

# Site Environmental Management Plan (SEMP) - Works Plan - Turitea Reserve - Helicopter site

## Turitea Transmission Line

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## Distribution Register

Name	Designation	Role	Signature	Date
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Emma Comrie-Thomson	Environmental Consultant (Electrix)	Peer Review		

## Amendment Register

Issue No	Issue Date	Description	Author	Reviewer	Approver
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## ACRONYMS

Acronyms	Defined
AEE	Assessment of Environmental Effects
CEMP	Construction Environmental Management Plan
CLG	Community Liaison Group
CNMP	Construction Noise Management Plan
CTMP	Construction Traffic Management Plan
PNCC	Palmerston North City Council
SDS	Safety Data Sheets
SEMP	Site Environmental Management Plan
TDC	Tararua District Council

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## Appendix

Appendix A - Environmental Risk Register

## 1. Background

### 1.1 Introduction

This Site Environmental Management Plan (SEMP) details the principles, practices and procedures to be implemented to manage, remedy and mitigate potential adverse environmental effects during construction of a new 12km long 220kV transmission line to connect Transpower's existing Linton Substation to the "Plantation Substation" at Mercury's Turitea Wind Farm (the Project), near Palmerston North.

This SEM is for works within the Turitea Reserve where helicopters will be used to deliver materials, machinery and where required, workers. Walking tracks will also be utilised for worker access and egress should weather restrict helicopter access, as well as for any emergency.

The use of helicopters will include tower placement (for towers illustrated in figure 1) and conductor stringing activities (for towers 21-38) (figure 2). Figure 3-5 illustrate the exact works locations and access tracks into each of the areas.

The SEMs will be updated as necessary during the Project to ensure that they remain current. Where relevant, significant updates will be re-submitted to the Approvers, for certification. Minor updates will be tracked in documentation but will not be resubmitted for approval. These are likely to include (but are not limited to):

- Minor design changes;
- Increase in environmental controls (e.g. Erosion and Sediment controls); and
- Changes as instructed by Regulatory authorities following audits.

Table 1: Consent conditions relating to SEM

Number	Condition	SEMP Section
8	The Consent Holder shall prepare and submit to the Environmental Compliance Manager, at each respective Council, a SEM for each of the South Range Road, Water Catchment Access Road, Western Ridge, Browns Flat and Cross Valley Transmission and Out of Reserve (farmland) sub-catchment areas. The breakdown of the site into individual SEMs may be varied by the Consent Holder as necessary to reflect any change to the design and construction programmes.	-
9	Each SEM shall be prepared by a group of suitably qualified experts (including input from the Consent Holder, contractor, designer, environmental specialist, erosion and sediment control specialist and (for the walkover only) the consent authority). The preparation of the SEM shall include, but not be limited to, an onsite meeting and walk-over of each sub-catchment area by this group of experts.	1.4
10	Each SEM shall be submitted to the Environmental Compliance Managers for review, acting in a technical certification capacity, at least 30 working days prior to bulk earthworks commencing in each SEM area. A response should be provided within 30 working days of receipt. Construction activities must not commence in the relevant SEM area until written certification has been obtained. The purpose of the SEM is to indicate how the CEMP will be applied on a site-specific basis.	-

11	Each SEMP shall include the following as appropriate to each individual sub-catchment area:	Figures 1-2
	11.1 A location plan;	
	11.2 A description of the work to be undertaken;	2
	11.3 Contact details for the contractor(s) undertaking the work;	12
	11.4 A work programme;	3
	11.5 A method statement covering construction method, monitoring and contingencies;	6, 7
11.6	Design for the works covered by the SEMP, showing:	
	a. Areas to be disturbed;	7
	b. Vegetation clearance methods and vegetation stockpiling;	8
	c. Fill areas;	-
	d. Spoil stockpile and disposal areas;	6
	e. Culverts and associated works in watercourses;	-
	f. Step by step criteria for determining the appropriate use of erosion and sediment control measures, including cut off drains, surface water control works, sediment ponds, flocculation measures (if required), and progressive rehabilitation of earthworks areas;	9
	g. Stormwater management measures; including both temporary and permanent measures;	8.2
	h. Re-vegetation and rehabilitation (identification of re-vegetation to be undertaken and re-vegetation methods and any maintenance);	8
	i. Inspection and reporting schedule in particular in response to adverse weather conditions;	9.3
	j. Maintenance and monitoring activities;	9.2
k. Storage and handling of fuels and hazardous material and contingency measures for containment of spills; and	11	
l. Decommissioning and re-stabilising of sediment ponds, and other erosion and sediment control measures, at the completion of construction.	9.1	
12.1	In addition to the requirements of condition 11 above, the SEMP for the Cross-Valley Transmission sub-catchment area (between the Browns Flat and Plantation substations) shall include the following:  In areas where this is identified by a suitably qualified and experienced ecologist engaged by the Consent Holder as being necessary in order to minimise the impact on the surrounding vegetation, the footprint area for the transmission line support structures will be cleared by hand; and	8

12.2	<p>In addition to the requirements of condition 11 above, the SEMP for the Cross-Valley Transmission sub-catchment area (between the Browns Flat and Plantation substations) shall include the following:</p> <p>All components for the identified transmission line support structures, including the reinforcement and concrete for the foundations, as well as the towers themselves, will be constructed with the use of helicopters to avoid the need for construction of access tracks.</p>	1
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## 1.2 Turitea Water Catchment Area

The locations of work are within the Turitea Water Supply Catchment, as illustrated in figure 1.

