

Te Ahu a Turanga: Manawatū Tararua Highway Assessment of Effects on the Environment

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Glossary of Abbreviations

Abbreviation	Term
AEE	Assessment of Effects on the Environment
AEP	Annual Exceedance Probability
ANZECC	Australia and New Zealand Environment Conservation Council
AEMP	Aquatic Ecology Management Plan
ARI	Annual Recurrence Interval
BCR	Benefit to Cost Ratio
BPO	Best Practicable Option
BOD	Biological Oxygen Demand
BR01	Bridge 1 – Nutcracker Farm Underpass
BR02	Bridge 2 – Manawatū River Bridge
BR03	Bridge 3 – Eco Bridge
BR05	Bridge 5 – Te Āpiti Wind Farm Underpass
BR06	Bridge 6 – Ballantrae Farm Underpass
BR07	Bridge 7 – Mangamanaia Stream Bridge
CEDA	Central Economic Development Agency
CEDF	Cultural and Environmental Design Framework
CEMP	Construction Environmental Management Plan
CH	Chainage
CIA(s)	Cultural Impact Assessment(s)
CLG	Community Liaison Group
CLM	Contaminant Load Model
CSA	Construction Support Area
CSMP	Contaminated Soils Management Plan
CTMP	Chemical Treatment Management Plan
CU-08	Culvert 8
DBC	Detailed Business Case
DCR	Design and Construction Report
DEBs	Decanting Earth Bunds
DOC	Department of Conservation
DSI	Detailed Site Investigation
ECR	Environmental Compensation Ratios
EMP	Ecology Management Plan
ESC	Erosion and Sediment Control
ESCP	Erosion and Sediment Control Plan
ESCMP	Erosion and Sediment Control Monitoring Plan
EIANZ	Environmental Institute of Australia and New Zealand
EciAG	Ecological Impact Assessment Guidelines
FENZ	Fire and Emergency New Zealand
FIDOL	Frequency, Intensity, Duration, Offensiveness and Location
GD05	Auckland Council Guideline Document 2016/005 <i>Erosion and Sediment Control Guideline for Land Disturbing Activities in the Auckland Region</i>
GPS	Government Policy Statement on Land Transport: 2018/19 - 2027/28
Ha	Hectares
HAIL	Hazardous Activities and Industries List
HNZPTA	Heritage New Zealand Pouhere Taonga Act 2014
HIRDS	High Intensity Rainfall Design System
IAP2	International Association for Public Participation
INI	Index of Biotic Integrity
km	Kilometres
km/h	Kilometres per hour
LINZ	Land Information New Zealand
LTMA	Land Transport Management Act 2003
LOS	Level of Service

m	Metres
MCI	Macroinvertebrate Community Index
MDC	Manawatū District Council
MDP	Manawatū District Plan
MfE	Ministry for the Environment
MSE	Mechanically Stabilised Earth
NES	National Environmental Standard
NES_{AQ}	Resource Management (National Environmental Standards for Air Quality) Regulations 2004
NES_{CS}	Resource Management (National Environmental Standards for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011
NES_{ETA}	Resource Management (National Environmental Standards for Electricity Transmission Activities) Regulations 2009
NES_{PF}	Resource Management (National Environmental Standards for Plantation Forestry) Regulations 2017 (NES _{PF})
NES_{TF}	Resource Management (National Environmental Standards for Telecommunication Facilities) Regulations 2016
NLTP	National Land Transport Programme 2018 – 2021
NoR(s)	Notice(s) of Requirement
NPS	National Policy Statement
NPSET	National Policy Statement for Electricity Transmission 2008
NPSFWM	National Policy Statement for Freshwater Management 2014
NPSREG	National Policy Statement for Renewable Electricity Generation 2011
NPSUDC	National Policy Statement on Urban Development Capacity 2016
NZDF	New Zealand Defence Force
ONRC	One Network Road Classification
PCD	Preliminary Concept Design
PM₁₀	Particulate Matter
PNCC	Palmerston North City Council
PNCCDP	Palmerston North City Council District Plan
PSI	Preliminary Site Investigation
PWA	Public Works Act 1981
QEII	Queen Elizabeth II
Q_{xx}	A XX-year flood event (e.g. Q ₁₀)
RAP	Remedial Action Plan
RCP	Representative Concentration Pathways
RFP	Request for Proposal
RLTP	Horizons Regional Land Transport Plan 2015-2025
RMA	Resource Management Act 1991
RPA	Ramarama Protection Area
RPS	Regional Policy Statement
RSE	Reinforced Soil Embankments
SEV	Stream Ecological Valuations
SH2	State Highway 2
SH3	State Highway 3
SH57	State Highway 57
SLS	Serviceability Limit State
SRPs	Sediment Retention Ponds
SSESCP	Site Specific Erosion and Sediment Control Plan
SUP	Shared Use Path
TDC	Tararua District Council
TDP	Tararua District Plan
TPH	Total Petroleum Hydrocarbons
TSS	Total Suspended Solids
ULS	Ultimate Limit State
USLE	Universal Soil Loss Equation
VCP	Vegetation Clearance Protocols

Terms and Definitions

The following table sets out the terms used within this AEE.

Term	Definition
AgResearch	AgResearch Limited.
Ashhurst Roundabout	The roundabout to be constructed to the immediate east of the current SH57/Fitzherbert East Road/ SH3 intersection. Also referred to the Western Roundabout.
Alignment	The route and / or horizontal and vertical position of the proposed highway.
Alliance	The alliance delivery model is a relationship-style arrangement, that brings together the client and one or more parties to work together to deliver a project, sharing project risks and rewards. A 'hybrid alliance' model is being used to deliver the Te Ahu a Turanga Project. Parties to the Alliance include Waka Kotahi NZ Transport Agency, Fulton Hogan, HEB Construction Limited, Aurecon Limited, WSP, Rangitāne o Manawatū, Rangitāne o Tamaki nui-ā-Rua, Ngāti Kahungunu ki Tāmaki nui-a-Rua and Ngāti Raukawa .
Ballantrae Farm Underpass	An underpass structure located at CH 10210 to enable grade-separated property access to Ballantrae Farm (also referred to as BR06).
Best Practicable Option	Defined in section 2 of the RMA, in relation to a discharge of a contaminant or an emission of noise, as meaning the best method for preventing or minimising the adverse effects on the environment, having regard to various stated factors.
Chainage	A distance measured along a straight line. For this Project, Chainage is measured in metres from west to east.
Culvert	A pipe designed to convey water under an embankment.
Culvert 8	A triple 2m x 2m stormwater culvert of 70m, 25m of which forms the bridge structure, beneath the highway at CH 7850.
Discharge	An activity that results in a contaminant being emitted, deposited, or allowed to escape.
Diversion	Redirecting water from its existing course of flow; causing it to flow by a different route.
Eastern QEII	A protected open space administered by the Queen Elizabeth II Trust.
Eco Bridge	A 305m-long bridge structure located between CH 3970 and CH 4280 for the purpose of minimising adverse effects on nationally critical vegetation/ecological habitats (also referred to as BR03).
Enabling works	The Transport Agency is separately seeking a number of resource consents for enabling works (works in advance of the main Project development) for the Project, to be progressed in a series of packages in advance of the Main Works. These are described in section 1 of the Assessment of Effects on the Environment (Volume I).
Erosion Control	Methods to prevent or minimise the erosion of soil, in order to minimise the adverse effects that land disturbing activities may have on a receiving environment.
Forest and Bird	Royal Forest and Bird Protection Society of New Zealand Inc
Horizons	Manawatū-Whanganui Regional Council also known as Horizons Regional Council.
Hydrology	The branch of science concerned with the properties of the earth's water.
Geogrid	A geosynthetic material used to strengthen soil.
Gorge	Manawatū Gorge.
Grade separation	This a method of aligning a junction of two or more surface transport intersections at different levels (grades) so that they will not disrupt the traffic flow on each of the routes when they cross each other.
Kaimahi	Worker. For this Project, the Iwi Partners have each appointed Kaimahi to assist with the day to day demands of the Project and to represent the iwi on the Iwi Working Group.

Main Works	This term refers to the Project works as described for in this application (to differentiate from the enabling works). It is the Project, which consists of the construction (and all associated activities), operation, use, maintenance and improvement of approximately 11.5km of state highway connecting Ashhurst and Woodville via a route over the Ruahine Ranges.
Manawatū Gorge Route	The former SH3 through the Manawatū Gorge that has been indefinitely closed.
Manawatū Gorge Scenic Reserve	The Manawatū Gorge Scenic Reserve is an area of extensive, protected native forest located on both sides of the Manawatū Gorge which is administered by DOC. The Manawatū Gorge Scenic Reserve includes popular walking tracks through native forest on the southern side of the Gorge.
Manawatū River Bridge	A 300m-long bridge structure with one pier in the Manawatū River and two piers on the river banks (also referred to as BR02).
Mangamanaia Stream Bridge	A 36m-long single-span bridge located at CH 12900 across the Mangamanaia Stream (also referred to as BR07).
Meridian	Meridian Energy Limited.
Nutcracker Farm Underpass	An underpass structure located at CH 3270 to enable grade separated property access to Nutcracker Farm (also referred to as BR01).
Pier	Vertical support structure for a bridge.
Project	Te Ahu a Turanga; Manawatū Tararua Highway Project. The Project consists of the detailed design, consenting and construction, operation, use, maintenance and improvement of approximately 11.5km of state highway connecting Ashhurst and Woodville via a route over the Ruahine Ranges.
Project Area	The Project corridor (i.e. the area proposed to be designated) and immediate surrounds within which construction activities will take place.
QEII Open Space Covenant	A protected open space administered by the Queen Elizabeth II Trust.
QEII Trust	Queen Elizabeth II National Trust
The Ranges	Ruahine Range.
Sediment Basin	A permanent basin downstream of debris channels in the major cut areas to capture and contain sediment in runoff from cut slopes which are separate from the stormwater treatment wetlands.
Sediment Control	Capturing sediment that has been eroded and entrained by overland flow before it enters the receiving environment.
Shared Use Path	A dedicated separate path for use by cyclists and pedestrians.
Spoil site	An area where surplus earthwork material will be permanently placed.
Te Ahu a Turanga	A sacred rock of special cultural and historical significance, referring to a historical event and a wāhi tapu near the Project area. Tangata whenua have gifted the name Te Ahu a Turanga to the Project.
Te Āpiti Wind Farm	The wind farm owned and operated by Meridian Energy Limited on the saddle of the Ruahine Ranges.
Territorial Authorities	Tararua District Council, Manawatū District Council and Palmerston North City Council.
Transport Agency	Waka Kotahi NZ Transport Agency.
Transpower	Transpower New Zealand Limited.
Western Gateway Park	A proposed open space area (and associated car park) providing for recreational, scenic and amenity opportunities at the western end of the Manawatū Gorge Scenic Reserve.
Western QEII	A protected open space administered by the Queen Elizabeth II Trust.
Woodville Roundabout	The proposed roundabout to the immediate west of the current Napier Road/Troup Road/Vogel Street/Woodlands Road intersection. Also referred to as the Eastern Roundabout.

1 Introduction

1.1 Overview

Waka Kotahi NZ Transport Agency (Transport Agency) is applying for the necessary resource consents to deliver Te Ahu a Turanga: Manawatū Tararua Highway Project (the Project). The Notices of Requirement (NoRs) for the Project were given to the Territorial Authorities on 2 November 2018, confirmed by the Transport Agency on 7 June 2019, and are now subject to appeal. This application and supporting Assessment of Effects on the Environment (AEE) is for the regional resource consents required for the Project.

The Project involves the detailed design, consenting and construction, operation, use, maintenance and improvement of approximately 11.5km of state highway connecting Ashhurst and Woodville via a route over the Ruahine Range (Ranges). The purpose of the Project is to replace the indefinitely closed section of State Highway 3 (SH3) through the Manawatū Gorge (Manawatū Gorge Route). Figure 1-1 below shows the Project location and extent along with the indefinitely closed Manawatū Gorge Route which the Project will replace.

The Project comprises a median separated carriageway with two lanes in each direction (one lane plus a crawler lane) over the majority of the route and will connect with State Highway 57 (SH57) east of Ashhurst and SH3 west of Woodville (via roundabouts – the Ashhurst/Western Roundabout and the Woodville/Western Roundabout). The Project also includes a Shared Use Path (SUP) for cyclists and pedestrians (refer Figure 1-1), as well as a number of new bridge structures, including the Manawatū River Bridge (BR02) which will pass over the Manawatū River at the western end of the Manawatū Gorge. The name Te Ahu a Turanga has special cultural and historical significance, referring to a historical event and a wāhi tapu near the Project area, and has been gifted to the Project by tangata whenua.

The following Section 1 provides an overview of the Project context, including Project Partners, Project objectives and outcomes, Project background, approvals applied for within this AEE and other approvals required.

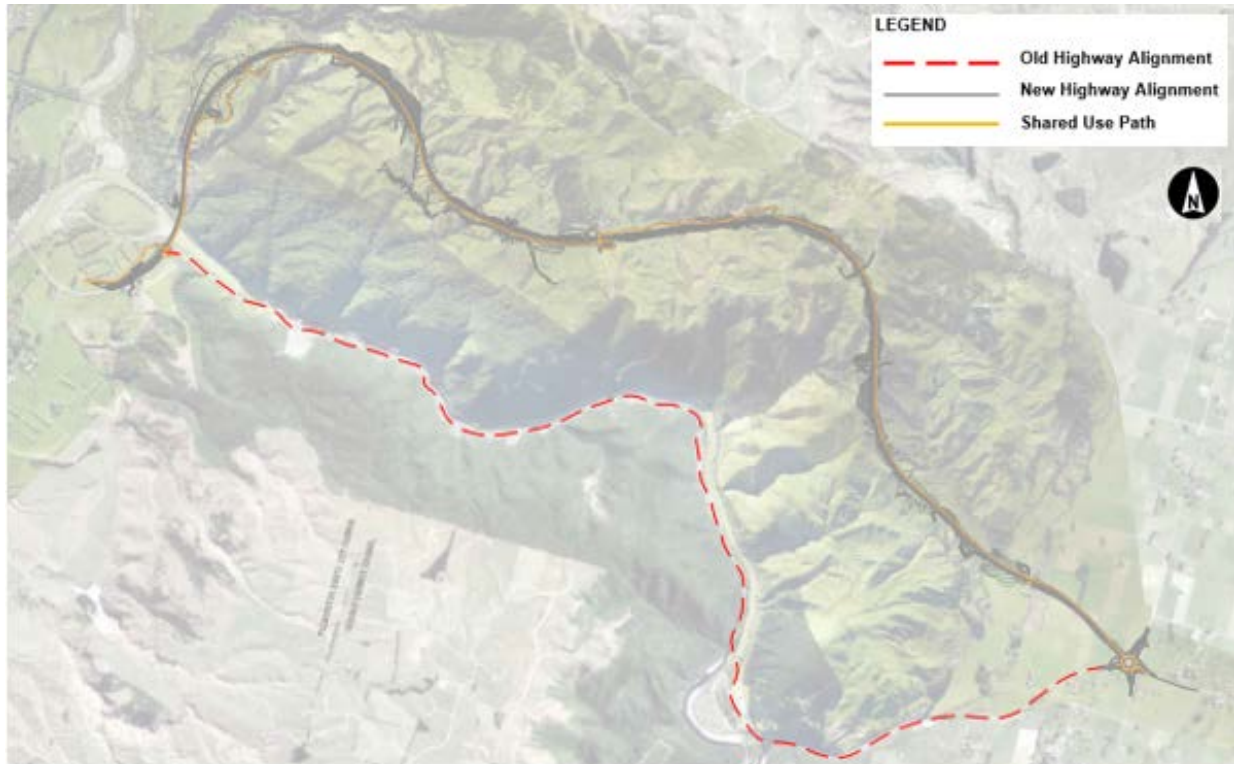


Figure 1-1 Overview of the Project Location and Extent

1.2 Purpose of the Assessment of the Effects on the Environment

This AEE has been prepared in accordance with section 88 and the Fourth Schedule of the Resource Management Act 1991 (RMA) to support the application by the Transport Agency to Horizons for the resource consents necessary to authorise the construction, operation, use, maintenance of the Project. The resource consents required are detailed in Section 4. The AEE provides the information necessary for a robust understanding of the Project and the actual and/or potential effects the Project will have on the environment. The design and detail of each of the elements of the Project are described in:

- Section 3 of this AEE (**Volume I**);
- The Design and Construction Report (DCR) contained at **Volume II**; and
- The Drawing Set contained in **Volume III**.

This AEE (**Volume I**) contains the following information:

- An overview of the Project context, including Project Partners, Project objectives and outcomes, Project background, approvals required under the One Plan and other approvals (Section 1);
- A description of the existing environment (Section 2);
- A description of the Project (Section 3);
- An assessment of the reasons for the application (Section 4);
- A summary of the consultation undertaken by the Transport Agency (Section 5);
- An assessment of the environmental effects of the Project (Section 6)
- An assessment of alternatives considered in development of the Project (Section 7);
- An assessment of the Project in the context of the relevant planning documents (Section 8);

- An assessment of the Project against the relevant statutory provisions (Section 9); and
- A conclusion of the AEE (Section 10).

Table 1-1 provides an overview of the suite of documents that accompany this AEE and form the application.

Table 1-1 Suite of documents

Volume I: Application for Resource Consent	
Assessment of Effects on the Environment	
Appendix A	Forms
Appendix B	Records of Title
Appendix C	Resource Consents Required and Activity Status Assessment
Appendix D	Relevant Statutory Provisions
Appendix E	Proposed Conditions
Volume II: Design and Construction Report	
Appendix A	Geotechnical Design Technical Memorandum
Appendix B	Construction Time/Location Diagram
Appendix C	Spoil Site Selection Memorandum
Appendix D	Manawatū River Bridge (BR02) Construction Staging
Appendix E	Design Standards and Guidelines
Volume III: Drawings	
Volume IV: Technical Assessments	
Technical Assessment A	Erosion and Sediment Control
Technical Assessment B	Stormwater Management
Technical Assessment C	Water Quality
Technical Assessment D	Hydrology
Technical Assessment E	Air Quality
Volume V: Technical Assessments continued	
Technical Assessment F	Terrestrial Ecology
Technical Assessment G	Terrestrial Offset and Compensation
Technical Assessment H	Freshwater Ecology
Technical Assessment I	Natural Character
Volume VI: Cultural Impact Assessments	
Cultural Impact Assessment A	Rangitāne o Manawatū
Cultural Impact Assessment B	Rangitāne o Tamaki nui-ā-Rua
Cultural Impact Assessment C	Ngāti Kahungunu ki Tāmaki nui-a-Rua
Cultural Impact Assessment D	Ngāti Raukawa
Cultural Impact Assessment E	Te Āpiti Ahu Whenua Trust
Volume VII: Management Plans	
CEMP	Construction Environmental Management Plan
CSMP	Contaminated Soils Management Plan
EMP	Ecology Management Plan
ESCP	Erosion and Sediment Control Plan

1.3 Project Context

1.3.1 Waka Kotahi NZ Transport Agency

The Transport Agency is the Crown entity responsible for providing an integrated approach to planning, funding and delivering transport in New Zealand. The overarching objective of the Transport Agency, as set out in section 94 of the Land Transport Management Act 2003 (LTMA) is to “*undertake its functions in a way that contributes to an effective, efficient, and safe land transport system in the public interest*”.

One of the Transport Agency’s statutory functions is to manage the state highway system, including planning, funding, design, supervision, construction, and maintenance and operations, in accordance with the relevant statutes¹.

1.3.2 Strategic Context

The LTMA requires the relevant Minister (currently the Minister of Transport) to issue a Government Policy Statement on Land Transport, the current version of which is the Government Policy Statement on Land Transport: 2018/19 - 2027/28 (GPS). The LTMA also requires the preparation of a National Land Transport Programme and Regional Land Transport Plans. Under the LTMA, when undertaking its functions, the Transport Agency must, amongst other matters, exhibit a sense of social and environmental responsibility and use its revenue in a manner that seeks value for money.² The Transport Agency must also give effect to the GPS when performing its functions in respect of land transport planning and funding.³

The GPS, prepared under the LTMA, sets the Government’s strategy to guide land transport investment over a 10-year period. The GPS identifies safety and access as the key strategic land transport priorities for the Government, alongside the environment and value for money as supporting priorities. The Project is directly aligned with the GPS priorities through providing greater reliability of freight and passenger average travel times on a regional network, increased resilience, safer journeys and the provision of greater access for all road users. In addition, the social and environmental responsibility and value for money have been key considerations in planning for the new connection, identifying a preferred designation corridor, and developing the Project.

The National Land Transport Programme 2018 – 2021 (NLTP) gives effect to the GPS forecasts of activities and expenditure. The NLTP identifies the Project as a key priority and confirms an initial investment for its design and construction.

The Horizons Regional Land Transport Plan 2015 - 2025 (2018 review) (RLTP) sets out the strategic direction for land transport in the Region. The RLTP recognises a replacement route for the Manawatū Gorge as a key focus area and states that:⁴

“It is critical for regional economic growth that the focus remains on the development of an alternative to the Manawatū Gorge as the principal east-west link between Manawatū and Hawkes Bay. Completion of a new route must ensure an improvement to the resilience and availability of the route as well as realising opportunities for connectivity to land use development, freight hubs and efficiency, and tourism.”

The RLTP identifies an alternative to the Manawatū Gorge Route as a priority project for funding purposes and therefore the Project is considered fundamental to the achievement of this Plan.

1.3.3 Project Partners

The Transport Agency appreciates and respects that issues such as ‘areas of interest’ and mana whenua are for Māori to determine in accordance with tikanga and it is not the role of the Transport Agency to seek to define those matters. The Transport Agency seeks to operate in a manner that is respectful of tikanga and seeks to ensure that Māori who identify with an area have the ability to express that, if they wish to do so, through the statutory processes. Consequently, an open and inclusive approach is adopted. The Transport Agency acknowledges that there will be different layers and

¹ The LTMA and the Government Roadway Powers Act 1989. See section 95(1)(c) LTMA.

² LTMA, section 96.

³ LTMA, section 70.

⁴ RLTP, page 18, section 3.2.3.

strengths of history, association and interests, and again the Transport Agency has no role in defining or resolving those matters.

The Transport Agency's approach is:

- Underpinned by the Transport Agency's commitment, as a Crown agency, to a partnership-based approach with tangata whenua that reflects the principles of the Treaty of Waitangi/Te Tiriti o Waitangi; and
- Informed by on-going engagement, including formal hui, informal meetings, site visits and site walk-overs, described in Section 5 of this AEE.

The involvement of iwi in the development of the Project started in 2018, with iwi combining with and presenting evidence on the effects of the proposed work with the Transport Agency's during the NoR Phase. The process of working together continued through 2019 with involvement in field work entailing cultural monitoring and assistance with geotechnical, ecological and water surveys. Iwi also undertook site visits as requested to familiarise themselves with the Project and in order to ensure that cultural values are recognised, understood and responded to during the design development. The following iwi are all formally partners to the Alliance, with involvement from August 2019 (Iwi Partners). Iwi Partners have representation on the Project Governance Board and have appointed Kaimahi to assist with day to day Project demands and to establish the Iwi Working Group. Iwi Partners include:

- Rangitāne o Manawatū;
- Rangitāne o Tamaki nui-ā-Rua;
- Ngāti Kahungunu ki Tāmaki nui-a-Rua; and
- Ngāti Raukawa ki te Tonga.

In addition, the owners of Parahaki Island (also known as Motuere Island), which is Māori freehold land under Te Ture Whenua Māori Act 1993, have an interest in the Project, and have been invited (through the Ahu Whenua Trustees who hold the Island on trust for the beneficial owners) to be part of the Iwi Working Group and to input into Project design and development processes.

Weekly design workshops commenced in September 2019 to help integrate cultural and spiritual values into the Project team and to inform design development. The workshops have focused on particular aspects of the Project's design, and have tended to focus on ecology, stormwater management, earthworks, structures and cultural expression. These workshops have also included input from Te Āpiti Ahu Whenua Trustees (from November 2019) who have an interest in proposed Project works near to Parahaki Island.

In parallel with the above described process, Iwi Partners and Te Āpiti Ahu Whenua Trust have prepared Cultural Impact Assessments (CIAs) which are provided in **Volume VI**, and which are summarised in Section 6.13 of this AEE. Further details on the process to identify cultural values in relation to the design process to date is included at Section 1.4.5 of this AEE.

1.3.4 Project Objectives and Outcomes

The Project objectives, as identified in the Detailed Business Case (DBC) described in Section 1.4.2, are to reconnect the currently closed Manawatū Gorge SH3 with:

- A more resilient connection;
- A more efficient connection than the Saddle Road and Pahiatua Track; and
- A safer connection than the Saddle Road and Pahiatua Track.

The Project is expected to result in a safe, efficient and resilient transport link that will enable economic development and regional productivity and deliver the following major benefits and outcomes:

- Significantly reduced traffic-related deaths and serious injuries;
- Increased resilience of the corridor;
- Improved travel times by approximately 10 minutes per trip between Palmerston North and Woodville (and associated reductions in vehicle operating costs);
- Support for regional economic activities and productivity, including through reductions in operating costs and travel times;
- Avoided cost of delays to realising the benefits of the Manawatū Gorge Route replacement, which are estimated to be \$22 million per annum regionally (associated with additional direct travel costs);
- Provision of a reliable and safe road for access to Palmerston North hospital for those on the east of the Ranges; and
- Enabled modal choice and recreational benefits through the provision of the SUP and walking tracks.

1.4 Project Background

1.4.1 Introduction

From its construction in 1872 until its indefinite closure in April 2017, the Manawatū Gorge Route provided a vital connection between the west and the east of the North Island. This was important at both a regional scale and local scale; regionally, by connecting the Manawatū-Whanganui region with Hawkes Bay; and locally, by connecting the communities of Woodville and Dannevirke with Ashhurst and Palmerston North.

The indefinite closure of the Manawatū Gorge Route was preceded by a long history of unplanned closures as a result of slips blocking the road, due to geotechnical instability of the steep cuts at various locations along the route. These closures have caused substantial road user disruption and required significant investment to remediate.

Figure 1-2 below illustrates the historic landslides and future potential landslides in the area and Figure 1-3 shows the significance of the slip that occurred in April 2017.

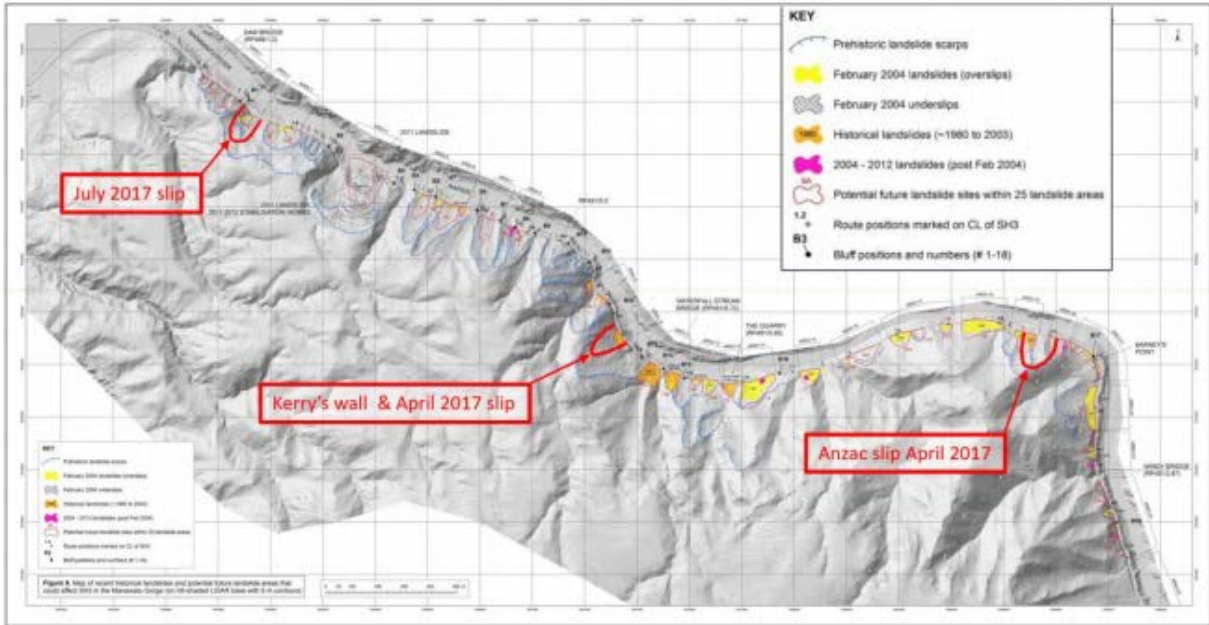


Figure 1-2 Manawatū Gorge Historic and Potential Landslides



Figure 1-3 Photograph of Anzac Slip, April 2017

Prior to its closure, the Manawatū Gorge Route carried approximately 7,600 vehicles per day, was classified as a National Road under the One Network Road Classification⁵ (ONRC) and qualified as an important national freight link.

Following the closure of the Manawatū Gorge Route, traffic flows have continued at previous levels using the two alternative routes, being Saddle Road and Pahiatua Track. The use of these alternative routes has had significant social, economic and environmental impacts on nearby residents and the wider region and has led to a spike in crash events on the alternative routes. While improvement works on Saddle Road continue, neither of these steep, narrow and winding routes are able to provide an appropriate level of service for a permanent state highway connection in terms of safety, resilience and efficiency.

The scale of impacts of the indefinite closure of the Manawatū Gorge Route resulted in an urgent need to identify a safe, resilient and efficient new route and, as such, the Transport Agency undertook an extensive two-stage investigation process as part of its DBC to identify a replacement route. The DBC process is briefly summarised below and in Section 7 of this AEE.

1.4.2 Detailed Business Case

The DBC process included an analysis of a long list of 18 different route options that were considered as alternatives to the closed Manawatū Gorge Route. The long-listed options included tunnels, viaducts and new routes over the Ruahine and Tararua Ranges north and south of the existing Manawatū Gorge Route. These were assessed against a set of criteria (including the Project's investment objectives, environmental and social impacts, as well as implementability) established at the start of the Project. Four short-listed options were identified as a result of this process.

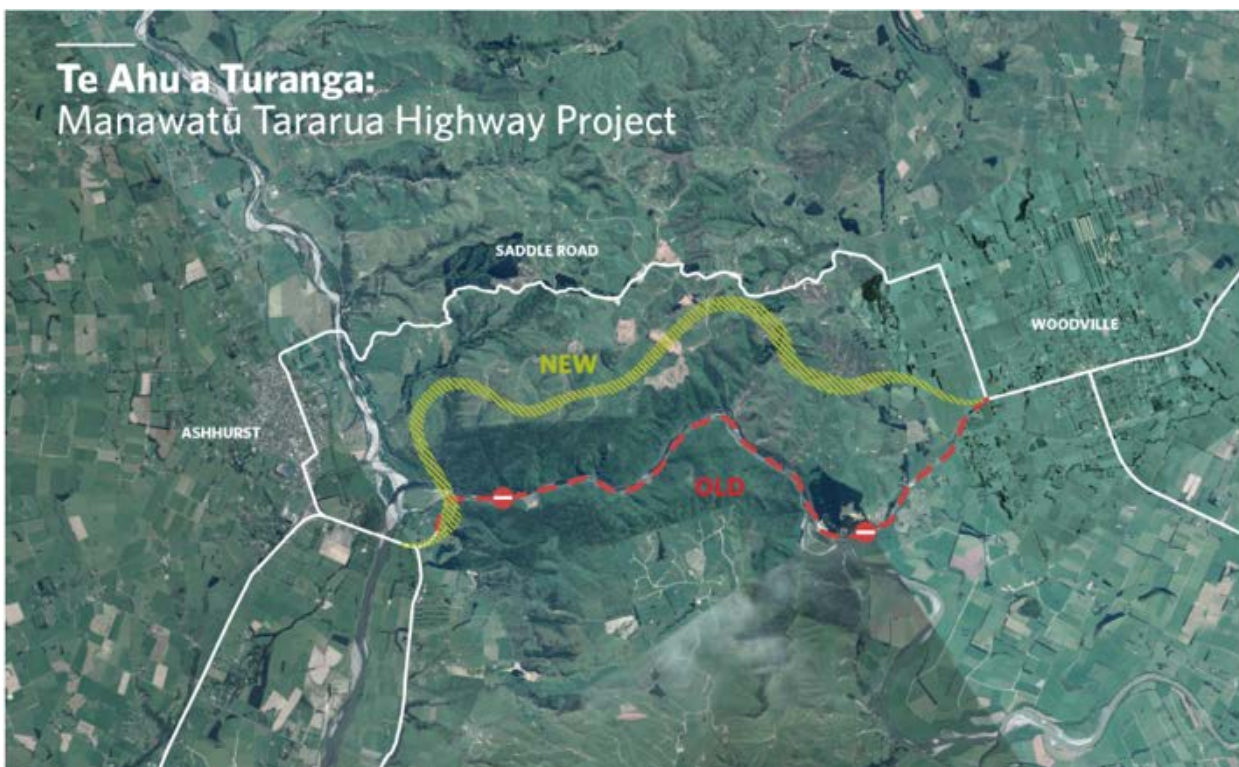


Figure 1-4 Detailed Business Case - Preferred Route

⁵ The ONRC is a classification system that divides New Zealand's roads into six categories from 'national' through to 'access' based on how busy they are, whether they connect to important destinations, or whether they are the only route available.

The four short-listed options were further refined and reassessed against the same criteria to identify a preferred route (in March 2018). That route was located across the Ruahine Range to the north of the Manawatū Gorge Route and traversed two areas that are subject to Queen Elizabeth the Second (QEII) Open Space Covenants (referred to in this AEE as 'Western QEII' and 'Eastern QEII'). The preferred route is indicatively shown in Figure 1-4.

1.4.3 Notice of Requirement Indicative Design

As part of the identification of the area to be subject to NORs for the Project, the preferred route was further considered and refined in response to potential adverse effects on the environment. The NoRs indicative alignment was designed to meet specific geometric criteria including parameters for the vertical and horizontal alignment – in particular, a maximum gradient of 8%. In relation to the QEII covenanted areas, this alignment indicatively crossed the Western QEII on a bridge, and the Eastern QEII on an embankment.

During this phase, the realignment of approximately 1.8km of the preferred route was identified at the eastern end of the Project, to reduce the potential effects on a stream and on property in that location.

The NoRs⁶ were given to the Territorial Authorities on 2 November 2018. They were publicly notified, at the Transport Agency's request, and 742 submissions were made by various individuals and entities. The Territorial Authorities appointed a Hearings Panel to consider and make recommendations on the requirements under delegated authority, and a public hearing took place in Palmerston North from 25 March to 5 April 2019 and on 18 April 2019. On 24 May 2019, the Hearings Panel issued its Recommendation Report, in which it recommended that the requirements be confirmed, subject to conditions. On 7 June 2019, the Transport Agency gave notice of its decision to confirm the requirements, subject to conditions. In this decision, the Project's designation area / corridor was confirmed (noting there was an indicative alignment in place for the purposes of that process). The Transport Agency's decision was subsequently appealed to the Environment Court, which is explained further below at Section 1.6.4.

1.4.4 Preliminary Concept Design

A comprehensive tendering process between two consortia was undertaken between February and May 2019 to determine which consortia would take the Project forward into the delivery phase. The Advance Alliance (that has since been renamed Te Ahu a Turanga Alliance (the Alliance)) was announced as the successful tenderer in July 2019. Parties to this alliance include the Transport Agency, Fulton Hogan, HEB Construction Limited, Aurecon Limited, WSP, Rangitāne o Manawatū, Rangitāne o Tamaki nui-ā-Rua, Ngāti Kahungunu ki Tāmaki nui-a-Rua and Ngāti Raukawa.

As part of the tendering phase, a Preliminary Concept Design (PCD) was developed that included an altered alignment to that of the NoRs that extends to the north beyond the designated corridor in Tararua District from CH 5500 to CH 7100 (a length of approximately 1.5km). This alignment is referred to in this AEE as the 'Northern Alignment'. This shift is achieved by increasing the road gradient to a maximum of ~10% over a short length on the western rise. The proposed Northern Alignment is shown in Figure 1-5 below.

The benefits achieved through the PCD (including the Northern Alignment) include:

- Reduced impact and footprint on the QEII covenanted areas through a reduction in the area of disturbance and the degree of severance;

⁶ NoR documentation is publicly available online: <https://www.nzta.govt.nz/projects/sh3-Manawatū/rma-consenting/> and <https://www.pncc.govt.nz/council-city/meetings/hearings/te-ahu-a-t%C5%ABranga-manawat%C5%AB-tararua-highway/>

- Reduced impact on a rare seepage wetland and the avoidance of 0.05 hectares (ha) of nationally significant swamp maire, through extending the length of an Eco Bridge (BR03) structure;
- Reduced effects on the Te Āpiti Wind Farm by eliminating the need to remove wind turbines, reducing the extent of works in the vicinity of turbines and enabling uninterrupted access to the wind farm during construction;
- Reduced effects on the AgResearch Ballantrae Farm Research Station (Ballantrae Farm) through an amended alignment and steepened cut slopes lessening the area impacted;
- Optimised earthworks volumes and material re-use strategies;
- A resilient geotechnical solution, provided through the use of benched cut slopes; and
- Reduced effects on significant habitats as a result of design refinements, from those assumed in the NoRs documentation (being based on a broad corridor approach).

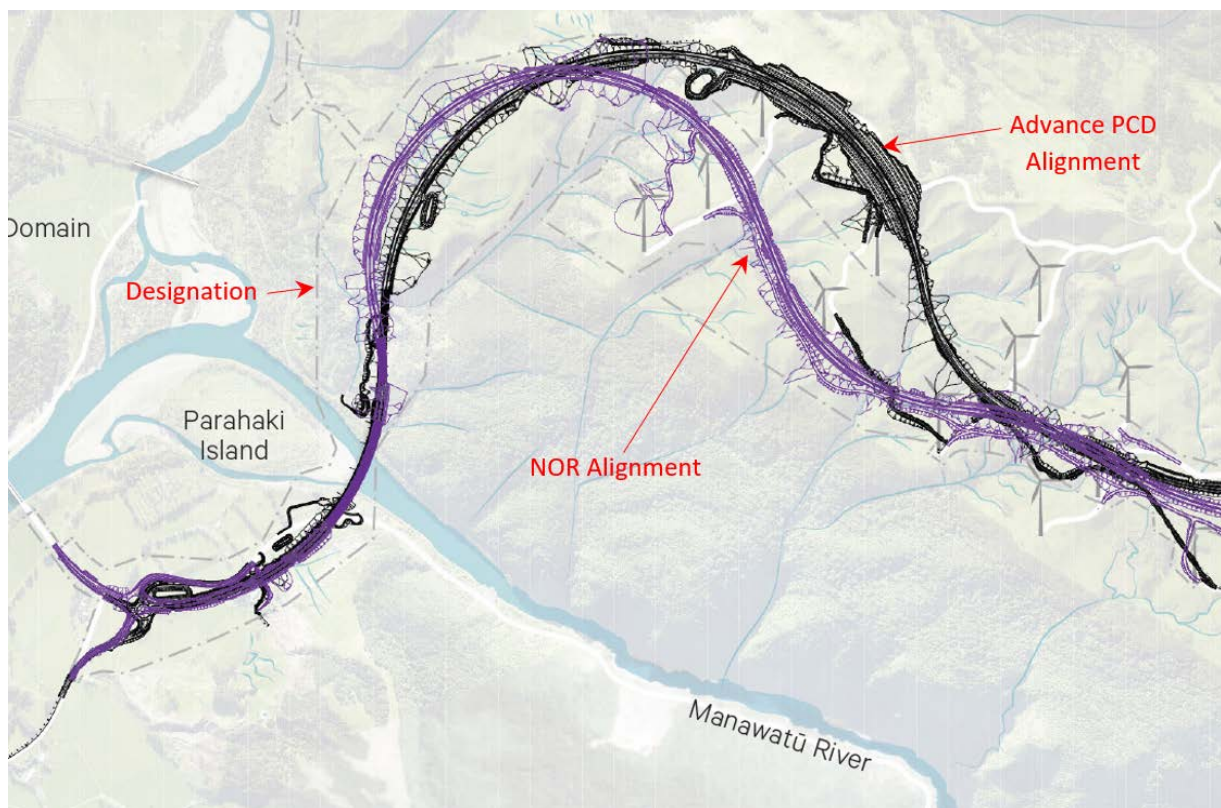


Figure 1-5 Alliance Preliminary Concept Design alignment (the 'Northern Alignment') (black) compared to the original NoR alignment (purple)

1.4.5 Development of Design for Consenting

Following the award of the contract to the Alliance, the design of the Project has continued to be developed and refined through the Transport Agency working with Iwi Partners (further detail is provided below), community and stakeholders to develop a design for resource consent. The design provides sufficient detail for the actual or potential effects of the Project on the environment to be assessed (including the effectiveness of the proposed measures to manage adverse effects). The design is presented in the DCR at **Volume II** and the Drawing Set at **Volume III**.

The Project will become the new SH3 route between Ashhurst and Woodville and will replace the closed Manawatū Gorge Route. The details associated with the revocation and/or road stopping of the existing SH3 Manawatū Gorge Route are not part of this Project and will be subject to separate procedures and

discussions with stakeholders. This process will be carried out in accordance with the relevant provisions of the LTMA and/or the Public Works Act 1981 (PWA). Similarly, any future use of the Manawatū Gorge Route is outside the scope of this application.

1.4.5.1 Identification of and maintaining Cultural Values

Ongoing engagement and collaboration with Project Iwi Partners has informed an understanding of tangata whenua relationships with the land, water, sites, wāhi tapu, and other taonga and associated cultural values. This has, in turn, informed and shaped the development of the Project from option identification and assessment through to the refinement of the proposed designations and the development of the design to support the consenting phase.

During the NoR phase a Cultural and Environmental Design Framework (CEDF) was developed in discussion with iwi taking into account environmental and landscape design considerations. The Preliminary CEDF set out the overarching design principles and 'vision' that will be applied to the final design of the Project and incorporates Te Aranga Māori Design Values and Principles that, in turn, are guided by the values incorporated in the Project vision of rangatiratanga, kaitiakitanga, manaakitanga, wairuatanga, whanaungatanga and mātauranga.

Te Aranga Principles are delivered through the development and design of the Project with examples of Project specific application of these Principles including:

- Reviving and recording traditional and ancestral names;
- Identifying appropriate names for the road and features in partnership with tangata whenua;
- Reusing and recycling waste materials, where appropriate;
- Referencing tangata whenua values and narratives in design; and
- Opportunities for tangata whenua to have further specific roles in relation to the Project such as seed collection, planting vegetation, propagation and/or environmental maintenance.

These Principles have been used to inform ongoing engagement with tangata whenua and will be used in the development of the Outline Plan(s) (in subsequent stages) to realise opportunities for the celebration of cultural values, including as follows:

- Landmarks and carvings could provide reference to site history;
- Artistic elements could be incorporated into the design of highway elements;
- Bridge design could be inspired by the origin story of the Gorge to represent cultural narratives;
- Bridging over areas with high ecological values;
- Naming of the highway features including bridges should be in collaboration with tangata whenua; and
- Cultural harvest plantings, if appropriate.

In order to assist with this process of design development and to better integrate cultural and spiritual values into the Project, iwi were invited to become Project Partners. Iwi kindly accepted that offer and have (from 18 September 2019) attended weekly design workshops as well as hui as required to consider detailed design aspects for example the ecology workshops referred to in Terrestrial Offset and Compensation - **Technical Assessment G**.

This activity has been complemented with bi-monthly and monthly Iwi Working Group and Governance meetings. Te Āpiti Ahu Whenua Trustees have also been invited to attend all of these hui (workshops etc.) since November 2019. The Transport Agency has also met with the Trustees as a landowner.

Iwi Partners are currently working with the Project designers to develop the next version of the CEDF, which is informing the ongoing design development (detailed design).

“Cultural Values are the foundation on which tikanga Māori is based and from where Mātauranga Māori emerges. Cultural Values define the framework for behaviour actions and interaction with the natural world” (Preliminary CEDF, p.29).

The ongoing development of the CEDF provides and represents a step towards a Mātauranga Māori, values-based design approach informed by 11 core values which have been identified by the Iwi Working Group. The values are as follows:

- Wairuatanga - Recognizing that the spiritual is critical to personal and collective wellbeing and respecting the diverse cultures and beliefs.
- Kotahitanga - Developing and maintaining a unity of purpose and direction towards a shared vision for the Project.
- Te Tititi o Waitangi – as the foundation of the Iwi-Crown partnership for the Project.
- Rangatiratanga – Professionalism.
- Ūkaipotanga – Looking after each other.
- Pukengatanga – Respecting others.
- Manaakitanga - Acknowledging each other’s mana, different perspectives and ways of working.
- Tino Rangatiratanga – respecting obligations and accountabilities outside of the immediate Project.
- Kaitiakitanga - Placing the environment and sustainability at the heart of our work, and recognising our role as stewards for future generations.
- Whanaungatanga – belonging and connection and a relationship through shared experiences and working together which provides people with a sense of belonging.
- Whakapapa – of all things not only people for example the Whakapapa or relationships of the Manawatū River and the many streams and groundwater systems that contribute to it.

These values and other associated cultural awareness considerations are being built into the ongoing development of the CEDF, the detailed design of the Project, and proposed construction methodology. The process for developing the CEDF is iterative and the CEDF document itself is described as a “living document”. This means that the framework document will continue to evolve, reflecting the design development process and the ongoing design led discussions with Iwi Partners and other stakeholders.

1.5 Approvals Required under the One Plan

The Transport Agency is seeking the regional resource consents required for the construction and operation of the Project pursuant to the Horizons Regional Council One Plan (One Plan). These are summarised in Section 4 and a detailed rule assessment is contained in Appendix C.

Given the extent to which the activities for which resource consents are required are interrelated and overlapping, they cannot realistically be considered separately. Therefore, it is appropriate for the resource consent applications to be ‘bundled’ together and considered jointly. As the most restrictive consent sought is for a non-complying activity, the overall activity status for this application is **non-complying**.

1.6 Other Approvals

Other approvals may be separately required (that is, independent of the resource consent applications for the Project) and are described in the following subsections.

1.6.1 Resource consents under the NES for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011

A Preliminary Site Investigation (PSI) and Detailed Site Investigation (DSI) were undertaken for the Project which identified four areas of contaminated land within the Project footprint (see Section 2.3.10 for further detail). These areas will be remediated prior to commencement of the Project's earthworks. The necessary resource consents will be sought from the Territorial Authorities in respect of the disturbance of known and potentially contaminated land pursuant the Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011 (NES_{CS}). These NES_{CS} consents will also cover any accidental discovery during the Project's earthworks. The Contaminated Soil Management Plan (CSMP) contained at **Volume VII** therefore addresses the accidental discovery of contaminated land.

1.6.2 Resource consent under the NES for Electricity Transmission Activities) Regulations 2009

The Project works at the Woodville Roundabout have the potential to impact up to five poles on the Transpower Woodville - Mangamaire 110kV transmission line. The raising of conductors will be required to achieve the necessary clearance from the proposed highway surface. At the time of writing, the height that the poles are required to be raised is yet to be determined, however, it is understood that this is likely to be within the 15% permitted activity threshold provided under the Resource Management (National Environmental Standards for Electricity Transmission Activities) Regulations 2009 (NES_{ETA}). Following confirmation of the design and determination of the height increase required, it will be confirmed whether consent is required pursuant to the NES_{ETA}, and if so, this will be sought separately.

1.6.3 Enabling Works (regional and district resource consents)

In addition to the proposed designations required for the Project (discussed below) and the resource consents sought by this application (which together will authorise the Project's 'Main Works'), the Transport Agency is separately seeking RMA authorisation for a number of 'Enabling Works'. This includes a number of regional resource consents for Enabling Works, and district land use consents where these may be required for Enabling works (e.g. for activities outside the proposed designations, noting that the proposed designations provide land use authorisation for enabling works that are within the boundaries of the proposed designations). These Enabling Works will be carried out in advance of the Main Works to enable the main construction activity to occur and include investigation activities needed to complete the detailed design of the Project. The intention is that some elements of the Enabling Works will (subject to securing the necessary resource consent/s) commence in the second half of 2020.

A description of the Enabling Works and their status in respect of necessary resource consents is provided for each of the Enabling Works packages in Table 1-2 below and shown in Drawing TAT-3-DG-R-0010 (**Volume III**). Some of the resource consents that have been granted for Enabling Works anticipate that some adverse effects of the proposed Enabling Works on ecological values may be managed by measures proposed as part of the Main Works resource consents. The approach for this is set out in the conditions imposed on the Enabling Works consents.

Table 1-2 Enabling works overview

Enabling Work	Status	Description / Proposed works
Western Access Track (Stage 1)	Consents from Horizons Regional Council granted on 13 November 2019 (Consent reference: APP-2019202470.00). Note activity is permitted by the MDP.	This package involves the widening of an existing access track and some realignment to allow construction vehicle access. Activities include earthworks, vegetation clearance and culvert work.
Geotechnical Investigations	Consents from Horizons Regional Council granted on 27 February 2020 (Consent reference: APP-2019202606.00). Note activity is permitted by the MDP, TDP and PNCDP.	This package involves earthworks and vegetation clearance to create access tracks and drilling platforms in order to undertake geotechnical investigations on the banks of the Manawatū River, Parahaki Island and within high value ecosystems.
Western Access Track (Stage 2) – Saddle Road left hand turn and Western Access track extension	In preparation.	This package involves the creation of a new access track underneath the Saddle Road bridge (at the Pohangina River) removing the need for right hand turn access to the site and an extension of the consented western access track (APP-2019202470.00). Activities include earthworks, vegetation clearance and stream crossing.
Water take from Manawatū River and creation of reservoirs for water storage	In preparation.	This package involves vegetation clearance and earthworks associated with both the installation of a water abstraction device and generator (and associated water take) and associated creation of storage ponds located outside of the Project designation corridor.
Eastern Access	In preparation.	This package involves earthworks, vegetation clearance and stream crossing activities associated with the creation of an eastern access off Hope Road.
Cook Road Access	In preparation.	This package involves earthworks, vegetation clearance and stream crossing activities associated with the improvement (minor widening) of the existing access track.
Pine tree clearance	Permitted activity under the National Environmental Standard for Plantation Forestry 2017 (NES _{PF}).	This package involves earthworks and vegetation clearance. Pine tree clearance is a permitted activity under the NES _{PF} . This work is required as there are pines within the Project footprint and these trees need to be removed for long term safe operation of the state highway.
Te Āpiti Wind Farm access tracks (to be confirmed)	Scoping underway (to be confirmed).	This package involves earthworks, vegetation clearance and stream crossing activities associated with the creation of the two westernmost access tracks within the Te Āpiti Wind Farm.

1.6.4 Designations to authorise the land use element of the Project

The Transport Agency is a Requiring Authority as defined under section 166 of the RMA. In late 2018, the Transport Agency gave a NoR to each of the Territorial Authorities for designations to allow the construction and operation of the Project.

Following public notification, the receipt of submissions, and a hearing taking place in March to April 2019, independent hearing commissioners (under delegated authority) recommended that the Transport Agency confirm the requirements, subject to conditions. In June 2019, the Transport Agency issued its formal decision confirming the requirements subject to conditions.

Three appeals against the Transport Agency's decision to confirm the requirements were lodged by the Director-General of Conservation (Director-General), Queen Elizabeth II National Trust (QEII Trust), and landowners at the western end of the Project alignment. The landowner appeal was withdrawn.

Through the appeal process, the Transport Agency has asked the Environment Court to modify the requirement for a designation in the Tararua District Plan (TDP), to provide for the Northern Alignment (as discussed at Section 1.4.4). The Northern Alignment falls partly outside the area identified in the requirement as confirmed by the Transport Agency. The route and design of the Project as set out in this resource consents application, and considered in this AEE, reflects the Northern Alignment route; that is, resource consents are sought for the Northern Alignment.

The Transport Agency has also agreed amendments to the designation conditions with the primary appellants (Department of Conservation (DOC) and QEII Trust), the Territorial Authorities, and other section 274 parties via Court assisted mediation. All but two section 274 parties to the appeals have agreed to settle the appeals on the basis of the Northern Alignment modification and amended designation conditions.

A hearing on the Court's jurisdiction to modify the relevant requirement to provide for the Northern Alignment was held on 20 February 2020 and a decision was issued on 3 March 2020 confirming that the Court does have this jurisdiction. A timetable has been set for evidence exchange on the outstanding issues raised by the two parties who remain opposed, with a priority hearing to be scheduled if required. It is hoped that all appeals are resolved by June 2020.

1.6.4.1 Proposed designation conditions

The Transport Agency has made detailed commitments as to how it will address the adverse effects of the Project, and the process it will follow in confirming the final form of the Project.

Those commitments are reflected in the designation conditions, in the form agreed with the Territorial Authorities, DOC, QEII Trust and others and presented to the Environment Court. As is standard practice for projects of this scale, the conditions in turn provide for a full suite of management plans to be prepared (and in the case of the Ecology Management Plan, submitted for certification), in order to manage the potential effects of the Project.

The location of the designation corridor (updated to incorporate the Northern Alignment) and the commitments made by the Transport Agency in the mediated version of the designation conditions have been taken as a starting point for the preparation of the resource consents application, and this accompanying AEE. The relevant conditions, and the nature of the designation corridor, are addressed as relevant throughout this AEE and in the technical reports.

The significance of the designation conditions as the starting point for these consent applications can be illustrated by a high-level summary of the conditions that apply to terrestrial ecology:

- Designation condition 24 set standards for the management of the effects of the Project on terrestrial ecology values, including prescribing maximum removal areas for certain vegetation types;

- The conditions also provide the framework for the Ecology Management Plan (EMP), including for the development of offset and / or compensation measures (such that a net indigenous biological diversity gain is achieved);
- The description of offset and / or compensation measures in the EMP is specifically required to be developed by reference to any relevant conditions of regional consents; in practice that means the offset and / or compensation measures will be finalised by reference to conditions imposed on these consents (presuming they are granted); and
- Conditions 19 -23 require a number of specific management plans (to address the establishment of planting proposed by the Transport Agency, and potential effects on lizards, bats, birds and terrestrial invertebrates).

It is important, when the decision-maker is considering and assessing this resource consent application, that it has proper regard to the NoRs process and proposed conditions, and to the proposed modification of the Tararua District Council (TDC) requirement to provide for the Northern Alignment (on which this application is based).

1.6.4.2 The designations and section 91 of the RMA

Section 91 of the RMA provides that Horizons may determine not to proceed with the notification or hearing of the resource consent applications if it considers on reasonable grounds that other resource consents are required, and that it is appropriate for better understanding the nature of the proposal that those other resource consent applications are made before proceeding further.

All the necessary regional resource consents for the Project's Main Works are being applied for through this application. The district land use components of the Project's Main Works will be authorised via the designations (should the appeals as outlined above be resolved). On that basis, no additional district land use consents are required to authorise the Project.

Table 1-2 above outlines whether district land use authorisations are required or whether these are permitted for the various Enabling Works packages.

In these circumstances, section 91 does not allow Horizons to defer the notification or hearing of this application. Regardless of whether or not the designations are finally confirmed by the Court before any hearing in respect of the resource consents, the notices of requirement for the designations were lodged some time ago. Further, the nature of the Project is very well understood; the designation conditions are agreed as between the original parties to the Environment Court appeals (as discussed above), and the Transport Agency is committed to providing for the Northern Alignment. As noted above, the Environment Court has confirmed it has jurisdiction to modify the requirement to allow the Northern Alignment; the Transport Agency and other parties have asked that the Court will modify the requirement accordingly, subject to the resolution of the remaining issues raised by two parties.

1.6.4.3 Designation Conditions and Management Plans

In its decision on the requirements, the Transport Agency included a set of conditions for the designations. As noted above, amendments to these designation conditions have been agreed through the Environment Court mediation process (except for two section 274 parties) and the final version of the designation conditions will be set by the Environment Court.

The designation conditions require the Transport Agency to prepare a number of management plans in order to ensure that the effects of the Project are appropriately addressed. The management plans are referred to throughout this AEE (and in the accompanying technical reports) as appropriate. Of particular note is the Transport Agency's formal commitment (including following discussion with the Territorial Authorities, DOC and others) that it will not formally submit the Ecology Management Plan required by the designation conditions to the Territorial Authorities until it has obtained the regional resource consents necessary for the Project. In practice, it is intended that the Construction

Environmental Management Plan, Erosion and Sediment Control Management Plan, Ecology Management Plan (including all sub plans) provided as part of this application, meet the requirements of the designation conditions and following the outcome of this resource consent process they will then go through the certification (as necessary) and outline plan processes as is required by the designation conditions. The management plan framework is described in more detail in Section 1.7.

1.6.4.4 Outline Plans

Section 176A of the RMA requires an outline plan of a public work for a project, or work to be constructed on designated land, to be submitted by the requiring authority to the territorial authority to allow the territorial authority to request changes before construction is commenced. The Transport Agency has not requested nor obtained a waiver of the requirement for outline plans and therefore, is required to submit outline plans to each of the Territorial Authorities prior to commencing construction.

The outline plans will be submitted once the necessary regional resource consents have been obtained and will show the detailed design of the Project, and address specific matters required by section 176A(3) of the RMA and the designation conditions.

1.6.5 Archaeological Authority

An application for a general archaeological authority pursuant to section 44(a) of the Heritage New Zealand Pouhere Taonga Act 2014 (HNZPTA) will be sought for the Project. The application is currently being prepared.

1.6.6 Wildlife Authority

Authorisations for the disturbance of native wildlife under the Wildlife Act 1953 will be sought from DOC.

1.7 Management Plan Framework

The designation conditions described in Section 1.6.4.2 above require the Transport Agency to prepare a Construction Environmental Management Plan (CEMP). The CEMP is an overarching document that provides the framework for managing environmental effects during construction of the Project including topic-based management plans, which provide further detail as to how specific effects shall be managed. It shall be implemented throughout the entire construction period and informs the management of environmental and construction effects associated with the Project. It is noted that some parts of these plans may endure beyond the construction period for maintenance and monitoring purposes.

Condition 14 of the designation conditions requires the preparation of the CEMP and the sub-plans as shown in below. This is the management plan framework adopted by the Project. The management plans provided as part of this regional resource consent application (for which certification by Horizons is requested) are shown in dark blue. Those sub-management plans shown in light blue will be prepared to support the Project's outline plan(s) (to be prepared at a later stage of the Project). It is noted that the Tangata Whenua Values Monitoring and Management Plan is required under both the designation and the proposed conditions for consent (provided at Appendix E). This plan will be developed with Iwi Partners and provided at a later stage of the Project.



Figure 1-6 Management Plan Framework

The star (*) within Figure 1-6 denotes those sub-management plans of the CEMP that then contain sub-management plans of their own. These are described in further detail below.

The Erosion and Sediment Control Management Plan (ESCP) is an overarching management plan that contains a number of sub-management plans and procedures as depicted below in Figure 1-7. Site Specific Erosion and Sediment Control Plans (SSESCPs) will be prepared in accordance with the ESCP and contain detailed erosion and sediment control measures on each area/stage of works (three example SSECPs are included in the Drawing Set, **Volume III**).

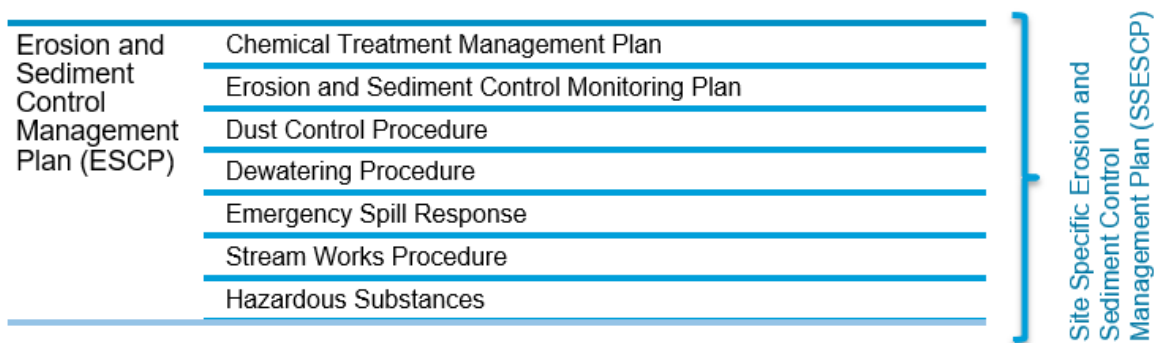


Figure 1-7 Erosion and Sediment Control Management Plan Sub-Management Plans

The EMP is a single integrated document that contains a series of discipline-specific management plan sections within it, as shown in Figure 1-8. These sections outline in detail the measures to be implemented during the works to avoid, remedy or minimise ecological effects. Each chapter is intentionally written as a standalone management plan (and in line with the designation conditions) which can be updated as required.

Ecology Management Plan (EMP)	Vegetation Clearance Management Plan
	Planting Establishment Management Plan
	Biosecurity Management Plan
	Lizard Management Plan
	Bat Management Plan
	Avifauna Management Plan
	Terrestrial Invertebrate Management Plan
	Freshwater Ecology Management Plan
	Fish Recovery Protocols
	Residual Effects Management Plan

Figure 1-8 Ecology Management Plan Sub-Management Plans

2 Existing Environment

2.1 Introduction

This section of the AEE provides a description of the planning, human and natural aspects of the existing environment within which the Project will be constructed and operated. It draws on information from a number of sources including the technical assessments contained in **Volumes IV** and **V**. The potential effects of the Project on this environment and the measures proposed to manage these effects are detailed in Section 6 of this AEE.

2.2 Human Environment

2.2.1 Regional Context

The Project connects Ashhurst and Woodville, across the Ruahine Range north of the Manawatū Gorge and reinstates the principal east-west link between the Manawatū and Hawkes Bay regions. The Manawatū Gorge is the boundary between the Tararua and Ruahine Ranges and is 16km east of Palmerston North, 31.7km south-west of Dannevirke and approximately 155km north of Wellington as shown in Figure 2-1.

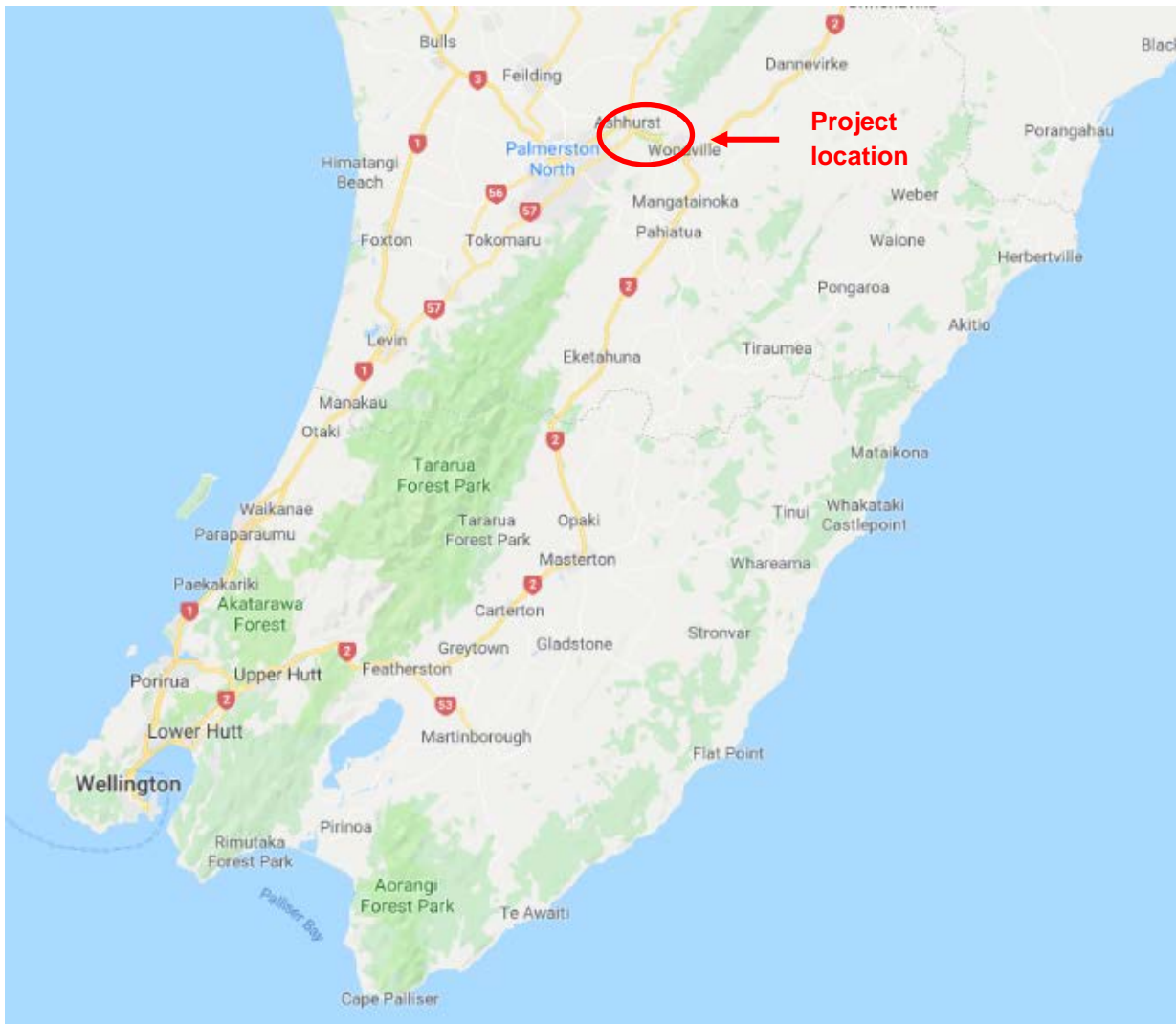


Figure 2-1 Location of the Project

The Project is located entirely within the Manawatū-Whanganui Region, and traverses and connects the Palmerston North City, Manawatū District and Tararua District territorial authority jurisdictions.

The 2013 Census records the Manawatū-Whanganui Region as having a population of 222,672. Palmerston North is the primary economic centre of the region. Outside of Palmerston North, the region is predominantly rural, interspersed with local town service centres, including Ashhurst and Woodville, which are located at the western and eastern extents of the Project respectively.

Traversing the Ruahine Range (previously by using the Manawatū Gorge Route, and currently by using the alternative routes) is a daily occurrence for many of the region's residents for the purposes of employment, educational, social, recreational, health and retail activities.

The regional economy is centred in Palmerston North and has particular strengths:

- In transport and distribution, with the growth of a regional logistics hub being consolidated in the North East Industrial Zone in Palmerston North;
- In food product manufacturing, and particularly value-added manufacturing, supported by processing red meat and dairy from the Rangitikei, Manawatū, and Tararua Districts;
- In agricultural and scientific research, supported by Massey University and exemplified by Food HQ (a collaboration between internationally recognised companies, research and educational institutions, mostly based within a 1km radius of Palmerston North); and
- As a public-sector hub, including a substantial health and New Zealand Defence Force (NZDF) workforce.

Sustaining and growing the regional economy, including the key components listed above, depends on maintaining high quality and efficient transport links (including an east-west connection).

2.2.2 Land Use

The townships of Ashhurst and Woodville are located on the terraces and plains at either extent of the Project. Dwellings are more prevalent near these townships including along SH3 (Napier Road) between Ashhurst and Palmerston North, where there are a number of lifestyle blocks.

In the past, the hill country of the Ruahine Range would have been covered in dense podocarp-broadleaved native forest but, by the turn of the twentieth century, much of the forest had been cleared for pastoral use such that the majority of the Project now traverses rural farmland, used predominantly for sheep and beef cattle farming, and more recently for exotic woodlots.

Key land uses and infrastructure/utilities that are adjacent to or within the Project Area include the following:

- While predominately consisting of hill country farmland, the Project Area also includes areas of remnant forest protected by QEII Open Space Covenants. The Project interacts with two of these areas (Western QEII and Eastern QEII), while avoiding four others nearby;
- Outside of the Project Area, extensive areas of native forest are located on both sides of the Gorge and are protected by the Manawatū Gorge Scenic Reserve which is administered by DOC. The Manawatū Gorge Scenic Reserve includes popular walking tracks through native forest on the southern side of the Gorge;
- Long-term fertiliser trial site is located on Ballantrae Farm, north of the Gorge near the eastern end of Saddle Road;
- KiwiRail's Palmerston North – Gisborne railway follows the northern bank of the Manawatū River through the Manawatū Gorge;

- Te Āpiti Wind Farm (owned by Meridian) is located to the north of the Manawatū Gorge (and shown in Figure 2-2). Te Āpiti Wind Farm is a landmark for the area and the location of tourism opportunities;
- First Gas' high pressure gas pipeline crosses the Ruahine Range in the vicinity of Saddle Road;
- TDC's closed Woodville Landfill is located off Saddle and Morgan Roads;
- Transpower's Mangamaire – Woodville A 110kV transmission line follows Woodlands and Troup Roads; and
- A number of other utilities are located in the vicinity, such as local water supply, stock water, telecommunications and electricity supply infrastructure.



Figure 2-2 View west across Te Āpiti Wind Farm towards Ashhurst

2.2.3 Transport Environment

The regional transport network, including the ONRC for various routes, is shown on Figure 2-3 below. This figure shows the three east-west connections across the Ruahine Range, including the closed Manawatū Gorge Route (a national route shown in red), Saddle Road to the north (an arterial route shown in dark blue) and the route known as Pahiatua Track (a combination of an arterial route and primary collector shown in light blue).

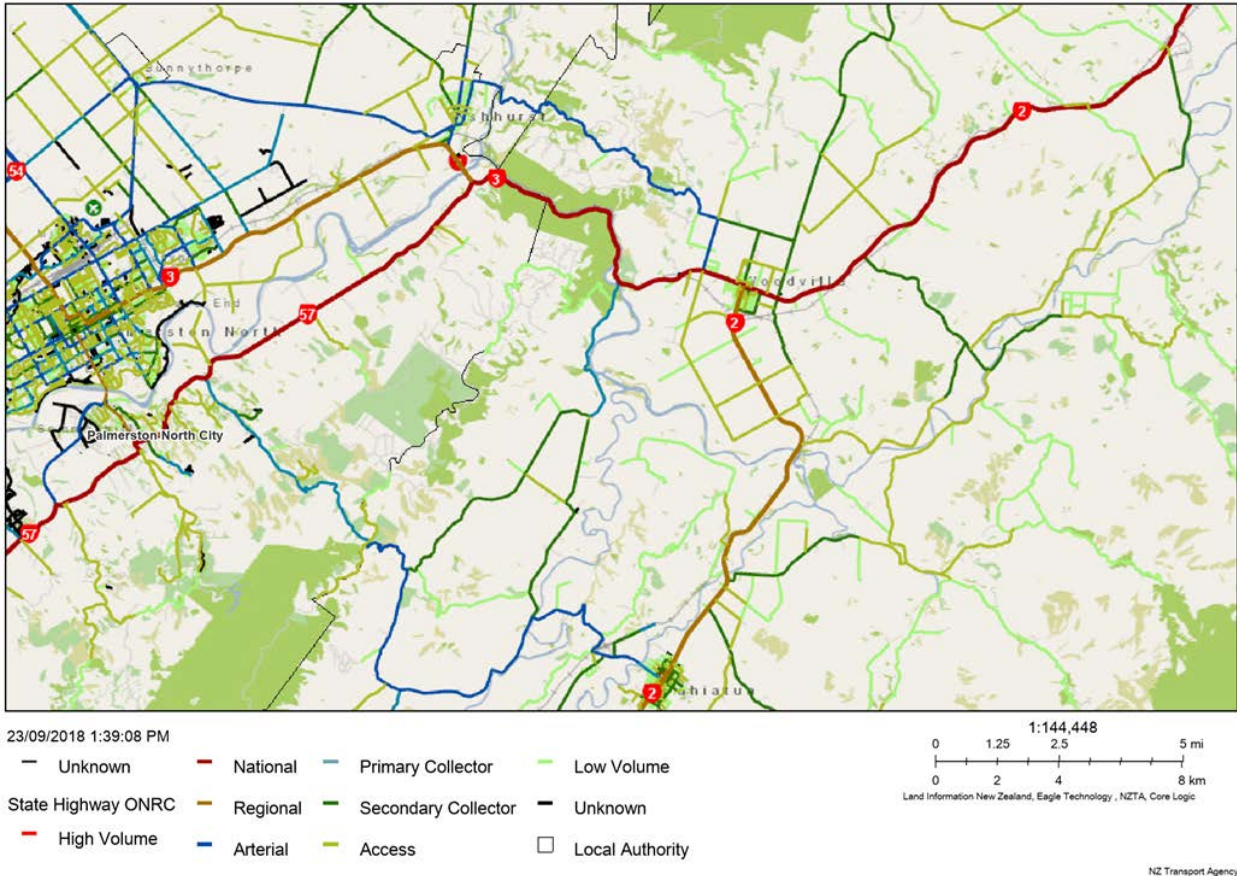


Figure 2-3 Regional Transport Network

Prior to its closure, the Manawatū Gorge Route carried approximately 7,620 vehicles per day, with heavy vehicles making up 11.3% of the traffic. The closure of the Manawatū Gorge Route has not resulted in lower traffic volumes traversing the Ruahine Range; rather traffic volumes have redistributed with 80% of traffic shifting to Saddle Road, and the remainder re-routing along the Pahiatua Track. Daily traffic volumes on Saddle Road and the Pahiatua Track have increased from approximately 150 to 6,220 vehicles on Saddle Road and from approximately 2,214 to 3,819 vehicles on the Pahiatua Track. This has resulted in road users experiencing significantly longer travel times. For instance, the travel time east to west through Saddle Road is 21.6 minutes for light vehicles, which is almost 9 minutes slower than the travel time was on the Manawatū Gorge Route prior to its closure.

Saddle Road connects to Salisbury Street which then continues through the centre of Ashhurst. This has resulted in increased traffic volumes in Ashhurst, which have resulted in additional noise and vibration, increased traffic delays and raised safety risk in this town centre.

Along its length, Saddle Road provides rural property access and access to the Te Āpiti Wind Farm. At Woodville, Saddle Road connects to Oxford Road/Woodlands Road. Saddle Road has a steep curvilinear alignment with one lane in each direction and climbs approximately 300m vertically. Sporadic slow vehicle passing opportunities are provided in the uphill direction. The Level of Service (LOS)⁷ of Saddle Road is currently assessed as 'acceptable' (LOS C) but predicted to be 'worst performance' (LOS E) by 2041.

Pahiatua Track (Pahiatua Aokautere Road) connects Aokautere (on SH57) to Pahiatua (on State Highway 2 (SH2)). At the Aokautere end, SH57 provides access to the north (Ashhurst) and the

⁷ Estimated using the LOS typical curve contained in the Highway Capacity Manual 2010, Chapter 14 Exhibit 15-5

south/west (Levin and Palmerston North). Pahiatua Track itself provides access to lifestyle blocks and rural properties along the route. At the eastern end, Pahiatua Track connects to Makomako Road and loops to the south before heading north and east to Pahiatua. There are a number of alternative routes to connect with SH2 and SH3 on the eastern side of the Tararua Ranges. Pahiatua Track has a narrow curvilinear alignment with one lane in each direction. Limited passing opportunities are provided. The route climbs approximately 350m vertically.

There are fundamental operational issues associated with the terrain, pavement construction and geometry of both Saddle Road and Pahiatua Track. The extra distance and higher gradients on both routes have led to higher vehicle operating costs, particularly for heavy commercial vehicles, since the closure of the Manawatū Gorge Route. These costs have been estimated at approximately \$60,000 per day, or more than \$22M per annum regionally.

In terms of safety, since the closure of the Manawatū Gorge Route, crashes on Saddle Road from Ashhurst to Woodville have spiked, which is likely to be attributable to the significant increase in traffic using Saddle Road. There has not been a significant change in crash numbers on SH57 from Aokautere to SH3, but there has been an increase in the number of crashes on Pahiatua Track from Aokautere to Woodville. The geometry and physical characteristics of Saddle Road and Pahiatua Track alternative routes have contributed to a 2-star KiwiRAP rating which is well below the preferred safety level for a road of this type of a 4-star KiwiRAP standard. Due to the lower standard road, it is anticipated that over time, there will be more crashes on both alternative routes than there were on the Manawatū Gorge Route previously.

There are no public transport services on either of the current east-west connections. Intercity operates inter-regional bus services connecting Napier, Wellington, Gisborne, Palmerston North, Tauranga and Masterton. These services use Saddle Road. Several school buses also travel daily between Dannevirke and Palmerston North via Saddle Road.

The Palmerston North to Gisborne rail line runs through the northern side of the Manawatū Gorge. Currently this line carries freight services only.

The main Fire and Emergency New Zealand (FENZ) facilities and St Johns ambulance services are located in Palmerston North. These services currently rely on Saddle Road to provide a connection to the adjacent eastern districts such as Tararua.

Walking and cycling routes are focussed around Ashhurst and the Manawatū Gorge including:

- The Manawatū River shared path between Ashhurst and Palmerston North;
- Walking trails around Ashhurst Domain (west of the Manawatū River) and through the Manawatū Gorge (east/south of Manawatū River); and
- The cycle route traversing Pahiatua Track, which forms part of the New Zealand Cycle Trail Touring Route (currently the 10km section on Pahiatua Road is closed due to the increased volumes of traffic since the closure of the Manawatū Gorge Route).

The Manawatū Gorge walking track is the primary walking route between the western and eastern ends of the Gorge and has remained open and accessible following the closure of the Manawatū Gorge Route. The track is accessible from SH3 and car parks for recreational users are located at the western and eastern ends of the Gorge. Figures from 2016 indicate that the Manawatū Gorge recreational area has over 100,000 visitors annually, with walking track numbers increasing by 350 percent since 2012.⁸

⁸ <http://www.teapiti.com/updates/2017/11/2/additional-facilities-enhance-te-apiti-Manawatū-gorge-visitor-experience> .

2.2.4 Historical Settlement

The description of Māori settlement below has been derived from documentary records summarised in the Historic Heritage and Archaeology Assessment by Clough and Associates that supported the NoRs for the Project.

The wider Manawatū, Whanganui and Wairarapa areas were settled and occupied by various iwi, including the Rangitāne tribe, Ngāti Kahungunu and Ngāti Raukawa, among others. The areas are rich in cultural associations and histories.

The Manawatū Gorge is recognised by iwi as one of the main routes connecting the east and west and is named Te Āpiti, meaning the narrow passage that is situated between two mountain ranges (known as Te Hononga Maunga). An early walking track along the river was formed by Māori in order to carry waka over land when the river was low. The rapids of the Manawatū River are called Te Au-Rere-a-Te Tonga, meaning ‘the rushing current of the south’.

The Gorge (and the adjoining Ranges) also hold a number of cultural and spiritual values, including geological and landscape features and mahinga kai.

A carved rock on the hilltop near Saddle Road marks a battle site where ancestors were killed. According to legend, the bodies were collected and heaped and then turned to stone. The rock and hilltop are therefore a deeply significant cultural site and are named Te Ahu a Turanga.

Māori settlement in the area has been concentrated along the margins of rivers, with the rivers and surrounding forest being abundant sources of food. Pā were strategically located, for instance at the entrance to the Manawatū Gorge (now part of Ashhurst Domain) and the ‘Raukawa pā’ near Ashhurst, which was a base for the gathering of hīnau berries. During the 19th century, Māori had several small occupation sites along the Manawatū and Pohangina Rivers, such as Raparuhe, Te Ponga, Te Wharau, and Parahaki. Parahaki Island is Māori freehold land, held on trust by Te Āpiti Ahu Whenua Trustees for the beneficial owners, and a highly valued cultural site.



Figure 2-4 View east of the mouth of the Manawatū Gorge over Parahaki Island

Māori guided the first European, Jack Duff, through the Manawatū Gorge in 1830. By 1870, a more substantial bridle track through the Gorge had been developed for foot and horse traffic. In the same year the construction of a railway started, but this was not fully completed until 1891. The Upper Gorge Bridge was constructed in 1875 and provided coach transport to Hawke's Bay. The original bridge was washed away in a flood in 1895. Over this timeframe substantial forest clearance occurred and by 1900 very little native forest remained on the plains.

