1995 (Gazette Ref. 12/391).

Network Tasman Limited has the legal status of a Requiring Authority and is able to issue a Requirement pursuant to Section 168 of the Resource Management Act 1991 for its proposed project of planning for a future Riwaka electricity substation.

- 2.2** A requirement to designate may fall outside the overall framework of a plan in that a designation does not need to be consistent with the objectives and policies of the plan, and it may be contrary to the rules that have effect over the land in question. Conditions may be recommended on a requirement and included in the designation.
- 2.3** The purpose of a designation is to secure the land in a planning sense for a public work. Designation has no effect on the actual land acquisition process or compensation payment amounts which are beyond the scope of the RMA 1991 and dealt with under separate legislation (Public Works Act 1981).
- 2.4** The information supplied with a requirement to designate is also different in nature to that supplied with resource consent for a number of reasons:
- a) in making a decision, the matters for which consideration must be given differ in nature (compare Sections 168, 171 and 176A of the Act for designations with Section 104 for a resource consent);
 - b) much of the information supplied with a notice of requirement relates to those matters that are relevant for determining whether to confirm or cancel a

requirement. For example, the consideration of effects on the environment also has a different perspective in that, by their nature, public works, particularly large-scale projects can have some form of adverse effects on private landowners that are simply unavoidable.

2.5 The Committee's role is that prescribed for a territorial authority under Section 171 of the RMA 1991. When considering a requirement and submissions to it the committee under Section 171(i) must, subject to Part 2 of the Act, consider the effects on the environment having particular regard to :

- a) relevant national policy statements and all relevant provisions of Council's planning documents (Section 171(a));
- b) whether adequate consideration has been given to alternative sites, routes or methods of achieving the public work where the requiring authority does not own the land or the work will have a significant adverse effect on the environment.
- c) whether the work and designation is reasonably necessary to achieve the objectives of the requiring authority for which the designation is sought (Section 171(c));
- d) any other matter considered reasonably necessary for Council to make its recommendation.

2.6 Having heard the requiring authority and submitters the Committee must make a recommendation to Network Tasman to either cancel or confirm the requirement to designate. If confirmed it can also recommend such conditions as it deems appropriate on both the requirement and Outline Plan. The Outline Plan process is a separate process between the Council and Network Tasman where the details of the landscaping, access and buildings and other matters covered by Section 176A RMA1991 are considered in detail along with compliance with the designation conditions.

Network Tasman has 30 working days from receiving the Committee's recommendation to advise its decision on the recommendation (Section 172 Resource Management Act 1991).

Within 15 working days of receiving the Network Tasman decision the Tasman District Council serves the decision on submitters and directly affected landowners and occupiers (Section 173 Resource Management Act 1991).

3. TASMAN RESOURCE MANAGEMENT PLAN

3.1 The rules of the Tasman Resource Management Plan (the Plan) (operative in part on 18 September 2008) are not applicable to the proposal in that a requirement is not subject to the rules in a District Plan. Requirements and designations are subject to regional rules, although in this instance the proposal appears to comply with the regional rules of the Plan. While no detailed information on the proposed stormwater discharge has been provided, it is expected that the discharge of stormwater from the proposed substation will have no difficulty in complying with the relevant rule 36.4.2.

The application site is located within the Rural 1 zone and there are no TRMP Area overlays for faultlines, landscape priority, contamination or archaeological features etc on the site. Had a requirement not been sought resource consent would have been needed for the substation as the activity breaches TRMP Rule 16.6.2.1 (o) (i) as a sub-station in a rural area is not a permitted activity, and would have been a discretionary activity in accordance with TRMP Rule 16.6.2.4.

3.2 The applicant has provided a geological assessment from Geo-Logic Limited, which generally concludes that the site is geotechnically suitable for the proposed substation and under part 6 makes two recommendations as follows:

- “1. Once further consideration has been given to the specific site developments proposed, facility importance levels and likely foundation types and loadings, then it will be appropriate to carry out a sub-surface investigation to determine soil strength parameters and quantify liquefaction potential for design*
- 2. Site development should be carried out under the supervision of a qualified engineer, experienced in foundation design with review by an appropriately qualified geotechnical engineer.”*

It is important that these two recommendations are not lost sight of at the outline plan or building consent checking stages of the projects development. By including them as a condition of the designation they will be brought to the attention of those responsible for these later assessments.

4. NOTIFICATION AND SUBMISSIONS

4.1 Written Approvals

Prior to notification no written approval's were received.

4.2 Notification

The application was fully notified on 9 December 2009 and submissions closed on Wednesday 27 January 2010

4.3 Submissions

Neutral submissions

Submitter	Reasons	Heard?
1 New Zealand Historic Places Trust(NZHPT)	Advice note in case of archaeological discovery	No
2 Little Sydney Mining Company Ltd	Affected by cables being located within the Company's property. Note: the proposed cables are permitted activities under the TRMP and access easements, compensation etc is beyond the scope of the Councils jurisdiction under the RMA1991	Not Stated

Submissions in opposition

Submitter	Reasons	Heard?
3 S & K Hendren	Property valuation, noise and visual	Yes

	impacts, and better alternative locations	
4 K & L Hay	Property valuation, noise and visual impacts, and better alternative locations	Yes

These parties' properties are shown in Appendix 1 except for the NZHPT which has a general interest.

4.4 Comments on Submissions

4.4.1 The two submissions that oppose the application have identified very similar issues primarily relating to valuation, noise and visual impacts on their properties and they know of better alternative sites. Further discussion with respect to the noise and visual matters raised in the submissions is contained in Section 7.0 of this report.

4.4.2 Alternative sites

The matter of the requiring authority having to consider better alternative sites, methods and routes only arises for Councils consideration under Section 171(1)(b) (i) & (ii) where the requiring authority has not secured an interest in (or owns) the land to which the requirement relates or where a significant environmental effect could arise. In relation to Network Tasman's proposed substation they have an agreement to buy the subject land from the landowner. Also latter in this report having considered the potential adverse environmental impacts(effects) I conclude that with mitigating conditions they will be no more than minor. In this situation then consideration of alternatives sites is not relevant.

4.4.3 Property valuation effects

A concern has been raised in submissions that property values will be affected by the proposal. However the Environment Court has determined that "Effects on property values are not a relevant consideration in determining whether resource consent should be granted. Diminution in property values is simply another measure of adverse effects on amenity values" Foot v Wellington CC EnvC W73/98, noted (1998) BRM Gazette 173. This was further supported by another Environment Court decision in North Canterbury Gas Ltd v Waimakariri DC (EnvC A217/02) where the Court noted that the physical effects on the environment are of more importance to a case than the speculative evidence of effects on valuation. Therefore property valuation is not a matter that can be considered in the determination of the requirement.