### 1.3 Pre-construction meeting

Prior to works commencing in this area there shall be a pre-commencement meeting held on site. The following parties shall be invited to attend the meeting (allowing five working days to confirm the meeting date and time):

- a. Mercury's Environmental Advisor;
- b. Electrix Project Manager;
- c. Electrix Operations Manager
- d. Electrix Environmental Manager;
- e. The Project's Ecologist; and
- f. Council's Monitoring Officer.

This meeting shall discuss the proposed work, how it is to be done, the installation and requirements of the tracks, and the areas of work where specific monitoring and direction are required.

Electrix shall prepare minutes of the actions agreed at the meeting.

A copy of these minutes from this meeting shall be forwarded to all attendees within 5 working days of the meeting occurring.



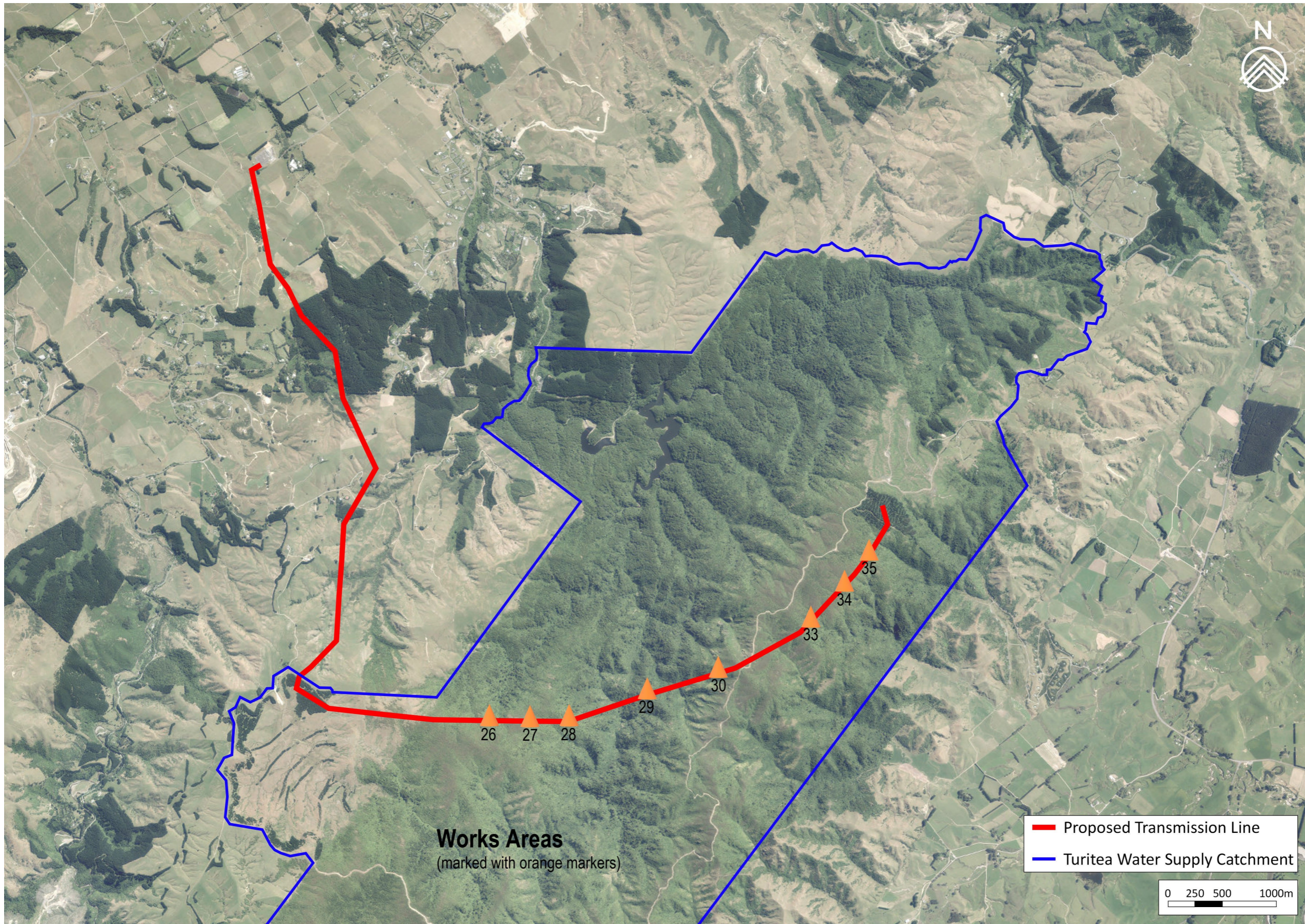


Figure 1: Turitea Water Supply Catchment in relation to works area with Pole numbers indicated.