During the 1880s, the Crown created a Forest Reserve to the north and south of the Manawatū Gorge, along the line of the Tararua and Ruahine Ranges. Subsequently, the reserve status was uplifted from a part of this land that is located to the north-east of the confluence of the Manawatū and Pohangina Rivers. This land was leased and used for timber milling and sheep farming.

The township of Ashhurst, located to the west of the Manawatū Gorge, is situated on land that was acquired by the Crown in 1864 as part of the purchase of the Ahuaturanga Block, or the upper Manawatū Block. A portion of this land was subsequently purchased by Colonel William Feilding, in early 1870, on behalf of the Emigrants and Colonists Aid Corporation, to assist immigration of British working-class people to New Zealand. Ashhurst was surveyed at a clearing in the bush, known as Otangaki in 1877 and was named after Henry George Ashhurst, a director of the Emigrant and Colonists Aid Corporation.

By 1879, the township had increased significantly as a base for those involved in developing the Pohangina Valley, due to its strategic location in proximity to the Manawatū Gorge Road and railway line between Whanganui and Napier. In 1879 the Otangaki Hotel was built to accommodate an influx of visitors and workers. Schools and a post office were constructed, and various businesses started to form in the main street of the township.

East of the Manawatū Gorge, the township of Woodville was established at the road and rail junction between the Wairarapa, Hawke's Bay and Manawatū regions, earning its informal name of 'The Junction'. Settlement began with the sale of the first rural and suburban sections in 1875, with many of these sections purchased by road workers or those employed to construct the Hawke's Bay Railway. Land sales continued throughout the 1870s and the establishment of dairy farms in and around the Woodville area helped to support growth.

By 1883, Woodville included several houses, a hotel, a butcher, bakery, bootmaker, general store, schoolroom and a branch of Bank of New Zealand. Woodville's population had grown to 1,100 residents by 1908. Between 1895 and 1910, sawmills in and around the Woodville area produced significant quantities of firewood and sawn timber. Production was aided by the nearby rail lines, including from Napier, which reached Woodville in the 1880s, and the Palmerston North line, which was constructed in the 1890s.

2.2.5 Cultural Environment

Rangitāne o Manawatū, Rangitāne o Tamaki nui-ā-Rua, Ngāti Kahungunu ki Tāmaki nui-a-Rua and Ngāti Raukawa have identified an interest in the Project. In addition, the owners of Parahaki Island have an interest in the Project and have been engaged with through the Ahu Whenua Trustees who hold the Island on trust for the beneficial owners. As explained above (in Section 1.3.3), the Transport Agency is developing the Project in partnership with these iwi groups.

In terms of the Treaty of Waitangi/Te Tiriti o Waitangi, it is recognised that the following Treaty settlements provide important context to the Project:

- Rangitāne o Manawatū Claims Settlement Act 2016;
- Rangitāne Tū Mai Rā (Wairarapa Tamaki nui-ā-Rua) Claims Settlement Act 2017; and

- the initialled Deed of Settlement between the Crown and Ngāti Kahungunu ki Wairarapa Tāmaki Nui-ā-Rua.

The Rangitāne o Manawatū Claims Settlement Act 2016, Deed of Settlement and accompanying documents describe the relationship between Rangitāne o Manawatū and land that is identified as their area of interest, including land subject to the Project. The Rangitāne o Manawatū Claims Settlement Act 2016 includes statutory acknowledgements and accompanying statements of association in respect of:

- Manawatū Gorge Scenic Reserve;
- Manawatū River and tributaries; and
- Pohangina River and all tributaries.

The Rangitāne o Manawatū Claims Settlement Act 2016, in relation to these statutory acknowledgements, places obligations on consent authorities, the Environment Court and Heritage New Zealand Pouhere Taonga.

The Rangitāne Tū Mai Rā (Wairarapa Tamaki nui-ā-Rua) Claims Settlement Act 2017, Deed of Settlement 2016 and accompanying documents set out the relationship between Rangitāne Tū Mai Rā (Wairarapa Tamaki nui-ā-Rua) and land that is identified as their area of interest, including land subject to the Project. The Rangitāne Tū Mai Rā (Wairarapa Tamaki nui-ā-Rua) Claims Settlement Act 2017 includes a statutory acknowledgement of the Manawatū River and its tributaries.

The Crown and Ngāti Kahungunu ki Tāmaki nui-ā-Rua initialled a Deed of Settlement in March 2018. The Deed, and accompanying documents similarly describe the relationship between Ngāti Kahungunu ki Tāmaki Nui-ā-Rua and their area of interest, including land that is subject to the Project. Ngāti Kahungunu ki Tāmaki nui-a-Rua continues to claim mana whenua interests in the area of interest set out in the Deed of Settlement for Ngāti Kahungunu ki Wairarapa Tāmaki nui-a-Rua Settlement Trust.

Ngāti Raukawa are still progressing their claims under the Treaty of Waitangi Act 1975.

It is also acknowledged that Parahaki Island is Māori freehold land under Te Ture Whenua Maori Act 1993, and the Transport Agency has engaged with Te Āpiti Ahu Whenua Trustees, who represent the owners of the Island, to understand relationships and values associated with Parahaki Island so that the Project may properly recognise and provide for those relationships and values.

Figure 2-5 below provides an overview understanding of the cultural landscape that was developed in discussion with the Project Iwi partners late last year. This figure is a draft and has not yet been confirmed by the Project Iwi Partners.

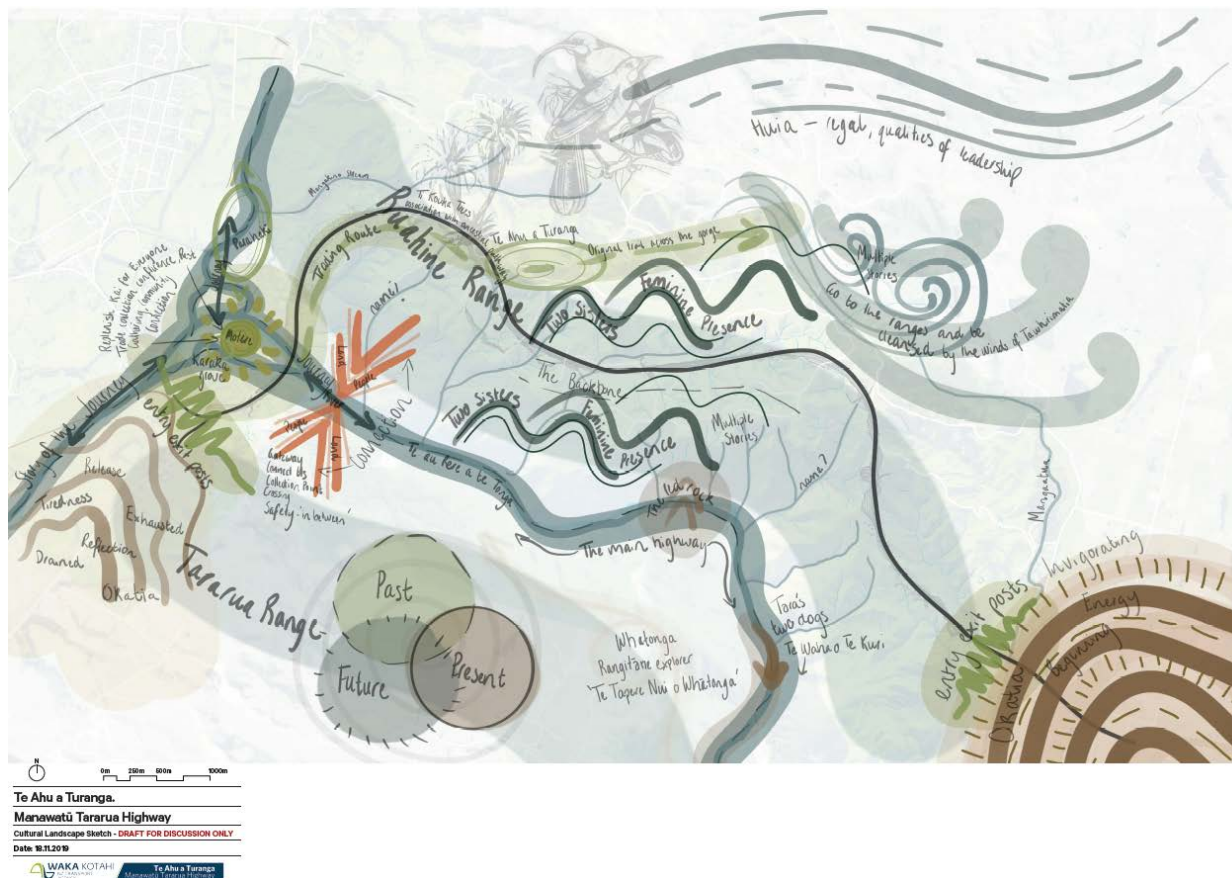


Figure 2-5 Cultural Landscape Sketch (Draft)

2.3 Natural Environment

2.3.1 Topography

The landscape traversed by the Project comprises steep hill country ranging from 200m above sea level to the south and 346m above sea level to the north, with deeply incised gullies that contain remnant or regenerating native vegetation and areas of exotic scrub. Further north, the landform rises steeply to Wharite Peak, a prominent landmark at 920m above sea level on which a television repeater tower is located. Native forest covers the upper slopes of Wharite Peak to the north of the corridor.

The Manawatū Gorge Scenic Reserve is approximately 1000ha, extends on both sides of the Gorge and contains an extensive area of native forest. The Manawatū Gorge Scenic Reserve provides a distinctive contrast to the surrounding farmland and a contextual southern 'boundary' to the Project. The Manawatū River flows through the Gorge from the east to west, bisecting the North Island's main axial ranges. There are views from open parts of the walking tracks on the southern side of the Gorge to the Te Āpiti and Tararua Wind Farms.

2.3.2 Landforms, Geology and Natural Hazards

The Project is situated between Saddle Road to the north and the Manawatū Gorge Scenic Reserve to the south and runs through Te Āpiti Wind Farm on part of a landform referred to as the Manawatū Saddle, a structural sag in the otherwise continuous mountain axis formed by the Ruahine and Tararua Ranges.

The Project traverses a short section on the edge of the Manawatū Plain then crosses the Manawatū River near the confluence with the Pohangina River before rising quickly up the steep hill slopes to a

flattish area along the ridge crest. The alignment then descends through steep hill country on the eastern side and then on to the alluvial river plain south of Woodville.

South of the Gorge, the Tararua Wind Farm is located on the Tokomaru Marine Terrace and adjoining hill slopes. To the west of the Ranges, the Manawatū River meanders generally south-westwards through the relatively young Manawatū Plain landscape (c. 500,000 years). The old seabed of the Manawatū Plain has been affected by movements in the underlying rock, producing a series of domes with intervening low areas. The Pohangina River, which flows between the Ruahine Range on the east and the Pohangina Dome on the west, joins the Manawatū River at Ashhurst. The Pohangina Valley occupies the area between the Ruahine Ranges and the Dome.

The geomaterials presented along the proposed Alignment are mainly papa sandstone, siltstone, mudstone, conglomerate and alluvial gravel and silts with some shallow colluvium. The geomorphology of this area is strongly controlled by the tectonic setting of the lower North Island, with the Ruahine Range and the Tararua Range (to the south) forming part of the North Island Axial Ranges. Tectonic forces have influenced landform both directly (through active faulting and folding) and indirectly (as a result of effects on stream patterns and drainage). Slopes vary in steepness over short distances and slips are reasonably common throughout the area.

The wider Project Area has a complex geology, with a number of geological formations showing contrasting geological behaviours. It is a seismically active area due to the presence of a number of active and inactive fault lines. At the western end of the Project Area, the Parahaki, Raukawa, and Centre Fault run approximately in the north-east direction crossing the Manawatū River. Both the Parahaki Fault and Centre Fault are not classified as active faults in the GNS Active Fault Database. The Raukawa Fault is considered to be active. At the eastern end of the Project Area, the Totara, Ruahine, and Mohaka Faults run approximately in the north-east direction across the Project Alignment. Both the Ruahine Fault and Mohaka Fault are active faults with an estimated slip rate at 1-5mm per year. The Totara Fault is an inactive fault and is not classified in the GNS New Zealand Active Faults Database.

River flooding as a result of sustained or high intensity rainfall is the most frequent and widespread hazard throughout the Manawatū-Whanganui Region. Significant flood events occurred in 2004 and 2015 that impacted wide parts of the region, including the Project Area. The primary flood risk areas in the lower reaches of the Manawatū River are Palmerston North, Feilding, Foxton and Foxton Beach, while Pahiatua is the primary risk area in the upper catchment.

The geology and terrain traversed by the Project means that there is also some risk of slips in significant storm events.

2.3.3 Water Catchments

The Manawatū River is 235km long, flows through the Manawatū Gorge in a westerly direction to the south of the Project Alignment and drains a catchment area of approximately 5,890km². The Manawatū River and nine of its sub-catchments are potentially affected by the Project. The catchments have a combined area of approximately 34km², and more than half of this area is upstream of any potential works in the Mangamanaia catchment. The Project affects a maximum of only about 0.6% of the total area of the Manawatū River catchment, or 0.3% if the upper Mangamanaia is excluded. Generally, the headwaters of the sub-catchments have been modified and degraded by agricultural land use. Areas of higher quality stream length are typically present within the areas subject to QEII Open Space Covenants and the Manawatū Gorge Scenic Reserve.

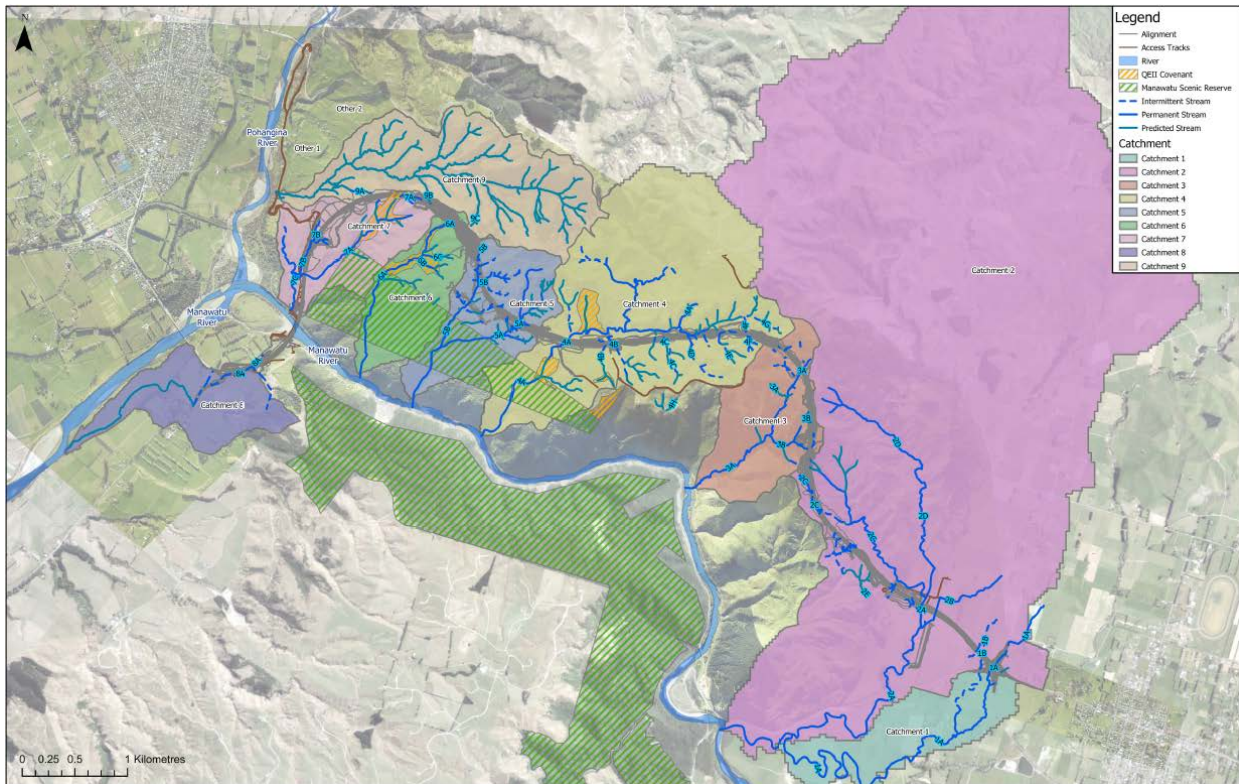


Figure 2-6 Sub-catchments and waterways present within the Project Area

The sub-catchments, shown in Figure 2-6 above have been assigned identifiers⁹ (numbers) from Catchment 1 to 9 (starting on the eastern end of the Alignment) and are briefly described below.

- **Catchment 1** is approximately 1.17 km² and drains a flat, low-lying floodplain. It is highly modified and dominated by pastoral farming that includes numerous drainage channels.
- **Catchment 2** (Mangamanaia catchment) is approximately 20.55km² which is the largest catchment traversed by the Project. The catchment has steeper dissected hill country to the west and north, and generally flat low-lying floodplain to the east. Approximately 85% of the catchment is under pasture with a small area of indigenous forest cover.
- **Catchment 3** is approximately 1.23 km² with a combination of pastoral farming and broadleaf indigenous forest. The Project crosses a small portion of the very upper end of the catchment where there is a smaller proportion of pasture and a larger proportion of forest.
- **Catchment 4** is approximately 4.12 km², has flatter slopes and is predominantly high producing pasture with the lower part of the catchment contained within the Manawatū Gorge Scenic Reserve. Grazed farmland dominates the land use of the hill country together with the turbines of Te Āpiti Wind Farm and associated access tracks. The Project traverses the middle reaches of the catchment.
- **Catchment 5** is approximately 1.20 km² and has a larger proportion of indigenous forest and stock exclusion as its lower section is in the Scenic Reserve. The Project crosses a portion of the very upper end of the catchment.

⁹ These sub-catchment numbers are consistent with those used in the NoRs documentation.

- **Catchment 6** is approximately 0.95 km² and has a larger proportion of indigenous forest in the lower catchment as it is located within the Eastern QEII and Scenic Reserve. The Project crosses a small portion of the very upper end of the catchment.
- **Catchment 7** is approximately 1.10 km² and has steep gullies with indigenous regenerating forest. Farming activities are present throughout the catchment. The upper part of the catchment is located within the Western QEII and the lower part lies within the Scenic Reserve. West of the Scenic Reserve on the north bank of the Manawatū River, the catchment gradient flattens and includes a perched wetland, and old growth lowland forest. The Project crosses a small portion of the very upper end of the catchment and bridges one of the gullies down to the Manawatū River (through the Eco Bridge, BR03).
- **Catchment 8** is approximately 1.01 km² and drains to the Manawatū River downstream of the Pohangina River confluence. Most of this catchment is under pasture with a significant proportion in exotic forest. The Project crosses through the centre of this catchment.
- **Catchment 9** (Mangakino catchment, which is a tributary of the Pohangina River) is approximately 2.20km² and has 38% indigenous forest cover with about 60% under pasture. The Project only slightly encroaches into this catchment.

2.3.4 Groundwater

The sections below provide an overview of the measured or predicted groundwater level across the Project Alignment. This information has been obtained through ground investigations undertaken to date, however, further investigations are planned to further confirm these findings

- CH 2750 to CH 3900 - Drilling undertaken between CH 3250 and CH 3600 indicates groundwater levels are between 7m and 10m below ground near the proposed southern abutment of the Manawatū River Bridge (BR02). The piezometer on the slope above the southern approach also shows groundwater at 7m below ground, and monitoring indicates water levels are relatively insensitive to rainfall.
- CH 3900 to CH 7650 - Artesian groundwater was encountered by three boreholes drilled in the Eco Bridge (BR03) area between CH 3900 and CH 4250. Flowing artesian water was encountered between 7m and 17m below ground. The source of the water is the Te Āpiti conglomerate, with the overlying upper marine sequence acting as a confining layer/aquitard/aquiclude. The artesian water in this part of the site is likely influenced by the Raukawa Fault.

Higher up the slope, between CH 4850 and CH 4950, groundwater has been recorded between 3m and 5m below ground. Groundwater levels are anticipated to be relatively shallow across this part of the site.

Groundwater deepens to at least 10m below ground as the Alignment continues east. There is currently limited geological and hydrogeological data in the vicinity of the deep cut, with existing ground investigations focussed to the south. Further ground investigations are planned to be undertaken.

- CH 7650 to CH 9330 - Groundwater information for the plateau area is limited. Test pits excavated near CH 8720 during summer 2018/2019 encountered groundwater between 3m and 4m below ground, and monitoring undertaken at CH 8720 during winter 2019 shows groundwater levels between 0.5m and 2m below ground. This indicates that groundwater levels may fluctuate by several metres on a seasonal basis, however, the data is limited and needs to be established through continued monitoring. It is noted that test pitting carried out to 4m depth across the plateau area during summer 2019 generally did not encounter groundwater.

- CH 9330 to CH 12600 - Piezometers installed near the Ruahine Fault and on the eastern side of the Ruahine Range generally show groundwater levels at or greater than 20m below ground over the winter 2018 to winter 2019 monitoring period.
- CH 12600 to CH 13740 - Groundwater levels on the eastern alluvial plain are shallow and expected to be between 0.5m and 2m below the ground surface. Monitoring indicates groundwater levels are sensitive to rainfall in this location.

Figure 2-7 below provides a snapshot of the existing consented groundwater bores in the area surrounding the Project. This shows that there are no existing takes within the immediate vicinity of the Project works.

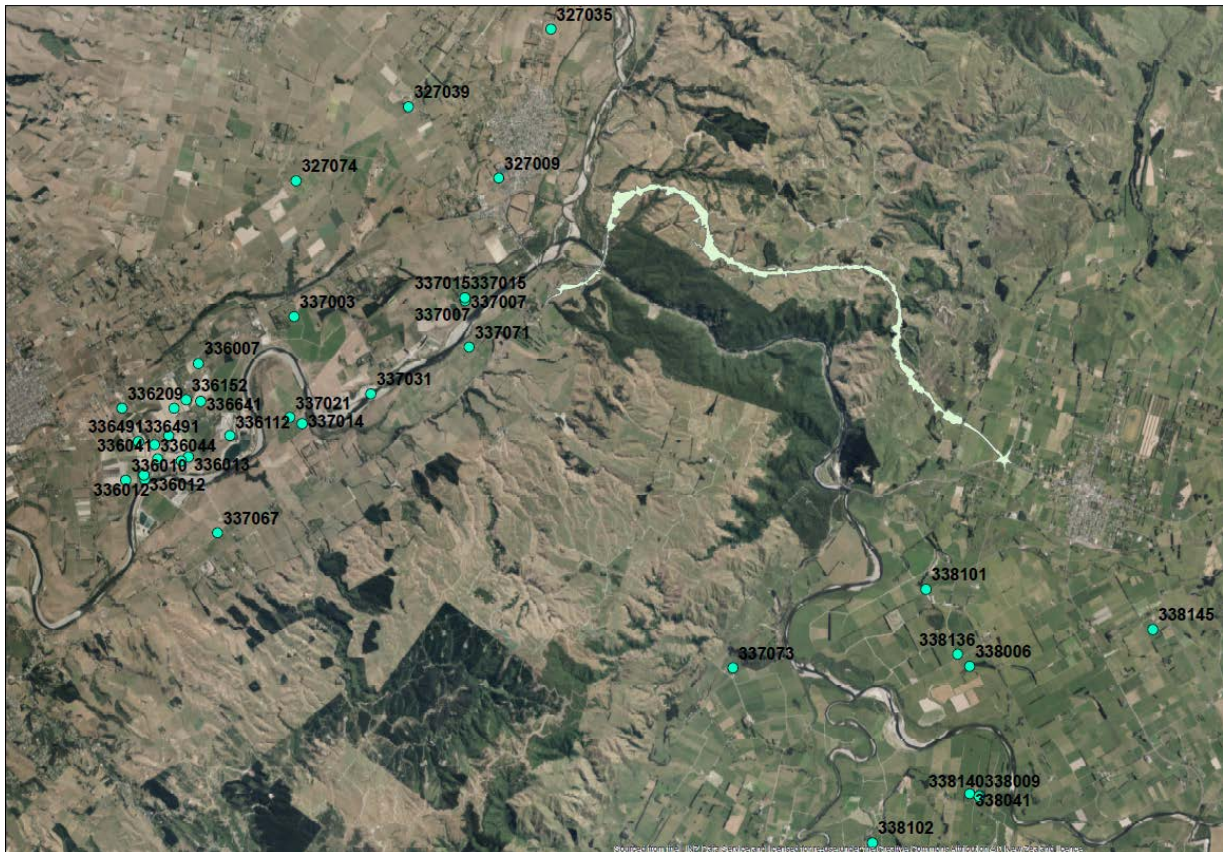


Figure 2-7 Existing consented groundwater bores surrounding the Project area

2.3.5 Water Quality

The existing surface water quality in the Project area was established using a combination of information. The starting point was the modelled baseline water quality undertaken to assess water quality aspects of natural character for the NoRs.

This was augmented with baseline monitoring data from Horizons who have regularly monitored standard water quality variables in the Manawatū River and Pohangina River and short periods of intensive sampling for dissolved metals at some Manawatū River sites.

In addition, in December 2018, baseline water quality monitoring was undertaken, measuring water clarity, turbidity, total suspended solids (TSS), aluminium and pH during wet and dry conditions. Aquatic macroinvertebrate and deposited sediment were also monitored. The results are described in EOS

(2019)¹⁰. Overall, the water quality across the catchments is varied and the water quality in the streams is characterised by:

- Relatively low water clarity;
- High concentrations of nitrate in catchments 1, 2, 7 and 8;
- High concentrations of dissolved phosphorus in catchment 5, 6 and 7;
- Occasionally high or very high concentrations of *E. coli* bacteria in all catchments, with the possible exception of catchment 6 and upper catchment 7;
- High turbidity in catchment 5;
- High hardness in catchment 7; and
- Concentrations of copper and/or zinc elevated above ANZG DGVs¹¹ in catchments 4, 5, 6 and 7.

2.3.6 Terrestrial Flora

Prior to human modification, it is presumed that the Project Area and surrounds would have been covered in podocarp-hardwood forest types with kahikatea-dominated swamp forest on the alluvial flats. However, indigenous vegetation in and surrounding the Project Area has been extensively cleared and converted to agricultural and urban land uses, with the main exceptions being:

- The Manawatū Gorge Scenic Reserve (immediately adjacent to the Project Area), which comprises approximately 1000 ha of protected lowland forest; and
- Forest remnants associated with gully systems that have been protected by QEII open space covenants (including the Western QEII and Eastern QEII).

Therefore, at present, the Project area is mainly characterised by grazed pastureland. There are also some stands of native and exotic-dominated vegetation across the alignment, which are generally associated with more incised topography. A number of wetland systems have also been identified, most of which are highly modified through stock grazing, with some dominated or co-dominated by indigenous wetland vegetation. With the exception of the Western and Eastern QEII, all of the indigenous vegetation remnants and wetlands have been modified to varying degrees through the effects of livestock (trampling and grazing).

Twelve vegetation types have been identified across the Project Area as follows:

- Old-growth forest alluvial;
- Old-growth forest hill country;
- Secondary broadleaved forests with old-growth signatures;
- Old-growth treelands;
- Kānuka forest;
- Advanced secondary broadleaved forest;
- Indigenous-dominated seepage wetlands (high value);
- Indigenous-dominated seepage wetlands (moderate value);

¹⁰ EOS Ecology 2019. Te Ahu a Turanga: Manawatū Tararua Highway – Baseline freshwater monitoring results. Prepared for New Zealand Transport Agency. EOS Ecology report No. NZT02-18064.03

¹¹ Australian and New Zealand Guidelines for Fresh and Marine Water Quality Default Guideline Values.

- Exotic wetlands (low value);¹²
- Secondary broadleaved forests and shrublands;
- Mānuka and kānuka shrublands; and
- Divaricating shrublands.

These vegetation types are mapped as shown on the Terrestrial Ecology Drawings TAT-3-DG-E-4131 – 4137 contained in **Volume III**.

Within or in close vicinity to the Project Area, there are also several ‘nationally threatened’ and ‘at risk’ plant species which have been observed, including;

- Giant Maidenhair (At Risk – Relict);
- Kānuka (Threatened – Nationally Vulnerable);
- Mānuka (At Risk – Declining);
- Ramarama (Threatened – Nationally Critical);
- Rōhutu (Threatened – Nationally Critical);
- Rātā (Threatened – Nationally Vulnerable);
- White rātā (Threatened – Nationally Vulnerable);
- Climbing rātā (Threatened – Nationally Vulnerable);
- Akatea (Threatened – Nationally Vulnerable); and
- Swamp maire (Threatened – Nationally Critical).

2.3.7 Terrestrial Fauna

2.3.7.1 Herpetofauna

While no lizards have been detected within the Project footprint, three native lizard species are confirmed in the adjacent Manawatū Gorge Scenic Reserve which is contiguous with a number of the vegetation types that occur within the Project footprint. These records are within 1km of the Project footprint at the closest point. An additional three native species have been recorded within 15km of the Project Area. Consequently, it is likely that these species are present in the Project footprint. These species are generally either arboreal or ground-dwelling (species dependent), in forest, scrub, rock piles and crevices, grassland (ungrazed) and wetlands, all of which are present in the Project footprint. At-risk lizard species that may be present include:

- Barking gecko (*Naultinus punctatus*);
- Ngahere gecko (Mokopirirakau “southern North Island”);
- Raukawa gecko (*Woodworthia maculatus*);
- Pacific gecko (*Dactylocnemis pacificus*);
- Glossy brown skink (*Oligosoma zelandicum*);
- Ornate skink (*Oligosoma ornatum*); and

¹² Note these were referred to as ‘exotic dominated wetlands’ in the NoR stage but have been reclassified as pasture wetlands because further field investigations revealed that while all of the wetlands were in pasture some of them were native species dominated with a high abundance of native *Juncus edgariae* present, and occasionally contain patches of native *Carex* sedges.

- Northern grass skink.

2.3.7.2 Invertebrates

To date there has been no empirical invertebrate data collected from within the Project footprint. However, there are high quality habitats for terrestrial invertebrates such as old-growth forest hill country and alluvial forest, secondary broadleaved forests and shrublands, including advanced broadleaved forests and broadleaved forests with old-growth signatures and divaricating shrubland habitats. There is limited information available on the invertebrate community in the area however, a literature review has shown that several "threatened" or "at risk" terrestrial invertebrates may be present in the Project Area. Notable species that may be present include;

- Beetle (*Megadromus turgidiceps*);
- Moths (*Meterana grandiosa* and *M. exquisita*);
- Powelliphanta snails (*marchanti*, *traversi traversi*, and *tarevsi tararuaensis*);
- Snail (*Wainuia urnula*).

2.3.7.3 Avifauna

Habitats have been identified across the Project Area that could support the "threatened" or "at-risk" species listed in Table 2-1. Forested habitats, particularly more mature habitat types, could support the at-risk whitehead (declining) and NZ falcon (recovering), while also likely to occasionally support other wide-ranging species such as North Island robin and kaka.

Nationally "threatened" or "at-risk" cryptic wetland bird species, matuku-hūrepo (Australasian bittern), pūweto (spotless crane), and koitareke (marsh crane), have the potential to be present in wetlands within the Project footprint, particularly the raupō and carex dominated wetlands.

The shingle riverbed habitat of the Manawatū River supports many wetland and river bed bird species, including banded dotterel, Caspian tern (both threatened - nationally vulnerable), and black shag (at-risk - naturally uncommon). The following Table 2-1 lists native bird species that are (or may be) within the Project Area.

Table 2-1 Native birds observed within a 200 km² surrounding the Project Area

Common name	Scientific Name	Conservation status
Australasian bittern	<i>Botaurus poiciloptilus</i>	Threatened - Nationally Critical
White heron	<i>Ardea alba</i>	Threatened - Nationally Critical
Grey duck	<i>Anas superciliosa</i>	Threatened - Nationally Critical
Black-billed gull	<i>Chroicocephalus bulleri</i>	Threatened - Nationally Critical
Banded dotterel	<i>Charadrius bicinctus</i>	Threatened - Nationally Vulnerable
Caspian tern	<i>Hydroprogne caspia</i>	Threatened - Nationally Vulnerable
Red-billed gull	<i>Chroicocephalus novaehollandiae scopulinus</i>	At Risk - Declining
Whitehead	<i>Mohoua albicilla</i>	At Risk - Declining
North Island robin	<i>Petroica longipes</i>	At Risk – Declining
Spotless crane	<i>Porzana tabuensis</i>	At Risk - Declining
NZ pipit	<i>Anthus novaeseelandiae</i>	At Risk - Declining
Rifleman	<i>Acanthisitta chloris</i>	At Risk – Declining
Marsh crane	<i>Porzana pusilla</i>	At Risk - Declining
NZ dabchick	<i>Poliiocephalus rufopectus</i>	At Risk - Recovering

Kākā	<i>Nestor meridionalis</i>	At Risk - Declining
Bush falcon	<i>Falco novaeseelandiae</i>	At Risk - Recovering
Pied shag	<i>Phalacrocorax varius</i>	At Risk - Recovering
Long-tailed cuckoo	<i>Eudynamys taitensis</i>	At Risk – Naturally Uncommon
Black shag	<i>Phalacrocorax carbo</i>	At Risk - Naturally Uncommon
Little black shag	<i>Phalacrocorax sulcirostris</i>	At Risk - Naturally Uncommon
Black-fronted dotterel	<i>Eiseyornis melanops</i>	At Risk - Naturally uncommon
Royal spoonbill	<i>Platalea regia</i>	At Risk - Naturally Uncommon
Australian coot	<i>Fulica atra australis</i>	At Risk - Naturally Uncommon
Kākāriki spp. (unknown)	<i>Cyanoramphus spp.</i>	Not Threatened (<i>C. auriceps</i>)/At Risk – Relict (<i>C. novaezealandiae</i>)

2.3.7.4 Bats

No native bats have been recorded across the Project Area over three separate acoustic survey periods (undertaken in support of the NoRs). There are 161 records of long-tailed bats within 50km of the Project. The closest records are located approximately 13km (Pohangina Valley area) and 23km (north of Fielding) from the Project and were recorded in 1994 and 2019 respectively. Further acoustic surveys are currently being undertaken, but results are currently not available. However, based on previous results, it is unlikely that the area is located within the home range of a bat population, nevertheless, it cannot be ruled out that bats, including the long-tailed bat (classified as Threatened - Nationally Critical) may occasionally traverse the Project Area.

2.3.8 Freshwater Ecology

The Project Alignment is located within the Manawatū River catchment. The Manawatū River flows through the Manawatū Gorge in a westerly direction. Nine sub-catchments of the Manawatū River (as shown in Figure 2-6), and the River itself, have been identified as being impacted by the Project. The streams within each sub-catchment vary in biotic and abiotic characteristics which are largely driven by the surrounding land use.

The tributaries at the western end of the Alignment include highly incised valleys, some of high ecological value, and convey runoff in a southerly direction to the Manawatū Gorge. The central area includes some lower gradient streams and networks that also convey runoff to the Manawatū Gorge. The tributaries at the eastern end of the Alignment discharge into the Mangamanaia Stream located in the lowland area to the west of the Ruahine Ranges. The Mangamanaia Stream discharges into the main Manawatū River upstream of the Manawatū Gorge.

There are also a number of existing artificial watercourses located at each end of the Project that were constructed for conveyance of runoff from adjacent farmland to culverts crossing the existing state highway. Of note are the existing farm drains adjacent to existing SH3 (Napier Road).

2.3.9 Natural Character

Natural character is a term used to describe the naturalness of river/stream environments. The attributes and qualities considered to assess the naturalness of rivers and other water bodies relate to the degree of intactness of the natural elements, patterns and processes, including the extent of any physical modifications to landforms or presence of built structures. It also includes the perceptual or experiential component of naturalness.

Each of the catchments described in Section 2.3.3 above have had their existing level of natural character assessed, shown in Table 2-2 (the assessment methodology for which is set out in Section 6 of this AEE).

Table 2-2 Existing Catchment Natural Character Levels

Catchment	Existing Natural Character Level
Catchment 1	Low
Catchment 2	Moderate
Catchment 3	Moderate High
Catchment 4	Moderate Low
Catchment 5	Moderate High
Catchment 6	Moderate High
Catchment 7	Moderate High
Catchment 8	Low
Catchment 9	High

Of the nine catchments, only Catchment 9 (Mangakino Stream), has an overall high level of existing natural character. This is largely the result of considerable areas of continuous mature and regenerating indigenous vegetation, associated with the deeply incised gully system. Additionally, those catchments that are within areas subject to QEII Open Space Covenants (catchments 6 and 7) hold higher existing natural character levels, due to the streams existing within indigenous forest environments. Catchments 5 and 6 also discharge into the Manawatū River via the Manawatū Gorge Scenic Reserve which forms the lower part of these catchments and comprises of largely unmodified dense indigenous vegetation/forest. Consequently, the existing natural character levels are higher for these catchments.

2.3.10 Contaminated Land

A PSI and DSI have been undertaken for the Project. The PSI determined that a number of activities on the Hazardous Activities and Industries List (HAIL) have, or are likely to have, occurred within or adjacent to the Project Alignment. These activities include:

- HAIL A2 – Chemical storage and application of chemicals on livestock within the stockyard at 439 Saddle Rd, Ashhurst (located between CH 9600 and CH 9750);
- HAIL H – Woodville Closed Landfill (located between CH 9750 and CH 9850). Properties adjacent to the landfill are also considered to be HAIL G3);
- HAIL A6 – Fertiliser application on Ballantrae Farm (located between CH 9950 and CH 10700);
- HAIL A6 – Small rural airstrip and associated fertiliser storage. The fertiliser storage is considered to be HAIL A6 however the air strip itself is not considered to be HAIL (located between CH 13000 and CH 13030); and
- HAIL A8 – Former sheep dip and stock-yard (located between CH 13600 and CH 13650).

An additional sixth area comprised an organic hobby orchard which, while not classified as an activity on the HAIL, was also identified as a potential area of contamination. Based on the PSI, the majority of the Project Area is not considered to be a HAIL site or has not been impacted by hazardous activities and industries.

Targeted sampling for the DSI was undertaken on those areas with contamination concerns within the proposed earthwork areas. The results of the DSI identified that four of the abovementioned areas contained levels of contamination that exceeded the adopted acceptance criteria for the protection of human health and or the regional background concentrations. These areas will be remediated prior to earthworks associated with the Project (consent, where relevant, will be sought from the relevant Territorial Authorities pursuant to the NEScs. The Contaminated Soil Management Plan (CSMP) contained at **Volume VII** therefore addresses the accidental discovery of contaminated land.

2.3.11 Air Quality

The elevated topography and exposed nature of this location makes it susceptible to sustained periods of high winds (hence the suitability for wind farm location). There are no anthropogenic emission sources within the Project Area. Given the largely rural location of the Project, low background levels of dust and fine particulate matter (PM₁₀) levels may be present. However, ambient air quality measurements at rural locations is not commonly undertaken.

In the absence of site-specific measurement data, the Transport Agency provides an online tool for estimating background PM₁₀ concentrations based on geography. Using this tool, a predicted maximum 24-hour average PM₁₀ concentration of approximately 19 µg/m³ is given for the general location of the Project. This is under half of the National Environmental Standard for Air Quality (NES_{AQ}) threshold for PM₁₀ (of 50 µg/m³), which is consistent with good air quality.

2.4 Planning Environment

The following sections describe the legal effect of the NoRs for the Project and consented enabling works as well as setting out the schedules of the One Plan considered relevant to the Project, being:

- Schedules A and B: Surface water management zones and values, which are discussed in Section 2.4.3;
- Schedules C and E: Surface water quantity and quality targets, which are discussed in Section 2.4.4;
- Schedule D: Groundwater quantity, which is discussed in Section 2.4.5;
- Schedule F: Indigenous biological diversity, which is discussed in Section 2.4.6; and
- Schedule G: Regionally outstanding natural features and landscapes, which is discussed in Section 2.4.7.

2.4.1 The NoRs for Designations for the Project

At the time of lodgement of these resource consent applications, the NoRs (including the modification to give effect to the Northern Alignment) have not yet been confirmed by the Environment Court. As such, they do not have legal effect or enable works relating to the Project. The Transport Agency is hopeful that an Environment Court decision confirming the requirements, modified to provide for the Northern Alignment, will be released in advance of any hearing on these consent applications. At that point, the designations (including the conditions) will have legal effect and will authorise 'district' 'land-use' elements of the Project works.

2.4.2 Resource consents for enabling works

Enabling Works consents that have been granted (with conditions) have legal effect. The Transport Agency is hopeful that the remaining Enabling Works listed in Section 1.6.3 will be granted (with conditions imposed) in advance of decisions being made on these Main Works resource consent applications.

Where resource consents for Enabling Works are in place, and the district land-use elements of those works are also authorised (either through separate land-use consents, once the requirements are confirmed, or because no land-use authorisation is required), those Enabling Works form part of the existing environment for the purposes of the assessment of these Main Works consent applications. At the time of writing this application, the following Enabling Works packages form part of the existing environment:

- Western Access Track (stage 1);
- Pine tree clearance; and

- Geotechnical Investigations.

2.4.3 One Plan Schedules A and B: Surface Water Management Zones and Values

The Project is located within the Middle Manawatū (Mana_10) and Upper Gorge Catchments (Mana_9) Water Management Zones within the Parent Catchment: Manawatū as identified within Schedule A of the One Plan.

The relevant sub-zones are listed below and are shown in Figure 2-8:

- Middle Manawatū (Mana_10a);
- Lower Pohangina (Mana_10d); and
- Mangaatua (Mana_9c).

The zone wide values which apply to all of the sub-zones listed in Table B.1 of Schedule B are:

- Life supporting capacity – hill mixed;
- Aesthetics;
- Contact recreation;
- Mauri;
- Industrial abstraction;
- Irrigation;
- Stock water;
- Existing infrastructure; and
- Capacity to assimilate pollution.
- Natural State values also apply to some reaches in the upper catchments of the Mana_10d and Mana_9c sub-management zones, these reaches are not within the Project Area.

The site/reach specific wide values which are within the Project Area as listed in Table B.1 of Schedule B, as follows:

2.4.3.1 Middle Manawatū (Mana_10a)

- Site of Significance - Riparian (SOS-R) Value: Gravel and Sand (dotterel);
- Site of Significance – Cultural (SOS-C) Value: Density of cultural and historical sites of significance including wāhi tapu* and taonga – Rangitaane o Manawatū; and
- Trout Fishery Value in the Region – Other Trout Fishery.

2.4.3.2 Mangaatua (Mana_9c)

- Flood Control & Drainage (FC/D)

The extent to which the site-specific values apply is shown in Figure 2-8 below.

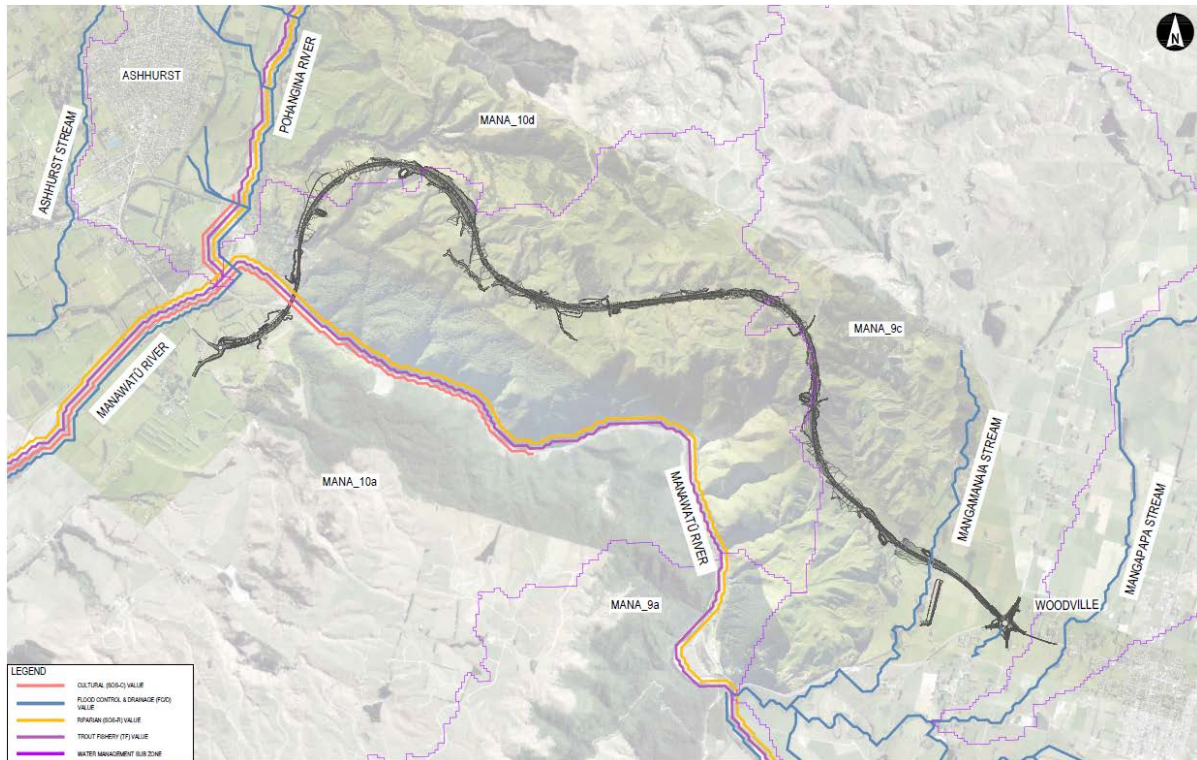


Figure 2-8 Schedule B Surface Water Management Zones and Values

2.4.4 One Plan Schedules C and E: Surface Water Quality and Quantity Targets

Schedule C and Schedule E describe the surface water quality and quantity targets for the Water Management Zones within the Region. As identified in Section 2.4.3 above, the Project is located within the Middle Manawatū (Mana_10a), Lower Pohangina River (Mana_10d) and Upper Gorge (Mana_9c) Water Management Sub-Zones. The targets for the Mana_10a, Mana_10d and Mana_9c Sub-Zones are set out in Table 2-3 below.

Table 2-3 One Plan Schedule E Surface Water Quality Targets

Variable	Units	Mana_10a, Mana_9c	Lower Pohangina Mana_10d	Condition Criteria
pH range		7 to 8.5	7 to 8.5	Within range
pH		0.5	0.5	Must not change by more than
Temp. <	°C	22	22	Must not exceed
Temp.	°C	3	3	Must not change by more than
DO	% sat.	70	70	Must not exceed
POM	Mg/L	5	5	Average when flow < median
DRP	Mg/L	0.01	0.01	Annual average when <20th flow exceedance
SIN	Mg/L	0.444	0.11	Annual average when <20th flow exceedance
NH4	Mg/L	0.4	0.4	Average
NH4. Max	Mg/L	2.1	2.1	Maximum
Clarity %	%	30	30	Must not be reduced by more than
Clarity >	Mg/L	2.5	2.5	Must exceed when river < median flow

Ecoli. Bathing	cfu/100mL	260	260	Summer max. when flow < median flow
Ecoli. Year	cfu/100mL	550	550	Annual max. when <20 th flow exceedance
Deposited sediment	% cover	20	20	Maximum cover of fines on stream bed

2.4.5 One Plan Schedule D: Groundwater Quantity

Schedule D describes the Groundwater Management Zones and allocation limits within the region. The Project Area is located within the Manawatū and Tararua Groundwater Management Zones, which correspond with the surface Water Management Zones identified in Schedule A of the One Plan. The annual allocable volume is 166,000,000m³ per year for the Manawatū Ground Water Management Zone and 239,000,000m³ per year for the Tararua Zone.

2.4.6 One Plan Schedule F: Indigenous Biological Diversity

Schedule F of the One Plan sets out the classification system for assessing habitat types as rare, threatened or at-risk, in Table F.1 and F.2(a). The significance of the vegetation within the Project Area has been identified and is discussed in further detail in Section 6.

The existing vegetation and associated Schedule F habitat types located within the Project Area are further described in Table 2-4 below.

Table 2-4: Summary of ecological values identified under Schedule F of the One Plan

Ecosystem type	Equivalent vegetation type listed in Table F.1 in Schedule F and threat classification	Assessment as per Horizons One Plan Policy 13-5
Old-Growth Forests (Alluvial)	Kahikatea - pukatea - tawa forest or treeland	Significant
	Threatened	Policy 13-5 (a)(i)(A)
Old-Growth Forests (Hill Country)	Podocarp/tawa - mahoe forest or treeland	Significant
	Threatened	Policy 13-5 (a)(i)(A)
Secondary Broadleaved Forests with Old-Growth Signatures	Podocarp/tawa - mahoe forest or treeland	Significant
	Threatened	Policy 13-5 (a)(i)(A)
Old-Growth Treelands	Podocarp/tawa - mahoe forest or treeland	Significant
	Threatened	Policy 13-5 (a)(i)(A)
Advanced Secondary Broadleaved Forests	Does not represent pre-human forest compositions defined in Schedule F	Not significant
	Not threatened	Policy 13-5 (a)
Kānuka Forests	Kanuka forest or Treeland	Significant
	Threatened	Policy 13-5 (a)(i)(A)
Mānuka and Kānuka Shrublands	Does not represent any of the shrubland definitions compositions outlined in Schedule F	Not significant
	Not threatened	Policy 13-5 (a)

Divaricating Shrublands	Does not represent any of the shrubland definitions outlined in Schedule F Not threatened	Not significant Policy 13-5 (a)
Indigenous Dominated Seepage Wetland – High Value (<i>raupō</i> wetland)	Seepage and spring wetland Rare	Significant Policy 13-5 (a)(ii)(E)
Indigenous-Dominated Seepage Wetlands	Seepage and spring wetland Rare	Significant Policy 13-5 (a)(ii)(E)
Pasture wetlands dominated by <i>Juncus edgariae</i>	Seepage and spring wetland Rare	Significant Policy 13-5 (a)(ii)(E)
Exotic-dominated Wetlands	Not dominated by indigenous vegetation thus does not represent any of the wetland definitions outlined in Schedule F Not threatened	Not significant Policy 13-5 (a)

2.4.7 One Plan Schedule G: Regionally Outstanding Natural Features and Landscapes

Schedule G of the One Plan identifies two natural features and landscapes relevant to the Project alignment, namely:

- l) *The series of highest ridges and highest hilltops along the full extent of the Ruahine and Tararua Ranges, including within the Tararua and Ruahine Forest Parks; and*
- m) *Manawatū Gorge, from Balance Bridge to the confluence of the Manawatū and Pohangina Rivers, including the adjacent scenic reserve.*

While the Schedule G descriptions provide a general location, these areas are not mapped and, therefore, the extent is subjective.

3 Project Description

3.1 Overview

The following Project description provides the basis for the AEE of the Project and is a summary of the detail contained in the DCR (**Volume II**) and the Drawing Set (**Volume III**).

The Project incorporates the following features:

- Approximately 11.5km of two-lane, median divided, access-controlled rural state highway, with crawler lanes over the majority of the length in each direction;
- Connection to the existing state highway network by way of two single-lane roundabouts at either end of the Project extent (the Western and Eastern Roundabouts);
- A four-lane bridge across the Manawatū River (BR02) and the adjacent Palmerston North – Gisborne rail line at the western end of the Manawatū Gorge – located approximately at CH 3600 to CH 3900;
- A four-lane Eco Bridge (BR03) spanning the ecologically sensitive area located on northern side of the Manawatū River at the western end of the Project Alignment – located approximately at CH 4000 to CH 4300;
- A four-lane Mangamanaia Stream Bridge (BR07) and a farm track passing underneath which is located above the Q₁₀ flood level;
- Underpasses (in the form of box culverts) with internal access roads at:
 - Approximately CH 3270 providing access to a private property which is situated to the south of the proposed state highway (Nutcracker Farm Underpass (BR01));
 - Approximately CH 8240 connecting the northern and southern sections of Te Āpiti Wind Farm (Te Āpiti Wind Farm Underpass (BR05)); and
 - Approximately CH 10210 connecting the northern and southern sections of Ballantrae Farm (Ballantrae Farm Underpass (BR06)).
- Safe stopping areas (SSA) accessed from the main Alignment leading to viewing areas / rest areas accessed via a footpath at the following locations:
 - off the eastbound carriageway at approximately CH 5200;
 - off the westbound carriageway at approximately CH 8150; and
 - off the westbound carriageway at approximately CH 11650.
- A controlled access for over-dimension vehicles to Te Āpiti Wind Farm at approximately CH 8000;
- Realignment of access tracks within Te Āpiti Wind Farm to maintain the network of accesses between the wind turbines for ongoing farm operations;
- Creation of a Western Gateway Park at the western end of the Manawatū Gorge Scenic Reserve providing open space area and approximately 120 car parks;
- A SUP for pedestrians and cyclists commencing at the existing SH3 Ashhurst Bridge and terminating at the Vogel Street/Hampson Street intersection, Woodville;
- A replacement airstrip and associated access track located approximately 100 m to the south of its current location at CH 13050;
- New walking tracks and boardwalks within the Wetland Experience Area between approximately CH 4000 and CH 4250 (on the west side of the main Alignment on the Eco Bridge);

- A 2-3 m wide walking / cycling track linking the western rest area (Ashhurst lookout) and the new Wetland Experience Area between approximately CH 4200 and CH 4800 to the north of the Manawatū River and west of the Alignment;
- A repurposed existing access track (the Western Access Track) to provide walking and cycling facilities alongside the Pohangina River (over a distance of approximately 3 km) from the Project through to Saddle Road;
- Stormwater treatment wetlands, stormwater swales, drains, sediment traps;
- Culverts to reconnect streams crossed by the proposed works and stream diversions to recreate and reconnect streams; and
- Spoil sites (at various locations, see Drawings TAT-3-DG-C-3640 - 3650 (**Volume III**)).

The Project will become the new SH3 and will replace the existing Manawatū Gorge Route that is indefinitely closed. The details associated with the revocation and/or stopping of the existing SH3 route are not part of this Project and will be subject to separate procedures and discussions with stakeholders. This process will be carried out in accordance with the relevant provisions of the LTMA and/or the PWA. Similarly, any future use of the Manawatū Gorge Route is outside the scope of this resource consent application.

The following sections of this AEE provide a summary of the proposed work including indicative construction considerations, methodologies and durations for key Project elements. The Project has been designed to a level of detail necessary to enable a fulsome assessment of its actual and potential effects on the environment.

3.2 Highway and Rooding Elements

The Project includes the following main highway and rooding elements:

- A four-arm single lane roundabout connection with SH57 east of Ashhurst (Western Roundabout);
- A five-arm single lane roundabout connection with existing SH3 west of Woodville (Eastern Roundabout);
- Two lane single carriageway highway (one lane in each direction) where crawler lanes are not provided (approaches to roundabouts only);
- Four lane dual carriageway highway (two lanes in each direction) through the inclusion of crawler lanes that are provided due to steep grades and extended where necessary to provide a consistent corridor and to reduce merge and diverge points;
- 3.5m wide traffic lanes;
- 1.5m wide outside shoulders; and
- A 3m wide central median and wire rope barrier provided from the Western Roundabout to the Eastern Roundabout.

3.3 Walking and Cycling Facilities

3.3.1 Shared Used Path (SUP)

The Project incorporates a generally 3m wide SUP with a minimum 0.2m clearance on either side, generally along the length of the new road starting at the Western/Ashhurst Roundabout and terminating at Hampson Street in Woodville. The SUP is generally positioned adjacent to the carriageway but separated from it by a barrier. The indicative SUP alignment is shown on the plans contained in the Drawing Set (**Volume III**) and further information is contained within the DCR (**Volume II**).

The SUP design complies with proposed designation condition 36(b)(ii)(A), which requires that the SUP be designed and constructed in accordance with Austroads Guide to Road Design Part 6A Appendix A Figure A1: Bicycle Path Operation or any subsequent revisions of that document. As required by proposed designation condition 36(a)(i), the SUP will be extended west across the Ashhurst Bridge through to SH3/Cambridge Avenue intersection in Ashhurst, and that section of the SUP is being developed by the Transport Agency as a separate but linked project.

From the Western/Ashhurst Roundabout, the SUP is located on the northern side of the existing SH3 carriageway, before traversing through the new Western Gateway Park and looping under and up onto the southern abutment of Manawatū River Bridge (BR02). The SUP is positioned on the eastern side of the Manawatū River Bridge (BR02) and Eco Bridge (BR03) and viewing areas are provided at mid-span at each bridge. From CH 4500 to Te Āpiti Wind Farm Underpass (BR05), the SUP alignment is located to the south of the highway alignment but separated by barriers from the carriageway. The SUP traverses through the BR05 underpass before shifting onto the northern side of the carriageway until it intersects with the Eastern/Woodville Roundabout.

The SUP footprint is minimised to avoid or reduce ecological impact or encroachment on sensitive areas at other constrained discrete lengths. The SUP reduces to 2.5m (with 0.25m shoulders) to avoid effects on the Western QEII to minimise ecological impact and meet the maximum vegetation removal area as allowed for in proposed designation condition 24. Ultimately the design of the SUP (including any variations from the width specified by the proposed designation conditions) will be subject to:

- Further discussions with stakeholders, land owners and the Community Liaison Group;
- Compliance with proposed designation conditions; and
- The Outline Plan process.

The vertical grade of the SUP will vary along its length as it follows the natural topography with steeper sections needed in order to minimise sections of engineered cuts/fills, help minimise impacts on adjacent properties, the environment and areas of cultural significance while achieving integration with the natural landscape. Further details are provided the DCR (**Volume II**).

The SUP will be designed to accommodate a range of cycling and walking users and abilities. Measures to lower the speed of cyclists on the paths in areas of higher gradient, including the use of landscaping, geometric alignment features, surfacing features and markings, tactile feedback as well as signs and education.

3.3.2 Other Walking and Cycling Facilities

The Project also proposes the following walking and cycling infrastructure:

- A series of walkways and boardwalks are proposed within the proposed Wetland Experience Area accessed from the main SUP alignment or the walking and cycling track from Saddle Road; and
- A walking track connecting the proposed Wetland Experience Area (at the northern abutment of Manawatū River Bridge (BR02)) and Saddle Road is also proposed.

The walking and cycling components of the Project will provide for greater connectivity, local access and travel choice both north to south and east to west within the Project Area. Further, the proposed designation conditions required by the NoRs will deliver the following outcomes for pedestrians and cyclists:

- The preparation of a Network Integration Plan to demonstrate how the Project integrates with the existing local road network including future and planned walking and cycling facilities;
- The construction of an Ashhurst Bridge clip-on to provide separated pedestrian and cyclist access prior to completion of the Project; and

- The establishment of a Recreational Paths Fund of \$1 million to enable the investigation and construction of recreational paths that could potentially provide additional connections to the SUP required by proposed designation condition 36.

3.4 Viewing Areas

The Project also provides viewing areas along the corridor, which are provided at the following locations:

- The eastern side of the Manawatū River Bridge (BR02);
- Ashhurst lookout (at approximately CH 4650) with pedestrian connections from both directions;
- Wind farm lookout (at approximately CH 7970); and
- Woodville lookout (at approximately CH 11500).

These viewing areas will provide a sealed pull-off area and car park for users to safely stop along the Alignment. The areas will consist of a landscaped space with seating and a gravelled walkway between the carpark and viewing areas, as shown in the indicative arrangement and design in Figure 3-1 below.



Figure 3-1 Ashhurst Viewing Area

3.5 Structures

The Project requires the construction of several new structures as shown in the Drawing Set (contained in **Volume III**). A detailed description of the proposed bridge structures is provided in the DCR (**Volume II**).

The Project includes seven new bridge structures as described in Table 3-1 below. The locations of these bridges are shown in Figure 3-2 below, with each structure described briefly in the following sections.

Table 3-1 Proposed Bridge Structures

Ref #	Bridge Structure	Location (Approx.)
BR01	Nutcracker Farm Underpass	CH 3270
BR02	Manawatū River Bridge	CH 3600 to CH 3900

BR03	Eco Bridge	CH 4000 to CH 4300
BR05	Te Āpiti Wind Farm Underpass	CH 8240
BR06	Ballantrae Farm Underpass	CH 10210
BR07	Mangamanaia Stream Bridge	CH 12900

Table Notes: Culvert 8 is included in Figure 3-2 below as the large size of the culvert meets the definition of a bridge as defined in the Bridge Manual¹³.

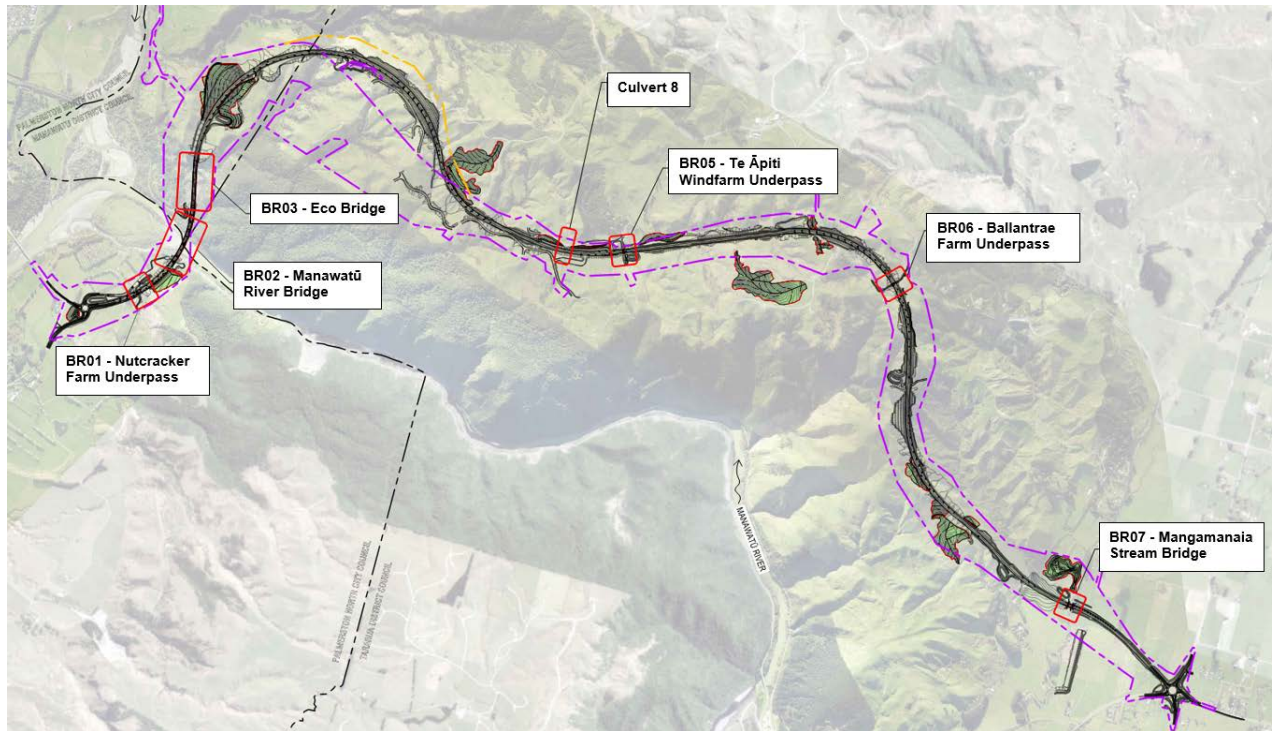


Figure 3-2 Bridge Location Plan

In addition, the Project also provides retaining walls made up of reinforced earth slopes and structure abutments.

To minimise the embankment footprint and to avoid ecologically sensitive areas, steep cut or fill slopes are proposed at various locations along the alignment including at CH 3900 and CH 4000 (between the Manawatū River Bridge (BR02) and Eco Bridge (BR03)), that area north of the Western and Eastern QEII Open Space Covenanted areas, through the Ballantrae Farm area and several high embankment locations (up to 1V:1H). The locations of these are shown in drawings TAT-3-DG-S-2100 to 2702 (**Volume III**). The relatively steep slope embankments are proposed to be reinforced by geogrid and geotextile to strengthen their stability and to avoid seismic induced displacement or fault rupture developing through the pavement surface.

Cut slopes steeper than 1V:3H will not be planted as topsoil will not stay on the slope and drainage has been designed to be cut off drains (consisting of permanent turf reinforcement matting lined channels or rock lined channels) to protect against erosion.

3.5.1 Nutcracker Farm Underpass

The Nutcracker Farm Underpass (BR01) crosses perpendicularly under the highway at chainage CH 3271 to provide stock and vehicle access from one side of the highway to the other. The bridge will be

¹³ Bridge manual SP/M/022. Third edition up to and including Amendment 3. Oct 2018., New Zealand Transport Agency

constructed as a reinforced concrete box that is approximately 26.4m in length with minimum internal dimensions of 6.0m wide by 4.9m high.

3.5.2 Manawatū River Bridge

The Manawatū River Bridge (BR02) is situated between CH 3600 and CH 3900 and crosses the Manawatū River at the mouth of the Manawatū Gorge. The bridge is a 300m long 4-span post-tensioned concrete box girder bridge, with one pier located in the Manawatū River (referred to as Pier 2) and two piers outside of the 2-year flood plain (referred to as Pier 1 and Pier 3). The bridge is approximately 26.2m wide and carries four traffic lanes, a median, shoulders with 0.35m sight distance widening in the eastbound direction, a 3.4m SUP and a viewing area on the eastern side to enable views into the Manawatū Gorge.

3.5.3 Eco Bridge

The Eco Bridge (BR03) is a 305m long 7-span multi-girder weathering steel structure that spans across the existing raupō wetlands between CH 3970 to CH 4280. The structure carries four traffic lanes, median shoulders and a 2.5m wide SUP. The purpose of the structure is to minimise effects on the "threatened – nationally critical" swamp maire and old growth mataī trees. In addition, the Eco Bridge is of sufficient height (14m) to allow vegetation to grow beneath the structure.

The structure is designed to minimise foundations and maximise span lengths in a manner that accommodates the constraints of waterways, wetlands and sensitive vegetation. The Eco Bridge incorporates the crossing of a permanent stream originating in the Western QEII to the north and allows for continuity of high-value streams through this area.

3.5.4 Te Āpiti Wind Farm Underpass

The Te Āpiti Wind Farm Underpass (BR05) crosses perpendicularly under the highway at CH 8200 to provide vehicle access for Meridian (as the Wind Farm owner and operator) from one side of the highway to the other. Similar to Nutcracker Farm Underpass (BR01), the bridge is essentially a short cut and cover tunnel and will be constructed as a reinforced concrete box with minimum internal dimensions of 6.0m wide by 4.9m high.

3.5.5 Ballantrae Farm Underpass

Ballantrae Farm Underpass (BR06) crosses perpendicularly under the highway at CH 10200 to provide internal access on Ballantrae Farm. The bridge is essentially a short cut and cover tunnel and will be constructed as a reinforced concrete box with minimum internal dimensions of 6.0m wide by 4.9m high, similar in cross section and detail to Nutcracker Farm Underpass (BR01) and Te Āpiti Wind Farm Underpass (BR05).

To minimise the impact on Ballantrae Farm, all site lay down areas / stockpiles / crane pads and temporary works will be kept within the permanent alignment footprint. Fill over this bridge varies in depth from 1.6m to 2.2m, which is substantially more than the other two similar structures to accommodate longitudinal network drainage within the fill over the bridge. The underpass bridge is to be built within an embankment of up to 20m in height. A nearly 200m long culvert pipe will also be constructed beneath the underpass bridge site.

3.5.6 Mangamanaia Stream Bridge

The Mangamanaia Stream Bridge (BR07), is a 36m-long single span bridge. It is 25m wide, comprising of 4 lanes, a median strip, shoulders and 3.4m wide SUP, that crosses the Mangamanaia Stream at right angles at CH 12900. The bridge is located on a fault line; it is understood there is a lateral creep of approximately 5mm per year and the fault line is subject to large sudden rupture movements. To provide equivalent robustness for flood events without compromising seismic robustness, ground

improvements in front of the Mechanically Stabilised Earth (MSE) abutment walls, comprising of undercut and backfill with cement stabilised hardfill, will be undertaken. For further details on the geotechnical considerations which have informed the bridge design, refer to the Geotechnical Design Technical Memorandum contained in Appendix A of the Design and Construction Report (**Volume II**).

Farm tracks (4.5m wide) are proposed underneath the bridge on both sides of the stream to enable stock and vehicle access from one side of the highway to the other. The access tracks below the bridge are designed to be above the 10-year return period flooding level. Scour protection is also incorporated into the design to prevent washing out of the bridge abutments.

3.6 Stormwater Management

The Project intersects several existing waterways, all of which are tributaries of the Manawatū River. The highway will discharge stormwater runoff, via conveyance and treatment systems, into various tributaries of the Manawatū River.

The total impervious area proposed to be created through the Project is approximately 513,734m². This includes the main alignment, roundabouts, local roads, SSAs, SUP and the Western Gateway Carpark.

A Stormwater Management – **Technical Assessment B** containing details of the stormwater management proposed has been prepared. The overarching design is presented below for each stormwater element.

3.6.1 Stormwater Runoff Collection and Conveyance Systems

The Project stormwater runoff collection and conveyance systems are designed to convey a 100-year ARI 10-minute storm event.

Stormwater is conveyed by open channels, where practicable, in order to minimise the number and extent of underground assets. The following three types of open channels are used:

- 1) planted where possible to provide additional treatment prior to runoff discharging to wetlands;
- 2) rock lined channels in locations where high velocities are expected (i.e. on steep gradients); and
- 3) low maintenance chip sealed channels where space behind the barrier is limited/constrained.

In locations where open channels are not practical, runoff will be captured and conveyed by piped systems.

3.6.2 Stormwater Management Devices

Constructed wetlands and wetland swales are the preferred stormwater treatment devices for the Project. All wetlands, wetland swales and treatment swales have been designed in accordance with the Transport Agency's *Stormwater Treatment Standard for State Highway Infrastructure* (2010).

The Project provides for the following:

- 9 x stormwater wetlands;
- 10 x stormwater wetland swales;
- 10 x flow-through stormwater treatment swales; and
- 17 x sediment basins.
- The likely locations of the proposed stormwater management devices are confirmed in the Stormwater Drainage Layout Plans (TAT-3-DG-H-1401 to 1421) contained in **Volume III**.

3.6.3 Culverts

In addition to the stormwater management devices described above, culverts are positioned where existing streams (permanent and intermittent) cross the highway. This is to facilitate normal stream flow conditions and significant storm event runoff (100-year ARI) from one side of the highway to the other.

Drawing TAT-3-DRG-H-1441 contained in **Volume III** provides a schedule of all the cross-drainage culverts proposed for this Project including their location and design characteristics.

Fish passage is provided for in all culverts along the Alignment and stream diversions. The preliminary need for fish passage measures has been assessed in accordance with the Transport Agency's Fish Passage Guidelines for State Highways (2013) and New Zealand Fish Passage Guidelines for Structures up to 4m (NIWA, 2018). As noted in the Typical Stormwater Drainage Details Cross Culverts Drawing (TAT-3-DG-H-1452), fish passage measures such as spat rope or rip rap will be used.

3.6.4 Stream Diversions

Due to the existing natural topography and gully systems across the Alignment, the construction of permanent diversion channels and stream diversions to maintain stormwater flows is necessary.

Where the Alignment crosses streams at angles, the culvert designs have been short to maintain as much length of the natural streams as possible and to construct new stream sections (stream diversions) that connect back to the existing stream. Stream diversions have been classed into three types that are listed below and detailed on the Stormwater Drainage Typical Details drawings.

- **Type 1:** 2,050 m of lowland stream diversion (permanent streams of low gradient);
- **Type 2:** 3,900 m of steep stream diversion (permanent streams with steep gradient); and
- **Type 3:** 2,080 m of intermittent stream diversion.

Further detail is also provided in the Freshwater Ecology - **Technical Assessment H**.

3.7 Utilities and Infrastructure

Existing utilities will be affected by the construction of the Project, and are proposed to be either removed, relocated or protected during the works.

The Project affects the following existing utilities:

- Water networks (PNCC and TDC);
- 11kV power transmission and 400V distribution (Transpower, Powerco, Scanpower);
- Meridian 22kV electricity cables and communications cables at Te Āpiti Wind Farm;
- Telecommunications (Chorus and Inspire Network); and
- Private utilities (e.g. 400V feed to pumps).

Consultation with affected utility owners has been undertaken and is ongoing. Where the Project works necessitate the disruption to or relocation of these utilities, this will occur on a like-for-like basis.

3.8 Project Wide Construction Description

An indicative construction sequence is set out in Figure 3-3 below:

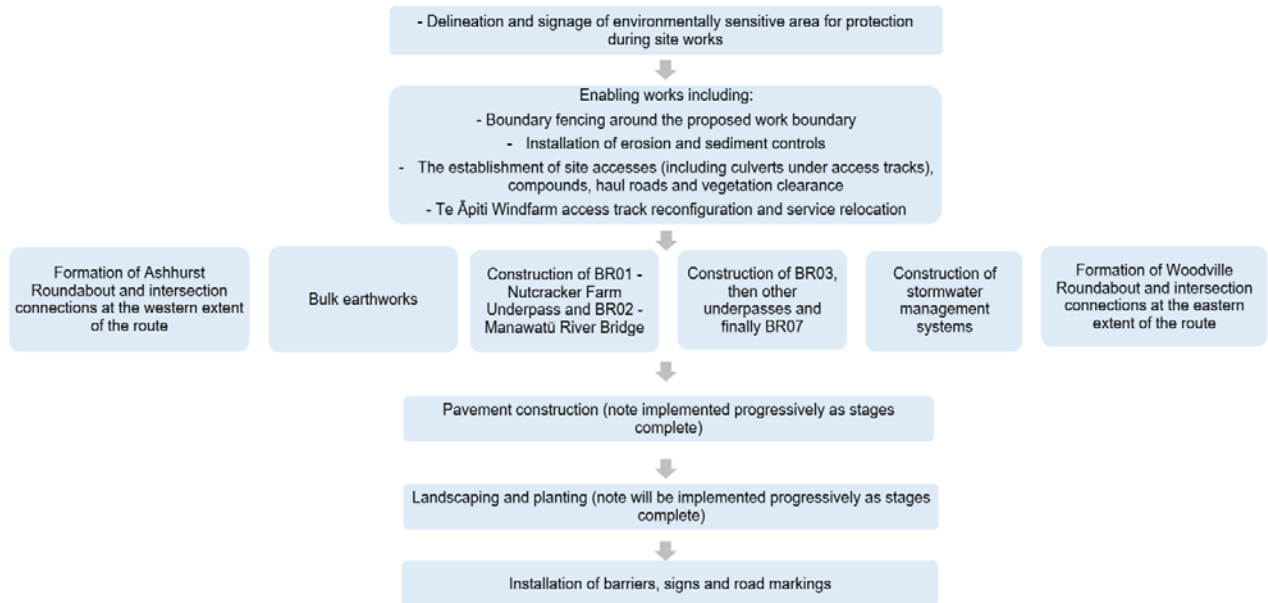


Figure 3-3 Indicative Construction Sequencing

3.8.1 Construction Programme

The Project is anticipated to take approximately four years to complete, commencing in late 2020 with completion in early 2025. A summary of the estimated quantity of earthworks anticipated (indicative only) for each of the construction seasons is shown in Table 3-2 below.

Table 3-2 Earthwork Quantities anticipated for each Construction Season

Earthworks Season	Volume (m ³)
Earthworks Season 1	118,000
Earthworks Season 2	2,500,000
Earthworks Season 3	2,400,000
Earthworks Season 4	1,100,000

Table Notes: The volumes presented are in situ volumes and do not account for material bulking.

The total sum of volumes handled per season is greater than the total earthwork volume due to double handling for the conditioning of material.

Some earthworks activities are proposed to be undertaken during the winter periods when site conditions permit and will include cut to waste. These cut to waste activities are expected to predominantly occur when stripping unsuitable material from the upper 3m. Therefore, the greatest opportunities for winter earth working are within the winters between seasons 1 and 2 and seasons 2 and 3.

3.8.2 Construction Laydown Areas

Construction laydown areas will be required at a number of locations that are convenient for each Main Work area. The locations of these temporary works are shown on the Accommodation Work drawings (TAT-3-DG-C-3601 to 3616) contained within the Drawing Set (**Volume III**). Below is a summary of the laydown areas and locations:

- **CH 3000** – Office compound and staff carpark and access (approximately 8,000m² with a granular surface);
- **CH 3100** – Temporary top soil stock pile area (approximately 8,000m²);

- **CH 3200** – Structures compound/laydown for Nutcracker Farm Underpass (BR01) (approximately 400m² hardstand area);
- **CH 3600** – A structures compound / laydown for Manawatū River Bridge (BR02) located at the site of the existing car park; the site office is to be repurposed as a car park and community facility at the end of construction;
- **CH 8000** – Material stock pile area (approximately 18,300m²) with granular handstand area;
- **CH 8200** – Approximately 400m² hardstand area to support Te Āpiti Wind Farm Underpass (BR05) construction;
- **CH 8350** – Cook Road site office and yard providing for car parking, office space, staff rest and wellbeing facilities. Approximately 1,400m² of aggregate platform capped with limestone;
- **CH 10250** – Approximately 400m² hardstand area to support Ballantrae Farm Underpass (BR06) construction;
- **CH 12900** – Approximately 400m² hardstand area to support Mangamanaia Stream Bridge (BR07) construction as well as approximately 560m² hardstand area on the western embankment of Mangamanaia Stream Bridge (BR07);
- **CH 13050** – Hope Road site office and yard of approximately 1,600m² with unsealed surfacing; and
- **CH 13100** – Material stock pile area (approximately 17,500m²) is proposed with a granular hardstand area.

3.8.3 Construction Access

Access to the site will be gained through the following locations:

- Napier Road – to be used by employees and light vehicles accessing the main site office and for heavy vehicle deliveries for sections west of Nutcracker Farm Underpass (BR01), Manawatū River Bridge (BR02) and the Western Gateway Park;
- Western Access track (to be constructed pursuant to separate Enabling Works resource consents) – for construction access to the main Alignment and Eco Bridge (BR03);
- Braemoar Farm – for heavy and light vehicle construction access for local earthworks;
- Cook Road – for the construction of Te Āpiti Wind Farm underpass (BR05) and long term importing of pavement aggregates;
- Morgan Road – temporary access for site establishment and access works at Te Āpiti Wind Farm; and
- Hope Road – for access to the site from the west and construction works associated with Mangamanaia Stream Bridge (BR07).

The locations of these access points are shown in Figure 3-4 below.

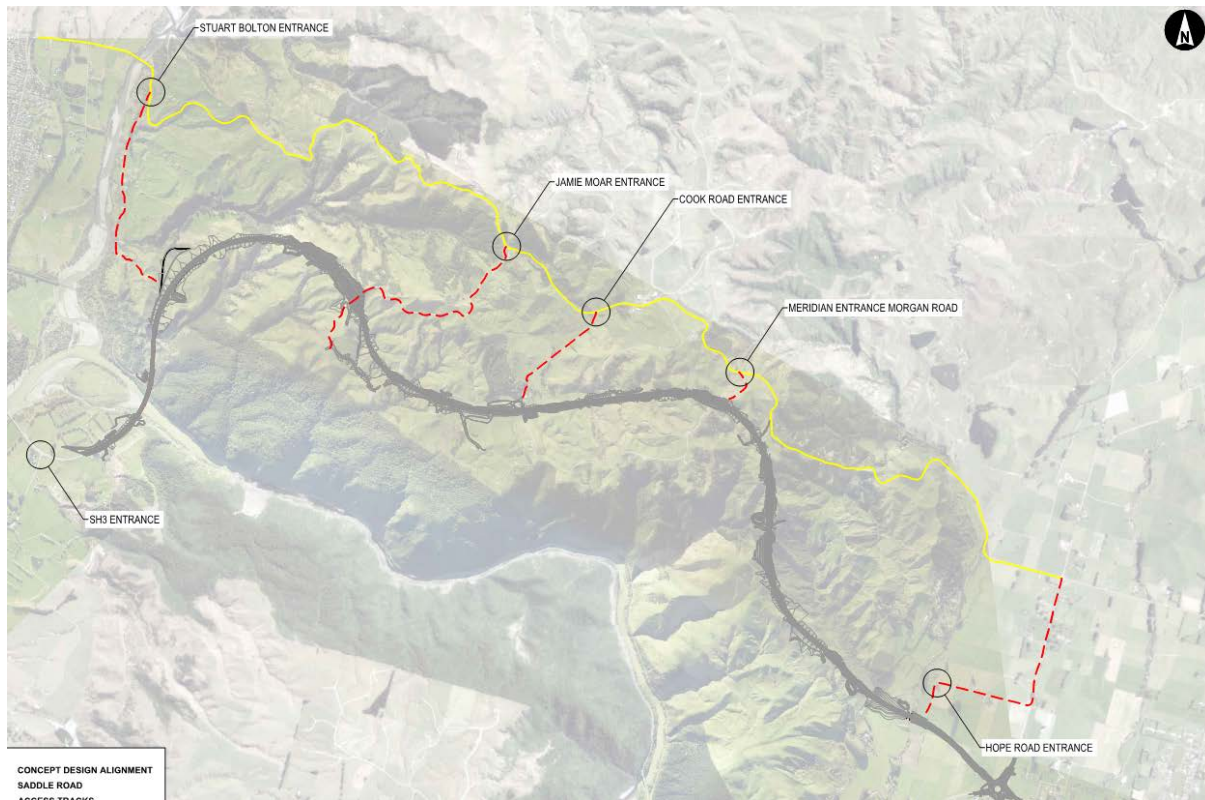


Figure 3-4 Construction access points

The construction access tracks included in the Enabling Works resource consent applications are described above in Section 1.6.3. Some localised earthworks will be required to enable the formation of site accesses/haul roads to provide a suitable size and gradient for plant and equipment access. Topsoil and any other material unsuitable for reuse will be stripped and disposed of. Granular material will need to be imported to form all-weather surfaces. Where possible, haul roads will be constructed along the permanent road alignment to minimise the extent of earthwork disturbance. Refer to Accommodation Work drawings (TAT-3-DG-C-3601 to 3616) contained with the Drawing Set (**Volume III**).