5. STATUTORY CONSIDERATIONS

5.1 This application has to be considered, in accordance with the provisions of Section 171 of the Act and then a recommendation made to the Requiring Authority (Network Tasman).

"(1A) When considering a requirement and any submissions received, a territorial authority must not have regard to trade competition or the effects of trade competition.

- (1) *When considering a requirement and any submissions received, a territorial authority must, subject to Part 2, consider the effects on the environment of allowing the requirement, having particular regard to—*
 - (a) *any relevant provisions of—*
 - (i) *a national policy statement:*
 - (ii) *a New Zealand coastal policy statement:*
 - (iii) *a regional policy statement or proposed regional policy statement:*
 - (iv) *a plan or proposed plan; and*
 - (b) *whether adequate consideration has been given to alternative sites, routes, or methods of undertaking the work if—*
 - (i) *the requiring authority does not have an interest in the land sufficient for undertaking the work; or*
 - (ii) *it is likely that the work will have a significant adverse effect on the environment; and*
 - (c) *whether the work and designation are reasonably necessary for achieving the objectives of the requiring authority for which the designation is sought; and*
 - (d) *any other matter the territorial authority considers reasonably necessary in order to make a recommendation on the requirement.*
- (2) *The territorial authority may recommend to the requiring authority that it—*
 - (a) *confirm the requirement:*
 - (b) *modify the requirement:*
 - (c) *impose conditions:*
 - (d) *withdraw the requirement.*
- (3) *The territorial authority must give reasons for its recommendation under subsection (2)."*

5.2 Part 2 of the Act

Section 5 sets out the Purpose of the Act, and states:

- (1) *The purpose of this Act is to promote the sustainable management of natural and physical resources.*
- (2) *In this Act, sustainable management means managing the use, development, and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic, and cultural wellbeing and for their health and safety while—*
 - (a) *Sustaining the potential of natural and physical resources (excluding minerals) to meet the reasonably foreseeable needs of future generations; and*
 - (b) *Safeguarding the life-supporting capacity of air, water, soil, and ecosystems; and*
 - (c) *Avoiding, remedying, or mitigating any adverse effects of activities on the environment.*

5.3 Section 6

Section 6 of the Act details matters of national importance to be recognised and provided for. Of relevance to this application are: 6(a) *the preservation of the natural character of the coastal environment, wetlands, and lakes and rivers and their margins, and the protection of them from inappropriate subdivision, use and development;* and 6(f) *the protection of historic heritage from inappropriate subdivision, use and development.*

The application site is located beside a drain that flows into the Little Sydney watercourse system. The proposed substation will be located on raised land within a building and will have no discharge or visual appearance that would detract from the values of the Little Sydney watercourse system.

The NZHPT has advised in their submission that there are a number of archaeological sites in the vicinity of the site; including find spots and pit sites and that the presence of subsurface archaeological material on the site cannot be discounted. The NZHPT have recommended an advice note as follows:

"It is possible that archaeological sites may be affected by the proposed work. Evidence of archaeological sites may include burnt and fire cracked stones, charcoal, rubbish heaps including shell, bone and/or glass and crockery, ditches, banks, pits, old building foundations, artefacts of Maori and European origins or human burials. The applicant is advised to contact the New Zealand Historic Places Trust if the presence of an archaeological site is suspected. Work affecting archaeological sites is subject to a consent process under the Historic Places Act 1993. If any activity associated with this proposal, such as earthworks, fencing or landscaping, may modify, damage or destroy any archaeological site(s), an authority (consent) from the New Zealand Historic Places Trust must be obtained for the work to proceed lawfully. The Historic Places Act 1993 contains penalties for unauthorised site damage."

Following discussion with the Requiring Authorities consultant and the landowner Mr Inglis on 19/01/2010 the applicant has volunteered to accept an advice note.

I am therefore satisfied that the matters of national importance are not compromised by the requirement.

5.4 Section 7

Section 7 of the Act provides other matters that Council shall have particular regard to. Of relevance to this application are 7(c) *the maintenance and enhancement of amenity values*, and 7(f) *maintenance and enhancement of the quality of the environment*.

5.5 Amenity values are defined in the Act as

Amenity values means those natural or physical qualities and characteristics of an area that contribute to people's appreciation of its pleasantness, aesthetic coherence, and cultural and recreational attributes.

An assessment of the effects of the proposal on the amenity of the surrounding environment is included as part of my evaluation of issues under Section 7.0 below.

5.6 Section 8

Section 8 of the Act relates to the principles of the Treaty of Waitangi. No specific issues in this regard have been raised by iwi and I am satisfied that there are no matters pertaining to the Treaty of Waitangi that are of a concern for this application.

6. NATIONAL POLICY AND ENVIRONMENTAL STATEMENTS

6.1 There are two National Policy Statements and four National Environmental Standards.

6.2 The National Environmental Standard for Electricity Transmission Activities 2009 is focused on ensuring that territorial local authorities have planning controls for the national grid that are appropriate and nationally consistent and also manage activities such as excavation that could endanger the integrity of the national grid if carried out near lines. Networks Tasman's proposals for transmission associated with the substation are for underground lines with easements that should provide adequate protection without detracting from the amenity of the neighbourhood and environment generally.

6.3 The National Policy Statement on Electricity Transmission covers the wider electricity system of generation, lines, towers, poles, switching stations and substations. The policy statement recognises that the availability of electricity and its security of supply play a vital role in the well being of New Zealand. The objectives and policies are to be applied and weighed up with other considerations by decision makers in considering notices of requirement for designations.

6.3.1 The objective of the *National Policy Statement on Electricity Transmission* is "to recognise the national significance of the electricity transmission network by facilitating the operation, maintenance and upgrade of the existing transmission network and the establishment of new transmission resources to meet the needs of present and future generations, while managing the adverse environmental effects of the network; and managing the adverse effects of other activities on the network." The relevant policies are:

6.3.2 *Policy 8: In rural environments, planning and development of the transmission system should seek to avoid adverse effects on outstanding natural landscapes, areas of high natural character and areas of high recreation value and amenity and existing sensitive activities.*

6.3.3 *Policy 9: Provisions dealing with electric and magnetic fields associated with the electricity transmission network must be based on the International Commission on Non-ionising Radiation Protection Guidelines for limiting exposure to time varying electric magnetic fields (up to 300GHz) (Health Physics, 1998, 74(4):494-522) and recommendations from the World Health Organisation monograph Environmental Health Criteria (No 238, June 2007) or revisions thereof and any applicable New Zealand standards or national environmental standards.*