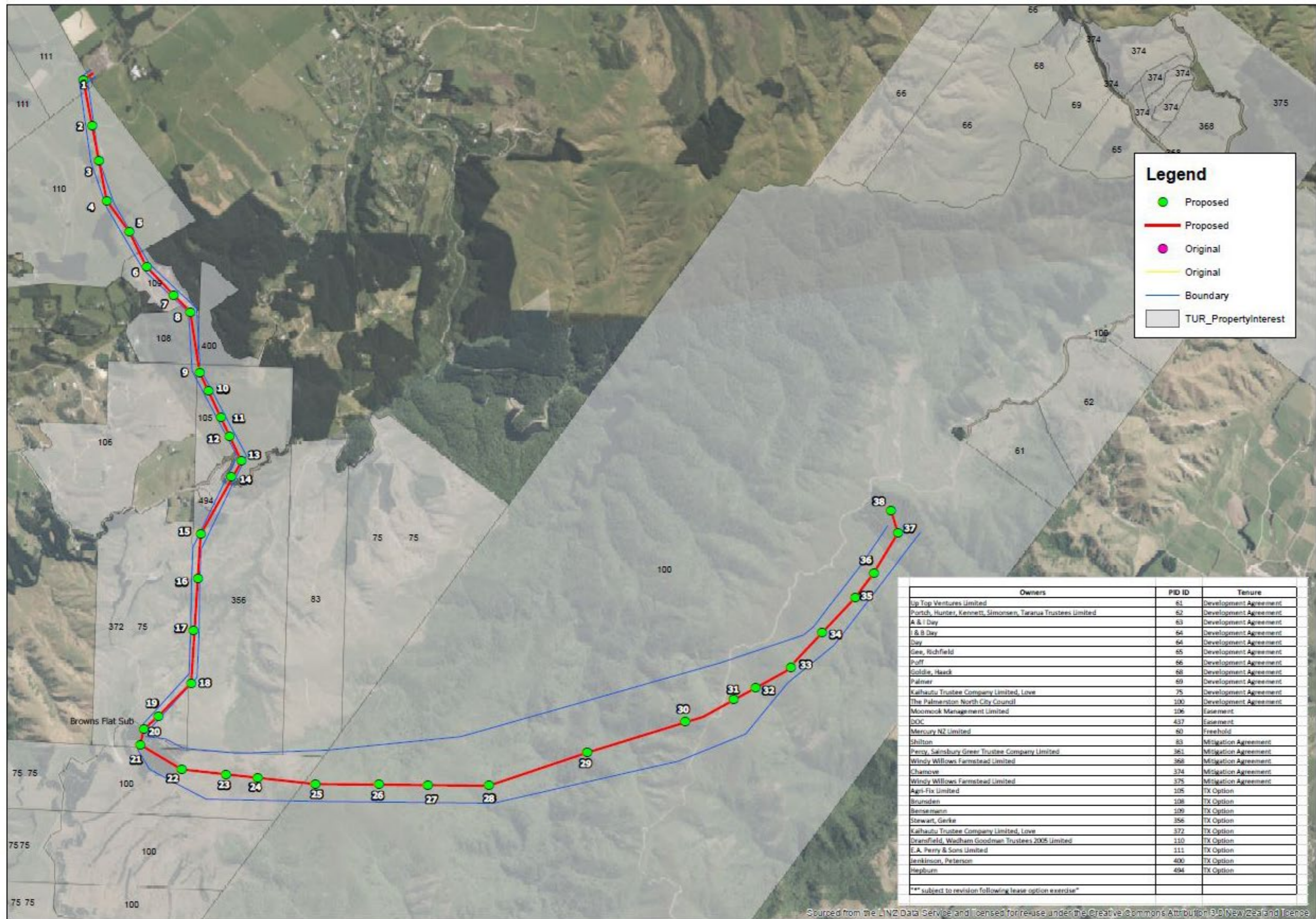


Figure 2: Overall Transmission Alignment.

## 1.4 Site Walkover

A site walkover was carried out on the 22<sup>nd</sup> July 2019 with the following specialists and construction team.

*Table 2: Attendees at site walkover.*

Name	Role
Mason Jackson	Mercury - Consents and Compliance Manager
Gregor McLean	Southern Skies - Erosion and Sediment Consultant for Mercury
Hamish Sutherland	Horizons Monitoring Officer
Graeme Ridley	Ridley Dunphy - Erosion and Sediment Peer Review Consultant for Horizons
Kevin Small	Electrix - Project Manager
Emma Comrie-Thomson	Electrix - Environmental Manager
Jon Edwards	Electrix - Construction Manager



Figure 3: Walking Tracks into T25 to T28.

Legend

- Metal (white)
- Metal over Fabric
- Track Maintenance (yellow)
- ATV Track
- New Gate
- New Culvert
- Crane Pad
- Walking Track



Figure 4: Walking Track into T29.