Access for the construction of the northern abutment of the new Manawatū River Bridge (BR02) will also require a temporary railway crossing over the existing rail corridor. The formation of this crossing will be as agreed with KiwiRail.

3.8.4 Earthworks

Earthworks are proposed across the Alignment as shown in the Drawing Set at **Volume III**. Earthworks for the Project will occur over an area of approximately 195 ha and will typically include the following activities:

- Topsoil and stockpiling stripping;
- Bulk excavation;
- Placement of engineered fill; and
- Replacement of topsoil and grass on batters/fill areas.

A progressive approach to stabilisation of earthworks surfaces will be undertaken with surfaces being covered with erosion resistant materials as soon as practicable. The total quantity of earthwork volume

is calculated on an indicative basis to be approximately 5.8 Million cubic metres (Mm³) which includes allowance for:

- Access tracks;
- Undercuts;
- Slip / benching in fills (required to ensure stable base in slip affected fill areas);
- Topsoil strip and re-spread;
- Structured undercuts; and
- Wetland ponds, swales, stream diversions.

The overall Project earthworks volume by type is summarised in Table 3-3 below (these figures are indicative estimates only).

Table 3-3 Project Earthworks Volumes by Type

Name	Volume (m ³)
Cut to Structural Fill	4,600,000
Cut to waste (including undercut and unsuitables**)	1,200,000

Table Notes: The volumes presented are in situ volumes and do not account for material bulking.

**Material that is not of a strength or composition suitable for road construction. The material is suitable for placement in fill/spoil sites and put to normal farming practice / use.

Further details are presented in the DCR (**Volume III**) and are contained in the Drawing Set (**Volume III**).

3.8.4.1 Resilient Cut and Fill Slopes

The relatively steep slope embankments are to be reinforced by geogrid and geotextile to enhance their stability and to avoid seismic induced displacement \ fault rupture developing through the pavement surface. All soft subgrade beneath large embankments are undercut and backfilled with engineered fill.

Cut slopes steeper than 1V:3H will not be planted because topsoil will not stay on these slopes and drainage will be provided through cut off drains (consisting of Enkamat lined channels or rock lined channels) to protect against erosion. The drains on the benches can self-cleanse due to the gradients and the widths of the benches themselves being wide enough to let the debris accumulate without needing cleaning. The design of the cut slopes removes the need for regular maintenance of the channel drains and the benches.

3.8.4.2 Erosion and Sediment Control

For an overview of the erosion and sediment management techniques and measures that will be used within the Project, including outline methodologies and management techniques, refer to the Erosion and Sediment Control - **Technical Assessment A**.

The main erosion and sediment control measures include:

- Clean water diversions, established as a physical barrier to prevent clean water attempting to enter the site, will be directed to discharge at points beyond the works location;
- Perimeter bunding, encompassing a treatment area for devices such as decanting earth bunds (DEBs) and sediment retention ponds (SRPs) prior to discharge;
- Use of check dams along flow paths and adjoining bunds to lengthen the approach paths to reach different treatment devices;

- Super silt fences, hay mulching and chemically treated SRPs to limit erosion and collect water-borne soil in a manner that manages adverse downstream effects;
- DEBs to provide a high level of sediment removal prior to discharge; and
- Progressive and rapid stabilisation of disturbed areas using mulch, aggregate and geotextiles during the construction phase.

3.8.5 Vegetation Clearance and Ecology

Construction works will require vegetation clearance to enable full site mobilisation for the establishment of access and haul roads, site compounds, laydown areas and stockpiles. This clearance includes the removal of plantation forest, exotic trees, pasture and indigenous vegetation. Proposed designation condition 24, developed through the NoR process, identifies 12 distinct indigenous terrestrial ecosystem types present within the Project area and provides a maximum allowance for removal per ecosystem as presented in Table 3-4 below.

The Project's current design has resulted in the need for significantly less vegetation clearance when compared to the indicative designing support the original NoRs, which has been achieved through the design amendments. Therefore, the Project's proposed extent of vegetation removal within the designation corridor as modified is within the maximum areas proposed to be allowed for under proposed designation condition 24.

Table 3-4 Maximum area for vegetation clearance provided by proposed Designation Condition 24

Ecosystem Type	Maximum Area of vegetation or habitat able to be removed pursuant to proposed designation condition 24 (ha)
Secondary broadleaved forests with old-growth signatures	2.39
Old-growth treelands (including Ramarama Area)	0.26
Kānuka forests (CH4000 – 4400)	1.00
Kānuka forests (elsewhere)	0.59
Advanced secondary broadleaved forests (CH5600 – 5800)	0.09
Advanced secondary broadleaved forests (elsewhere)	0.41
Secondary broadleaved forests and scrublands (CH6100 – 6400)	0.03
Secondary broadleaved forests and scrublands (elsewhere)	14.12
Mānuka and kānuka shrublands (CH6100 – 6400)	0.00
Mānuka and kānuka shrublands (elsewhere)	3.63
Divaricating shrublands	0.33
Old-growth forests (alluvial)	0.15
Old-growth forests (hill country)	0.86
Raupō dominated seepage wetlands (high value)	0.13
Indigenous-dominated seepage wetlands	1.12

(moderate value)	
Exotic-deominated wetlands (low value)	2.74

The vegetation removal areas for the Project have been estimated on the basis of a potential construction footprint. This potential construction footprint has been prepared by applying generalised construction buffers across the Project to estimate the quantum of ecological effects and is shown on the ecological plans in the Drawing Set. This is further described in the Terrestrial Ecology - **Technical Assessment F**.

The construction buffers have been applied in order to estimate the maximum amount of vegetation removal per vegetation type and are not intended as a 'maximum construction boundary'. This means that the Project works may occur outside this buffer, however the maximum area of vegetation clearance stated for the vegetation type must not be exceeded.

Both the Terrestrial Ecology - **Technical Assessment F** and the Water Quality - **Technical Assessment C** recommend the preparation of a Vegetation Clearance Management Plan. This Plan will include procedures for minimising the area and duration of soil exposure from vegetation clearance, minimising the volume of vegetation to be mulched, locating wood residue piles with an appropriate separation distance from any waterways, and minimising potential leachate from these piles.

4 Reasons for Consent

4.1 Introduction

The activities that require resource consents pursuant to sections 9(2), 13, 14 and 15 of the RMA and the One Plan are described in detail within the Rule Assessment at Appendix C and summarised below.

As explained earlier in this AEE, the land use components of the Project will be authorised by designations, and land use consents required under NES_{CS} will be sought from the territorial authorities as required.

Other than resource consents necessary for Enabling Works (discussed earlier in this AEE), all regional resource consents required for the Project are being sought as part of this application, whether they are explicitly specified or not.

The regional rules are contained in Chapters 13 to 18 of the One Plan. Reasons for resource consents being required under these chapters and under sections 9(2), 13, 14 and 15 of the RMA are set out in Sections 4.2 to 4.8 below.

4.2 Chapter 13: Earthworks and Vegetation Clearance

Chapter 13 of the One Plan contains objectives, policies and rules for land use activities and indigenous biological diversity.

Most properties that are traversed by the Project will, at least in part, be located in a Hill Country Erosion Management Area which is defined as 'any area of land with a pre-existing slope of 20 degrees or greater'.

On that basis, Rule 13-6 applies as it relates to land disturbance in a Hill Country Erosion Management Area, and Rule 13-7 applies to land disturbance and vegetation clearance in a Hill Country Erosion Management Area and within 10m of a watercourse. Therefore, the following land use consents are sought under Rule 13-6 and Rule 13-7:

- A **land use consent** is sought pursuant Rule 13-6 of the One Plan and sections 9(2), 14 and 15 of the RMA as a restricted discretionary activity for land disturbance and vegetation clearance (and associated diversion of water and discharge of sediment) within the Hill Country Erosion Management Area, but outside of a rare, at-risk or threatened habitat and not within 10 metres of a watercourse.
- A **land use consent** is sought pursuant to Rule 13-7 of the One Plan and to sections 9(2), 14 and 15 of the RMA as a discretionary activity for land disturbance and vegetation clearance (and associated diversion of water and discharge of sediment) within 10m of a watercourse, but outside of a rare, at-risk or threatened habitat.

Rule 13-6 and Rule 13-7 also provide for any discharge of sediment which is ancillary to the land disturbance or vegetation clearance. It is anticipated that these rules also provide for the discharge of water from any dewatering which is treated with stormwater via the erosion and sediment control devices. Rule 13-6 and Rule 13-7, however, do not apply to activities in a rare, at-risk or threatened habitat as defined by Schedule F. This is discussed further in Section 4.2.1 below.

Where land disturbance and vegetation clearance are not within a Hill Country Erosion Management Area nor within 10m of a watercourse, nor within a Schedule F habitat, it is considered a permitted activity under Rule 13-5.

The matters of discretion specified in Rule 13-6 (timing of works, Erosion and Sediment Control (ESC), setback distances, compliance with Schedule E) are addressed in Section 6 of this AEE.

4.2.1 Schedule F Assessment

The 12 ecosystem types identified in the Terrestrial Ecology - **Technical Assessment F** correspond to six habitat types identified in Table F.1 of Schedule F of the One Plan as follows:

- Threatened:
 - Kahikatea-pukatea-tawa forest or treeland
 - Podocarp forest or treeland
 - Podocarp/tawa-mahoe forest or treeland
 - Kanuka forest or treeland
- Rare:
 - Seepage and spring wetland
 - Swamp and marsh wetland

However, to meet the definition of a rare habitat, threatened habitat or at-risk habitat under Schedule F these habitats must also meet at least one of the criteria described in Table F.2(a) for the relevant habitat type, and not be excluded by any of the criteria in Table F.2(b).

Each of the habitat types along the Alignment has been assessed by a Project Ecologist, and if they are considered to be rare habitat, threatened habitat or at-risk habitat under Schedule F (including Table F.2 (a) and (b)), then they are identified on the Terrestrial Ecosystem Plans (TAT-3-DG-E-4131 to 4137-A) of **Volume III**.

As well as the road itself and the construction footprint, there are a number of specific activities located within the areas identified as 'rare habitat' or 'threatened habitat'. These are:

- Eco-Bridge (BR03);
- Five culverts (CU-07, CU-08A, CU-09, CU-14, CU-15);
- One stormwater treatment device (Wetland 03);
- One stream diversion (SD-EC05-01); and
- Six cut off drains.

These activities within the areas identified as 'rare habitat' or 'threatened habitat' (as shown in Terrestrial Ecosystems Plans in **Volume III**) require the following non-complying activity consent pursuant to Rule 13-9 and sections 9(2), 13, 14 and 15 of the RMA:

- A **land use consent** is sought pursuant to Rule 13-9 of the One Plan to and section 9(2) of the RMA as a non-complying activity for earthworks and vegetation clearance within a rare habitat or threatened habitat.
- A **land use consent** is sought pursuant to Rule 13-9 of the One Plan and section 13 of the RMA as a non-complying activity for activities (BR03, SD-EC05-01 and five culverts) in the bed of any lake or river, within a rare habitat or threatened habitat.
- A **water permit** is sought pursuant to Rule 13-9 of the One Plan and section 14 of the RMA as a non-complying activity for the taking and diversion of water (dewatering, diversion and drainage) within a rare habitat or threatened habitat.

- A **discharge permit** is sought pursuant to Rule 13-9 of the One Plan and section 15 of the RMA as a non-complying activity for discharges of sediment during construction to a rare habitat or threatened habitat.
- A **discharge permit** is sought pursuant Rule 13-9 of the One Plan and section 15 of the RMA as a non-complying activity for discharges of stormwater (once operational from Wetland 03) to a rare habitat or threatened habitat.

4.3 Chapter 14: Discharges to Water and Land

Chapter 14 of the One Plan contains objectives, policies and rules for discharges to water and land (not within a rare, threatened or at-risk habitat).

In the event that dewatering occurs outside a rainfall event (i.e. the groundwater is not contaminated with sediment), the groundwater could be discharged back to the source (to the closest waterbody). Provided the activity is not within an at-risk habitat or a rare or threatened habitat, the discharge of groundwater will be a permitted activity pursuant to Rule 14-12. Should the groundwater be entrained with sediment or not able to meet the other conditions of this Rule 14-12, the groundwater will be treated via the sediment control pond/devices and will be subject to the resource consent requirements under Chapter 13.

Except for the discharges within Schedule F habitats addressed above, all other stormwater discharges from the treatment devices (i.e. operational stormwater discharges) set out in the Stormwater Management - **Technical Assessment B** can comply with the permitted activity standards of Rule 14-18.

There is the potential for contaminants (other than sediment) to be discharged to the environment in the event of accidental discovery of contaminated soil. To prevent any discharges to the environment occurring, and to ensure Chapter 14 is not applicable, the CSMP (**Volume VII**) will be implemented.

Where filling (including the disposal of excess cut material) occurs using material sourced from the Project (that is, the material is not imported) it is considered that this falls within the One Plan, definition of 'cleanfill material' in the One Plan and Rule 14-21 applies. It is considered that cut to fill is covered by the land disturbance provisions in Chapter 13 of the One Plan. In addition, the use of material imported to the Project site as engineered fill and for track and road surfacing falls within the definition of 'cleanfill material' in the One Plan and Rule 14-21 applies. However, the placement of fill will potentially not comply with the volume limits of Rule 14-21(b) and/or the location standards in Rule 14-21(c). As a precaution, the Transport Agency has applied to discharge imported fill pursuant to Rule 14-30. In summary, the activities requiring resource consent under s15 of the RMA and Chapter 14 are:

- a **discharge permit** is sought pursuant to Rule 14-30 of the One Plan and section 15 of the RMA as a discretionary activity for discharges of fill, not complying with Rule 14-21.

4.4 Chapter 15: Discharges to Air

Chapter 15 of the One Plan contains objectives, policies and rules for discharges to air. In particular, the discharge of dust must not result in offensive or objectionable odour, dust, smoke or water vapour at the boundary of any sensitive area as defined in Policy 15-2(d). Policy 15-2(d) defines sensitive areas as:

- a) Residential buildings;
- b) Public places and amenity areas where people congregate;
- c) Education facilities;
- d) Public roads;

- e) *Surface water bodies;*
- f) *Wahi tapu, marae and other sites of significance to hapū and iwi;*
- g) *Domestic, commercial and public water supply catchments and intakes;*
- h) *Rare habitats, threatened habitats and at-risk habitats; and*
- i) *Sensitive crops or farming systems (including certified organically farmed properties and greenhouses).*

As set out in the Air Quality - **Technical Assessment E**, provided the Dust Control Procedure (included in the ESCP, **Volume VII**) is complied with, the permitted activity standards of Rule 15-16 will be met.

4.5 Chapter 16: Takes, Uses and Diversions of Water, and Bores

Chapter 16 of the One Plan contains objectives, policies and rules for the take, use, damming or diversion of water (not within a rare, threatened or at-risk habitat).

Groundwater will be encountered in a number of cuts along the route and dewatering will be required. As volumes are unknown, it cannot be confirmed whether the take of groundwater will exceed the maximum volume permitted under Rule 16-2, and therefore a groundwater take is applied for pursuant to Rule 16-9.

Drainage activities and diversions within Schedule F habitats are addressed above. All other drainage is able to comply with the permitted activity standards of Rule 16-11. Approximately 39 other stream diversions are required as part of the Project. As stated in Stormwater Management - **Technical Assessment B** none of the stream diversions can comply with the permitted activity standards of Rule 16-12, due to their length and proximity to infrastructure and therefore require resource consent pursuant to Rule 16-13.

In summary, the activities requiring resource consent under section 14 of the RMA and Chapter 16 are:

- A **water permit** is sought pursuant to Rule 16-9 of the One Plan and to section 14 of the RMA as a discretionary activity for the taking of water (dewatering); and
- A **land use consent** is sought pursuant to Rule 16-13 of the One Plan and section 14 of the RMA as a discretionary activity for the diversion of streams.

4.6 Chapter 17: The Beds of Rivers, Lakes and Artificial Watercourses, and Damming

Chapter 17 of the One Plan contains objectives, policies and rules for activities involving the beds of rivers and lakes (not within a rare, threatened or at-risk habitat).

The Manawatū River at the location of the Manawatū River Bridge (BR02) is identified as a Site of Significance – Cultural in accordance with Schedule B. The Manawatū River Bridge includes a pier in the river bed which requires excavation and piling. Therefore, a resource consent is required pursuant to Rule 17-3. The construction of the bridge will require temporary ancillary activities including the diversion of water.

Five culverts (CU-07, CU-08A, CU-09, CU-14, and CU-15), are located within Schedule F habitats as described above. As set out in the Stormwater Management - **Technical Assessment B**, the other 20 cross culverts (CU01 to CU20), and six of the eight access culverts (ACU02 to ACU07) exceed the standards of Rule 17-10, mostly due to length. Approximately 13 culverts proposed are to be constructed 'offline' and not within the streambed. That is, the primary activity is a stream diversion being applied for pursuant to Rule 16-13. However, for completeness, a land use consent pursuant to

section 13(1) of the RMA and Rule 17-23 is being sought for all culverts and stream diversions proposed as part of the Project.

The Project involves the construction of a bridge (BR07) over the Mangamanaia Stream. The banks of the Mangamanaia Stream will be modified to accommodate farm access tracks. Scour protection is also proposed around the bridge abutments. The Mangamanaia Stream, at the location of the bridge, is identified as a having Schedule B Value of Flood Control and Drainage, and therefore, a land use consent pursuant to section 13(1) of the RMA and Rule 17-15 is being sought for works associated with BR07.

In summary, the activities requiring resource consent under Chapter 17 and section 13 of the RMA are:

- A **land use consent** is sought pursuant Rule 17-3 of the One Plan and section 13 of the RMA as a discretionary activity for the placement of a bridge over the Manawatū River (and associated disturbance, diversion, deposition and discharges), which is identified as a Schedule B – Site of Significance – Cultural.
- A **land use consent** is sought pursuant to Rule 17-15 of the One Plan and section 13 of the RMA as a discretionary activity for the placement of a bridge over the Mangamanaia Stream (and associated disturbance, diversion, deposition and discharges) which is identified as Schedule B – Value of Flood Control and Drainage.
- A **land use consent** is sought pursuant to Rule 17-23 of the One Plan and section 13 of the RMA as a discretionary activity for the proposed culverts and associated disturbance, diversion, deposition and discharges, within watercourses which cannot comply with Rule 17-10.

4.7 Permitted Activities

Resource consents are not required for activities that are permitted activities under the RMA and the One Plan. As discussed in the above sections, resource consents are not considered to be required in the following circumstances:

- For vegetation clearance (and associated diversion of water and discharge of sediment), which pursuant to Rule 13-5 and sections 9(2), 14 and 15 of the RMA is a permitted activity in the following instances:
 - a) Outside of the Hill Country Erosion Management Area, where the proposed vegetation clearance is:
 - i. not in an at-risk, rare or threatened habitat;
 - ii. more than 5m from the bed of a river;
 - iii. more than 10m from a wetland identified in Schedule F.
 - b) in the Hill Country Erosion Management Area, where the proposed vegetation clearance is:
 - i. not in an at-risk, rare or threatened habitat;
 - ii. 1ha or greater per property;
 - iii. vegetation greater than seven years of age;
 - iv. more than 10m from the bed of a river or wetland identified in Schedule F.
- For the discharge of construction and operational stormwater outside of rare, threatened or at-risk habitats, which is a permitted activity pursuant Rule 14-18 and section 15 of the RMA.
- For the discharge of dust during earthmoving, which is a permitted activity pursuant to Rule 15-16 and section 15 of the RMA.
- For the taking, diversion and discharge of drainage water outside of at-risk, rare or threatened habitats, which is a permitted activity pursuant to Rule 16-11 and sections 14 and 15 of the RMA.

4.8 Offsetting sites

It is noted that extensive planting is proposed in the Terrestrial Offset and Compensation - **Technical Assessment G** and riparian planting in the Freshwater Ecology - **Technical Assessment H**. While it is highly unlikely that resource consents will be required for planting, once landowner agreements are finalised, any resource consents required for offsetting will be sought if these are determined as being required.

Planting of vegetation, particularly indigenous vegetation, is generally encouraged through the One Plan policy framework. While it is considered unlikely that resource consents will be required for the terrestrial and / riparian planting proposed (discussed above), the One Plan rules framework does place some restrictions on this activity. Rule 17-15 – “*Activities affecting Schedule B Value of Flood Control and Drainage*” requires Discretionary Activity resource consent for certain activities on land adjacent to waterways with this Value, including planting and the erection of fencing perpendicular to a river or artificial watercourse.

An assessment of indicative sites proposed by the Transport Agency has been undertaken and this indicates that consents are unlikely to be required. However, the Transport Agency will consider potential further consenting requirements associated with planting and fencing once specific details are finalised and landowner agreements are in place.

This is considered appropriate in the circumstances because final details of the indicative sites are yet to be confirmed (e.g. final areas, detailed fencing plans etc.) and because a degree of flexibility is necessary due to ongoing engagement occurring with landowners and stakeholders such as Horizons and DOC to finalise specific details. Consultation with Horizons' Operations Team will also be important if future planting and fencing requirements do trigger a requirement for consent under Rule 17-15.

4.9 Summary of Resource Consents Required

4.9.1 Construction Phase Resource Consents

The following five resource consents are required during the construction phase of the Project and therefore shorter duration consents (10 years) are sought:

- A **land use consent** is sought pursuant to Rule 13-6 of the One Plan and sections 9(2), 14 and 15 of the RMA as a restricted discretionary activity for land disturbance and vegetation clearance (and associated diversion of water and discharge of sediment) within the Hill Country Erosion Management Area, but outside of a rare, at-risk or threatened habitat and not within 10m of a watercourse.
- A **land use consent** is sought pursuant to Rule 13-7 of the One Plan and sections 9(2), 14 and 15 of the RMA as a discretionary activity for land disturbance and vegetation clearance (and associated diversion of water and discharge of sediment) within 10m of a watercourse, but outside of a rare, at-risk or threatened habitat.
- A **land use consent** is sought pursuant to Rule 13-9 of the One Plan and section 9(2) of the RMA as a non-complying activity for earthworks and vegetation clearance within a rare habitat or threatened habitat.
- A **discharge permit** is sought pursuant to Rule 13-9 of the One Plan and section 15 of the RMA as a non-complying activity for discharges of sediment during construction to a rare habitat or threatened habitat.
- A **water permit** is sought pursuant Rule 16-9 of the One Plan and section 14(2) of the RMA as a discretionary activity for the taking of water (dewatering).

4.9.2 Operational Phase Resource Consents

The following eight resource consents are required to remain in place post-construction of the Project. Therefore, the maximum duration of consent (35 years) is sought for the following activities:

- A **land use consent** is sought pursuant to Rule 13-9 of the One Plan and section 13 of the RMA as a non-complying activity for activities (BR03, one stream diversion and five culverts) in the bed of any lake or river, within a rare habitat or threatened habitat.
- A **water permit** is sought pursuant to Rule 13-9 of the One Plan and section 14 of the RMA as a non-complying activity for the taking and diversion of water (diversion and drainage) within a rare habitat or threatened habitat.
- A **discharge permit** is sought pursuant to Rule 13-9 of the One Plan as a non-complying activity to section 15 of the RMA for discharges of stormwater (once operational from Wetland 03) to a rare habitat or threatened habitat.
- A **discharge permit** is sought pursuant Rule 14-30 of the One Plan and section 15 of the RMA as a discretionary activity for discharges of fill.
- A **water permit** is sought pursuant to Rule 16-13 of the One Plan and sections 14 of the RMA as a discretionary activity for the diversion of streams.
- A **land use consent** is sought pursuant to Rule 17-3 of the One Plan and section 13 of the RMA as a discretionary activity for the placement of a bridge and associated disturbance, diversion, deposition and discharges, over the Manawatū River which is identified as a Schedule B – Site of Significance – Cultural.
- A **land use consent** is sought pursuant to Rule 17-15 of the One Plan and section 13 of the RMA as a discretionary activity for the placement of a bridge and associated disturbance, diversion, deposition and discharges, over the Mangamanaia Stream which is identified as Schedule B – Value of Flood Control and Drainage.
- A **land use consent** is sought pursuant to Rule 17-23 of the One Plan and section 13 of the RMA as a discretionary activity for the proposed culverts and associated disturbance, diversion, deposition and discharges, within watercourses which not comply with Rule 17-10.

4.9.3 Overall Activity Status

It is proposed to bundle the resource consent applications. With regard to the decision of *Newbury Holdings Ltd v Auckland Council* [2013] the most restrictive activity status is applied to the entire proposal. As one of the applications seeks resource consent as a non-complying activity, when bundled, the overall activity status for the resource consent applications is non-complying.

4.9.4 Summary

To avoid doubt, the Transport Agency is seeking resource consents for the activities described above (excluding resource consents necessary for enabling works) and any other regional resource consents required for the Project, whether they are explicitly specified or not. Therefore, all resource consents directly required as part of this Project for the ongoing operation and maintenance of the Project are being sought at this time.

5 Consultation and Engagement

5.1 Overview

This section provides an overview of partner, stakeholder and public consultation and engagement for the Project. It summarises engagement during each phase of the Project including the engagement tools and methods used, the parties engaged, and the engagement outcomes sought and achieved.

The consultation and engagement for the Project commenced in 2017 and has extended through a number of phases including issue identification, option evaluation and preferred option identification, the corridor alignment processes and currently, the development of the Project design as now proposed and lodged. In more detail this has included:

- DBC Phase (September 2017 – May 2018);
- NoR Development Phase (June 2018 – November 2018);
- NoR Consideration Phase (November 2018 - ongoing);
- Procurement Phase (February 2019 – May 2019); and
- Current Phase – Detailed Design and Resource Consents (July 2019 – ongoing).

Methods of engagement have included hui, one-on-one meetings, workshops, letters, newsletters and email distributions, community information sessions (open days), online campaigns, and advertising. A Community Liaison Group (CLG) was also initiated in October 2019. Feedback from this engagement has been essential in developing and influencing key aspects of the Project, and stakeholders have been advised on how their feedback has been used by the Project team.

A significant and consistent theme of feedback from local communities and stakeholders has been concern about the lack of a resilient and safe connection between Ashhurst and Woodville, frustration about the length of time since the closure of SH3 through the Gorge, and requests that the Project be completed as quickly as possible.

Following detailed discussions during the period June 2018 to June 2019, Rangitāne o Manawatū, Rangitāne o Tamaki nui-ā-Rua, Ngāti Kahungunu ki Tāmaki nui-a-Rua and Ngāti Raukawa became Project Iwi Partners and thus part of the team tasked with developing the design of the Project informed by technical assessment. This approach has helped the Project Team to develop a better understanding of cultural values and practice and to embed these concepts into the Project design and proposed construction methodologies.

This partnership and the ongoing process of engagement with local communities will continuously inform development of the Project's detailed design, and the construction phase of the Project.

5.2 Consultation Framework and Guidelines

5.2.1 Resource Management Act 1991 (RMA)

While consultation with potentially affected parties and stakeholders in advance of lodging applications for resource consent is not strictly required under the RMA, doing so is considered best practice, especially for major projects.

The Transport Agency places a strong emphasis on pre-application engagement and consultation, in line with its focus on exhibiting a sense of social and environmental responsibility (including by taking into account the views of affected communities). Engagement with tangata whenua is also important in light of the Transport Agency's Treaty of Waitangi obligations (including in respect of section 8 of the RMA).

A statement of any consultation carried out in relation to a project is required by Clause 1 of Schedule 4; this section of this AEE provides that description.

Within that framework, thorough and ongoing consultation has been carried out in the context of considering:

- The effects on the environment of the Project;
- Suitable and appropriate approaches to avoiding, remedying or mitigating adverse effects;
- Refinements to the proposed alignment of the new road, in order to minimise adverse effects while delivering on the Transport Agency's objectives;
- Developing the Project alongside tangata whenua as Project Partners; and
- The views, concerns and matters of importance to landowners, stakeholders and the community.

5.2.2 Land Transport Management Act 2003 (LTMA)

The Transport Agency is required by section 96(1) of the LTMA to exhibit a sense of social and environmental responsibility in meeting its objectives and undertaking its functions. The Transport Agency's approach to consultation and engagement for the Project is consistent with this principle.

5.2.3 Transport Agency Public Engagement Policy 2008

The Transport Agency's Public Engagement Policy identifies four key commitments to public engagement:

- Providing genuine opportunities for public contributions;
- Ensuring people are informed;
- Adopting an inclusive and representative approach to public engagement; and
- Maintaining high professional public engagement standards.

5.2.4 Transport Agency Public Engagement Guidelines (September 2016)

The Transport Agency's Public Engagement Guidelines (September 2016) set a framework for consultation with the public. By actively engaging the public in its decision-making, the Transport Agency aims to gain a better understanding of how people, communities and organisations are affected by its decisions and how it should balance its social, environmental, cultural and economic responsibilities.

The Transport Agency's overarching approach to effective stakeholder engagement is to develop strong collaborative relationships with stakeholders.

5.2.5 International Association for Public Participation (IAP2)

Engagement during each phase of the Project has been based on the principles and core values of the International Association for Public Participation (IAP2).

IAP2 provides internationally recognised consultation best practice principles. The community engagement spectrum of participation (refer to Figure 5-1 below) is based on the decisions to be made and the associated level of influence the community has on Project decision-making.

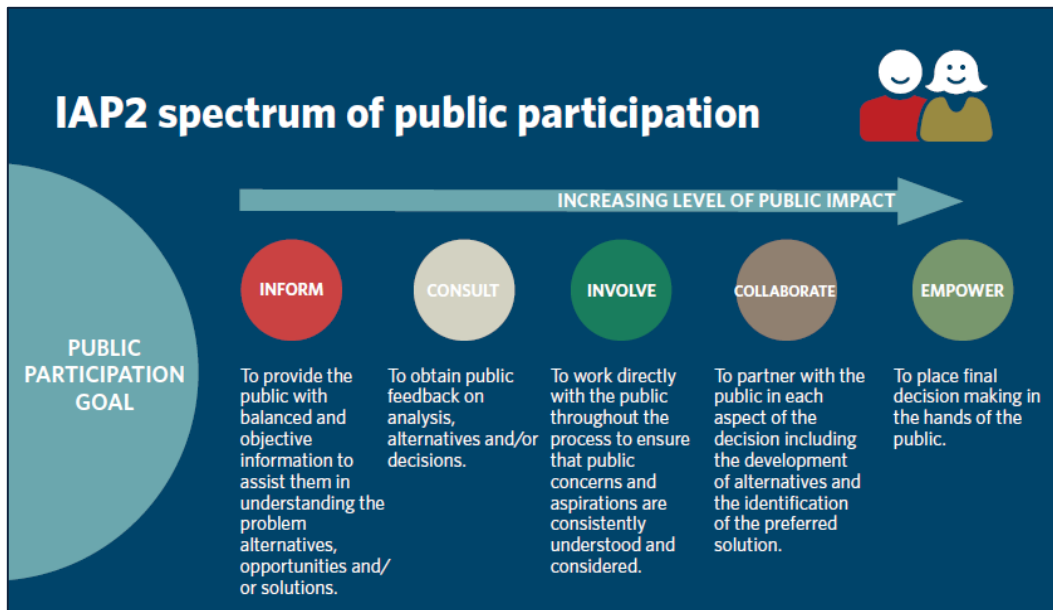


Figure 5-1 IAP2 Spectrum of Public Participation. Source: Transport Agency

5.3 Communications and Engagement Strategy (October 2019)

The Project team developed the Communications and Engagement Strategy (Strategy) to guide the ‘why’, ‘how’ and ‘when’ of engagement with key stakeholders. The Strategy was first developed for engagement during the DBC and NoR phase of the Project; it has been carried over (reviewed and updated as appropriate) to this resource consent phase. The Strategy is consistent with the Transport Agency’s Public Engagement Guidelines and commitment to apply an IAP2 participation spectrum approach.

The Strategy is based on the core principles of:

- Proactive communication;
- Responsiveness;
- Language and tone; and
- Transparency.

The Strategy is based on the core proposition of “A safe, resilient and efficient replacement for the closed State Highway 3 through the Manawatū Gorge as a top priority”.

The Outcome Statement identified in the Strategy is “Te Ahu a Turanga; Manawatū Tararua Highway supports economic development and growth for the central and lower North Island through a safe, efficient and resilient state highway network.”

5.3.1 Consultation objectives

The consultation and communication objectives for the Project are set out in the Communications and Stakeholder Engagement Strategy (Version 4, October 2019), and have been carried through the various phases. These objectives include to:

- Inform and liaise with stakeholders who are affected by or have an interest in the Project in order to increase the likelihood of mutually acceptable outcomes and better decisions;
- Gather information on allowing relevant opportunities, constraints and risks to be identified and scoped;

- Identify the values and priorities of stakeholders and the reasons for their position;
- Ensure the alternatives and options presented meet the outcomes sought and communications meet stakeholder expectations;
- Provide adequate opportunities to stakeholders and the public to become involved in the Project by utilising a variety of communication methods;
- Ensure all factors affecting the Project are adequately considered and documented after engaging with the community and stakeholders;
- Ensure Project constraints and impacts (engineering, social and environmental) are conveyed during consultation;
- Inform and liaise with the consent authority planners to allow for a collaborative approach leading up to, during and beyond lodgement for all statutory authorisations required for this Project;
- Meet the Transport Agency’s obligations under the RMA and LTMA; and
- Inform and seek feedback from tangata whenua. As outlined above, the Transport Agency has moved beyond informing and seeking feedback from tangata whenua to working with tangata whenua as Project Iwi Partners.

5.3.2 Communications and engagement tools and channels

The Transport Agency has engaged with parties in a proactive, transparent and responsive manner. The consultation and engagement approach for the Project has been to work collaboratively with key stakeholders and to be transparent and responsive in its engagement with the wider community. The tools used are presented in Table 5-1 below.

Table 5-1 Stakeholder and Public Engagement Summary

Tool	Description
Communications and Engagement Database	All communications and engagement activities with key stakeholders and the public are recorded in the Consultation Manager database.
Landowners	There has been regular communication and engagement with landowners through both written updates and face-to-face/phone interactions, to ensure landowners understand the Project, to understand any concerns and issues for those landowners and facilitate land access and future land purchases.
Stakeholder Meetings	Many stakeholder meetings have been held to present audience-specific information to key stakeholder groups and seek feedback.
Community Liaison Group	The CLG has been used as a forum to share information on detailed design of specific Project elements, including the Western Gateway Park, SUP, planned landscaping, mitigation works, construction environmental management (particularly construction traffic) and other key Project information.
Working Groups	Project team members and selected stakeholders have worked together on specific issues (for example, regional connectivity).
Regional Land Transport Committee	Regular Project updates have been given as part of the regular Regional Land Transport Committee meeting schedule.
Public Information Events	Numerous public information events and open days have been held to enable the public to view plans and designs, ask questions and discuss the Project with team members directly and to provide input and feedback.
Newsletter	A digital newsletter is sent to subscribers on a public email distribution list and is published in the Project website.
Online	Online channels are used to provide Project-related information and give the public a further opportunity to interact with the Project team: The Project website: https://www.nzta.govt.nz/projects/sh3-manawatu ;

	<p>Tweet: @NZTACNI;</p> <p>Facebook: www.facebook.com/nztacni;</p> <p>Email contact: manawatugorge@nzta.govt.nz; and teahuaturanga@nzta.govt.nz;</p> <p>Social Pinpoint: an on-line survey and comment platform, allowing users to provide feedback specific to certain areas of the Project (via a mapping tool).</p>
Dedicated Phone	A free phone number (0800 740 560) was set up to receive calls and answer queries from the public.
Media Releases / Press Briefings / Advertising	There has been considerable media interest in the Project. Media engagement has been proactive, with press releases, site visits and informal briefings at key stages throughout the process. Public meetings, open days and information sessions were advertised in local media.

5.4 Key Phases of Consultation and Engagement

The DBC phase of Project investigation considers the nature of problem that has occurred (in this instance the issues caused by the closure of the Manawatū Gorge Route) and how that is able to be solved. In broad summary the DBC developed a long list of options to solve the problem and following assessment and consultation a short list of options was selected. Further assessment and consultation in respect of the short list followed allowing a preferred option to be selected. The preferred option was then further assessed and developed and used for the basis of seeking designations by means of the NoRs.

The consultation and engagement that occurred in each of these phases of investigation are described below.

5.4.1 DBC Phase (September 2017 – May 2018)

The Transport Agency completed consultation and engagement on the **Option Long List** in September and October 2017. The assessment of long-listed options included public consultation and specialist assessment and took into account information provided through Project and stakeholder workshops.

5.4.1.1 Public meetings & engagement with potentially affected landowners

An initial list of 13 potential routes was released and public meetings were held in Palmerston North, Woodville and Ashhurst to explain these potential routes to the public (on 26 and 27 September 2017). Feedback was captured through face-to-face meetings, via the online Social Pinpoint tool, and through notification (letter/email) to potentially affected property owners. Through landowner and stakeholder feedback, the long list was extended to include another four options and the do-minimum. This resulted in 18 possible routes.

Feedback received during this phase included:

- 749 comments on Social Pinpoint¹⁴; and
- 66 responses to landowner notification letters/emails.

5.4.1.2 Stakeholder workshops

The following key stakeholder workshops were held:

- 4 September 2017 in Palmerston North – Project Introduction (presentation of the Project, process and programme; and
- 3 October 2017 in Palmerston North – Long list option analysis and feedback.

¹⁴ An online mapping tool for community engagement.

The following stakeholders and organisations were invited to the aforementioned workshops to discuss the long list and gather information around the problem, benefits of the Project and options developed:

- Rangitāne o Manawatū;
- Rangitāne o Tamaki nui-ā-Rua;
- Ngāti Kahungunu ki Tāmaki nui-a-Rua;
- MDC;
- PNCC;
- TDC;
- Horizons;
- DOC;
- Accelerate 25 – Manawatū business community;
- Road Transport Association New Zealand;
- New Zealand Heavy Haulage Association;
- New Zealand Automobile Association; and
- Fonterra New Zealand.

At that time, the iwi listed above were not Project Partners. This relationship developed later in the consultation process, as described earlier in Section 1.3.3.

5.4.1.3 Statutory Approvals Works Group

A Statutory Approvals Working Group was established at this time with planning representatives from the three Territorial Authorities and Horizons. This Group identified planning, social and environmental constraints of the options in relation to plan changes and growth plans. The first meeting occurred on 26 September 2017. The name of this group changed to RMA Planning Officers' Group from April 2018 reflecting the Project moving to the pre-implementation phase. Meetings were initially held on a monthly basis, which increased to fortnightly from July 2018.

The feedback received from the Group fell into the following key themes:

- Stability and reliability of the route;
- Need for a straight and short route;
- Avoiding significant impacts on property use and Ashhurst;
- Impacts on Woodville businesses; and
- To consider the wider connections to SH57 and SH2.

5.4.1.4 Short List Options - consultation & engagement activities

Following feedback and workshops the Option Short List was announced on 11 October 2017. Consultation on the Option Short List occurred during October 2017 and November 2017.

More than 400 people attended open days in Palmerston North, Woodville and Ashhurst on 11, 12, and 13 October 2017. Feedback received included 189 comments on Social Pinpoint and 35 written submissions.

A workshop was held on 2 November 2017 with the following parties:

- Rangitāne o Manawatū;

- Rangitāne o Tamaki nui-ā-Rua;
- Ngāti Kahungunu ki Tāmaki nui-a-Rua;
- MDC;
- PNCC;
- TDC;
- Horizons;
- Spearhead Manawatū/Accelerate 25;
- Road Transport Association New Zealand;
- NZ Automobile Association (Manawatū); and
- Fonterra New Zealand.

Additional meetings were held with the NZ Automobile Association (on 18 October 2017), Hawkes Bay Regional Land Transport Committee (on 24 October 2017) and the Statutory Approvals Working Group (on 25 October 2017).

In December 2017 a Joint Working Group was established, comprising of the Transport Agency, Accelerate 25, PNCC, MDC, TDC, Horizons, Road Transport Association NZ, NZ Automobile Association, NZDF and the NZ Heavy Haulage Association. The working group considered the future development of a regional freight network and how the short-listed options would enable or complement this.

On 25 January 2018 the Project team met with regional mayors, chief executives, councillors and senior officials of the Councils, iwi, and industry leaders, to discuss the process used to assess the short-listed options. MDC's Ngā Manu Tāiko Committee was briefed on the Project on 13 February 2018.

The feedback received on the Project fell into the following key themes:

- Travel efficiency and connectivity;
- Project delivery and cost;
- Impacts on Ashhurst; and
- The importance of future-proofing the route by providing sufficient lanes and passing lanes.

Feedback on each specific option was also received, which fell into the following key themes:

- Stability and reliability of the route;
- The need for a 'straight and short route';
- Reducing travel times;
- Avoiding significant impacts on property use and Ashhurst; and
- Providing connections to regional freight routes.

5.4.1.5 Preferred option

The preferred option was communicated to regional mayors, chief executives, chairs and senior officials of the Councils in early March 2018. The Statutory Approvals Working Group met to discuss the preferred option on 15 March 2018. The preferred option was publicly announced on 16 March 2018 via press release, the Project website, a Project newsletter and online channels.

The following key stakeholders were informed of the preferred option at meetings and by emails and phone calls on 15 March 2018:

- Rangitāne o Manawatū, Rangitāne o Tamaki nui-ā-Rua and Ngāti Kahungunu ki Tāmaki nui-a-Rua;
- MDC, PNCC, TDC, Horizons and other local authorities in the lower North Island; and
- KiwiRail, DOC, QEII Trust, Meridian, AgResearch, NZ Automobile Association (Manawatū branch), Road Transport Association NZ, NZ Heavy Haulage Association, Road Transport Forum NZ, NZDF, Spearhead Manawatū/Accelerate 25 and Massey University.

5.4.2 NoR Development Phase (June 2018 – November 2018)

The Transport Agency completed a number of briefings to organisations and held meetings with key stakeholders relating to the development of the NoRs for the Project. These include the meetings set out in Table 5-2 below. The Transport Agency continued to engage throughout and following the Council-level hearing, which took place in March/April 2019.

Table 5-2 Notice of Requirement Phase – Stakeholder Meetings Prior to NoR Lodgement

Stakeholder	Date (2018)
RMA Planning Officers Group	16 April, then monthly; and fortnightly from July
Meridian	14 June, 10 July, 3 August, 9 August, 23 August, 30 August, 19 September, 26 September
Territorial Authorities Economic Resourcing	22 June
Horizons – Freshwater Ecology	17 July
Tararua District Council – Workshop	25 July
Te Āpiti Governance Group	24 August
Heritage New Zealand Pouhere Taonga	28 August
AgResearch	16 July, 31 August, 25 October
Masterton Council Meeting (Combined Councils, including the Territorial Authorities and Horizons) - Briefing	7 September
First Gas	18 September
DOC	14 June, 20 September and 3 October
QEII Trust	3 October
Transpower	13 August
Local Road Control Authorities (Palmerston North City Council and Tararua District Council)	10 October

5.4.2.1 Public information sessions

Public information sessions presenting the preferred option (including an animated flyover) were held in July and August 2018. Three sessions were held in Ashhurst to discuss wider issues relating to proposals to mitigate the increased traffic through the town. Sessions and attendances were as follows:

- Ashhurst - 19 July, 20 July, and 21 July 2018 (181 visitors in total);
- Woodville - 25 July 2018 (128 visitors);
- Palmerston North - 26 July 2018 (108 visitors);
- Dannevirke - 31 July 2018 (157 visitors); and

- Pahiatua - 1 August 2018 (47 visitors).

54 feedback forms were received, with the key themes being time of Project delivery, and concerns about ongoing effects in the meantime on access to recreational and employment opportunities.

5.4.2.2 Stakeholder workshops

Stakeholder workshops were held in Palmerston North (10 August 2018 – Pre-Implementation update, and 4 October – Pre-lodgement Notices of Requirement) and attended by:

- Rangitāne o Manawatū, Rangitāne o Tamaki nui-ā-Rua, Ngāti Kahungunu ki Tāmaki nui-a-Rua and Ngāti Raukawa;
- The Territorial Authorities and Horizons; and
- DOC, QEII Trust, NZ Automobile Association (Manawatū branch), Road Transport Association NZ, NZ Heavy Haulage Association, Road Transport Forum NZ, NZDF, Accelerate 25, Massey University, Central Economic Development Agency, Environment Network Manawatū, FENZ, First Gas, Fonterra NZ, Royal Forest and Bird Protection Society of New Zealand Inc (Forest and Bird), NZ Trucking Association, NZ Police, Sport Manawatū, Manawatū Chamber of Commerce, and Transpower.

5.4.2.3 Tangata Whenua Values Assessments

Tangata Whenua Values Assessments were prepared by Rangitāne o Manawatū, Rangitāne o Tamaki nui-ā-Rua, Ngāti Kahungunu ki Tāmaki nui-a-Rua and Ngāti Raukawa and filed as part of and in support of the NoRs. These reports were presented as part of the Transport Agency's case at the Council-level hearing of the NoRs.

These assessments indicated that the NoRs would likely have an acceptable level of cultural effect and requested that iwi remain involved in the development of the design of the Project to ensure that the effects continue to appropriately avoided, remedied and mitigated. An area of particular concern for iwi related to ensuring that the approach to addressing effects on awa (rivers and streams) and on terrestrial ecological systems is appropriate. The reports were positive about the process of engagement with the Transport Agency and recognised the benefits of working in collaboration.

As part of the regional consenting process, Iwi Partners and Te Āpiti Ahu Whenua Trustees (in respect of Parahaki Island) have prepared CIAs which are provided in **Volume VI**.

5.4.3 Notice of Requirement Consideration Phase (November 2018 – ongoing)

The NoRs were publicly notified in November 2019. A number of submissions were made requesting that the Project design be expanded or adapted in response to a number of issues. By far the most significant number of submissions requested that the Project include / provide for the development of a shared use path (SUP) that connects into the existing network and complements plans of the Councils to develop / expand that network. This issue was debated and tested during the NoR hearings phase and ultimately the Transport Agency agreed to provide:

- A SUP along the length of the Project;
- A SUP connection between the Project and Ashhurst which would necessarily also include an improvement to the existing Ashhurst Bridge (to provide space for the SUP);
- A SUP from the Project to Woodville (which would ultimately form part of the Lindauer Arts Trail); and
- A 'recreational paths' fund of \$1 million, for various entities to investigate other potential connections to the SUP.

The main other issues raised in submissions and how ultimately these were responded to is described in summary below:

- Some residential landowners located close to the Project were concerned about noise and visual effects from the construction and operation of the Project. Accordingly landscaping and noise bunds were agreed to be designed and constructed in collaboration with landowners;
- AgResearch owns and operates a research facility at Ballantrae Farm, and was concerned about the effects on that research facility. Accordingly, a condition was proposed to ensure that effects on the facility were minimised;
- The QEII Trust was concerned about adverse effects of the Project on land that is subject to QEII Open Space Covenants. A condition was agreed requiring that the design of the Project and proposed construction methods be developed in consultation with QEII Trust; and
- Meridian was concerned about the potential effects of the Project on Te Āpiti Wind Farm and ultimately conditions were agreed restricting planting that could occur in the Farm and requiring that a management plan be prepared to ensure appropriate design outcomes and to manage and minimise construction effects.

The recommendation from the Hearings Panel was issued in May 2019 and the Transport Agency confirmed the designations in June 2019. This decision was appealed by DOC and QEII Trust in July 2019, who were concerned about the scale of effects on terrestrial ecosystems and thus about the ability of the Transport Agency to appropriately address those concerns. Forest and Bird, Meridian and the Territorial Authorities joined these appeals. J & G Bolton Limited and Mr S Bolton also joined these appeals (at a later date). A third appeal, brought by nearby landowners, was settled.

In order to address these concerns, the design of the Project was adjusted by pushing the Alignment further north relative to the areas subject to QEII Open Space Covenants, and by doubling the length of a proposed eco-bridge (from 150m to 300m). This adjustment significantly reduced effects on valuable ecosystems. In addition, adjustments to conditions were agreed with DOC, QEII Trust, Forest and Bird, Meridian, and the Territorial Authorities, providing enhanced protection measures for flora and fauna. These discussions underpin the current Project design (as shown in **Volume II and III**) and approaches to managing effects on ecosystems as are described in the Ecology Management Plan (**Volume VII**).

5.4.4 Procurement Phase (February 2019 – May 2019)

In the period between February 2019 and May 2019 the Transport Agency was (in parallel to the NoR phase) in a tender process with two shortlisted consortia with a view to selecting a party to form an alliance that would ultimately develop the design of the Project, secure all remaining required resource consents and then construct the Project. The tendering process required the two consortia to independently develop the design of the Project as a tender bid for the Transport Agency to evaluate.

As part of this process the Transport Agency required the two consortia to consult and engage with key stakeholders to inform their design development and proposed delivery methods. The winning tenderer from that process (referred to as the Alliance in this AEE) completed consultation and engagement sessions with the following Project Partners, interested organisations and key stakeholders, described in Table 5-3 below.

Table 5-3 Alliance Procurement Phase – Project Partner and Stakeholder Meetings

Project Partner / Stakeholder	Date (2019)
Rangitāne o Manawatū	12 March; 17 April; 7 May
Rangitāne o Tamaki nui-ā-Rua	13 March; 18 April; 7 May
Ngāti Raukawa	13 March; 5 April; 7 May
Ngāti Kahungunu ki Tāmaki nui-a-Rua	15 March; 18 April; 7 May
Landowners – Stuart Bolton; Andrew Bolton	6 March
AgResearch	22 March
Meridian	27 March
Horizons	21 March
Palmerston North City Council	1 April
Tararua District Council	12 April 2019
Manawatū District Council	12 April 2019
DOC	12 April 2019
KiwiRail	11 March
PowerCo	19 March
Transpower	2 April

During this phase the Alliance developed and proposed a design for the Project that sought to address relevant matters raised by the Project Partners and stakeholders and, where possible, address concerns that had been raised by submitters during the NoR phase. While a number of refinements were made to the concept design, a key design amendment was to shift part of the Alignment north (refer to Section 1.4.3 of this AEE, which discusses the Northern Alignment).

5.4.5 Current Phase (July 2019 – ongoing)

This section provides further detail on the consultation and engagement activities undertaken during the current phase (Detailed Design and Resource Consents) and provides an overview of the feedback from regulatory authorities, directly affected landowners, stakeholders and the local community and where appropriate, how this has informed both the design and the technical assessments which support this resource consent application.

The current phase has focussed on further developing the design of the Project from that presented during the NoR phase, taking into account that process and further feedback from Project Partners and stakeholders. This process has been informed by environmental assessments, input from Iwi Project Partners as well as ongoing discussions with landowners and stakeholders (for example, DOC). The process has been iterative, with designs being developed and then refined in response to concerns and issues raised while also furthering desirable Project outcomes. This process has informed the Project design, and the potential management, mitigation and offset measures proposed in this application.

During this period, while the Transport Agency held open public fora, engagement occurred predominantly on a one-on-one basis with partners and stakeholders in meetings, and workshops, via phone and email. In particular, this included:

- General liaison with Horizons and the Territorial Authorities;

- Detailed discussions and workshops with Horizons in respect of potential effects on water quality, stormwater, erosion and sediment control, natural character and ecology;
- Targeted joint ecology workshops with representatives of the Iwi Partners, Horizons, Te Āpiti Governance Group and DOC;
- Discussions with road user groups including Heavy Haulage Association, Road Transport Association NZ and NZ Automobile Association;
- Discussions with directly affected landowners including AgResearch and Meridian;
- Discussions with stakeholders and interest groups including QEII Trust;
- Establishment of and meetings with the CLG (29 October, 26 November 2019 and 18 February 2020);
- Establishment of a subcommittee of the CLG to consider the SUP and another subcommittee to consider the design of the Western Gateway Park. Additional sub-groups are anticipated to be established to consider specific design aspects over the coming year; and
- Public Information Sessions allowing local communities to be involved (from 13 to 21 August). Further Public Information Sessions are programmed for March 2020.

5.5 Consultation Feedback & Outcomes (Current Phase)

This section provides further detail on the consultation and engagement activities undertaken during the current phase (Detailed Design and Resource Consents) and provides an overview of the feedback from regulatory authorities, directly affected landowners, stakeholders and the local community and where appropriate, how this has informed both the design and the technical assessments which support this resource consent application.

5.5.1 Horizons and Territorial Authorities

5.5.1.1 Governance

A RMA Planning Officers Group comprising representatives of the Territorial Authorities and Horizons was established in July 2018 and met regularly during the NoR phase. This group has now been adjusted so that it can focus on the regional consenting process, Enabling Works applications and the forthcoming outline plan (required under s176A of the RMA and the proposed designation conditions). Accordingly, steering group meetings involving officers from the Territorial Authorities as well as Horizons have been held monthly (from 10 October 2019). The steering group meetings allow overall Project planning to occur and the participants to map out likely resource requirements and discuss issues.

5.5.1.2 Horizons

Discussions with planning officers at Horizons have been ongoing since June 2018 and have focussed on establishing systems and processes for ensuring that the Project design responds to the key issues, aims and objectives contained in the One Plan. Discussions have also focussed on ensuring that there is consistent and appropriate communications between Council Officers and the Project team and thorough consideration of relevant statutory obligations, and has included discussions about setting up a team that can service the requirements of the Project during the RMA processing phase as well as during implementation phases.

Since July 2019 discussions have also sought to ensure that the actual and potential effects of the Project are being identified and correctly assessed. This has in particular entailed:

- A site visit on 10 September 2019;

- Sharing the evolving planning programme (e.g. staging of Enabling Works resource consents; this application; critical workshop dates; lodgement etc.);
- Providing contact details of independent technical experts;
- Sharing of scopes of technical assessments;
- Workshops as follows:
 - Ecology Workshops on 1 October, 15 October, 29 October and 19 November 2019 (discussed further below);
 - Natural Character Method Workshop on 1 November 2019;
 - Water Quality Workshop on 5 November 2019;
 - ESC Method Workshop on 30 October 2019; and
 - Stormwater Design Workshop on 30 October 2019;
- Sharing draft documentation prepared in support of the resource consent applications including technical assessments and the AEE report;
- Weekly catch-up meetings with officers from Horizons commenced from 1 October to discuss technical matters and immediate priorities; and
- A presentation to the Horizons Environment Committee on 12 February 2020 to update Councillors on the current status of the Project.

5.5.1.3 Territorial Authorities

As described above, the Project team meets with the RMA officers of the relevant Territorial Authorities at the monthly steering group meetings. These are supplemented as necessary with meetings to discuss Enabling Works applications that are being sought in advance of the Main Works commencing. It is anticipated that more regular meetings with the Territorial Authorities will be required during 2020 as part of the process of preparing outline plan material, including management plans.

5.5.2 Joint activities - Ecology

A series of workshops have been convened to discuss how ecological effects should be assessed and how to develop a package of mitigation, offset and compensation measures that would deliver an ecological biodiversity net gain (with reference to the direction given in Policy 13-4 of the One Plan).

A workshop was held on 24 September 2019 with DOC in order to align understanding on process and to discuss the Biodiversity Offsetting Model (that has been developed by DOC). The ecological experts agreed to consider this approach and to discuss this with a broader audience, notably with the Project's Iwi Partners and Horizons.

A series of four further workshops were then held through October and November with the objective to agree on an approach to understand the scale of effects of the Project and to workshop an appropriate ecological response. These workshops were held on 1 October, 15 October, 29 October and 19 November 2019 and involved the following attendees:

- Iwi Partners, including their technical experts;
- Horizons' officers and independent planning and ecological experts;
- DOC officers and ecological experts; and
- Te Āpiti Governance Group representatives.

The workshops were supplemented with meetings of workshop participants as required.

5.5.3 Landowners

Numerous one-on-one meetings and discussions have occurred with the owners of land which the Project traverses and directly affects. These discussions have broadly related to:

- The design of the Project;
- Understanding how the land is currently used and how it could be used once the Project has been constructed, including opportunities for filling gullies with any excess spoil, ecological planting and landscaping;
- The anticipated construction programme;
- Discussions around construction effects, including maintaining property access during construction;
- Providing access for investigations and survey;
- The location of construction accessways;
- Approaches to managing potential construction and operational effects; and
- The property acquisition process.

The following landowners have been involved in these discussions:

- Mr T Shannon;
- Mr S Bolton;
- Braemoar Farms Limited;
- J & G Bolton Limited;
- Meridian;
- AgResearch (in respect of the Ballantrae Farm);
- Mr M Pringle;
- Mr A Bolton;
- Ms B Cooke and Mr N Shoebridge;
- KiwiRail;
- Te Āpiti Ahu Whenua Trustees (in respect of Parahaki Island);
- Land Information New Zealand (LINZ) (in respect of land held for Rail Purposes); and
- Landowners outside of the Project Area whose land can contribute towards the ecological mitigation and offsetting package.

Selected landowners are discussed in further detail below.

5.5.3.1 *Mr T Shannon (Nutcracker Farms)*

Part of the existing car park located to the west of the Gorge is located on Mr T Shannon's land. The Transport Agency's discussions with Mr Shannon have therefore been focussed on the reinstatement of the car park, including to meet the requirements of the relevant proposed designation condition, and how this will affect the future use of Mr T Shannon's land.

5.5.3.2 *Te Āpiti Ahu Whenua Trustees (in respect of Parahaki Island)*

The Trustees of Parahaki Island have been engaged in detailed discussions with the Project Team and the Transport Agency regarding the potential effects of the Project on the island. The Transport Agency has assisted research activities to help understand the cultural values of the Island and how they might

be affected by the Project. The Trustees have reported on these cultural values in a CIA (prepared in 2019) which in turn have informed discussions between the Transport Agency and the Trustees in respect of managing the effects of the Project on the Island (see **Volume VI**). This has included discussion regarding potential ecological restoration planting on the Island, which is proposed to be designed to ensure that effects are being appropriately managed. Discussions are also occurring in respect of the shape and form of the proposed Manawatū River Bridge, to help ensure that the Project responds appropriately to the cultural values of the Island and its surrounds.

5.5.3.3 Mr S Bolton

The Project team has had discussions with Mr Stuart Bolton about his long-term plans and this has included discussions on opportunities for ecological mitigation planting and potential walking and cycling tracks. Mr S Bolton has helpfully advised on locations of drains, water courses and on-site conditions generally that need to be considered when designing and then constructing the Project.

5.5.3.4 Mr A Bolton

Discussions with Mr Andrew Bolton have included opportunities for retiring riparian areas of the Mangamanaia Stream as part of the Project's ecological mitigation and offset package. In addition, Mr A Bolton has been involved in discussions about potential locations for spoil sites and access tracks, so that these complement / are consistent with the continued operation of the Farm.

5.5.3.5 Braemoar Farms Limited

Braemoar Farms Limited is affected by the proposed Northern Alignment shift. Engagement with Braemoar Farms Limited has focussed around land requirements associated with the Northern Alignment modification, opportunities for ecological restoration planting and general site access requirements, both for investigations (geotechnical and ecological) and longer-term construction access planning.

5.5.3.6 Meridian

Meridian meets with the Project designers and engineers to discuss detailed design on a monthly basis. Site access protocols have been agreed and each week a 'three week ahead' site visit schedule is provided. In addition, monthly Governance meetings between the Transport Agency and Meridian also occur to ensure that any necessary matters are being identified and resolved.

Detailed discussions and information sharing between Meridian and the Transport Agency/Alliance have occurred to ensure that the proposed re-alignment of Te Āpiti Wind Farm access tracks are consistent with Meridian's operational requirements. These discussions have extended to include wind modelling of the access tracks, the proposed spoil sites and the Project generally to help ensure that the Wind Farm operation is able to continue, and potential effects on the efficiency of the Wind Farm are understood and managed.

These discussions have also considered the SUP and how that can be appropriately accommodated through the Wind Farm, whilst allowing for user experience and connections to the broader network.

5.5.3.7 KiwiRail

Discussions with KiwiRail have occurred in respect of processes to avoid and manage potential effects on the railway network during construction and to agree design parameters and specifications. Discussions have also been held in relation to how ecological planting on either side of the railway line designation can be delivered in a manner that is consistent with rail requirements including future network improvement options and plans. These discussions are ongoing.

5.5.3.8 LINZ (in respect of land held for Rail Purposes)

Discussions with LINZ have been focussed on whether land located between the railway line and Mr S Bolton's land could be made available for ecological mitigation and offsetting. These discussions are

well advanced, and it is now considered likely that the land will be able to be used for ecological purposes.

5.5.3.9 Palmerston North City Council (Recreation Unit) (in respect of Ashhurst Domain)

Officers have been in discussions with the Project team about opportunities for restoration planting to occur within the Ashhurst Domain. PNCC has now agreed that in principle plans can be drawn up for retiring some of the Ashhurst Domain from farming purposes and using it instead for ecological purposes. More detail about these discussions is provided in Terrestrial Offset and Compensation - **Technical Assessment G**.

5.5.3.10 Ecological offsetting/compensation landowners

Numerous landowners have been approached in order to discuss opportunities to provide land for the stream offset and terrestrial offsetting/compensation package. Discussions have needed to ascertain interest in retiring and/or planting (and other measures) and survey work to calculate the contribution that work could make. The discussions have also addressed the need for ongoing legal protection of planted and retired areas. More detail about these discussions is provided in Terrestrial Offset and Compensation - **Technical Assessment G** and Freshwater Ecology – **Technical Assessment H**.

5.5.4 Stakeholders

There are numerous stakeholders and groups involved in the Project. They have a range of interests; participants have included those with interests in land, asset owners, people with interests in the Project's design and development, and others with broader ecological, tourism and economic interests. These interests tend to relate to the proposed design of the Project and ensuring that assets are protected / reinstated during construction.

In addition to those listed in preceding sections, the Project team has had various interactions with the following entities:

- Asset owners – PowerCo, Transpower, and the Territorial Authorities as road controlling authorities;
- A variety of transport network users including Heavy Haulage Association, the Police and other Emergency Services (such as fire and ambulance services), cycling and walking groups and local community groups;
- Economic interests – Central Economic Development Agency (CEDA), and a local Chamber of Commerce;
- Ecological stakeholder groups – DOC, Te Āpiti Governance Group, Forest and Bird, QEII Trust;
- KiwiRail and Ministry of Defence (including representatives from the Linton Army Base); and
- Education groups such as local schools and Kura Kuapapa, Massey University, and training providers including Talent Central, Connexis and BCITO.

5.5.4.1 Department of Conservation (DOC)

As an appellant in respect of the NoRs, initial engagement with DOC was via the Court-assisted mediation process and targeted workshopping in respect of their appeal. Following two rounds of Court-assisted mediation, DOC agreed to settle their appeal on the NoRs, subject to the Court endorsing the proposed Northern Alignment modification and amended conditions, which foreshadow information about offsetting and compensation being available through this consenting process.

Alongside the NoRs appeal process, there have been a significant number of discussions with DOC over the past 6 months, building on discussions in previous years about the Project, which have informed the assessment methodologies used, the design of the Project (including the shared use path, culverts, stream crossings, access tracks, earthworks and spoil site locations) and the proposed

construction methodologies. Discussions have occurred between the organisations' management, planning officers, and planning and ecological experts. Joint Iwi Partner and DOC sessions have also been held to discuss the development of the ecological response package.

A key dimension to the work has been the fortnightly ecological workshops described above. Critically, ecological experts for the Project team have agreed to use DOC's preferred Biodiversity Offsetting Model and guides that have been developed and adopted by DOC. Discussions and workshops with DOC have focussed on agreeing relevant parameters and assumptions that need to be developed when using the Biodiversity offsets accounting system (<https://www.doc.govt.nz/about-us/our-policies-and-plans/guidance-on-biodiversity-offsetting/biodiversity-offsets-accounting-system/>).

The outcomes of ecological reporting (supporting the resource consent application) have been provided to DOC for comment.

More details of liaison and discussion with DOC is provided in Terrestrial Ecology – **Technical Assessment F**, Terrestrial Offset and Compensation – **Technical Assessment G** and Freshwater Ecology – **Technical Assessment H**.

5.5.4.2 The Queen Elizabeth II National Trust (QEII Trust)

Like DOC, QEII Trust was an appellant to the NoRs and initial engagement followed a similar path, that being initially via the Court-assisted mediation process. QEII Trust has agreed to settle its appeal (subject to the Court) following Court-assisted mediation and on the basis of the Northern Alignment and agreed conditions being given effect. Targeted meetings have been held with QEII Trust to discuss the design and the outcomes of ecological reporting (supporting the resource consent application). In addition, ecological reporting has been provided to QEII for comment.

5.5.5 Public Information Sessions (August 2019)

One round of public and broader community engagement has occurred in the form of public information sessions. These were held in August 2019 to introduce the Alliance and share Project information in relation to the concept design.

The presenters at the open days provided supporting materials including posters, plans, geotechnical borehole samples, a video of ecological surveys and an animated flyover. The open days occurred on the following dates:

- Pahiatua - 13 August 2019 (approximately 23 visitors);
- Dannevirke - 14 August 2019 (approximately 79 visitors);
- Woodville - 15 August 2019 (approximately 62 visitors);
- Palmerston North - 20 August 2019 (approximately 31 visitors); and
- Ashhurst - 21 August 2019 (approximately 82 visitors).

The feedback from these sessions indicated that the following key issues were of primary concern to those communities:

- The Project should provide four lanes and not taper to two lanes across the top of the Ruahine Range;
- The Project was taking too long, and the construction start date should be brought forward so that the road can be opened sooner;
- There was general interest in the design of the SUP and associated facilities; and
- There was support for and interest expressed in the proposed Western Gateway Park.

Further Public Information Sessions are programmed from 10 March 2020. These sessions will focus on sharing the design and outcomes of the technical assessments in support of the regional consent applications (including the proposed package of mitigation, offset, and compensation measures) and to provide updated information on how the Project is proposed to be constructed.

5.6 Community Liaison Group (CLG)

As required by the proposed designation conditions, a community liaison group has been established, the purpose of which is to help inform the ongoing design of the Project (including the design of mitigation) and with managing effects during construction. The CLG meets monthly (and has so far met on 29 October 2019, 26 November 2019 and 18 February 2020) and is comprised of representatives of the following:

- Manawatū District Council;
- Palmerston North City Council;
- Tararua District Council;
- Horizons;
- Ashhurst School;
- Woodville School;
- Te Kohanga Reo o Atawhai;
- Rāngilique Laing (Learning Adventures);
- Te Āpiti Governance Group;
- Ashhurst Engineering;
- Manawatū Chamber of Commerce;
- Dannevirke Chamber of Commerce;
- Fonterra;
- CEDA;
- Heavy Haulage;
- Road Transport Association;
- Equestrian representative;
- Accessibility advocacy;
- Build the Path;
- Walking Group representative;
- Community based walking advocate;
- St John;
- Forest and Bird;
- Environment Network Manawatū (Manawatū River Source to Sea);
- DOC;
- Ashhurst Action;
- Ashhurst Property Brokers;

- Village Voice;
- Local residents of Ashhurst, Palmerston North, Pahiatua and Dannevirke;
- Sport Manawatū;
- Manawatū Mountain Bike Club;
- People on Bikes Forum; and
- CEDA (from second meeting).

The CLG established Terms of Reference for its operation and mandate, along with meeting regularity and locations. The CLG is provided with general Project updates, however the agenda is tailored to ensure a focus on those matters which the designation conditions require the CLG to be specifically engaged on. This includes matters such as the ecological response (terrestrial); the SUP (refer below) and the Western Gateway Park design.

The Group established the CLG SUP Working Group, a sub-group to specifically consider the design of the SUP that is proposed to be built as part of the Project. This sub-group met on 5 November, 12 November, and 20 November to progress the design development of the SUP. The group includes representatives from PNCC, Sport Manawatū, Build the Path, Manawatū Mountain Bike Club, equestrian interests, walking interests, and local Ashhurst and Woodville residents (who are also walking, accessibility and Lindauer Trail advocates). The sub-group has worked to inform the preferred alignment of the SUP (as shown within this application), with consideration and the balancing of the range of factors a key focus (e.g. consideration of gradients, end users, surfacing etc). The group has also considered the opportunities that the SUP provides in terms of broader connectivity and this has been a significant influence on the preferred alignment (i.e. the shifting of the alignment to the northern side of the highway at CH 8200).

The CLG has also established the Western Gateway Park Design Working Group, which will soon start focussing on the detailed design of this key Project element.

5.7 Ongoing and Future Consultation

The Transport Agency is committed to ongoing communication with all stakeholders through the consenting phase of this Project. The Strategy includes sharing Project information and providing updates via the Project newsletter, website, local media and social media. Iwi will remain partners in the Project through the phases to come. Working closely in consultation with other key stakeholders will also be an integral part of the detailed design process of the final Alignment (and subsequent processes).

The Alliance engaged to construct the final Alignment will implement a comprehensive communication plan both prior to and for the duration of construction works. The types of communication that the public could reasonably expect will be outlined in a Communications and Engagement Plan. As indicated above at Section 5.3, the Communications and Stakeholder Engagement Strategy has been updated to reflect the current phase (Version 4, October 2019).

The experience of the Transport Agency with other major construction projects around the country is that effective communication of information is one of the best ways to manage the effects of construction on people and communities.

6 Assessment of Effects on the Environment

6.1 Introduction

Pursuant to section 88 and Schedule 4 of the RMA, this application must include an assessment of any actual or potential effects that the activity may have on the environment, and information regarding the proposed measures to avoid, remedy or mitigate adverse effects. When considering an application for resource consent, regard must be had to any actual and potential effects on the environment of allowing the activity (section 104(1)(a) of the RMA).

In addition to the requirements under the RMA, it is also part of the Transport Agency's environmental policy and its operating principles under section 96(1)(a) of the LTMA to *exhibit a sense of social and environmental responsibility, which includes ... avoiding, to the extent reasonable in the circumstances, adverse effects on the environment.*

As set out in Section 7, avoiding adverse effects has been a key driver for the development of the Project's design. This Section 6 of the AEE summarises the positive effects of the Project on the environment, summarises its actual and potential adverse effects, and sets out the proposed methods for avoiding, remedying, mitigating and offsetting these effects for each of the Technical Assessments contained in **Volumes IV to VI**. These effects and methods are summarised below and reflected in the proposed conditions of consent (contained at **Appendix E**).

6.2 Positive Effects

While the consents sought from Horizons are largely for activities relating to the construction of the Project, once operational the Project will give rise to many significant benefits for the people of Manawatū, Tararua, and people travelling between and through the districts. Unless the Transport Agency obtains the necessary consents to construct the Project, these significant benefits cannot be realised; as such, they are important to consider in evaluating the application for consents.

Many of the benefits relate to the fundamental improvement to the state highway network that the Project will bring about, realising opportunities for recreational and active transport users and associated social benefits. These were reported on by specialists during the NoR phase of the Project¹⁵ and the relevant assessments include:

- Volume 2: Assessment of Effects on the Environment and Supporting Material (31 October 2018);
- Volume 3: Technical Assessment #1 Transport; and
- Volume 3: Technical Assessment #3 Social.

There are a number of positive effects associated with the implementation of the Project. An overview of the range and extent of those positive effects is set out below:

- A safer, more efficient transport route:
 - The Project results in improved safety performance and safer journeys for users of the new route when compared to the alternative routes in the current road network (Saddle Road and the Pahiatua Track) and the closed route through the Gorge, resulting in reduced social consequences of injuries and deaths.
 - Reliability in travel times will significantly improve as the capacity of the proposed route will result in little to no difference between travel times in peak or off-peak periods.

¹⁵ Available to view at <https://www.nzta.govt.nz/projects/sh3-manawatu/rma-consenting/>

- At a regional level, improved resilience, reliability and journey times will provide better access to key pieces of social infrastructure which are based in Palmerston North, including the ‘lifeline’ link between Tararua District and Palmerston North Hospital, as well as a high level of efficiency for all vehicles including emergency service vehicles and buses travelling between Palmerston North and Tararua District.
- Provide increased network resilience:
 - Completion of the Project will provide a greater level of resilience to the state highway network through improved route resilience, including in the event of crashes, slips and natural hazards. There is also an increase in motorists’ safety due to improved design responses to seismic activity, as well as ensuring post-rupture repairs can be easily and economically undertaken.
- Improved connectivity, modal choice and recreational benefits through the provision of the SUP and walking tracks including:
 - The provision of the SUP will provide greater travel choice as well as increased connectivity for active mode users. It will support health benefits from encouraging active modes of transport, both recreationally and by providing additional modes (such as for people commuting between Tararua District and Palmerston North) which were previously unavailable.
 - The provision of the viewing areas, walking tracks and the SUP will be attractive to pedestrians and potential cyclists who are not currently confident enough to travel along Saddle Road or the Pahiatua Track without the provision of a dedicated, separate facility.
 - The Project will develop tourism, leisure and recreational economies in the region by providing a SUP between Ashhurst and Woodville that connects with and expands the existing walking and cycling networks.
- Positive social effects including:
 - Reduced road noise and associated disturbance for residents in Ashhurst and around the outskirts of Woodville.
 - The diversion of heavy traffic out of Ashhurst will result in the reinstatement of the community’s way of life, connectivity and business activity prior to the closure of the Gorge route.
 - Increased traffic through Woodville resulting in increased business activity.
- Support regional economic activities and productivity including through reductions in operating costs and travel times:
 - There will be benefits associated with the certainty of the Project proceeding, travel costs and agglomeration economies as well as increased spending on goods and services and the opportunity to manufacture and supply construction materials.
 - The Project, and its construction, also has the potential to provide for enhanced socio-economic well-being of the region through increased business activity and the provision of direct, indirect and induced employment opportunities during the construction period.
- A range of environmental benefits including:
 - Net biodiversity gain through habitat restoration, riparian planting, stream retirement, stock exclusion fencing, maintenance and weed and pest control which will improve water quality and habitat connectivity, resulting in positive landscape and biodiversity enhancements within the area.
 - Providing stormwater treatment on the new highway (in comparison to the currently untreated Saddle Road), improving water quality in streams and contributing to the overall improvement of the Manawatū River and Pohangina River.

- The Mangamanaia Stream Crossing Bridge (BR07) is anticipated to reduce (albeit slightly) the net effect of the existing flood hazard of the Mangamanaia floodplain.

6.3 Geotechnical

A Geotechnical Technical Memorandum has been prepared (Appendix A of the DCR, **Volume II**), which summarises the geological setting of the Project and the design approach that has been taken to address the potential effects of the Project in relation to geological and geotechnical processes and constraints. These effects include land instability (discussed at Section 6.3.1 below) and effects associated with earthquake events (discussed at Section 6.3.2 below).

6.3.1 Land Instability

Land instability refers to land which has the potential to slip when saturated with water. The conditions that affect slope stability are geology, degree of weathering of the soil or rock mass, and slope angle and height. Land instability can result in adverse effects to life, property and infrastructure.

Land instability is the reason that this Project is required. The existing Gorge road has been subject to a number of major slips over the years to the point that it is now closed indefinitely as discussed in Section 1. Therefore, the key focus has been designing this Project to minimise risks and maximise resilience while unlocking the significant benefits that this Project provides.

A regional study was undertaken by the design team to map, measure, and assess the performance of major natural geological features and engineered cut and fill slopes in similar geology to those proposed for the Project within the surrounding regions. The study has been used to address specific geotechnical considerations for the Project design and mitigate any potential effects of the Project in relation to land instability hazards.

The risk of land instability is proposed to be managed and minimised by the Project in the following ways, which are described in more detail in the Geotechnical Technical Memorandum and on the Earthworks Typical Detail Drawings (TAT-3-DG-G-1251 to 1257 contained in **Volume III**):

- Three different cut slope designs are being employed on the Project – cut slopes with benches, mono-slopes, and cut slopes with soil nails. The cut slope designs have been informed by the observations from the study of existing cut slope performance in the region to try to minimise the erosion of the cut faces through height of the cut, angle of the slope and the placement of cut off drains and debris collection zones. Soil nail reinforcement will be used to maintain the stability of the upper residual soil where it is difficult to cut back the weaker layer to provide a gentle slope (such as due to a nearby site boundary or sensitive ecological environments); this will be the case between the northern abutment of BR02 and the southern abutment of Eco Bridge (BR03);
- All embankments are to be constructed at 3H:1V batters or flatter, except for the embankments at the interface between Manawatū River Bridge (BR02) and Eco Bridge (BR03) (CH 3900 to CH 4000 eastern side) and the QEII Gully (CH 5450 to CH 5620 southern side) which are proposed to be 1H:1V batter because of ecological and land constraints (but will have geotextile reinforcement for seismic purposes);
- Soft and organic materials within gullies and landslide debris will all be undercut, and all topsoil will be stripped and removed within the footprint of embankments and cut slopes to minimise instability. Drainage is also proposed to limit the saturation of these features; and
- Rock fall protection netting will be used in locations where it is deemed that rock fall may be a risk.

6.3.2 Earthquakes

As described in Section 2.3.2, the Project area is strongly impacted by the geological and seismological setting, with the Raukawa Fault at the western end and the Ruahine and Mohaka Faults at the eastern end of the Project being active faults. Due to the presence of active faults, there is potential for significant seismic activity that can result in the following effects, each discussed in more detail below:

- Liquefaction; and
- Shaking and mass movement.

6.3.2.1 Liquefaction

Liquefaction can lead to subsidence and lateral spreading. A liquefaction assessment carried out for the Project indicated that minor liquefaction potential is anticipated within the upper 3m of the younger river alluvial soils at CH 2900–3600 and CH 12600–14000 if high groundwater is encountered. However, any ground settlement induced by liquefaction as the result of a large earthquake is expected to be less than 100mm; as such, specific ground improvements to counter this risk are not required and have not been incorporated into the Project's design. The other areas are less prone to seismic liquefaction due to shallow rock and low groundwater tables.

6.3.2.2 Shaking and Mass Movement

Earthquake induced shaking and mass movement can result in damage to and/or destruction of structures or cut slopes built or constructed across, or near, fault lines. To mitigate potential negative effects of the active fault lines, specific features have been incorporated into the design, as explained below.

- Crossings of all identified faults along the alignment are proposed to use geogrid and geotextile reinforced rafts (within the upper 2-3m of the earthwork below the future road level). The compacted earth fill, together with the geogrid and geotextile layers, form a ductile and continuous reinforced earth structure over each of the fault zones;
- All bridge foundations and abutments have been designed in accordance with the Transport Agency's Bridge Manual¹⁶ to limit seismic induced horizontal displacement;
- A single span bridge at the Mangamanaia Stream Crossing Bridge (BR07), with fully integral pad footings, is considered the most robust and resilient way to span the fault and stream during seismic events. Additionally, the annual creep displacement experienced by this fault (at a rate of 1–5mm) is accommodated by the abutment pad foundations sliding on the MSE wall fill. Up to 500mm of relative displacement could occur over the 100-year life of the bridge. The bridge and the MSE walls have been designed for the resulting actions from gradual and sudden sliding motions;
- For larger embankments (higher than 25m), geotextile reinforcement will be placed within the embankment in order to reduce the potential seismic induced embankment displacement; and
- The effect of seismic topographic amplification (acceleration of a seismic wave from the bottom of a large cut to the top) has been incorporated into the design based on the Transport Agency's research report 613 'Seismic design and performance of high cut slopes' (Brabhakaran et al., 2018).