6.3.4 *Policy 10: In achieving the purpose of the Act, decision makers must to the extent reasonably possible manage activities to avoid reverse sensitivity effects on the electricity transmission network and to ensure that the operation, maintenance, upgrading, and development of the electricity transmission network is not compromised.*

6.3.5 In relation to policies 8 and 10 the proposed substation is located on a relatively small pocket of "dead" land within a productive rural and rural residential landscape where the existing electricity transmission lines can be

readily accessed. The pocket of land is essentially “dead land” from a horticultural perspective because of: its productive potential being limited by its shape which results from the location of a large drain and legal boundaries; its difficult microclimate (shaded and frozen in winter); and being underlain by a deep clay base from the adjoining hillside. Typically areas of “dead land” in horticultural parts of the Tasman district are used for farm buildings, worker housing and storage. Whilst located adjacent to an area that has been subdivided for rural residential purposes and which has high visual amenity, I consider any adverse effects including reverse sensitivity effects on the area to be relatively minor. This is because the substation is proposed to be designed with the appearance of a farm building design, is to be connected to the existing transmission line network by underground cables and the site is to be landscaped. In addition I understand that Mr Inglis has suggested that the site could be deer fenced if that was helpful. Strictly speaking the site should not need any security fencing because the necessary security for the extremely valuable and important substation plant is actually provided by the building. I note that this is the case in Mapua where the substation has no roadside fence because it’s not needed for security.

The overall effects of these mitigating measures will in my opinion successfully avoid adverse visual and reverse sensitivity effects. I therefore consider the proposal to be consistent with policies 8 and 10.

6.3.6 In relation to policy 9 the applicant has provided a statement from R W Stronach, an experienced electrical engineer who measured the electro magnetic fields from the Mapua substation and assessed the proposed substation. Mr Stronach concluded that the level of the electric fields at the property boundary would be at similar levels of electric field generally experienced in the home and at work (paragraph 38). The Geologic Ltd plan that locates the substation building shows the building located over 20m from the right of way (ROW) to the west of the property boundary, thus minimising neighbours’ exposure.

6.3.7 From the above assessment I conclude that the proposal is generally consistent with and provides for the objective and policies of the *National Policy Statement on Electricity Transmission*.

7. KEY ISSUES

The key issues are:

Land fragmentation and loss of productive land

Amenity impacts and particularly visual amenity and noise effects of the substation operation and building

Traffic effects on Swamp Road

Land stability and flooding

Cross boundary effects of electromagnetic fields

Hazardous facility.

7.1 Land Fragmentation and Loss of Productive Land

Land fragmentation and loss of potentially highly productive rural land is a major issue in the Tasman District. The district only has a finite small area of potentially highly productive land and most of that is within the Rural 1 zone. The TRMP objectives and policies for the rural environment are in Chapter 7 of the TRMP. A major issue in the district is the cumulative adverse effects of small lot subdivision and non soil based activities occurring on rural land. Objective 7.1.2 and associated policies 7.1.3.1 , 7.1.3.2, 7.1.3.3, 7.1.3.4 seek to prevent further land fragmentation and loss of good productive land to non soil based activities. However in the rural area there some non soil based activities that must be provided for and the TRMP objective 7.2.2 and associated policy 7.2.3.1 seeks to ensure that where practicable they are provided for on land which is not of high productive value.

The substation development is located within a 10.7732 ha title that is part of a 113.9548 ha horticultural property that operates as Inglis Horticulture Limited. The substation area of approximately 0.63 ha with ROW access to Swamp Road will be lost to soil based production and will be subdivided from the 10 ha title.

While the land is located within a title that contains very versatile highly productive land the land that is the actual site of the substation has some mitigating characteristics. Those characteristics include: the location and shape of the land, the position of a major drain and a harsh microclimate. The land has been difficult to incorporate into the productive orchard and has been used for storage of spoil and vegetative waste. In relation to the current horticultural operation this small area of land is essentially “dead land” whose loss has minimal impact on the overall productivity of the land resource.

The ROW will cut right through the present title and has the potential to generate further land fragmentation. This has been discussed with Network Tasman and the landowner’s representatives. The landowner supports formation of the ROW and a new access across the property rather than developing a new access parallel to the existing sealed access along the western boundary from Factory Road (the access into the rural residential properties to the west). Apparently a sealed access adjacent to the drain as is proposed and new bridge crossing would be valued by Inglis Horticulture Limited as it would provide a sealed row head and access that would result in more efficient fruit transport and less bruising of fruit. The area occupied by the ROW is always expected to be a headland because of the permanent nature of the large adjoining drain. Some of the underground cables will be located beneath the ROW.

All cables associated with the substation will be underground and that will help to minimise any negative effects of overhead wires on the future productive capability of the property.

Overall it is concluded that the substation development will not result in any significant loss of potentially highly productive land or lead to further land fragmentation.

7.2 Amenity impacts and particularly visual amenity and noise effects of the substation operation and building

7.2.1 Visual Amenity

The surrounding environment is dominated by established orchards on the flat land and recently established rural-residential properties on adjoining hillsides. The proposed substation building is expected to be approximately 600m²(30m x 20m) with a maximum height of 10 metres. The building is designed to have the appearance of a farm building and Network Tasman has volunteered to finish it in green recessive colours.

The building is well setback from property boundaries and meets the Rural 1 zone building setback requirements. The building height of 10m exceeds the permitted activity building height of 7.5m but falls within the controlled activity height limit of 12.5 m. For controlled activity buildings Council has limited its control to:

*“(1) the location of the building on the site and effects on the potential availability of productive land
(5) for buildings that exceed the permitted activity height, in addition to the other matters listed, the appearance and visual impact (including colour, materials, surface treatment and fenestration), site landscaping and planting, shading effects across site boundaries, and effects on significant views”.*

In relation to (1) above the location of the building within the 10.7732 Certificate of Title has been discussed and it was concluded that the substation development will only have a minimal impact on the availability of productive land. Within the 6330m² substation portion of the title the building has been located in accordance with the recommendation of the Geo-Logic Limited’s geotechnical engineers. The site has a substantial amount of fill and a large drain adjoining so it is important that the geotechnical engineer’s recommendations are followed. The building site is well set back from the adjoining ROW serving several rural residential properties to the west.