Legend

- Metal (white)
- Metal over Fabric
- Track Maintenance (yellow)
- (yellow)
- ATV Track
- New Gate
- New Culvert
- Crane Pad
- Walking Track

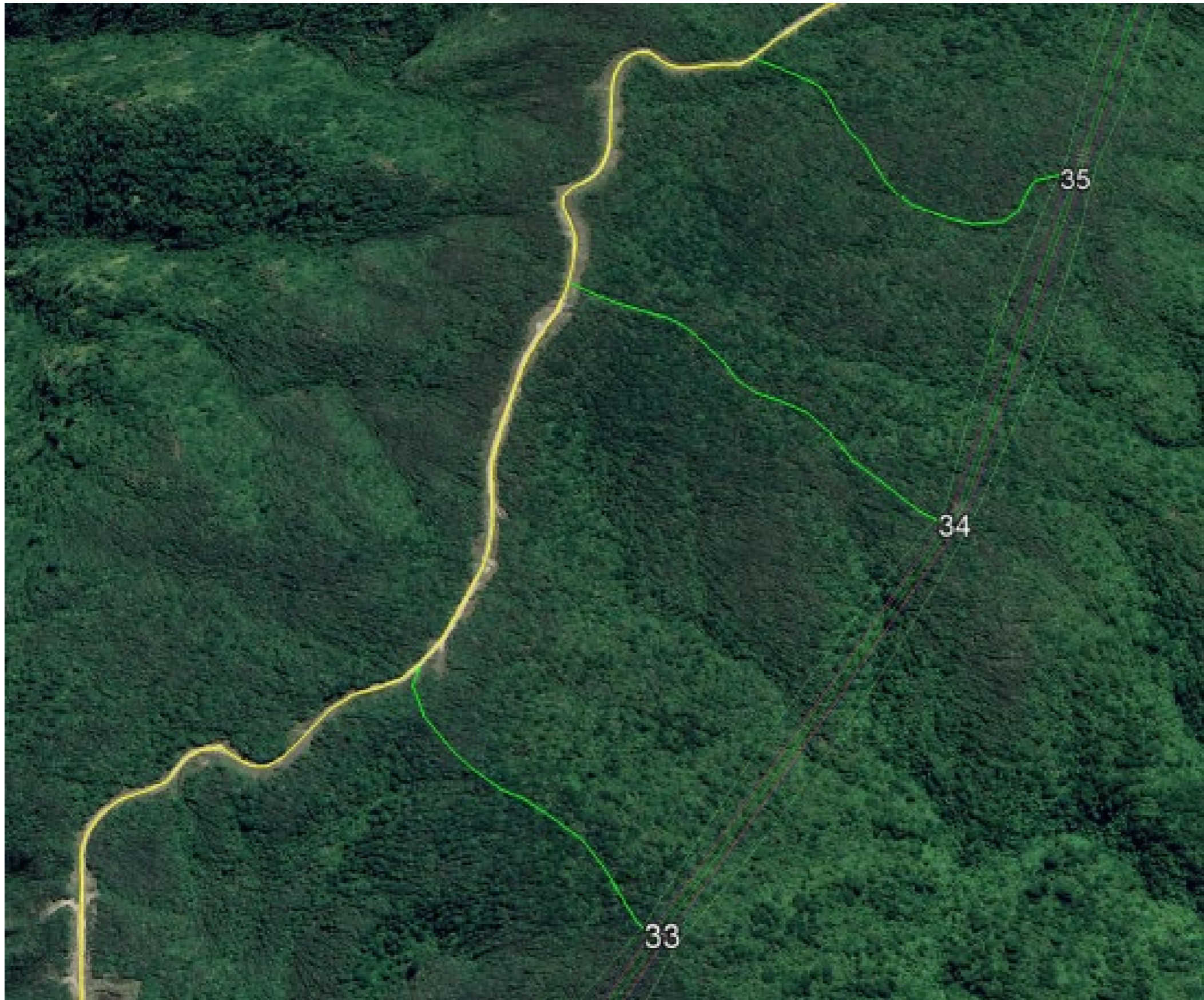


Figure 5: Walking Tracks into T33 and T35.

Legend

- Metal (white)
- Metal over Fabric
- Track Maintenance (yellow)
- (yellow)
- ATV Track
- New Gate
- New Culvert
- Crane Pad
- Walking Track

## 2. Scope of works

There are a number of steps involved in the construction of this transmission line, those relevant to environmental considerations are.

- **Construction of access tracks and work sites:** This includes a site survey, the creation or upgrade of both permanent and temporary tracks, clearing and levelling of the site for the poles/towers and creation of cranes pads for flying in of tower sections (where required);
- **Geotechnical investigation:** Carried out to better understand the geotechnical makeup of the ground which will be used to guide the design of the tower foundations;
- **Foundations:** This will include the drilling or digging of foundation holes, the placement of steel reinforcing and connecting elements between foundation and tower and pouring of concrete;
- **Construction of the tower sections:** These will be craned together with some preassembly of tower sections occurring prior to being helicoptered into place;
- **Wiring:** Running blocks will be hung on the towers and a pulling rope will be run out between the towers by helicopter. The conductor will then be attached to the pulling rope and pulled through the towers. It is planned to do this in 3 sections. In each section there will be 8 wires pulled (two circuits each containing 3 individual conductor wires and 2 OPGW earth-wires); and
- **Dressing:** Running blocks will be removed, insulating stings hung to connect the conductor to the towers and vibration dampeners fitted.