These design features ensure motorists' safe and continuous crossing over the fault zones during any abrupt fault rupture events while post-rupture repairs can be easily and economically undertaken.

¹⁶ 3rd Ed Amendment 2 (2013)

6.3.3 Summary

The geotechnical design of the Project is in accordance with the required standards as specified in the Transport Agency's Bridge Manual to minimise as far as practicable any potential adverse effects on life, infrastructure and property from natural hazards, including land instability and earthquake induced effects, once the Project is operational.

6.4 Earthworks and Erosion and Sediment

An Erosion and Sediment Control (ESC) - **Technical Assessment A** has been prepared to assess the potential effects of earthworks, including erosion and sediment mobilisation during construction phase of the Project. This assessment informs, and should be read in conjunction with, the Water Quality - **Technical Assessment C** and the Freshwater Ecology - **Technical Assessment H**.

Section 6.4.1 outlines the methodology used for the ESC - **Technical Assessment A**, Section 6.4.2 addresses the actual and potential effects of earthworks activities, Section 6.4.3 provides an overview of the mitigation measures proposed to be employed and Section 6.4.4 provides a summary.

6.4.1 Assessment Methodology

The assessment focuses on erosion and sediment related effects as a result of construction activities such as earthworks. Furthermore, it identifies and recommends ESC methods, practices and standards to be implemented during construction to avoid, remedy, or mitigate potential effects of the Project.

The effects of earthworks are calculated and assessed using sediment yield. The most commonly used tool, and the tool used for calculating the sediment yield for this Project, is the Universal Soil Loss Equation (USLE). The USLE calculates the estimated sediment yield (in tonnes per year) for the initial year's earthworks (given the first year is considered the most significant due to first exposure of the land and steepest initial slopes) in each stream catchment based on the area of earthworks within the catchment. An estimate of sediment yield for the same area under the existing land use conditions is also calculated. The existing sediment yield is then discounted from the predicted earthworks sediment yield to calculate the additional load that will result from the earthworks across that period. This is done in recognition that sediment loads also exist in waterways from sources such as sediment laden runoff from existing pasture, forest, stream bank and bed erosion, land slips and farm tracking sources not resulting from the Project.

Eight USLE estimates have been undertaken for each stream system that crosses the Project alignment (refer Table 2 of the Hydrology - **Technical Assessment D**). The USLE method involves a number of conservative assumptions and therefore provides conservatively high estimates. This conservatism is confirmed through comparisons with continuous monitoring and reporting from other recent roading projects which provide a greater level of certainty in estimating sediment yield and validate the performance of proposed erosion and sediment control measures.

The assessment also identifies the erosion and sediment control philosophy and the principles to be applied on the Project, along with a series of risk mitigation tools. The erosion and sediment control design has been prepared in accordance with the Auckland Council Guideline Document 2016/005 *Erosion and Sediment Control Guideline for Land Disturbing Activities in the Auckland Region* (GD05) which is regarded as industry best practice. GD05 is also the standard required to be used by the Project's proposed designation conditions.

6.4.2 Effects

As outlined in Section 3.8.4 of this AEE, earthworks are required across the Project alignment and will result in approximately 4,600,000m³ of cut to fill and 1,200,000 m³ of cut to waste (1,800,000 m³ when accounting for bulking factor) over a total area of approximately 195 hectares. The construction phase

of the Project has the potential to result in changes to existing water quality and the health of freshwater habitats as a result of discharges of sediment from earthworks, instream works, and the discharge of other construction related contaminants. Sediment will be discharged over short durations during wet weather events and it is recognised that works within, or directly adjacent to, waterbodies pose a higher risk due to their proximity to the receiving environments.

Without appropriate erosion and sediment control measures, earthworks activities have the potential to result in large additional discharges of sediment to waterbodies. The Erosion and Sediment Control Assessment focusses on the mitigation and management of the sediment load in order to minimise the effects of earthworks. The effects of downstream sedimentation are assessed in the Water Quality - **Technical Assessment C** and the Freshwater Ecology - **Technical Assessment H** and summarised respectively in Sections 6.7 and 6.11 below.

Post-construction sedimentation effects are likely to be limited to potential erosion at the outfalls of stormwater reticulation and treatment devices. However, such effects are appropriately minimised by proposed design elements and proposed consent conditions.

6.4.3 Mitigation

Erosion and sediment control measures will be undertaken and implemented through a range of structural (physical works) and non-structural (methodologies and construction sequencing) measures to minimise and control sediment generation and migration as far as practicable.

Three of the key activities that will be undertaken to mitigate and manage erosion and sediment include:

- **Stabilisation:** Progressive and rapid stabilisation of disturbed areas using mulch, aggregate and geotextiles will be on-going during the construction phase. Temporary stabilisation will apply particularly with respect to stockpiles, ground improvement locations where topsoil is removed, concentrated flow paths and batter establishment. Permanent stabilisation will be carried out in accordance with the final design parameters and is likely to comprise establishing vegetation (e.g. topsoil and planting), placing of mulch and exposing of rock. Stabilisation will be undertaken according to the soil type, geology and time of year, with the intent of achieving an 80% vegetative cover or non-erodible surface over the entire exposed area. Stabilisation is designed for both erosion control and dust minimisation and will be progressively implemented;
- **Works within a waterbody:** Stream works will be undertaken in a manner that recognises the higher risk of this activity, from a sediment generation and discharge perspective, and the sensitivity of the receiving environments. Works within active stream channels and any associated works will be undertaken in a 'dry' environment. This will be based upon diversion of flows around the area of works or undertaking construction 'off-line'. Consideration will also be given to peak fish spawning and fish migration periods (if relevant) under the instruction of the Project Ecologist, during which time stream works will be carefully managed or avoided; and
- **Chemical treatment:** To the greatest extent practicable, sediment run-off from earthworks areas, including areas where spoil is placed in gullies, will be controlled by chemically treated sediment retention ponds (SRPs) and decanting earth bunds (DEBs). SRPs are considered to be the most efficient sediment retention device for earthworks in all environments.

A draft ESCP has been prepared (and is contained in **Volume VII**) which guides the overall principles and methodology to be adopted. It sets out a detailed framework for the management, mitigation and monitoring measures to be implemented during the construction of the Project. A range of erosion and sediment control devices and mechanisms are proposed and each of these is discussed in more detail within the ESCP. These are shown on the corresponding ESC Drawings (contained in **Volume III**).

The ESCP is supported by a number of specific management plans and procedures as outlined by Table 6-1 below:

Table 6-1 Supporting Erosion and Sediment Control Management Plans and Procedures

Specific Management Plan / Procedure	Purpose
Chemical Treatment Management Plan (CTMP)	A management framework for the implementation of chemical treatment of devices. A chemical analysis and reactivity test has been completed which analyses the responsiveness of various soils along the Project alignment to chemical treatment which will maximise treatment device efficiency by enhancing sediment settlement rates.
Erosion and Sediment Control Monitoring Plan (ESCMP)	An ESCMP ensures that ESC measures have been designed, installed and managed in accordance with the ESCP. The monitoring will also provide continual feedback to ensure successful ESC performance and early detection of activities or problems that have the potential to result in an adverse environmental effect. The regular monitoring will be supported by monitoring of the chemical treatment systems, weather, and rainfall trigger events, and will include wet weather responses and contingencies, and reporting.
Dewatering Procedures	Provides the procedures for dewatering excavations.
Emergency Spill Response Procedure	Provides an overview of key potential emergency spills and the appropriate response as well as the responsibilities of key personnel.
Stream Works Procedure	Provides an overview of the key risks and methodologies associated with stream works activities.
Hazardous Substances	Provides an overview of the hazardous substances that may be required on site for construction management purposes and any associated methodologies.
Dust Control Procedure	Provides an overview of the methodologies to be employed to achieve the required level of dust management.

All earthworks activities are to be undertaken in general accordance with the ESCP.

The Contractor is also required to provide SSES CPs. SSES CPs provide management of specific sites and activities including confirming specific construction constraints and opportunities as well as the erosion and sediment control devices and methodologies.

This approach enables flexibility, innovation and practicality of ESC measures while still ensuring the potential effects are managed appropriately, in accordance with best practice. For the purposes of this application and to demonstrate the level of detail these plans will provide, three example SSES CPs have been provided for the following locations/activities:

- The Eco Bridge (BR03) area;
- Culvert 8 (CU-08) at CH 7850; and
- CH12100 – CH12900.

All erosion and sediment controls will meet the minimum criteria of the GD05 Guidelines. A final ESCP and final SSES CPs will be submitted to Horizons prior to commencement of works for certification as required by the proposed conditions of consent.

6.4.4 Summary

The assessment provides a conservative understanding of the potential sediment yield that may arise as a result of construction activities including earthworks. Furthermore, it identifies and recommends erosion and sediment control methods, practices and standards to be implemented during construction to avoid, remedy, or mitigate potential effects of the Project. Erosion and sediment controls will be

installed to minimise, capture and treat sediment laden runoff that would otherwise enter the receiving environment.

Provided that SSESCPs are prepared in accordance with the erosion and sediment control measures outlined in the ESCP and associated drawings, any actual and/or potential effects associated with erosion, soil mobilisation, sedimentation and discharges to receiving environments will be temporary in duration and will be appropriately managed and mitigated to the extent that they are no more than minor.

6.5 Stormwater Management

A Stormwater Management - **Technical Assessment B** has been prepared which details the operational stormwater management design proposed for the Project. The proposed stormwater design including the conveyance system, treatment devices, culverts and stream diversions are summarised in Section 3.6 of this AEE and are not repeated here.

This assessment solely focuses on the operational stormwater management design and therefore the effects in terms of stormwater quantity, stormwater quality and the BPO, which are summarised below. This assessment informs, and should be read in conjunction with, the Water Quality - **Technical Assessment C** and Freshwater Ecology - **Technical Assessment H** for effects downstream of the discharge locations.

6.5.1 Assessment Methodology

The design methodology of the stormwater drainage and management systems for the Project has taken into account the key design standards and guidance documents listed in Appendix 1 of the Stormwater Management - **Technical Assessment B**. The following are the key parameters and principles that have influenced the stormwater design:

- The rainfall parameters that have been used for the design of stormwater management devices are consistent with those described in the Hydrology - **Technical Assessment D**. In summary, design rainfalls from High Intensity Rainfall Design System (HIRDS)¹⁷ were applied and adjusted for climate change (by assuming 2.3°C warming and the associated percentage increases out to 2120);
- The design of stormwater-related infrastructure for the proposed road carriageway is based on estimating a design discharge using the Rational Method¹⁸ for each sub-catchment;
- The stormwater management for the Project has been designed in accordance with the BPO method which seeks to provide the most efficient device while minimising adverse effects on the environment;
- The stormwater design has sought to minimise impacts on terrestrial and freshwater ecology (including providing fish passage where appropriate);
- The devices proposed are required to comply with stormwater quality and quantity requirements (treatment, detention, retention and attenuation) set by Horizons and the Transport Agency Treatment Standard 2010; and
- The design principles for the proposed stormwater management systems, network drainage and culverts have been designed to mimic the existing hydrologic regime (natural drainage paths and discharge points) and surrounding rural landscape as far as practicable. This includes an open

¹⁷ The High Intensity Rainfall Design System (HIRDS) is an online tool, designed by National Institute of Water and Atmospheric Research (NIWA), that estimates the magnitude and frequency of design rainfall parameters at any point in New Zealand

¹⁸ Rational Method is in accordance with NZTA stormwater standard (2015) and has been widely used internationally and is suitable for small catchments with relatively uniform land use.

channel collection and conveyance network, treatment devices, stormwater cross drainage, culverts and diversions, and outfalls including erosion protection. The form and functionality of this approach is aligned with the Project design team's integrated water management / whole-of-landscape approach.

6.5.2 Stormwater Quantity Effects

Increased impervious surfaces can increase runoff, potentially impacting on downstream flood levels in large rainfall events and increasing the potential for stream erosion. The design of the stormwater management system has sought to mitigate and manage the actual and potential adverse effects related to stormwater quantity in the following ways:

- The reticulation system has been designed to the 10-year Annual Recurrence Interval (ARI) rainfall event with secondary or overflow systems designed for the 100-year ARI rainfall event. In the locations where there is no secondary overland flow path the reticulation system has been designed to convey the 100-year ARI peak flow. As far as it is practicable to do so, peak-flow attenuation up to the 10-year ARI storm event and extended detention have also been provided for wetlands and wetland swales. This will reduce the rate of runoff from larger storm events (closer to pre-development levels) and mitigate effects associated with erosion and flooding on the receiving environment. In sub-catchments that drain directly to the Manawatū River, no peak flow attenuation is proposed;
- Three wetlands (W05, W07 and W08) and four wetland swales (WS01, WS08, WS09 and WS10) treat stormwater from different catchments and, without appropriate management, would increase the volume of stormwater discharging at their respective receiving environments. The potential adverse effects of this will be minimised through the provision of attenuation and extended detention. Therefore, the receiving environment will not receive any more stormwater at a given period than it would have in the pre-development condition;
- In addition to extended detention and storage, all outlets are fitted with erosion protection and, where required, energy dissipation structures such as concrete wing wall with apron, rock rip rap aprons, rock silting basins or erosion control matting to prevent or minimise scour. In addition, where fish passage is recommended (refer to Freshwater Ecology - **Technical Assessment H**) this is incorporated into the outlet structure to mitigate effects on fish passage; and
- Overland flow, predominately sheet flow, that approaches the state highway is proposed to be intercepted and conveyed by cut-off drains. Approximately 9km of cut-off drainage channels are proposed. The drains are designed to mimic the existing hydrological regime as much as possible to minimise impacts of cross-catchment flows by discharging to the nearest state highway cross-culvert. This is an important element of the proposed stormwater management system as the drains mitigate adverse flooding effects on adjacent property associated with overland flow entering or running alongside the state highway.

The stormwater quantity mitigation devices (including for example, proposed flow attenuation devices, cut-off drains, culvert works and erosion protection at outfalls) will appropriately mitigate the potential surface water effects of the Project on the wider catchment.

6.5.3 Stormwater Quality Effects

The Project proposes to create approximately 383,000m² of new total impervious area as described in Section 4 of the DCR. For the purposes of this Stormwater Management - **Technical Assessment B**, only those impervious areas that are roadway, comprising the proposed carriageway, the existing road (state highway) tie-ins and the Gateway Park, are being treated in accordance with the Transport Agency treatment standards. Runoff from the other impervious surfaces over the Project including the SUP, access tracks and viewing platforms will not be treated and will typically runoff onto the adjacent

land and naturally dissipate and infiltrate or will discharge directly to the nearest downstream watercourse via vegetated conveyance channels.

The roadway areas created as part of the Project are designed to drain via open conveyance channels to a wetland, wetland swale or treatment swales. There are nine stormwater treatment wetlands, ten stormwater treatment wetland swales and seven flow-through treatment swales proposed.

Wetland, wetland swale or treatment swale devices are considered the BPO and are the preferred method of treatment as they provide the following advantages:

- They provide attenuation and extended detention;
- They have proven effectiveness for water quality treatment through their size and water quality flow control;
- They require less frequent maintenance than other devices (such as proprietary devices); and
- Wetlands and wetland swales are more suitable for treating larger catchment areas where they can provide peak flow control, flow attenuation and flood protection.

In appropriate places, the conveyance channels will be planted and will act as an element of 'pre-treatment' prior to being discharged through the downstream stormwater management device.

Debris has the potential to silt and block the conveyance channels. Debris channels and sediment basins (and dual forebay wetlands) are proposed on cut slopes to capture debris and allow for settlement of sediment from runoff from large cuts respectively. This will prevent larger sediment loads from entering the conveyance channels (which would have maintenance implications) and ultimately being discharged to the receiving environment.

The proposed stormwater management design described above provides a 'treatment train' approach to manage stormwater runoff from the impervious areas to a high standard, namely removal of 75% of TSS on a long-term average basis. This is a significant improvement from the treatment that is currently being provided over the existing state highway network within the Project area (for example, existing SH3 – Napier Road), which is currently discharged untreated.

6.5.4 Summary

In summary, the Project is expected to have a minimal residual effect on the amount of pollutants reaching the receiving environment, due to the proposed treatment devices and treatment train approach applied in the design to achieve a minimum of 75% TSS removal on a long-term average basis. In addition, the Project will not exacerbate flooding or reduce the ability of a watercourse to convey flood flows, as peak-flow attenuation has been provided for in the design of stormwater treatment devices. Overall the proposed stormwater design is appropriate for managing the stormwater runoff from the Project.

The effects associated with the water quality downstream of the discharge locations is discussed in the Water Quality - **Technical Assessment C** and the Freshwater Ecology - **Technical Assessment H**.

6.6 Hydrology

A Hydrology - **Technical Assessment D** has been prepared to assess the potential effects of the Project on the hydrology of the area, including flooding and scour effects.

Section 6.6.1 briefly outlines the assessment methodology of the Hydrology – **Technical Assessment D**, Section 6.6.2 assesses the central alignment, Section 6.6.3 assesses the Manawatū River Bridge (BR02), Section 6.6.4 assesses the Mangamanaia Stream Crossing Bridge (BR07), Section 6.6.5 assesses the Woodville Roundabout (located in a floodplain), and Section 6.6.6 provides a summary.

6.6.1 Assessment Methodology

Rainfall is a key component of the hydrological system, and therefore comprehensive rainfall analysis is provided Annexure 1 of Hydrology - **Technical Assessment D**. In summary, design rainfalls from HIRDS¹⁹ were applied and adjusted for climate change (by assuming 2.3°C warming and the associated percentage increases out to 2120) using the Representative Concentration Pathways (RCP) 6.0 scenario.

As the intensity and distribution of rainfall can have a wide range of impacts on the environment, this Rainfall Analysis also informed the Stormwater Management - **Technical Assessment B**, ESC - **Technical Assessment A** and the location, magnitude, duration and impact of flooding.

In order to gain an understanding of the flow regimes in the Project area, data was used from the three long-term flow monitoring sites maintained by Horizons in the wider vicinity of the Project (Manawatū at Upper Gorge, Manawatū at Teachers College and the Pohangina River at Mais Reach), as well as water level monitoring undertaken for the Project, at the upstream end of the culvert under the railway embankment; just upstream of the confluence of Stream 7 with the Manawatū River.

In addition, to assess the design and interaction of the Manawatū River Bridge (BR02) and Mangamanaia Stream Crossing Bridge (BR07) with existing fluvial and flood hazards, two computational hydraulic models (HEC-RAS and Tuflow) were developed. A design hydrograph was used to assess the ten largest flood events recorded in the Manawatū Gorge to inform alternative bridge and pier configurations for both the Manawatū River and Mangamanaia Stream crossings, as well as the effects of scour protection around the piers and abutments.

6.6.2 Central Alignment

Apart from the Manawatū River and Mangamanaia Stream crossings (addressed in Section 6.6.3 and 6.6.4 below), the Project will predominantly cross only ephemeral streams and upper reaches of perennial streams over the Ruahine Range.

As these catchments are already highly modified by vegetation clearance and current land use activities, the natural runoff processes are already highly modified. The predominant soil type (a thin regolith – i.e. layer of loose material overlying rock – and presence of loess (i.e. silty) soils), together with the generally rolling slopes and removal of natural forest reduces the ability of the regolith to attenuate the effect of rainfall. This means that flow regimes of these small drainage lines are closely connected to rainfall.

The construction of the Project will affect only a small proportion of the various catchments intersected by the highway. Consequently, the effects will also be very small relative to the catchment runoff processes and any effects will also be extremely localised.

For small rainfall events, up to the 10% AEP event, effects will be mitigated, moderated and attenuated by the proposed stormwater treatment design and management (described in Stormwater Management - **Technical Assessment B**). For rainfall events larger than 10% AEP, there will be no difference in the rainfall-runoff behaviour of the regolith under existing conditions and following completion of the Project.

6.6.3 Manawatū River Bridge

The proposed Manawatū River Bridge (BR02) is located approximately 600m upstream of the confluence of the Pohangina River and near the culturally significant Parahaki Island.

¹⁹ The High Intensity Rainfall Design System (HIRDS) is an online tool, designed by National Institute of Water and Atmospheric Research (NIWA), that estimates the magnitude and frequency of design rainfall parameters at any point in New Zealand

As discussed in Section 7, several bridge design options for the Manawatū River (BR02) were assessed and the preferred option is a precast-concrete balanced-cantilever structure. The bridge will be supported by abutments at each end and three piers. Each pier will consist of four bored piles and a pier cap to provide support. The middle pier will be located within the active channel of the Manawatū River.

A 2D hydraulic model was developed to inform design and scour protection of BR02. The development of this hydraulic model and its various assumptions are discussed in Annexure 2 of Hydrology - **Technical Assessment D**. The model can also assess:

- The potential effects of the bridge on water levels and flow velocities;
- The risks and magnitude of scour; and
- The potential effects on Parahaki Island.

Each is addressed in turn below.

6.6.3.1 Water Levels and Flow Velocities

The extent and depth of flooding during the Serviceability Limit State (SLS) (i.e. the 1% AEP flood, increased to allow for climate change to 2120) will be such that entire floodplains of both the Manawatū and Pohangina Rivers are inundated. In that scenario, Parahaki Island will be inundated by at least 0.5m (and up to 3m at the upstream end of the gravel bar at the eastern end of the Island).

The results of the model show that the central pier (Pier 2) has the potential to significantly increase the velocity of the Manawatū River in three locations in a 1% AEP flood event. The greatest potential effect to the river velocity is up to 1.5m/s within the centre of the active channel, where the greatest depth and least friction is found. A small velocity increase at the entrance to the 'Parahaki bypass channel' located along the true left of the Manawatū River was also identified. Any potential effects to the water level and velocity have been shown to be extremely small and extremely localised within this area.

The model indicates that during the 1% AEP flood event the 'bow-wave' upstream of the central pier is likely to result in a local water level increase of up to 1.4m, however, this water level dissipates rapidly upstream. Downstream of Pier 2, a slight reduction in water level is anticipated by approximately 0.25m. This reduction is restricted to the upstream gravel bar of Parahaki Island and the true left bank of the Manawatū River.

6.6.3.2 Scour

The Manawatū River Bridge (BR02) has the potential for bank and channel bed scour to occur at the bridge piers, particularly in relation to the central pier (Pier 2) located within the active bed of the Manawatū River.

A scour analysis was conducted using the water depths and velocities from the HEC-RAS model to estimate the potential extent of scouring on the bed level for the SLS (1% AEP) and ULS (2500-year) design flood events. During these two design (flood) events, the lowest local bed levels scour down to RL 37.9m and RL 34.2m respectively in relation to the piers. This also assumes a large debris raft 'worst case' scenario on the central pier.

The results indicated that scour will not migrate to coincide with the central pier as the Manawatū River is currently migrating towards the true right bank, where the maximum depth and velocity is situated. Therefore, scour around Pier 2 is not anticipated to be an issue. This is reflected in the current erosion occurring on the true right bank downstream of the proposed bridge location at present. Further, there is no potential for scour to occur at Pier 3 because it is located outside of the active flow path, even during the most extreme design event.

The design of the bridge and piers has been informed by the model results to avoid exacerbating scouring effects within the river bed. To mitigate the potential adverse effects, rocks with a median size (i.e. D_{50}) of 0.9m will be used to protect the pier of the proposed bridge against the SLS design event (adjusted for the potential effects of climate change to 2120). It has been assumed that 4,230m³ of scour protection will be required around Pier 2; see corresponding Drawing TAT-3-DG-S-2201 for further details. This is the scenario adopted when assessing the potential effect of construction of the pier and bridge on the river hydraulics.

With these measures in place, the construction of the bridge and piers will have minimal impact on the bed and riparian bank of the Manawatū River.

6.6.3.3 Parahaki Island

The assessment (and supporting modelling) shows that:

- During the SLS event, Parahaki Island is inundated by at least 0.5m (and up to 3m at the upstream end of the gravel bar), and that under the current channel environment, erosion of both the upstream and downstream extents of Parahaki Island may be expected to occur;
- The construction of the bridge piers will have no adverse effects on Parahaki Island as a result of the dynamics of flow and velocity changing. There will be a slight reduction in water level, up to 0.25m, but this is generally restricted to the upstream gravel bar and the left bank of the active channel of the Manawatū River. There is no change to the flow velocity across Parahaki Island because of the relatively shallow depth of flooding and good vegetation cover; and
- The central pier is anticipated to create a small decrease in velocity along the edge of the gravel bar at the upstream end of Parahaki Island, which could potentially create the deposition of sediment and accretion of this area of the gravel bar. As described above, this potential effect will be mitigated using scour protection to protect the central pier of the proposed bridge and Parahaki Island against the SLS design event.

6.6.4 Mangamanaia Stream Crossing Bridge

A 2D hydraulic model was also developed to inform design and scour protection of BR07. The development of this hydraulic model and its various assumptions are discussed in Annexure 3 of Hydrology - **Technical Assessment D**.

The Mangamanaia Stream flows across an extensive floodplain and consequently the extent of overbank flooding is significant during the current 10% AEP event. Therefore, the effects of the peak discharge on the extent and depth of flooding within the Mangamanaia Stream are naturally minimised due to the relatively extensive floodplain. The increased volume of water during a 10% AEP event is accommodated by a relatively small increase in the depth of flooding rather than a large increase in the area inundated. In an extreme design event it is anticipated that a significant component of overbank or 'out of channel' flow will occur and flow over the adjacent floodplain of the Mangamanaia Stream.

The Mangamanaia Stream Crossing Bridge (BR07) has the potential to increase flood elevations and velocity within the Mangamanaia Stream. However, the proposed bridge will be supported by abutments on either side of the river bank and no pier is proposed within the channel, avoiding any potential effects on the natural hydraulic behaviour of the stream.

The construction of the bridge over the Mangamanaia Stream will result in relatively minor changes to flooding and the flood hazard during the 1% AEP design event. Water depths are expected to reduce by 0.5m upstream and on the true right bank of the river as a result of the Project. While the depth of inundation will increase by up to 0.5m over approximately 0.46ha, much of this will be within a constructed wetland currently characterised as pasture. Furthermore, while the depth of flooding will

increase over a relatively small area, the velocity of the floodwater will decrease by up to 0.6m/s over a slightly larger area of approximately 0.57ha.

The size of the channel to be bridged has been considered in order to account for the potential for scouring to occur if the river banks are overtopped. Based on this assessment, scour protection has been designed to mitigate the energy of flows not expected to remain in the channel during an extreme design flow. Overall, the construction of the Mangamanaia Stream Crossing Bridge (BR07) is likely to result in a slight reduction in the flood hazard.

In addition, the duration of any potential inundation has also been considered. As the area already, experiences flooding during the design event, the effect of the bridge in this area is likely to increase the duration of inundation by a maximum of 2 hours. When considering the construction of the proposed wetlands and areas of pasture within the existing environment, the proposed bridge design is likely to mitigate the existing flood hazard.

The changes in both the depth and velocity of flooding as a result of the proposed bridge are minimal when assessed against a large design event (and lesser in smaller flood events). The Hydrology – **Technical Assessment D** concludes that the effects of constructing the proposed bridge over Mangamanaia Stream are likely to be positive. Any changes to the existing flood hazard are considered to be less than minor.

6.6.5 Woodville Roundabout

The Project involves the construction of a roundabout located on the floodplain to the west of Woodville. As the highway will raise the ground surface and modify the topography in this area, there is the potential to disrupt existing overland flow paths on this floodplain and increase the flood hazard.

The proposed roundabout is located in an area that currently floods. Following construction of the roundabout, the overland flow and nature of flooding is expected to be small and localised to the immediate vicinity of the proposed roundabout. In the SLS (1% AEP flood event at 2120), the majority of areas expected to flood will increase by less than 0.5m and one area immediately up-gradient to the eastern limb of the roundabout is expected to flood by up to 1m over existing pasture.

However, during this large design event, the improved hydraulic efficiency and conveyance of culverts following construction of the roundabout is anticipated to result in a shorter duration of flooding, with the duration of inundation of flooding exceeding 0.3m expected to last less than 4 hours.

6.6.6 Summary

The magnitude of any potential hydrological effects will be relatively small given the geographical size and existing dynamics of the receiving environment. The majority of the land and catchments directly intersected by the Project are currently subject to significant land cover and land use change.

The effects of the Manawatū River Bridge (BR02) central pier on water levels and flow velocities during a range of design events, including the SLS and ULS events, have been shown to be very small and localised. The construction of BR02 and piers will have no adverse effects on Parahaki Island. However, there is a decrease in velocity along the edge of the gravel bar at the upstream end of Parahaki Island which could potentially lead to the deposition of sediment and accretion of this zone of the gravel bar. This will be mitigated using scour protection to protect the central pier of the proposed bridge and Parahaki Island against the SLS design event. With these measures in place, the construction of the bridge and piers will have minimal impact on Parahaki Island and the bed and riparian bank of the Manawatū River.

In regard to the proposed Mangamanaia Stream Crossing Bridge (BR07), the Mangamanaia catchment is already prone to flooding. Therefore, the formation of the highway and bridge will not exacerbate the current situation. It has been shown that the proposed Mangamanaia Stream Crossing Bridge (BR07) is likely to mitigate the existing flood hazard, particularly downstream of the highway.

The Woodville Roundabout is also located on a contemporary floodplain. The model results indicated that any flooding caused by the proposed roundabout is likely to be small, localised to the immediate vicinity of the proposed roundabout and short in duration. Any changes as a result of the Project will be extremely small relative to those that have occurred in the past.

The Hydrology - **Technical Assessment D** concludes the Project will have an effect on the hydrology of the area which is no more than minor. Indeed, the Project will result in a number of environmental benefits, particularly relating to flood hazard mitigation.

6.7 Water Quality

A Water Quality - **Technical Assessment C** has been prepared to establish a baseline of existing surface water quality within the Project area and to undertake an assessment of the effects of the construction and operation activities on surface water quality.

Section 6.7.1 briefly outlines the assessment methodology of the Water Quality – **Technical Assessment D**, Section 6.7.2 addresses effects on water quality during construction, Section 6.7.3 addresses effects on water quality once the Project is operational, and Section 6.7.4 provides a summary.

6.7.1 Assessment Methodology

Establishing the baseline of the existing surface water quality was undertaken using a combination of information as described in Section 2.

The effects on water quality during construction of the Project from erosion and sedimentation were assessed by predicting the sediment discharged to streams, using the sediment yields predicted in the ESC - **Technical Assessment A**. The impacts of vegetation clearance and concrete pouring on water quality during construction were also considered.

The effects on water quality once the Project is operational were assessed by predicting the level of contaminants from the road run-off using the Contaminant Load Model (CLM) and the load reduction based on the proposed stormwater treatment devices described in the Stormwater Management – **Technical Assessment B**.

The predicted water quality during construction and operation was assessed against the following targets and guidelines:

- Schedule E of the One Plan for surface water quality targets for the relevant water management sub-zones: Middle Manawatū Mana_10a, and Upper Gorge Mana_9c and Lower Pohangina (Mana_10d (Pohangina River));
- 95% protection levels as set out in the ANZECC (2000) and updated ANZG (2018) guidelines to protect freshwater systems; and
- The USEPA (2006) Criteria Maximum Concentration (CMC) which are more ecological relevant as they protect against acute effects (stormwater discharges occur during rain events and are intermittent by nature).

The NPSFWM, which includes a National Objectives Framework (NOF), has also been considered (as discussed further in Section 8 below). For the purpose of the Water Quality – **Technical Assessment C**, however, the focus has been on the One Plan targets.

6.7.2 Water Quality Effects during Construction

6.7.2.1 Sediment

The ESC - **Technical Assessment A** provides estimates of sediment loads resulting from the Project's earthworks. Load calculations were done using the USLE which can significantly over-estimate sediment yields due to a number of conservative assumptions.

Most of this sediment yield estimated will be discharged over short durations during wet weather events; consequently, the wet weather suspended sediment concentrations of receiving streams are likely to increase by a similar amount. The modelling undertaken for the Water Quality – **Technical Assessment C** suggests that in the absence of any further treatment of the sediment, discharges from the earthwork sites during rain events may result in sediment loads and suspended sediment concentrations two to three times higher and water clarity 40% to 55% lower.

However, this is prior to any dilution from the streams. For aquatic life, the deposition of sediment on the stream bed is more relevant than water column concentrations during flood events. The use of appropriately designed treatment devices like SRPs are particularly effective at removing the fraction of sediment most prone to settling and reduces this risk. Therefore, the modelling supports the need for appropriate ESCP, the use of chemically treated SRPs, and robust monitoring as outlined in the ESC - **Technical Assessment A**.

6.7.2.2 Vegetation

Vegetation clearance can also have a number of potential effects on nearby streams. The bulk storage of woodchip and wood residue can produce leachate with a high Biological Oxygen Demand (BOD) as well as dissolved organic matter which can have an adverse effect on aquatic life. Moderate amounts of woodchip beside a stream have negligible effects and are commonly used to positive effect as part of restoration. Similarly, small amounts of woodchip entering a stream will have negligible adverse effects. However, if situations occur where vegetation clearance causes piles of woodchip to cover a waterway, the effect on the aquatic life can be large, due to deoxygenation causing the loss of invertebrate and fish life downstream until sufficient reaeration or dilution occurs.

Therefore, the Water Quality – **Technical Assessment C** supports the preparation of Vegetation Clearance Protocols (VCP) (as part of the EMP) and includes procedures for:

- Minimising the area and duration of soil exposure from vegetation clearance;
- Minimising the volume of vegetation to be mulched;
- Locating wood residue piles with an appropriate separation distance from streams; and
- Minimising potential wood waste leachate from these piles.

Provided these management measures are adhered to, the effect of vegetation clearance on stream water quality is expected to be negligible.

6.7.2.3 Concrete

Runoff entrained with unset concrete, concrete fines, concrete dust or concrete washings can become highly alkaline. If this runoff enters receiving waters untreated it can have adverse effects on aquatic life. Wherever possible, pre-cast concrete structures are being used across the Project, which will minimise some of the risk associated with concrete pouring. Concrete will be poured in a number of locations along the route, but particularly near the bridge piles. However, the risk of concrete affecting stream water quality is low because the areas affected are limited in scale and are not directly in water.

Furthermore, the potential effect of concrete on surface water quality will be minimised and mitigated by capturing and treating any stormwater.

6.7.3 Water Quality Effects during Operation

Stormwater discharges from new impervious surfaces such as roads can have multiple levels of effects on streams by affecting stream hydrology and morphology, water temperature and water quality.

Stormwater discharges from increases in impervious surfaces from roads and urbanisation can increase flood peaks and volume causing them to be more 'flashy' than natural streams. However, these effects of stormwater on hydrology can be minimised by reducing the amount of impermeable area, and by using treatment devices that enhance infiltration and flow detention as set out in the Stormwater Management - **Technical Assessment B**.

Runoff from treatment devices like wet ponds can still have high water temperatures (thermal pollution) which has a strong influence on the distribution of aquatic biota. The Water Quality – **Technical Assessment C** concludes that the thermal pollution is expected to be very small as the proposed road surface in each catchment is relatively small and the stormwater treatment devices proposed for use in the Project are effective at reducing temperature effects (e.g. vegetated wetlands, swales, and even grassed conveyance).

Stormwater runoff from roads can contain a wide range of contaminants including: (TSS, total petroleum hydrocarbons (TPH), heavy metals (e.g. Copper (Cu), and Zinc (Zn)). All stormwater discharges from the Project will be treated with one or more treatment devices. Most stormwater from the Project will be treated by multiple treatment devices in series – providing greater benefit than when they are used individually. No operational stormwater from the road will be discharged to catchment 5 or 6. One treatment device (wetland 02) discharges treated stormwater directly to the Manawatū River.

The CLM contaminants that are most commonly found in road runoff and estimates the total load of contaminants discharged to each catchment from a stormwater treatment device (prior to any mixing with the receiving waters). Estimates from the CLM found a net reduction in the load of stormwater contaminants to the Manawatū River downstream of the Project, in the Pohangina River, and catchments 9, 4, 2 and 1. The reason for the load reductions is because the Project will result in traffic volume shifting to the proposed road which provides formal treatment of stormwater, whereas the current routes do not.

The CLM also estimated there will be some catchments with a net increase in contaminants from stormwater (prior to mixing with receiving waters), namely catchment 2E and catchments 3, 7 and 8. All increases are minor, with the exception of catchment 7 which is moderate. However, the effects of the increase in metals in catchment 7 are moderated by the high hardness (meaning high in dissolved minerals) in the catchment.

Furthermore, the discharges to all catchments have estimated end-of-pipe concentrations of Zn, Cu and TPH within the (hardness-adjusted) acute toxicity guidelines, with exception of catchment 8 which was borderline. Total copper in discharges to catchments 1 and 8 were close to the guideline values.

Although there are slight increases in TSS in catchments C2E, C3, C7A and C7, the estimated concentration of TSS in the discharge is less than TSS measured in wet weather flows and similar to long term median TSS in the Manawatū River.

It is noted that the CLM estimates are prior to mixing with the receiving waters, and insufficient information is available on the stream flow regime to reliably estimate average concentrations in the streams after mixing. However, it is considered that the level of dilution required to meet the ANZECC guidelines for Zn and Cu will very likely be exceeded during storm events. Conversely, it is possible that

the level of dilution required for TPH in catchments 1 and 3 will not be exceeded during storm events in some catchments. Nevertheless, the effect of TPH on the environment is expected to be small because intermittent stormwater discharges are more appropriately compared with acute toxicity guidelines, which are met with no dilution.

6.7.4 Summary of Effects on Water Quality

The earthworks during construction will increase sediment loss. This will be particularly apparent during high flow events but the effects on downstream water quality can be minimised and mitigated with the ESCP, SSESCPs, and ESCMP.

The stormwater treatment devices are proposed as part of the Project which will provide treatment, detention and attenuation of stormwater runoff from the impervious areas created by the Project. This will result in overall better water quality in the Manawatū River.

There is potential for stormwater to cause a decline in water quality in sub-catchment 2E and in catchments 3, 7 and 8. However, for these catchments the effects will likely be small because of the intermittent nature of stormwater discharges, the quality of the stormwater being within relevant guidelines and, for TSS, the stormwater having similar concentrations to that found in the streams during flood events.

Therefore, once operational, the stormwater discharges from the Project can be expected to have negligible or minor impact on surface water quality.

6.8 Contaminated Land

A CSMP has been prepared and is provided in **Volume VII**. Section 6.8.1 briefly outlines the methodology and scope of the assessment, Section 6.8.2 summarises potential effects, sets out the mitigation and management measures and Section 6.8.3 provides a summary.

6.8.1 Assessment Methodology

The PSI identified six areas of current and historical contaminating activities, five of which are included on the HAIL. The PSI also identified a sixth site; a hobby organic orchard at 1630 Napier Road that was not classified as an activity on the HAIL. Consequently, a DSI was undertaken to determine the extent and level of contamination present at the five HAIL Sites (1 to 5) and precautionary sampling was also undertaken at the orchard (Site 6).

The DSI identified concentrations of arsenic in soils at the Saddle Road stockyards (Site 1) and the former sheep dip (Site 5) that exceeded the adopted acceptance criteria for the protection of human health and/or the regional background concentrations. The sampling of the hobby orchard (Site 6) identified some shallow soil impacted with lead above background concentrations but below human health concentrations. Similarly, the small air-strip and the fertiliser storage (Site 4) identified some shallow soil impacted with cadmium and zinc above background concentrations but below human health concentrations.

These four areas (Site 1, 4, 5 and 6) are proposed to be remediated prior to the commencement of the land disturbing activities associated with the Main Works. The remediation will be carried out through excavation, transport and disposal of soil to a facility licensed to accept the material (i.e. Bonny Glen Landfill) in accordance with a Remedial Action Plan (RAP). This will be authorised by way of land use consents pursuant to the NES_{soil} and will be sought from the relevant Territorial Authority. A discharge consent from Horizons is not considered to be required as no contaminants will be discharged as part of the remediation, provided the CSMP and RAP are adhered to.

The CSMP sets out protocols in the event that unexpected contamination is encountered during the Main Works. The potential discharge of contaminants to the environment during accidental discovery of contaminated soil during the Main Works is a regional consent consideration and is addressed in the following sections.

6.8.2 Mitigation

The uncontrolled disturbance of contaminated soil has the potential to discharge contaminants to the receiving environment, to nearby watercourses and ecological sensitive areas. Section 7 of the CSMP contains the methodology for the management of discharges during the remediation. These will also be implemented if unexpected contamination is encountered. The protocols for the management of water and dust during disturbance of contaminated soil to reduce the risk of offsite contamination include:

- Separation and diversion of clean stormwater away from areas of ground disturbance to minimise the potential for clean stormwater to encounter contaminated soil;
- Where stormwater run-off has encountered contaminated soil, this water will be considered potentially contaminated, and directed to a separate sediment basin;
- For groundwater that is encountered during the disturbance of contaminated soil, water will be pumped from the excavation and be directed to a separate holding tank;
- Any stormwater or groundwater which has encountered potentially contaminated soil will be considered potentially contaminated and will be disposed of via a licensed liquid waste contractor or tested. It will only be discharged to the environment if it is tested to show compliance with the Australian and New Zealand Environment Conservation Council (ANZECC) Guidelines for Fresh and Marine Water Quality (2000) (ANZECC, 2000);
- Dust must be minimised in accordance with the ESCP. Additionally, a water tanker (or equivalent) will be kept on-site and used for dust control during disturbance of contaminated soil. Waste soil, including stockpiled soil, will be kept adequately wetted to minimise dust. Stockpiles will be dampened, and material will not be added or removed from stockpiles during high wind events; and
- In the event of accidental discovery of odorous contaminated materials (such as degrading hydrocarbons), it may be necessary to replace cover material over the contaminated materials to reduce odour and to excavate in a manner that exposes a small area at a time and allows it to ventilate, prior to exposing another area.

6.8.3 Summary

The actual and potential adverse effects of contaminated land are limited to the land disturbance during the construction phase of the Project. If unexpected contamination is encountered, the CSMP will be adhered to in order to prevent the discharge of contaminants to the environment. On this basis, effects on the environment will be appropriately avoided, remedied as mitigated to the extent that they are less than minor.

6.9 Air Quality

An Air Quality - **Technical Assessment E** has been prepared to assess the potential effects on air quality from the construction and operation of the Project. Reference has been made to the MfE ambient (outdoor) NES_{AQ} and to the One Plan in preparing this assessment.

6.9.1 Assessment Methodology

The assessment focusses on dust as a result of construction activities on sensitive activities and locations as the main potential adverse air quality effect. The sensitive locations within the Project area assessed include:

- Residences within 200m of the construction works;
- Individual wind turbines of the Te Āpiti Wind Farm;
- Ballantrae Farm (owned by AgResearch);
- The National Grid Transmission Line (at the eastern extent of the Project alignment); and
- Ecological areas along the Project route (within 100m of construction activities) that contain fauna and flora that may be sensitive to dust deposition.

Sources of dust during construction include the excavation and handling of materials (including filling activities, spoil disposal, vegetation removal, pavement construction and stockpiling), suspension of dust by vehicles on unpaved surfaces, and wind-blown dust from exposed surfaces. The key factors influencing the discharge of dust from these sources include the proportion and moisture content of fine materials, extent of exposure area and strength and direction of wind conditions.

Other air emissions relating to vehicle combustion are expected to be negligible for the construction and operation of the Project and have not been considered for further assessment.

The potential dust effects were assessed using FIDOL factors (Frequency, Intensity, Duration, Offensiveness and Location)²⁰ relating to nuisance and deposition/soiling effects as well as potential health effects from exposure to construction and earthworks dust (which tend to have high levels of micro particles). Additionally, effects on plant life can occur where prolonged and very high levels of dust deposition occur, affecting its ability to photosynthesise.

The Project route was broken up into four geographical areas comprising Ashhurst, Ruahine Ranges, Ballantrae Farm area and Woodville for the purposes of the assessment. Each area is considered distinct in terms of location and the types of sensitive receivers' present. Within each of the four areas, sensitive receivers were identified and assessed based on the level of risk of adverse dust impact.

6.9.2 Effects

The Project area, because of its locality and topography, is exposed to relatively frequent strong wind conditions, particularly from the west and north-west direction. The air quality assessment identified the following receptors as having a moderate or high risk of dust impact when considered without any mitigation implemented:

- Four wind turbines (identified as TAP09, TAP10, TAP46 and TAP49);
- Ecological areas (identified as E2, E3, E4 and E11);
- Areas of the Ballantrae Research Station that are located within 100m west or north of the Project alignment (identified as Receptor R7); and
- Three residential dwellings near the Woodville Roundabout (identified as R8, R10 and R11).

The location of each of these receptors is identified within the Air Quality – **Technical Assessment E**.

²⁰ The FIDOL factors are described in detail in the Ministry for the Environment (MfE) 'Good practice guide for assessing and managing the environmental effects of dust emissions' 2001.

6.9.3 Mitigation

The Air Quality – **Technical Assessment E** recommends the following dust control measures:

- Dust suppression on haul roads through the application of water or biodegradable suppressant. Should further mitigation be required, vehicle speed reductions may be imposed;
- Progressive stabilisation, particularly in fill and spoil sites;
- Plant operation considerations including minimising material drop heights and use of excavators;
- Routine monitoring including daily observation and weather forecast checks;
- Continuous instrumental dust monitors at the eastern end of the Project for monitoring the dust levels at the residential dwellings considered high risk (identified as receptors R8, R10 and R11); and
- Dust deposition monitoring and review to be undertaken at the four wind turbines and the four ecological areas identified as being moderate or high risk.

The Dust Management Procedure (Appendix 3 of the ESCP) sets out a detailed framework for the management, mitigation and monitoring measures to be implemented in the construction and earthworks activities associated with the Project. The procedure focuses principally on controlling the source of dust discharges and will address the risk of discharges from the earthworks (including from each construction lay down area). Additionally, the proposed NoR conditions require dust management to be included within the management plans to be specifically prepared for Ballantrae Station, the Te Āpiti Wind Farm, and the National Grid.

6.9.4 Summary

With the implementation of the mitigation and monitoring measures identified and in conjunction with the wider erosion and sediment control measures proposed for the Project, offensive and objectionable dust effects will be avoided, dust emissions will not be detrimental to amenity values and ambient particulate levels will be within the thresholds of the NES_{AQ}. Therefore, the actual and potential dust effects on sensitive receivers will be appropriately managed such that they will be less than minor.

6.10 Terrestrial Ecology

A Terrestrial Ecology - **Technical Assessment F** has been prepared to assess the potential effects on terrestrial ecology, including terrestrial and wetland vegetation and associated fauna, from the construction and operation of the Project. A Terrestrial Offset and Compensation - **Technical Assessment G** has been prepared to recommend measures to address residual adverse effects on terrestrial ecology identified in Terrestrial Ecology - **Technical Assessment F**.

Section 6.10.1 addresses the overall Project footprint, and the significant reduction in affected habitat since that assumed through the NoR process. Section 6.10.2 briefly outlines the assessment methodology of the Terrestrial Ecology Assessment, and Sections 6.10.3, 6.10.4 and 6.10.5 provide an assessment of the effects of the Project on vegetation, specific plant, and fauna species respectively. Section 6.10.6 summarises the proposed measures to avoid, remedy and mitigate the effects on terrestrial ecology. Section 6.10.7 provides a summary of the offset and compensation measures proposed as reported in Terrestrial Ecology - **Technical Assessment F** and Terrestrial Offset and Compensation - **Technical Assessment G**.

6.10.1 Overall Project footprint as compared to NoR 'effects envelopes'

The existing terrestrial ecology of the Project area is described at Section 2. In summary, the Project footprint (including spoil sites) covers an area of 195 ha within a predominantly agricultural landscape. The vast majority of the Project footprint is made up of habitats of relatively low value in terrestrial

ecology terms: grazed pastureland and exotic-dominated plantation forests or exotic shrublands (e.g. gorse and broom), and existing buildings and infrastructure.

However, the Project footprint does include 11.82 ha of indigenous forest and shrublands and a number of small wetlands totalling 4.97 ha (together, 16.79 ha and 8.5% of the Project footprint).

That level of impact is significantly reduced from the potential level of impact, assumed and assessed during the NoR process.

Table 5 of the Terrestrial Ecology - **Technical Assessment F** (replicated at Table 6-2 below) compares the impact of the Project footprint with the assumed maximum level of impact set through the NoR process (including some specific restrictions referred to in that process as 'effects envelopes'). In particular:

- The first column lists the relevant habitat types, as detailed in Terrestrial Ecology - **Technical Assessment F**;
- Column 2 lists the amount of each habitat within the proposed designation corridor (as opposed to the Project footprint, and noting there are areas of vegetation and wetlands that are outside the designation corridor but within the Project footprint, as discussed below);
- Column 3 lists the 'effects envelope' or maximum affected area for each habitat type, as per the (post-mediation) Designation Conditions dated 15 October 2019; and
- Column 4 sets out the areas within the Project footprint (including outside the designation corridor), now proposed to be specified in resource consent conditions as updated maximum areas for removal.

Table 6-2 Extent of vegetation clearance relative to respective envelopes set out in the NoR conditions

Name	Area within proposed designation boundaries	Maximum area of vegetation able to be removed under Designation Condition 24	Total area impacted by Project footprint
Secondary broadleaved forests with old growth signatures	3.07	2.39	0.25
Old growth Treeland (including Ramarama Area)	0.41	0.26	0.13
Kānuka forests (CH4000 – 4400)	4.52	1	0.91
Kānuka forests (elsewhere)		0.59	0.39
Advanced secondary broadleaved forest (CH5600 – 5800)	2.93	0.09	0.04
Advanced secondary broadleaved forest (elsewhere)		0.41	0
Secondary broadleaved forests and scrublands	16.32	14.12	6.71
Mānuka and kānuka shrublands (CH6100 – 6400)	4.12	0	0
Mānuka and kānuka shrublands (elsewhere)		3.63	2.11
Divaricating shrublands		0.33	0.33
Old growth forest alluvial	4.23	0.15	0.10
Old growth forest hill country	1.78	0.86	0.85
Indigenous Dominated Seepage Wetlands High Value	0.55	0.13	0.11
Indigenous Dominated Seep Wetlands Moderate Value	0.66	1.12	0.44
Exotic Wetlands Low Value* (Pasture wetlands)	2.74*	2.74	4.42*
Totals	38.59	27.85	16.79

Table Notes: *The only instance in which the area proposed for removal is above the effects envelope is for 'exotic wetlands' now defined as 'pasture wetlands' However, this was provided for in condition 18(e) on the understanding that further wetlands would likely be identified or impacted as additional field investigation was undertaken.

The 'effects envelopes' and other maximum affected areas set out in the post-mediation Designation Conditions (Mediated version, dated 15 October 2019) represent an overall reduction in affected area as compared to the June 2019 Transport Agency decision version of the conditions (Decisions version, dated 11 June 2019), which provided for an overall maximum removal of approximately 32 ha. Those original effects areas were endorsed by the Council-level hearing panel which, in summary, considered that impacts of that magnitude would be acceptable (subject to appropriate mitigation and offset / compensation measures). The reductions in affected areas from the decision version to the post-mediation version of conditions were achieved by the Northern Alignment design, which significantly reduced effects on the Eastern and Western QEII covenant areas.

The Designation Condition restrictions on effects have been adhered to through the further development of the Project design, and indeed achieving a significant reduction in the areas to be impacted has been a focus of design efforts. In respect of all habitat types other than pasture wetlands (which make up the majority of the affected wetland habitat) the Project footprint covers less area than the maxima set in the designation conditions; in a number of cases the reduction is significant.

Vegetation clearance is proposed outside the proposed designation boundaries (0.56 ha of manuka and kanuka shrubland and 1.16 ha of exotic wetlands) required for activities such as the disposal of spoil. Those areas are accounted for in the overall 16.79 ha;²¹ the end result is that the Project footprint amounts to:

- Approximately 52% of the maximum removal area specified in the original designation conditions (Decisions version, dated 11 June 2019); and
- Approximately 60% of the maximum removal area specified in the updated proposed designation conditions (Mediated version, dated 15 October 2019).

The design measures that have been applied to achieve this reduction in terrestrial ecology effects are discussed in Section 6.10.6.

6.10.2 Assessment Methodology

A fulsome terrestrial ecology assessment was undertaken during the NoR phase of the Project;²² at the council-level hearing of the NoRs the Transport Agency called evidence from Dr Adam Forbes on habitats and vegetation, and Andrew Blayney on terrestrial fauna. The terrestrial ecology assessment and evidence addressed the values of the Project area, and the anticipated level of effect of the Project based on the design and survey information available at that time. As set out above, the assessments carried out including the setting of 'effects envelopes' for various significant habitat types. The 'envelopes' were intended to set a baseline for an acceptable level of effects on terrestrial ecology values and were accompanied by an expectation that the Transport Agency would continue to work to minimise effects.

More detailed characterisation and assessment of terrestrial and wetland habitat types and associated fauna has been able to be made as a result of design advancement of the Project and through additional and more detailed information being obtained as a result of survey and fieldwork. Therefore, the assessment undertaken to support this regional consent application constitutes a verification, update and expansion on the information provided during the NoR process. Terrestrial Ecology - **Technical**

²¹ The Project footprint also covers areas impacted by Project enabling works, as explained in Terrestrial Ecology - **Technical Assessment F**.

²² Transport Agency's Technical Assessment 6: Terrestrial Ecology, prepared by Dr Adam Forbes and lodged with the Notices of Requirement (NoRs) for designations for the Project (Technical Assessment 6).

Assessment F explains that the results of this assessment were broadly consistent with the NoR assessment, and specifically identifies updates and exceptions.

As with the NoR assessments, the Environmental Institute of Australia and New Zealand (EIANZ) Ecological Impact Assessment Guidelines (EclAG) document (EIANZ, 2018) has been used to assess the level of effect on each habitat type and fauna species. This is considered best practice and is based on:

- The ecological value category assigned to each vegetation/habitat type or species (on a scale from 'Negligible' to 'Very High');
- The potential magnitude (on a scale from 'Negligible' to 'Very High') of effect on each of the vegetation/habitat or species value after efforts to avoid or minimise potential effects; and
- An overall level of residual effect (those that cannot be avoided or minimised) is determined and used to guide the type and quantum of offsetting and compensation required.

Information used to inform the EclAG assessment was gathered through a combination of a literature review and site investigations and surveys. Where site-specific information of species distributions is limited (e.g. terrestrial invertebrates and lizards) a conservative approach has been applied. Accordingly, the species identified through the literature review are assumed present in all of the vegetation types that contain suitable habitat.

As explained in Terrestrial Ecology - **Technical Assessment F**, an explicitly conservative approach has been taken to the assessment of effects on terrestrial ecology (for example by assuming the presence of fauna in situations where that has not been confirmed).

The above methodology has been used to inform the level of effect that the Project is anticipated to have on habitats and fauna (as discussed at Sections 6.10.3 and 6.10.4 below). Where specific methodologies have been used, these have been discussed in the relevant section.

6.10.3 Terrestrial Vegetation and Habitat Effects

The Project will require vegetation removal as a result of physical Project elements (such as the alignment, spoil sites, and SUP), as well as clearance required for construction. To calculate the likely areas of vegetation removal required, the Project team has applied a 'construction buffer' to allow for construction activities and access. The total level of required vegetation removal has also been calculated to include the impacts associated with enabling works, for which resource consents are being sought separately as necessary. Together, the total area of clearance, including construction buffer and taking into account enabling works, is referred to as the Project footprint.

As noted above, the Project footprint includes a maximum vegetation clearance and removal area of approximately 11.82 ha of indigenous dominated vegetation and a small number of wetlands totalling approximately 4.97 ha. This results in a total direct vegetation impact of approximately 16.79 ha of vegetation/habitat removal.

The vegetation and habitats impacted have been categorised into 12 vegetation/habitat types. This largely follows the categorisation applied in the NoR process, with some updates as explained in Terrestrial Ecology - **Technical Assessment F**. Eight vegetation types are considered significant pursuant to Policy 13-5 due to being classified as Threatened or Rare under Schedule F of the One Plan (as shown in Table 6-3).²³ This information is also shown visually on the Drawings TAT-3-DG-E-

²³ For the purposes of the Policy 13-5 assessment, pasture wetlands have been split into indigenous and exotic dominated wetlands.

4131 - 4137 contained in **Volume III**. Again, the majority of the Project footprint (approximately 91%) is made up of pasture, exotic forest, and existing road and other infrastructure.

Table 6-3 Summary of the vegetation/habitat types present in the Project area, their Schedule F classification and anticipated extent of impact

Vegetation / Habitat Type	Schedule F assessment	Approximate area impacted by the Project (ha)
Old-growth forest (alluvial)	Significant	0.10
Old-growth forest (hill country)	Significant	0.85
Secondary broadleaved forests with old-growth signatures	Significant	0.25
Old-growth treelands	Significant	0.13
Advanced secondary broadleaved forest	Not significant	0.04
Kānuka forests	Significant	1.3
Secondary broadleaved forests and scrublands	Not significant	6.71
Mānuka and kānuka shrublands	Not significant	2.11
Divaricating shrublands	Not significant	0.33
Raupō-dominated seepage wetlands (high value)	Significant	0.11
Indigenous-dominated seepage wetlands (moderate value)	Significant	0.44
Pasture wetlands ²⁴	Those dominated by <i>Juncus edgariae</i> are Significant but those dominated by exotic species are Not Significant	4.42
Total		16.79

Using the EciAG methodology outlined in Section 6.10.2, the magnitude of effect is assessed after taking into consideration any direct and indirect impacts, and any mitigation and minimisation measures to be undertaken. As shown in Table 6-4, the Project results in a low magnitude of effect on four habitat types, a moderate magnitude of effect on seven habitat types, and a high magnitude of effect on one habitat type (indigenous-dominated seepage wetlands). The assessed magnitude of effect is then applied in relation to the vegetation/habitats assessed ecological value to come to an overall level of effect (or 'residual effect') as shown in Table 6-4.

Table 6-4 Assessed level of effect for vegetation/habitats calculated using the EciAG methodology

Vegetation / Habitat Type	Ecological Value	Magnitude of effect	Level of Residual Effect
Old-growth forest (alluvial)	Very High	Moderate	High
Old-growth forest (hill country)	Very High	Moderate	High
Secondary broadleaved forests with old-growth signatures	High	Moderate	High
Old-growth treelands (+ ramarama)	High	Low	Moderate
Advanced secondary broadleaved forest	High	Low	Moderate
Kānuka forests	Moderate	Moderate	Moderate
Secondary broadleaved forests and scrublands	Moderate	Moderate	Moderate
Mānuka and kānuka shrublands	Moderate	Moderate	Moderate
Divaricating shrublands	Moderate	Moderate	Moderate

²⁴ Note these were referred to as 'exotic dominated wetlands' in the NoR process but have been reclassified as pasture wetlands because further field investigations revealed that while all of the wetlands were in pasture some of them were native species dominated with a high abundance of native *Juncus edgariae* present, and occasionally contain patches of native *Carex* sedges.

Raupō-dominated wetlands (high value) seepage	Very High	Moderate	High
Indigenous-dominated wetlands (moderate value) seepage	Moderate	High	Moderate
Pasture wetlands	Moderate	Moderate	Moderate

Terrestrial Ecology - **Technical Assessment F** concludes that the residual levels of effect (once avoidance and mitigation measures outlined in Section 6.10.6 are applied) in respect of these habitat types require offset and / or compensation measures to be applied. This is as anticipated through the NoR process (and proposed conditions).

6.10.4 Effects on specific plant species

Ten (10) plant species that have a Threat Classification have been observed within, or in close proximity, to the Project area (these species are identified in Table 6-3).

The effects of the Project on these plant species have been specifically assessed in Terrestrial Ecology - **Technical Assessment F**; this is additional to the assessment of effects on the habitats in which these plants are present. The results of the assessment, through the application of the EclAG framework, are set out in Table 6-5.

Table 6-5 Assessed level of effect for specific plant species applying the EclAG methodology

Plant species	Ecological Value	Magnitude of effect	Level of Residual Effect
Giant maidenhair	High	Moderate	Moderate
Kānuka	Very High	Moderate	Low
Mānuka	Very High	Moderate	Low
Ramarama	Very High	Low	Low
Rohutu	Very High	Low	Low
Rātā	Very High	Low	Low
White rātā	Very High	Low	Low
Climbing rātā	Very High	Low	Low
Akatea	Very High	Low	Low
Swamp maire	Very High	Low	Low

6.10.5 Terrestrial Fauna Effects

Consistent with the assessment of effects carried out for the NoR process, Terrestrial Ecology - **Technical Assessment F** includes an assessment of the Project's potential effects on the various fauna that inhabit the identified habitat types across the Project footprint.

This assessment is additional to the assessment of the Project's effects on the relevant habitats; it also recognises that there are valuable fauna species that inhabit or potentially inhabit areas that are more generally considered to be of relatively low value (pasture and exotic forest in particular).

Potential effects on each fauna type (avifauna, bats and lizards and invertebrates) are discussed in further detail in the sections below.

6.10.5.1 Avifauna

25 Threatened and At-Risk bird species have been confirmed within the Project area using a range of habitats. A high-level summary of the effects that the Project may have on habitats used by various bird species is provided below. Where notable species use multiple habitats, these have been identified also:

- Forest birds – up to 11.82 ha of potential forest and shrubland habitat is proposed for removal, based on an assumption that these species could potentially use all forest and shrubland types in the Project footprint. However, the more intact, old-growth areas are likely to be preferred habitat;

- Wetland birds – 0.55 ha of habitat loss (representing the ‘non-pasture’ impacted wetlands). The fact that none of the wetland species have been recorded after targeted acoustic surveys indicates that the wetland removal will be unlikely to have population-level effects;
- NZ Pipit – 4.97 ha of wetlands (of all types) and approximately 30 ha of pasture that will be permanently lost (i.e. pasture that lies under the road footprint specifically as opposed to the Project footprint more broadly);
- Open water birds / native ducks – 2 ha of open water farm ponds. The small area of impact in combination with the fact that neither of these species have been confirmed in the Project area indicates that this impact is unlikely to have population-level effects;
- River birds – noise disturbance from Project works is considered a moderate effect as it could result in abandonment of nests. However, some species (such as NZ dotterels) are known to be resilient to such construction disturbance based on similar Project experience. Mechanisms are to be employed to deter river birds from nesting in the vicinity of the BR02 footprint, and to protect any nests that are discovered; and
- Karearea – it has been conservatively assumed that falcon use all vegetated areas available in the designation corridor, including the improved pasture. Permanent habitat loss is therefore estimated at 11.82ha of forest and shrublands, as well as 1.12 ha of pine forest and 30 ha of pasture (a negligible proportion of available pine forest and pasture habitat in the wider landscape).

Table 6-6 assesses the level of effect of the Project on each avifauna species. The magnitude of effect ranges from Negligible to Moderate. The Project has been assessed to have a Moderate level of residual effect on 11 species.

Table 6-6 Assessed level of effect for avifauna calculated using the EclAG methodology

Biodiversity value	Ecological Value	Magnitude of effect	Level of Residual Effect
Bird Species			
Australasian bittern	Very high	Potentially Low	Moderate
Banded dotterel	Very high	Negligible	Low
Black-billed gull	Very high	Negligible	Low
Caspian tern	Very high	Negligible	Low
Red-billed gull	High	Negligible	Very Low
Whitehead	High	Moderate	Moderate
Spotless crane	High	Potentially low	Moderate
NZ pipit	High	Very low	Low
Marsh crane	High	Potentially low	Moderate
Rifleman	High	Moderate	Moderate
North Island robin	High	Moderate	Moderate
Kakariki	Moderate	Low	Low
Kaka	Moderate	Low	Low
Australian coot	Moderate	Negligible	Very Low
NZ dabchick	Moderate	Negligible	Very Low
Bush falcon (Karearea)	Moderate	Moderate	Moderate
Long-tailed cuckoo	Moderate	Moderate	Moderate
Pied shag	Moderate	Negligible	Very Low
Black shag	Moderate	Negligible	Very Low
Little black shag	Moderate	Negligible	Very Low
Royal spoonbill	Moderate	Negligible	Very Low
Black-fronted dotterel	Moderate	Negligible	Low
Kereru	Moderate	Moderate	Moderate
Bellbird	Moderate	Moderate	Moderate
Tui	Moderate	Moderate	Moderate

Consistent with the requirements of the proposed designation conditions, avifauna management measures are contained within the sub-plans of the EMP (contained at **Volume VII** and discussed

further at Section 6.10.6.2). Specifically, an Avifauna Management Plan, Vegetation Clearance Management Plan, Planting Establishment Management Plan and Biosecurity Management Plan are provided and include seasonal restrictions, pre-clearance protocols, weed control, and enrichment planting measures.

Terrestrial Ecology - **Technical Assessment F** concludes that measures to offset and / or compensate for the residual effects of the Project (i.e. once measures to avoid, remedy or mitigate effects have been applied) are required in respect of those bird species where residual effects are assessed as 'Moderate'. Those measures are discussed in Section 6.10.6.

6.10.5.2 Lizards and invertebrates

To date no lizards have been identified in the Project area. However, there are inherent limitations to surveying for lizards over large areas. Hence it is conservatively assumed that At-Risk lizards are present in a low density across all of the forest and shrubland. This approach is consistent with the approach taken through the NoR assessment.

Similarly, desktop invertebrate assessments show that several species and their habitats may be present within the Project footprint, including species that are classified as 'Threatened' or 'At Risk'. The proposed designation conditions require pre-construction surveys to seek to confirm the presence or absence of invertebrate species; those surveys commenced in February 2020 and results will be made available as they come to hand. An expert invertebrate assessment is contained at Appendix F.2 to Terrestrial Ecology - **Technical Assessment F**.

Table 6-7 assesses the level of effect of the Project on lizard and invertebrate species. The Project will have a Potentially Moderate level of residual effect for five lizard and four invertebrate species; and a High level of residual effect on three species of invertebrate (snails). The 'Potentially' qualifier reflects that these effects assessments are conservative, and not based on detailed survey results.

Table 6-7 Assessed level of effect for lizard and invertebrate species calculated using the EciAG methodology

Biodiversity value	Ecological Value	Magnitude of effect	Level of Residual Effect
Lizard Species			
Barking gecko	High	Potentially Moderate	Potentially Moderate
Ngahere gecko	High	Potentially Moderate	Potentially Moderate
Raukawa gecko	Low	Potentially Moderate	Low
Pacific gecko	Moderate	Potentially Moderate	Potentially Moderate
Glossy brown skink	High	Potentially Moderate	Potentially Moderate
Ornate skink	High	Potentially Moderate	Potentially Moderate
Invertebrate Species			
<i>Powelliphanta traversi traversi</i> (snail)	Very high	Potentially Moderate	Potentially High
<i>Powelliphanta traversi tararuaensis</i> (snail)	Very high	Potentially Moderate	Potentially High
<i>Powelliphanta marchanti</i> (snail)	Very high	Potentially Moderate	Potentially High
<i>Megadromus turgidiceps</i> (beetle)	Moderate	Potentially Moderate	Potentially Moderate
<i>Meterana grandiosa</i> (moth)	Moderate	Potentially Moderate	Potentially Moderate
<i>Meterana exquisita</i> (moth)	Moderate	Potentially Moderate	Potentially Moderate
<i>Wainuia urnula</i> (snail)	Moderate	Potentially Moderate	Potentially Moderate

The key habitat proposed for removal is of varying quality for lizards and invertebrates with the highest quality habitat being 2.5 ha of old-growth forest and kānuka forest. The removal of these areas could pose a population-level effect for at least some of the lizard and invertebrate species assumed to be present if not appropriately mitigated.

Lizard and invertebrate management measures are contained within the sub-plans of the EMP (contained at **Volume VII** and discussed further at Section 6.10.6.2). Those sub-plans include the

measures required to be included by the proposed designation conditions. Specifically, a Lizard Management Plan (including relocation protocol), Terrestrial Invertebrate Management Plan (including survey requirements), Vegetation Clearance Management Plan, Planting Establishment Management Plan and Biosecurity Management Plan are provided and include pre-clearance protocols, weed control and enrichment planting measures.

As with avifauna species, Terrestrial Ecology - **Technical Assessment F** concludes that offset and / or compensation measures are necessary to address Moderate or greater levels of residual adverse effects on lizard and invertebrate species (see Section 6.10.6).

6.10.5.3 Bats

A bat assessment is contained at Appendix F.1 of Terrestrial Ecology - **Technical Assessment F**. As explained in Appendix F.1, a series of surveys carried out before and during the NoR process did not identify any bats within the Project footprint; the closest record is of a long-tailed bat 13 km away.

With those results in mind, the assessment of effects on bats has been undertaken on the conservative assumption that long-tailed bats move through the area on occasion (but do not regularly use the Project footprint).

Table 6-8 Assessed level of effect for bats calculated using the EclAG methodology

Biodiversity value	Ecological Value	Magnitude of effect	Level of Residual Effect
Bat Species			
Long-tailed bat	Very high	Negligible	Low

The impacts of the Project on long-tailed bats are expected to be negligible. The overall Low level of residual effect under the EclAG formula is driven by the Very High ecological value of long-tailed bats as shown in Table 6-8. Consistent with the requirements of the proposed designation conditions, a Bat Management Plan (which includes pre-clearance protocols) is included within the EMP (contained at **Volume VII** and discussed further at Section 6.10.6.2); this is considered to appropriately mitigate any potential adverse effect on bats.

6.10.6 Measures to Avoid, Remedy or Mitigate Effects

The Project has sought to avoid, remedy and mitigate the adverse effects on terrestrial ecology as far as practicable through project shaping and a suite of ecological mitigation and management measures/tools set out in the EMP (**Volume VII**). These measures are discussed in further detail below.

6.10.6.1 Avoiding Effects

The significant reduction in habitat loss compared to the assumed NoR effects maxima is the product of an iterative and careful design process.

As previously addressed in Section 2, the Northern Alignment shifts between CH 5400 - CH 6600 so the road traverses the northern edge of the Western and Eastern QEII covenant rather than the middle reaches of the gully to avoid severance and reduce the extent of impact. As referenced in Section 6.10.1, this reduced the maximum area of vegetation or habitat to be removed from a total of approximately 31 ha to 27.85 ha.

Further considerable effort has been undertaken through design of the Project to avoid adverse effects on terrestrial ecology (as discussed in the DCR and at Section 7 of this AEE). In summary these measures have included:

- Project route optioneering – the MCA phase (prior to lodgement of the NoRs) considered ecological impact and the preferred alignment had considerably lower ecological effects in comparison to other alignments assessed;

- Designation design – constraining the footprint to minimise potential impacts on ecologically significant areas;
- Design changes/refinement that have reduced the amount of forest and wetland loss from 27.85 ha to 16.79 ha including:
 - Steepening batters adjacent to the western QEII area to further reduce the amount of vegetation clearance/encroachment required into this high value habitat;
 - Lengthening of BR03, careful location of bridge piers and locating the wetland walking track to avoid old-growth swamp maire and to minimise impacts on the high value raupō wetland at CH 4000 - CH 4200;
 - Redesigning Wetland 5 to reduce the extent of impact on the old-growth treeland containing ramarama vegetation; and
 - Consideration of ecological values in determining the spoil site locations.

6.10.6.2 Ecology Management Plan

In addition to the avoidance measures, an EMP has been prepared (as per the Designation Conditions) (refer to **Volume VII** of the AEE). The EMP includes a number of specific sub-management plans that seek to manage effects on terrestrial ecology. The EMP includes all of the measures required by the Designation Conditions, as well as additional measures recommended in Terrestrial Ecology - **Technical Assessments F** and Terrestrial Offset and Compensation – **Technical Assessment G** to address effects on terrestrial ecology values.

The EMP covers measures to avoid, remedy and mitigate effects; as well as measures to offset and compensate for residual effects (particularly through the Planting Establishment Management Plan and Residual Effects Management Plan).

The sub-management plans relevant to terrestrial ecology effects include:

- **Vegetation Clearance Management Plan** – provides management actions recommended in order to avoid, remedy and mitigate effects on vegetation include design measures, vegetation mapping, vegetation clearance protocols, vegetation salvage and eco-sourced replacement planting;
- **Planting Establishment Management Plan** – outlines the management processes to implement planting proposed to address ecology effects. Management actions recommended include eco-sourced replacement planting, selection of appropriate plant species mixes and appropriate exclusion measures, weed control and pest management;
- **Biosecurity Management Plan** – sets out procedures that will minimise the likelihood of spread or introduction of invasive organisms as a result of Project-related activities;
- **Lizard Management Plan** – describes measures to avoid, remedy or mitigate potential adverse effects of the Project on lizards, including measures to salvage and relocate native lizard species that are likely to be adversely affected by the Project;
- **Bat Management Plan** – describes measures to avoid, remedy or mitigate potential adverse effects of the Project on long-tailed bats that may be adversely affected by the construction and operation of the Project; those measures include pre-clearance search and tree removal protocols;
- **Avifauna Management Plan** – sets out how the Project proposes to avoid or minimise potential adverse effects on avifauna, in particular through measures to avoid where practicable actively nesting birds;

- **Terrestrial Invertebrate Management Plan** – specifies procedures to avoid, remedy or mitigate the potential adverse effects of the Project on At-Risk or Threatened terrestrial invertebrates. At this stage the Plan sets out detailed pre-construction survey protocols, with the Plan to be updated to prescribe management measures in light of the results of the surveys; and
- **Residual Effects Management Plan** – sets out the methods that will be used to offset and compensate for residual effects associated with the Project, which cannot be avoided or minimised. The REMP also outlines the performance standards and monitoring and reporting requirements.

Having a fulsome draft EMP prepared at the consent lodgement stage allows for the details of the Transport Agency's proposed measures to address effects on terrestrial ecology values to be considered through this process. The Transport Agency's intention is that the draft EMP will be assessed, updated and ultimately approved through the resource consent process. The EMP would then go through the certification and outline plan process as set out in the Designation Conditions.

6.10.7 Offset and Compensation

After options to avoid, remedy and mitigate adverse effects have been exhausted, the residual adverse effects identified in Terrestrial Ecology - **Technical Assessment F** will be offset or compensated, providing a verified or expected net gain in biodiversity values.

While offsetting and compensation form key components of the effects management framework for this Project, it is noted that these measures do not reduce the overall level of adverse effect. Therefore, based on the level of residual effect on vegetation/habitats (after factoring in the avoidance and mitigation measures outlined in Section 6.10.6) it is considered that the Project results in significant residual adverse effects. This is particularly relevant to the habitats that are classified as significant habitats (under Schedule F and Policy 13-5 of the One Plan). This section provides a discussion of the offset and compensation requirements to address the significant residual adverse effects.

Terrestrial Ecology - **Technical Assessment F** specifies the residual terrestrial fauna effects that need to be offset and / or compensated for. The Terrestrial Offset and Compensation - **Technical Assessment G** discusses what is required as offset and compensation and how this has been calculated²⁵. A summary is provided below.

It was recognised in the NoR process that measures to offset and / or compensate for effects on terrestrial ecology values would be necessary. The Designation Conditions (particularly condition 24) set a framework for offsetting and compensation, which has been an important reference point.

The Transport Agency has actively sought the input of key stakeholders (including but not limited to iwi Project Partners, DOC, Horizons, QEII Trust and Te Āpiti Governance Group) as to the approach to offset and compensate for residual adverse effects, including through a series of technical workshops.

Terrestrial Offset and Compensation - **Technical Assessment G** explains in particular that there has been a focus on:

- Adhering to the 'mitigation hierarchy' as a matter of ecological best practice, and in accordance with Designation Condition 24. Where possible, effects are to be offset (to a 'verifiable net gain') as opposed to compensated for (to an 'expected net gain'); and

²⁵ Note that the offsetting and compensation package includes the habitat restoration and enhancement measures that are required by those enabling works that have been or will be consented separately, in order to comprehensively address the effects of the Project in its entirety.

- The offset and compensation package has been developed by close reference to “*Biodiversity Offsetting Under the Resource Management Act – A Guidance Document 2018*” (BOURMA), which is referred to in Designation Condition 24.

The quantum of offset and compensation measures required for addressing residual effects has been determined through applying a Biodiversity Offset Accounting Model (as encouraged in BOURMA and by key stakeholders) and a Biodiversity Compensation Model. The Models have been used as decision support tools in identifying the proposed package of offset and compensation measures in respect of terrestrial ecology effects. The end result is a proposed package that is significantly more robust than the ‘horse trading’ that often occurs in the development of measures to address residual adverse effects. For a detailed explanation on the methodology used to calculate the offset and compensation refer to the Terrestrial Offset and Compensation - **Technical Assessment G**.

To offset or compensate for the abovementioned residual effects, the following restoration and habitat enhancement measures are required:

- 45.6 ha of native terrestrial revegetation, and 6.55 ha of wetland revegetation with additional 10 m buffer plantings, including:
 - Provision for seeding of forest resources and artificial cavities for fauna (if necessary);
 - Stock exclusion by fencing;
 - Plant establishment pest control;
 - Weed and animal pest management for a ten-year period; and
 - Permanent legal protection.
- 48.3 ha of native bush (plus 0.4 ha of existing wetland) will be retired from stock grazing through stock exclusion fencing; as with the revegetation area, this will be complemented by weed and animal pest management for a ten-year period and permanent legal protection;
- approximately 300 ha of mammalian pest control will be undertaken for a period of 10 years (on a 2-yearly rotation) in the Northern Block of the Manawatū Gorge Scenic Reserve, which is within close proximity to the Project footprint and dominated by Old Growth Hill Country Forest;
- Performance standards and ‘targeted outcome monitoring’ of specific restoration and habitat enhancement measures (including pest control) are proposed to ensure the anticipated gains are achieved;
- Terrestrial Offset and Compensation - **Technical Assessment G** explains that discussions are ongoing with landowners, and other stakeholders, in respect of potential ‘target’ sites for the offset and compensation actions. The Proposed Ecological Offset/Compensation Plans (TAT-3-DG-E-4150 – 4162) are contained in **Volume III** and show proposed offset and compensation locations. The target sites have not at this stage been formally secured; formal agreements will be required with landowners to achieve the necessary protection as described in Terrestrial Offset and Compensation - **Technical Assessment G**. Discussions to that end are in progress. Conditions requiring the offset and compensation sites to be secured are proposed at **Appendix E**.
- The Planting Establishment Management Plan and Residual Effects Management Plan (which are part of the EMP) together set out the detail in terms of the offset and compensation actions to be implemented, and the performance standards to be met; and
- In addition to the above, there will be offset and compensation provided to address freshwater ecology effects (discussed at Section 6.11 below). These measures have not been taken into account when undertaking the offset and compensation calculations for terrestrial ecology but

nevertheless, will provide benefits to terrestrial and wetland biodiversity values through the provision of habitat and buffering and connectivity across the landscape.

Together, the proposed offset and compensation measures will deliver an overall gain in terrestrial biodiversity over the short and the long term.

6.10.8 Summary

Terrestrial ecology effects of the Project include the loss, fragmentation and degradation of habitats for flora and fauna as well as harm to species and individuals within these habitats. Appropriate avoidance and minimisation measures have been implemented or are proposed (as discussed in Section 6.10.6, including through a detailed EMP which has been prepared in draft form and is being lodged with this application). In particular, the overall extent of indigenous vegetation and wetland habitat is now significantly reduced from the maximum levels assumed through the NoR process. Nevertheless, there are effects that have been assessed as having 'moderate' or 'high' levels of effects on local biodiversity values after those avoidance and minimisation measures are taken into account.

A comprehensive offset and compensation package has been designed and a summary provided at Section 6.10.7. The offset model achieves a 'net gain offset' for 7 out of the 12 ecosystem types. After compensation is applied, a net gain in biodiversity will result over the short and the long term for all 12 ecosystem types.

It is considered that through the implementation of the EMP, in combination with the offset and compensation package, actual and potential adverse effects resulting from the Project on terrestrial ecology will be appropriately addressed.

6.11 Freshwater Ecology

A Freshwater Ecology - **Technical Assessment H** has been prepared to assess potential effects on freshwater ecology from the construction and operation of the Project. This assessment should be read in conjunction with the ESC - **Technical Assessment A** and Water Quality - **Technical Assessment C** assessments.