In relation to (5) above Network Tasman have outlined the need for a 10m high building in their requirement application as it is “...*necessary to provide roof clearance for transformers*” (part 3). The proposed substation will not be constructed as a traditional substation design of poles, transformers and security fencing but will be housed in a building designed to have the appearance of a rural farm building that is finished in recessive green colours. The substation building is setback more than 150m from the nearest dwelling (Lot4 DP17734 Hay and Mahon) and approximately 320m from the other closest neighbour (Lot 2 DP17734 Hendren) and there will be no shading of the outdoor living areas of those properties. The building will be visible from neighbours but in my opinion will not detract from the view to any greater degree than a complying building that could be constructed as of right for farming or horticultural purposes. Network Tasman’s proposal to landscape the building will also soften its appearance as viewed from the submitter’s properties. As suggested at a site meeting with submitters on 3 February 2010 I would welcome without prejudice to their submission any

suggestions that they have on the type of trees that they might prefer in the event of the substation being constructed.

The building is also located below and set back approximately 150m from the nearest dwelling.

In my opinion, and having regard to the controlled activity building height for the Rural 1 zone the visual effect of the building is within the scope of development that could be expected on a vacant Rural 1 zone property.

7.2.2 Noise Effects

Two of the submitters have expressed concern about potential noise generated by the proposed substation. The applicant states that steps will be taken to ensure that the noise performance standards of the Plan are met. The relevant provisions of the Plan permit noise levels (at the notional boundary of any dwelling) of L₁₀: 55 dBA at day time and L₁₀: 40 dBA at night time with a night time L_{max} of 70 dBA, day time meaning 7.00 am to 9.00pm Monday to Friday inclusive and 7.00 am to 6.00 pm Saturday (but excluding public holidays), and night time is all other times.

Noise effects from construction are considered to be similar in scale and duration to those of constructing a farm building. Once the building is constructed and the substation located inside it then noise associated with ventilation or the humming noise emitted by the transformers should be largely contained inside the building.

However following the Hay and Hendren submissions it was apparent that further information and clarification of the potential noise effects would be useful for everyone. Network Tasman agreed to commission a further investigation of noise generated by a 66kV transformer substation and to make an assessment of the expected noise emission from the proposed Riwaka substation. Council staff agreed with the appointment of a noise expert Dr Jeremy Trevathan from Acoustic Engineering Services, with his assessment being peer reviewed by Councils noise advisor Mr Graham Caradus.

That was done and Network Tasman suggested that Mr Trevathan's report be sent out with the Council agenda papers so that all of the key information was available for parties to consider before the hearing.

Mr Caradus has peer reviewed Mr Trevathan's report (see Appendix 2) and advised:

“...the salient point made in Dr Trevathan's report of 5 February is that he notes that the compliance level set in TRMP Rule 17.15.2.1(d) is L10 of 40dBA and that the proposed substation is expected to be compliant by more than 20dBA even when the 5dBA penalty is applied for Special Audible Characteristic. Interpreting that, the noise at the notional boundary of the nearest residence is expected to be in the order of 15dBA, and that is below the threshold of many peoples hearing. Inside a house it will be even better, so it could be argued that the effects of noise will be less than minor.”

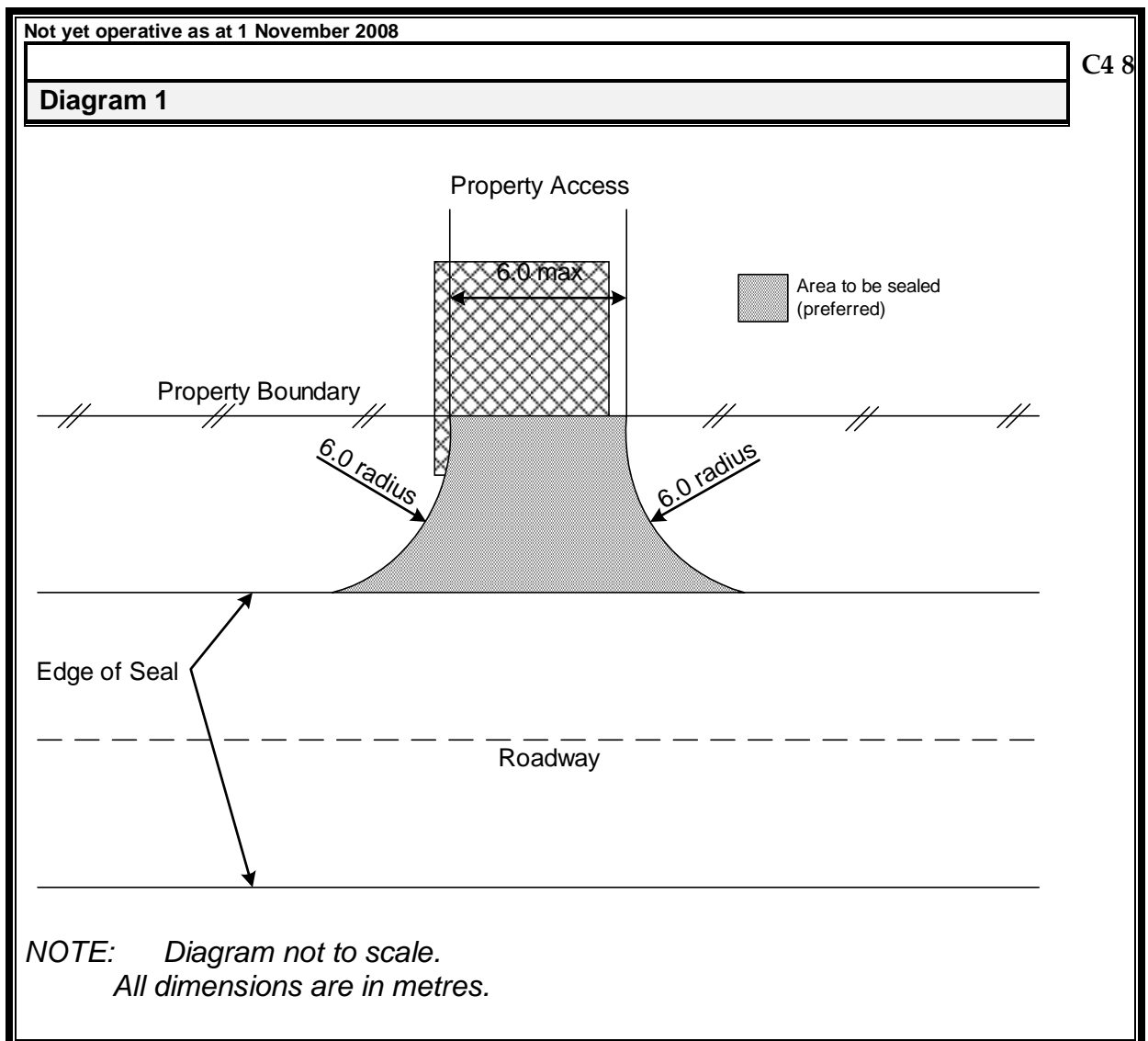
I note that Dr Trevathan suggests a number of mitigating measures for the substation, and it would be appropriate to include those as conditions...