## 3. Work Programme

Overall the Project is anticipated to take approximately 1 year to construct. Many elements of the Project will be undertaken concurrently. This section of work is forecast be carried out as per Table 3.

Table 3: Indicative works programme.

Activity onsite	Indicative Duration
Cut Waking Tracks to Towers 26-30, 33-35	16 days
Footprint Clearance for Towers 26-30, 33-35	16 days
Foundations of Towers 26-30, 33-35	56 days
Install and Erect Towers 26-30, 33-35	81 days

## 4. Winter Works 'Restriction' Areas

Schedule 2 of the Consent decision, condition 3 outlines the restrictions for works being carried out in winter (defined as the months of 1 May to 30 September inclusively). The condition outlines that:

*“Road or platform pavement construction (including basecourse) works, and tower foundations may be undertaken at any time of the year.”*

The works outlined in section 2 above meets with the above condition and therefore is not restricted.

## 5. Environmental Risk

A preliminary Environmental Risk Register is attached as Appendix A. The Risk Register is a live document which will be used by the Project team. As construction progresses the risk register will be reviewed and updated as required.

## 6. Method Statement

### 6.1 Site Access Construction

Access to work sites will be by ground-based methods, aerial methods or a combination of both. Where ground-based access are to be used to any work site, a walking track route has been selected in consultation with the Project Ecologists. The route selected, as the access walking route to any work site, has considered impacts on; other land use activities, environmental impacts (including ecological), safety of the route for the workers that will be required to use it and cost.

All ground-based access routes have been marked on plans (figures 3-5) that clearly indicate the proposed access route, referenced with structure number. Walking tracks will be utilised for working access and egress as well as for any emergency.

Each ground-based access route will be marked on site with suitable pegs/pickets/markers prior to construction. Where the access routes are not along already formed tracks or roads, the markers shall be sufficiently frequent to enable the route to be easily assessed and followed.

New access routes will produce limited amounts of stockpile which will be utilised along the new access route. Areas where larger amounts of cut require the spoil to be transported away from the project, and outside of the Turitea Water Supply Catchment, consultation between the landowner and Electrix will determine where the spoil will be placed (within the property boundary or disposed of appropriate off-site), in accordance with required authorities (e.g. PNCC, Horizons One Plan Permitted Activity requirements).

Should temporary stockpiling be required on-site, these areas will be -

- Located outside the water catchment area;
- At a distance of at least 20m from a waterbody; and
- Bunded on the uphill side to divert clean water runoff away from the stockpile.

Should any stockpile be required to remain onsite for more than 4 consecutive weeks, a perimeter silt fence will be installed, and stockpile will be hydroseeded, as per Schedule 2: Condition 23.

## 7. Walking Tracks

A series of aerials showing the specific locations of the works are illustrated in figure 3 -5.

- Track lengths are shown in green; and
- With existing track maintenance in yellow.

Table 4 outlines the volumes of disturbance to occur for the track works.



Table 4: Track lengths.

Track Tower Number	Track length	Track Width
Tower 26	664m	1-1.2m
Tower 27	570m	
Tower 28	525m	
Tower 29	605m	
Tower 30	164m	
Tower 33	271m	
Tower 34	365m	
Tower 35	355m	

## 8. Vegetation Clearance

All tracks, whether new, or upgrades to existing tracks or pest animal control tracks, are to be 1 - 1.2 metres wide. This is to allow worker access and egress, should weather restrict helicopter access, as well as for any emergency.

Vegetation clearance for the pylon locations (225 m<sup>2</sup> per pylon) was included in the mitigation proposed for Browns Flat (Schedule 2 Condition 35).

Works will be carried out in accordance with *Ecological Assessment of Potential Vegetation Clearance for Transmission Pylons at the Turitea Wind Farm*, report by Wildlands.

## 9. Erosion and Sediment Control

Due to the surrounding land use, limited erosion and sediment control measures will be put in place. However, to minimise potential adverse effects the project will be staged so as to minimise the amount of exposed earth at any time. This will be achieved through staging of the works and progressive site stabilisation.

Around the tower locations, the project will utilise erosion and sediment control measures (where required) which meet (or exceed) industry best practice and guidelines such as Greater Wellington Regional Council's *'Erosion and Sediment Control Guidelines'*. These will be determined once the vegetation removal areas are pegged out.

As part of the erosion and sediment control methodology we will utilise onsite, there will be ongoing site monitoring by the Project team to ensure that our works do not have an adverse effect on the environment.

This monitoring will include ensuring that: erosion and sediment control measures have been installed correctly and that methodologies are being followed and are functioning effectively throughout the duration of the works.

Sediment control measures will be provided for potential silt run-off during construction and until the stabilisation of ground is established.

The construction and environmental management and monitoring requirements include:

- The management of sediment inputs to water courses from earthworks via stormwater and / or windblown dust;
- Best management practices to minimise the chance of accidental spillage or loss of hydrocarbons and non-stabilised cement products to watercourses; and
- Adoption of best practice sediment and erosion control measures.

## 9.1 Decommissioning and re-stabilising erosion and sediment control measures

The project will be staged so as to minimise the amount of exposed earth at any time. This will be achieved through staging of the works and progressive site stabilisation.