During the NoR process, an initial assessment of freshwater ecology values within the proposed designation corridor was prepared, which included initial high-level comment on the potential effects of the Project on freshwater ecology²⁶. Freshwater Ecology - **Technical Assessment G** refers to and builds on the survey work carried out during the NoR process; this resource consent process is the primary process for considering and addressing the effects of the Project on freshwater ecology.

Section 6.11.1 outlines the methodology used for the Freshwater Ecology - **Technical Assessment G**, Section 6.11.2 addressed the potential effects on freshwater ecology during construction and measures to mitigate those effects, Section 6.11.3 addresses the potential effects on freshwater ecology once the Project is operational and measures to mitigate those effects, Section 6.11.4 provides a summary of offsetting measures required to address habitat loss and modification, and Section 6.11.5 provides an overall summary.

6.11.1 Assessment Methodology

The Freshwater Ecology - **Technical Assessment H** followed the methods outlined in EclAG, in broadly the same manner as applied in the Terrestrial Ecology Assessment.

²⁶ Transport Agency's Technical Assessment 6C: Freshwater Ecology, prepared by Kieran Miller and lodged with the Notices of Requirement (NoRs) for designations for the Project (Technical Assessment 6C).

The effects are reported based on the nine relevant catchments of the Manawatū River (Catchments 1 to 9), and the River itself, as described in Section 2.

To inform the inputs into the above method, existing standard and best practice approaches to freshwater assessment were implemented such as those undertaken through stream classifications, Macroinvertebrate Community Indices (MCI), fish Index of Biotic Integrity (IBI) and Stream Ecological Valuations (SEVs):

- **Stream classifications** involve identifying different attributes of the streams, in order to define them as either ephemeral, intermittent, permanent, or artificial. Each stream was classified and mapped according to whether they provide temporary or permanent habitat for aquatic fauna and contribute to functions within a wider aquatic ecosystem;
- **Macroinvertebrate samples** were collected at each SEV site, using a sampling protocol selected based on the predominant substrate type present within the sampling reach. Each sample was tested and results reported on a number of measures, including MCI and Semi/Quantitative Macroinvertebrate Community Index (SQ/QMCI) which reflect the sensitivity of the macroinvertebrate community to changes in water quality and habitat, where higher scores indicate better stream condition. MCI values are then translated to quality classes, which describe the ecological health of the stream;
- **Fish surveys** were undertaken in support of the assessment in all potentially affected catchments.²⁷ The fish survey method was in general accordance with the New Zealand Freshwater Fish Sampling Protocols for Wadeable Rivers and Streams. Fish survey results were used to calculate the IBI at each survey site; and
- **SEV** methodology was used to assess the aquatic ecological function of the streams across the Project alignment. Fourteen variables were assessed, and values assigned to four key ecological functions (hydraulic, biogeochemical, habitat provision and biodiversity provision). SEV results are reported on a scale of 0 to 1, where 1 is a pristine stream. Twenty-six (26) SEV sites were surveyed. The SEV method is designed to quantify the ecological function of a stream reach and, where all measures to avoid, remedy and mitigate effects of a stream reach have been exhausted, it provides a means to quantify offset requirements. The offset methodology is discussed in more detail below.

6.11.2 Effects during Construction and measures to mitigate those effects

The potential effects on freshwater ecology during construction relate to:

- Stream diversions, culvert placement and stream infilling;
- Sedimentation from earthworks; and
- Wood leachate and concrete.

Each is considered in turn below, along with the measures proposed to mitigate those effects.

6.11.2.1 Stream Works and freshwater fauna injury or mortality

Activities within streams, such as diversions, culvert placement and stream in-filling (as a result of spoil sites and road embankments) can cause stranding, injury or mortality to native freshwater fauna.

Some of these effects will be minimised by adhering to the Freshwater Ecology Management Plan (FEMP) section of the EMP (**Volume VII**) regarding the timing of stream works, and to the Streamworks Procedure (Appendix 6 of the **ESCP**). The relevant measures included in these plans include undertaking construction works, wherever practicable, “in the dry” and “offline” (i.e. with flows diverted

²⁷ Excluding catchment 6 as the only area of the stream to be affected had very poor fish habitat.

around the works site), providing temporary fish passage, and undertaking stream works in summer months when intermittent streams are likely to be dry and fish absent.

Effects will be further minimised and mitigated by implementing Fish Recovery Protocols (FRP) across the site as part of the EMP (**Volume VII**). The FRP includes procedures for:

- Identifying areas of fish populations;
- Recovery and relocation of fauna (including fish and kōura) prior to instream works commencing;
- Measures to prevent fish returning to cleared areas; and
- Rescue and relocation of fauna from spoil or dewatered materials.

Following the successful implementation of the comprehensive FRP, and temporary fish passage measures, the Freshwater Ecology – **Technical Assessment H** concludes the overall effect on freshwater fauna will be Low or Very Low for all catchments.

6.11.2.2 Sedimentation from earthworks, construction and instream works

As discussed in Section 6.4, there is the potential for sediment to be discharged into the receiving environment during earthworks. Although the potential magnitude of sedimentation effects without mitigation can be high, these can be reduced considerably with adherence to the proposed approach described in the ESC - **Technical Assessment A** and summarised in Section 6.4 above.

As discussed in the Water Quality - **Technical Assessment C**, most of this sediment load will be discharged over short durations during wet weather events and consequently, the wet weather suspended sediment concentrations are likely to increase by a similar amount.

While the discharge of sediment can have an impact on water quality, it is the deposition of sediment on streambeds which can have noticeable effects on freshwater ecology. This is because many native species (with the exception of banded kokopu which has not been recorded within the Project catchments) are tolerant of elevated suspended sediment, whereas excess deposited sediment can clog the small spaces which impacts aquatic macroinvertebrates, alters food sources (i.e. macroinvertebrates for predation by fish) and removes egg laying sites for fauna.

As explained in the Freshwater Ecology - **Technical Assessment H**, following the implementation of mitigation measures the overall effect during construction when accounting for ecological values has been conservatively assessed as being Low to Moderate across the majority of catchments. The overall level of effect in Catchment 5 and 7 is anticipated to be High (but acceptable) following implementation of mitigation measures and during construction.

To provide certainty that any potential change is 'barely discernible' following construction Aquatic Ecology Monitoring Protocols (AEMP) are proposed as part of the FEMP.

Monitoring will continue following completion of the Project works to confirm that the post-construction state of the streams returns to a pre-development state.

6.11.2.3 Water quality effects from construction activities

The Freshwater Ecology – **Technical Assessment H** builds on the conclusions of the Water Quality - **Technical Assessment C** regarding the potential impacts on water quality from cleared vegetation. Both assessments recommend adherence to the Vegetation Clearance Management Plan (included in the EMP (**Volume VII**)) and summarised in Section 6.10.6.

Other potential effects resulting from concrete or other substances can be managed through best practice construction processes. The ESCP (**Volume VII**) includes a Hazardous Substances

Procedure, which describes the processes to be implemented to minimise potential risks for concrete and other substances to discharge to the receiving environment.

With the implementation of the described controls, the Freshwater Ecology – **Technical Assessment H** concludes that the overall level of effect resulting from vegetation clearance or water coming into contact with hazardous substances is very low to low.

6.11.3 Operational / long term effects

The potential effects on freshwater ecology once the Project is operational are potentially long term and include:

- Reduced fish passage;
- Stormwater quality and quantity changes (refer to the DCR and the Stormwater Management - **Technical Assessment B** for a full description of the proposed stormwater management approach for the Project); and
- Permanent loss or modification of streams.

Each is considered in turn below, along with the measures proposed to address those effects.

6.11.3.1 Fish Passage

As discussed in the Stormwater Management - **Technical Assessment B**, there are approximately 33 permanent new culverts proposed to be constructed along the alignment. Culverts can restrict fish migration if they are perched or too steep or long, or if there are increases in water flow with insufficient 'roughness' to allow effective fish movement upstream. This can result in a decrease in fish mobility leading to fragmented populations, a reduction in population size, and limiting overall available habitat for freshwater fauna.

Many of the stream catchments affected by the Project are short and steep, with existing natural and artificial barriers to fish passage. However, Catchments 1, 2, 8 and 9 are more likely to have unrestricted fish passage due to low elevation.

The NZ Fish Passage Guidelines have been considered – and, as far as practicable, adopted – in the design of the Project culverts.²⁸ Those culverts in the upper headwaters of the steep catchments were designed to be consistent with the natural gradients present and targeted towards climbing species. All culverts will be embedded to 25% to avoid perching and in an effort to maintain mean cross-sectional depth in adjacent stream reaches. All pipes are oversized, and the aprons have low-flow channels built in.

However, due to the steep nature of the stream systems, constructing culverts that minimise length, while also providing a reasonable gradient is difficult. Consequently, the Freshwater Ecologist provided advice on culvert design based on the likely upstream habitat remaining following construction and location of the culvert. Where upstream habitat was minimal, was only intermittent in nature, or was going to comprise only constructed habitat following construction, fish passage measures were not incorporated into the design.

Drawing TAT-3-DG-H-1441 Cross Culverts Schedule includes full design details for each culvert.

The Freshwater Ecology – **Technical Assessment H** concludes that with the provision of fish passage where necessary and practicable, the overall level of effect ranges from No Effect to Low, depending on the catchment.

²⁸ NIWA and DOC, published 2018.

6.11.3.2 Stormwater Quantity

Increases in impervious surface can change the velocity and volume of stormwater runoff within a catchment, which can result in erosion and habitat modification in streams. Streams within the Project area are susceptible to stream bank erosion which can modify instream habitat and result in sediment deposition in downstream environments.

As discussed in more detail in the Stormwater Management - **Technical Assessment B**, stormwater erosion effects will be mitigated by the provision of detention for all stormwater runoff which will ensure slow release, reducing the potential effects of increased flows on stream systems. At the point of discharge, outfalls will be constructed with erosion protection measures (including energy dissipation structures in some locations) to reduce the potential for erosion.

Peak flow attenuation (up to the 10-year annual return period (ARI) storm event) and extended detention in stormwater management systems is provided for all runoff from the state highway. This attenuation will mitigate flooding effects upstream and downstream of the Project. This is discussed in more detail in the Hydrology - **Technical Assessment D**.

The Hydrology - **Technical Assessment D** concludes the runoff from the Project comprises only a small proportion of the total runoff within the catchments so any potential effects will be so small that they could not be identified and quantified. Further, the existing hydrological environment is highly modified as a result of vegetation clearance and modification.

The stormwater design results in some diversion of stormwater from one catchment to another which will result in a decrease in contributing catchment flows within Catchments 5 and 6, and an increase in Catchments 7 and 4. However, the increases in contributing catchment flows will be minimised through the provision of flow attenuation and extended detention. Further, the small decrease in contributing catchments 5 and 6 is equivalent only to the area of the state highway as all other catchment area will be retained within the catchment.

Consequently, the overall level of operational water quantity effects (in freshwater ecology terms) will be Very Low to Low, depending on catchment.

6.11.3.3 Stormwater Quality

Stormwater runoff from roads can contain a wide range of contaminants which have the potential to impact fauna and ecosystem health within the freshwater environment. Thermal pollution, resulting from increased impervious surfaces or stormwater treatment devices themselves, is an additional potential effect on freshwater ecology.

Water quality treatment of all stormwater runoff from the proposed state highway within the Project area (to a standard of 75% TSS removal on a long-term average basis) is provided using planted wetlands, wetland swales and swales. This is discussed in more detail in the Water Quality - **Technical Assessment C** which informed the Freshwater Ecology Assessment. The key conclusion is that most of the time and during baseflow conditions, stormwater quality can be expected to have a 'negligible or minor' impact on stream water quality. The Freshwater Ecology Assessment concludes the overall level of operational water quantity effects (in freshwater ecology terms) will be Very Low to Low, depending on catchment. A small improvement may occur in the Manawatū River itself, noting that runoff from existing roads is not treated.

6.11.3.4 Stream Loss and Diversions

A total of 13.365 km of stream length (permanent and intermittent) will be affected by the Project. A substantial portion of impacted stream length will be located underneath spoil sites or road embankments. While the effects on freshwater ecology from some activities can be mitigated (for example by ensuring fish passage through culverts), stream loss (including stream diversions) results

in the permanent loss of the original ecological function and value. This is considered to have a significant ecological effect which requires offsetting.

Much of this stream length will be replaced with stream diversions comprising 3 types:

- Type 1 – permanent streams with low gradient;
- Type 2 – permanent streams with steep gradient; and
- Type 3 – intermittent stream diversions.

Further details of the proposed stream diversions are provided in the Stormwater Management - **Technical Assessment B**, including the Diversion Schedule.

The Freshwater Ecology - **Technical Assessment H** considers that this level of impact cannot be effectively mitigated, even if a new stream channel is created and designed appropriately as per the Diversion Schedule. Rather, the new stream channel (new stream habitat) created as part of a stream diversion is considered an offset.

Residual effects associated with stream habitat loss and modification have been assessed as of a Very High overall level, requiring offsetting. The proposed offsetting for habitat loss and modification effects is described below.

6.11.4 Measures to Offset Residual Stream Habitat Loss and Modification Effects

In order to define the quantum of stream offset required to address the residual adverse effects on freshwater stream systems, Environmental Compensation Ratios (ECR) have been calculated where stream loss or modification occurs. The 'gains' are proposed to be achieved through a combination of stream diversions (creation of new habitat) and riparian planting (and associated protection actions) of existing streams.

The SEV and ECR methodologies are recognised as being robust and effective tools to support offset decision making for freshwater stream systems. Application of the SEV and ECR method has been used to quantify, in respect of indicative modelled sites (refer below), stream creation (through diversions) and riparian restoration and enhancement planting required to offset impacts on 13.365 km of intermittent and permanent stream. The quantum of new stream creation, and indicatively modelled streambed enhancement (via riparian planting), is presented by catchment in Table 17 of the Freshwater Ecology - **Technical Assessment H** and replicated below at Table 6-9.

Table 6-9 Summary of proposed offset and range of ECR calculated for each catchment

Catchment	Streambed area impacted (m ²) ('loss')	Proposed offset measures ('gain')	ECR range
Catchment 1	974	1,102 m ² streambed enhancement via riparian planting 700 m ² new stream creation	1.09 to 2.23
Catchment 2	1690	2,831 m ² streambed enhancement via riparian planting 1,491 m ² new stream creation	1.28 to 4.41
Catchment 3	181	346 m ² streambed enhancement via riparian planting 102 m ² new stream creation	1.98 to 5.36
Catchment 4	2583	3370 m ² streambed enhancement via riparian planting 2970 m ² new stream creation	1.37 to 5.09

Catchment 5	1349	2,010 m ² streambed enhancement via riparian planting 1,692 m ² new stream creation	2.10 to 4.34
Catchment 6	39	119 m ² streambed enhancement via riparian planting	2.96 to 3.53
Catchment 7	639	172 m ² streambed enhancement via riparian planting 1,410 m ² new stream creation	1.97 to 2.89
Catchment 8	794	1,155 m ² new stream creation	1.01 to 2.06
Catchment 9	55	161 m ² streambed enhancement via riparian planting	2.96

6.11.4.1 Stream Diversions and offsetting

A total area of 9,501 m² of streambed is to be created through the construction of Type 1, 2 and 3 stream diversions. The benefits of the creation of stream diversions in the context of this Project are twofold. The diversions facilitate the movement of water along a similar path to predevelopment and in that respect they mitigate potential effects on catchment flow regimes. In addition, if designed and constructed appropriately, diversions also offer the potential to provide additional habitat and stream length to replace that being lost.

ECRs between 1.09 and 5.36 were calculated depending on the ecological value lost at the impact site, and the potential ecological gain at the modelled offset site.

Overall, the Freshwater Ecology assessment concludes that diversions contribute to offsetting the effects of streambed habitat modification and, at catchment level, stream diversions mitigate the overall effect of habitat modification.

6.11.4.2 Riparian planting and offsetting

Riparian planting is proposed to be undertaken, in addition to the diversions, to address residual effects on freshwater ecology resulting from the Project. It is proposed to plant and retire stream margins within the immediate Project catchments to provide for improved aquatic ecosystem health. This will include fencing of riparian margins to restrict stock access and planting of these margins; those areas will be subject to permanent legal protection. The PEMP sets out requirements and performance measures in respect of the riparian planting.

Several landowners have expressed an interest in having their streams fenced and planted. However, for the purpose of the ECR calculations, this area of riparian planting is wholly identified within one of two indicative offset sites; being 23.4 km of stream length at Ratahiwi Farm in the upper Mangamanaia Stream catchment (the other indicative site that has been surveyed is Sproull Farm). Based on that modelled site, and an indicatively modelled average 20 m planting width on each bank, riparian restoration / enhancement would be required along 10,137 m² of streambed area in order to achieve no net loss.

Ratahiwi Farm is within the Mangamanaia Stream catchment and would involve several headwater gully systems being retired and planted. This would contribute to catchment-scale benefits beyond just the stream reach (and what the SEV method can reasonably capture).

The final location and precise composition of the offset package will be determined following further discussions with landowners; in particular 17 km of stream length (as opposed to the modelled 23.4 km) at Ratahiwi Farm has been more definitively identified as being potentially available for enhancement.

6.11.5 Summary

A fulsome assessment of the Project's freshwater ecology values has been carried out, including through detailed surveys; a number of construction and operational or long-term effects on those values have been identified, with mitigation actions proposed.

Stream habitat loss and modification is the most significant adverse effect on freshwater ecology associated with this Project, and mitigation of these Very High effects is not possible given the permanent loss of the original streambed. However, the residual adverse effects on freshwater ecology of the Project can be offset via the 9,501 m² of streambed created, stream diversions and riparian restoration/ enhancement (indicatively modelled to occur along 10,137 m² of streambed). This will ensure that there is no net loss in ecological function.

Overall, the Freshwater Ecology Assessment concludes that the measures proposed are sufficient to address the residual freshwater ecology effects associated with this Project and will result in a positive overall outcome within the immediate Manawatū River catchment.

6.12 Natural Character Effects

A Natural Character - **Technical Assessment I** has been prepared to assess the potential effects of the Project on the natural character of relevant waterbodies (and their associated margins). For this Project, the waterbodies potentially affected by the Project are the Manawatū River and the 9 stream catchments which are crossed by the Project's construction footprint, and which all ultimately feed into the Manawatū River (catchments 1 to 9 as shown on the Waterways and Catchments Overview Plan, Drawing TAT-3-E-4100 in the Drawing Set, **Volume III**. This drawing also identifies the sub-catchments, which are labelled by reference to the overall catchment number (e.g. catchment 1 includes sub-catchments 1A, 1B, etc.) See also the Natural Character Maps in Appendix I.6 of Natural Character - **Technical Assessment I**.

Natural character is concerned with the condition of the waterbody and how this is experienced. The degree of natural character within an environment depends on the extent to which natural elements, patterns and processes occur and the nature and extent of modifications. As mentioned, for this Project, it is the natural character of the Manawatū River and the 9 stream catchments crossed by the Project's construction footprint which is relevant. The natural character of these waterbodies can be broken down into three spatial components being active bed, margin and context. Within those spatial components, there are abiotic, biotic and experiential attributes to consider, which all contribute to the overall quality of natural character of a particular waterbody.

An assessment of natural character was carried out to inform the AEE that was prepared in support of the NoRs (referred to in this Chapter 6 as the NoRs Assessment). The NoRs Assessment was based on the proposed designation footprint at that stage (i.e. without being modified to provide for the Northern Alignment). That Assessment concluded that the Project may lead to a significant diminishment of natural character of particular streams at the location where the Project's construction footprint crossed the stream, but that the reduction in natural character would diminish when considered at an overall stream scale.

The Northern Alignment has led to a significant improvement in natural character effects when compared to the original alignment being considered by the NoRs Assessment. In particular, catchments 6 and 7, which are both located in areas protected by QEII Open Space Covenants, are less affected by the Northern Alignment than they were by the original alignment.

6.12.1 Assessment Methodology

An assessment of a project's effects on natural character requires a comparison of the existing state of natural character with the expected state of natural character post-development; and then an assessment of the significance of the change (if any), recognising that change can be negative or positive.

An assessment of natural character requires an understanding of the various systems and attributes that contribute to natural character. This necessitates input from a range of technical disciplines such as in relation to river hydrology and morphology, aquatic and terrestrial ecology, water quality, and experiential attributes. By collectively assessing the various attributes and components of waterbodies at both the pre- and post-development stages, a change in the degree of "naturalness" or level of natural character can be determined.

Consequently, the Natural Character Assessment was undertaken by a team of experienced practitioners in the relevant disciplines²⁹. The assessment involved the following broad steps, each of which is discussed in more detail below:

- 1) reviewing and confirming as a team the assessment methodology, including the assessment framework and assessment matrix (which was largely the same as that used for the NoRs Assessment but with some amendments);
- 2) reviewing and confirming the waterbodies crossed by the Project;
- 3) assessing the current condition of natural character of those waterbodies (by rating each attribute of natural character and then agreeing as a team the overall rating of natural character), including identifying any areas of high or outstanding natural character; and
- 4) assessing the anticipated change to natural character of those waterbodies (again, by rating each attribute and then agreeing an overall rating of natural character), and then assessing the significance of that change (if any).

As mentioned above, assessing the level of natural character involves an understanding of the different attributes that contribute to a waterbody's natural character. Consequently, the assessment framework for the Project identified nine attributes that contribute to natural character: flow regime, active bed / morphology, water quality, indigenous taxa assemblages, ecosystem functioning, exotic aquatic flora and fauna, structures and human modifications, terrestrial ecology and experiential. These attributes were clustered into three attribute groups for the different spatial components of the waterbody. These were abiotic attributes (which relate to the active bed and margin), biotic attributes (which relate to the active bed and margin) and the experiential attribute (which relates to the whole river/stream corridor, including the active bed, margin and immediate context).

Based on this assessment framework, the team then agreed and applied an assessment matrix, which sets out indicators of the quality of particular attributes across a rating scale ranging from *very high* to *very low* (see the Natural Character Assessment Matrix provided at Appendix I.2 of Natural Character - **Technical Assessment I**). To aid in calibrating the matrix and the assessment of attributes, three regional examples of rivers and streams were identified to form a baseline – one each of high, moderate and low natural character.

Potential effects on waterway need to be considered in context. While impacts may be specific to the site of impact or "crossing point", their effects on the catchment will be influenced by the stream conditions both upstream and downstream. Because of this, the team considered that a catchment approach is the most appropriate scale or "area" for assessing the natural character of the streams

²⁹ Dr Jack McConchie (hydrology and geomorphology), Alex James & Keith Hamill (water quality) Justine Quinn (freshwater ecology), Josh Markham (terrestrial ecology), David Hughes (stormwater) and Boyden Evans (experiential, and who also coordinated the team and authored Natural Character - **Technical Assessment I**).

affected by the Project. Therefore, the assessment (Steps 3 and 4 above) was undertaken at a catchment scale for the nine stream catchments affected by the Project.

Additionally, an assessment (Steps 3 and 4 above) was undertaken for selected "crossing points" along the Alignment. The crossing points are the areas where a waterbody lies under the potential construction footprint (refer to the Natural Character Maps in Appendix I.6 of Natural Character - **Technical Assessment I**). This crossing point analysis helped to inform the assessment of effects at the catchment scale. The team selected crossing points for detailed analysis where they were determined to potentially have higher levels of natural character, due to having a high stream ecological valuation or being rated high for a particular attribute.

However, the Manawatū River Bridge (BR02) crossing point was also considered as an "area" of natural character in its own right because of its size, scale, prominence, visibility, accessibility and its location at the mouth of the Gorge. No catchment scale assessment was carried out for the Manawatū River or a particular reach of that River.

For each assessment, each technical expert compiled a list of key points for each catchment and crossing point to describe the condition and quality of a particular attribute and assigned a rating for that attribute. The ratings for each attribute are tabulated, together with the commentary explaining the ratings (refer to the Catchment Assessment Tables and Crossing Point Assessment Tables in Appendix I.3 and I.4 of Natural Character - **Technical Assessment I**). The team then discussed the individual attribute ratings and agreed an overall natural character rating for each catchment and crossing point based on those ratings and associated commentary. No weightings or averages were applied in this process. This process was used to assess both the existing and post-development natural character; the difference being the effect resulting from the Project.

The team did not specifically consider mitigation measures when considering the post-development levels of natural character, and therefore the post-development ratings are pre-mitigation ratings.

In applying ratings, the team adopted a seven-point scale as had been done for the NoRs Assessment (i.e. very low, low, moderate low, moderate, moderate high, high, very high, with "outstanding" being considered a sub-set of "very high"). The team also agreed that a diminishment from outstanding to very high; very high to high; or high to moderate should be considered a significant change.

6.12.2 Effects

The Project crosses the Manawatū River just beyond the mouth of the Gorge and potentially affects nine stream catchments (refer to the Waterways and Catchments Overview Plan, Drawing TAT-3-E-4100 in the Drawing Set, **Volume III**. See also the Natural Character Maps in Appendix I.6 of Natural Character - **Technical Assessment I**).

Given the scale of the works associated with construction and operation of the Project, the natural character of the waterbodies within the Project Area will be affected in some way. Generally, these effects will be detrimental because of physical loss or modification of the abiotic attributes of the waterbodies which in turn may affect the biotic systems and experiential attributes. For example, the filling or culverting of the stream gullies with earth embankments or spoil sites will result in permanent loss of vegetation and the loss or modification of significant lengths of active bed and margin.

Assessment of the crossing points indicates that there will be significant diminishment of some attributes and qualities at that crossing point scale. However, as noted earlier, potential effects on waterbodies need to be considered in context and effects at a site of impact or crossing point are influenced by the stream conditions both upstream and downstream. At a catchment scale, none of the streams will experience a significant diminishment in natural character.

In terms of the Manawatū River Bridge (BR02) crossing point, this was assessed as not experiencing a significant diminishment in natural character.

Table 6-10 below sets out the assessed levels of existing and post-development natural character by catchment.

Table 6-10 Catchment Summary - Existing and Post-Development Natural Character

Catchment	Existing Natural Character	Post Development Natural Character
1	Low	Low
2	Moderate	Moderate Low
3	Moderate High	Moderate
4	Moderate Low	Low
5	Moderate High	Moderate Low
6	Moderate High	Moderate High
7	Moderate High	Moderate
8	Low	Low
9	High	High

Table 6-11 sets out the assessed levels of existing and post-development natural character of the selected crossing points.

Table 6-11 Crossing Point Summary: Existing and Post-Development Natural Character

Crossing Point	Existing Natural Character	Post Development Natural Character
2C	Moderate High	Low
3A	Moderate	Moderate Low
3B	Moderate High	Moderate Low
4D	Moderate Low	Low
5A	High	Low
5B	Moderate High	Low
6A	Moderate	Very Low
7A	High	Low
7B	Moderate Low	Low
7B Eco Bridge (BR03) (Raupō wetland)	High	Moderate
9	Moderate Low	Low
Manawatū River Bridge (BR02) crossing point	Moderate High	Moderate

The following are the key effects of the Project on natural character as concluded by Natural Character - **Technical Assessment I:**

- There are no areas of existing outstanding natural character within the areas potentially affected by the Project. This finding is consistent with the findings of the NoRs Assessment;
- Of the nine stream catchments traversed by the Project, only one (catchment 9, Mangakino Stream) has an overall high level of existing natural character, however, given the very small

proportion of this catchment that will be affected by the Project, the catchment is expected to retain a post-development rating of high natural character;

- For the other catchments, the overall existing levels of natural character have been assessed as ranging from low to moderate high. Post-development, there will be reduced levels of natural character in catchments 2, 3, 4, 5 and 7; but in catchments 1, 6, and 8, there will be no change. For those catchments that are expected to experience a diminishment in natural character, the diminishment is not expected to be significant;
- Significant reductions in natural character are expected at three crossing points: crossing point 5A will reduce from high to low; crossing point 7A will reduce from high to low; and crossing point 7B (the Eco Bridge (BR03) over the Raupō wetland) will reduce from high to moderate. However, these effects attenuate when considered at a catchment scale, and as mentioned, no significant effects are expected at a catchment scale;
- Further, the effects of the Northern Alignment on natural character are less than the original alignment that was considered by the NoRs Assessment. In particular, catchments 6 and 7 (which are located in areas protected by QEII Open Space Covenants) are less affected by the Northern Alignment than they would have been by the original alignment. The Northern Alignment also enables development of a range of recreational facilities and experiences in catchment 8. The Northern Alignment does have greater effects than the original alignment for catchment 5 (and in particular crossing point 5A); however, overall, the effects of the Northern Alignment on natural character are less than anticipated with the original alignment;
- The overall existing level of natural character of the Manawatū River Bridge (BR02) crossing point was assessed as moderate high, and post-development natural character is expected to reduce to moderate. This is not considered to be a significant diminishment in natural character and is consistent with the conclusions from the NoRs Assessment; and
- While the Natural Character - **Technical Assessment I** focused on the long-term (permanent) effects of the Project, the construction activities are also expected to create adverse effects on the natural character of the waterbodies. These construction effects will be substantial, particularly at the crossing point locations, including the Manawatū River Bridge (BR02) crossing point. These effects will be managed through best practice construction methodologies and will generally be temporary and short-term. Following construction, these effects will lessen once rehabilitation and revegetation takes place.

6.12.3 Mitigation

As noted previously, in assigning post-development ratings to natural character, the team did not consider possible mitigation measures; therefore, the ratings given are all pre-mitigation ratings. While the team did not specifically consider mitigation for natural character effects, the cumulation of many of the mitigation measures provided to address the environmental effects of the Project will contribute to mitigating adverse effects on natural character. The detail on the measures taken to avoid, remedy and mitigate the adverse effects of the Project are set out in the relevant technical reports and are summarised in Sections 6.4 to 6.11 above).

6.12.4 Summary

In summary, while many of the catchments/areas within the Project area experience a reduction in the level of natural character as a result of the Project works, none are considered to experience a

significant diminishment³⁰ in natural character. Furthermore, cumulatively, the nine catchments comprise only a small proportion (0.6%) of the overall Manawatū River catchment and at that broader scale, the overall effects on the natural character of the waterbodies are expected to be relatively small.

6.13 Cultural Effects

As described in Section 1.3 of this AEE, Iwi Partners have been involved in a multi-layered engagement and collaboration with the Project which has sought to identify and maintain cultural values. In order to integrate cultural and spiritual values into the Project, iwi have been invited to be and are now Project Partners. Iwi Partners have developed key cultural values for the Project that underpin the ongoing cultural, environmental and wider design, management and implementation aspects.

In parallel with the above described processes, Iwi Partners and Te Āpiti Ahu Whenua Trustees have each prepared Cultural Impact Assessments (CIAs) which are provided in **Volume VI**. These CIAs have been informed by the above processes and represent a point in time. They reflect progress made to date to avoid and mitigate cultural effects and to identify areas where further work is still needed to manage remaining residual effects.

The Transport Agency respects that these are assessments made by the iwi in relation to their own values. The following tables summarise the:

- Residual effects that are described in the CIA reports; and
- Measures and processes that have been agreed with Iwi Partners to address those residual effects.

The Transport Agency appreciates the considerable efforts of Iwi Partners in connection with the Project to date. The Transport Agency also acknowledges that Iwi Partners will want to provide an update on their respective positions as the Project further develops and as more design information is made available. This will include further consideration of proposals to manage ecological effects through offsetting and compensation.

6.13.1 Rangitāne o Manawatū

The CIA provided by Rangitāne o Manawatū presents information on cultural impacts as known at this time, based on the information available. This assessment is based on an ongoing relationship with the Transport Agency and the Alliance. The relationship is based on a recognition that Te Āpiti, Manawatū Gorge and the Ruahine Range are cultural taonga, that the local species, waterways and landmarks within the Project and wider area hold great spiritual significance to iwi and that the principles of the Treaty of Waitangi underpin the engagement process.

The CIA states that the principle of partnership is being realised through Rangitāne o Manawatū involvement in technical and governance decision making; the principle of protection is being applied through the design process with a focus on minimising cultural and environmental impacts with residual impacts robustly offset or compensated for; while the principle of participation will continue to develop throughout the duration of the Project. Rangitāne o Manawatū have work and training aspirations, and aspirations to undertake a comprehensive cultural monitoring program.

The Project is located within a cultural landscape known as Ahuaturanga; the landscape and the Project are named after Te Ahu a Turanga Peak that sits above Te Āpiti, near the Saddle Road in the Ruahine

³⁰ As noted above, the expert team who carried out the Natural Character Assessment considered that a reduction from outstanding to very high; very high to high; or high to moderate should be considered a significant change. This is explained further in Natural Character - **Technical Assessment I**.

Range. Te Ahu a Turanga is a significant wāhi tapu, which is important culturally, spiritually and historically to Rangitāne.

Te Āpiti is of paramount importance to Rangitāne as it connected communities east and west of Te Āpiti; the Manawatū River and its riparian margins and Te Ahu a Turanga track were significant routes of transport and communication passageways. Te Āpiti is also the meeting place of the two great forests of Whātonga, namely the forests of the Ruahine and Tararua Ranges. The area is thus symbolic of connectivity between people, places and environments.

Rangitāne o Manawatū are spiritually invested in protecting the ecology, wāhi tapu and wairua of the area. The relationship of Rangitāne with the area is also recognised through the statutory acknowledgements in the Rangitāne o Manawatū Settlement Act 2016, which include statutory acknowledgements over the Manawatū Gorge Scenic Reserve; Manawatū River and tributaries and Pohangina River.

The Ruahine Range is immensely significant to Rangitāne, being part of their identity and recited as part of their Pepeha. The Ruahine Range contains undisclosed burial grounds, special trees where placenta have been buried and significant hunting/gathering grounds. Rangitāne believe that some of the resting places of their tupuna are going to be disturbed when construction commences and are working with the Alliance in confidence to minimise these impacts. Rangitāne o Manawatū do not wish this kaupapa to be part of the public hearing and consenting process in order to protect the location of these resting places. Rangitāne o Manawatū are also working with the Alliance to understand impacts on taonga species in the Ruahine Range, with the aspiration to enhance and reengage with old harvesting grounds and taonga populations.

The Manawatū River and its tributaries are central to the cultural values system of Rangitāne. This is recognised in the Schedule B, Surface Water Management Values in the One Plan. The Manawatū River was created through the spirit of Okatia, who gave life to a tōtara tree growing on the slopes of the Puketoi Range in the Hawkes Bay. The tōtara made its way to the mountain ranges of Ruahine and Tararua, forcing its way through, creating the Manawatū Gorge/Te Āpiti and giving the River the ability to make its way out to sea. The most significant quality that flows through the Manawatū River is its mauri which binds the physical, traditional, and spiritual elements of all things together, generating, nurturing, and upholding all life. This mauri is the most crucial element that binds Rangitāne with their tangible and intangible surroundings. The interconnecting waterways and wetlands of the Manawatū River catchment form a dendritic pattern across the landscape. Flooding and connectivity of intermittent and ephemeral streams, wetlands and floodplains is celebrated as part of this process. If an activity occurs that disrupts the natural actions of waterways entering the River it is seen as having a negative impact on the mauri. Thus, negative impacts on mauri will arise as a result of the Project through infilling, culverting and diverting stream channels, removal of riparian vegetation, and through the release of sediment and roadway contaminants.

The confluence of the Manawatū and Pohangina Rivers is an important place historically and spiritually for Rangitāne o Manawatū. It is where the mauri of the two waters mix which is at the centre of an important cultural landscape. Restoration of waterways and forests on alluvial flats and terraces around this confluence has high cultural value because high value species will flourish here. It currently consists of impacted but high values.

6.13.1.1 Cultural effects and management

The CIA provided by Rangitāne o Manawatū combines aspects of traditional information and practices that have been preserved, recovered through archaeological investigations and recognised in cultural redress provided under Treaty Settlement; with recent scientific investigations undertaken by the Alliance. It seeks to document Rangitāne o Manawatū values and the actions proposed by the

Alliance/Transport Agency/Iwi collective to mitigate and compensate for the impacts of the Project on these values.

As part of the process, Rangitāne o Manawatū have indicated disappointment that the scope of the Project was extended to provide four lanes (two in each direction) and to include a Shared Use Path. This is recorded in the CIA, which in turn has then advised on the effects of the Project including these additional elements.

Rangitāne o Manawatū also note that due to the operational requirements of Te Āpiti Wind Farm it is not possible to give back to Te Ao Māori and enhance mauri within catchments (through stream retirement and riparian planting) within the Te Āpiti Wind Farm that are significantly affected by the Project. It is acknowledged that catchments within Te Āpiti Wind Farm are already affected by trampling of stock through stream channels. A key value and approach of Rangitāne o Manawatū is the need to give back to the area being affected, but this value cannot be met in this instance. However, Rangitāne o Manawatū agree that the offset package will provide for the recovery of stream values in alternative locations.

A key concern of the iwi is effects on indigenous biodiversity. The ecological response package will go a long way to addressing those concerns, however, there will still be residual cultural effects of concern. Table 6-12 summarises the residual effects and the measures that have been agreed with Rangitāne o Manawatū to address those residual effects:

Table 6-12 Rangitāne o Manawatū: Summary of residual effects and management

RESIDUAL EFFECTS	MANAGEMENT
To address residual effects, Rangitāne o Manawatū iwi leaders would like the Transport Agency to gift a portion of land to Rangitāne o Manawatū in the west of Te Āpiti to enable Rangitāne o Manawatū to maintain connection to the area and practice their duties as kaitiaki of the area to their fullest extent. This approach is supported by Article 2 of the Treaty of Waitangi.	The proposed Tangata Whenua Values Management Plan will include consideration as to how access to offset and compensation areas can be provided during the implementation and management phases of this Project, and beyond, so as to provide opportunities for iwi to practice their kaitiaki duties.
Rangitāne o Manawatū are concerned that external tourism operations will pick up in the region and capitalise on the cultural landscape. Tourism operators must consult and work with mana whenua to maintain the integrity of the cultural landscape and its history.	A condition (refer Appendix E) is now proposed that requires design and placement of signs for wayfinding and setting out the cultural narrative and values. This approach will assist in maintaining the integrity of the cultural landscape and its history.
Rangitāne o Manawatū are concerned that weedy gravel bars within the Manawatū/Pohangina confluence are not being considered in wider restoration planning. Planting, weed and pest control is proposed for the surrounding terrestrial areas, which is supported by the iwi, however, Rangitāne o Manawatū feel that the gravel bars, which have high potential habitat value, should also be protected and enhanced.	The approach to weed pest management (located in the Planting Establishment Management Plan of the Ecology Management Plan (Volume VII)) acknowledges the need to manage the possibility of weed invasion into areas that are proposed to be planted as part of the Project. A number of invasive pest plant species are currently present in around the Project footprint and the approach to this issue is to control weed invasion into these areas.
To address residual effects, Rangitāne o Manawatū request that a Cultural Materials Access Plan is required by the conditions of consent and developed as part of the Tāngata Whenua Values Monitoring and Management Plan. This will provide for Rangitāne o Manawatū to have the ability to sustainably harvest resources from terrestrial restoration sites so that they can harvest resources from their maunga and traditional harvesting grounds into the future.	The proposed Tangata Whenua Values Management Plan will include consideration as to how access to offset and compensation areas can be provided during the implementation and management phases of this Project, and beyond, so as to provide opportunities for iwi to practice their kaitiaki duties.
To address residual effects, Rangitāne o Manawatū request retirement and enhancement of Karaka	A condition (refer Appendix E) is now proposed that requires this opportunity to be explored. The Karaka

<p>Grove, a historic mahinga kai area of Rangitāne o Manawatū located on the Manawatū River terraces at the western end of the Gorge to the south of Parahaki Island.</p>	<p>Grove is located on land in private ownership and forms part of an active farm.</p>
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It is acknowledged that Rangitāne o Manawatū have requested additional project and administration support be provided to support Iwi Partners overall. This is subject to ongoing discussions with Iwi Partners.

It is noted that the CIA also identifies a broader concern of ensuring that Rangitāne o Manawatū retains connection to features within the Gorge, such as a sacred rock. Rangitāne o Manawatū thus request that they be consulted and involved in the decision-making process as to what will happen with the old road through the Manawatū Gorge. This is a separate project, but the Transport Agency can confirm that Rangitāne o Manawatū will be involved in the relevant decision-making processes associated with that project.

Rangitāne o Manawatū have worked proactively with the Alliance to understand and mitigate the impacts that the Project will have on Te Āpiti, the Ruahine Ranges, waterways, taonga species and site-specific wāhi tapu. The conditions described in the table above (and as provided in **Appendix E**) appropriately provide for Iwi's continued partnership and participation within the Project, thereby fostering positive outcomes in the social, economic and environmental spheres for the wider Māori community. Rangitāne o Manawatū confirm in their CIA that they look forward to further developing and realising the principles of partnership, protection and participation within the Project Alliance.

6.13.2 Rangitāne o Tamaki nui-ā-Rua

The CIA provided by Rangitāne o Tamaki nui-ā-Rua is focused on the construction and operational footprint of the Project corridor and the wider "Study Area" where indirect impacts may occur. The Study Area considered by the CIA includes a 1000m radius from the approximate road centreline (as shown in the general arrangement drawings in **Volume III**) and has also considered the locations of proposed spoil sites, access tracks and construction yards/ laydown areas. Within this area all appropriate and known cultural sites, areas, landscapes and resources have been identified.

This CIA includes all known elements of the natural and cultural environment within the Project Area and wider Study Area considered to hold cultural value for Rangitāne o Tamaki nui-ā-Rua. This includes native biodiversity and ecology, geological and topographic features, natural resources including water bodies, built heritage such as marae, socio-cultural features such as papakāinga, cultural landscapes, historic or cultural sites, Māori archaeological sites, pou whenua and significant cultural public art. The figure below identifies cultural values across the landscape within the CIA Study Area.



Figure 6-1 Map depicting some of the cultural sites, areas and resources within the Rangitāne o Tamaki nui-ā-Rua Study Area (indicative only)

The CIA confirms that mātauranga/cultural knowledge of the Project Area and wider Study Area has been obtained, where appropriate, from kaumatua, kuia and other holders of knowledge within Rangitāne o Tamaki ā Rua. Readily available published and unpublished written records, illustrations, maps, archaeological and geological records were also reviewed. Spatially referenced heritage asset data was reviewed from the New Zealand Archaeological Association (NZAA) recording scheme database (ArchSite). Other information, reports, and impact assessments provided by the Transport Agency were also reviewed, and the CIA notes that review of the Technical Assessments, Design and Construction Report, and Drawings is continuing. Site visits were also carried out.

6.13.2.1 Cultural effects and management

The Rangitāne o Tamaki nui-ā-Rua CIA identifies numerous significant adverse impacts which have not been reduced to less than significant (minor or less) by the remedy and mitigation measures identified and offered by the Transport Agency to date. These residual impacts include Rangitāne o Tamaki nui-ā-Rua's relationship and their culture and traditions with their ancestral lands, water sites, wahi tapu and other taonga. Accordingly, Rangitāne o Tamaki nui-ā-Rua consider that further mitigation and offsetting is required.

Rangitāne o Tamaki nui-ā-Rua understand that the Project design has avoided and minimised effects on ecosystems and on streams, and in particular on the swamp maire and other eco-systems in and around the raupo seepage swamp through alignment refinement and design of the Eco Bridge. However, Rangitāne o Tamaki nui-ā-Rua state that they would like to be provided with engineering design details and the opportunity to discuss further archaeological investigations so that they can ensure that effects continue to be appropriately managed.

In addition, Rangitāne o Tamaki nui-ā-Rua request opportunities to continue to be involved in the development of the design of the Project. This continued involvement is currently provided for through the proposed conditions (**Appendix E**) which amongst other things requires the preparation of a Tangata Whenua Values Monitoring and Management Plan, preparation of the Ecology Management

Plan (where the role of Iwi Partners is acknowledged) and through associated involvement in the design of offsetting. It is noted Iwi Partners are also involved in detailed design elements that are subject to the outline plan processes associated with the proposed designations for the Project.

As with other iwi, a key concern of Rangitāne o Tamaki-nui-ā-Rua is the Project's effects on indigenous biodiversity. The ecological response package will go a long way to addressing those concerns, however, there will still be residual cultural effects of concern. Table 6-13 summarises those residual effects and the measures that have been agreed with Rangitāne o Tamaki nui-ā-Rua to address those residual effects:

Table 6-13 Rangitāne o Tamaki nui-ā-Rua: Summary of residual effects and management

RESIDUAL EFFECTS	MANAGEMENT
Concern about the potential effects on two Ti Kouka trees located at CH 5800 – CH5900. Support investigation into the possibility of translocation for the two Ti Kouka on the northern alignment.	Condition now proposed (Appendix E) requiring the investigation of options and then if practicable relocation of the two identified Ti Kouka trees.
To address residual effects, there is a request to provide offset mitigation in the form of a Te Āpiti Restoration Fund for purpose of protecting and enhancing the cultural and environmental values of the Manawatū Gorge and its environs. This could be administered by a Trust with representatives from Rangitāne o Tamaki nui-ā-Rua. This will be reviewed once the ecological response package is understood.	The precise mechanism for funding and then delivering any agreed offsetting and compensation has yet to be developed. Iwi Partners will be invited to participate in and assist with implementation discussions. The option for developing a Trust will be considered as part of this process.
Seek opportunity to review and inform and ideally participate in procurement for the construction and operation of the Project	The Transport Agency and the Alliance are committed to the ongoing involvement of Iwi Partners in the implementation, delivery and opening of the Project.
Seek the opportunity to develop cultural indicators for relevant management plans and frameworks and resourcing to undertake kaitiaki cultural monitoring during the construction phase. Provide the opportunity to develop and implement Te Awa o Manawatū Cultural Monitoring Tool and Framework.	Proposed conditions (Appendix E) now require the development of cultural indicators and monitoring, as well as the undertaking of kaitiaki cultural monitoring. This will include the development and implementation of a Te Awa o Manawatū Cultural Monitoring Tool and Framework.

Rangitāne o Tamaki nui-ā-Rua confirm that the Project is a project of regional to national importance. The social, safety and economic rationale for a new route alignment roughly along the proposed designation corridor is agreed in principle by Rangitāne o Tamaki nui-ā-Rua.

Rangitāne o Tamaki nui-ā-Rua confirm that they have a constructive but developing working relationship with the Transport Agency and Alliance and this will require a continued high level of engagement and participation in these next phases of the Project. Rangitāne o Tamaki nui-ā-Rua wish to continue to develop the positive working relationship with the Transport Agency that will deliver material enhancements to the Awa Manawatū, Te Āpiti, and its surrounding environment that are value-add and which emphasise the Māori-outcome components of the Project.

6.13.3 Ngāti Kahungunu ki Tāmaki nui-ā-Rua

Ngāti Kahungunu ki Tāmaki nui-a-Rua provided conditional support to the Transport Agency for the Project at the NoR hearings and continue to provide cultural guidance advice and recommendations for the resource consenting process. The CIA provided by Ngāti Kahungunu ki Tāmaki nui-a-Rua seeks to:

- Articulate historical linkages between Ngāti Kahungunu and the Tāmaki nui-a-Rua (Tararua) District, including a large percentage of the new highway route;

- Explain the cultural values of Ngāti Kahungunu ki Tāmaki nui-a-Rua and how they connect with natural resources;
- Document how these values and their attributes are integrated into the tikanga and kawa of hapū/iwi;
- Summarise the various activities associated with the new highway project – enabling and construction works;
- Understand and quantify the effects of these activities from a Ngāti Kahungunu ki Tāmaki nui-a-Rua perspective;
- Determine and explain how these effects impact on the cultural and environmental values (uāra) of Ngāti Kahungunu ki Tāmaki nui-a-Rua;
- Provide commentary/discussion on the various proposed activities and their effects, and
- Make recommendations on how such effects may be adequately avoided, remedied or mitigated.

The CIA highlights Ngāti Kahungunu ki Tāmaki nui-a-Rua’s traditional connections with the whenua (land), the ngāhere (indigenous forest), ngā wai (freshwater resources) and all flora and fauna which connect to and through mātauranga Māori me ōna tikanga. The CIA confirms that natural resources in the Project Area historically provided abundant supplies of traditional foods, clothing materials, items for adornment, timber for whare and weaponry, along with other essentials for day-to-day survival. The impacts from colonisation, land confiscation, changes in land tenure and intensive land use have resulted in a partial disconnection of tangata whenua from Papatūānuku and all she provides, and from the traditional belief systems that Māori hold.

The CIA provided by Ngāti Kahungunu ki Tāmaki nui-a-Rua is preliminary. They consider that the ongoing development of the Project’s design to finalise management plans and outline plans (as part of the designation process) will mean that the detail as to how the various Project construction activities will be undertaken and managed will only become available later. Consequently, Ngāti Kahungunu ki Tāmaki nui-a-Rua consider that at this stage it is difficult to accurately quantify the full range and degree of effects and reserve the right to provide an additional CIA or amendments. Ngāti Kahungunu ki Tāmaki nui-a-Rua consider that continuing their role of as a Partner in the Project will ensure that this information is sought and provided.

6.13.3.1 Cultural effects and management

The key issues from a Ngāti Kahungunu ki Tāmaki nui-a-Rua perspective is the ability for the Project to be both inclusive and supportive of iwi participation at appropriate levels, and in a way that allows sufficient time for all levels of engagement and robust decision-making. The CIA also identifies resourcing issues and requests that certain tasks commence, such as the preparation of the outline plans (required in connection with the proposed designations for the Project), archaeological authorities. These are tasks that need to be completed and the programming of this work will be discussed with all Iwi Partners.

As with other iwi, a key concern of Ngāti Kahungunu ki Tāmaki nui-a-Rua is effects on indigenous biodiversity. The ecological response package will go a long way to addressing those concerns, however, there will still be residual cultural effects of concern. Table 6-14 summarises known residual effects at this time (including the need for additional processes) and the measures that have been agreed with Ngāti Kahungunu ki Tāmaki nui-ā-Rua to address those residual effects:

Table 6-14 Ngāti Kahungunu ki Tāmaki nui-a-Rua - Summary of residual effects and management

RESIDUAL EFFECTS	MANAGEMENT
Request greater presence in monitoring and recording of birds during construction of and following completion of highway.	Proposed conditions (Appendix E) now provide the opportunity for appropriate monitoring of the Project, with details to be worked out through the development of a Tangata Whenua Values Monitoring and Management Plan. This Plan will also consider ongoing monitoring requirements following completion of the new state highway.
Have concerns about effect of Project on streams, and of changes in the water environment including as a result of stormwater runoff. Request involvement in and to be appropriately resourced for this involvement in all design of stream diversions or stream work and associated discharges to streams within the Tararua District. More specifically: <ul style="list-style-type: none"> - Design - Minimising effects on hydrology - Fish capture and release - Minimising effects on aquatic Taonga - Riparian enhancement programmes - Ensuring fish passage is provided - Cultural monitoring - Ensuring mauri of streams not diminished 	Proposed conditions now provide for the involvement of Project Iwi Partners in the design of stream diversion and of stream offsets, and associated activities. Cultural health monitors are proposed to be on site prior to and during stream works, including works that propose discharges to streams.
Request involvement in planting programmes pre and post construction	Proposed conditions now propose the involvement of Iwi Partners in the design and implementation of ecological offset planting.
Request the right to select specific trees for future cultural uses where proposed to be removed from within designation. Would also like access to small shrubs and saplings	Proposed conditions now require vegetation that is cleared to be made available to Iwi Partners. It is anticipated that the Tangata Whenua Values Monitoring and Management Plan will include preparation of a protocol to determine distribution of materials that become available for cultural uses.
Cultural monitoring required to cover all work, across multiple sites, may require up to 4 Ngati Kahungunu monitors to be ready for recommencement of enabling works in 2020	Proposed conditions now require appropriate cultural monitoring to be undertaken with specifics to be agreed as part of the Tangata Whenua Values Monitoring and Management Plan.
Prioritise the drafting of the Tangata Whenua Values Monitoring and Management Plan	The specification of the TWVMMP (proposed condition TW3) will be finalised through the current resource consent process but it is agreed that it is an important and urgent task and its completion will likely require considerable input and direction from Iwi Partners.
Enable cultural monitoring and assessment of aquatic environments	Proposed conditions now require the development of cultural indicators and monitoring.
Enable tikanga o Kahungunu processes, procedures and concepts for both terrestrial and aquatic data collection.	Proposed conditions now provide Iwi Partners the opportunity to be involved in Project design and in the construction phase. This includes cultural health monitoring of terrestrial ecosystems and the awa.
Incorporate more Māori concepts into Project design elements	Proposed conditions now require the involvement of Iwi Partners in the design of ecological offsetting. It is noted that Iwi Partners are also able to participate in outline plan design matters associated with the designations for the Project.

Ngāti Kahungunu ki Tāmaki nui-a-Rua acknowledge that the responses recorded in the table above ease concerns and provide a clear pathway to resolving and working through remaining concerns and issues in a manner that appropriately manages cultural values and effects.

Ngāti Kahungunu ki Tāmaki nui-a-Rua note that although there will be huge impacts on the landscape and the waterways, the Project also provides opportunities to rekindle their tikanga practices, and the resurgence of cultural priorities will benefit future generations, something they will treasure as tipuna did in times past.

6.13.4 Ngāti Raukawa

The CIA provided by Ngāti Raukawa has been undertaken and developed through an evaluation of the likely impacts of the proposed development on the community of people that maintain whakapapa to the affected territories.

The cultural impacts assessed include understanding the impact on the domains of maunga (spoil site management, earthworks, road engineering design, bridges, walkways and waahi tapu management), the mauri of waterways, ecology (terrestrial, water) and species management (impact on birds, lizards, bats, gecko).

The CIA records that Ngāti Raukawa have an inseparable identity with the river systems, streams, wetlands and lakes within the catchment of the Manawatū River and the maunga of Ruahine. Ngāti Raukawa note that their people speak of these areas in terms of whakapapa of the maunga to the springs, streams, river and its connection and flow to the sea. Ngāti Raukawa are connected to the multiple iwi in this landscape through whakapapa, shared waterways and shared marae, which keeps historical and current connections to these lands and waterways warm, alive and remembered. Ngāti Raukawa taniwha and tipua in these areas include Pekatahi (a giant freshwater koura), Whangai mokopuna (a giant tuna) and Okatia (who resides on the coast and was the name for Waitarere). Ngāti Raukawa proactively support the protection of waters for wellbeing and healing and indicate that they will continue to work with the Transport Agency to identify places where these waters need particular care.

The CIA identifies and assesses actual and potential impacts of the Project, and on the basis of the developed design and proposed mitigation / offsetting, provides key findings and recommendations. These findings acknowledge current efforts to involve Iwi Partners in the Project through co-governance and the existing strategic relationship with the Transport Agency (through the Hapū Integration Group). This also includes acknowledgement of existing effort to develop cultural monitoring regime and development of iwi led processes to ensure appropriate care of taonga, heritage and wāhi tapu (through discovery protocols).

Further, the CIA proposes a series of key performance indicators that are to be used by the Alliance to help ensure positive population level benefits. These have been gratefully received and are being developed into the Alliance's key performance indicators that will be finalised and confirmed over the next few months and relate to commercial arrangements. These indicators will ultimately need to be approved by the Project Alliance Board which includes representative of each Iwi Partners.

As with other iwi, a key concern of Ngāti Raukawa is effects on indigenous biodiversity. The ecological response package will go a long way to addressing those concerns, however, there will still be residual cultural effects of concern. Residual effects and the proposed approach to managing these are provided in Table 6-15 below:

Table 6-15 Ngāti Raukawa Cultural Impact Assessment: Residual impacts and management

RESIDUAL EFFECTS	MANAGEMENT
Impact on peace keeping and political impacts through inappropriate design works, including cultural markers.	Proposed conditions now propose involvement of Iwi Partners in the design of signs and wayfinding and setting out cultural narratives. This could result in the involvement of Māori carvers working together across multiple forums.
The health and sustaining mauri of the Manawatū awa is of utmost importance to all iwi; this includes the main channel and tributaries.	Proposed conditions now propose the development and implementation of a Te Awa o Manawatū Cultural Monitoring Tool and Framework. This will provide for Cultural Health Monitoring.

The current position of Te Rūnanga o Raukawa is that the Project is supported. This support is provided on the basis that cultural and environmental impacts can be mitigated or offset, which in turn relies on there being sufficient resourcing and commitment to resolving the matters identified. The recommendations to mitigate effects proposed by Ngāti Raukawa are deliberately broad as the large-scale nature of the work requires flexibility.

Ngāti Raukawa consider that the Project provides a metaphorical means in which to repair the bonds of reciprocity, peace-making, political and economic stability through the formation of a wider Rūnanga a Iwi. Ngāti Raukawa would like to ensure that the Project has a positive impact when working with neighbouring iwi.

6.13.5 Te Āpiti Ahu Whenua Trust

As noted above, the owners of Parahaki Island (also known as Moutere Island), which is Māori freehold land under Te Ture Whenua Māori Act 1993, have been invited (through the Ahu Whenua Trustees who hold the Island on trust for the beneficial owners) to be part of the Iwi Working Group and to input into Project design and development processes.

The Te Āpiti Ahu Whenua Trustees (the Trustees) have provided a preliminary CIA that was prepared in 2019. The Trustees acknowledge that they are continuing to work with the Transport Agency and the Alliance to develop a mitigation package to help address and remediate effects. This includes work on the finishes of the proposed Manawatū River Bridge (BR02), construction methodology, and ecological mitigation, which in combination can also align with and help realise the Trustees' vision for Parahaki Island.

The Trustees note that they will be in a position to update the CIA closer to the start of consent hearings.

The Trustees consider that the entire 'Te Āpiti/Manawatū Gorge area is a cultural landscape, embedded with identity, meaning, and significance. The character and integrity of the whole is made up of its constituent parts, such as the Manawatū Awa, Pohangina Awa, the Manawatū Gorge slopes that are the Tararua and Ruahine ranges, Parahaki Island, the nearby historic kainga (Otangaki, Te Wharau and Raukawa), the river gravel deposits, the traditional portage ara/route, the indigenous vegetation and wetlands, and the indigenous animals present in the catchment.'

The CIA states that 'this cultural significance risks being overshadowed and undermined by the physical presence of a new river bridge that will dominate the cultural viewshafts from the Island along the gorge, significantly alter the cultural and natural landscape, and introduce impacts associated with vehicle noise, light, and air discharges into the landscape and within areas of tapu. Maintenance activities could impact to the quiet enjoyment and spiritual qualities of the Island.'

The CIA identifies ‘23 significant adverse effects to the cultural values of the Trust’s beneficiaries’ (owners and their whānau and hapū) relationship and their culture and traditions with their ancestral lands, water, sites, wāhi tapu, and other taonga.’ These effects are, in summary:

- Amenity effects of traffic on the Island;
- The effects of the Manawatū River Bridge (BR02) on the Island and on the cultural landscape;
- Construction and setting effects (including hydraulic effects) on the Manawatū River;
- Effects on wāhi tapu and cultural use on/of the Island caused by traffic on the Bridge, and through the use of viewing platforms;
- Potential effects on archaeology;
- Effects on old growth alluvial forests, old growth hill country forests, old growth treelands, advanced secondary broadleaved forests, raupo dominated seepage wetlands, secondary broadleaved forests and shrublands, kanuka forests, indigenous dominated seepage wetlands, manuka/kanuka and divaricating shrublands, as well as the fauna found in these eco-systems; and
- Effects on long fin eel, inanga, lamprey, kokopu and kakahi.

The CIA states that further mitigation and offsetting is required and pending the adoption of the proposed recommendations (in the CIA) or ‘otherwise securing by agreement net positive cultural outcomes for the Trust and Parahaki Island’ the ‘Trust reserves its position (default conditional opposition) on any upcoming regional resource consents related to the Project’.

The CIA concludes that the Trustees wish to develop a positive working relationship with the Transport Agency that will deliver material enhancements to Parahaki Island and its surrounding environment that are ‘value-adds’ and Māori-outcome components of the Project. The Trustees state that they will require a high level of engagement and participation in the next phases (regional consenting, detailed design, construction, and monitoring) of the Project.

Discussions with the Trustees are ongoing and to date it has been agreed that planting on the Island can help mitigate some effects. This proposed planting is shown on the proposed ecological offset/compensation plan set provided in **Volume III** (refer to drawing TAT-3-DG-E-4151).

6.13.6 Summary

In order to integrate cultural and spiritual values into the Project, iwi have been invited to be and are now Project Partners. Iwi Partners have developed key cultural values for the Project that underpin the ongoing cultural, environmental and wider design, management and implementation aspects.

The process of working with Iwi Partners has allowed cultural and spiritual values to be integrated into the development of the design of the Project, and the design of processes for managing the effects associated with its construction. This process is ongoing.

The CIAs represent a point in time and (aside from the CIA prepared by the Te Āpiti Ahu Whenua Trust) largely report on how the Transport Agency and Iwi Partners have agreed that residual cultural effects should be managed. Additional design information and continued involvement of Iwi Partners is required to ensure that these effects continue to be effectively managed. Additional cultural effects are identified which relate to matters associated with celebrating the cultural landscape, the need for iwi’s ongoing involvement in the design of proposed ecological offsetting and compensation measures (to assist in ensuring the success of these measures in order to ensure that the vital important mauri of the Manawatū awa is protected), and the need to provide long term access to cultural resources. Proposed conditions, in particular the requirement for a Tangata Whenua Values Monitoring and Management Plan, will help secure these outcomes.

Te Āpiti Ahu Whenua Trust remain concerned about the effects of the Project on the cultural values associated with Parahaki Island. Discussions regarding those concerns is continuing and includes consideration of ecological planting on Parahaki Island.

6.14 Summary of Assessment of Effects

The Project has the potential to give rise to a range of potential adverse effects and these have been covered in the preceding assessment and in the Technical Assessments in Volumes **IV and V**. A summary of the key construction and operational effects are highlighted below:

Construction

Effects associated with the construction of the Project are largely temporary in nature (with the exception of ecological effects) and are able to be appropriately managed such that they avoid, remedy and mitigate significant effects. Management measures include the following:

- ESC will be installed to minimise, capture and treat sediment laden runoff that would otherwise enter the receiving environment;
- Dust mitigation and monitoring measures are proposed such that offensive and objectionable dust effects will be avoided and will not be detrimental to amenity values; and
- The CSMP provides precautionary measures should any unexpected contaminated soil be discovered during earthworks.

Operation

In addition to realising the benefits that the Project will provide (as outlined in Section 6.2), the design of the Project has sought to avoid and mitigate effects as far as practicable during the ongoing operation of the Project, including in the following ways:

- The stormwater discharges can be expected to have negligible or minor impact on surface water quality. The Project is expected to have a minimal residual effect on the amount of pollutants reaching the receiving environment as a result of the proposed treatment devices and treatment train approach applied in the design to achieve a minimum of 75% TSS removal on a long-term average basis;
- The Project will not exacerbate flooding or reduce the ability of a watercourse to convey flood flows, as peak-flow attenuation has been provided for in the design of stormwater treatment devices;
- The magnitude of any potential hydrological effects will be relatively small given the geographical size and existing dynamics of the receiving environment and will result in a number of environmental benefits, particularly relating to flood hazard mitigation;
- The design minimises as far as practicable any potential adverse effects on life, infrastructure and property from natural hazards including land instability and earthquake induced movements;
- Many of the catchments/areas within the Project area experience a reduction in the level of natural character as a result of the Project works, however none are considered to experience a significant diminishment in natural character;
- Stream habitat loss and modification is the most significant adverse effect on freshwater ecology associated with this Project, and full mitigation of these effects is not possible given the permanent loss of the original streambed. However, the residual adverse effects on freshwater ecology of the Project can (and will) be offset via riparian restoration/enhancement to ensure that there is no net loss in ecological function; and

- Terrestrial ecology effects of the Project include the loss, fragmentation and degradation of habitats for flora and fauna as well as harm to species and individuals within these habitats. Appropriate avoidance and minimisation measures are proposed including through a detailed EMP (**Volume VII**). A comprehensive offset and compensation package has been designed to achieve a 'net gain offset' for 7 out of the 12 ecosystem types and, after compensation is applied, a net gain in biodiversity will result over the short and the long term for all 12 ecosystem types.

In addition to the above effects, the CIAs provide an understanding on the cultural effects during both construction and operation and how these have been agreed to be managed. Ongoing involvement is required to ensure that the effects on Iwi Partners are appropriately managed, the vital important mauri of the Manawatū awa is protected, and to provide long term access to cultural resources.

Conditions of consent are proposed (**Appendix E**) to help secure the abovementioned outcomes. The Project will bring significant benefits to the local and regional community through increased connectivity, resilience and safety in addition to the social and recreational benefits. Overall, while the Project will result in some short-term temporary construction related effects, the longer-term benefits of the Project will be significantly positive for people, the community and the environment.

7 Assessment of Alternatives

7.1 Introduction

This Section provides a summary of the alternatives considered in the development of the Project to date. Alternatives considered included in relation to the design of structures, the location of the Project route, construction methodologies, and treatment options, both during construction and longer-term, in the case of discharges.

A full consideration of alternative sites, routes, and methods of undertaking the works proposed to be designated was undertaken as part of the NoRs process. The AEE that accompanied the NoRs documentation describes the process undertaken by the Transport Agency in considering alternative Project (and designation) ‘corridors’³¹. A high-level overview of the development of the Project is set out in Section 1.4 above, and Section 7.3 below.

For the purposes of this application for resource consents, the alternatives assessment below builds on this earlier work and therefore concentrates primarily on refining the design of the Project within the proposed designation ‘corridor’, as well as elements of the Project that sit outside the designation corridor (particularly spoil sites). The assessment focuses on alternatives as relevant to this resource consent process, including:

- The relevant statutory requirements;
- An overview of the history and development of the Project in respect of alternatives;
- A discussion identifying potentially significant adverse effects of the Project and alternatives considered for these areas; and
- A discussion regarding alternatives and discharges.

7.2 Statutory Requirements

Descriptions and / or consideration of alternatives is required in certain circumstances under the Fourth Schedule of the RMA.

Schedule 4 of the RMA specifically requires consideration of alternatives for resource consents as follows:

- Clause 6(1)(a) requires that an AEE must include a description of possible alternative locations or methods for undertaking the activity where it is likely that the activity will have a significant adverse effect on the environment; and
- Clause 6(1)(d)(ii) requires that in relation to applications for discharge permits, “any possible alternative methods of discharge, including discharge into any other receiving environment” be assessed. This also aligns with section 105 requirements.

Consideration of alternatives is also identified as relevant to the application of a number of policies within the One Plan RPS and Regional Plan, particularly in respect of discharges; activities that will have ecological impacts; natural hazards; and natural character in respect of critical infrastructure. These matters, listed below, are addressed partly in this section and partly in the other relevant parts of this AEE:

³¹ Contained at Part E of Volume 2: Assessment of Effects on the Environment and Supporting Material

- Policy 3-3(c)(iii) seeks that more than minor adverse effects of establishing nationally important infrastructure are avoided, remedied or mitigated, taking into account (amongst other matters) whether there are any reasonably practicable alternative locations or designs;
- Policy 6-9(d), in respect of natural character, directs that the development or use of a river and its margins must generally (but without limitation) be considered appropriate if there is a functional necessity to be located in that position and that no reasonably practicable alternative location exist;
- Policy 9-3(d) directs that critical infrastructure avoids being inundated by a 1 in 200-year flood event or in an area likely to be adversely affected by natural hazards unless the critical infrastructure cannot reasonably be located in an alternative location; and
- Policy 14-4 seeks to mitigate adverse effects associated with discharges of contaminants into water or onto or into land through the consideration of the opportunity to utilise alternative discharge options or a mix of discharge regimes, including discharging contaminants onto or into land as an alternative to discharging contaminants into water.

7.3 Project Development Overview

The development of the Project is summarised in Section 1.4 of this AEE and in the DCR. The development of the Project has undergone an iterative process since 2017 and generally consistent with the following phases:

- Business Case Phase (September 2017 – March 2018);
- NoRs Phase (June 2018 – February 2019 (and beyond));
- Procurement Phase (February 2019 – May 2019); and
- Current Phase – Concept Design and Resource Consents (July 2019 – lodgement).

At each phase, a process of identifying and evaluating alternatives was undertaken, commensurate with the level of detail available at that stage. Assessments typically took into account environmental, social, cultural, commercial, programme and constructability considerations.

The DBC and NoRs phases of the Project focused on identifying the most appropriate corridor for the Project as well as determining the arrangement of elements to ensure appropriate levels of efficiency and road safety, both during construction and when operational. It commenced at a broad scale and systematically narrowed the options to the route presented at the NoRs. These alternatives assessments were informed by, and responded to, stakeholder and community engagement as design development occurred (as discussed in Section 5).

The NoRs documentation includes a discussion of alternatives in respect of the design to that point in the Project lifecycle. For the purposes of this application for resource consent, the earlier consideration of alternatives is relied upon and is not repeated in this application. The proposed designation corridor (altered to accommodate the northern alignment that is considered by this resource consent application) and proposed conditions are effectively the baseline within which the alternative locations and methods have been considered for the regional resource consent application. In this sense, the alternatives considered in relation to the resource consents have sought alignment with the proposed designation corridor. The sections below, therefore, focus on the design developments and alternatives assessed that have occurred since the NoRs were given (in November 2018) as part of the procurement and current phases.

7.4 Potential significant adverse effects

Clause 6(1)(a) of the Fourth Schedule requires that a description of any possible alternative locations or methods for undertaking an activity is required if it is likely that the activity will result in any significant adverse effects on the environment.

During the NoRs process, including the hearings, a number of areas were highlighted where there was the potential for significant adverse effects to occur. Conditions on the NoRs require certain effects to be considered during the detailed design of the process and be minimised as far as possible. Parameters included specifying maximum areas of vegetation removal, maximum areas of land disturbance to occur on Ballantrae Farm and a maximum number of turbines that would be removed. As the Project has entered the detailed design phase these parameters, among others, have been factored into the design development and in the associated alternatives considered.

In addition to potential effects identified during the NoRs process, throughout the design development phase when considering what activities were likely to have a significant adverse effect on the environment and which areas and values were likely to be more sensitive to development, the values identified in the provisions of the One Plan and any relevant national environmental standard or policy statements have provided guidance.

Section 2.4.3 of this AEE confirms the areas of value as identified by the One Plan that are affected by the Project. These areas of value provide a basis for understanding which areas are afforded greater statutory protection and acknowledgement at a regional level and enable an understanding of the level of effect that the Project may have on these particular resources.

The Project alignment is within the following areas of value:

- Surface Water Management Zones and Values (identified in Schedule B);
 - Sub-catchment Mana 10a as a Site of Significance in respect to both riparian and cultural values as well as being of trout fishery value;
 - Sub-catchment Mana 9c is identified as having flood control and drainage values;
- Indigenous biological values associated with habitat types identified as rare, threatened or at-risk (identified in Schedule F);
- Two regionally outstanding natural features and landscapes being the ridgeline of the Ruahine Range and the Manawatū Gorge (Schedule G); and
- Under Chapter 3, the One Plan also recognises electricity generation facilities, transmission networks and the National Grid, the road and rail networks identified in the RLTS, and telecommunication facilities as well as reticulation systems as being physical resources of regional or national significance (policies 3-1 and 3-2). In respect of the Project, the regional or national significance infrastructure is, therefore, considered to be Te Āpiti Wind Farm, the Transpower Mangamaire – Woodville A 110kV transmission line, SH3 and the Palmerston North – Gisborne rail line, Chorus and Inspire Network's apparatus and the Councils' potable and sewage reticulation systems. While not specifically provided for under the One Plan, the Project acknowledges AgResearch's facility at Ballantrae Farm as a significant regional facility.

In addition to the above regional values provided by the One Plan, Section 8 of this AEE provides an assessment of relevant statutory documents, including national environmental standards and national policy statements which provide objectives and policies for matters of national significance.

Where the Project has or would potentially have a significant adverse effect on any of the above values or matters, further design consideration and alternatives have been explored. It is noted that some of the structures proposed and alternatives considered can impact on more than one of the values. For

this reason, the alternatives discussion as set out below summarises the alternatives considered in specific locations within the proposed route and discusses how the design has sought to minimise effects on the following:

- Cultural values;
- Ecology and indigenous biological diversity values (both terrestrial and freshwater);
- Natural character of rivers and their margins;
- Flood hazards;
- Physical resources with national research significance; and
- Existing infrastructure of regional or national significance.

Section 6 of this AEE has assessed the proposed design and considers the actual and potential adverse effects associated with the Project. Section 6 concludes that the Project passes through a highly valued cultural landscape and is anticipated to have significant adverse effects (before the proposed offset and compensation measures are considered) in regard to freshwater ecology (stream loss from stream diversion) and terrestrial ecology (clearance or alteration of indigenous vegetation ‘ecosystem types’; loss or alteration of potential habitat for indigenous fauna (lizards, birds and invertebrates); and in respect of mortality, injury and disturbance of indigenous fauna).

In the following subsections five areas are described, as each of these areas was identified as having values that are more sensitive to potential adverse effects. Accordingly, the consideration of alternatives in each of these areas was afforded particular attention. As the selection of spoil sites had the potential to impact areas identified as having values that are more sensitive to potential adverse effects, the process undertaken is also described. For many of these alternatives, site selection was to a degree constrained by the location, being already determined by the NoRs corridor, so alternatives consisted of engineering options for structures (bridges in particular) and construction methodologies.

A standard approach to the consideration of alternatives was not feasible, with differing parameters and technical specialist input necessary being warranted and this is reflected in the way that the alternatives are described below.

7.4.1 Manawatū River Bridge – BR02 (CH 3600 – CH 3900)

The Manawatū River, in the location of the Project, is identified as having cultural, ecological and natural character values. The Project, in its crossing of this river, has the potential to have significant adverse effects on these values.

As described above, the process to consider alternative locations of the bridge is not explained in detail below given the location of the river crossing was broadly determined as part of earlier alternatives assessments as set out in the NoRs consideration of alternatives. This included the assessment of six sub-options to achieve connection of the preferred alignment with SH3 at or near Ashhurst. The bridge over the Manawatū River at this proposed location was preferred because of its connection into the existing roading network at Ashhurst and its avoidance of Parahaki Island.

The values associated with the Manawatū River’s receiving environment mean that the process of designing the bridge requires a number of environmental factors to be taken into consideration. These include the surrounding environment (including active fault lines and flooding hazards), the effects of piers in the river bed, the cultural significance of the area, the current use of the area and walking track access. These environmental factors require balancing against whole-of-life performance, capital cost, constructability and programme considerations.

Over the course of the Business Case and NoRs phases various options for the design of the Manawatū River Bridge (BR02) were considered. The report “Bridge and Retaining Wall Design Philosophy Report”, dated 26 October 2018, prepared by Holmes Consulting, presents potential options for bridge structural form which were considered during the NoRs phase of the Project. The NoRs proceeded on the basis that the form of the bridge for which resource consents would be sought would have either one pier, or no piers, in the bed of the river (with an assumption that there would be one pier in the bed of the river for the purpose of NoRs assessments).

The alternative bridge designs explored at each phase of the Project are presented in Table 7-1 below; where relevant, constructability considerations have been incorporated.

7.4.1.1 Design of the bridge

Table 7-1 Manawatū River (BR02) Alternatives Considered

Option Considered	Discussion
Detailed Business Case Options³²	
<ul style="list-style-type: none"> ■ Ten span Super T bridge 	<p>This option consists of two parallel bridges, one for each direction of travel, each with 10 spans of 32m giving an overall length of 322m.</p> <p>This option uses a simple, well understood form which has been used extensively around New Zealand and will result in an economical design. There are no structural elements above the roadway, minimising the visual impact.</p> <p>This design would result in multiple (approximately eight) piers within the bed of the river with extensive temporary and permanent structures within the river. This would have the potential to have significant adverse effects on the hydrological function, ecological value, cultural value and natural character of the river in this location. It was considered that the potential for adverse environmental effects of this option were too great for it to be considered further.</p>
<ul style="list-style-type: none"> ■ Three span composite girder bridge 	<p>This option consists of twin steel composite box girder bridges with three spans of 100m, 120m and 100m giving an overall length of 320m.</p> <p>This design option requires one pier to be located in the river and the others next to but set back from the river edge. This option balances the number of piers in the river with a simple superstructure.</p>
<ul style="list-style-type: none"> ■ Three space cable stayed bridge (Source: Appendix M to DBC) 	<p>The option consists of a three-space cable bridge with three spans of 24m, 168m and 132m resulting in an overall length of 324m. The overall height of the main supporting tower is 65m.</p> <p>This option eliminates the need for piers in the river, with main and secondary piers which mimic the wind turbines on the hills above. The superstructure forms a thin band across the landscape. Work above the live railway is kept to a minimum.</p>
Notice of Requirement Options³³	
<ul style="list-style-type: none"> ■ Option A: No piers in the river 	<p>This option provides a main span in the order of 180m long across the water and a back-span length of around 110m (equivalent to 60% of the main span for efficient balance cantilever design).</p> <p>A balanced cantilever type arrangement using haunched steel or concrete box girders, or a variable depth steel truss superstructure arrangement was proposed as the most feasible design for this bridge option. Construction of the main span over the river using a cantilever or balanced cantilever approach was considered feasible.</p> <p>It was considered that a long span bridge solution would minimise the impact of piers in the waterway, as well as scour and gravel movement. The fewer piers located within the river bed also would reduce the level of temporary works and construction effect to access pile locations within the water. However, this option was significantly more expensive when compared to options with pier support.</p>

³² Source: Preliminary Structure Options Report, Appendix M to DBC

³³ Source: Bridge and Retaining Wall Design Philosophy Report, 26 October 2018, prepared by Holmes Consulting

Option Considered	Discussion
<ul style="list-style-type: none"> Option B: One pier in the river 	<p>This option provides for a pier (or piers) in the river which would reduce the bridge spans to 90m or less. This would make the bridge structure more suited to a constant depth steel box girder or steel 'I' girder superstructure arrangement, depending on number of piers and span length.</p> <p>A concrete box girder superstructure would be feasible but would have increased weight and substructure sizes compared to a steel option.</p> <p>Depending on road alignment geometrics, construction of a steel bridge by launching the superstructure from the abutments may be feasible. This method would minimise construction requirements for cranes and the lifting of superstructure components, particularly out over the river.</p>
Procurement and Current Phase Options	
<ul style="list-style-type: none"> Option 1 	<p>This option consists of a 4-span balanced cantilever constant depth structure with a pier in the middle of the river. It presents a practical 'no frills' solution which is not too imposing on the landscape.</p>
<ul style="list-style-type: none"> Option 2 	<p>This option provides for a 4-span balanced cantilever variable depth structure with a pier in the middle of the river potentially reducing visual impact (a slightly more elegant design to Option 1).</p>
<ul style="list-style-type: none"> Option 3 	<p>This option consists of a 3-span cable stay structure with no piers in the middle of the river. This design type was reconsidered as it was thought to maximise cultural expression and the celebration of the place.</p> <p>While this approach removed the need for a pier within the river bed (but would require two river bank piers to be close to the river), there were a number of factors that led to it being discounted including it being:</p> <ul style="list-style-type: none"> Aesthetically imposing on the landscape; Not considered to be suited to the roading geometrics due to the curve of the bridge; and Significantly more expensive than other options considered.
<ul style="list-style-type: none"> Option 4 	<p>Variable section long span concrete balanced cantilever option with no pier in the middle of the river. Similar to the cable stay option (Option 3), it would require two piers on the river bank close to the water's edge.</p> <p>This option, while minimising the direct contact with the river, would be difficult to construct and would be more expensive than the multi span options.</p>

7.4.1.2 Preferred Option

The length of a bridge span and the form and materiality of the bridge are directly related to the number of piers required to support the structure (which in turn can impact on the cultural values including mauri, and natural character of the river in this location). A range of options have been considered through combined workshops with various technical experts (design including structural, construction, ecology, natural character, and urban design), each with differing arrangements, construction and permanent footprints. All options seek to avoid physical encroachment into the legal property boundary of Parahaki Island and the Manawatū Gorge Scenic Reserve. These bridge options have been presented to and discussed with the Project Iwi Partners.

A 4-span variable depth concrete balanced cantilever structure, with a single central pier in the river, has been adopted for the Manawatū River crossing on the basis that it balances minimising effects on the environment with the cost (with the non-pier option being appropriately 30% more expensive than the preferred option) and constructability of the asset. This design is able to achieve aesthetic outcomes and seismic performance without compromising the functionality or durability of the bridge and hydraulic environment of the river. In particular, the slender design facilitates continued views from Parahaki Island up the Manawatū River.