7.3 Traffic Effects

The traffic effects during construction and then for ongoing operation and maintenance of the substation are quite different.

During construction of the substation heavy traffic for a limited time will occur. These temporary traffic effects are expected to be similar in scale and duration to the construction traffic associated with building a large rural building. Council engineers are satisfied that provided the site access is built to the Rural intersection standard in Diagram 1 Schedule 16.2C below then the safe and efficient operation of Swamp Road should not be compromised.

Schedule 16.2C: Rural Intersection and Access Design



Following construction the substation traffic volumes are expected to be, on average, two vehicle movements per week. This is a very low traffic volume which by itself is considered to have no more than a minor effect on the environment. However the access will also be available for orchard traffic and so its retention at the standard outlined in Figure 16.2C Diagram 1 makes good sense. The landowners have volunteered to surrender an existing access and a new access crossing place will be needed from Council's engineering Department. These matters are covered in the recommended advice notes.

7.4 Land Stability and Flooding

The issue of land stability is covered in chapter 5b of the notice of requirement application and in Attachment 4 which is a full geo-technical report prepared by Geo-Logic Limited in May 2009. I have read the geo – technical report and am satisfied that subject to its recommendations any instability issues can be mitigated.

While Councils flood hazard records record flooding of the property the floods do not cover the site of the substation. The land is slightly elevated and Councils Resource Scientist specialising in flooding Mr Verstappen considers that while flooding has occurred around the eastern edge of the site achieving a flood free building site will be relatively easy. The proposed building site located by Geo-Logic Limited appears to be flood free.

7.5 Cross Boundary Effects of Electromagnetic Fields

This issue is covered by Mr Stronach in Attachment 5 to the requirement application. Given Mr Stronach conclusion that "the electric and magnetic fields created by the proposed substation at Riwaka will be considerably less than the exposure levels recommended by the Ministry of Health and will be less than the levels generally experienced in the home or at work" , I am satisfied that the potential adverse EMS effects will be mitigated.

7.6 Hazardous Facility

While the substation's transformers contain cooling oil they are recognised as not being storage of a hazardous substance in the TRMP. The definition of Storage is as follows:

"Storage- in relation to any hazardous substance, means the containment of a substance or mixture of substances, either above ground or underground, and includes the filling and emptying of the container. Storage does not include substances in use or oil used as a heating or cooling medium in enclosed systems."

The transformer oil is only used for cooling and is within a closed system. The transformers are mounted on bunded pads that are able to contain any potential spillage. This storage of cooling oil is within the scope of the permitted activity under the TRMP.

In addition the substation and the equipment within it is designed to survive seismic shaking and I am satisfied that the potential hazard from contamination is minimal.

7.7 Summary of Effects

Effect	Main Issues	Scale of Adverse Effects
Land productivity effects	Land fragmentation and loss of high quality land	For practical horticultural farming purposes the land has limited productive value because of its micro climate, shape and location adjacent to a large drain.
Effects on the visual amenity	Effects associated with a large farm building	Falls within a controlled activity building and when finished in recessive colours and landscaping the effects should be less than minor.
Noise effects	Construction noise, noise associated with cooling fans and noise emitted by transformers	Mitigated by the building adopting noise mitigation measures recommended by Dr Trevathan. In compliance with the TRMP Rural 1 zone noise standards
Traffic effects	Traffic generation from construction and for inspection purposes	Mitigated by design of access to Swamp Road.
Health and Safety	Effects from electromagnetic radiation	Mitigated by building and underground cables
	Effects from contaminants (cooling oil)	Falls within permitted activity. Mitigated by bunding.
Land Stability and Flooding	Associated with locating a structure on filled land at the edge of a flood overlay hazard	Mitigated by geotechnical and engineering design of building foundations
Positive Effects	Provision of a secure supply of electricity to the Motueka/Riwaka/Kaiteriteri/Marahau areas. Well positioned in relation to existing transmission lines.	

7.8 Conclusion

As with many important public works long term forward planning is needed in order to meet anticipated future needs and secure land where development can occur without significant adverse environmental effects. The proposed substation contributes to providing a secure supply of electricity to an important productive part of the Tasman District that can be expected to grow over time. I believe that the historical adverse visual impact anticipated with a substation have been mitigated by housing the

substation in a building that has the appearance of a rural building and by underground cable connection to the nearby transmission network. I am satisfied that the effects related to noise effects have been adequately mitigated and that the geotechnical constraints can be overcome by appropriate engineering design. In a practical farming sense the potential loss of highly productive land is minor and I consider the overall environmental effects of the proposal to be less than minor.

8. SECTION 5 AND RECOMMENDATION

In terms of Section 5 of the Act, I consider that a grant of consent would promote the sustainable management of natural and physical resources.

Therefore I recommend that the requirement be confirmed, subject to conditions.

9. CONDITIONS, ADVICE NOTES, PLANS

The requiring authority has volunteered the following conditions 1- 9 and advice note 1. Additional conditions 10 - 12 and advice notes 2-8 are also recommended.

General Accordance

1. The designation shall be undertaken in general accordance with the project description outlined in the Notice of Requirement dated 19 November 2009.
2. The electricity substation shall be placed entirely within a farm-style building as depicted in the photographic illustrations in Attachment 3 of the Notice of Requirement, prepared by Ultraspec Building Systems.

Building Bulk and Location

3. The maximum height of the building shall be 10 metres.
4. The building shall be located on the proposed site generally as shown in the Site Plan in the Geo-Logic Limited Report, in Attachment 4 and attached as Plan A dated 22 February 2010.

Colour

5. Only recessive colours (e.g. green) are to be used for the walls and roof of the proposed building.

Planting

6. The western and southern boundaries of the site are to be planted in evergreen trees to help soften the visual appearance of the proposed building as viewed from the nearby houses on Lots 2 & 4 DP17734. Such planting is to be established within 12 months from the date the designation is confirmed. The planting shall be maintained on an ongoing basis with any plants that die being replaced by the following 1 November.

Noise

7. Noise generated by the electricity substation, when measured at or within the notional boundary of any dwelling shall not exceed:

	Day	Night
L ₁₀	55 dBA	40 dBA
L _{max}		70 dBA

NB: Day = 7.00 am to 9.00 pm, Monday to Friday inclusive and 7.00 am to 6.00 pm Saturday (but excluding public holidays).
Night = all other times, including public holidays.

Noise must be measured and assessed in accordance with the provisions of NZS 6801:1991, *Measurement of Sound* and NZS 6802:1991, *Assessment of Environmental Sound*.