Other parts of the site will be vegetated in a way that achieves a good level of vegetative cover (>80%) as quickly as possible to minimise erosion. Re-vegetation will be through hydroseeding and spreading of topsoil and grassing (mulching may be required in some areas). Hydroseeding will primarily be used on cut slopes and spoil sites. Where appropriate direct transfer of native vegetation from adjacent parts of the site will be used.

Once the construction phase of the Project is complete, and the area is stabilised, the erosion and sediment control methods described above will be removed from site.

## 9.2 Monitoring

Given the extent of the works (and the existing land-use) we believe there is low risk of discharge especially given the installation of the above controls. Where works are in more open terrain there may be an opportunity for upstream and downstream monitoring (control and impact) which can occur following rainfall/meteorological events.

### 9.2.1 General Site Monitoring

In addition to environmental monitoring, general site monitoring will be undertaken:

- Daily - Electrix Delivery team and/or the Health Safety and Environmental Team will conduct inspection and issues will be noted. These inspections are informal visual inspection in order to check compliance with the CEMP.
- Weekly - Formal site inspections are to be completed by the Health Safety and Environmental Team. Site specific checklists will be developed to check compliance against the SEMP (including resource consent conditions). Issues will be noted if they present significant environmental risks (e.g. works near watercourses).
- Monthly - The Electrix Project Management Team and the Construction Manager will undertake a monthly site with the Environmental Manager to confirm the environmental monitoring programmes and work procedures containing environmental controls are being implemented in accordance with the SEMP and resource consents.

## 9.3 Rainfall Trigger Events

Rainfall forecasts and records for a site-specific and telemetered rainfall gauge will be monitored throughout the construction period.

These triggers are referenced to a site-specific and telemetered rainfall gauge:

- A rainfall event with an intensity equal to or greater than 15 mm/hr; and
- 25 mm or more total rainfall over any 24-hour period.

The rainfall triggers can be adjusted and refined through the course of construction phase as more data become available and as necessary to the minimise incidence of false alarm responses and/or missed events.

Mercury has installed a project specific telemetered rainfall gauge at the northern end of the Wind Farm site (shown by Mast 11 in Figure 6). This data is sent to a website where programmable triggers can be

set, and alerts can be sent to designated construction project staff. Electrix has subscribed to these notifications.

Exceedances of the established rainfall triggers will lead to site inspections of erosion and sediment controls and water quality monitoring for turbidity at all event-based monitoring sites where works are in progress or the sites are un-stabilised in the respective catchments.

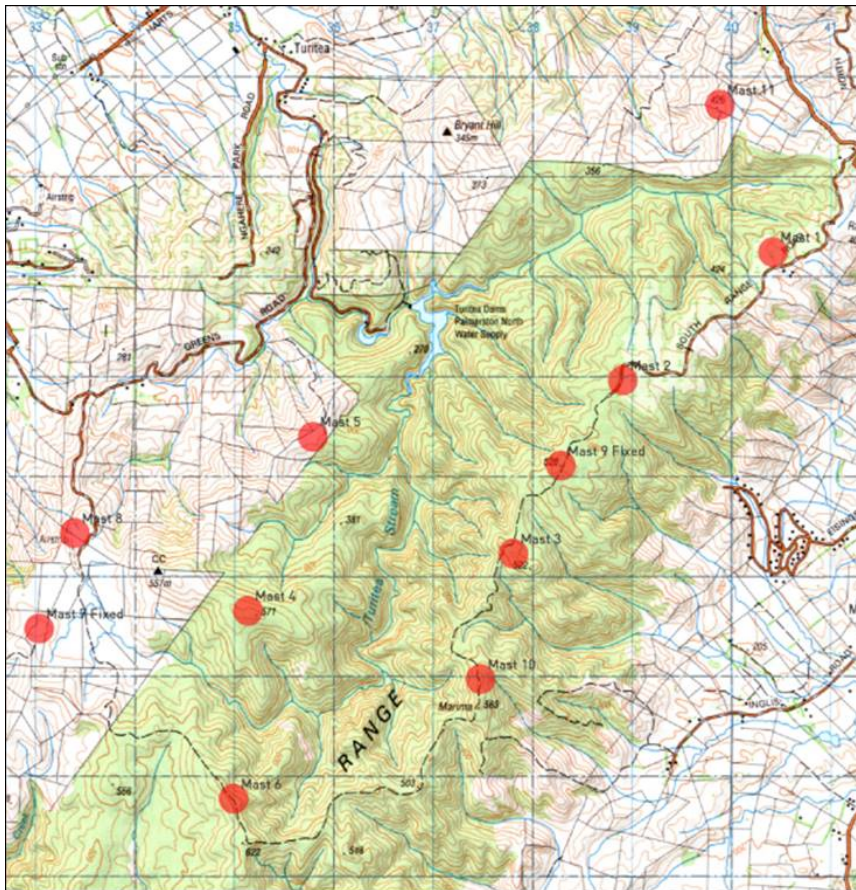


Figure 6: Weather Monitoring Masts.

#### 9.4 Water Quality Monitoring

Turbidity will be used as the key parameter for monitoring construction effects on waterways, and trigger levels for further construction effects monitoring and investigation will be based on turbidity.