Temporary staging, consisting of a series of 600mm hollow circular steel piles installed at 9 m intervals within the river, was the preferred constructability method because it provides a safe, cost effective platform and can be in place for the duration of the construction period and minimises interference with river functionality (thereby minimising effects as far as practicable). The only construction alternative would be to launch the bridge from both sides or just one side. This approach would require the clearance of construction space in the order of 200m length for the bridge spans prior to jacking them out across the water. Construction of Pier 2 would still necessitate temporary staging. The northern area to the Manawatū River Bridge (BR02) does not have the necessary space without increased vegetation clearance beyond that necessary for the road alignment. Although launching from the southern side only would be feasible, in addition to Pier 2 staging a temporary tipping point stabilisation structure would be required, necessitating works in the river bed. On balance, it was considered that the impact on the environment and construction programme (including risk) associated with the temporary staging approach is less than that associated with the launch method.

As discussed in the Hydrology - **Technical Assessment D** modelling was undertaken for a range of design flow/flood events. This process concluded that effects associated with Pier 2 are very small and localised in respect of the river. The assessment reports that the 'bow-wave' upstream of Pier 2 results in a local water level increase of up to 1.4m in a design event; however, this effect dissipates rapidly upstream. Downstream, and in the lee of Pier 2, there is a slight reduction in water level; up to 0.25m. While some changes to water levels and flow velocities across Parahaki Island are predicted, from a hydrological perspective these are considered to be less than minor. The proposed measures to address scour would further mitigate potential adverse effects on Parahaki Island.

Section 6.13 of the AEE details the Project's consultation with the Iwi Partners over the course of the Project phases which has included discussions and workshops on the bridge options across the Manawatū River and potential impacts from the bridge, including those on Parahaki Island. The CIA (Volume VI) prepared for the Project by Rangitāne o Manawatū, confirms that while their preferred position is a bridge design with no piers in the Manawatū River, their support of the preferred option collectively been agreed upon is provided. The cultural importance of the Manawatū River is confirmed in the CIAs (Volume VI) prepared by Rangitāne o Tamaki nui ā Rua, Ngāti Kahungunu ki Tāmaki nui-a-Rua and Ngāti Raukawa with the health and mauri of the river being key cultural impacts that they wish to see addressed. Discussions with the Iwi Partners are ongoing, in particular, regarding the design process for the Manawatū River Bridge (BR02).

The Te Āpiti Ahu Whenua Trustees as owners of Parahaki Island have been engaged in detailed discussions with the Transport Agency regarding the potential effects of the Project on the Island including the preparation of a CIA (refer to **Volume VI**). While the Project avoids any direct impact on the physical extent of Parahaki Island such that values associated with the Island are recognised and the land is retained for the use of its owners, the Te Āpiti Ahu Whenua Trustees remain concerned about the effects of the Manawatū River Bridge (BR02) on cultural values associated with Parahaki Island. In discussions to date with the Trustees, it has been agreed that planting on Parahaki Island can assist mitigate some effects on the cultural values identified. This proposed planting is shown on the proposed ecological offset/compensation plan set provided in **Volume III**. Discussions will continue regarding work on the finishes of the Manawatū River Bridge (BR02), construction methodology detail for BR02, and ecological mitigation in addition to that agreed to date, which in combination can also align with and help realise the Trustees' vision for Parahaki Island.

7.4.2 Eco Bridge - BR03 (CH 3900 – CH 4300)

Between CH 3900 and CH 4300 within the designation, there are a number of habitats that are classified as rare or threatened using the classification criteria detailed in Schedule F of the One Plan. The area immediately west of the Manawatū Gorge Scenic Reserve, north of the Manawatū River, contains several different valued ecosystem types. A wetland and stand of swamp maire (among other valued habitats) are on the east side of the corridor, a stand of mature old-growth forest is to the west of the corridor and a high value stream bisects them as shown in Figure 7-1 (right).

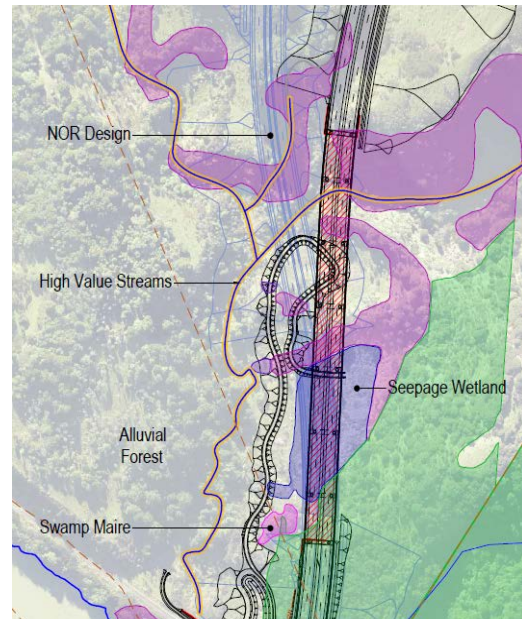


Figure 7-1 Sensitive ecological areas within CH 3900 and CH4300

The potential adverse effects of the Project in this area include the loss of valued indigenous vegetation through removal as well as longer term impacts on functional viability of the habitat types as a result of shading from structures or changes to drainage patterns. These potential adverse effects have prompted consideration of alternative designs through the design phases of the Project to date.

Particular effort was expended during the Procurement Phase to try and reduce the potential impact of the Project in this area. A deviation of the highway alignment over a 1.5 km length between the Eco Bridge (BR03) and CH 5100 (within the original designation area), and then between CH 5500 to CH 7100 was advanced, being the 'Northern Alignment' design. This is the most fundamental change to the original NoRs design with resulting positive effects. Key drivers for this alternative were to reduce impact and footprint of the Project on two QEII Open Space covenant areas as well as streams 6 and 7 and achieve a reduction in the impact on the ecosystem types.

Set out in Table 7-2 below is a summary of the iterative design process undertaken for the Eco Bridge (BR03), culminating in the Northern Alignment.

Table 7-2 BR03 Alternatives Considered

Option considered	Discussion
Detailed Business Case Option	
Earth embankment with culverts (no bridge structure)	
Notice of Requirement Option	
<ul style="list-style-type: none"> Bridge structure and embankment combination 	<p>The NoRs design provided for a combination of a bridge structure (155 m long) and an embankment (approximately 150 m long).</p> <p>In the NoRs design, the northern abutment of the Manawatū River Bridge is positioned on a knoll immediately north of the rail line and to the south of the swamp maire. The highway then crosses the wetland and swamp maire via a proposed 155 m bridge, then onto an engineered embankment north of the wetland. It then runs parallel to the stand of old growth native forest and stream before crossing the stream as the alignment leaves the high value ecological areas (as indicatively shown below).</p> <p>This design sought to minimise some of the effects of an embankment in this location and to maintain ecological values.</p>

Option considered	Discussion
Procurement and Current Phase Option	
Extended bridge structure	
Bridge Form Options	
<ul style="list-style-type: none"> Bridge Configuration 	<p>Three bridge forms have been considered for the extended bridge structure:</p> <ol style="list-style-type: none"> 1) 47m long weathering steel I girder bridge with concrete deck – concerns were raised that this design would result in birds nesting in the flanges and increase the risk of corrosion and ongoing maintenance costs. 2) 47m long nu-girder concrete I section girders – significantly heavier structure than steel I girder and presents challenges with respect to transport to site and lifting. Relatively cheapest option. 3) 47m weathering steel trough girder bridge with concrete deck. The troughs are significantly heavier than I girders and present similar transport challenges as Option 2. This bridge form is also the most expensive option.
<ul style="list-style-type: none"> Pier head design 	<p>Following identification of the extended bridge structure as the preferred type of structure further optioneering was undertaken in relation to the bridge form and the pier head design.</p> <p>Both single and double pier head designs were considered.</p> <p>Double pier heads were chosen due to having a smaller footprint thus reducing both ecological and visual effects.</p> <p>Given the location of the bridge within a seismic zone, double pier heads with reduced depth are better because they provide additional resilience to the asset and are more aesthetic.</p>

7.4.2.1 Preferred Option

'Treading lightly' is the key philosophy within this area of the alignment given the highly valued and sensitive ecological areas. The preferred design as a result of the evolution/Project shaping in this location is an extended 7 span (47m span) weathered steel girder bridge structure 305m long, with a refined double pier head. A minimum of 14m headroom between the raupō beneath the bridge to the bridge soffit is proposed in order to minimise potential effects on raupō by reduced shading and rain-shadow effects (compared to the NoR design).

There are numerous reasons for this preferred design over the NoRs design, including:

- Avoiding culverting of 308m of high value stream;
- Avoiding clearance of 0.05ha of 'Threatened – Nationally Critical' swamp maire and old growth mataī trees, which were confirmed as being important to iwi;
- A 100% reduction in the impact on old-growth alluvial forest, indigenous dominated moderate value seepage wetlands and exotic wetlands in the area, while impacts on secondary broadleaved forests and scrublands are also reduced by 60%; and
- Use of a retaining wall that minimises loss of kānuka forests by 59%, again within this section of the alignment.

Construction access for the Eco Bridge (BR03) has been designed using a combination of a granular causeway (where the ground conditions permit) and an elevated temporary staging platform (through a wetland area). The alternative construction methodologies available in this location would be to use one of the above methods in isolation or the construction of an embankment which would have a greater footprint than the bridge. The causeway and temporary staging have been positioned to minimise disturbance of the valued ecology and swamp maire. On completion of the bridge structure the granular causeway will be reshaped into the permanent walking track / maintenance access to enable effective reuse of this construction structure while the temporary platform will be removed.

7.4.3 The Northern Alignment – CH 5500 to CH 7100

A number of Project constraints exist between CH 5500 and CH 7100 of the alignment. These include turbines within the Te Āpiti Wind Farm and QEII Open Space Covenant areas as well as challenging topography and areas of cultural significance. This section of the alignment, therefore, posed potential significant adverse effects on ecological values and existing infrastructure. During the procurement phase of the Project, an alternative alignment (the Northern Alignment) to the as-lodged NoR corridor and design was proposed to lessen the effects on ecology and the wind farm as shown in Figure 1-5 in Section 1.4.4

Table 7-3 below discusses the two alternative routes in this segment of the alignment from CH 5500 to CH 7500.

Table 7-3 Alignment Alternatives CH 5500 to CH 7100

Option considered	Discussion
Notice of Requirement Option	
<ul style="list-style-type: none"> Notified NoR Route 	<p>From the Manawatū River Bridge, this alignment progresses north (at a maximum of 8% grade), before turning east and across the western QEII Open Space Covenant area and enters the western extent of the Te Āpiti Wind Farm. The alignment bisects the western-most turbine towers before crossing the eastern QEII Open Space Covenant area.</p> <p>This route crossed the western QEII Open Space Covenant area on a single-span bridge and the eastern QEII Open Space Covenant area on an embankment (requiring the watercourse to be culverted).</p> <p>The NoRs design required the removal of one (possibly two) wind turbines and potentially impacted a further eight, with works within the 160m 'zone of influence' for turbines.</p>
Procurement and Current Phase Option	
<ul style="list-style-type: none"> Northern alignment 	<p>The Northern Alignment proposes a shift to the north beyond the designated corridor. This is achieved by increasing the road gradient to a maximum of 10%. The increased grade and shift to the north was proposed to significantly reduce the direct impact of the NoRs design on the QEII Open Space Covenant areas while also avoiding the need to remove any turbines within the Te Āpiti Wind Farm.</p> <p>Many iterations of design have occurred to 'fine tune' this alignment (the proposed design is revision 33e).</p> <p>Construction on steep grades requires additional consideration to address unique safety and quality conditions.</p>

7.4.3.1 Preferred Option

The Northern Alignment as an alternative route was considered, and ultimately adopted for the following reasons:

- It reduces the impact and footprint on the QEII open space covenant areas with a reduction in the area of disturbance and the degree of severance. This results in:
 - Avoiding vegetation clearance in the Ramarama Protection Area (RPA)³⁴;
 - Avoiding removal on old growth treelands and secondary broadleaved forests and scrublands;
 - Significantly reducing the impact on advanced secondary broadleaved forest and mānuka / kānuka scrubland;
- It avoids the removal of wind turbines and the subsequent reduction of electricity generation; and

³⁴ As defined by NoR condition 5(a) – decision version June 2019.

- It removes the need for a bridge over one of the gullies (known as Bridge 04 in the NoRs lodged design). The removal of a bridge structure in this area both reduces the cost of construction while also providing increased resilience to the route as well as reducing impact on the natural character of the stream.

7.4.4 BR07 Mangamanaia Stream Crossing

Bridges and other structures in waterways have the potential to alter the hydrological conditions of waterbodies and surrounding floodplains. As noted above the Mangamanaia Stream holds the value of Flood and Drainage Control, as defined by the One Plan. It is also located on a fault line which is understood to have a lateral creep of approximately 5mm per year, and to be subject to large sudden rupture movements. Several bridge forms were explored including multiple boxes, bridge plus an offline private stream crossing, multi-span and single-span prestressed concrete bridge structures, as shown in Table 7-4 below.

Table 7-4 BR07 Mangamanaia Stream Crossing

Options considered	Discussion
Detailed Business Case Option	
<ul style="list-style-type: none"> A single span bridge 	A single 40 m span using composite steel girders and a reinforced concrete deck. This option uses a simple, well understood form which has been used extensively around New Zealand and will result in an economical design.
<ul style="list-style-type: none"> Double span bridge 	A 2 x 20 m span arrangement with equal spans centred on the stream (requiring a pier in the stream).
<ul style="list-style-type: none"> Three span bridge 	Three spans of 13 m using NZTA standard 587mm deep precast prestressed concrete bridge beams.
Notice of Requirement Option	
<ul style="list-style-type: none"> Multi span bridge 	<p>The NoR design provided for a 3-span bridge approximately 80m long, for which either of the below bridge types could be used:</p> <ul style="list-style-type: none"> Prestressed concrete hollow core structure (generally for spans up to 25m long). Economic, robust, durable and frequently used solution which can be supported by bored piles or reinforced soil walls. Prestressed concrete Super T bridge (generally for spans between 25m and 35m long). Economic, robust, durable and frequently used solution. The precast beams provide a safe working platform during construction of the insitu deck. <p>This bridge design was considered excessively long for the stream and farm access tracks required to pass beneath it.</p>
Procurement and Current Phase Option	
<ul style="list-style-type: none"> Realignment of stream 	Given the seismic nature of this location, an option of realigning the stream and building the bridge away from the fault line was considered. This would require the diversion of the stream and the creation of a reinforced earth embankment over the fault zone. This option is the most resilient of the alternatives but was discounted due to the stream diversion being likely untenable to stakeholders.
<ul style="list-style-type: none"> Single span bridge with underpasses either side 	<p>A single span bridge is the most resilient form following realignment of the stream. Two single span bridge options were considered.</p> <ol style="list-style-type: none"> A 25m span bridge with two separate underpass structures (similar to those of Nutcracker Farm Underpass (BR01), Te Āpiti Wind Farm Underpass (BR05) and Ballantrae Farm Underpass (BR06)) either side to provide for farm access. A single span bridge with a length of 36m which provides space for the farm access tracks beneath the structure.

Options considered	Discussion
<ul style="list-style-type: none"> Foundation options 	<p>Piled foundations would normally be used for a bridge structure to provide robustness in flood events however, piled foundations would not cope very well with the predicted fault movement.</p> <p>MSE wall abutments enable the bridge deck to slide on top of the walls thereby receiving the predicted fault movement without significant damage to the structure. Ground improvements in front of the walls, comprising undercut and backfill with cement stabilised hardfill, and erosion scour protection will provide resistance to flood damage.</p>

7.4.4.1 Preferred Option

The proposed solution is a 36 m single span bridge that is considerably shorter than the NoRs lodged design. based on a more detailed understanding of the flow and flooding levels of the stream. Super T prestressed precast bridge beams and MSE wall abutments are proposed as the structural form of the bridge. The bridge deck is designed to slide on top of the MSE walls, catering for the potential 500mm creep movements in the design life of the structure, and the ability to accommodate large fault rupture displacements without collapse, significantly enhancing the resilience of the structure.

The banks of the stream will be modified to accommodate 4.5 m-wide farm access tracks and a buffer strip between the tracks and the stream banks on both sides of the stream. The farm access tracks below the bridge are designed to be above the 10-year return period flooding level, scour protection measures are also designed to prevent washing out of the bridge abutments, creating a highly optimised and integrated design solution for the bridge.

This design is preferred in this location because:

- There is no permanent feature in the waterway, which is preferable from an environmental and cultural perspective;
- It provides whole-of-life maintenance benefits – this is no pier in the waterway requiring maintenance and debris clearing;
- It is more seismically resilient than two spans; and
- It is relatively cheaper compared to the longer multi-span structure with piles in the NoRs lodged design.

7.4.5 Ballantrae Farm

Potential effects on Ballantrae Farm were considered at length during the NoRs hearing, and it was recognised that the site holds research value and impacting on the long-term trial sites (frame sites) present on the property would result from the Project. During the NoR Hearings submitters raised concerns about the impact of the loss of research from the site on a national scale, due to its uniqueness and irreplaceability.

From the Business Case Phase short listed options, Option 1 (North of Saddle Road) and Option 4 (South of Gorge) would have avoided impacts on Ballantrae Farm.

7.4.5.1 Preferred Option

During the Procurement Phase the horizontal alignment through Ballantrae shifted west from the NoRs design location, which removes excessive fill into the deep valleys that contain ecologically sensitive bush. The vertical alignment steepened to 8.5% minimises the footprint of the Project through this land. Fill slopes have been steepened and stabilised with geogrids to ensure that a reduce area of cut is able to be achieved.

Alterations to the bench cut slope design also resulted in a reduced footprint through Ballantrae Farm.

The route of the alignment goes through the centre of Ballantrae Farm and in so doing minimises effects on these research facilities by balancing the direct impact on the individual research farmlets traversed (i.e. the alignment intersects four farmlets and results in a balanced land acquisition from each farmlet).

In recognition of the property acquisition process and the timing associated with necessary pre-construction monitoring activities, the construction programme for works in this area of the alignment has been reconsidered and rescheduled to commence no earlier than November 2021³⁵.

As discussed further in the section below, no spoil sites are located within the Ballantrae site.

7.4.6 Spoil Sites

The cut to fill balances of the Project result in an excess of 1.8 Million m³ of fill (including a bulking factor). To allow for some variability and contingency for the Project, a target disposal volume of 2 Million m³ has been provided for which represents 15% additional volume. While some of this spoil material may be suitable for Project landscaping, the vast majority will be surplus to any Project requirements and disposal will be required. As it is inefficient and costly to transport this volume of spoil from the Project area, the Project has considered the disposal of this spoil at locations along the alignment. Given the 'filling' nature of this activity, the disposal of spoil has the potential to lead to significant adverse environmental effects on ecological, natural character and cultural effects depending on the chosen location.

To this end, the identification, analysis and selection of spoil sites has been the subject of an assessment process which is explained in detail within the Spoil Sites Selection Memorandum provided at **Appendix C** of the **DCR** contained at **Volume II**. The content of this memorandum is summarised below as part of the consideration of alternatives for the Project.

7.4.6.1 Initial spoil site identification

Indicative spoil sites (eleven in total) for the Project were annotated on the Indicative Alignment Plans for the NoRs. These were generic locations reflecting the design status of the proposed alignment during the NoRs process. Therefore, as part of the Preliminary Conceptual Design (PCD) development undertaken during the Project's Procurement Phase, members of the construction team reviewed the NoR Indicative Spoil Sites to confirm whether they continued to be fit for purpose. The review concluded that as some of the NoRs Indicative Spoil Sites had geotechnical, topography, proximity and capacity demand limitations, a more detailed process needed to be undertaken to identify suitable spoil areas for the Project.

This more detailed process commenced with a team of representatives from the construction, geotechnical and stormwater/catchment management disciplines, completing a desk top analysis consisting of a visual inspection of aerial photography and topographical contours of the Project alignment and immediate adjacent land. This exercise sought to identify areas which were: generally low-lying; naturally confined or flat in proximity to the source of the spoil arisings; and also accessible from the Project alignment either within the designation or adjacent land. Coupled with this was a capacity analysis conducted using MX modelling and an estimation process based on plan area and contours. In total, 31 potential sites were identified which had a total estimated capacity of approximately 3.2 Million m³, approximately 1.2 Million m³ more than required for the Project.

7.4.6.2 Initial spoil site assessment

To determine which of the identified potential spoil sites would be most appropriate for Project use and have the least impact on the environment, location suitability assessments for each of the potential spoil sites were conducted using a suite of assessment criteria (see Table 2-2 of Appendix C to the **DCR**).

³⁵ Subject to receipt of all necessary statutory approvals.

The assessment criteria were grouped according to several headline categories relating to construction, geotechnical, environmental impact (landscape fit and visual amenity, ecological impacts, stormwater and hydrology), impacts on the operation of Te Āpiti Wind Farm and property impacts.

Using the assessment framework, the technical specialists³⁶ then provided commentary on the location suitability or potential issues at each of the sites and assessment conclude with a calibration workshop where the assessment conclusions were reviewed, and it was collectively agreed which sites generally had the least impact when considered against the assessment criteria.

Sites which rated negatively against all assessment criteria were eliminated. Sites which performed well against the construction and geotechnical criteria but had identified environmental constraints were debated further to test the ability to manage / mitigate the constraints (or potential effects). Where management / mitigation measures were feasible and provided a construction benefit, the site was selected, otherwise it was eliminated. At the end of the calibration workshop, a preferred list of sites was generated.

7.4.6.3 Cultural values analysis

The Project team met with the Project's Iwi Partners over a series of workshops to review the spoil site selection and assessment process and consider the cultural values for each of the proposed spoil site locations. This engagement concluded with a site-by-site assessment of the spoil site locations by the Kaimahi representatives of the Iwi Partners against the following key cultural considerations which they considered to be appropriate:

- Whole-of-catchment effects;
- Effects on fauna, avifauna, and fish passage;
- Effects on water quality and life essence / mauri;
- Proximity to and perceptual effects on sites of cultural significance;
- Landform fit / visibility and visual amenity; and
- Effects on vegetation.

The site-by-site assessment exercise led to some changes in the initial design of spoil sites (i.e. diversion / cut off drains treatments options or Spoil Site #6 being sized so as not to affect the adjacent valley) and/or the removal of some spoil sites (e.g. Spoil Site #26 – noted as having cultural and ecological value). A detailed assessment of spoil site options was also undertaken by Ngāti Kahungunu ki Tāmaki nui-a-Rua and is provided as Appendix C to their CIA (Volume VI).

In general, the rationale for and locations of the proposed spoil sites were accepted by the Iwi Partners. However, it was agreed that further assessment of proposed spoil sites #8 and #25 to the east of cut #13 (CH 5900 – CH 6500) was required. The Kaimahi indicated that proposed spoil sites #8 and #25 were located in an area of high value to iwi due to the proximity to sites of significance (a potential wāhi tapu site in the vicinity of stream 5) and the potential for effects on mauri and ecology associated with the stream and catchment.

7.4.6.4 Site selection refinement

In response to the concerns raised by the Kaimahi and the importance of a spoil site to support the cut #13 works, the Project team undertook further assessment in respect of spoil sites #8 and #25.

The provision of a spoil site in the vicinity of cut #13 is critical to the Project. Cut #13 is scheduled early in the construction programme with structural fill material from it being used to form embankments along

³⁶ Construction – earthworks and mass haulage, Geotechnical, Landscape and Visual, Ecology – freshwater and terrestrial, Stormwater and Catchment Management

the length of the alignment providing for the Project's mass haulage. The cut will generate spoil to overburden before material suitable for use as structural fill is reached. Spoil disposal as near to the works area would reduce the need for the unnecessary importation of fill or the creation of haul routes for the purposes of spoil disposal only in the wider catchment. A number of spoil site locations were considered in this area, including spoil site #8 and spoil site #25, which had been identified at the conclusion of the initial site selection process outlined above as the preferred site in this area. Spoil site #25 was estimated to have an approximate disposal volume of 360,000m³ which was also an important consideration as this was the volumetric area required.

Further investigative work was undertaken by the Project ecology team which confirmed that proposed spoil site #25 is located in a stream (Stream 5B) that has high ecological value (based on the macroinvertebrate community index (MCI) score which is a biological indicator of water quality). Consequently, to confirm if either the removal or limitation of spoil disposal in the Stream 5 catchment³⁷ was feasible, three alternative options (as listed below) were tested.

- Option 1 – Shift disposal site from spoil site #25 to spoil site #29;
- Option 2 – Spoil filling / disposal of Stream 5 tributaries only; and
- Option 3 – Shift the disposal area to spoil site #8 (southern side of the Alignment).

Detail on this optioneering exercise is presented at Section 3.2 of the Spoil Sites Selection Memorandum appended to the DCR (contained in **Volume II**). Upon review of the three options, constraints issues associated with Option 1 and Option 2 (double handling of the disposal material and more complex construction method, resulting in increased cost and longer programme, as well as a disposal volume shortfall) resulted in them being rejected, and Option 3 taken forward for further construction, ecological, cultural and stormwater design consideration to determine which would have the lesser overall impact.

To assist this comparative assessment, a concept drainage design including an indication of the location of proposed culverts and stream diversions was devised for both spoil sites. The existing streams and the terrestrial ecological areas were also mapped to enable an assessment of the relative viability of providing fish passage in spoil sites #8 and #25 and to provide an indication of the degree of stream and ecological loss. Each technical discipline then undertook a comparative assessment of the two spoil sites, the detailed commentary of which is provided at Section 3.3 of the Spoil Sites Selection Memorandum appended to the DCR (contained in **Volume II**).

The Project presented its technical discipline findings from the comparative analysis of spoils sites #8 and #25 to the Iwi Partners in a workshop setting. Through discussion with the Iwi Partners it was concluded that the two spoil sites under consideration were not in the vicinity of a wāhi tapu site, as originally was thought possible. While spoil site #25 is closer to Te Ahu a Turanga, it was concluded in discussion with the Kaimahi that the spoil site would not materially affect the setting of this site and may help screen the alignment from Te Ahu a Turanga. The team confirmed that both spoil sites #8 and #25 would entail the permanent filling of sections of the stream 5 catchment, having an effect on the mauri of this stream. Spoil site #25 would entail loss of headwaters and terrestrial ecological systems, however, spoil site #8 would have similar freshwater effects, but lower in the catchment. On this basis, while no strong opinion in favour of either spoil site #8 or spoil site #25 was given by the Iwi Partners at the conclusion of the workshop, it is understood that the Iwi Partners are accepting of the need for a spoil site in this general area (and understand the rationale behind it) and were comfortable with the assessments and recommendations of technical experts in terms of the two sites.

³⁷ See the Waterways and Catchment Overview Map (Drawing TAT-3-DG-E-4102) at **Volume III** for confirmation of this catchment location.

Given the comments above, spoil site #25 has been preferred over spoil site #8 because of the site's significant constructability advantages. It is, however, recognised that spoil site #25 has the potential to introduce a significant area of additional earthworks (in addition to the western cut) near to Te Ahu a Turanga. As noted, there is an ongoing ability for the Iwi Partners to influence the design of this spoil site and that there is an acknowledged beneficial opportunity to screen the new highway partially from that sacred location.

The work required to overcome the construction impediments of spoil site #8, which would be at significant cost and risk, would further extend the Project construction footprint at spoil site #8. There is insufficient room within the designation and adjacent private land to accommodate these if spoil site #8 was used and construction would potentially need to extend into the adjacent Manawatū Gorge Scenic Reserve. It is considered the perceived advantages associated with spoil site #8, being that it has fewer ecological and landform fit/visual amenity effects, as noted above, would consequently be significantly reduced.

7.4.6.5 Preferred Sites

At the conclusion of this spoil site selection process, 15 spoil sites are proposed which have been identified as avoiding significant adverse environmental effects on ecological, natural character and cultural effects. The locations of these sites are confirmed on the Spoil Disposal Areas Plans (Drawings TAT-3-DG-C-3600 to TAT-3-DG-C-3645) and supported by a Spoil Sites - Typical Cross Section (TAT-3-DG-C-3650) contained in the Drawing Set at **Volume III**.

7.4.7 Summary

It is recognised that a Project of this scale and nature cannot be constructed without adverse effects on the environment. The discussion contained in Section 6 of this AEE concludes that the Project is anticipated to have significant adverse effects in regard to freshwater ecology (stream loss from stream diversion) and terrestrial ecology (clearance or alteration of indigenous vegetation 'ecosystem types'; loss or alteration of potential habitat for indigenous fauna (lizards, birds and invertebrates); and in respect of mortality, injury and disturbance of indigenous fauna), before the proposed offset and compensation measures are considered. The Project also affects a significant cultural landscape.

The design considerations for the Project have sought to manage the potential for significant adverse effects on cultural and environmental values (as directed by national legislation and the Horizons One Plan). As demonstrated above, the Project has sought to minimise these effects as far as practicable through innovation, design iterations and the consideration of alternatives (as well as constructability methods).

7.5 Discharges

Pursuant to Clause 6(1)(d) of the Fourth Schedule and section 105(1)(c) of the RMA, where consent is sought for the discharge of contaminants to the environment, any possible alternative methods of discharge, including discharge into any other receiving environment must be assessed.

This application is seeking resource consents for discharges relating to the following activities:

- For the discharge of fill (spoil sites); and
- For the discharge of water or contaminants into water or onto or into land within 'rare habitat' or 'threatened habitat' in accordance with Schedule F.

As discussed above, the alternatives for the general location/route of the Project were carefully considered in the Business Case and NoRs phases.

The sections below set out a more specific discussion of alternative options considered for the relevant discharges associated with the Project.

7.5.1 Discharges to Land and Water

7.5.1.1 During Construction

During construction of the Project, discharges to land and water will occur within the Middle Manawatū subzone of the Manawatū River catchment including its multiple tributaries. This will largely involve the discharge of silt and sediment runoff from earthworks and general construction activities.

These discharges are a necessary part of the construction process and cannot be practicably diverted to an alternative receiving environment due to the geographic location of the Project. A range of methods for erosion and sediment control were considered and assessed in the ESC - **Technical Assessment A** to minimise effects on the environment. An ESCP and three SSES CPs have been prepared and accompany this application.

Industry best-practice construction and erosion and sediment control techniques are proposed and with the implementation of these, as required by the proposed conditions of consent, the effects of these discharges on water quality have been assessed in Water Quality - **Technical Assessment C**. The report acknowledges that the bulk earthworks will, during construction, increase sediment loss. The effects will be particularly apparent during high flow events, however, the effects downstream can be minimised through the proposed SSES CPs 'control' and 'treatment' methods as discussed in Section 6.

7.5.1.2 Operational Discharges

The permanent works and operation of the Project will generate new discharge points and discharge of contaminants from the road surface. These contaminants will be picked up in stormwater which will then be treated (to the Transport Agency's Stormwater Treatment Standard for State Highway Infrastructure 2010 guidelines) prior to discharging into a waterbody (which will ultimately discharge into the Manawatū River).

At a high level the following Options were generally considered:

- Option 1 – Discharge to land/infiltration
Discharge of stormwater through infiltration has been found to be largely unachievable due to the low permeability of the soils. This option was not pursued.
- Option 2 – Discharge to water – no treatment
The Transport Agency's 2010 guidelines do not allow for no treatment. This option was discarded.
- Option 3 – Piped network
Piped networks would greatly increase capital cost as well as ongoing maintenance costs. This option was not pursued.
- Option 4 – Discharge to water – with treatment.

The consideration of options and choice of treatment methods has involved many elements which have included:

- The efficiency of treatment and contaminant removal;
- Space efficiency and practicality including topography and land gradients;

- Cultural preferences for more natural treatment systems (green infrastructure) where water passes over and through land for filtration and treatment prior to discharge to the receiving environment; and
- The ability to produce positive environmental outcomes (including integration into the landscape) using the BPO.

In consideration of the alternatives and including these relevant considerations, the identified preferred method was the use of a naturalised 'treatment train' approach that is able to be easily integrated into the existing rural environment. The combination of swales and wetlands is considered to be the BPO for the provision of the necessary treatment, detention (stream erosion protection) and level of attenuation (flood mitigation). The Stormwater Management - **Technical Assessment B** outlines the BPO assessment which has been undertaken and confirms the preferred approach for the Project. An overview of the options considered is presented in Table 7-5 below.

Table 7-5 Stormwater Management Device BPO Assessment

Stormwater Management Device	Advantages	Disadvantages	BPO for Project (Y/N)
Planted flow-through Swales	<p>Effective devices for water quality treatment.</p> <p>Can be used to provide informal pre-treatment before discharging to wetlands or other dedicated treatment devices.</p>	<p>Requires a considerable length and reduced longitudinal grade to function for stormwater runoff treatment (achieve necessary hydraulic residence time).</p> <p>Swales adjacent to the highway can increase earthworks footprint, construction cost, particularly when in cut.</p> <p>Do not provide adequate volume storage for peak flow attenuation.</p>	Yes
Filter Strips	<p>Filter strips are based on the concept of stormwater treatment being achieved via filtration of sheet flow runoff from an adjacent road surface.</p> <p>Potential for erosion and scour is reduced due to there being no point discharge.</p> <p>Effective at TSS concentration reduction, removal of Cu, Pb and Zn.</p>	<p>Do not provide quantity control.</p> <p>Require a large area for the device immediately adjacent to the pavement surface (i.e. along the side of the carriageway), increasing earthworks footprint, construction cost when in cut.</p> <p>Not suitable for areas with moderate to steep slopes and areas where the area adjacent to the highway is constrained.</p>	No
Rain Gardens	<p>Effective at treating stormwater runoff by filtration, infiltration, adsorption and biological uptake.</p> <p>Discharge flow over a relatively large area, and therefore the potential of erosion and scour due to the discharge is reduced.</p>	<p>A large footprint is often required.</p> <p>High maintenance costs due to regular maintenance requirements - dense planting and high sediment loads can lead to clogging if not maintained regularly.</p> <p>Do not provide adequate volume storage for peak flow attenuation.</p> <p>Not suited to longitudinal, constrained environments in remote locations where a higher level of traffic management for maintenance activities is required.</p>	No
Proprietary Filter Cartridges	<p>Stormwater360 StormFilters are the Transport Agency's preferred proprietary for high traffic load applications and have been used on recent NZTA projects around NZ for water quality treatment.</p> <p>Targeted removal of metals and hydrocarbons.</p> <p>Proprietary Filter Cartridges can fit in tight spaces, so are good when treatment is required in constrained physical environments.</p>	<p>Do not provide adequate volume storage for peak flow attenuation.</p> <p>High maintenance requirement and underground / confined space maintenance required.</p> <p>Reduced resilience in seismic areas.</p>	No
Sand Filters	<p>Effective at removal of hydrocarbons.</p> <p>Effective at removal of finer sediments.</p>	<p>Suited for small catchment areas.</p> <p>Hydraulic head requirement through sand filters is larger than that through the proprietary filter devices.</p> <p>Sand filters require a large physical space and more space for maintenance activities.</p> <p>They do not provide adequate volume storage for peak flow attenuation.</p> <p>They require maintenance on a more frequent basis and are prone to clogging.</p>	No

Stormwater Management Device	Advantages	Disadvantages	BPO for Project (Y/N)
Dry Ponds	Provides greater detention and attenuation volumes for the same foot print than wet ponds and wetlands.	No water quality treatment function.	No
Wet Ponds	Provides water quality and quantity control. Smaller footprint than wetlands. Low maintenance.	Deeper permanent water depth than wetlands – increased safety risk. Warming of water temperature due to pond surface area – can impact on downstream ecology. Standing water potentially can attract birds, which is not acceptable to Meridian.	No
Planted Wetlands	Provides water quality and quantity control. Low maintenance. Wetland plants filtering, absorption and uptake. Visual amenity and are a better habitat for wildlife. Low level planting acceptable to Meridian. Preferred stormwater management device by iwi.	Larger footprint than wet ponds.	Yes

To inform the Water Quality – **Technical Assessment E**, a contaminant load model was developed to assess the effect of the long-term stormwater discharge with the proposed mitigation. This assessment concluded that the high level of stormwater treatment provided by the Project will result in improved water quality in the Manawatū River, the Pohangina River and Catchments 1, 2, 4 and 9. Stormwater from the alignment will not discharge to Catchments 5 and 6. While there is potential for treated stormwater discharges to cause a decline in water quality in sub-catchment C2E and in Catchments 3, 7 and 8, the Water Quality – **Technical Assessment E** considers that the effects for these catchments will be small as:

- Stormwater discharges will be intermittent in nature;
- The quality of the stormwater will be within relevant guidelines; and
- For TSS, the stormwater will have similar concentrations to that currently found in the streams during flood events.

On this basis, alternative sites and methods have been properly considered.

7.5.2 Discharges to Air

The discharges to air associated with the Project will arise from the construction-related earthworks (dust) and will, therefore, be present for the duration of the construction phase only. Best practice construction dust management will be implemented as described in the Air Quality – **Technical Assessment E** and in the proposed Dust Control Procedure (Appendix 3 of the ESCP, **Volume VII**).

8 Assessment of Planning Documents

8.1 Introduction

This section of the AEE assesses the Project against the relevant provisions of the following planning documents:

- National Policy Statements (Section 8.2);
- National Environmental Standards (Section 8.3);
- Transport-related plans and policies (Section 8.4);
- Horizons' One Plan (Section 8.5);
- District Plans (Section 8.6); and
- Other relevant policies and plans (Section 8.7).

A summary conclusion of the planning documents assessment is then provided at Section 8.8. This section of the AEE explains why the Project is consistent with these relevant planning documents in accordance with sections 104(1)(b) and 104D(1)(b) of the RMA.

The RMA provisions and other legislation relevant to the Project are discussed in Section 9 of this AEE. A full set of the relevant provisions of the planning and statutory documents is contained in **Appendix D**.

8.2 National Policy Statements

8.2.1 Introduction

There are currently five NPS issued under section 52(2) of the RMA. The only mandatory NPS is the New Zealand Coastal Policy Statement, which is not relevant to this Project.

The National Policy Statement on Urban Development Capacity 2016 (NPS-UDC) is also not considered relevant to this Project. The other three relevant NPS are discussed in Sections 8.2.2 to 8.2.4 below.

8.2.2 National Policy Statement for Freshwater Management 2014

The National Policy Statement for Freshwater Management 2014 (NPSFWM) is primarily relevant to the development of regional plans but also relevant when assessing the effects of the Project on the quality of fresh water, freshwater ecosystems and values associated with freshwater bodies. The NPSFWM addresses, as a matter of national significance, the management of fresh water through a framework that considers and recognises Te Mana o te Wai as an integral part of freshwater management.

The NPSFWM directs regional councils, in consultation with their communities, to set objectives for the state of freshwater bodies in their regions and to set limits on resource use to meet these objectives. The NPSFWM includes a range of objectives that are achieved through policies which in turn, give specific direction to regional councils.

The Project involves discharges to freshwater environments and to land where it may enter freshwater environments. The Project also results in the permanent loss of sections of streams. However, the Project is consistent with the purpose of the NPSFWM objectives and policies for the following reasons:

- Once operational, the Project improve the overall quality of freshwater through improved stormwater treatment as detailed in the Stormwater Management - **Technical Assessment B**. The proposed treatment scenario is an improvement on the existing situation where no formal treatment of stormwater runoff from existing state highway roads³⁸ within the Project area is provided (Objective A1 and A2).
- Appropriate erosion and sediment controls will be implemented during construction in accordance with GD05 (and the ESCP at Volume VII and proposed SSESCPs) (Objective A1 and A2).
- Although the Project will result in the permanent loss of sections of streams, it is proposed to offset these effects via new stream channels (stream diversions) and riparian planting/enhancement to achieve no net loss of ecological function overall (Objective B1 and B4).
- The integrated management of fresh water and the use of land and development has been appropriately considered in the proposed stormwater management design for the Project (Objective C1).
- Tangata whenua values are reflected in the management of fresh water as Iwi, as Project Partners, have been involved in confirming the design approach for stormwater management, and where the Project has impacted freshwater bodies, they have been and will continue to be involved with the design and implementation of mitigation and offset measures (Objective D1).

For the reasons above (and as discussed further in Section 6 of this AEE), the Project is consistent with the objectives of the NPSFWM.

8.2.3 National Policy Statement for Renewable Electricity Generation 2011

The National Policy Statement for Renewable Electricity Generation 2011 (NPSREG) is of relevance to the Project, as it interfaces with the Te Āpiti Wind Farm. The NoRs design required the removal of one (possibly two) wind turbines and potentially impacted a further eight turbines within the Wind Farm.

The Northern Alignment (introduced in Section 1 and discussed further in Section 7), however, avoids the need to remove any wind turbines within the Te Āpiti Wind Farm. In addition, the Transport Agency has been working closely with Meridian to ensure that the Project does not adversely affect the operation of the Te Āpiti Wind Farm. Specific consideration has been given to maintaining access to wind turbines to facilitate their continued operation; and the Project includes the Te Āpiti Wind Farm underpass (BR05) which provides vehicle access between the northern and southern sections of the wind farm. Construction programming has also been devised to ensure the operations can continue without interruption.

Where the Meridian 22kV electricity cables and communications cables at the Te Āpiti Wind Farm are impacted by the Project, relocation of these utilities (on a like for like basis) will occur in consultation with Meridian. Therefore, the Project is consistent with the NPSREG as it does not hinder the operation and maintenance of renewable electricity generation activities.

8.2.4 The National Policy Statement on Electricity Transmission 2008

The NPSET is relevant to the effects of the Project on the National Grid, where the construction works are in the vicinity of the Mangamaire – Woodville A 110kV transmission line.

The Project works at the eastern roundabout has the potential to impact up to five poles on the Transpower Woodville to Mangamaire 110kV transmission line. The raising of the conductors is required to achieve the necessary clearance from the road surface, and the Transport Agency will work closely with Transpower to ensure that this is done in a safe and efficient manner. There are no

³⁸ This includes existing roads at the Ashhurst (Fitzherbert East Road (SH57) and Napier Road (SH3)) and Woodville roundabouts (Woodlands Road, Napier Road and Vogel Street (SH3)).

permanent impacts on the national transmission line, and no consent required under the NESET (as discussed in Section 1.6.2). The Project is consistent with the NPSET as it does not hinder the operation and maintenance of national electricity transmission activities.

8.3 National Environmental Standards

There are currently six National Environmental Standards (NES) issued under section 43 of the RMA. Neither the National Environmental Standards for Plantation Forestry 2018 nor the National Environmental Standard for Sources of Drinking Water 2007 are relevant to the Project.

8.3.1 National Environmental Standard for Air Quality 2004

NES_{AQ} (amended in 2011) has been considered and it has been determined that Project is compliant with it. The Air Quality - **Technical Assessment E** states that the main discharge to air associated with the Project's construction will be dust and concludes that the dust arising from the Project will remain well within the NES_{AQ} ambient air quality standard.

8.3.2 National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health

As discussed in Section 2 of this AEE, land use consents will be sought pursuant to the NES_{CS} from the territorial authorities in a separate application, and the known contaminated sites will be remedied prior to construction of the Project.

8.3.3 National Environmental Standard for Telecommunication Facilities Regulations 2016

The NES_{TF} provides a planning framework aimed at enabling network operations. Where the Project works necessitate any disruption to or relocation of these telecommunication facilities, consultation with the utility network operator (Chorus and Inspire Network) will continue and steps taken to ensure that the Project will not hinder the operation and maintenance those telecommunication networks.

8.3.4 National Environmental Standard for Electricity Transmission Activities Regulations 2009

As discussed in Section 1.6.2 and Section 8.2.3, the Project requires the raising of conductor levels on the Transpower Mangamaire – Woodville A 110kV transmission line to achieve the necessary clearance from the alignment. The increased height is likely to be within the 15% permitted activity threshold stipulated in the Resource Management (National Environmental Standards for Electricity Transmission Activities) Regulations 2009 (NES_{ETA}) and as such, no consent is required pursuant to the NES_{ETA}.

8.4 Transport-related plans and policies

8.4.1 Government Policy Statement on Land Transport

The GPS outlines the Government's strategy to guide land transport investment over the next 10 years. The GPS operates under the LTMA (see Section 9.10 for further details on the LTMA).

The GPS identifies safety and access as the key strategic land transport priorities for the Government, alongside the environment and value for money as supporting priorities. The Project is directly aligned with the GPS priorities with the provision of a more resilient, efficient and safer connection which manages environmental effects.

8.4.2 National Land Transport Programme

The NLTP gives effect to the GPS forecasts of activities and expenditure. The NLTP identifies the Project as a key priority and confirms an initial investment for its design and construction.

8.4.3 Horizons Regional Land Transport Plan

The RLTP sets out the strategic direction for land transport in the Region. The RLTP recognises a replacement route for the Manawatū Gorge as a key focus area and states that:

“It is critical for regional economic growth that the focus remains on the development of an alternative to the Manawatū Gorge as the principal east-west link between Manawatū and Hawke’s Bay. Completion of a new route must ensure an improvement to the resilience and availability of the route as well as realising opportunities for connectivity to land use development, freight hubs and efficiency, and tourism.”

The RLTP identifies an alternative to the Manawatū Gorge route as the first priority project for funding purposes, and therefore the Project is fundamental to the achievement of this Plan.

8.5 Horizons One Plan

8.5.1 Introduction

The Horizons One Plan (One Plan) is the combined regional policy statement and regional plan that regulates the Manawatū-Whanganui region. Consents for the Project are required under the provisions of the One Plan.

Part 1 of the One Plan contains the RPS which sets out the regionally significant resource management issues and the objectives, policies and methods that will be used to address these issues over ten chapters (Chapters 1 to 10). The relevant chapters of the RPS are addressed in Section 8.5.2 below.

Part 2 is the Regional Plan section of the One Plan and primarily contains regional rules regarding the control of the region’s natural and physical resources over nine chapters (Chapters 11 to 19), but also contains objectives and policies designed to guide decision-making on resource consent applications. The relevant chapters of the regional plan are addressed in Section 8.5.3 below.

8.5.2 Regional Policy Statement

8.5.2.1 Chapter 1: Setting the Scene

Chapter 1 sets out the One Plan framework and states that its main focus is on four keystone environmental issues facing the region, namely: Issue 1: surface water quality degradation, Issue 2: increasing water demand, Issue 3: unsustainable hill country land use, and Issue 4: threatened indigenous biodiversity. It is noted that there is significant interconnection between the issues. Issues 1 and 4 are particularly relevant to this Project. Project activities have the potential to impact on surface water quality (sediment runoff during construction, in particular) and will impact on some areas of threatened indigenous biodiversity. These are discussed in more detail in the sections below.

Although climate change is not one of the four keystone issues, it is acknowledged as an overarching issue for the regional community and has implications for many of the keystone issues. Chapter 1 recognises the need to plan for climate change and help the region adapt to the effects of climate change, through managing water quality within a values framework that can respond to climate change and planning for changes to the scale and frequency of natural hazards, amongst other matters. Climate change is relevant to the design standards for the Project’s bridges and culverts as well as resilience of the road design. This is discussed in more detail in Section 8.5.2.8 (Chapter 9, Natural Hazards).

The One Plan notes at Chapter 1.5 that the right balance between encouraging and supporting change and requiring it needs to be struck, and in this regard the Regional Council considers that solutions need to be practical, appropriate to the scale of the problem, and affordable for the ratepayers and communities of the Region. The activities which are encouraged as part of this approach include:

- Operating in accordance with codes of practice and other good practice initiatives;
- Having net environmental benefits, especially where the benefits support progress on the 'Big Four' issues;
- Assisting the Region to adapt to climate change;
- Providing habitat enhancement, especially if it results in benefits to indigenous biodiversity; and
- Resulting in innovative ways to reduce the impact of otherwise adverse effects on the environment.

This approach is particularly relevant to the proposed ecological offsetting packages and net gain in biodiversity to be achieved by the Project.

Chapter 1.6 acknowledges that industry-developed codes of practice and other practice initiatives are encouraged and supported by the Regional Council. The Transport Agency has regard to internationally and nationally recognised industry codes of practice as well as devises its own codes for state highway infrastructure. The Project design and construction management have advanced with regard to these standards and codes as confirmed in the DCR, management plans and technical assessments, for example in relation to stormwater treatment and ESCP.

8.5.2.2 Chapter 2: Te Ao Maori

Provisions identified as relevant: Objective 2-1 and Policy 2-1, 2-2 and 2-4

Chapter 2, specifically section 2.2 and Table 2.1 of Policy 2-4, identifies the resource management issues of significance raised by hapū and iwi. Table 2.1 refers the reader to the relevant parts of the One Plan where the issues are addressed, namely Chapters 2, 4, 5, 6, 12, 13, 14, and 16, which are commented on in later in this Section.

Objective 2-1 requires resource management approaches to have regard to the mauri of natural and physical resources to enable hapū and iwi to provide for their social, economic and cultural wellbeing. Kaitiakitanga must be given particular regard; and the relationship of hapū and iwi with their ancestral lands, water, sites, wāhi tapu and other taonga (including wāhi tūpuna) must be recognised and provided for through resource management processes. Whilst Policy 2-1 (Hapū and iwi involvement in resource management) is directed towards the Regional Council, the intended outcomes of this policy are embodied in the Project approach of the Transport Agency and Alliance partnering with Rangitāne o Manawatū, Rangitāne o Tamaki Nui-ā-Rua, Ngāti Kahungunu ki Tāmaki nui-ā-Rua, and Ngāti Raukawa. This partnership has ensured that the values of those iwi groupings and consideration of the careful management of the potential adverse effects on those values have been central to the development of the Project and will be central in its implementation. This approach achieves Objective 2-1 and goes beyond the extent of involvement being sought by Policy 2-1.

In respect to Policy 2-2, which seeks the protection of wāhi tapu, wāhi tūpuna and other sites of significance, an accidental discovery protocol condition is proposed to respond to any risks of finding unknown wāhi tapu or wāhi tūpuna during construction activities.

While the mauri of water is significant due to the location of the Project, Policy 2-3 is directed at water takes from surface water, which are not being sought as part of this Project (only small amounts for dewatering of groundwater is required).

Resource management issues identified by Iwi Project Partners have informed the Project design and proposed mitigation. Five CIAs (**Volume VI**) have been produced by the Project's Iwi Partners and the

Te Āpiti Ahu Whenua Trustees and all emphasise a desire to act as kaitiaki and express the importance of protecting the natural environment, particularly in relation to natural waterbodies and areas of indigenous biological diversity.

Section 6.13 provides further information on the effects identified by iwi and how they are to be mitigated or responded to as the Project is implemented. On this basis, it is considered that the Project is consistent with the objectives and policies of Chapter 2.

8.5.2.3 Chapter 3: Infrastructure, Energy, Waste, Hazardous Substances and Contaminated Land

Chapter 3 outlines regionally significant issues in respect of infrastructure, energy and waste hazardous substances and contaminated land and includes a suite of objectives, policies and methods that derive from these issues. It contains broad guidance for managing activities associated with infrastructure, energy, waste, hazardous substances and contaminated land, noting that there are specific policies integrated into the resource-based chapters of the Plan.

Infrastructure

Provisions identified as relevant: Objective 3-1, Policy 3-1, Policy 3-2 and Policy 3-3

A specific issue relevant to this Project is identified in Chapter 3, namely that *“there is potential for concerns about local adverse effects to prevail over recognition of the regional and national benefits of establishing infrastructure and other physical resources of regional or national importance”*. In terms of the Project’s potential effects on other important infrastructure, the specific policies outlined in the plan to address this issue have been given careful consideration and have helped frame the design of the Project. Otherwise, the provisions of Chapter 3 strongly support the establishment and operation of the Project and are important to consider in assessing this application for consents.

Objective 3-1 and Policy 3-1 require regard to be had to the benefits of regionally and nationally important infrastructure (including the road and rail network as identified in the RLTP) by providing for their establishment, operation, maintenance and upgrading.

The RLTP (as detailed in Section 8.4.3 above) has identified the new SH3 section as critical infrastructure and finding a viable alternative route is described as an immediate priority. The Project delivers an extensive range of benefits and positive effects including significant transport, social and economic impacts, as set out in Section 6 and accordingly granting consent helps achieve Objective 3-1. Provision of a reliable and efficient east-west connection is important to the region economically and for realising opportunities for recreational and active transport users, and the derived social benefits.

Policy 3-2 requires councils to ensure that the adverse effects of other activities on regionally or nationally important infrastructure are avoided as far as reasonably practicable. In accordance with Policy 3-2, the Project does avoid, as far as reasonably practicable, any potential adverse effects on other network utilities and infrastructure including the Palmerston North – Gisborne rail line, the National Grid, and the assets of Te Āpiti Wind Farm, Ballantrae Farm and the Transpower Mangamaire – Woodville A 110kV transmission line. As discussed in Section 7 of this AEE, where the Project has, or would potentially have a significant adverse effect on regionally or nationally important infrastructure, further design investigation to minimise effects was undertaken. The current proposed alignment avoids the need to remove any wind turbines within the Te Āpiti Wind Farm and construction programming will also allow uninterrupted operation of the Wind Farm during this period. The Project will have an effect on the research facility located on a part of the Ballantrae Farm which cannot be completely avoided. To reduce effects, however, the Project’s horizontal alignment has been shifted west from the NoRs design location and the cut slopes in the section of the alignment steepened to 2:1 to minimise the footprint and land requirement as well as the extent of direct impact on the research farmlets. The current design limits the impact on the Transpower Mangamaire – Woodville A 110kV transmission line

to that considered at the NoRs stage. In accordance with Policy 3-2, adverse effects from the Project on regionally or nationally important infrastructure will be avoided as far as reasonably practicable.

Policy 3-3 establishes a framework for the management of adverse effects arising from the establishment, operation, maintenance and upgrading of infrastructure of national importance. This framework provides for minor adverse effects to be allowed, and more than minor effects to be avoided, remedied or mitigated – taking into account:

- The need for the infrastructure;
- Any functional, operational or technical constraints that require the infrastructure to be located or designed in the manner proposed;
- Whether there are any reasonably practicable alternative locations or designs; and
- Whether more than minor adverse effects that cannot be adequately avoided, remedied or mitigated can be offset.
- The effects of the Project are managed in a manner that is consistent with these provisions; numerous measures will be implemented to mitigate all of the adverse effects of the Project, and an extensive package of measures is proposed to offset or compensate for adverse ecological effects.

The need for the Project, as a resilient route able to provide an appropriate level of service, has been demonstrated in Section 1 and discussed elsewhere in this AEE. As noted above, the RLTP identifies the Project (i.e. as it provides an alternative route) as being an immediate priority for the Region.

Functional constraints and alternatives have been considered at length through the route alternatives that have underpinned the business case and NoRs phases of the Project and have guided the further refinement carried out through the procurement and concept design phases of the Project (as discussed at Sections 1.4 and 7 of this AEE and the DCR contained at **Volume II**).

The Project will of course result in a range of adverse effects on the environment, particularly on terrestrial and freshwater ecology. As discussed at Section 6, and particularly Section 6.10 and Section 6.11 concerning terrestrial and freshwater ecology respectively, The Project's design has sought to minimise adverse effects on those values, and measures will be undertaken as the Project is constructed to avoid, remedy and mitigate those adverse effects as far as practicable. Most notably, an EMP (**Volume VII**) has been prepared to manage and mitigate effects on ecology, which includes a number of specific sub-management plans as described in Section 6.10. Nonetheless, after options to avoid, remedy and mitigate adverse effects have been exhausted, significant residual effects exist for both terrestrial and freshwater ecology which need to be offset or compensated for. The Terrestrial Offset and Compensation Report - **Technical Assessment G** and the Freshwater Ecology - **Technical Assessment H** discuss what is required to offset and compensate for the residual effects. This is also assessed and considered further with respect to Policy 5-23 and in the Chapter 13 assessment. For the reasons outlined above, the effects of the Project are managed in a manner that is consistent with the provisions of Policy 3-3.

Energy

Provisions identified as relevant: Objective 3-2, Policy 3-6

Objective 3-2 seeks an improvement in the efficiency of the end use of energy and an increase in the use of renewable energy resources. Amongst the matters considered in Policy 3-6, Regional Council and Territorial Authorities must have particular regard to the Region's potential for the use and development of renewable energy resources.

The Project does not compromise the on-going operation of the Te Āpiti Wind Farm. When compared to the NoRs design, the Project's alternative design avoids the removal of two turbines. In addition, careful attention has been given to earthworks areas and height to avoid creating adverse wind effects, and to ensure that care will be taken for any works within the zone of influence adjacent to turbine foundations. In doing so, the Project supports the on-going efficient operation of the Wind Farm and its associated renewable energy benefits.

In terms of energy use, the Project results in substantial travel time and cost savings, compared to the current alternative routes. The extra distance and higher gradients on both routes (Saddle Road and Pahiatua Track) have led to higher vehicle operating costs, particularly for heavy commercial vehicles, since the closure of the Manawatū Gorge route. These costs have been estimated at approximately \$60,000 per day, or more than \$22M per annum regionally. Therefore, the overall vehicle operating costs and fuel consumption will be reduced once the Project is operational.

As such, the Project is consistent with these energy provisions.

Waste, Hazardous Substances and Contaminated Land

Provisions identified as relevant: Objective 3-5 and Policy 3-14 and Policy 3-15

Objective 3-5 and supporting provisions seek that the Regional Council and Territorial Authorities work together to minimise waste; ensure it is disposed of appropriately; manage effects of hazardous substances; and manage adverse effects of contaminated land.

Without appropriate mitigation, the disturbance of contaminated soil has the potential to discharge contaminants to the receiving environment, to nearby watercourses and sensitive ecological areas during the construction phase of the Project. As described at Section 6.8 of this AEE, a DSI identified four areas of contaminated land. It is proposed that these areas will be remediated prior to commencement of construction of the Project (resource consent(s) for which will be applied for separately).

A Contaminated Soils Management Plan (CSMP) has been prepared and is provided in **Volume VII**. The CSMP contains the methodology for management of unexpected contamination should it be encountered during the land disturbing activities. These measures are consistent with this objective and policies for identifying and managing contaminated land.

8.5.2.4 Chapter 4: Land

Provisions identified as relevant: Objective 4-2 and Policy 4-2.

Objective 4-2 seeks the regulation of potential causes of accelerated erosion and that increased sedimentation in water bodies are avoided, as far as reasonably practicable, or otherwise remedied or mitigated. It also seeks to ensure sediment loads entering water bodies as a result of accelerated erosion are reduced to the extent required to be consistent with the water management objectives and policies for water quality set out in Chapter 5. The ability of the Project to meet the objectives and policies of Chapter 5 is discussed in Section 8.5.2.5 below.

Policy 4-2 guides the Regional Council's and Territorial Authorities' regulation of land use activities relating to vegetation clearance, land disturbance, forestry and cultivation and associated rules to ensure Objective 4-2 is achieved. Indeed, the issues for land management of Chapter 4 are regulated by the objectives, policies and rules contained in Chapter 13 (Land Use Activities and indigenous biological diversity) which are discussed in Section 8.5.3.2 below.

8.5.2.5 Chapter 5: Water

Provisions identified as relevant: Objectives 5-1, 5-2, 5-3 and 5-4 and Policies 5-1, 5-2, 5-3, 5-4, 5-10, 5-22, 5-23, 5-24, 5-25 and 5-26.

Chapter 5 addresses the management of fresh water in the Region, specifically, the management of water quality, water quantity and the beds of rivers and lakes. Each is addressed in turn below.

Water Quality

Objective 5-1 and supporting Policy 5-1 require that surface waterbodies and their beds are managed in a manner which safeguards their life supporting capacity and recognises as well as provides for the water management values (hereafter referred to as values) set out in Schedule B of the RPS. Objective 5-2 seeks to ensure that surface water and groundwater quality is maintained or improved and, in respect of surface water quality, to support the values in Schedule B. Groundwater encountered during construction will be managed carefully via standard construction practices so as to ensure that its quality is maintained.

The values in Schedule B are listed by sub-zone and those relevant values pertaining to the sub-zones impacted by the Project are identified in Section 2.4.3 of this AEE. The pertinent sub-zones for the Project are Middle Manawatū (Mana_10a), and then Mangaatua (Mana_9c) in respect of Mangamanaia Stream Bridge (BR07) and the crossing of the Mangamanaia Stream. For each identified value, a management objective is described in Schedule B (and summarised at Table 5.2 of Chapter 5).

As confirmed in Section 6 of this AEE, the zone wide values 1 to 9 (and their associated objectives) will be avoided, mitigated or managed such that adverse impacts as a result of the Project will not occur. Consideration of the site/reach-specific values (values 10-12) is presented in Table 8-1 below.

Table 8-1 Assessment of the relevant Schedule B values

Individual Value & Management Objective	Assessment
<p>Site of Significance – Riparian (Gravel & Sand, dotterel) (Mana_10a) Objective: Sites of significance for indigenous riparian biodiversity are maintained or enhanced.</p>	<p>As shown in Figure 2.8 of this report, the Manawatū River is identified as having riparian (Gravel & Sand, dotterel) values. Specific management control measures are proposed in relation to dotterels, as set out in the Avifauna Management Plan (contained in the EMP, Volume VII) and required by proposed NoR condition 22 (see Appendix E).</p>
<p>Site of Significance – Cultural (Mana_10a) Objective: Sites of significance for cultural values are maintained.</p>	<p>As shown in Figure 2.8, the Manawatū River is acknowledged as having cultural values. Impacts of the Project on cultural values are discussed in Section 6.13 and the supporting CIAs.</p>
<p>Trout Fishery – Other (Mana_10a) Objective: The water body and its bed sustain healthy rainbow or brown trout fisheries</p>	<p>As shown in Figure 2.8 of this report, the Manawatū River is confirmed as having trout fishery values. Potential temporary effects resulting from construction works within the river will be mitigated by implementing the Stream Works Procedure contained in the ESCP (Volume VII) and the Fish Recovery Protocol contained in the EMP. Fish recovery will, therefore, be undertaken in dry conditions and fish will be salvaged from within the coffer dams during dewatering. Fish passage during construction is unlikely to be restricted by the construction of the piers. As such, the Trout Fishery Values of the Manawatū River will not be impacted by the Project.</p>
<p>Flood Control and Drainage (Mana_9c) Objective: The integrity of existing flood and river bank erosion protection structures and existing drainage structures is not compromised, and the risks associated with flooding and erosion are managed sustainably</p>	<p>As shown in Figure 2.8 of this report, the Mangamanaia Stream is recognised as having flood control and drainage values.</p> <p>The Project does not impact on any existing protection structures. The risks associated with flooding and erosion will be managed through the design standards for the bridge over the Mangamanaia Stream and culverts in that catchment. The Hydrology - Technical Assessment D concludes that the effects of the proposed bridge (BR07) construction over the Mangamanaia Stream are likely to be positive. Any changes to the existing potential flood hazard levels are considered to be less than minor.</p>

Policy 5-2 identifies that the water quality targets cited at Schedule E must be used to inform the management of surface water quality as set out in Policies 5-3 and 5-4.

Policy 5-3 applies to on-going compliance when water quality targets of Schedule E are met, while Policy 5-4 applies when those water quality targets are not met. Policy 5-5 applies when the existing water quality is unknown and is therefore not relevant as the water quality of the catchments affected is known and reported on. The existing water quality in the sub-catchments affected by the Project is discussed in Water Quality - **Technical Assessment C**, and generally this indicates that none of the nine catchments can meet all of the water quality targets. Water clarity is not met for any of the catchments, and additionally deposited sediment is not met for any of the catchments, apart from Catchment 7. This is described further in Table 5.6 of the Water Quality - **Technical Assessment C**.

When targets are not met, Policy 5-4 requires the water quality to be managed so that it is enhanced. It is considered that in the long term, Policy 5-4 can be met. All operational discharges (stormwater) will be treated, which is a significant improvement from the treatment that is currently being provided over the existing state highway network within the Project area including Saddle Road and the existing roads at the Ashhurst (Fitzherbert East Road (SH57) and Napier Road (SH3)) and Woodville roundabouts (Woodlands Road, Napier Road and Vogel Street (SH3)). It is also relevant that the former SH3 route through the Gorge had no treatment. On this basis, there is the potential for the Project to improve water quality in the Project catchments. Furthermore, the riparian planting proposed in the immediate Project catchments, as described in the Freshwater Ecology - **Technical Assessment H**, is likely to improve water quality and ecosystem health.

During construction the main potential contaminant is sediment which could impact on water quality. The Water Quality - **Technical Assessment C** has identified that the water quality target of no changes greater than 30% may not be achieved during periods of high flows. These effects will be temporary, and they can be minimised and mitigated with adherence to the ESCP (**Volume VII**) as well as through the preparation of the SSESCPs. To provide certainty that any potential change will be 'barely discernible' following construction, a AEMP (contained in the EMP, **Volume VII**) is proposed.

Policy 5-6 relates to groundwater quality and is not considered relevant as there will be no discharge of contaminants to groundwater. Neither Policy 5-7 which relates to the management of land use activities, Policy 5-8 (intensive farming land use activities), nor Policy 5-11 (sewage discharge) are considered relevant to the Project. Policy 5-9 is also not relevant to this Project, as there are no direct point source discharges to water. Discharges to water that will occur are either ancillary to other activities (earthworks during construction) or a permitted activity (ongoing stormwater discharges). Policy 5-13 (Efficient use of water) is not considered relevant as although a groundwater take resource consent is being sought, it is for dewatering, not for a use.

Policy 5-10 is relevant to the proposed discharges of cleanfill (spoil) to land. These discharges will not result in pathogens or other toxic substances being discharged, as the material to be discharged is cleanfill only. The CSMP (**Volume VII**) is proposed to ensure that no toxic substances would be discharged if encountered during construction.

Water Quantity

Objective 5-3 (Water quantity and allocation) and associated Policies 5-12 to 5-21 are not considered relevant to this Project for the following reasons. Although a resource consent is being sought for the take of groundwater pursuant to Rule 16-9, this is for dewatering during construction earthworks only. As the exact volumes for dewatering are not known, resource consent is being sought as a precaution. Any clean groundwater (not entrained with sediment), however, will be discharged to the nearest watercourse while any groundwater entrained with sediment will be discharged via the nearest ESC

controls. As such, the groundwater from construction earthwork dewatering will not leave the catchment in which it originated.

Beds of Lakes and Rivers

Objective 5-4 (which is supported by Policies 5-22 to 5-27) seeks to ensure that the beds of rivers and lakes will be managed, in a way that:

- Sustains their life supporting capacity;
- Provides for the instream morphological components of natural character;
- Recognises and provides for the Schedule B values; and
- Provides for infrastructure and flood mitigation purposes.

It goes on to require that land adjacent to the bed of reaches with a Schedule B value of Flood Control and Drainage are managed in a manner which provides for flood mitigation purposes.

Policy 5-22 sets out the general management requirements for activities in, on or under the beds of rivers such that: the Schedule B values as required in Policies 5-23 to 5-25 are recognised and provided for (as described in Table 8-1 above); any significant reduction in the river/bed's ability to convey flood flows or significant impediment to the passage of floating debris are avoided; effects on the stability and function of the river bed, habitat diversity, natural character and public access are avoided, remedied or mitigated; fish passage is provided for; the nature and extent of navigation or access for the operation/maintenance/upgrade of infrastructure and other physical resources of regional or national importance is not obstructed; and continued public access in accordance with Policy 6-10 is provided for. This policy is of relevance to the Manawatū River Bridge (BR02) and works within streams. The Project has been designed and has sought to avoid, remedy and mitigate effects on the beds of rivers and lakes as far as practicable to generally achieve the above requirements.

Policy 5-23 relates to activities in sites with a Schedule B Natural State, Sites of Significance - Cultural, or Sites of Significance – Aquatic value, and as a consequence, it is relevant to the Manawatū River Bridge (BR02). Policy 5-23(a) requires effects on these values to be avoided in the first instance. Policy 5-23(b), however, allows for the mitigation or remedy of effects where it is not practicable to avoid them in respect of infrastructure and other resources of regional and national importance, or for activities that will result in an environmental benefit. The Project is identified as being of regional and national importance, and therefore, effects do not need to be avoided, but they must be remedied or mitigated. Under Policy 5-23(c), the habitat and spawning requirements of identified species are to be maintained. Effects on natural character of BR02 are discussed in more detail in Section 8.5.3.2 below.

As shown in Figure 2-8, the Manawatū River has the following Schedule B site/reach values: Riparian (Gravel & Sand, dotterel); Trout Fishery; and Cultural. Specific management control measures are proposed in relation to dotterels, as set out in the Avifauna Management Plan (contained in the EMP, **Volume VII**) and required by Condition 22 of the NoR Conditions and in the proposed condition set in Appendix E. Impacts on cultural values are discussed in Section 6.13 and the supporting CIAs contained in Volume VI.

Potential temporary effects resulting from construction works associated with the Manawatū River Bridge (BR02) will be mitigated by implementing the Stream Works Procedure contained in the ESCP (**Volume VII**). Public access will be restricted to the extent required for health and safety purposes during construction, but following construction, access to a number of areas within the Project area is likely to be enhanced (such as the proposed SUP and viewing platform which form part of BR02, which will link to wider river edge public access initiatives being progressed as part of the Project and subject to the Outline Plan process e.g. Western Gateway Park and enhanced wetland experience area).

The Hydrology - **Technical Assessment D** describes the modelling and assessment that has been undertaken in designing BR02 to confirm that the ability of the river and the bed to convey flood flows will not be adversely affected. The assessment concludes that the construction of the bridge and piers will have minimal impact on the bed and riparian bank of the Manawatū River. The potential for the deposition of sediment and accretion of Parahaki Island will be mitigated by using scour protection to protect the central pier so that the construction of the bridge and piers will have minimal impact.

Policy 5-24 is relevant to activities in rivers and their beds with a Schedule B value of Flood Control and Drainage and is, therefore, relevant to the Mangamanaia Stream Bridge (BR07). The policy requires the activity (i.e. BR07) to be managed in terms of flood hazard, erosion protection and adverse effects. The Hydrology - **Technical Assessment D** concludes that the effect of constructing the proposed bridge over the Mangamanaia Stream will be small and overall likely to be positive. This is considered to be consistent with Policy 5-24(a). The Project is also consistent with Policy 5-24(b) on the basis that the design of BR07 avoids adverse effects on the instream morphological components of natural character.

Policy 5-25(a) is relevant to all other activities in rivers and their beds in respect of all other Schedule B values. It requires that significant adverse effects, in the first instance, be avoided, remedied or mitigated on the instream morphological components of natural character and the Schedule B values. Policy 5-25(b) then goes on to provide consent applicants with the option of providing an offset. As the zone-wide values (Values 1 to 9 in Table 8-1 above) apply to the whole Project, this policy is therefore applicable to the 39 stream diversions and 33 new culverts proposed to be constructed along the alignment. As outlined in the Freshwater Ecology - **Technical Assessment H**, the stream loss and modification associated with these stream diversions and new culverts can neither be avoided nor fully remedied or mitigated. Neither Policy 5-25(b) or (c) is considered relevant given the Project meets Policy 5-25(a) and avoids significant adverse effects on Schedule B values and natural character.

Policy 5-26 provides for activities in, on, under or over the beds of rivers and lakes that are essential or result in an environmental benefit to be generally be allowed. It is considered that the activities for which resource consent is sought pursuant to section 13 of the RMA, are essential to enable the Project, which in turn, is considered essential as it is identified as a priority project under the NLTP and the RLTP.

It is, therefore, proposed to offset the significant adverse effects on freshwater ecology with the creation of new stream channels and riparian planting of a commensurate level and these offset activities are considered to be consistent with Policy 5-25. Having considered the Project against the relevant objectives and policies in Chapter 5, it is consistent with the relevant provisions.

8.5.2.6 Chapter 6: Indigenous Biological Diversity and Historic Heritage

Indigenous Biological Diversity

Provisions identified as relevant: Objective 6-1, Policy 6-2 and Policy 6-10

Objective 6-1 and Policy 6-2 seek that significant indigenous biodiversity, particularly *rare, at risk and threatened habitats*, are protected and managed. The potential impacts of the Project on indigenous biological diversity have been assessed within the Terrestrial Ecology - **Technical Assessment F** with reference to the One Plan provisions. A number of areas of significant indigenous biodiversity have been determined in accordance with Schedule F, these are identified in Terrestrial Ecology - **Technical Assessment F** and at Section 2.4.6 of this AEE.

Policy 6.2 directs that the Regional Council must protect significant indigenous biodiversity through regulation. The rules in Chapter 13 give effect to this policy, and as such the plan provides for consideration of activities in these areas. Specific decision-making criteria are outlined in Chapter 13 and a detailed analysis of these provisions below in Section 8.5.3.2

As discussed in Section 6.10, the Project will require the removal of some areas of significant vegetation to enable the construction and operation of the Project. Given the importance of this vegetation, refinements to the design, including a considerable change to the proposed alignment (Northern Alignment), have been undertaken so as to avoid and minimise any impact on these areas as far as practicable. An EMP (**Volume VII**) has also been prepared to manage effects on terrestrial ecology, this is discussed in Section 6.10.4. Further detail is discussed in Section 8.5.3.2 below. This is considered to be consistent with Objective 6-1.

Public access along rivers and streams will be maintained within the Project where appropriate, specifically, the SUP along BR02 will provide public access to the Manawatū River, while balancing the need to protect rare and threatened habitats, in accordance with Policy 6-10.

Natural Character

Provisions identified as relevant: Objective 6-2, Policy 6-8 and Policy 6-9

Objective 6-2 in the One Plan deals with outstanding natural features (ONF), landscapes and natural character.

While the Manawatū Gorge is identified as an ONF/Landscape in Schedule G of the One Plan, in accordance with Section 6.1.3 of the One Plan, Territorial Authorities have the responsibility of managing the effects of land use, through district plan provisions and land use resource consents. Consequently, the management of competing pressures for the subdivision, use and development of land that may affect ONF and landscapes is most appropriately dealt with at a territorial level and therefore not dealt with in this application.

Objective 6-2(b) and (c) seek to protect the natural character of amongst other matters waterbodies (in the context of the Project this includes the Manawatū River, streams, wetlands and their margins), by ensuring that:

- The natural character of rivers and their margins is protected from inappropriate development;
- Adverse effects on the natural character of rivers and their margins are avoided where they would significantly diminish the attributes and qualities of areas that have high natural character, and avoided, remedied, or mitigated in all other cases; and
- Rehabilitation and restoration are undertaken, where appropriate.

A reduction in natural character from 'high' to 'moderate' or less is considered to "*significantly diminish the attributes and qualities of areas that have high natural character*" in accordance with One Plan Objective 6-2(b)(ii), as explained in Natural Character – **Technical Assessment I**. This interpretation is consistent with that used during the NoRs phase when assessing natural character.

The other aspect of this objective requiring interpretation is what constitutes an 'area'. It is considered that the stream catchment scale is the most appropriate 'area' at which to assess the effects of natural character given the interconnected nature of ecosystems. A Project of this size and nature is going to have detrimental adverse effects on waterbodies at the point of impact which cannot be avoided. Therefore, while selected crossing points have been assessed, these targeted assessments have been used to provide context and to inform the catchment assessment to respond to the policy direction in the One Plan. The only exception to this is the Manawatū River Bridge crossing which has been considered an 'area' in its own right because of its size, scale, prominence, visibility, accessibility and its location at the mouth of the Gorge.

From the assessment undertaken (using a range of attributes such as those in Policy 6-8(c)), no areas were assessed as having outstanding natural character. Catchment 9 and three crossing points (5A, 7A and 7B Eco Bridge (the raupō wetland located in catchment 7)) were assessed as having high

existing natural character. The natural character of Catchment 9 remains high post-development and therefore does not experience significant diminishment. While the natural character of crossing points 5A, 7A and the raupō wetland will be significantly diminished using the above interpretation, their respective catchments (Catchments 5 and 7) were not assessed as having high existing natural character and therefore are not subject to Objective 6-2(b)(ii).

The natural character of rivers and their margins has been protected from the Project works as far as practicable through minimising the extent of instream works, particularly those in high quality reaches. The mitigation and offset proposed by the other Technical Assessments, particularly the Terrestrial Offset and Compensation - **Technical Assessment G** and Freshwater Ecology - **Technical Assessment H**, provide the opportunity for rehabilitation and restoration of stream margins through stock exclusion and riparian planting which will provide a longer-term positive benefit for these waterbodies. Taking into consideration the design and mitigation efforts of the Project, the form and scale of the Project has been designed to be compatible with the landform, geological features and vegetation as far as practicable and as a result will not significantly disrupt natural processes or existing ecosystems, which is consistent with the direction of Policy 6-9.

Significant diminishment of attributes and qualities of areas that have high natural character have been avoided such that the Project is consistent with the applicable One Plan provisions. Notwithstanding that, Policy 5-23(b) allows infrastructure of regional and national importance, or activities that result in an environmental benefit, to remedy or mitigate those effects where it is not practical to avoid them. On the basis of the above, the effects of the Project on waterbodies and their margins have been avoided, remedied and mitigated as far as practicable.

8.5.2.7 Chapter 7: Air

Provisions identified as relevant: Objectives 7-1 and 7-2 and Policies 7-1, 7-2 and 7-3

Objectives 7-1 and 7-2 and Policies 7-1, 7-2 and 7-3, require that a standard of ambient air quality is maintained and fine particulate levels (PM₁₀) are managed to comply with NES_{AQ} and regional standards set out in Policy 7-2 (the discharge must not cause any noxious, offensive or objectionable dust beyond the property boundary).

The Air Quality - **Technical Assessment E** states that the main discharge to air associated with the Project's construction will be dust and concludes that the dust arising from the Project will remain well within the NES_{AQ} ambient air quality standards. It also states that the Project can meet Policy 7-2 (Regional standards for ambient air quality) provided the recommended mitigation measures are followed and managed in accordance with the proposed Dust Control Procedure (Appendix 3 of the ESCP, **Volume VII**). Additionally, required as part of the proposed NoRs conditions, dust management will also be included within the site-specific management plans for Ballantrae Farm, Te Āpiti Wind Farm and the National Grid (i.e. the Transpower Mangamaire – Woodville A 110kV transmission line).

Given there will be no ongoing operational discharges to air, Policy 7-4 relating to incompatible land uses is not relevant to this Project. Furthermore, this policy is directed to be addressed primarily through district plans. Policy 7-5 and 7-6 are also not relevant as the Project is not located within a polluted airshed.

The implementation of dust control measures will ensure the dust emissions from the construction of the Project will not be detrimental to amenity values, human health, property or the life supporting capacity of air and ambient particulate levels and, as such, the Project is consistent with the objectives and policies of Chapter 7.

8.5.2.8 Chapter 9: Natural Hazards

Provisions identified as relevant: Objectives 9-1 and 7-2 and Policies 9-1, 9-2, 9-3, 9-4 and 9-5.

Objective 9-1 seeks the avoidance and mitigation of adverse effects from natural hazard events on, amongst other matters, infrastructure. The objective is supported by Policies 9-1 to 9-5 that provide clear direction regarding the avoidance of increased risk, except where certain circumstances apply, and applying a precautionary approach to the effects of climate change.

Policy 9-1 sets out the division of responsibilities between the Regional Council and Territorial Authorities for natural hazard management under the RMA. Policy 9-2 (g) states that Policy 9-2 (Development in areas prone to flooding) does not apply to critical infrastructure. Critical infrastructure includes infrastructure strategic road and rail networks (as defined in the RLTP). The RLTP states “*State Highway 3 is critical for regional economic growth that the focus remains on the development of an alternative to the Manawatū Gorge as the principal east-west link between Manawatū and Hawke’s Bay*”.

Of Policies 9-3 and 9-4, Policy 9-3 is considered to be more applicable as it relates to the placement of new critical infrastructure, in an area likely to be inundated by a 0.5% AEP (1 in 200 year) flood event, or in an area likely to be adversely affected by another type of natural hazard. It states that such locations are to be avoided, unless there is satisfactory evidence to show that the critical infrastructure:

- Will not be adversely affected by floodwaters or another type of natural hazard;
- Will not cause any adverse effects on the environment in the event of a flood or another type of natural hazard;
- Is unlikely to cause a significant increase in the scale or intensity of natural hazard events; and
- Cannot reasonably be located in an alternative location.