For the avoidance of doubt, the Tasman Resource Management Plan defines notional boundary as:

Notional Boundary – in relation to noise, means:

- (a) a line 20 metres from the facade of any rural dwelling that is most exposed to the noise source; or
- (b) the legal boundary of the site of the dwelling, where this is closer to the dwelling than (a).

Electric and Magnetic Fields

8. Electric and magnetic fields associated with the electricity substation and transmission network shall meet the International Commission on Non-Ionising Radiation Protection Guidelines for limiting exposure to time varying electric magnetic fields (up to 300GHz) (Health Physics, 1998, 74(4):494-522) and recommendations from the World Health Organisation monograph Environmental Health Criteria (No 238, June 2007) or if a revision is in place when the electricity substation is relocated and built then compliance with that replacement standard shall be met.

Lapse Period

9. This designation shall lapse on the expiry of 15 years after the date on which it is included in the Tasman Resource Management Plan.

ADVICE NOTES

Archaeological

1. In terms of the Historic Places Act 1993, in the event of discovering an archaeological find during the earthworks (e.g. shell, midden, hangi or ovens, garden soils, pit depressions, occupation evidence, burials, taonga, etc) you are required under the Historic Places Act 1993 to cease the

works immediately until, or unless, authority is obtained from the New Zealand Historic Places Trust under Section 14 of the Historic Places Act 1993.

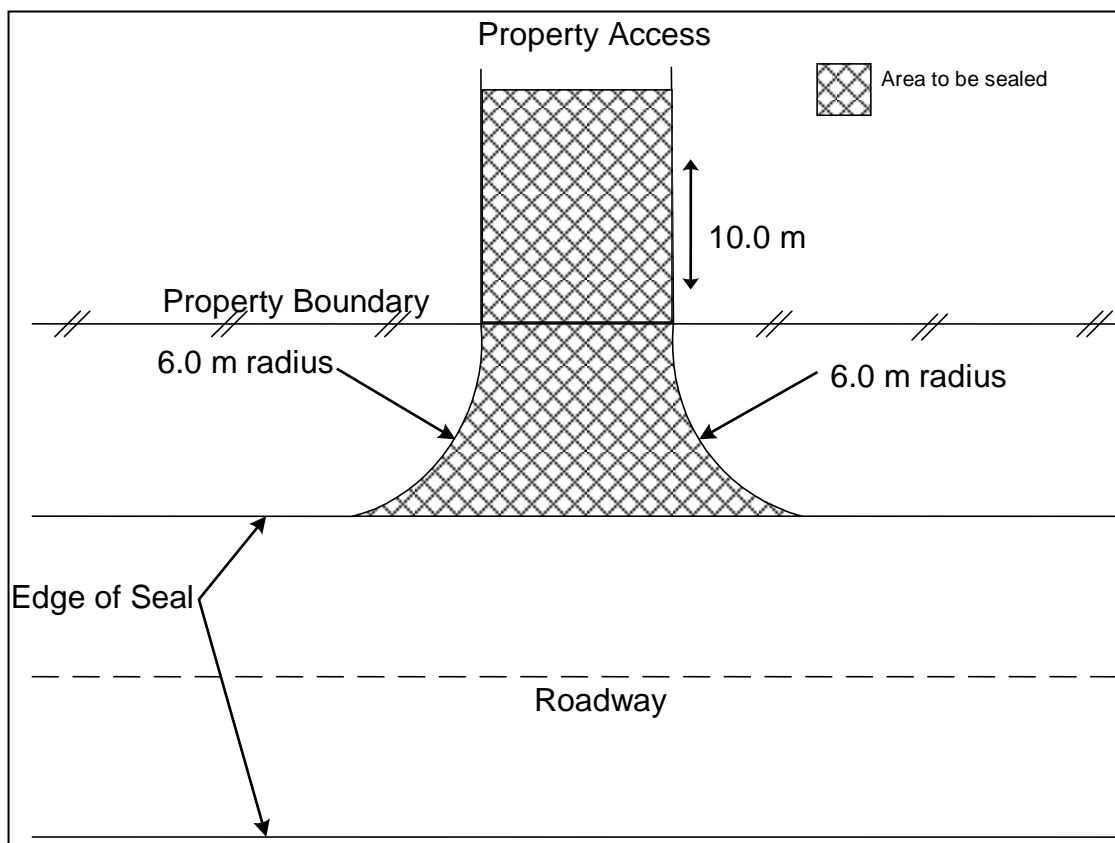
Note Conditions 1-9 inclusive and advice note 1 were volunteered in the application

10. Vehicle Crossing

The consent holder shall form and seal the access to the subject property from Swamp Road before construction of the substation commences or earlier in the event of the property being subdivided. The seal shall extend from the existing sealed road edge to a distance of at least 10 metres inside the subject property. The design shall be in accordance with **Appendix A** below.

Note: All cost associated with the access upgrade is to be met by the Consent Holder and a vehicle access crossing permit is required to be obtained through Council's Engineering Department. Also note that bridging the drain alongside Swamp Road requires RMA1991 Section 13 resource consent for works in a watercourse and that should be followed up with Council's Coordinator Natural Resource Consents.

APPENDIX A – VEHICLE CROSSING AT SWAMP ROAD



11. Building - Engineering Design

- (a) That a qualified engineer, experienced in foundation design, supervise a sub-surface investigation to determine soil strength parameters and quantify liquefaction potential for design. That engineer shall provide written confirmation that this has been done at the time a building consent application for the substation building is submitted to Council.
- (b) That the site development be carried out under the supervision of a qualified engineer, experienced in foundation design, with review by an appropriately qualified geotechnical engineer. Written confirmation of the above shall be provided to Council's Coordinator Compliance Monitoring

Advice Note: this condition covers the 2 recommendations from Geologic Limited

12. Noise – Dr Trevathan's noise mitigation measures

- a) That the transformers be housed in an enclosure which provides a minimum noise attenuation of 10dBA to transformer noise
- b) Any doors are to be solid core and fitted with seals
- c) Ventilation openings or penetration shall be designed so as not to degrade the overall level of sound insulation of the enclosure, and/or any active ventilation components should be selected and designed to ensure compliance with the TRMP, when combined with transformer noise.

ADVICE NOTES

1. This is not a building consent and the Designation Holder shall meet the requirements of Council with regard to all Building and Health Bylaws, Regulations and Acts.
2. This designation only authorises the activity described above. Separate consent will be required for subdivision and in the event of the substation not proceeding then the land if subdivided shall be amalgamated back into the original 10.7732 ha property (being described as Lot 3 DP19345 at the time of this requirement decision).
3. The Designation Holder is liable to pay a development contribution in accordance with the Development Contributions Policy found in the Long Term Council Community Plan (LTCCP). The amount to be paid will be in accordance with the requirements that are current at the time the relevant development contribution is paid.