Turbidity will be measured at upstream and downstream of works using a calibrated hand-held meter in response to the established rainfall triggers. Field measurements will be gathered as soon as possible following the trigger rainfall event, when safe to do so and during working hours.

Clarity monitoring (e.g. horizontal sight range of a black disk) will be undertaken to monitor construction related effects on water quality of the waterbody. Monitoring of water clarity will be undertaken upstream of the project site area and approximately 200 m<sup>1</sup> downstream (to allow for reasonable mixing), to assess the change in clarity due to the works. Visual clarity monitoring will be undertaken as soon as

<sup>1</sup> Horizon's One-Plan defines the length for reasonable mixing as the lower value of 7 x median width of the river or 200 m downstream of the discharge.

practicable during daylight hours following a trigger rainfall event. A photographic record will be maintained of these inspections.

### **Water Quality Assessment**

A trigger of >30% change in visual clarity will be adopted to initiate adaptive management actions.

If the reason for discolouration cannot be isolated to a specific area within the work site:

- Further discussions with the site team and/or additional site audits may be required to determine the contributing source (if any); and
- We will assess the appropriateness of existing erosion and sediment control measures within the catchment.

### **10.Truck movements**

Works will be carried out in accordance with the Project Construction Traffic Management Plan (CTMP). Electrix will manage truck movements to minimise effects in ways that are in general accordance with the consent conditions. In brief summary:

- There will be no truck movements on Greens Road (until such time that it has been upgraded);
- A 'driver comments' free phone number will be operated in accordance with Conditions 69 and 76 of Schedule 3; and
- Records of vehicle movements will be kept in accordance with Conditions 73 and 74 of Schedule 3.

In accordance with Schedule 3: condition 63 of the Resource Consent, vehicles entering or exiting the site will travel on Greens Road or Kahuterawa Road following their respective upgrades (required pursuant to Schedule 3, Condition 53 of the Consents) and at the following times:

Table 5: Vehicle restrictions: Greens Rd and Kahuterawa Road.

Time Period	Light Vehicles	Trucks
Weekdays	No restrictions	6.30am to 7.30am; 8.15am to 3.15pm; and 4.30pm to 6.00pm.  Except that trucks shall not use the roads when particular events, notified through community consultation, are held, and which involve a peak in the presence of vulnerable road users, such as equestrian or cycling events.  In addition, the prohibition on access from 7.30am to 8.15am and 3.15pm to 4.30pm only applies on school days.
Weekends and statutory holidays*	6.30am to 7.30am; and 5.00pm to 6.00pm;  Except that up to 10 other light vehicle movements may occur outside of these times each day.	No truck access, except that up to 6 truck movements per day may occur on weekends and statutory holidays between the hours of 8am and 6pm.

\*Light vehicle access is also allowed at any time for the purposes of site security and site supervisors (associated with the monitoring of health and safety and environmental effects). Additionally, light vehicle and truck access is allowed at any time for the purpose of maintenance / emergency response, to carry out emergency maintenance works or to respond to a health and safety matter that cannot reasonable wait until a weekday.

## 11.Spill Response

Best management practices will be adopted to minimise the chance of accidental spillage or loss of hydrocarbons and non-stabilised cement products to watercourses. A monitoring programme will provide the basis for an adaptive management response to issues that may arise during the construction phase of the Wind Farm.

Emergency response and spill contingency plans will be implemented on site to minimise risks.

The risk of accidental spillages of hydrocarbons and other potentially harmful substances during construction will be minimised by the adoption of best management practices such as refuelling in bunded sites out of sensitive sub-catchments and regular servicing / maintenance of hydraulic hoses on heavy machinery.

All stored fuel will be protected by a bund for an appropriate volume to prevent spillage of fuel during normal use or by accidental rupture. A fuel bowser will then be used to transfer smaller quantities of fuel to plant employed around the Site.

All Safety Data Sheet (SDS) will be available and understood by all personnel handling (or with access to) the substance.

All heavy plant will carry their own spill kits with storage containers and additional spill kits carried in each of the vehicles.

Hazardous materials will be stored in a container which will be banded. Storage containers will be at the laydown yard (within Property G).

### 11.1 Concrete and Grout

Concrete will be transported onto this site via concrete truck (off-road vehicle) and via helicopter. Grout maybe used to secure the ground anchors into the pads.

Grout and concrete works will be managed by ensuring:

- Refilling areas are at least 20 m away from waterways;
- Specific concrete and grout wash-down areas are provided;
- The collect and disposing of excess concrete are removed from site; and
- Spill kits are available and accessible for use.

## 12.Site Contact Details

*Table 6: Contact details for the contractor undertaking the work.*

Position	Name	Organisation	Phone	Email
Environmental Manager	Emma Comrie-Thomson	Electrix	Ph: 021 755 509	emmac@4sight.co.nz
Construction Manager	Jon Edwards	Electrix	Ph: 021 953 336	jon.edwards@electrix.co.nz
Project Manager	Kevin Small	Electrix	Ph: 021 312796	kevin.small@electrix.co.nz
HSEQ Assessor	Alison Gardiner	Electrix	Ph: 021 822 900	alison.gardiner@electrix.co.nz

**APPENDIX A:**  
**ENVIRONMENTAL RISK REGISTER**

## Environmental Risk Register

Risk Rating					
		Likelihood			
		Probable	Possible	Improbable	
Consequence	Minor	Medium	Low	Low	<b>Minor:</b> Low environmental impact. Short term and can typically be remedied.
	Moderate	High	Medium	Low	<b>Moderate:</b> Environmental effect/s which can be remediated. Discharge off site occurs.
	Major	High	High	Medium	<b>Major:</b> Significant environmental effect resulting in costly restoration under Resource Management Act.