As set out in the Stormwater Management - **Technical Assessment B**, and Section 6.5 of this AEE, provision has been made for peak flow attenuation and extended detention in stormwater management systems which will mitigate flooding impacts upstream and downstream of the Project. As identified in the Hydrology - **Technical Assessment D**, the Mangamanaia catchment in which the proposed Mangamanaia Stream Bridge (BR07) is located, is already prone to flooding. It has, however, been shown that the proposed Mangamanaia Stream Bridge is likely to mitigate the existing flood hazard, particularly downstream of the highway.

The Project, as new critical infrastructure, including the Manawatū River Bridge (BR02), the Mangamanaia Stream Bridge (BR07) and the Woodville Roundabout have, as far as practicable, have been located and designed to minimise any potential adverse effects on life, infrastructure and property from flooding.

As described in the Geotechnical Technical Memorandum (Appendix A of DCR, **Volume II**) and summarised in Section 6.3 above, the Project has been designed to minimise as far as practicable any potential adverse effects on life, infrastructure and property from natural hazards including land instability and earthquake induced effects once the Project is operational.

In relation to this matter, land instability is the reason that this Project is required. As such, the minimisation of the risks of natural hazards is at the forefront of Project design. Furthermore, when compared to the existing situation, the Project proposes a solution that is substantially more resilient to seismic activity, flooding and other significant natural hazards. Consequently, the Project is providing greater resiliency to ensure the adverse effects on people, property, infrastructure and the wellbeing of the community are avoided or mitigated, consistent with Objective 9-1.

Therefore, the proposed infrastructure is unlikely to be adversely affected by floodwaters or other natural hazards, nor are they likely to cause any, or increase the intensity of, adverse effects on the environment in the event of a flood or natural hazard, ensuring consistency with Policies 9-3 and 9-4.

In terms of climate change, the effects of flooding have been assessed using a model adjusted for predicted climate change. Furthermore, the Project has been designed in accordance with all relevant best practice guidelines, and a precautionary approach to the effects of climate change has been adopted, ensuring consistency with Policy 9-5.

8.5.3 Regional Plan

8.5.3.1 Chapter 12: General Objectives and Policies

Provisions identified as relevant: Objectives 12-1 and 12-2 and Policies 12-2, 12-3, 12-4 and 12-5.

Objective 12-1 requires that the regulation of activities in the region is undertaken in such a manner as to maximise certainty and avoid unnecessary costs on resource users and other parties, as well as give effect to the provisions of the RPS. Objective 12-2 relates to consent duration, review and enforcement.

These objectives are supported by Policies 12-2 to 12-12. Policies 12-3 and 12-4 relate to consent conditions and highlight the need for conditions to be measurable, comprehensible and enforceable. A comprehensive suite of conditions is proposed and provided at Appendix E. It is considered that these provide certainty in giving effect to the provisions of the RPS and impose measures (performance standards and processes) that will avoid, remedy, mitigate, and offset or compensate for the effects of the Project.

Policy 12-5 addresses consent durations and states that for applications required under sections 13, 14 and 15 of the RMA, durations will generally be set to the next common catchment expiry date listed in Table 12.1. The common catchment expiry date for the water management zone (Middle Manawatū) applicable to the Project was 2013 (from Table 12.1), with the next review being 2023.

Policy 12-5(b) however, clarifies that consents granted within three years prior to the relevant common catchment expiry date may be granted with a duration aligned with the second common expiry date (that is the number of years up to the next expiry date plus 10 years). On that basis, an expiry date of 2033 could be sought for all construction related resource consents for the Project. However, it is anticipated that construction will take 4 – 4.5 years, and an expiry date of 10 years is considered appropriate on all construction period resource consents sought.

For the resource consents sought pursuant to section 13 of the RMA (i.e. structures in beds of streams and rivers) and Rule 13-9, Rule 17-3, Rule 17-15, and Rule 17-23 which form part of the road network, the maximum duration of 35 years is sought as provided for pursuant to section 123 of the RMA. A maximum duration of 35 years is also sought for all other operational resource consents pursuant to sections 14 and 15 of the RMA, specifically:

- The diversion of streams pursuant to Rule 13-9 and 16-13 of the One Plan;
- The discharge of stormwater from Wetland 03 pursuant to Rule 13-9 of the One Plan; and
- The discharge of fill pursuant to Rule 14-30 of the One Plan.

It is considered the maximum duration is appropriate for these resource consents as once they are implemented, they will remain in place for the life of the Project.

Policy 12-6 relates to consent reviews, and Policy 12-6(c) suggests a review in parallel with a common catchment expiry date. Reviews are set out in the condition set contained in Appendix E. This does not preclude a review of conditions in other circumstances as provided for under section 128 of the RMA.

The Project covers both multiple activities and multiple sites, and accordingly the application combines activities and sites under a single application package which is considered appropriate under Policy 12-7. Additionally, the conditions proposed have been prepared in an integrated fashion and allow for the management of the Project's environmental effects as a whole. It is considered that the comprehensive

conditions suite proposed, including reviews and durations, is consistent with the relevant objectives and policies in Chapter 12.

8.5.3.2 Chapter 13: Land use activities and certain activities in rare habitats, threatened habitats and at-risk habitats

Land use Activities

Provisions identified as relevant: Objectives 13-1 and Policies 13-1 and 13-2

Objective 13-1 and Policy 13-1 require the regulation of vegetation clearance and land disturbance outside areas of significant indigenous vegetation. The regulation seeks to ensure that accelerated erosion and any associated effects, such as increased sedimentation within waterbodies or damage to people, buildings or infrastructure, are avoided where appropriate or remedied or mitigated.

To avoid potential effects, an ESCP has been prepared to appropriately manage the effects of the proposed construction works. Policy 13-2 sets out the matters for decision making including the requirement to consider the appropriateness of establishing infrastructure of regional or national importance including achieving integrated management through consent conditions.

Section 6 of this AEE sets out how effects of vegetation clearance and land disturbance will be managed across the Project area such that they are consistent with the relevant provisions.

Indigenous Biological Diversity

Provisions identified as relevant: Objectives 13-2 and Policies 13-3, 13-4 and 13-5

Objective 13-2 and Policy 13-3 require the regulation of resource consents to protect areas of significant indigenous vegetation and significant habitats of indigenous fauna or to maintain indigenous biological diversity, including enhancement where appropriate.

Schedule F sets out the classification of habitat type through a regional lens (Table F.1 of the One Plan) and then criteria to apply to those habitat types (set out in Table F.2(a)) to determine if they qualify as rare habitats, threatened habitats or at-risk habitats (in accordance with Policy 13-5). Schedule F habitats are identified within the Terrestrial Ecology - **Technical Assessment F** and presented in the Terrestrial Ecology Drawings TAT-3-DG-E-4131 to 4137 contained within **Volume III**.

A range of resource consents are sought for the Project including land use consent, water permit and a discharge permit for activities within these habitats. The Terrestrial Ecology - **Technical Assessment F** concludes that the Project will result in 'high' or significant residual adverse effects on habitats, after avoidance and minimisation measures are accounted for. The assessment has been undertaken in accordance with Policy 13-5 which states that '*the potential adverse effect of an activity on the rare habitats, at risk habitat and threatened habitats must be determined by the degree to which the proposed activity will diminish the characteristics (comprising representativeness, rarity and distinctiveness, ecological context) for each habitat while also having regard to any additional ecological values*'.

Policy 13-4(b) stipulates a hierarchical approach to any more than minor adverse effects (in accordance with Policy 13-5). They are to be avoided in the first instance, and where they cannot be reasonably avoided, they are to be remedied or mitigated at the location where the effect occurs. Where this cannot be achieved, Policy 13-4(b)(iii) requires that the effects are offset to result in a net indigenous biological diversity gain. Policy 13-4(d) sets out how offset is to be achieved including:

- i) provide for a net indigenous biological diversity gain within the same habitat type, or where that habitat is not an area of significant indigenous vegetation or a significant

- habitat of indigenous fauna, provide for that gain in a rare habitat or threatened habitat type;
- ii) use of methodology appropriate and commensurate to the scale and intensity of the residual adverse effect;
 - iii) generally be in the same ecologically relevant location as the effect;
 - iv) not be allowed where inappropriate for the ecosystem or habitat type;
 - v) be able to be achieved and then maintained successfully in the long term; and
 - vi) achieve conservation outcomes above and beyond that which would have been achieved if offset were not required.

Therefore, in order to grant consent for the activities in areas of significance in accordance with Policy 13-4(b) the decision maker must be satisfied that where “more than minor” adverse effects cannot be avoided or mitigated at the point of the adverse effect, then an offset to result in a net indigenous biological gain must be able to be achieved and maintained.

The Terrestrial Offset and Compensation - **Technical Assessment G** sets out in detail the offset and compensation package proposed as part of the Project, a summary of which is provided at Section 6.10.7 of this AEE. A modelling approach was used to address the residual adverse terrestrial ecological effects of the Project that cannot be avoided or minimised. The Terrestrial Offset and Compensation - **Technical Assessment G** states that effects on seven of the twelve ecosystem types can be offset to a verifiable 'Net Gain' standard within 35 years. Effects on the other five habitat types (Old growth forest (alluvial and hill country); and the three wetland habitat types), can be compensated to an 'expected' Net Gain standard within 35 years. Four of these five ecosystem types are identified in Schedule F, and as significant under Policy 13.5 as set out in Table 6 3 in Section 6.10 above.

The One Plan does not distinguish between ‘offset’ and ‘compensation’ as those terms are used and understood in BOURMA; rather, the One Plan refers to ‘offset’ in a broad sense. It is noted that Terrestrial Offset and Compensation - **Technical Assessment G** does not class the compensation measures as ‘offset’ (in BOURMA terms) as the biodiversity values in these habitat types (the forest habitats) take a long time to reinstate or some values (i.e. loss of wetlands) cannot be replaced. Due to this, additional ‘compensation’ measures are proposed through stock exclusion fencing and pest control. Overall, the residual adverse effects on terrestrial ecology for the twelve ecosystem types have been addressed through offsetting and compensation actions. In accordance with the key biodiversity offsetting principles, Policy 13-4 is achieved.

The offsetting proposed goes beyond what is required to be offset under the One Plan provisions (Policy 13-5) given that it has been calculated to offset all significant adverse effects and not just those eight habitats identified under Schedule F. The offset proposed achieves the net gain requirement under proposed NoR condition 24. In addition to the offset proposed, compensation measures are also proposed as discussed at Section 6.10.7.

The offset and compensation proposed (to be undertaken in accordance with the EMP) demonstrates that residual ecological effects are able to be appropriately managed and a net overall biodiversity gain is able to be achieved and can be maintained. Accordingly, Policy 13-4(d) is able to be met and is not an impediment to consent being granted. In any event, it is noted that the Project will allow for the construction of nationally significant infrastructure and therefore Policy 3-3 lends important support for the Project.

8.5.3.3 Chapter 14: Discharge to Land and Water

Provisions identified as relevant: Objective 14-1 and Policies 14-1, 14-2, 14-3, 14-4, 14-8 and 14-9

Objective 14-1 seeks the management of discharges onto or into land or water in a manner that safeguards the life supporting capacity of water, provides for the values and management objectives in Schedule B of the One Plan and seeks to avoid, remedy or mitigate adverse effects on surface water or groundwater in regard to discharge onto or into land.

Policies 14-1 and 14-2 set out a range of matters which the Regional Council must consider when making decisions on resource consent applications, including the objectives of Chapter 5 and associated Policies 5-1 to 5-5 and Policy 5-9, which have been addressed in Section 8.5.2.5 above.

Policy 14-3 directs the Regional Council to have regard to industry-based standards (including guidelines and codes of practice), recognising that such standards generally represent current best practice, and that they may accept compliance with those standards as being adequate to avoid, remedy or mitigate adverse effects to the extent that those standards address the matters in Policies 14-1, 14-2, 14-4 and 14-5.

Policy 14-4 seeks the consideration of opportunities to use alternative options or combination of methods for the discharge of contaminants into water, or onto or in land to mitigate adverse effects. Policy 14-8 confirms the monitoring requirements for discharges to water and Policy 14-9 sets out the decision-making requirements in respect of the NPSFWM. Policy 14-9 requires the Regional Council, when considering and application for a discharge, to have regard to the extent to which the discharge would avoid contamination that would have adverse effects (particularly where it would have a more than minor adverse effect) on freshwater, ecosystems and the health of people and communities (through secondary contact with freshwater).

The sole resource consent being sought under Chapter 14 (Rule 14-21), relates to the 'discharge' of imported material (engineered fill) for road construction. Although engineered fill falls within the definition of 'cleanfill material' in the One Plan, the use of imported material for road construction does not fall within the definition of 'cleanfill' (which for the One Plan means a landfill that accepts only cleanfill material). For the avoidance of doubt (or as a precaution) a resource consent is being sought pursuant to Rule 14-30 as a discretionary activity for the discharge of contaminants to land or to water associated with the placement of cleanfill material.

Where filling (including the disposal of excess cut material (spoil)) to land occurs using material sourced from the same site (that is, the material is not imported) it is considered that this falls within the One Plan definition of 'land disturbance' and consent for this activity, where required, is sought under the rules in Chapter 13. Should contaminated soil be encountered during construction, the CSMP (Volume VII) will be adhered to, to ensure there are no (further) discharges of contaminants to the environment.

Once the Project is operational, there will be increased impervious areas, affecting stormwater runoff. The Project proposes a range of stormwater management devices and, based on the Stormwater Management - **Technical Assessment B**, the Project's stormwater discharges (once operational) are permitted under Rule 14-18 and can, therefore, meet the objectives and policies of Chapter 14.

Where the discharges of sediment are ancillary to earthworks, this is covered by the land disturbance rules in Chapter 13. However, resource consents for the Project are being sought for the discharge of stormwater once operational and the discharge of sediment during construction where these discharges are within Schedule F habitats.

Sediment run-off from earthworks areas will be managed via an ESCP (**Volume VII**) to avoid and minimise adverse effects on water quality. Section 8.5.2.5 of this report has had regard to the objectives and policies of Chapter 5 and the Project is considered to be consistent with those provisions, which seek to ensure that adverse effects on water quality are appropriately managed.

8.5.3.4 Chapter 15: Discharges to Air

Provisions identified as relevant: Objective 15-1, Policy 15-2

It is noted that the discharge of dust during earthmoving is a permitted activity pursuant to section 15 of the RMA and Rule 15-16 and no resource consent is sought.

Objective 15-1 seeks the management of air quality in a manner that maintains or enhances air quality to safeguard human health, meets regional and national standards, is not detrimental to amenity values, and manages fine particle levels. Policy 15-2 sets out a range of matters which the Regional Council must have regard to when making decisions on resource consent applications. No resource consent is being sought for an air discharge, as the discharge of dust during construction will comply with the permitted activity standards of Rule 15-16.

Provided the dust control measures are implemented in accordance with the proposed Dust Control Procedure (Appendix 3 of the ESCP, **Volume VII**), there will be no discharges to air beyond the boundary of the Project (in accordance the requirements of Policy 7-2) nor will the discharge result in offensive or objectionable odour, dust, smoke or water vapour at the boundary of any sensitive area as defined in Policy 15-2(d). On this basis, the management of air discharges associated with the Project is consistent with the objectives and policies of Chapter 15.

8.5.3.5 Chapter 16: Takes, uses and diversions of water and bores

Provisions identified as relevant: Objective 16-1 and Policies 16-1 and 16-3

Objective 16-1 requires that takes and diversions of water be regulated in a manner that recognises and provides for the values and management objectives in Schedule B and provides for the relevant provisions of Chapter 5. The relevant Schedule B values and management objectives for the Project have been identified in Section 2.4.3 and discussed in earlier above and are therefore, not repeated here. These values are recognised and provided for through the mechanisms described in Chapter 5 of the RPS and considered at Section 8.5.2.5 above.

Policy 16-1 directs decision-making for the taking, use and diversion of surface water and groundwater and seeks to avoid any adverse effects on other lawful activities, in particular surface water takes or groundwater bores. Policy 16-1(b) goes on to provide for the non-consumptive use of water including the use and recycling of water.

Where groundwater is encountered during land disturbance activities for the Project, dewatering is likely to be required. Due to the topography and limited information on groundwater levels across the Project alignment (described in Section 2.4.3) exact dewatering volumes cannot be estimated and could exceed the permitted volume of 50m³/day. Resource consent is, therefore, being sought as a precaution pursuant to Rule 16-9 for dewatering associated with the Project's land disturbance activities. As these are incidental groundwater takes for the purposes of construction and are unlikely to be large volumes over a long period of time (thus affecting surface water bodies), Policies 16-2, 16-4, 16-6, and 16-7 to 16-9 are not considered relevant to the Project.

Regarding Policy 16-5 (Effects of groundwater takes on other groundwater takes), existing consented groundwater bores surrounding the Project have been identified and are presented at Figure 2-7. Considering the location of these bores, the required dewatering for the Project's construction will not create an adverse effect on other lawful activities.

In respect of resource consents for diversions and drainage of water, Policy 16-3 requires the Regional Council to manage effects on rare, threatened or at-risk habitats, in accordance with Chapter 6 and the relevant objectives and policies of Chapter 13 and on the natural character of water bodies (also in accordance with Chapter 6).

The Project involves the construction of permanent diversion channels and stream diversion works to maintain stormwater flows through or around the alignment embankment and associated works areas. While drainage is a permitted activity pursuant to Rule 16-11, resource consent is being sought pursuant to Rule 16-12 for all stream diversions (39 in total) which are required as part of the Project. In addition, the Project requires six cut off drains, one stream diversion (SD-EC05-01) and one stormwater treatment device (Wetland 03) that are located within Schedule F habitats and therefore, resource consent pursuant to Rule 13-9 is required. The relevant Chapter 13 matters are discussed at Section 8.5.3.2 above.

All efforts to avoid and minimise effects from the required stream diversions have been explored, as have residual effects which are described in the Freshwater Ecology - **Technical Assessment H**. As stream loss cannot be avoided or fully mitigated, stream creation (through diversions), and riparian restoration and enhancement is proposed to offset the identified residual effects, described in the Freshwater Ecology - **Technical Assessment H**, and this approach is in accordance with Policy 5-25 of Chapter 5 of the RPS.

Policies 16-1 and 16-3 also require consideration of those relevant objectives and policies of Chapters 2, 3, 5, 6, 9 and 12. These other Chapter 16 matters have been discussed in the preceding sections and the Project is considered to be consistent with the relevant provisions of these chapters as well as the policies of Chapter 13. On this basis, the Project is consistent with the objective and relevant policies of Chapter 16.

8.5.3.6 Chapter 17: Activities in Artificial Watercourses, Beds of Rivers and Lakes, and Damming

Provisions identified as relevant: Objective 17-1 and Policy 17-1

Objective 17-1 directs the regulation of structures and activities in artificial watercourses, the bed of rivers and lakes, and damming to occur in a manner that safeguards life supporting capacity and recognises and provides for the Schedule B values and those relevant Chapter 5 objectives and policies. Policy 17-1 guides consent decision making for such activities to have regard to best management practices, to avoid any adverse effects on other lawful activities, and have regard to the objectives and policies of Chapters 2, 3, 5, 6, 9 and 12 as well as the matters in Policy 14-9 which relate to the NPSFWM.

The ability of the Project to meet the objectives and policies of Chapters 2, 3, 5, 6, 9 and 12 and the matters in Policy 14-9 have been discussed in the preceding sub-sections and are not repeated here.

As described in Section 2, the Project intersects several existing waterways, including the Manawatū River and its tributaries. As a result, several new bridge structures are required to span waterbodies and wetland areas, while culverts are required where existing streams cross the proposed highway. ESC - **Technical Assessment A**, Hydrology - **Technical Assessment D**, Stormwater Management - **Technical Assessment B** and Freshwater Ecology - **Technical Assessment H** have been prepared to assess the effects of the structures.

Manawatū River Bridge (BR02)

Potential temporary effects resulting from construction works associated with the Manawatū River Bridge (BR02) will be mitigated by implementing the ESCP (**Volume VII**), and specifically, the Stream Works Procedure contained in the ESCP (**Volume VII**) and the Fish Recovery Protocol containing the EMP. Fish passage during construction will not be restricted by the construction piers for BR02.

The design of BR02 has aimed to minimise adverse effects on the river bed through reducing the number of piers in the river bed which require excavation and piling. Consequently, the bridge design includes only one pier in the river bed with the other two piers outside of the 2-year floodplain. As the

Manawatū River holds Schedule B values, the design of the bridge and piers has been informed by the potential for bank and channel bed scour, and in turn the implementation of scour protection ensures that adverse effects on the bed of the river, and Parahaki Island have been minimised. During construction, ESC measures will be implemented to mitigate potential effects from erosion and sediment on the river bed. Consequently, adverse effects on the life supporting capacity of the river are minimised. Therefore, in relation to BR02, the Project is consistent with Objective 17-1.

Mangamanaia Stream Bridge (BR07)

The Mangamanaia Stream Bridge (BR07) is located within an extensive floodplain and has been identified within Schedule B as having value for Flood Control and Drainage. This identified value has been discussed in earlier sub-sections, but this value is recognised and provided for through the mechanisms described. The Hydrology Assessment - **Technical Assessment D** concluded that with the implementation of proposed mitigation measures, the proposed bridge is likely to have positive effects on the mitigation of the flood hazard. Rip rap scour protection will be applied to reduce adverse effects on the bed of the stream. Consequently, in regard to BR07, the Project will be consistent with Objective 17-1.

Culverts

As discussed in Section 6.11, fish passage in culverts has been provided for wherever practical and necessary and the design of culverts has been informed by potential ecological effects, ensuring that adverse effects on freshwater ecology are minimised, and the life-supporting capacity of the stream is safeguarded. Consequently, the Project is consistent with Objective 17-1.

In regard to Policy 17-1, all activities, including the construction of the aforementioned structures, will be undertaken in accordance with best management practices, which have been assessed and proposed within the supporting technical assessments and management plans. While other matters of Policy 17-1 have been discussed in other sections above, the Project is considered to be consistent with Chapters 2, 3, 5, 6, 9 and 12 and Policy 14-9. On this basis, the Project is consistent with the objective and relevant policies of Chapter 17.

8.5.4 Summary of One Plan

An assessment of the relevant chapters of the One Plan has been undertaken in Section 8.5 above. Although the Project is likely to result in a range of adverse effects, overall, the Project is consistent with the objectives and policies of the One Plan.

The effects associated with the construction of the Project, such as those relating to sediment, earthworks, dust, water diversions, and works in a waterbody or stream bed, are temporary in nature. These effects have been managed and mitigated through a range of management plans and proposed conditions. Furthermore, in terms of operation, the Project has largely avoided potential long-term adverse effects, such as on stormwater runoff, flooding, other natural hazards, and water quality through the design of the Project and associated control measures, such as stormwater treatment.

Although there is a reduction in natural character at crossing points 5A, 7A and the raupō wetland, there is no significant diminishment of attributes and qualities of the areas (catchments) that have high natural character such that the Project is consistent with the applicable One Plan provisions, particularly Objective 6-2(b).

The Project also results in the loss of streams (through stream diversion). However, Policy 5-23(b) allows infrastructure of regional and national importance, or activities that result in an environmental benefit, to remedy or mitigate those effects where it is not practical to avoid them. On the basis of the above, the effects of the Project on waterbodies and their margins have been avoided, remedied and

mitigated as far as practicable. The effects of stream loss are also being offset as described in the Freshwater Ecology - **Technical Assessment H** via the creation of new channels (as part of the stream diversions).

Although activities within Schedule F (rare and threatened) habitats are a non-complying activity, Policy 13-4(b) does not prohibit the granting of the consent if the decision maker is satisfied that where “more than minor” adverse effects cannot be avoided or mitigated at the point of the adverse effect, then an offset to result in a net indigenous biological gain must be able to be achieved. The Terrestrial Offset and Compensation - **Technical Assessment G** outlines how net gain will be achieved and maintained in order to offset the adverse effects on terrestrial ecology in accordance with Policy 13-4(d).

The Project is of regional and national importance, which is consistent with Chapter 3 as it involves the construction and operation of critical infrastructure as identified in the RLTP. As a result of this, the provisions in the One Plan seek that regard be held to the extensive range of benefits the Project provides, particularly in relation to positive transport, social and economic impacts. Under Chapter 3 and Chapter 5, the One Plan includes provisions which allow regionally and nationally important infrastructure to remedy or mitigate those effects where avoidance is not practicable.

Overall, as discussed throughout the above sections, the potential adverse effects of the Project are avoided, remedied or mitigated in a manner that is consistent with the relevant objectives and policies of the One Plan. Where there are residual adverse effects which cannot be avoided, remedied or mitigated, (in terms of effects on terrestrial and freshwater ecology), these are offset to a net gain in accordance with Policy 13-4(b). Consequently, the Project is consistent with the objectives and policies of the One Plan.

8.6 District Plans

Under section 104(1)(b)(vi) of the RMA particular regard must be had to the relevant provisions of a plan or proposed plan, when considering an application for a resource consent.

In this instance the Palmerston North City Council District Plan (PNCCDP), Manawatū District Plan (MDP) and Tararua District Plan (TDP) are considered relevant. The relevant provisions of the three district plans have been considered in relation to the Project’s location and the jurisdiction of each territorial authority, as shown in the General Arrangement Drawing (refer to DRG-3-DG-R-0100).

A detailed section-by-section review of the District Plan provisions is contained within Appendix D. The following provides a summary of the relevant provisions of the three district plans in respect of this regional resource consent application.

8.6.1 Palmerston North City Council District Plan

Provisions identified as relevant (confined to regional matters): Section 2 (The City View), Section 3 (Tangata Whenua and Resource Management), Section 9 (Rural Zone), Section 17 (Cultural and Natural Heritage), Section 20 (Land Transportation), Section 22 (Natural Hazards).

The PNCCDP recognises and provides for regionally and nationally important infrastructure by enabling its establishment, operation and development. Section 2 directs the integrated and efficient provision of infrastructure and network utilities, whilst delivering environmentally sensitive and economically sustainable outcomes and Section 20 seeks a safe, convenient and efficient land transport network. Regionally, the Project will deliver improved safety, reliability, journey times and greater access to key social services and infrastructure such as hospitals based in Palmerston North; as well as employment and distribution hubs.

Sections 3 and 17 of the PNCCDP direct active engagement and early consultation with tangata whenua on resource management issues and to recognise and protect identified 'areas of interest' and objects of intrinsic cultural and natural heritage value. The Transport Agency has developed the Project in partnership with Iwi, consequently an open and inclusive approach is embedded in the Project. During the design development of the Project, known sites of cultural significance (notably Parahaki Island) have been avoided. Cultural monitoring is also proposed as part of the Project.

Section 9 encourages the effective and efficient use and development of the natural and physical resources of the rural area and Section 22 seeks the establishment of appropriate controls to avoid or mitigate the effects of natural hazards. The location of the Project, and the range of design standards applied appropriately avoid or mitigate potential effects including those on natural hazards in a manner that achieves the identified District Plan objectives and policies. In some cases, the Project provides a solution that is substantially more resilient to seismicity, flooding and other significant weather-event-related natural hazards, such that the risks and impact of natural hazards is reduced. Completion of the Project will provide a greater level of resilience to the state highway network.

The Project is considered to be consistent with the policy direction of this plan as it delivers a wide range of benefits including significantly positive transport, social and economic impacts.

8.6.2 Manawatū District Plan

Provisions identified as relevant (confined to regional matters): Chapter 3B (Transport), Chapter 3D (Earthworks), Section 4 (Managing Land Use Effects), Section 6 (Esplanade Management), Section 8 (Natural Hazards) and NFL (Natural Features and Landscape).

The MDP has been subject to a number of plan changes, including Plan Change 65: Outstanding Natural Features and Landscapes notified on 6 February 2020. The provisions subject to Plan Change 65 considered relevant to the Project are identified in Appendix B.

The MDP transport provisions require that new roads enhance the safe, efficient operation of, and are integrated with, the existing network. This is specifically achieved through a proposed designation condition that requires a network integration plan to be developed.

Section 4 relates to managing land use effects and directs that effects of activities upon the natural and physical environment are recognition, avoided, remedied and mitigated. Through the various phases of the Project, considerable effort has been taken to avoid adverse effects on terrestrial and freshwater ecology through route optioneering and design refinement resulting in an alignment which has considerably lower ecological effects on significant indigenous vegetation and streams. Where options to avoid, remedy and mitigate have been exhausted, any significant residual effects have been offset or compensated for as described in Section 6 of this AEE.

The earthwork provisions of the District Plan (contained in Chapter 3D) provide for the management of effects generally (including in relation to scale) and then provide particular management approaches in respect of: protected areas or land forms; natural hazard risks; and the National Grid. Through the implementation of erosion and sediment controls (refer to the ESCP contained in **Volume VII**), the management of the Project earthworks is not inconsistent with the objectives and policies of Chapter 3D.

Section 8 seeks to reduce the potential impact of natural hazard events similarly to PNCC as discussed in 8.6.1 above. The Geotechnical Memorandum (Appendix A of the DCR) has assessed the potential effects of the Project in relation to natural hazards and the Project design is in accordance with the required standards as specified in the Transport Agency's Bridge Manual to minimise as far as practicable any potential adverse effects on life, infrastructure and property from natural hazards.

The enhancement of public recreational use of rivers and the protection of significant indigenous vegetation, wetlands and aquatic habitats is promoted in Section 6. The SUP across the Manawatū River and the series of walkways in its vicinity will provide greater recreational connectivity opportunities.

Under proposed Plan Change 65 the Manawatū Gorge is identified as an ONF but the description of features acknowledges the existing infrastructure (the KiwiRail Designation) within the Gorge and recognises the intended Project designation. Given that the Project is recognised, and given the relief sought by the Transport Agency's submission on PC65, it is possible that the ONF could ultimately exclude the Project area. In any event, careful design of the proposed highway by bridging and retention of ecological values will minimise adverse effects on this area. The values and features of the Gorge and the need to produce a sympathetic design are inherent in the Project design.

Based on the above discussion, it is considered that the Project has met and will continue to meet the objectives and policies of the MDP.

8.6.3 Tararua District Plan

Provisions identified as relevant (confined to regional matters): Policy Section 2.3 (Rural Land Use Management), 2.5 (Natural Hazards), 2.6 (Amenity and Environmental Quality) and 2.8 (Infrastructure)

Policy Section 2.8 contains provisions relating to transport infrastructure that seek efficient and safe networks and enable the development of new roads provided that adverse effects on the environment are avoided, remedied or mitigated. In terms of effects, it is acknowledged that the Project will result in a range of adverse effects on the natural environment. However, the Project's avoidance and mitigation measures, including offsetting and compensation for freshwater and terrestrial ecology (refer to Section 6) and proposed conditions ensure that the effects will be managed in a manner that is consistent with the Plan's provisions and achieve a high level of amenity of Section 2.6. The TDP also encourages the provision of safe cycling and pedestrian facilities and the Project is consistent with this through the provision of the SUP and supporting walking tracks and boardwalks.

Section 2.3 recognises that large scale excavation and land disturbance can cause potential adverse effects such as noise, dust, traffic and visual effects. The Project's earthworks, including spoil sites, have been carefully designed so as to avoid adverse effects, and will be subject to best practice site management and the proposed Dust Control Procedure (Appendix 3 of the ESCP, **Volume VII**).

The provisions of Section 2.5 seek to manage the risks and impacts of natural hazards by controlling development so that effects are avoided, remedied or mitigated, and in some cases the impact of natural hazard events is reduced. The location of the Project, and the range of industry standards that applied in the design, appropriately avoid or mitigate potential natural hazard effects in a manner that achieves the identified District Plan objectives and policies.

On this basis, the Project is consistent with relevant objectives and policies identified within the TDP.

8.7 Other Relevant Policies and Plans

In addition to the above planning documents, there are a number of other relevant strategic documents, plans and policies that are relevant to the Project.

Table 8-2 summarises these documents and briefly explains their relevance and how they have affected the Project development, if applicable.

Table 8-2 Other Relevant Policies and Plans

Other Relevant Policies and Plans

Horizons Regional Council Region Pest Management Strategy 2017 – 2037 (2017)	This Strategy has been considered and has assisted in informing the proposed pest management regime proposed in in the Terrestrial Offset and Compensation - Technical Assessment G .
Manawatū District Council: Growing Manawatū - Economic Growth Strategy (2017)	<p>This Strategy references the “uncertainty around the future of the Manawatū Gorge on SH3 impacting on freight costs to Tararua Region and the Hawkes Bay” as a weakness in the Strengths Weaknesses Opportunities and Threats (SWOT) assessment undertaken for the Strategy.</p> <p>The level of certainty now provided by the identified corridor (subject to an ongoing NoRs process), appointment of an Alliance and current detailed design and consenting phase is highly beneficial in this regard.</p>
Manawatū Gorge Governance Group: Te Āpiti Master Plan (draft 2019)	It is understood that the Master Plan is intended to coordinate approaches operations, management, development, and renewal activities for Te Āpiti, the area through Manawatū Gorge. It has a focus on the key outcome areas, namely culture, environment, recreation, education and leadership. The Master Plan has relevance to the Project in terms of common aspirations / outcomes for Te Āpiti. The Iwi Partnership arrangement, scale of the Project and opportunities it presents are therefore highly relevant. Involvement with the detailed design of the Project (including development and implementation of mitigation measures) is therefore important in recognising the aspirations and outcomes sought within this draft Master Plan.
OURS: The Manawatū River Leaders Accord 2010	<p>One of the commitments set out in the Accord was to establish an Action Plan to clean up the river.</p> <p>To the extent relevant, the Project achieves the specified goals, including by appropriately managing adverse effect on natural character, providing for on-going access to the Gorge and through broader economic benefits.</p> <p>The overarching focus/goal is to return the Manawatū catchment and waterways to a healthy condition and therefore, one of the commitments set out in the Accord was to establish an Action Plan with the aim of “cleaning up” the River. The Project supports the Accord’s key goal, by appropriately managing adverse effects associated with construction discharges (as outlined in Erosion and Sediment Control – Technical Assessment A) and long-term operational stormwater management (refer to Stormwater Management – Technical Assessment B) and managing effects associated with natural character and freshwater ecology through a variety of proposed mitigation measures including ecological restoration of waterways within the wider catchment (refer to Freshwater Ecology – Technical Assessment H). The Project also provides for on-going access to the Gorge, including the SUP and network of walkways and boardwalks within the Manawatū River esplanade.</p>
Ashhurst Domain Development and Management Plan 1997	The plan (prepared under the Reserves Act 1977) seeks to manage the use (activities) and development of the Domain. Relevant to the Project is the potential to connect with a broader network of recreational outcomes connecting to the Domain and the possibility to utilise part of the Domain for terrestrial offset planting activities (as outlined in Terrestrial Offset and Compensation – Technical Assessment G). It is noted that Ashhurst Domain Development and Management Plan is soon to be updated.

The Project has considered the purpose of the strategic documents summarised in Table 8-2 and has responded appropriately such that the Project is not inconsistent with any of the documents.

8.8 Summary of Planning Assessment

As discussed above, this section of the AEE has found the Project to be consistent with the pertinent provisions of the relevant policy and planning documents as summarised below.

There are three NPS and four NES that are relevant to the Project. As discussed in the above Sections 8.2 and 8.3, the Project is consistent with the policy direction of those documents, as follows:

- **NPSFWM:** The Project involves discharge to freshwater and to land where it may enter freshwater environments as well as the permanent loss of freshwater streams. Through appropriate mitigation

measures, such as stormwater treatment and ESC, as well as the integrated management of freshwater, land use and development and the reflection of tangata whenua values throughout stormwater design, the Project is considered to be consistent with the NPSFWM.

- **NPSREG:** Due to the proposed Northern Alignment, the Project does not hinder the operation and/or maintenance of renewable electricity generation, particularly at Te Āpiti Wind Farm meaning it is consistent with the NPSREG.
- **NPSET:** The Project requires conductors on the Mangamaire – Woodville A 110kV transmission line to be raised in order to achieve the necessary road surface clearance. As this action will not hinder the operation and maintenance of the national electricity transmission activities, the Project is considered to be consistent with NESET.
- **NESAQ:** As the Project will only result in discharge of dust to air which will remain well within the ambient air quality standard, the NESAQ was considered not to be relevant to the Project.
- **NEScs:** Land use consents will be sought from the territorial authorities in a separate application, pursuant to NEScs.
- **NES_{TF}:** While the Project is not a telecommunication network operator, where work may necessitate the disruption or relocation of telecommunication facilities, consultation with the utility network operator has been undertaken and will continue to occur; the Project will not hinder the operation and maintenance those telecommunication networks.
- **NES_{ETA}:** As noted above, the Project requires raising the level of the conductors to achieve the necessary clearance from the road. At this stage, the require height change is within the permitted activity status threshold, and as such, no consent is required.

The Project has achieved the GPS key strategic priorities of safety and access alongside the supporting priorities of environment and value for money. This is evidenced through the Project improving safety performance and safer journeys, travel times, increasing access to all road users and increasing route resilience (in the event of crashes, slips and natural hazards). To give effect to the GPS, the NLTP identifies the Project as a key priority and confirms initial investment for it, indicating the importance of the Project. Furthermore, the RLTP recognises the Manawatū Gorge replacement route as a key focus area and 'first priority project' within the region. Consequently, the Project is fundamental to the achievement of the RLTP and NLTP.

As discussed in greater detail in Section 8.5 the Project has been designed and is able to, where appropriate, avoid, remedy or mitigate potential adverse effects in a manner that is consistent with the One Plan objectives and policies. Additionally, due to the importance of the Project, and its identification as critical infrastructure within the RLTP, the proposed offsetting of residual ecological effects will ensure the Project is able to achieve the policy direction in the One Plan regarding the protection and management of indigenous biodiversity and natural character. Accordingly, the Project is considered to be consistent with the objectives and policies of the One Plan.

An assessment of the relevant District Plans has also occurred. All district plans are concerned with the provision of safe, efficient and integrated transport networks, which, as discussed throughout the AEE, the Project delivers. In addition, relevant provisions within the PNCCDP are largely concerned with active engagement and early consultation and the avoidance or mitigation of the effects of natural hazards. Consistency with this is evidenced through the open and inclusive approach in the development of the Project that the Transport Agency has developed in partnership with Iwi. In addition, the location and design of the Project avoids sites of cultural significance as well as increasing resilience by minimising natural hazard effects.

Relevant provisions of the MDP relate to the encouragement of walking and cycling, protection of indigenous biodiversity, the avoidance of adverse effects of earthworks and the protection of ONF, such

as the Manawatū Gorge. Due to the Northern Alignment and design approach, coupled with the proposed management measures, the Project is considered to be consistent with the objectives and policies of the MDP.

The relevant provisions of the TDP relate to the provision of safe cycling and walking networks, the management of adverse effects associated with land disturbance and the management of risks relating to natural hazards. Through the provision of the SUP and the mitigation and management control measures proposed, the Project is consistent with the identified objectives and policies of the TDP.

The Project has also considered other strategic documents summarised in Table 8-2 and has responded appropriately such that the Project is consistent with their purpose.

Consequently, the Project is consistent with the relevant objectives and policies of the planning framework discussed above. For an assessment of the statutory and legislative documents, please refer to Section 9 below.

9 Statutory Assessment

9.1 Introduction

The purpose of the statutory planning assessment is to provide analysis of the Project against the relevant legislative framework within which the resource consents are sought. This Section should be read in conjunction with Section 6 (Assessment of Effects on the Environment) and Section 7 (Assessment of Alternatives). An assessment of the Project against the relevant statutory policy statements and plans is contained in Section 8.

The statutory documents relevant to the consideration of the resource consents application for the Project are as follows:

- Resource Management Act 1991;
- Land Transport Management Act 2003;
- Rangitāne o Manawatu Claims Settlement Act 2016;
- Rangitāne Tū Mai Rā (Wairarapa Tamaki nui-ā-Rua) Claims Settlement Act 2017;
- Te Ture Whenua Maori Act 1993;
- Heritage New Zealand Pouhere Taonga Act 2014;
- Wildlife Act 1953; and
- Queen Elizabeth the Second National Trust Act 1977.

The structure of this Section of this AEE is as follows:

- Section 9.2 describes the RMA framework for decision-making;
- Sections 9.3 to 9.9 assess the Project against the relevant provisions of the RMA; and
- Section 9.10 then considers those other statutory documents that apply to the Project.

As confirmed in Section 2, the Transport Agency is seeking the necessary resource consents for the construction, operation and maintenance of those aspects of the Project which cannot be authorised by way of a designation – being generally those matters pursuant to sections 9(2), 13, 14 and 15 of the RMA and which do not comply with the permitted activity provisions of the One Plan. The activities that require resource consents are summarised in Section 4, and a detailed rules assessment is contained at **Appendix C**.

Given the interrelated and overlapping extent of the activities for which resource consents are required, it is appropriate for these resource consents to be ‘bundled’ together and considered jointly. As the most restrictive consent sought is for a non-complying activity, the overall activity status for this application for resource consents is non-complying.

9.2 Resource Management Act 1991

The RMA is the principal guiding statute governing the use of land, air and water. Part 2 of the RMA sets out the purpose and principles of the RMA. The matters to which a consent authority may, must and must not have regard in its consideration of an application for resource consent are stipulated under section 104. That consideration is subject to the provisions in Part 2, and other relevant matters for consideration are set out in sections 104D, 105, 107 and 108 of the RMA. Sections 123 and 125 relate to consent durations and lapse periods. The following sub-sections consider the Project against this RMA framework.

9.3 Part 2 of the RMA

As noted above, consideration of this application for resource consent under section 104 is subject to Part 2 of the RMA. The Project is consistent with, and indeed gains strong support from, the provisions of Part 2 as explained below.

9.3.1 Section 5 – Purpose and Principles

In terms of section 5 of the RMA, the Project will strongly enable people and communities to provide for their social, economic and cultural wellbeing and their health and safety, by providing:

- Economic benefits, including increased economic activity during construction and the operational benefits of certainty, productivity benefits and agglomeration benefits;
- Significant transport benefits through improved resilience, safety, efficiency, reliability and travel times, including improved journeys for all road users (from cyclists to freight operators), and benefits arising from increased connections and opportunities for recreational and active transport users; and
- Social benefits in terms of connectivity, community cohesion, reduced consequences of crashes and associated deaths and injuries. In addition, there will be improved social outcomes for the residents of Ashhurst through the removal of traffic from local roads, which is a problem that has been experienced since the existing SH3 link was indefinitely closed. Additionally, the Project will deliver a range of other opportunities that will deliver social benefits over time including initiatives to be developed with Iwi Partners (which will be delivered through the CEDF as described in Section 1.4.5.1) and through employment.

Sustainable management also involves the promotion of the matters in section 5(2)(a) to (c) of the RMA. In this regard, the following conclusions are made:

- The Project does not compromise the potential of natural and physical resources to meet the needs of future generations. With respect to natural resources, and in particular indigenous biodiversity, the Project will result in a net indigenous biological diversity gain with beneficial outcomes for the natural environment (including the life supporting capacity of ecosystems) (refer to Sections 6.10 and 6.11). In terms of physical resources, the Project will sustain – and indeed increase – the ability of the state highway system (as a physical resource of national and regional significance) to meet the foreseeable local and regional needs for road transport. In addition, managing potential effects on network utilities and other national and regionally significant infrastructure via the Project design (as discussed in Section 8.5.2.3, and as reflected in the proposed resource consent conditions) will ensure that the ongoing operation of a range of physical resources is not compromised.
- The Project provides safeguards for (and potentially improves) the life supporting capacity of air, water, soil and ecosystems through the implementation of performance standards and a comprehensive management plan framework resulting in a co-ordinated approach to the management of construction works to meet environmental outcomes. This includes a comprehensive stormwater management system for the new impervious areas as well as an ecological offset response (through the substantial terrestrial and freshwater ecological restoration and habitat enhancement measures discussed in Sections 6.10 and 6.11).
- The adverse effects of the Project are appropriately managed, as discussed in Section 6 above, by:
 - Avoiding effects, where practicable;
 - Then remedying and mitigating the majority of effects; and

- Offsetting or compensating for residual effects (in respect of indigenous biodiversity and by reference to Policy 13-4 of the One Plan).

Accordingly, the Project will promote the sustainable management of natural and physical resources, consistent with the purpose of the RMA.

9.3.2 Section 6 – Matters of National Importance

The Project recognises and provides for the matters within section 6 of the RMA, and as relevant to the regional consents. In particular:

- The Project provides for the preservation of the natural character of streams and margins by minimising the need for and extent of stream crossings as far as practicable which in turn limits disruption to the abiotic and biotic attributes. The extensive offset and compensation planting proposed, and other measures including retirement and protection of established vegetation, the development and protection of enhanced riparian margins, and extensive mammalian pest control, may result in some enhancement of natural character in some areas (section 6(a)).
- The Project corridor traverses two outstanding natural landscapes or features (being the Manawatū Gorge and the Ruahine Range ridgeline). The Project cannot avoid crossing these areas, however, effects on the Ruahine Range ridgeline are limited by the proposed location of the alignment in cut. Effects at the Manawatū River crossing will be primarily mitigated by the bridge structure design (section 6(b)).
- The protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna is achieved, in part, by the proposed alignment of the road which avoids the QEII areas as far as practicable, and other design refinements that have limited the extent of adverse effects. The replacement and offset planting measures and other measures proposed (including retirement and pest control) will ensure that the Project results in a net biological diversity gain (section 6(c)).
- The Project will enhance public access to or along the margins of rivers and other waterbodies (except where limited by necessary construction activities), including to areas that are currently inaccessible by the public, through the development of the Western Gateway Park, SUP and a pedestrian path network connecting to areas such as the indigenous seepage wetland (section 6(d)).
- The relationship of tangata whenua and their culture and traditions with their ancestral lands, water, sites, wāhi tapu and other taonga has been recognised and provided by embedding Māori cultural values in the Project, including through the incorporation of Te Aranga principles (via the CEDF), cultural mitigation measures (proposed conditions in Appendix E) and provision of on-going partnership between the Transport Agency and the Iwi Partners in respect of the Project (section 6(e)).
- The Project does not affect historic heritage (section 6(f)).
- The Project does not impact on any recognised customary rights (section 6(g)).
- Natural hazard risks are appropriately managed through the location and design of the Project (section 6(h)).

Overall, it is considered that the Project appropriately recognises and provides for the applicable matters of national importance in section 6 of the RMA.

9.3.3 Section 7 – Other Matters

The Project has had particular regard and has appropriately responded to the ‘other matters’ in section 7 of the RMA, as follows:

- The kaitiakitanga of tangata whenua has been recognised in this Project through the partnership with iwi, and their integral role in guiding the design and implementation of the Project (section 7(a)).
- The Project provides for the efficient development of a state highway connection between Ashhurst and Woodville, as a physical resource of critical importance to the Region (as identified by the RLTP and One Plan) (section 7(b)).
- The significant transport benefits that are realised by the Project will lead to reduced travel times with associated fuel savings and, therefore, greater efficiency of the end use of energy (section 7(ba)).
- The actual and potential effects of the Project on significant and high-value ecosystems are managed through avoidance where practicable, and:
 - By replacement and offset planting measures to achieve a net biological diversity gain in respect of terrestrial ecosystems (including identified Schedule F habitats); and
 - No net loss in ecosystem functioning in respect of freshwater ecosystems (section 7(d)).
- While the Project results in a permanent change to the existing environment, the adverse effects have been avoided, remedied, mitigated, offset or compensated for through the Project design and proposed conditions in order to achieve the maintenance of, and in some cases, an enhancement of the existing environment (section 7(f)).
- In terms of finite characteristics, the Project responds to the presence of Schedule F rare, at-risk and threatened habitats through avoidance where practicable or by limiting the Project extent (e.g. within the envelope provided for under the proposed designation in all cases). In addition, the design avoids a remnant stand of threatened – nationally critical swamp maire by providing for their retention and avoids ramarama. In terms of fauna, a range of measures are proposed including pre-construction surveys, seasonal constraints and management procedures to manage impacts on significant avifauna, lizards and bats (section 7(g)).
- The effects of climate change have been considered in the design of the Manawatū River Bridge and the Mangamania Stream Bridge, which accounts for climate change effects on the flood levels of the Manawatū River catchment. Proposed culvert sizing has also had regard to this matter (section 7(i)).
- While the Project passes through the Te Āpiti Wind Farm, the Transport Agency has worked closely with Meridian to ensure that the renewable energy benefits arising from its operation will not be compromised (section 7(j)).

9.3.4 Section 8 – Treaty of Waitangi (Te Tiriti o Waitangi)

The Transport Agency, as a Crown agency, has a commitment to a partnership-based approach with tangata whenua that reflects the principles of the Treaty of Waitangi/Te Tiriti o Waitangi. This approach is reflected in the on-going engagement between parties, and particularly the collaboration with the Project Iwi Partners, including their integral role in guiding the design, mitigation and implementation of the Project.

The Project has addressed the requirements of section 8 of the RMA through engagement with iwi who have identified themselves as mana whenua with an interest in the Project corridor. Where possible, the matters raised by iwi through hui and CIAs have been addressed in the Project design to date. The Transport Agency will continue to work closely with its Iwi Partners in finalising the Project's detailed design and implementing the Project, thus realising other opportunities for tangata whenua.

9.3.5 Summary – Part 2

In summary, while the Project will result in some unavoidable adverse effects on the environment, extensive measures are proposed to mitigate or otherwise offset or compensate for those effects. The Project will realise significant national, regional and local benefits and make a real difference in people's lives; as such, the Project gains strong support from Part 2 of the RMA and granting this application will further the sustainable management purpose of the RMA.

9.4 Section 104 Considerations

In addition to the Part 2 matters addressed above, the decision maker is required to have regard to specified matters in section 104, and each of these listed matters is discussed in the following sections.

9.4.1 Actual and Potential Effects on the Environment (section 104(1)(a))

The actual and potential effects associated with allowing the activities for which resource consents are sought have been assessed in Section 6. The environmental effects associated with the activities to be authorised by resource consent (earthworks, clearance of vegetation that is ecologically significant, stream diversions, culvert placement and stream infilling, and various discharges (during construction and operation)) are all able to be appropriately managed through the mitigation (and in some cases offset/compensation) measures set out in Section 6 and in the suite of technical assessments, and as reflected in the proposed consent conditions. These activities are required in order to enable the Project, and as such the effects of allowing these activities include the significant positive effects associated with the Project as a whole.

The adverse effects of allowing the activities are appropriately managed by:

- Avoiding effects, where practicable, through the design refinement that has occurred and by imposing standards and 'effects envelopes' in proposed conditions of consent;
- Remedying and mitigating effects that are not avoided, including through the implementation of a range of management measures described in Section 6 and those embedded in proposed conditions of consent; and
- Offsetting or compensating for residual adverse effects on rare and threatened habitats (defined by Schedule F to the One Plan) and other ecological values that cannot reasonably be avoided, remedied or mitigated to result in a net indigenous biological diversity gain for terrestrial ecology values and no net loss of freshwater ecology function.

9.4.2 Proposed Offset or Compensation Measures (section 104(1)(ab))

As described in Section 6.10, and as set out in Terrestrial Offset and Compensation - **Technical Assessment G**, a comprehensive offset and compensation package (comprising revegetation, bush and wetland retirement, and pest control) is proposed to address residual adverse effects on terrestrial and wetland ecology values. That package will result in an overall terrestrial and wetland biodiversity gain.

Section 6.11 and Freshwater Ecology – **Technical Assessment H** explain that the residual adverse effects of the Project on freshwater ecology (habitat loss and modification values) of the Project will be offset via 9,501m² of streambed created stream diversions (noting the total stream bed area to be created for the Project is 11,429m²), together with riparian planting along existing streambed (indicatively modelled to be 10,137 m² of streambed). This will result in no net loss in freshwater ecology function across the Project.

9.4.3 Provisions of the Relevant Standards, Regulations, Policies and Plans (section 104(1)(b))

The provisions of relevant standards, policies and plans are set out in Appendix D and are considered in Section 8. The activities for which resource consent is sought are consistent with the relevant objectives and policies in these documents, provided the adverse effects are appropriately managed. By way of summary, the Project is:

- Consistent with the NPSFWM through the provision of appropriate mitigation measures such as permanent stormwater treatment which is an improvement on the existing situation, the implementation of best practice erosion and sediment control procedures during the construction phase in accordance with GD05, provision of new streams and associated restoration to ensure there is no net loss of ecological function overall and the integrated management of freshwater, land use and development through design. In addition, tangata whenua values are reflected in the Project's stormwater design;
- Consistent with the relevant provisions of the NPSREG as it does not hinder the operation and maintenance of renewable electricity generation activities of Te Āpiti Wind Farm and the benefits that accrue as a result;
- Consistent with the relevant provisions of the NPSET on the basis that works in the vicinity of the National Grid (Transpower Woodville - Mangamaire 110kV transmission line) are to be designed and managed to ensure the Project will not hinder the operation and maintenance of the national electricity transmission activities;
- Able to meet the relevant standards of the NES_{AQ} and NES_{ETA};
- Consistent with the intent of NES_{TF} as the Project will not compromise the functions of the telecommunication network operators;
- Fundamental to the achievement of the RLTP and NLTP in providing for a Manawatū Gorge replacement route, and thereby achieving the key GPS strategic priorities of safety and access alongside the supporting priority of managing environmental effects;
- Consistent with the One Plan objectives and policies as it is able to avoid, remedy or mitigate actual and potential adverse effects on the environment; and is able to offset residual adverse effects on indigenous biological diversity in order to achieve the policy direction (Policy 13-4) regarding the protection and management of indigenous biodiversity; and does not result in the significant diminishment of attributes and qualities of areas with high natural character (Objective 6-2(b)(ii)); and
- Generally consistent with the relevant policies of the PNCCDP, the MDP and the TDP.

9.4.4 Other Matters (section 104(1)(c))

The RMA does not define what other matters are to be considered under section 104(1)(c) and as such, a case-by-case identification of the matters that are relevant to the consideration of an application for resource consent is required.

For the Project, 'other matters' are generally relevant statutes and non-RMA planning or policy documents that:

- Relevant because they mention the Project or relate directly to the Project's construction and/or outcomes; and
- Have been through a public engagement process and/or have been prepared in accordance with related legislation.

The following ‘other matters’ are considered relevant to the Project (and therefore application for resource consents) are considered in Section 9.10 below.

9.5 Section 104D

9.5.1 Non-Complying activity status (section 104D)

As outlined in Section 4, Rule 13-9 of the One Plan applies to works in rare and threatened habitats (identified by Schedule F of the One Plan) and a non-complying activity status applies to a number of resource consents being sought for the Project when located in those habitats. Given the interrelated and overlapping nature of the activities for which resource consent are required, it is appropriate for the resource consent applications to be ‘bundled’ together and considered jointly as a non-complying activity.

In determining an application for a non-complying activity, the decision maker must first consider whether one of the two tests under section 104D of the RMA can be met. In summary these tests are (emphasis added):

- Whether the adverse effects of the activity on the environment will be minor (section 104D(1)(a));
or
- Whether the application for an activity will not be contrary to the objectives and policies of relevant plans and proposed plans (section 104D(1)(b)).

Section 6 includes an assessment of actual and potential effects on the environment that is, in turn, supported by a number of technical assessments and reports included in **Volumes IV and V**. This assessment concludes that the Project may result in adverse effects on the environment that are more than minor in respect of:

- The cultural landscape, indigenous biodiversity, the mauri of the Manawatū River and catchment, and access to cultural resources;
- Terrestrial ecology concerning the loss of indigenous biodiversity values including those identified as Schedule F under the One Plan; and
- Freshwater ecology concerning the loss and modification of stream habitat.

On this basis, it is concluded that the Project cannot pass the section 104D(1)(a) gateway test (“effects gateway test”). The Project must, therefore, pass the second gateway test under section 104D(1)(b) and demonstrate that it is not contrary to the objectives and policies of relevant plans or proposed plans.

Considering the application in respect of section 104D(1)(b) is a test of whether the application is “contrary” to relevant objectives and policies following a balanced assessment of the objectives and policies of a plan as a whole. The word “contrary” is understood as meaning opposed in nature, different, or opposite to. An absence of support is not sufficient to meet the test of “contrary” and therefore, an activity need not be consistent with every objective or policy.

Section 8 includes a consideration of the Project in respect of the provisions of the following:

- One Plan (Regional Policy Statement and Regional Plan);
- PNCCDP;
- MDP; and
- TDP.

Appendix D confirms the status of these Plans and sets out the provisions that have been identified as relevant in full.

The assessment of the proposal against the objectives and policies of the relevant plans set out in Section 8 finds the proposal to be consistent with the relevant objectives and policies. Section 8 concludes:

- The Project has been designed and is able to avoid, remedy or mitigate potential adverse effects in a manner that is consistent with the One Plan. The proposed offsetting of residual adverse ecological effects will ensure that the Project is able to achieve the policy direction regarding the protection and management of indigenous biodiversity and natural character.
- The Project is consistent with the pertinent provisions of the relevant district plans, being the PNCCDP, the MDP and the TDP all of which seek the provision of safe, integrated transport networks.

The assessment of the proposal against the objectives and policies of the relevant plans set out in Section 8 finds the Project to be consistent with the relevant objectives and policies. As the application passes the section 104D(1)(b) test of section 104D, all resource consents sought in this application can, therefore, be considered for determination by the decision maker pursuant to sections 104 and 104B.

9.6 Section 105 Matters relevant to certain applications

Section 105 of the RMA requires that, for discharge permits that would contravene section 15, the decision maker also have regard to:

- The nature of the discharge and sensitivity of the receiving environment;
- The applicant's reasons for the proposed choice; and
- Any possible alternative methods of discharge, including discharge into any other receiving environment.

The Project involves discharges that require a discharge permit for discharges to land and surface water for both construction (cleanfill and sediment) and operation (stormwater) and therefore section 105(1) applies.

9.6.1 The Nature of the Discharges and the Sensitivity of the Receiving Environment

Discharges will occur both during construction and operation of the Project. The Project requires consent for the follow discharges:

- Discharge of sediment (in Schedule F habitats);
- Discharges of fill; and
- Discharge of operational stormwater (in Schedule F habitats).

The sensitivity of the receiving environment is addressed in the technical assessments provided in **Volumes IV** and **V** and summarised in Section 2 of this AEE. The nature of the discharges and other matters to which regard must be had under section 105, for each of the resource consents sought under section 15, are discussed in turn below.

9.6.1.1 Discharge of cleanfill

Where filling (including the disposal of excess cut material) occurs using material sourced from the same site (that is, the material is not imported) it is considered that this falls within the definition of 'cleanfill material' in the One Plan. In addition, the use of material imported to the Project area as

engineered fill, and for track and road surfacing falls within the definition of ‘cleanfill material’ in the One Plan. However, as these activities will potentially not comply with the permitted volume limits and the location standards, as a precaution, the Transport Agency has applied for the discharge of fill.

The nature of the discharges, reason for the proposed choice and alternative methods for the placement of cleanfill is addressed in Section 7.4.6 of this AEE and the Spoil Site Selection Memorandum, Appendix C of the DCR (**Volume II**). At the conclusion of this spoil site selection process, 15 spoil sites are proposed which have been identified as avoiding significant adverse ecological, natural character and cultural effects.

In terms of the placement of engineered fill (i.e. the location of the Project), Section 7 summarises broader processes for assessing alternative routes of the Project and Section 7.4.3 details the selection of the ‘Northern Alignment’ which was considered as an alternative route and ultimately adopted due to the reduction of environmental effects it achieves.

9.6.1.2 Sediment Discharges during construction

Discharges of sediment during construction for most of the Project are ancillary to the land use consents sought (or permitted activities) for land disturbance and vegetation clearance. Where the land disturbance and vegetation clearance occur within Schedule F habitats, however, a separate discharge consent pursuant to section 15 and Rule 13-9 is required.

The nature of the discharge of sediment during construction is described in Erosion and Sediment Control - **Technical Assessment A** and Water Quality - **Technical Assessment C**. Discharges of sediment laden water are a necessary part of the construction process. While sediment discharges to Schedule F habitats will be minimal, they are not avoidable given the location of the Project.

As set out in the ESC - **Technical Assessment A** and the ESCP (**Volume VII**), best practice ESC management measures will be undertaken at all times. Particular care to minimise construction impact on Schedule F (and other ecosystem types of significance as set out in the Terrestrial Ecology – **Technical Assessment F**), will be undertaken, as described in the EMP (**Volume VII**) and addressed in SSES CPs. As summarised in Water Quality - **Technical Assessment C**, it is considered that the effects of sediment discharges during construction on the receiving environment can be minimised and mitigated with the ESCP and the SSES CPs.

A discussion on alternatives regarding discharges during construction is contained in Section 7.5.1.1 of this AEE. In summary, due to the location of the Project, it is not practical to discharge to an alternative receiving environment. As the proposed ESC measures are already in accordance with best practice, there are no feasible alternative discharge methods.

9.6.1.3 Operational stormwater discharges

Similarly, for most of the Project, the discharge of stormwater once the Project is operational is a permitted activity. However, within a Schedule F habitat, the discharge of stormwater from six cut off drains and one treatment device (Wetland 03) requires resource consent.

As described in the Stormwater Management – **Technical Assessment B**, the Project is expected to have a minimal residual effect on the receiving environment. Stormwater from the new impervious areas will be diverted to the proposed treatment devices prior to it being discharged. This is a significant improvement from the treatment that is currently being provided over the existing state highway network within the Project area.

As summarised in Section 7.5.1.2, the Stormwater Management – **Technical Assessment B** has thoroughly considered the BPO in respect of stormwater quality and quantity matters (locations, devices and sizing and taking account of available space and location relative to sensitive ecological areas) for the entire Project. In summary, the devices chosen for the Project:

- Reflect cultural values (as understood), which have guided device section and performance standards;
- Minimise earthworks and associated construction / Project footprint;
- Provide effective water quality treatment through their sizing to accommodate flow or volume control;
- Consider access and maintenance requirements; and
- Wetland and wetland swales are the preferred means for stormwater management as they are most suitable for the treatment of larger catchment areas where they can provide peak flow control, flow attenuation and flood protection.

While there are practicable alternatives available for the discharges into the respective receiving environments, given the drivers outlined above, they are either not preferred or not appropriate (e.g. piped systems which result in greater earthworks volumes and increased maintenance).

9.6.1.4 Summary

The nature of the discharges, reason for the proposed choice and alternative methods for all discharge consents sought pursuant to section 15 of the RMA have been considered and are described in Section 7 of this AEE.

The placement of engineered fill (i.e. the location of the Project) was investigated extensively during the NoRs process, and the 'Northern Alignment' was ultimately adopted due to the reduction of environmental effects it achieves. The placement of cleanfill ('spoil sites') at 15 sites is identified as avoiding significant adverse ecological, natural character and cultural effects.

In relation to construction discharges of sediment, the proposed ESC measures contained in the ESCP (**Volume VII**) are in accordance with best practice. Once operational, stormwater quality and quantity is to be managed via treatment devices which have been selected and designed in accordance with BPO. Overall, it is considered appropriate for the applications for discharge permits to be granted, having regard to the matters in section 105.

9.7 Section 107 – Restrictions on Granting of Certain Discharge Permits

Section 107 restricts the ability of a consent authority to grant a discharge permit if the discharge gives rise to certain effects. The Water Quality – **Technical Assessment C** (as summarised in Section 6.7 of this AEE) describes the works that result in discharges (and for which discharge permits are sought). Section 6 and the accompanying technical reports describe the nature and effects of these discharges and conclude that these discharges will generally not give rise to the effects in the receiving waters set out in section 107(c) to (g) of the RMA (subject to appropriate construction management measures being implemented). That said, if such effects were to arise, a discharge permit may still be granted because the circumstances in section 107 of the RMA apply as follows:

- The discharges will be short term (or temporary) and any effects will occur at limited times, though not necessary consistently, over the duration of construction;
- Measures will be put in place to manage and minimise discharges during construction; and
- There will be no ongoing adverse effects once construction has been completed.

As outlined in the Stormwater Management – **Technical Assessment B**, the operational stormwater discharges will result in a positive effect on the receiving environment as the Project will treat all new impervious areas associated with the Project. This is a significant improvement from the treatment that is currently being provided over the existing state highway network within the Project area.

9.8 Sections 108 – Proposed Conditions

In accordance with section 108 of the RMA, draft resource consent conditions which propose administrative and management processes, the preparation and implementation of various management plans (**Volume VII**), and specific measures to mitigate the actual and potential effects associated with the Project are contained within **Appendix E**. The draft resource consent conditions have been developed based on the findings of the technical assessments (**Volumes VI and V**) and have been the subject of several workshops with (and have been reviewed by) the authors of those assessments.

Broadly, the proposed conditions suite covers the following matters:

- General Conditions (GA1 to GA5) contain complaints management, monthly and annual reporting requirements;
- Tangata Whenua Values (TW1 to TW4) recognises tangata whenua values (including the requirement for a Tangata Whenua Values Monitoring and Management Plan, which is consistent with the requirement included under proposed designation condition 30);
- Archaeology and Historic Heritage (AH1), contains an archaeological discovery protocol, but allows this requirement to be superseded if an Archaeological Authority pursuant to section 44(a) of the HNZPTA is granted (discussed in Section 9.10.5 below).
- Construction management (CM1 to CM5) includes the requirement for pre-construction meetings, a CEMP (contained in **Volume VII**), which is consistent with the requirement included under proposed designation condition 14);
- Ecology conditions (EC1 to EC21) for the management of ecological and biodiversity effects include:
 - Performance standards (EC1) for the maximum removal areas for wetlands, indigenous vegetation or habitats, which is consistent with the approved EMP (and with the restrictions in proposed designation condition 24);
 - Vegetation replacement requirements (EC2) in the case of swamp maire and ramarama (consistent with proposed designation condition 24);
 - Management of plant pests with the QEII Trust open space covenant (EC3);
 - Pre-construction survey requirements of and protection and management of fauna including avifauna, lizards, bats, terrestrial invertebrates (EC4 to EC10);
 - Performance standards (EC11) to offset the residual adverse ecological and biodiversity effects associated with terrestrial vegetation removal and the techniques to refine and confirm offset requirements during the detailed design phase;
 - Fish salvage, relocation and provision of fish passage (where appropriate) during construction and operation (EC12 and EC13);
 - Performance standards (EC14) to offset the residual adverse freshwater ecological effects associated with stream loss and the techniques to refine and confirm offset requirements during the detailed design phase;
 - The preparation of (and amendments to) Site Specific Ecology Offset and Compensation Plans (EC15 to EC18) to implement the restoration planting areas required by Condition EC11 and for the stream creation and riparian planting areas required by Condition EC14, and the outcomes sought in the EMP.
 - Provision for the further refinement of the EMP during the detailed design phase EC19);
 - The preparation of a Biosecurity Management Plan as required by the EMP (EC20); and

- A requirement for an 'At-Risk' or 'Threatened' Flora and Fauna Discovery Protocol not otherwise covered under the proposed conditions (EC21).
- Land Disturbance (LD1 to LD8) conditions to including performance standards around air quality, cut and fill stability, stabilisation, winter works and a protocol around the accidental discovery of contaminated land;
- Erosion and Sediment Control (ES1 to ES9) conditions including performance standards consistent with the approved ESCP (**Volume VII**), the requirements for the preparation SSESCPs and an associated certification process as well as ESC monitoring requirements;
- Operational stormwater (SW1) condition requires the stormwater management design to meet the requirements of the Transport Agency publication '*Stormwater Treatment Standard for State Highway Infrastructure*' dated May 2010);
- Conditions (BD1 to BD6) for Manawatū River Bridge (BR02), Eco-Bridge (BR03) and Mangamanaia Stream bridge (BR07) include requirements to design them in accordance with the Transport Agency's '*Bridge Manual SP/M/022 Third Edition, Amendment 3*' dated October 2018, and construction and design standards. They also include the requirement for a Flood Contingency Management Plan (BD4 to BD6) for the works in the Manawatū River or Mangamanaia Stream and a requirement to maintain public access and river navigability except in circumstances where public health and safety requirements restrict it; and
- Conditions for works in the bed of watercourses (WW1 to WW3) include design and performance standards relating to management of biosecurity, culvert design and measures to manage potential discharges into watercourses.

As identified in the above summary, where there is commonality with the proposed designation conditions this linkage has been made through the draft conditions to ensure integration can be achieved where this is appropriate and efficient to do so. In summary, this includes the requirements for:

- Complaints management;
- A CEMP;
- A Tangata Whenua Values Monitoring and Management Plan – a requirement of the CEMP;
- An Archaeological discovery protocol;
- An EMP (and associated sub-plans); and
- ESC measures and dust management procedures.

In terms of the status of management plans (described in Section 1.7 above) and the processes embedded in these proposed conditions (**Appendix E**), the following is noted:

- Draft CEMP (contained in **Volume VII**) – the proposed conditions require that a finalised CEMP must be submitted to Horizons for information at least twenty (20) working days prior to the commencement of the works authorised by these resource consents. A draft has been supplied with this application to provide an indication of how this document will be shaped and progressed, to ensure that the measures to confirm compliance with the proposed conditions of resource consent (and proposed designation condition 14) will be achieved.
- A Tangata Whenua Values Monitoring and Management Plan – the proposed conditions require that this management plan shall be included with the finalised CEMP. This plan is designed to be developed with the Project's Iwi Partners (or person(s) endorsed by the Iwi Partners) during the

detailed design phase and will be submitted with an updated CEMP. A draft is therefore not supplied.

- An EMP (contained in **Volume VII**) – there is a requirement to outline the measures to be taken to ensure that adverse effects on indigenous biodiversity values (ecology) associated with the Project will be appropriately addressed, and by outlining the methods used to address those effects. A key focus of the EMP is to ensure ecological effects are managed through the hierarchy of ‘avoid, remedy, and mitigate’ and then (for residual adverse effects) offset or compensated for to achieve a net indigenous biodiversity gain. The proposed designation conditions (designation condition 24(h)) require that the EMP (and its component plans) must not be submitted for certification until the regional resource consents necessary to provide for the construction of the Project have been granted and are beyond challenge. For this reason, an advanced draft EMP has been submitted as part of the application for regional resource consents (this application) to allow for the details of the Transport Agency’s proposed measures to address effects on terrestrial ecology values to be considered and approved through this application. The EMP would then go through the certification and outline plan process as set out in the Designation Conditions.
- ESCP (contained in **Volume VII**)- a requirement to outline the measures to establish and maintain erosion and sediment control measures during construction of the Project in accordance with the document titled ‘*Erosion and Sediment Control Guide for Land Disturbing Activities in the Auckland Region Guidance Document 2016/005 Incorporating Amendment 1*’ (GD05). This plan is also proposed to contain a number of appendices including a Chemical Treatment Plan; Erosion and Sediment Control Monitoring Plan; and a host of management procedures and responses including those for Dust Management; Dewatering; Emergency Spill Response; Stream Works; and Hazardous Substances. Given the level of detail available at this stage, a completed ESCP has been submitted as part of the application for regional resource consents (this application) for approval.
- CSMP (contained in **Volume VII**) – as a result of the PSI and DSI, two isolated sites have been identified along the route as having historical contaminating activities and resultant levels of contamination present that exceed accepted criteria, thereby necessitating the need for resource consent under the NEScs. In addition, two other sites of interest were also identified. The CSMP (Volume VII) has been developed to show how the sites will be remediated prior to the commencement of the land disturbing activities associated with the main works. The CSMP sets out protocols, including accidental discovery, if unexpected contamination is encountered to prevent the discharge of contaminants to the environment. Given the level of detail available at this stage, a completed CSMP has been submitted as part of the application for regional resource consents (this application) for approval.

9.9 Sections 123 and 125 Consent Duration and Lapse Dates

Section 123 of the RMA defines the maximum duration for which consents may be granted. Under section 123(c) the maximum period for any land use consent granted pursuant to section 13 is 35 years. As stated in Section 8.5.3.1, for the five resource consents sought pursuant to section 13 of the RMA (i.e. structures in beds of streams and rivers), the maximum duration of requested.

A maximum duration of 35 years under section 123 (d) also requested for the other three ‘operational’ resource consents pursuant to sections 14 and 15 of the RMA. Specifically:

- The diversion of streams pursuant to Rule 13-9 and 16-13 of the One Plan;
- The discharge of stormwater from Wetland 03 pursuant to Rule 13-9 of the One Plan; and
- The discharge of fill pursuant to Rule 14-30 of the One Plan.

It is considered the maximum duration is appropriate for these resource consents as once they are implemented, they will remain in place for the life of the Project.

The five other resource consents being applied for are related to construction. As discussed at Section 8.5.3.1, an expiry date of 10 years is considered appropriate on all construction period resource consents sought.

Under section 125 of the RMA, a resource consent lapses on the date specified in the consent, or (for discharge permits, water permits and land use consents) five years after the consent commences if no date is specified. As outlined in Section 3 of this AEE and the DCR (**Volume II**), the construction of the Project is accelerated and is estimated to take 4 – 4.5 years. Subject to receipt of all statutory approvals, the Project anticipates commencing in early 2021, hence, a lapse date of 10 years is considered appropriate on all resource consents sought.

The proposed resource consent conditions (**Appendix E**) provide a summary of the resource consents sought and the lapse periods and expiry dates that are proposed to apply to each (which align to the above summary).

9.10 Other Relevant Statutes and Statutory Acknowledgements

9.10.1 Land Transport Management Act 2003

The Project is consistent with the Transport Agency's legislative purpose and purpose of the LTMA as the Project provides an effective, efficient and safe state highway route between Ashhurst and Woodville. Further, the Project reflects the Crown's Treaty of Waitangi responsibilities through the Transport Agency's on-going partnership with the Project Iwi Partners.

9.10.2 Rangitāne o Manawatu Claims Settlement Act 2016 (including Statutory Acknowledgements)

The Project responds to Rangitāne o Manawatū's cultural, historical, spiritual, and traditional association with the area of interest and particularly the statutory acknowledgement areas. This is achieved through the Transport Agency's on-going partnership with Rangitāne o Manawatū, their involvement in the Project's design process with a focus on minimising cultural and environmental impacts, residual ecological impacts offset or compensated for and a range of measures (proposed conditions in Appendix E as confirmed in Section 6) proposed in response to the residual cultural effects identified by Rangitāne o Manawatū in their CIA (**Volume VI**).

9.10.3 Rangitāne Tū Mai Rā (Wairarapa Tamaki nui-ā-Rua) Claims Settlement Act 2017 (including Statutory Acknowledgements)

The Project responds to Rangitāne o Tamaki nui-a-Rua's cultural, historical, spiritual, and traditional association with the area of interest and particularly the statutory acknowledgement areas. This is achieved through the Transport Agency's on-going partnership with Rangitāne o Tamaki nui-a-Rua, their involvement in the Project's design process with a focus on minimising cultural and environmental impacts, residual ecological impacts offset or compensated for and a range of measures (proposed conditions in Appendix E as confirmed in Section 6) proposed in response to the residual cultural effects identified by Rangitāne o Tamaki nui-a-Rua in their CIA (**Volume VI**).

9.10.4 Te Ture Whenua Maori Act 1993

Parahaki Island is Māori freehold land as defined by section 129 of Te Ture Whenua Maori Act and the Island is, therefore, subject to the provisions of Act. The Te Āpiti Ahu Whenua Trustees as owners of Parahaki Island have been engaged in detailed discussions with the Transport Agency regarding the potential effects of the Project on the Island including the preparation of a CIA (refer to **Volume VI**).

The Project avoids any direct impact on Parahaki Island such that values associated with the Island are recognised and the land is retained for the use of its owners. Hydrology - **Technical Assessment D** confirms that the construction of the Manawatū River Bridge (BR02) bridge piers will have no adverse effects on Parahaki Island as a result of the dynamics of flow and velocity changing while the use of scour protection to the central bridge pier will protect Parahaki Island against the SLS design event.

In discussions to date with the Trustees, it has been agreed that planting on Parahaki Island can assist mitigate some effects on the cultural values identified. This proposed planting is shown on the proposed ecological offset/compensation plan set provided in **Volume III**.

The Te Āpiti Ahu Whenua Trustees, however, remain concerned about the effects of the Project on cultural values associated with Parahaki Island and discussions continue regarding work on the finishes of the Manawatū River (BR02), construction methodology detail for BR02, and ecological mitigation in addition to that agreed to date, which in combination can also align with and help realise the Trustees' vision for Parahaki Island. It is, therefore, considered that the Project does achieve the principles of this Act.

9.10.5 Heritage New Zealand Pouhere Taonga Act 2014

While no known or recorded archaeological sites will be damaged or destroyed during construction of the Project, it is anticipated that unidentified sites may be within the footprint of the works for which resource consents are sought. For this reason, the Transport Agency is separately seeking an Authority under section 44(a) of the HNZPTA.

9.10.6 Wildlife Act 1953

The Project has effects on areas of ecological value and the Wildlife Act is, therefore, relevant such that the Project will require an authorisation(s) given by the Director-General of Conservation under section 53 of the Wildlife Act for the disturbance of any protected wildlife. It is anticipated that any such authorisation will require management plan(s) similar to the EMP provided at **Volume VII**.

9.10.7 Queen Elizabeth the Second National Trust Act 1977

The Project area includes two areas of QEII covenanted land. Four other QEII covenant areas are also in the vicinity of the Project but have been avoided as part of the route selection and refinement process. Effects on the QEII covenanted areas have been further reduced and otherwise managed through: the Northern Alignment design; proposed conditions of consent that provide for a maximum envelope of effects in respect of indigenous vegetation removal and permanent streambed disturbance; and a comprehensive offsetting and compensation package that is design to ensure a net indigenous biological diversity gain.

9.11 Summary of Statutory Assessment

The actual and potential adverse effects on the environment of the Project have been assessed as appropriate subject to the measures of the proposed resource consent conditions contained within Appendix E and the proposed offset/compensation package. It is noted that the construction effects will be temporary in nature.

The Project also gives rise to significant positive effects and is an integral part of the region's transport network. The Project will enable people and communities to provide for their social, economic, and cultural well-being and for their health and safety, consistent with the purpose of the RMA.

The Project is consistent with other relevant statutes, along with other relevant non-RMA documents and plans. The application is able to meet the section 104D(1)(b) "gateway" test, as it is not contrary to the objectives and policies of the relevant RMA plans.

Discharges are necessary as a result of construction activities (cleanfill, sediment and stormwater). The discharges are managed using a range of measures that have been selected subject to site constraints and with cognisance of the sensitivity of the receiving environment. Operational stormwater discharges result in a positive effect due to improved treatment of stormwater discharges.

Overall, the Project will achieve and promote the purpose of the RMA. Therefore, for the reasons set out above resource consents may be granted under section 104B of the RMA subject to the conditions of consent proposed in Appendix E.

10 Conclusion

The Transport Agency is seeking resource consents to authorise the construction, operation and maintenance of the proposed Te Ahu a Turanga; Manawatū Tararua Highway Project. The Project comprises an 11.5km highway between Ashhurst and Woodville over the Ruahine Ranges. The purpose of the Project is to replace the indefinitely closed section of SH3 through the Manawatū Gorge.

The Project comprises a median separated carriageway with two lanes in each direction (one lane plus a crawler lane) over the majority of the route and will connect SH57 east of Ashhurst and SH3 west of Woodville (via proposed roundabouts). The Project also includes a SUP for cyclists and pedestrians, as well as a number of new bridge structures, including one over the Manawatū River.

Resource consents are required to authorise the necessary works as detailed in Section 4. The activities subject of these resource consents range from restricted discretionary to non-complying. The bundling principle applied to the consideration of related applications with the presence of a non-complying activity has triggered the requirement for assessment against the non-complying activity tests of section 104D of the RMA. Section 104D of the RMA requires that such applications pass through a “gateway” whereby applications for non-complying activities may only be granted if either the adverse effects of the activity on the environment will be minor; or the application is for an activity that would not be contrary to the objectives and policies of the relevant plans or proposed plans.

The Project has been assessed with regard to the matters set out in section 104 of the RMA. The actual and potential effects associated with allowing the activities for which resource consents are sought have been assessed in the supporting Technical Assessments (**Volumes IV & V**) and in Section 6. While the Project has significant local and regional positive effects, it is acknowledged that a Project of this size, scale and nature cannot occur without the potential for adverse effects. Potential effects during construction and operation of the Project relate to effects on, or from, geotechnical or natural hazard risk, earthworks (in relation to erosion and sediment mobilisation), stormwater design, hydrology and flow regime, surface water quality, potentially contaminated land, dust and air quality, freshwater ecology, terrestrial ecology, natural character and cultural impacts. Positive effects include the development of a safer, more efficient transport route, increased network resilience, improved connectivity, increased modal choice, recreational benefits, social benefits and a range of environmental benefits.