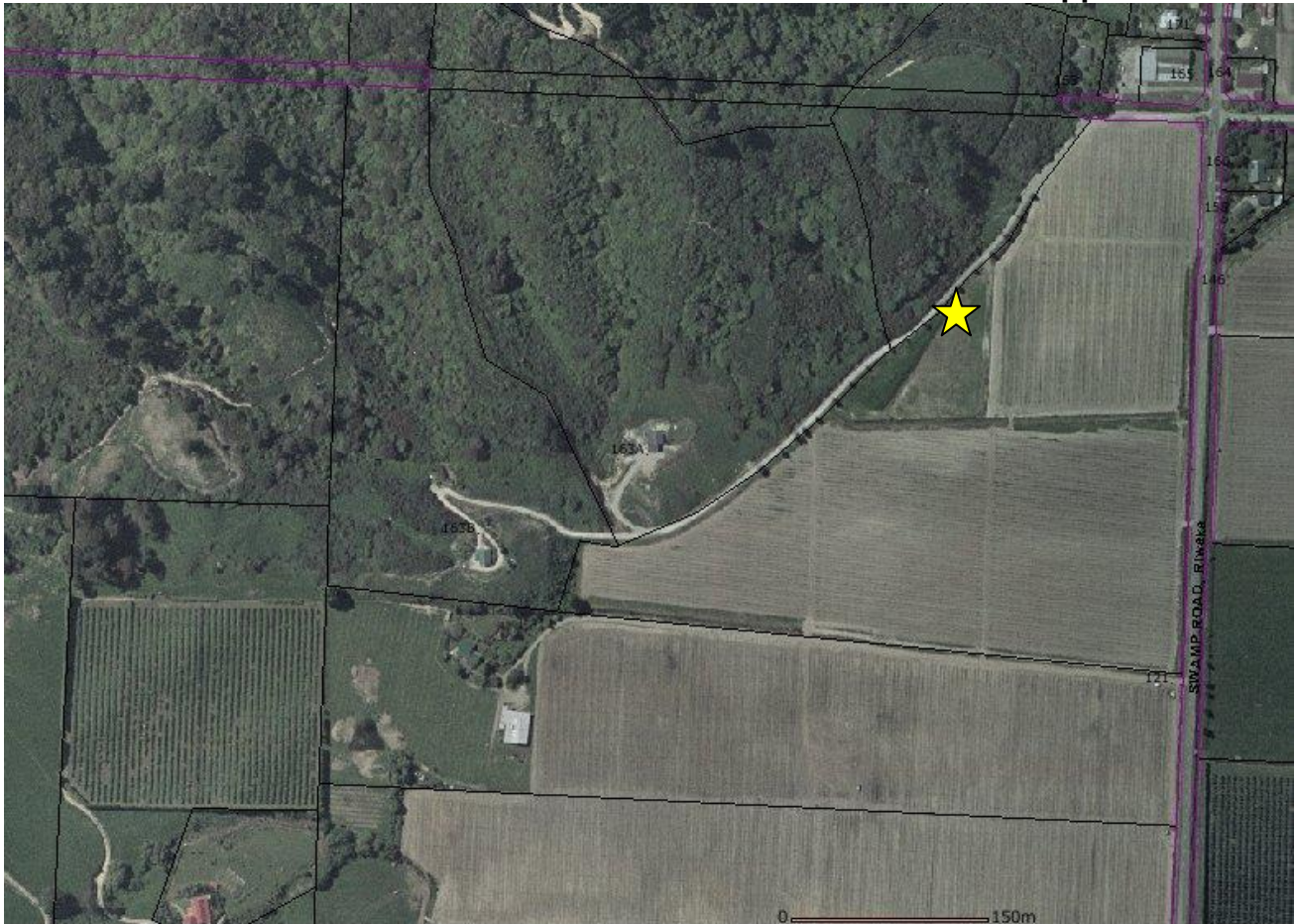
Council will not issue a Code Compliance Certificate until all development contributions have been paid in accordance with Council's Development Contributions Policy under the Local Government Act 2002.

4. Monitoring of this designation will be undertaken by the Council as provided for by Section 35 of the Act and a one-off fee has already been charged for this monitoring. Should the monitoring costs exceed this fee, the Council reserves the right to recover these additional costs from the Designation Holder. Costs can be minimised by consistently complying with conditions, thereby reducing the necessity and/or frequency of Council staff visits.
5. The Designation Holder should note that this designation does not override any registered interest on the property title.
6. A Vehicle Crossing Permit will need to be obtained from the Council's Engineering Department to authorize the upgrade to the vehicle crossing. Please contact the Council's Engineering Department for more information. It is also noted that the landowner representative Mr R Inglis volunteered to surrender an existing access at the time an application is made for the new crossing place. That voluntary surrender should be noted in the application for the new (replacement) crossing place.

Jack Andrew
Co-ordinator Land Use Consents

Graham Caradus
Co-ordinator Regulatory Services

APPENDIX 1 - Submitters and Application Site



KEY

★ Network Tasman Substation Application Site

1. **New Zealand Historic Places trust**
2. **Little Sydney Mining Company Limited**
3. **S and K Hendren**
4. **K and L Hay**



Level 2, 129 Kilmore Street Ph 03 377 8952 Fax 03 377 8601
Postal Address: P.O. Box 25 403 Christchurch

www.aeservices.co.nz
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File Ref: A01110 – 01 – R1

5 February 2010

Murray Hendrickson
Network Tasman Ltd
PO Box 3005
Richmond 7050
Nelson

Dear Murray

**Re: Riwaka Substation, Swamp Road, Riwaka
Noise assessment**

As requested, we have undertaken noise measurements at a number of Christchurch sites which house 66 kV transformers. Based on these measurements, we have considered expected noise emissions from the proposed Riwaka Substation. Please find our results and analysis below.

1.0 Noise emissions from other 66 kV transformer sites

Noise levels were measured in the vicinity of two transformer sites owned by Orion. The first ("Armagh Street site") housed a 1981 Tyree 66/11 kV transformer in a concrete block enclosure with a precast concrete panel roof and solid core doors with seals. The second ("Milton Street site") was a 1979 Tyree 66 kV transformer with no enclosure. Noise levels were measured on 3 February 2010, in accordance with NZS 6801:2008. The following provides details of the measurements:

-
- Operator:*
Jeremy Trevathan, Acoustic Engineering Services

 - Measurement period:*
1330 to 1430 hours, 3 February 2010

 - Metrological conditions:*
Scattered high cloud, NE wind 11 km/hr, 21 °C

 - Equipment*
Bruel & Kjaer Type 2250 Class 1 Sound Analyser
(Serial Number 2630291, last calibrated 4th April 2008)
Bruel & Kjaer 4231 Acoustic calibrator
(Serial Number 2635933, last calibrated 22nd May 2009)

 - Notes*
Analyser calibrated before and after measurements. No significant variation observed
Measurement settings: A-frequency weighting (dBA), fast response
-

The measurements were undertaken approximately 1.2 above ground level at various locations around the transformers.