**CEMP** = Construction Environmental Management Plan  
**CLG** = Community Liaison Group  
**SEMP** = Site Environmental Management Plan  
**Electrix Environmental Manager** = EEM  
**Electrix Project Manager** = EPM  
**Electrix Project Ecologist** = PE

**Electrix Construction Manager** = CM  
**Construction Noise Management Plan** = CNMP  
**Assessment of Environmental Effects** = AEE  
**Electrix Environmental Management Team** = EEMT  
**Electrix Site Supervisor** = SS



Issue	Likelihood	Consequence	Risk	Mitigation
Public complaints	Possible	Moderate	Medium	Keep Community Liaison Group (CLG) informed of works and progress. Record complaint using the Complaints Form. Advise EEM.
Waste management	Possible	Moderate	Medium	All waste is to be collected and removed from site and disposed at an appropriately licensed facility. No domestic waste water will be discharged to ground or water within the water supply catchment.
Waterway contamination due to sediment discharge	Possible	Moderate	Medium	SEMP outlines site specific sediment controls. Methodologies within these documents need to be carefully followed. EEMT will be responsible for regular inspection and maintenance of all erosion and sediment controls and audits. Weather dependant checks will also be required from the EPM, CM and SS.
Waterway contamination due to washing of vehicles and equipment	Improbable	Moderate	Low	No vehicle/equipment washing is to occur with Turitea Water Supply Catchment. No routine maintenance of equipment or machinery within the Turitea Water Supply Catchment or refuelling within 10 metres of the tributaries of any watercourse on site.
Lack of environmental awareness	Possible	Moderate	Medium	Project environmental induction, SEMP induction and toolbox meetings.
Spill during refuelling of plant equipment to land or water	Possible	Moderate	Medium	No refuelling and servicing is to occur with Turitea Water Supply Catchment. Refuelling and servicing to occur in approved locations only. No refuelling within 10 metres of the tributaries of any watercourse. Spill kits to be within easy reach and appropriately sized.
Spill of hazardous substances to land or water	Possible	Moderate	Medium	Spill kits to be within easy reach and appropriately sized. Appropriate training given to staff. Identify contaminant, stop source, protect receiving environment, contact EEM, clean up. Review and report using Environmental Incident Form. Store hazardous substances in bunded area or appropriately sized container. All storage containers to be labelled. Safety Data Sheet (SDS) to be stored with substances.
Sediment discharge during dewatering	Possible	Moderate	Medium	Install perimeter controls to divert clean water away from areas of disturbance. Controls to be inspected before use and maintained during use.
Contamination of surrounding area during insitu concreting and grouting	Possible	Major	Medium	Isolation of work area away from waterways. Collect and dispose of excess concrete. Spill kits to be within easy reach and appropriately sized. Appropriate training given to staff.

Issue	Likelihood	Consequence	Risk	Mitigation
Construction noise	Possible	Major	Medium	Plan and carry out works in accordance with Construction Noise Management Plan (CNMP). Ensure any high-risk noise methodologies are communicated to CLG. Helicopter's to be used in accordance with hours of work provisions outlined in CEMP and SEMP.
Dust	Possible	Major	Medium	Controls to be inspected before use and maintained during use. Wetting down of any area of concern. Surfaces and structures to be kept clean. Stabilisation of haul roads. All entrances and exits from site are to be stabilised entrance ways. These are to be maintained and may have wheel washes associated with them. Road sweeping if required.
Archaeological disturbance	Possible	Major	High	Avoidance of sensitive sites in design and acknowledgement of tangata whenua relationship with natural resources. Accidental Discovery Protocol to be followed and form part of the Project Environmental Induction.
Contamination due to works around waterways	Possible	Major	High	Slurry to be captured and disposed to pit, bin or off-site. Use of a wet-vac to capture contaminated slurry (e.g. concrete). Do not allow discharges to enter waterways or stormwater drains. Culvert replacement and works within waterways to follow specific methodologies within SEMP's. Ensure timing of these works is appropriately managed with weather monitoring etc.
Ecology - vegetation clearance for tower pads and walking track formation	Possible	Major	High	Works to be carried out in accordance with the <i>Ecological Assessment of Potential Vegetation Clearance for Transmission Pylons, by Wildlands</i> .
Ecology - Fauna (birds, bats, lizards, snails)	Possible	Major	High	Works to be carried out in accordance with the <i>Incidental Fauna Discovery Plans, by Wildlands</i> .
Ecology - stream ecology	Possible	Major	High	Works to be carried out in accordance with the <i>Adaptive Aquatic Ecology Management Response Plan, by Tonkin &amp; Taylor Ltd</i> .