The following noise levels were measured:

Armagh Street site

Within enclosure:	71 dBA L ₁₀
Outside enclosure 1 m from walls:	55 dBA L ₁₀

Note: Measured sound level was dominated by traffic noise. Transformer noise was barely audible.

Milton Street site

1 m from transformer: 64 dBA L₁₀

In both cases we observed the transformer noise to have a distinctive humming sound, which would typically attract a + 5 dBA penalty for Special Audible Characteristics.

2.0 Proposed Riwaka Substation

We understand that the 66 kV transformers at the Riwaka Substation are to be modern 'low-noise' models, and will be housed inside a sound-proofed room within a sheet steel building.

As the proposed Riwaka Substation may emit noise at any time, the relevant Tasman Resource Management Plan noise limit is 40 dBA L₁₀ (Rule 17.5.2.1(d)). This noise is to be measured at the notional boundary of any dwelling. The notional boundary is defined as a line 20 metres from the façade of the dwelling.

We understand that the proposed substation building is to be located 12 metres from the site boundary, and some 150 metres from the nearest residential notional boundary.

Based on our noise measurements as described in section 1.0 above, we would expect the noise emissions from a 66 kV transformer installation within the proposed Riwaka Substation building to be less than 40 dBA L₁₀ at the site boundary, and to comply with the Tasman Resource Management Plan noise limits at the nearest residential notional boundary by more than 20 dBA even when a + 5 dBA penalty for Special Audible Characteristics is applied to the noise, provided the following noise mitigation measures are adopted:

- Transformers housed in an enclosure which provides a minimum noise attenuation of 10 dBA to transformer noise.
- Any doors are to be solid core and fitted with seals.
- Any ventilation openings or penetrations should be designed so as not to degrade the overall level of sound insulation of the enclosure, and/or any active ventilation components should be selected and designed to ensure compliance with the District Plan, when combined with transformer noise.

If you have any further questions, feel free to contact us.

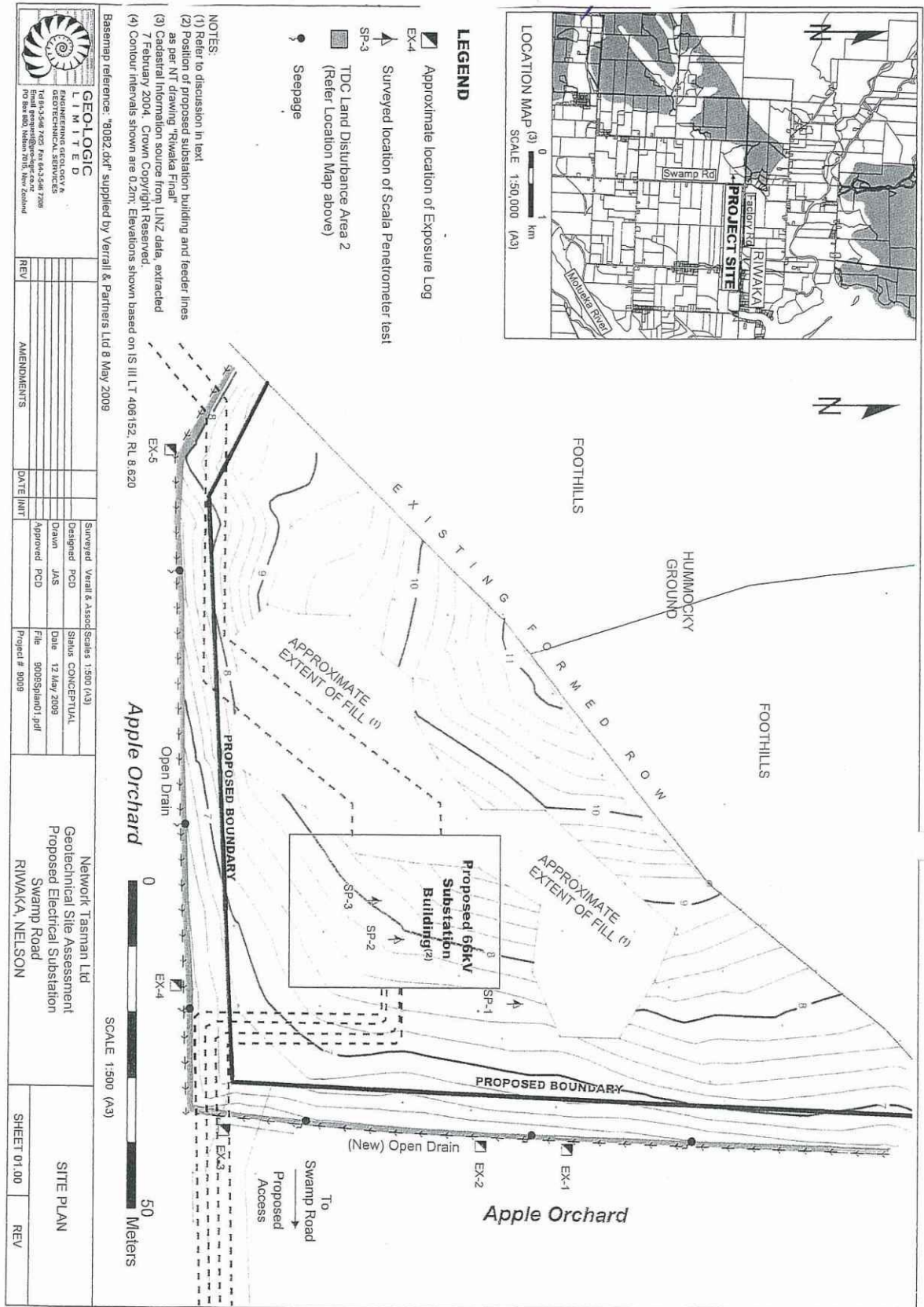
Yours faithfully,



Dr Jeremy Trevathan
Ph.D. B.E.(Hons.) Assoc. NZPI®

Acoustic Engineering Services

5 February 2010



REV	AMENDMENTS	DATE	LIMIT
	Surveyed		Verrill & Assoc (Scale 1:500 (A3))
	Designed PCD		Status CONCEPTUAL
	Drawn	12 May 2009	JAS
	Approved PCD		File 30059plan01.pdf
			Project # 8009

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01.00	