Where the adverse effects have not been able to be avoided or remedied through the design process, mitigation measures have been identified, and will be implemented through the proposed management plans included in **Volume VII** and proposed conditions contained in Appendix E. While every effort has been made to avoid, reduce or mitigate the adverse effects, the assessment of actual and potential effects on the environment (in Section 6 of this AEE) concludes that the Project will result in adverse effects on the environment that are significant, particularly in regard to:

- The cultural landscape, the mauri of the Manawatū River and catchment, and access to cultural resources;
- Terrestrial ecology concerning the loss of indigenous biodiversity values including those identified as Schedule F under the One Plan; and
- Freshwater ecology concerning the loss and modification of stream habitat.

Consequently, the Project cannot meet the requirements of section 104D(1)(a) of the RMA. However, a comprehensive offsetting and compensation package is proposed to address the above significant effects such that a net biological diversity gain is achieved in respect of terrestrial ecology, and no net loss of ecological functioning in streams. The consent authority must have regard to these offset and compensation measures proposed when considering this application, in accordance with section 104(1)(ab).

The Project has also been assessed against the relevant objectives and policies of the relevant planning instruments as set out in Section 8 of this AEE. This analysis determined that the Project is not contrary to the objectives and policies of the relevant plan (and other relevant documents), and therefore meets the test of section 104D(1)(b) of the RMA to pass the relevant gateway.

The assessment provided at Section 9 determines that consideration has appropriately been given to alternative sites, routes and methods as discussed in Section 7 of this AEE. Discharges will be appropriately managed through measures that have been designed with the location and sensitivity of the receiving environment in mind. In addition, operational stormwater discharges result in improved treatment of stormwater discharges when compared to the existing situation.

It is considered that the information contained in this application package (**Volume I to VII**) provides a robust understanding of the Project and the actual and/or the potential effects that the Project will have on the environment. The Project will result in adverse effects on the environment, but a comprehensive suite of measures is proposed to avoid, remedy and mitigate (and offset/compensate for) those effects, such that they do not provide a barrier to the grant of consent. A comprehensive suite of draft conditions has been included (at Appendix E of Volume I), which ensures that key measures

By contrast, the Project will deliver fundamental benefits for the people living in and travelling through the Manawatū and Tararua Districts and the wider region; these benefits weigh heavily in favour of consent being granted.

In summary, the assessment contained in this AEE clearly demonstrates the need for the Project and the benefits that it will bring about. In doing so, granting the necessary consents to implement the Project will strongly promote the sustainable management of natural and physical resources and is consistent with the purpose and principles of the RMA.

Appendix A – Forms

Appendix A Resource Consent Application pursuant to Section 88 of the Resource Management Act 1991 – Form 9

- To:** The Chief Executive
Horizons Regional Council
Private Bag 11025
Palmerston North
- Applicant:** Waka Kotahi NZ Transport Agency
- Proposal:** Waka Kotahi NZ Transport Agency (Transport Agency) is applying for the necessary resource consents to deliver Te Ahu a Turanga; Manawatū Tararua Highway Project (the Project).
- The Project involves the construction, operation, use, maintenance and improvement of approximately 11.5km of state highway connecting Ashhurst and Woodville via a route over the Ruahine Range. The purpose of the Project is to replace the indefinitely closed section of State Highway 3 (SH3) through the Manawatū Gorge.
- The Project comprises a median separated carriageway with two lanes in each direction (one lane plus a crawler lane) over the majority of the route and will connect with State Highway 57 (SH57) east of Ashhurst and SH3 west of Woodville (via roundabouts). The Project also includes a Shared Use Path (SUP) for cyclists and pedestrians, as well as a number of new bridge structures, including one over the Manawatū River.
- Location:** The Project connects Ashhurst and Woodville, across the Ruahine Range north of the Manawatū Gorge and reinstates the principal east-west link between the Manawatū and Hawkes Bay regions. Refer to the attached drawing referenced TAT-3-DG-R-0100-C. The Manawatū Gorge is the boundary between the Tararua and Ruahine Ranges and is 16 km east of Palmerston North, 31.7 km south-west of Dannevirke and approximately 155 km north of Wellington.
- Legal Description:** There are various properties to which the application relates, please refer to **Appendix B** of the Assessment of Effects on the Environment for Records of Title.
- Owners/Occupiers:** Refer to Records of Title (**Appendix B of Volume I**)
- Grid References:** NZTopo50: BM35 3467 3427 (east); NZTopo50: BM35 4219 3135 (west)
- Consents Required:** **Construction Phase Resource Consents**
- a **land use consent** is sought pursuant to Rule 13-6 of the One Plan and sections 9(2), 14 and 15 of the RMA as a restricted discretionary activity for land disturbance and vegetation clearance (and associated diversion of water and discharge of sediment) within the Hill Country Erosion Management Area, but outside of a rare, at-risk or threatened habitat and not within 10m of a watercourse.
- a **land use consent** is sought pursuant to Rule 13-7 of the One Plan and sections 9(2), 14 and 15 of the RMA as a discretionary activity for land disturbance and vegetation clearance (and associated diversion of water and discharge of sediment) within 10m of a watercourse, but outside of a rare, at-risk or threatened habitat.

a **land use consent** is sought pursuant to Rule 13-9 of the One Plan and sections 9(2) of the RMA as a non-complying activity for earthworks and vegetation clearance within a rare habitat or threatened habitat.

a **discharge permit** is sought pursuant to Rule 13-9 of the One Plan and section 15 of the RMA as a non-complying activity for discharges of sediment during construction to a rare habitat or threatened habitat.

a **water permit** is sought pursuant Rule 16-9 of the One Plan and section 14 of the RMA as a discretionary activity for the taking of water (dewatering).

Operational Phase Resource Consents

a **land use consent** is sought pursuant to Rule 13-9 of the One Plan and section 13 of the RMA as a non-complying activity for activities (BR03, one stream diversion and five culverts) in the bed of any lake or river, within a rare habitat or threatened habitat.

a **water permit** is sought pursuant to Rule 13-9 of the One Plan and section 14 of the RMA as a non-complying activity for the taking and diversion of water (diversion and drainage) within a rare habitat or threatened habitat.

a **discharge permit** is sought pursuant to Rule 13-9 of the One Plan as a non-complying activity to section 15 of the RMA for discharges of stormwater (once operational from Wetland 03) to a rare habitat or threatened habitat.

a **discharge permit** is sought pursuant Rule 14-30 of the One Plan and section 15 of the RMA as a discretionary activity for discharges of imported engineered fill.

a **water permit** is sought pursuant to Rule 16-13 of the One Plan and section 14 of the RMA as a discretionary activity for the diversion of streams.

a **land use consent** is sought pursuant to Rule 17-3 of the One Plan and section 13 of the RMA as a discretionary activity for the placement of a bridge and associated disturbance, diversion, deposition and discharges, over the Manawatū River which is identified as a Schedule B – Site of Significance – Cultural.

a **land use consent** is sought pursuant to Rule 17-15 of the One Plan and section 13 of the RMA as a discretionary activity for the placement of a bridge and associated disturbance, diversion, deposition and discharges, over the Mangamanaia Stream which is identified as Schedule B – Value of Flood Control and Drainage.

a **land use consent** is sought pursuant to Rule 17-23 of the One Plan and section 13 of the RMA as a discretionary activity for the proposed culverts and associated disturbance, diversion, deposition and discharges, within watercourses which comply with Rule 17-10.

Term Sought:

Five resource consents are required during the construction phase of the Project and therefore shorter duration consents (10 years) are sought. Eight consents are required to remain in place post construction and therefore the maximum duration of consent (35 years) is sought. Please refer to Section 4 and 9 of the Assessment of Effects on the Environment for further details regarding this.

Additional Consents: In respect of any additional resource consents required for the proposed activity, please refer to Section 1.6 of the AEE. However, in summary:

- Notices of Requirement (NoRs) have been given to the relevant Territorial Authorities¹ – the NoRs are currently under appeal;
- A suite of enabling works consents either have been or will be lodged to enable geotechnical investigations, construction access tracks to be upgraded or established, construction water take and associated storage; and
- Consent(s) will be sought pursuant to the National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health.

Summary of Information Supplied:

An Assessment of Effects on the Environment in accordance with Schedule 4 of the RMA at a level of detail that corresponds with the scale and significance of the effects that the proposed activity may have on the environment is included at **Volume I**. This is supported by technical specialist reports at **Volumes IV and V**. A full description of the proposed activity is included within the Assessment of Effects on the Environment and the Design and Construction report at Volume II and drawings at Volume III. The Assessment of Effects on the Environment identifies the effects that may be generated by the proposal and how these are proposed to be avoided, remedied, mitigated or offset through conditions and management plans. In addition, the Assessment of Effects on the Environment considers the proposal against relevant provisions of the RMA (including Part 2) and other statutory instruments, and the objectives and policies of the relevant statutory planning documents, and provides a record of consultation and engagement activities undertaken.


Overview of Documents: The table below provides an overview of the suite of documents that accompany this application.

Volume I: Application for Resource Consent	
Assessment of Effects on the Environment	
Appendix A	Forms
Appendix B	Records of Title
Appendix C	Rule Assessment
Appendix D	Relevant Statutory Provisions
Appendix E	Proposed Conditions
Volume II: Design and Construction Report	
Appendix A	Geotechnical Design Technical Memorandum
Appendix B	Construction Time/Location Diagram
Appendix C	Spoil Site Selection Memorandum
Appendix D	Manawatū River Bridge (BR02) Construction Staging
Appendix E	Design Standards and Guidelines
Volume III: Drawings	

¹ Tararua District Council; Manawatū District Council and Palmerston North City Council

Volume IV: Technical Assessments	
Technical Assessment A	Erosion and Sediment Control
Technical Assessment B	Stormwater Management
Technical Assessment C	Water Quality
Technical Assessment D	Hydrology
Technical Assessment E	Air Quality
Volume V: Technical Assessments continued	
Technical Assessment F	Terrestrial Ecology
Technical Assessment G	Terrestrial Offset and Compensation
Technical Assessment H	Freshwater Ecology
Technical Assessment I	Natural Character
Volume VI: Cultural Impact Assessments	
Cultural Impact Assessment A	Rangitāne o Manawatū
Cultural Impact Assessment B	Rangitāne o Tamaki nui-ā-Rua
Cultural Impact Assessment C	Ngāti Kahungunu ki Tāmaki nui-a-Rua
Cultural Impact Assessment D	Ngāti Raukawa
Cultural Impact Assessment E	Te Āpiti Ahu Whenua Trust
Volume VII: Management Plans	
CEMP	Construction Environmental Management Plan
CSMP	Contaminated Soils Management Plan
EMP	Ecology Management Plan
ESCP	Erosion and Sediment Control Plan

On behalf of
Waka Kotahi NZ Transport Agency

.....  Jenni Fitzgerald

Dated

Contact details:
Electronic address for service:
Postal address:

Waka Kotahi NZ Transport Agency (Te Ahu a Turanga)

teahuaturanga@nzta.govt.nz

Te Ahu a Turanga Project Office
Level 1, 32 Amesbury Street
Palmerston North 4410

Contact person:
Telephone:

Lonnie Dalzell, Owner Interface Manager
+64 4 894 5247

Appendix B – Record of Titles

Appendix B – Record of Titles

Physical Property Address	Legal Description	Owners
75 Cook Road, Ashhurst	Section 14 Block IV Gorge Survey District	J & G Bolton Limited
1631 Napier Road, Ashhurst	Lot 49 Deposited Plan 185	Nut Cracker Farms Limited
1630 Napier Road, Ashhurst	Section 439 Town of Fitzherbert and Lot 2 Deposited Plan 440506	Shannon & Co Limited
	Section 406 Town of Fitzherbert and Lot 50 DP 185	Shannon Johnston & Company Limited
985 Saddle Road, Ashhurst	Lot 2 DP 84523	Stuart George Hindmarsh Bolton
559 Saddle Road, Ashhurst	Section 16 Block IV Gorge Survey District	Braemoar Farms Limited
159 Hope Road, Woodville	Part Section 4, 12 Block XIV Woodville Survey District	AgResearch Limited
	Section 26 and Section 28 Survey Office Plan 6251, Section 30 Survey Office Plan 6313, Section 30 Survey Office Plan 1944 and Section 34-35 Survey Office Plan 1945	
	Section 21 Block XII Woodville Survey District and Part Section 3 and Part Section 5-6 XIV Woodville Survey District	
49807 Napier Road, Woodville	Section 12 Survey Office Plan 434380	Andrew William Bolton and Diane Margret Bolton
	Section 13 Survey Office Plan 434380	
	Rural Section 1 Woodville	
	Section 9-10 Block XIV Woodville Survey District	
	Part Section 1 Block XIV Woodville Survey District	
	Lot 18 DP 3313	
	Part Section 19 Woodville Special Settlement	
439 Saddle Road, Woodville	Lot 1 DP 337483	Meridian Energy Limited
	Section 18 Block IV Gorge Survey District	
	Lot 1 DP 308738	
Saddle Road, Woodville	Part Section 4, 12 Block XIV Woodville	Tararua District Council
Woodlands Road, Woodville Hope Road, Woodville	Section 14 Survey Office Plan 434380	Murray Alexander Pringle as Executor
	Section 15 Survey Office Plan 434380	
	Section 16-17 Survey Office Plan 434380	

	Section 7-8 Block XIV Woodville Survey District	
58 Troup Road, Woodville	Lot 77, 85, 88-89 DP 61 and Section 20-21 Survey office Plan 434380	Oasis Base Spaces Limited
	Lot 69-76, Lot 81-84 and Lot 90-100 DP 61	
Saddle Road, Ashurst	Section 1 Subdivision X DP 239	Crown – NZRC Land – LINZ Administered / The Emigrant and Colonists Aid Corporation Limited



**RECORD OF TITLE
UNDER LAND TRANSFER ACT 2017
FREEHOLD
Search Copy**




R. W. Muir
Registrar-General
of Land

Identifier **WN52A/674**
Land Registration District **Wellington**
Date Issued 14 November 1997

Prior References

WN31A/681

Estate Fee Simple
Area 103.2800 hectares more or less
Legal Description Lot 2 Deposited Plan 84523

Registered Owners

Stuart George Hindmarsh Bolton

Interests

538292.1 Proclamation defining the middle line of a gas pipeline under Section 71 of the Petroleum Act 1937 - 31.1.1983 at 1:48 pm

B626470.3 Esplanade Strip Instrument pursuant to Section 235 Resource Management Act 1991 by Manawatu District Council - 14.11.1997 at 9:01 am

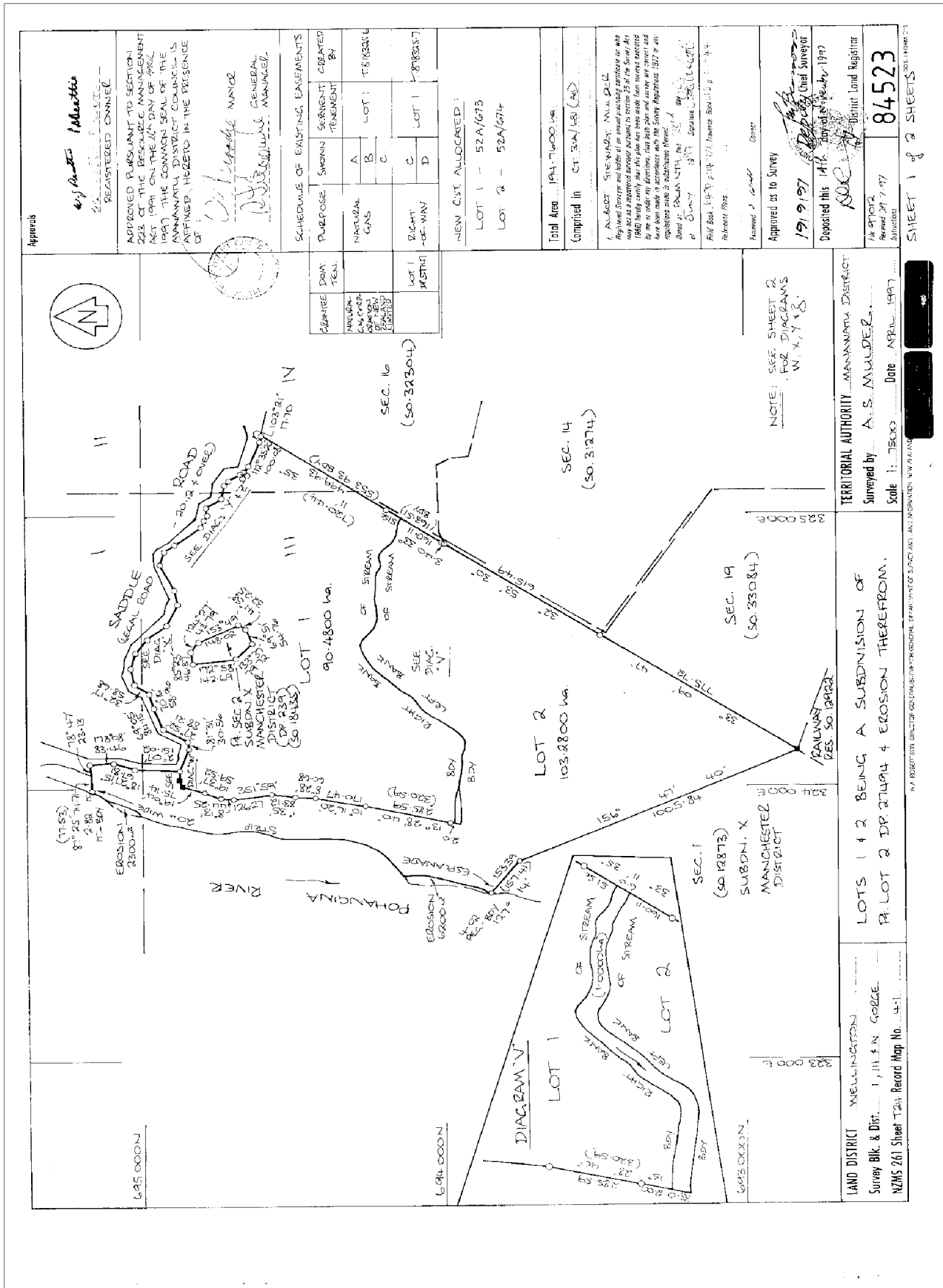
5106186.3 Mortgage to Rabobank New Zealand Limited - 9.11.2001 at 10:02 am

11008597.1 Compensation Certificate pursuant to Section 19 Public Works Act 1981 - 19.1.2018 at 9:23 am

11299324.1 Compensation Certificate pursuant to Section 19 Public Works Act 1981 by Her Majesty the Queen - 28.11.2018 at 8:46 am

11528901.1 Notice pursuant to Section 18 Public Works Act 1981 - 26.8.2019 at 1:54 pm

11670654.1 Compensation Certificate pursuant to Section 19 Public Works Act 1981 by Her Majesty the Queen - 29.1.2020 at 4:29 pm



Approved
[Signature]
 REGISTERED CONVEYANCE

APPROVED PURSUANT TO SECTION 223 OF THE RESOURCE MANAGEMENT ACT 1991 ON THE 21ST DAY OF APRIL 1997 THE COMMON SEAL OF THE MANAWATU DISTRICT COUNCIL IS AFFIXED HEREIN IN THE PRESENCE OF
[Signature] MANOR
[Signature] GENERAL MANAGER

REMARKS	DATE	BY
REVISION		
REVISION		
REVISION		

SCHEDULE OF EXISTING EASEMENTS	PURPOSE	SPAWN	SEARMENT	CREATED BY
A	NATURAL GAS			
B				
C				
D				

NEW DIST. ALLOCATED:	LOT	AREA
	LOT 1	52A/673
	LOT 2	52A/674

Total Area 194,7600 ha.
 Comprised in CT 33A/168 (AND)

I, ALBERT STEPHENSON, MANOR, of the County of Manawatu, do hereby certify that this plan was made from surveys conducted by me or under my direction, that both plan and survey are correct and complete in accordance with the Survey Regulations 1952 or any regulations made in substitution therefor.

Dated at Palmerston North this 21st day of April 1997.

ALBERT STEPHENSON, MANOR, of the County of Manawatu, a Justice of the Peace for the County of Manawatu.

Approved to Survey
 19/9/97
 Deposited this 14th day of April 1997
 84523
 SHEET 1 of 2 SHEETS

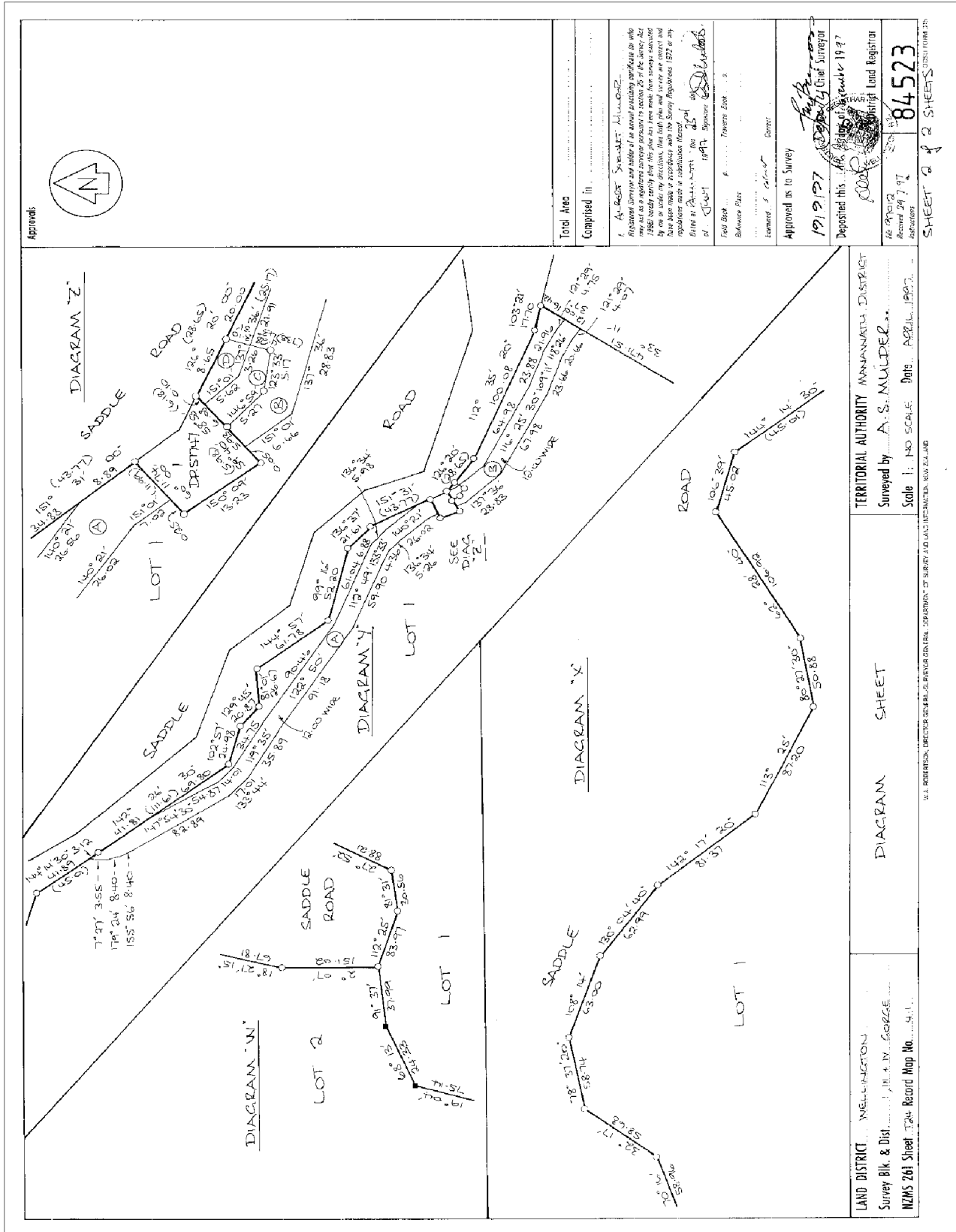
NOTE: SEE SHEET 2 FOR DIAGRAMS W.X.Y.Z.

TERRITORIAL AUTHORITY MANAWATU DISTRICT
 Surveyed by A.S. MAULDER
 Scale 1:2500 Date APRIL 1997

LOTS 1 & 2 BEING A SUBDIVISION OF PLOT 2 DP 27494 & EROSION THEREFROM.

LAND DISTRICT WELLINGTON
 Survey Blk. & Dist. 1, III & N. GEORGE.
 NZMS 261 Sheet T24, Record Map No. 4-1

THE PROFESSIONAL DIRECTOR OF CONVEYANCING, TERRITORIAL AUTHORITY OF MANAWATU DISTRICT, AND INFORMATION NEW ZEALAND



Approvals



Total Area
Comprised in

1. A. ROBERT SMITH, M.L.C. 2.
 Registered Surveyor and holder of an administrative certificate for who
 may act as a registered surveyor pursuant to section 20 of the Survey Act
 1977. The survey was carried out in accordance with the provisions of
 the Act and under my direction, that both the plan and survey are correct and
 have been made in accordance with the Survey Regulations 1977 and the
 regulations made in substitution thereof.
 Dated at Wellington, this 28th day of
 1977. Signature: *[Signature]*
 of *[Signature]* Registrar

Field Book...
 Reference Plans
 Examined & correct
 Approved as to Survey

19/9/77

Deposited this 19/9/77 by *[Signature]* Chief Surveyor

Registered as to Land Register

84523

84523

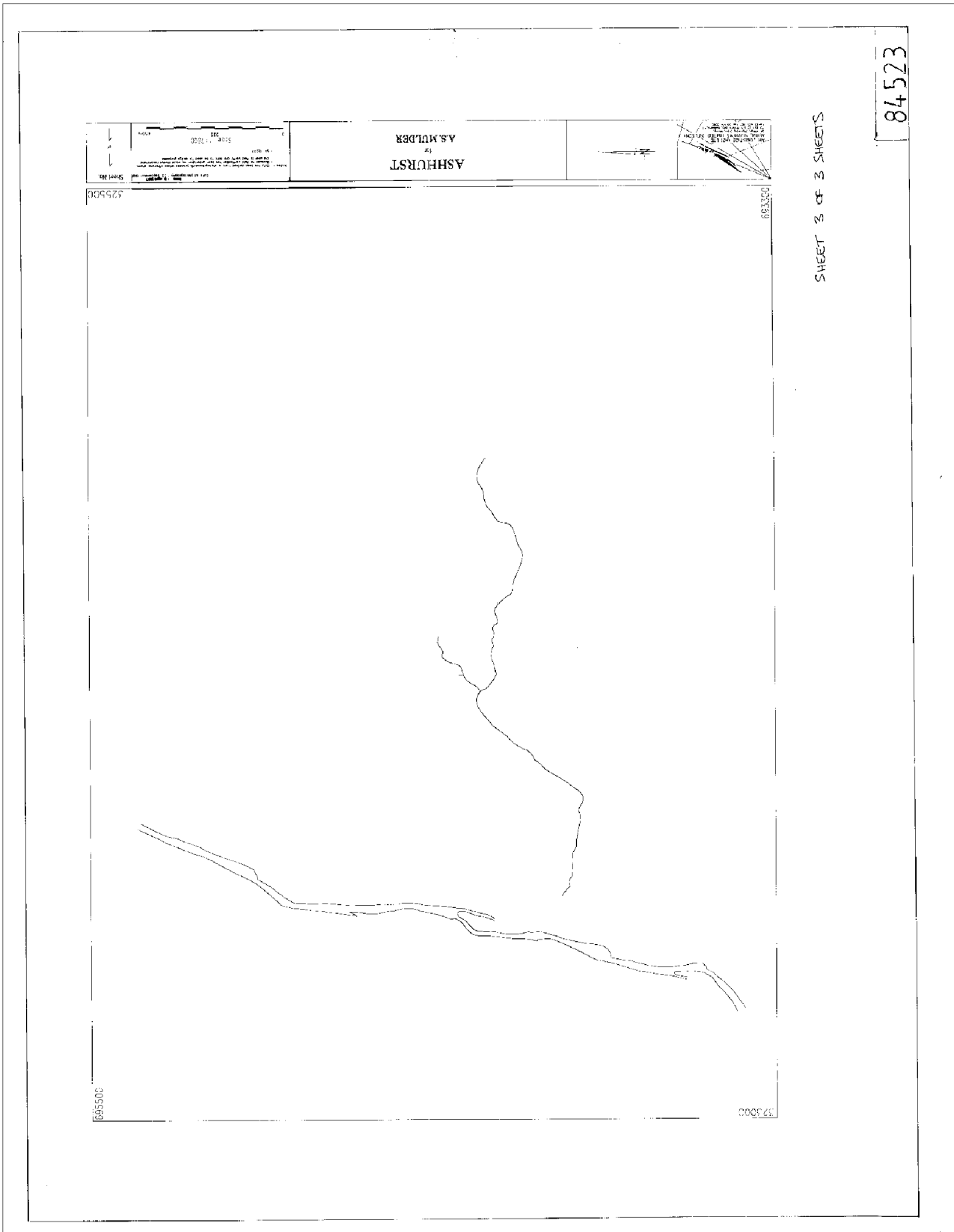
SHEET 2 of 2 SHEETS

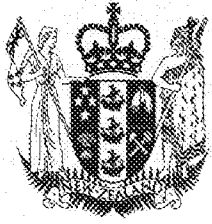
TERRITORIAL AUTHORITY MANAWATU DISTRICT
 Surveyed by A. S. MULDER
 Scale 1: NO SCALE Date: APRIL 1977

DIAGRAM SHEET

LAND DISTRICT WELLINGTON
 Survey Blk. & Dist. 1, 11, 14, GEORGE
 NZMS 261 Sheet 1244 Record Map No. 5111

S.E. INFORMATION DIRECTOR GENERAL SURVEY & LAND INFORMATION NEW ZEALAND





**RECORD OF TITLE
UNDER LAND TRANSFER ACT 2017
FREEHOLD
Search Copy**




R. W. Muir
Registrar-General
of Land

Identifier **WN42A/633**
Land Registration District **Wellington**
Date Issued 08 December 1992

Prior References

WN35B/745

Estate Fee Simple
Area 22.2900 hectares more or less
Legal Description Section 18 Block IV Gorge Survey District

Registered Owners

Meridian Energy Limited

Interests

Subject to Section 8 Mining Act 1971

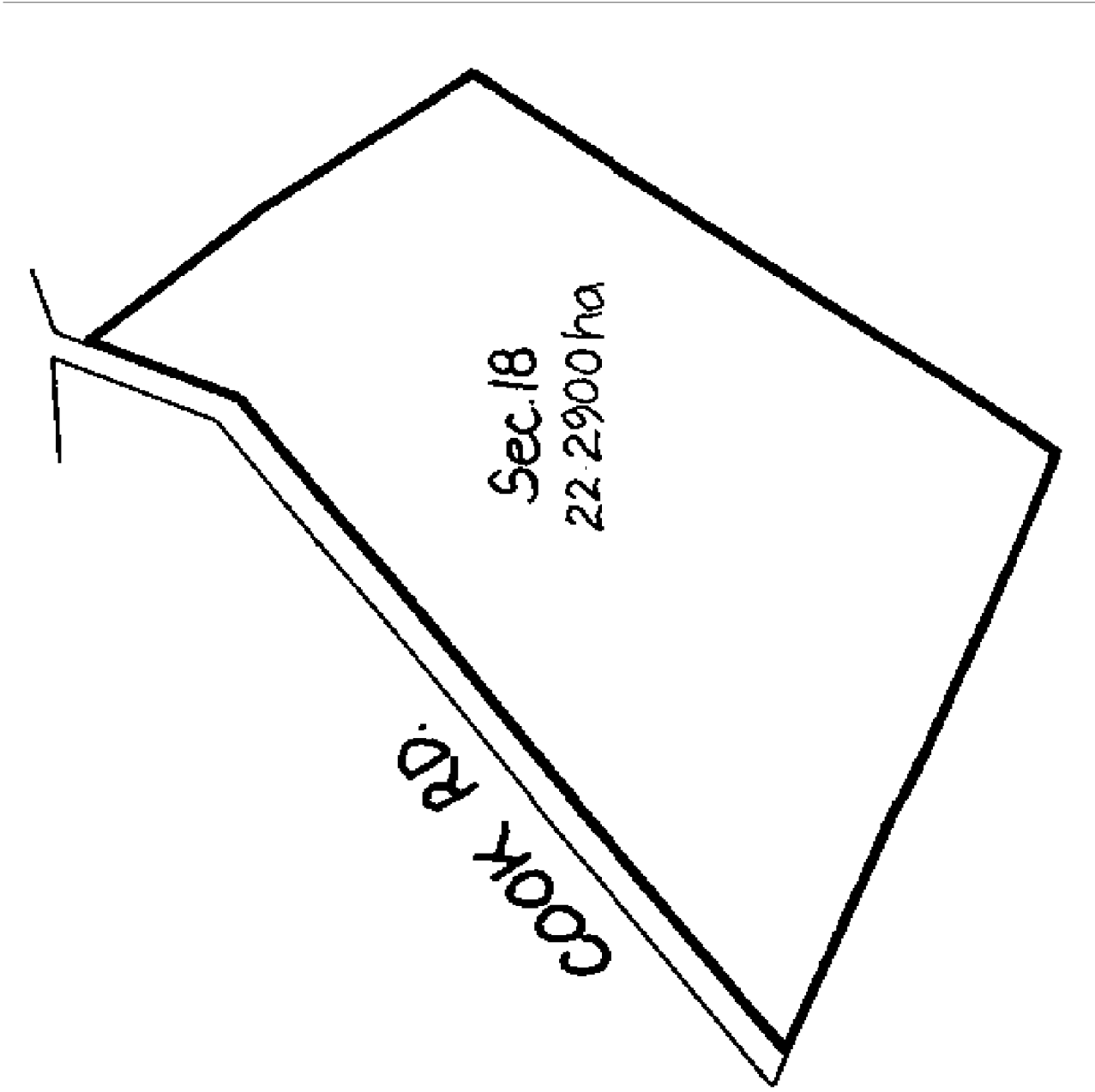
Subject to Section 168A Coal Mines Act 1925

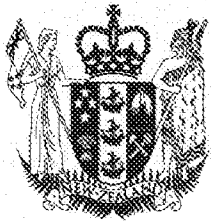
K474569 Compensation Certificate pursuant to Section 17 Public Works Amendment Act 1948 - 4.10.1960 at 1:45 pm

2559 Proclamation defining the middle line of a road passing through the within land - 10.6.1937 at 9.30 am

538292.1 Proclamation defining the middle line of a gas pipeline under Section 17 of the Petroleum Act 1937 - 31.1.1983 at 1.48 pm

11528976.1 Notice pursuant to Section 18 Public Works Act 1981 - 26.8.2019 at 1:54 pm





**RECORD OF TITLE
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R. W. Muir
Registrar-General
of Land

Identifier **WN42A/631**
Land Registration District **Wellington**
Date Issued 08 December 1992

Prior References

WN35B/745

Estate Fee Simple
Area 212.0300 hectares more or less
Legal Description Section 16 Block IV Gorge Survey District

Registered Owners

Braemoar Farms Limited

Interests

Subject to pipeline rights (in gross) over part marked A on DP 57902 in favour of The Natural Gas Corporation of New Zealand Limited created by Transfer 765973.1

Subject to Section 8 Mining Act 1971

Subject to Section 168A Coal Mines Act 1925

K474569 Compensation Certificate pursuant to Section 17 Public Works Amendment Act 1948 - 4.10.1960 at 1:45 pm

2559 Proclamation defining the middle line of a road passing through the within land - 10.6.1937 at 9:30 am

538292.1 Proclamation defining the middle line of a gas pipeline under Section 71 of the Petroleum Act 1937 - 31.1.1983 at 1.48 pm

Subject to a right of way over parts marked B & E on SO Plan 37254 created by Gazette Notice (1994 p 1980 amended by 1994 p 2361) B373457.3 - 28.7.1994 at 11.00 am

6036158.4 Mortgage to The National Bank of New Zealand Limited - 9.6.2004 at 9:00 am

Subject to a windpower investigation and development right (in gross) over the within land in favour of (now) Meridian Energy Limited created by Easement Instrument 6436270.3 - 26.5.2005 at 9:00 am

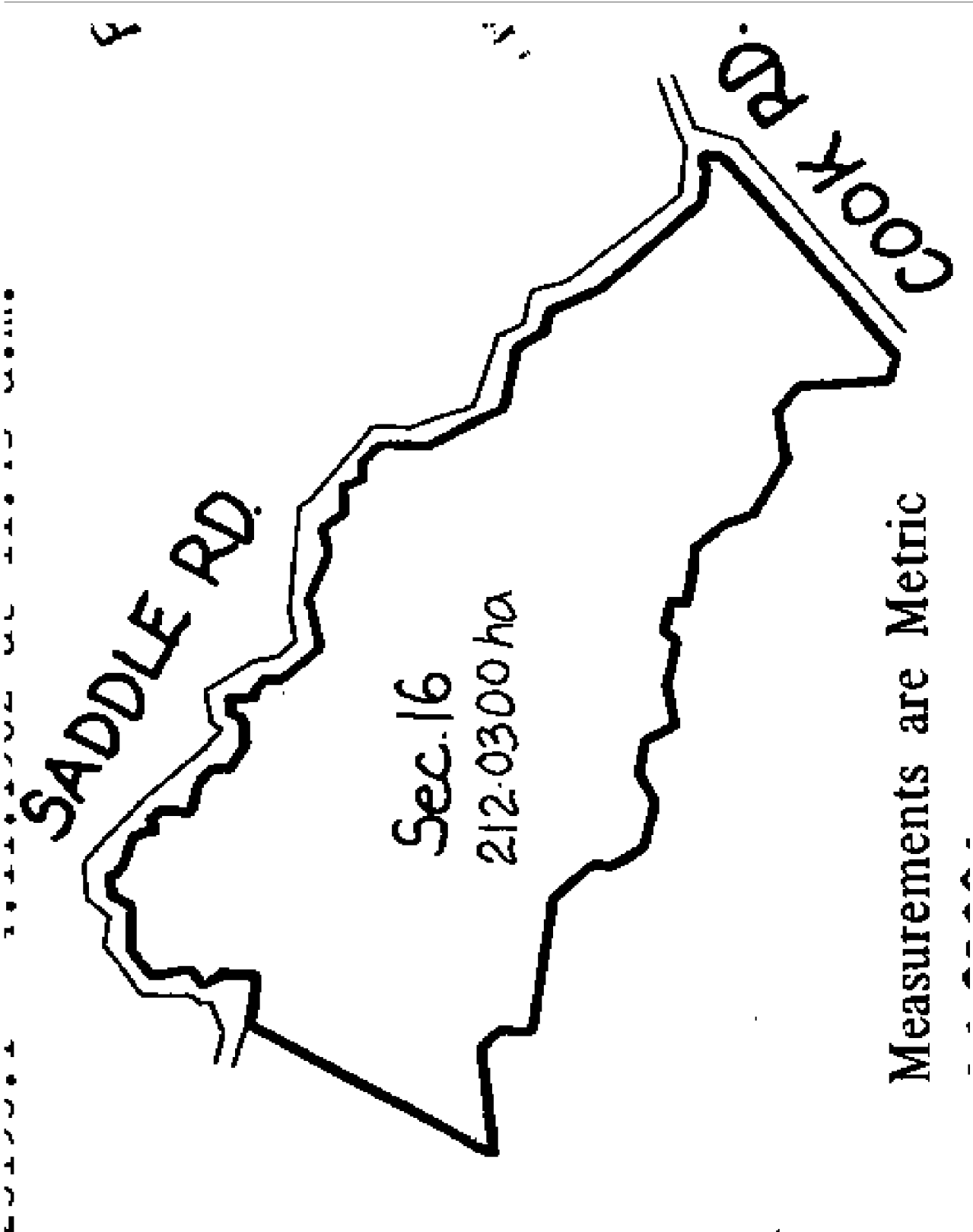
7562876.1 Variation of Mortgage 6036158.4 - 3.10.2007 at 9:00 am

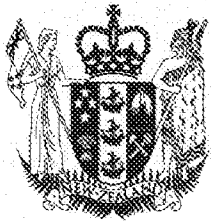
7656665.1 Mortgage to Jennifer Robynne MOAR - 20.12.2007 at 9:38 am

9971824.1 Compensation Certificate pursuant to Section 19 Public Works Act 1981 by Tararua District Council - 13.2.2015 at 11:06 am

10948135.1 Compensation Certificate pursuant to Section 19 Public Works Act 1981 by Tararua District Council - 3.11.2017 at 9:00 am

11528915.1 Notice pursuant to Section 18 Public Works Act 1981 - 26.8.2019 at 1:54 pm





**RECORD OF TITLE
UNDER LAND TRANSFER ACT 2017
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R. W. Muir
Registrar-General
of Land

Identifier **WN40B/274**
Land Registration District **Wellington**
Date Issued 13 November 1991

Prior References

WN17B/1499

Estate Fee Simple
Area 256.1390 hectares more or less
Legal Description Section 14 Block IV Gorge Survey District

Registered Owners

J & G Bolton Limited

Interests

Subject to Part IV A Conservation Act 1987

Subject to Section 11 Crown Minerals Act 1991

K474570 Compensation Certificate pursuant to Section 17 Public Works Amendment Act 1948 - 4.10.1960 at 1.46 pm

B292456.1 Open Space Covenant pursuant to Section 22 Queen Elizabeth The Second National Trusts Act 1977 - 26.5.1993 at 9.21 am (affects part herein)

B358970.1 Compensation Certificate pursuant to Section 19 Public Works Act 1981 - 10.5.1994 at 1.59 pm

Subject to a right of way over parts marked A, C & D on SO 37254 created by Gazette Notice B373457.3 (1994 p 1980 amended by 1994 p 2361) - 28.7.1994 at 11.00 am

Subject to windpower investigation and development rights (in gross) in favour of (now) Meridian Energy Limited created by Easement Instrument 5950784.2 - 30.3.2004 at 9:00 am

8125662.1 Open Space Covenant pursuant to Section 22 Queen Elizabeth The Second National Trust Act 1977 - 7.4.2009 at 9:00 am.

10421146.1 Open Space Covenant pursuant to Section 22 Queen Elizabeth The Second National Trust Act 1977 - 6.5.2016 at 11:07 am.

11014372.1 Compensation Certificate pursuant to Section 19 Public Works Act 1981 by Her Majesty the Queen - 25.1.2018 at 11:29 am

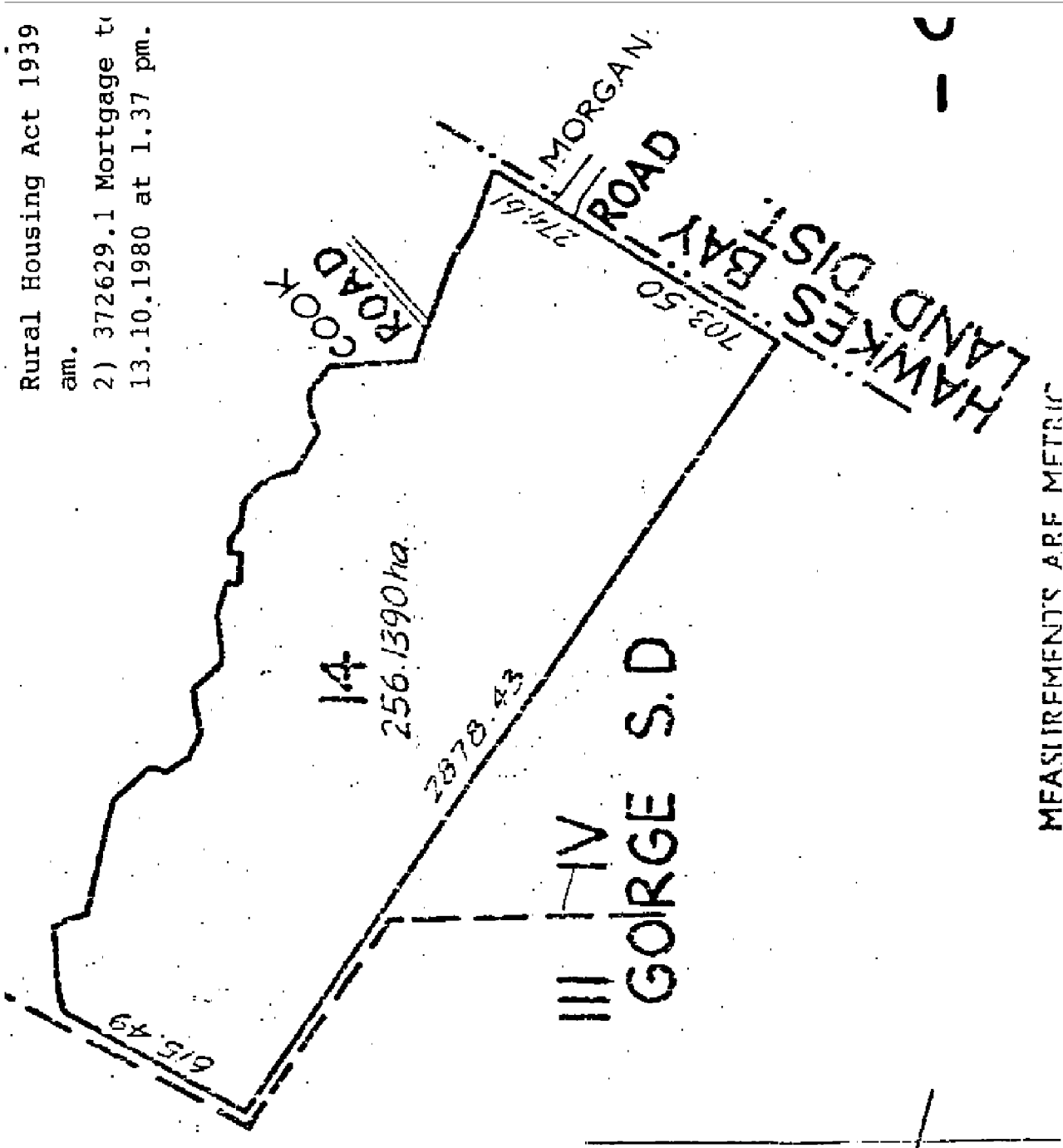
11302722.1 Compensation Certificate pursuant to Section 19 Public Works Act 1981 by Her Majesty the Queen - 30.11.2018 at 11:15 am

11528953.1 Notice pursuant to Section 18 Public Works Act 1981 - 26.8.2019 at 1:54 pm

Identifier

WN40B/274

Rural Housing Act 1939
am.
2) 372629.1 Mortgage to
13.10.1980 at 1.37 pm.





**RECORD OF TITLE
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R. W. Muir
Registrar-General
of Land

Identifier **WN20B/673**
Land Registration District **Wellington**
Date Issued 21 April 1980

Prior References

WN44/28 WN916/6

Estate Fee Simple

Area 49.0199 hectares more or less

Legal Description Section 406 Town of Fitzherbert and Lot
50 Deposited Plan 185

Registered Owners

Shannon Johnston & Company Limited

Interests

Subject to Section 59 Land Act 1948 (affects Section 406 Town of Fitzherbert)

793642 Gazette Notice declaring portion of State Highway No.3 to be a limited access road

8377321.1 Mortgage to Bank of New Zealand - 16.12.2009 at 12:47 pm

9205541.1 Notice pursuant to Section 195(2) Climate Change Response Act 2002 - 19.10.2012 at 4:40 pm

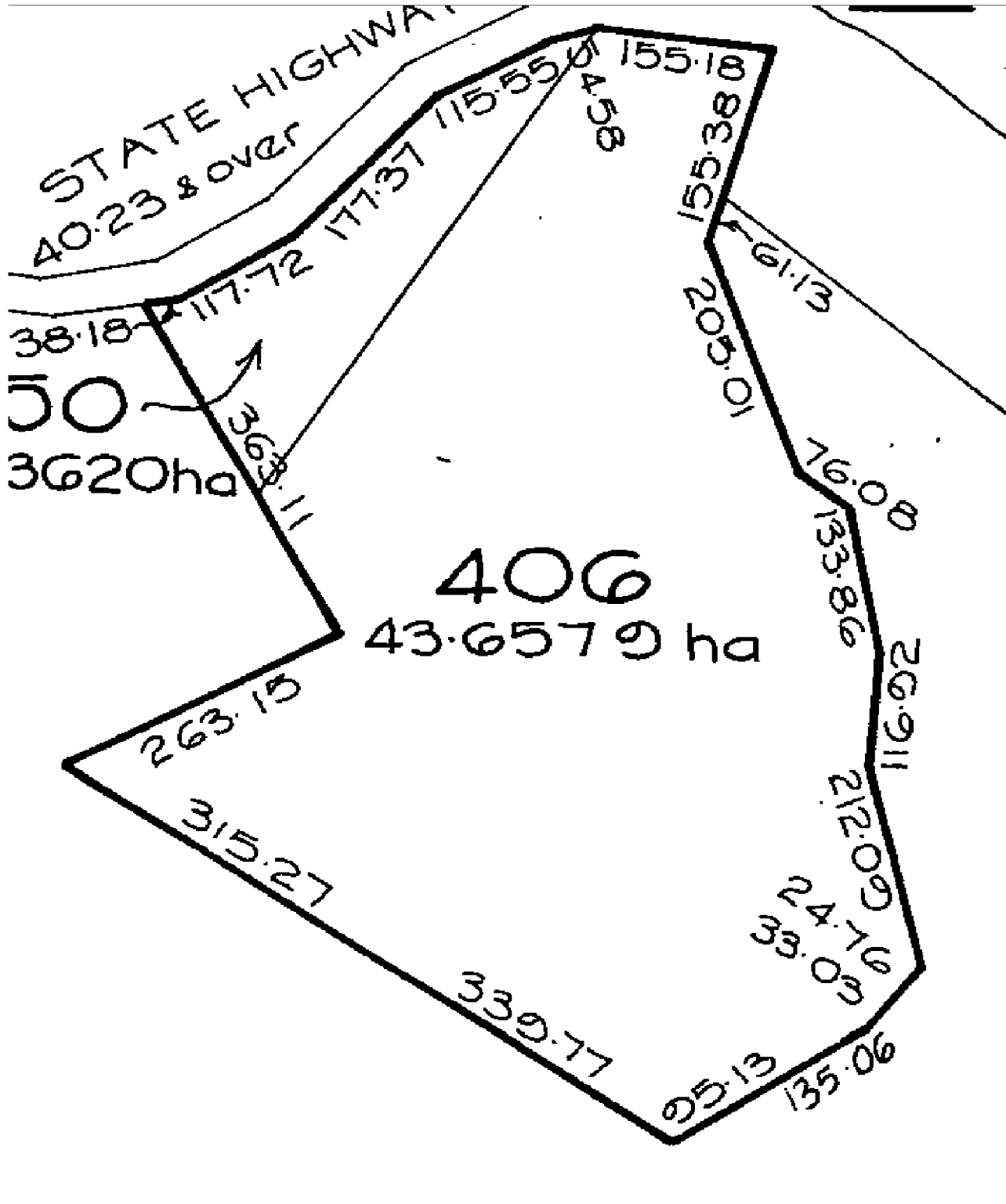
11002802.1 Compensation Certificate pursuant to Section 19 Public Works Act 1981 by Her Majesty the Queen -
12.1.2018 at 2:58 pm

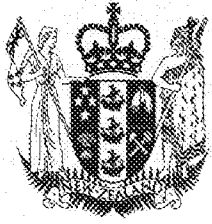
11281380.1 Compensation Certificate pursuant to Section 19 Public Works Act 1981 by Her Majesty the Queen -
9.11.2018 at 11:55 am

11528832.1 Notice pursuant to Section 18 Public Works Act 1981 - 26.8.2019 at 1:53 pm

11631584.1 Compensation Certificate pursuant to Section 19 Public Works Act 1981 by Her Majesty the Queen -
5.12.2019 at 2:22 pm

11659848.1 Compensation Certificate pursuant to Section 19 Public Works Act 1981 by Her Majesty the Queen -
16.1.2020 at 4:48 pm





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Registrar-General
of Land

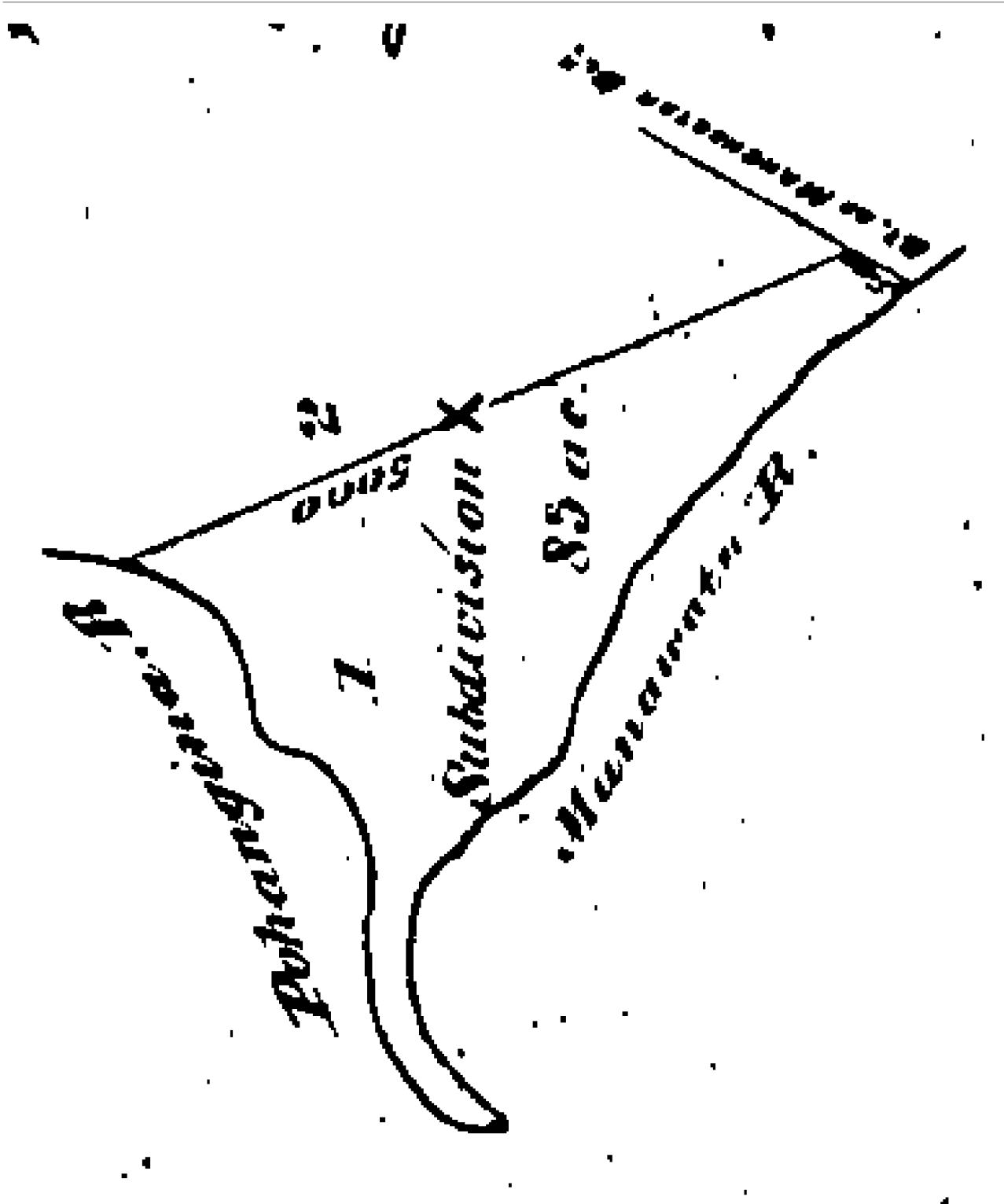
Identifier **WN31/162**
Land Registration District **Wellington**
Date Issued 24 November 1882

Estate Fee Simple
Area 33.5889 hectares more or less
Legal Description Section 1 Subdivision X Deposited Plan
239

Registered Owners
The Emigrant and Colonists Aid Corporation Limited

Interests

Subject to a right of Road one hundred (100) links wide





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R. W. Muir
Registrar-General
of Land

Identifier **WN20B/672**
Land Registration District **Wellington**
Date Issued 21 April 1980

Prior References

WN44/28

Estate Fee Simple
Area 14.0881 hectares more or less
Legal Description Lot 49 Deposited Plan 185

Registered Owners

Nut Cracker Farms Limited

Interests

793642 Gazette Notice declaring the adjoining State Highway No.3 to be a limited access road

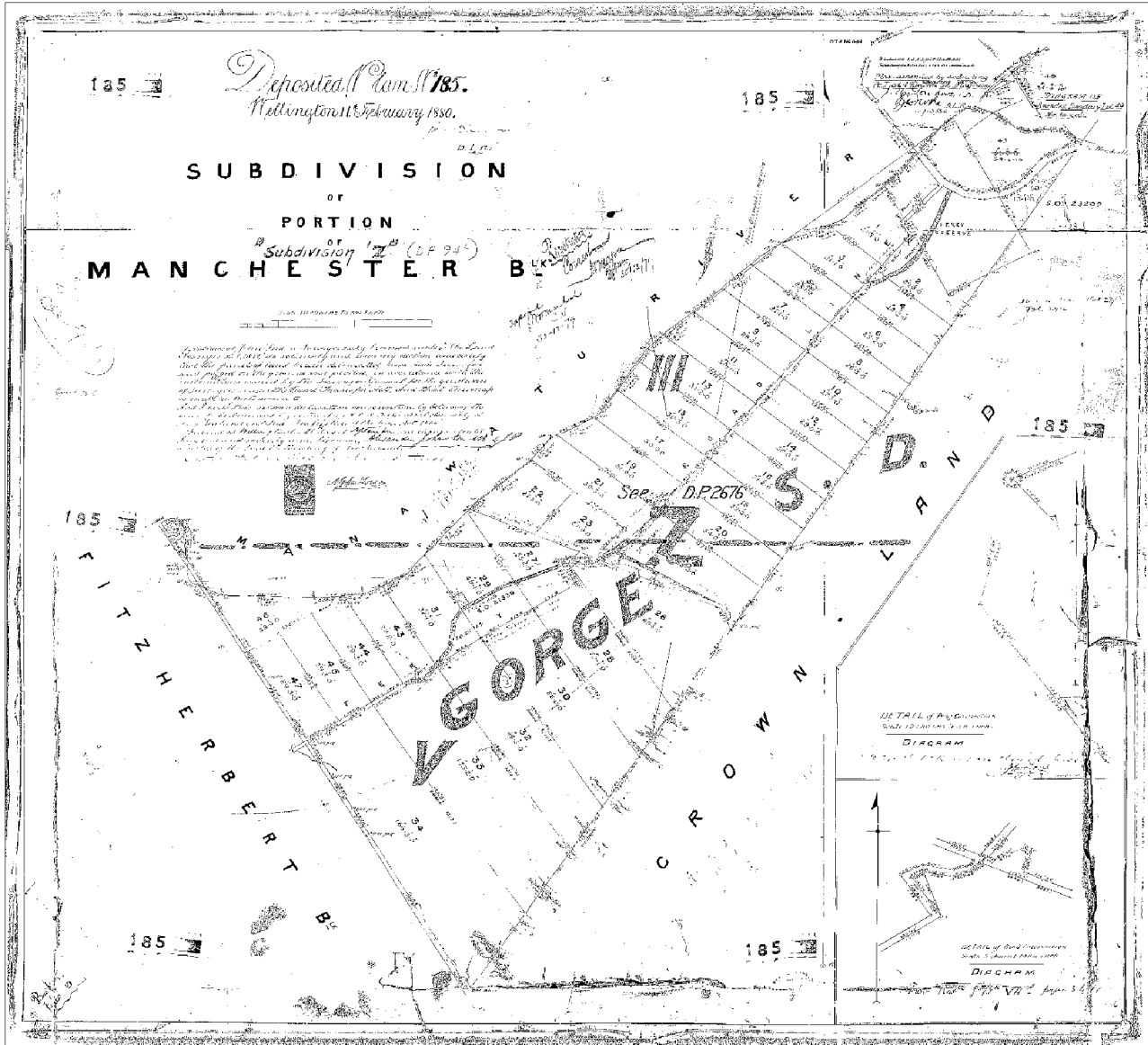
820951.1 Mortgage to Bank of New Zealand - 2.12.1986 at 9.01 am

11281382.1 Compensation Certificate pursuant to Section 19 Public Works Act 1981 by Her Majesty the Queen -
9.11.2018 at 11:55 am

11528852.1 Notice pursuant to Section 18 Public Works Act 1981 - 26.8.2019 at 1:53 pm

11631592.1 Compensation Certificate pursuant to Section 19 Public Works Act 1981 by Her Majesty the Queen -
5.12.2019 at 2:22 pm

11659817.1 Compensation Certificate pursuant to Section 19 Public Works Act 1981 by Her Majesty the Queen -
16.1.2020 at 4:47 pm





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R. W. Muir
Registrar-General
of Land

Identifier **572205**
Land Registration District **Hawkes Bay**
Date Issued 28 November 2011

Prior References

251017

Estate	Fee Simple
Area	5835 square metres more or less
Legal Description	Lot 77, 85, 88-89 Deposited Plan 61 and Section 20-21 Survey Office Plan 434380

Registered Owners

Oasis Base Spaces Limited

Interests

6961416.2 COVENANT UNDER SECTION 240 RESOURCE MANAGEMENT ACT 1991 (ALSO AFFECTS HBB3/50) - 25.7.2006 at 9:00 am

Subject to a right to convey electricity and telecommunications in gross over Section 20 SO 434380 marked B on SO 434380, over Lot 88 DP 61 marked B and over Lot 89 DP 61 marked C on DP 423742 in favour of Transpower New Zealand Limited created by Easement Instrument 8427758.1 - 26.2.2010 at 12:37 pm

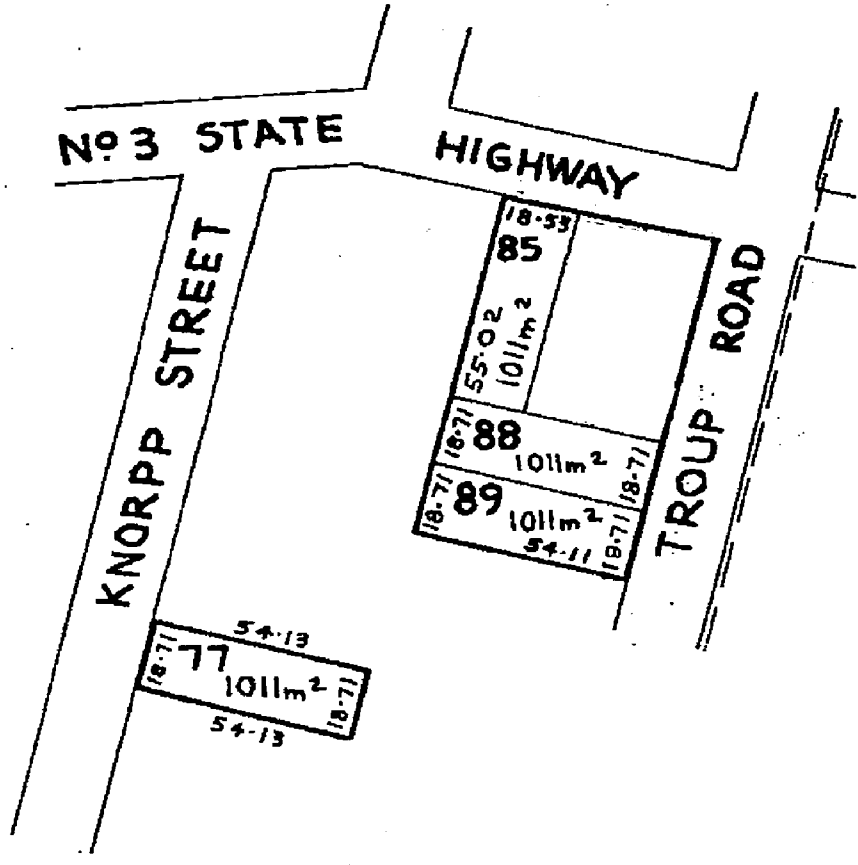
11457111.1 Compensation Certificate pursuant to Section 19 Public Works Act 1981 by Her Majesty the Queen - 5.6.2019 at 7:00 am

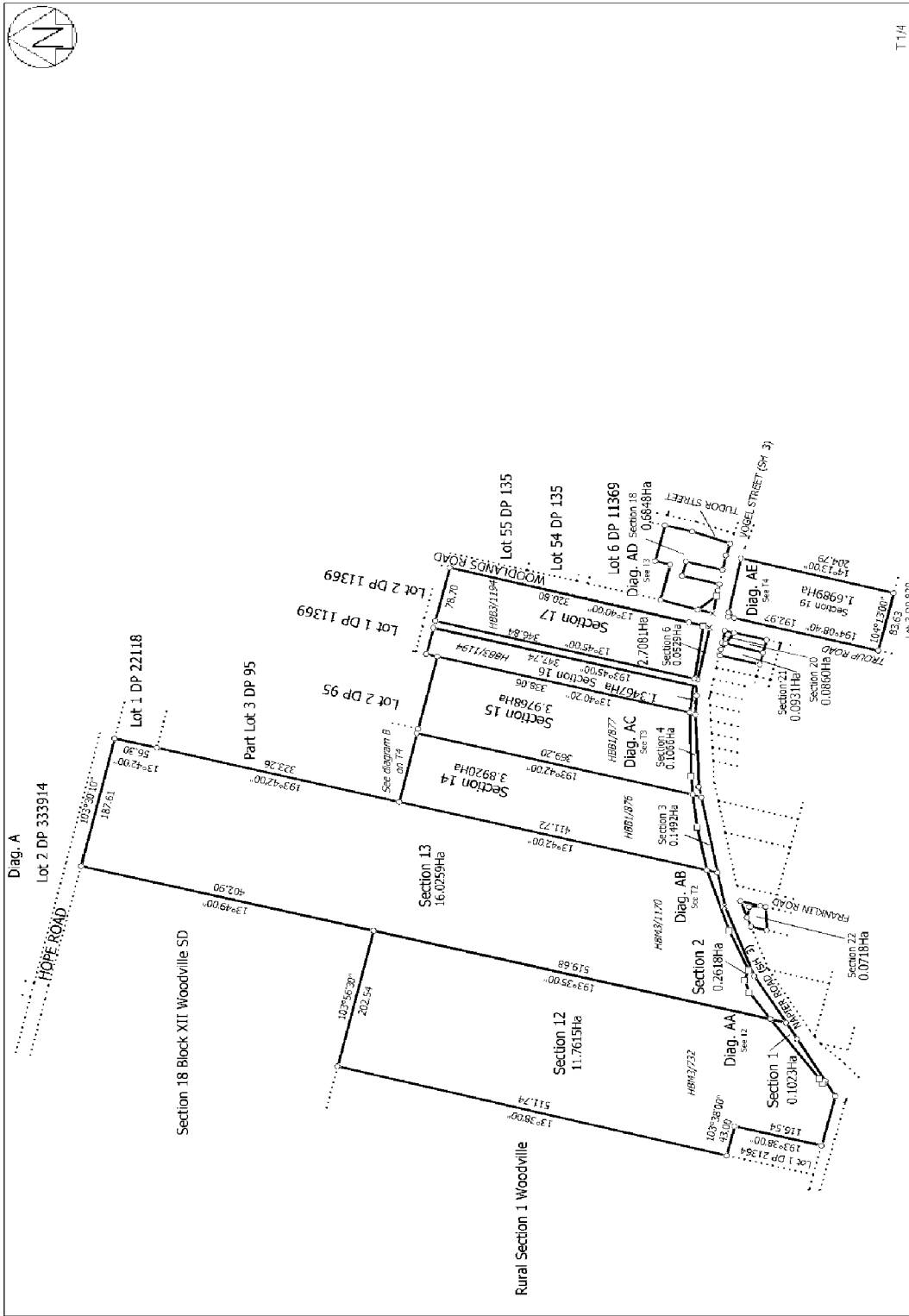
Title Diagram 572205

Copy - 01/01, Pgs - 001, 08/12/11, 12, 44



DocID: 212971168



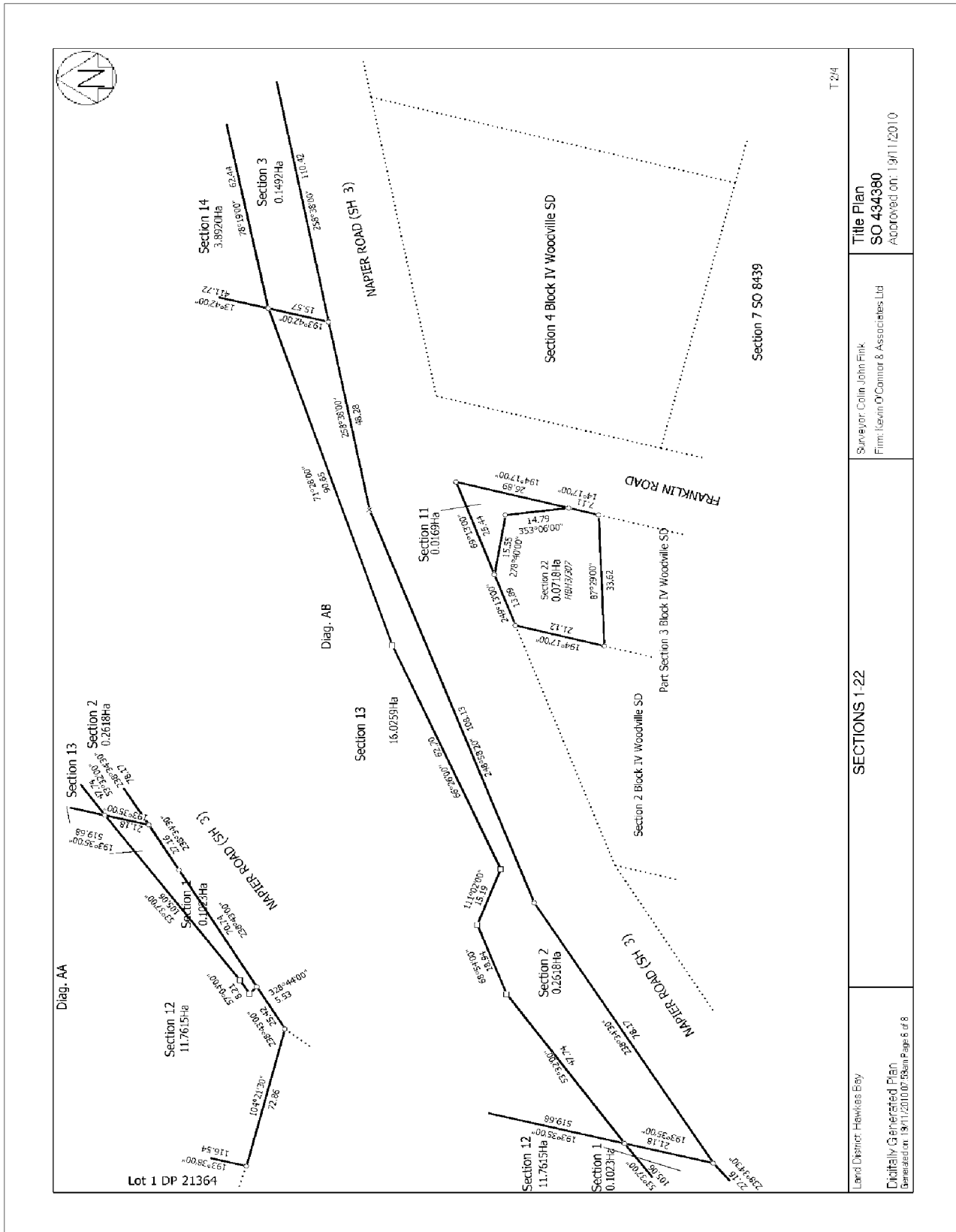


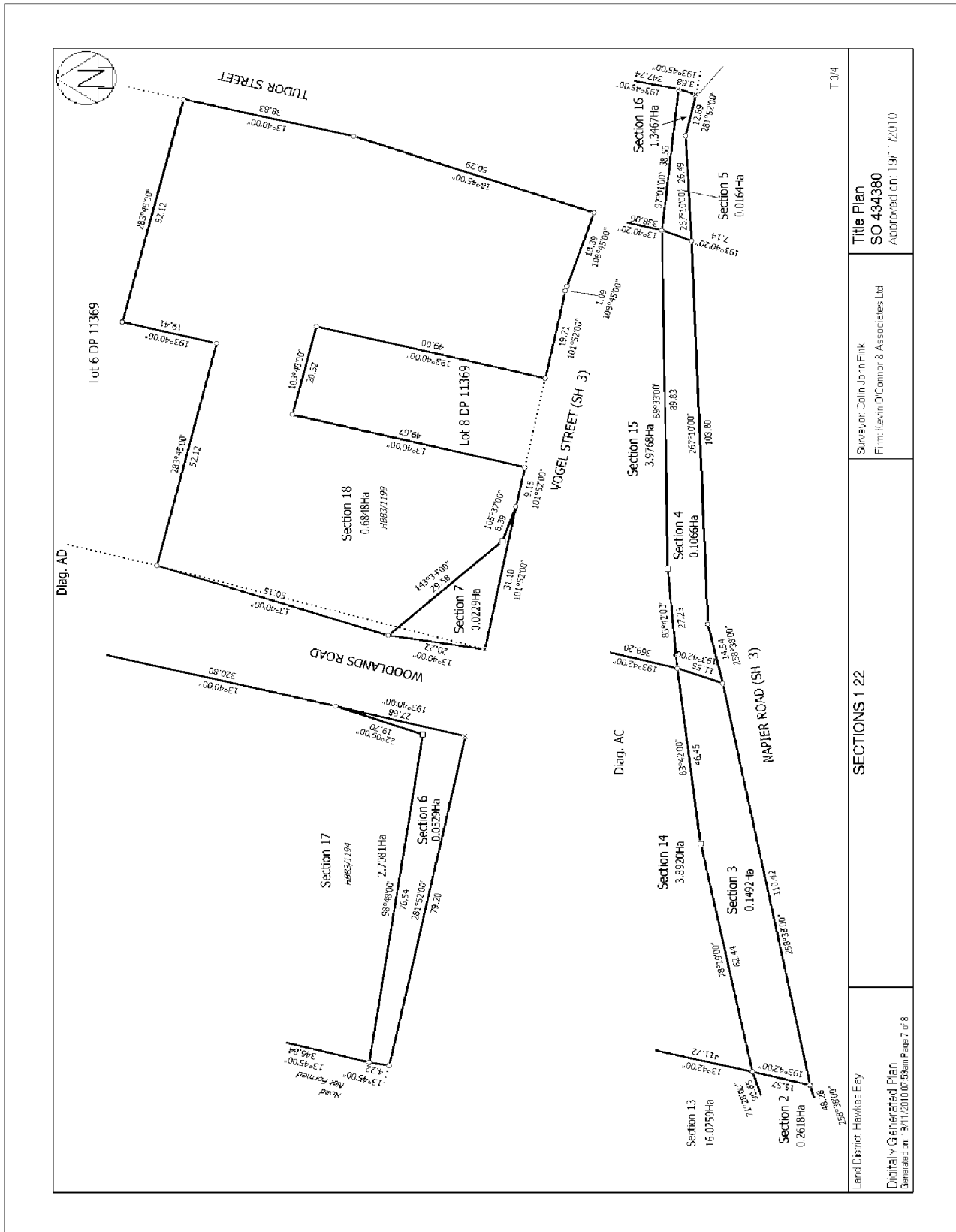
T 114

Surveyor: Colin John Fink
Firm: Kevin O'Connor & Associates Ltd

SECTIONS 1-22

Land District: Hawke's Bay
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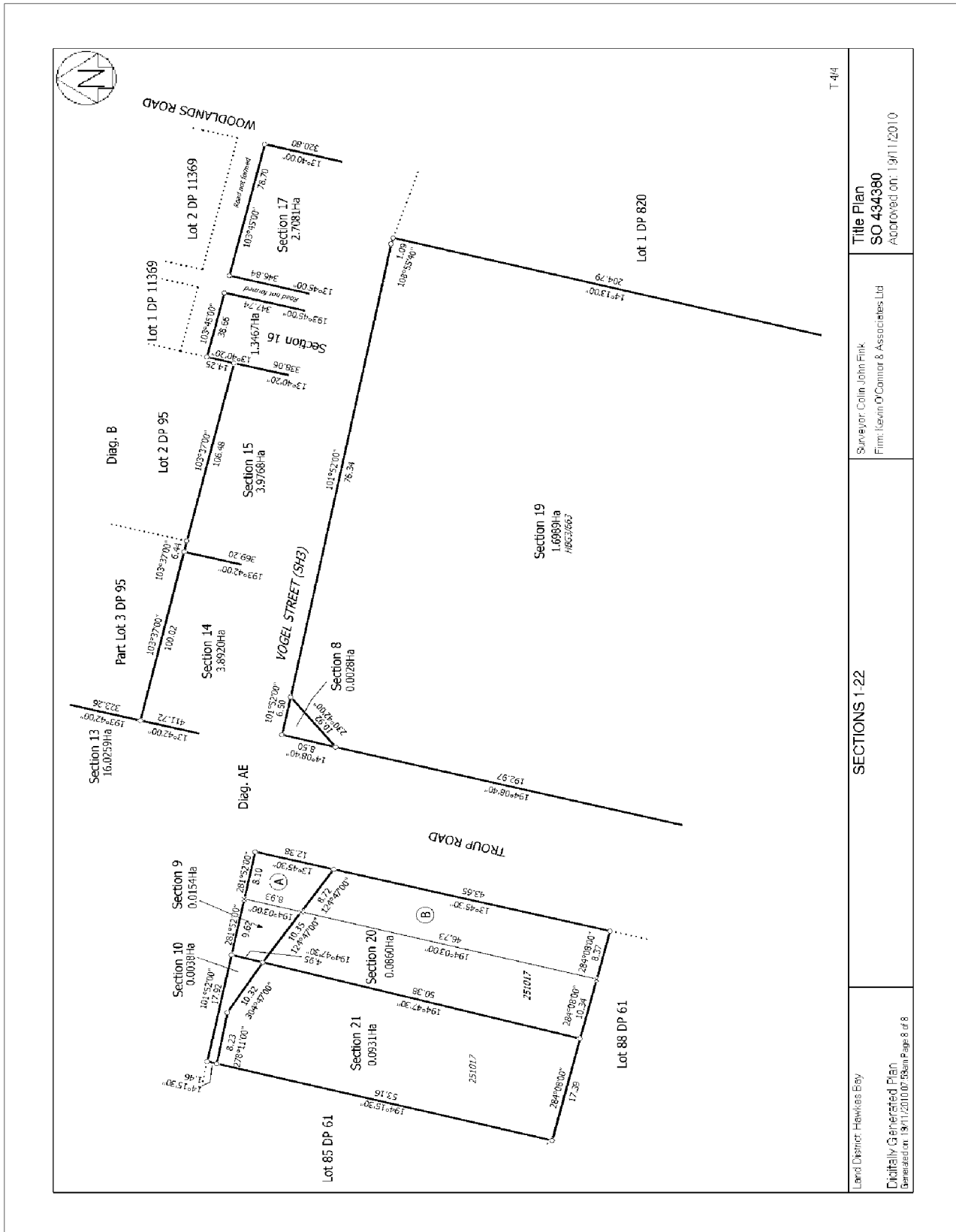
T 3/4

Surveyor: Colin John Finik
Firm: Kevin O'Connor & Associates Ltd

SECTIONS 1-22

Land District: Hawke's Bay
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Generated: 19/11/2010 07:09am Page 7 of 8

Title Plan
SO 434380
Approved on: 19/11/2010



T. 44

<p>Land District: Hawke's Bay</p>	<p>Surveyor: Colin John Fink Firm: Kevin O'Connor & Associates Ltd</p>	<p>SECTIONS 1-22</p>	<p>Digitally Generated Plan Generated on: 19/11/2010 07:09am Page 8 of 8</p>
<p>Title Plan SO 434380 Approved on: 19/11/2010</p>			



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R. W. Muir
Registrar-General
of Land

Identifier **568666**
Land Registration District **Hawkes Bay**
Date Issued 25 October 2011

Prior References

HBB3/1194

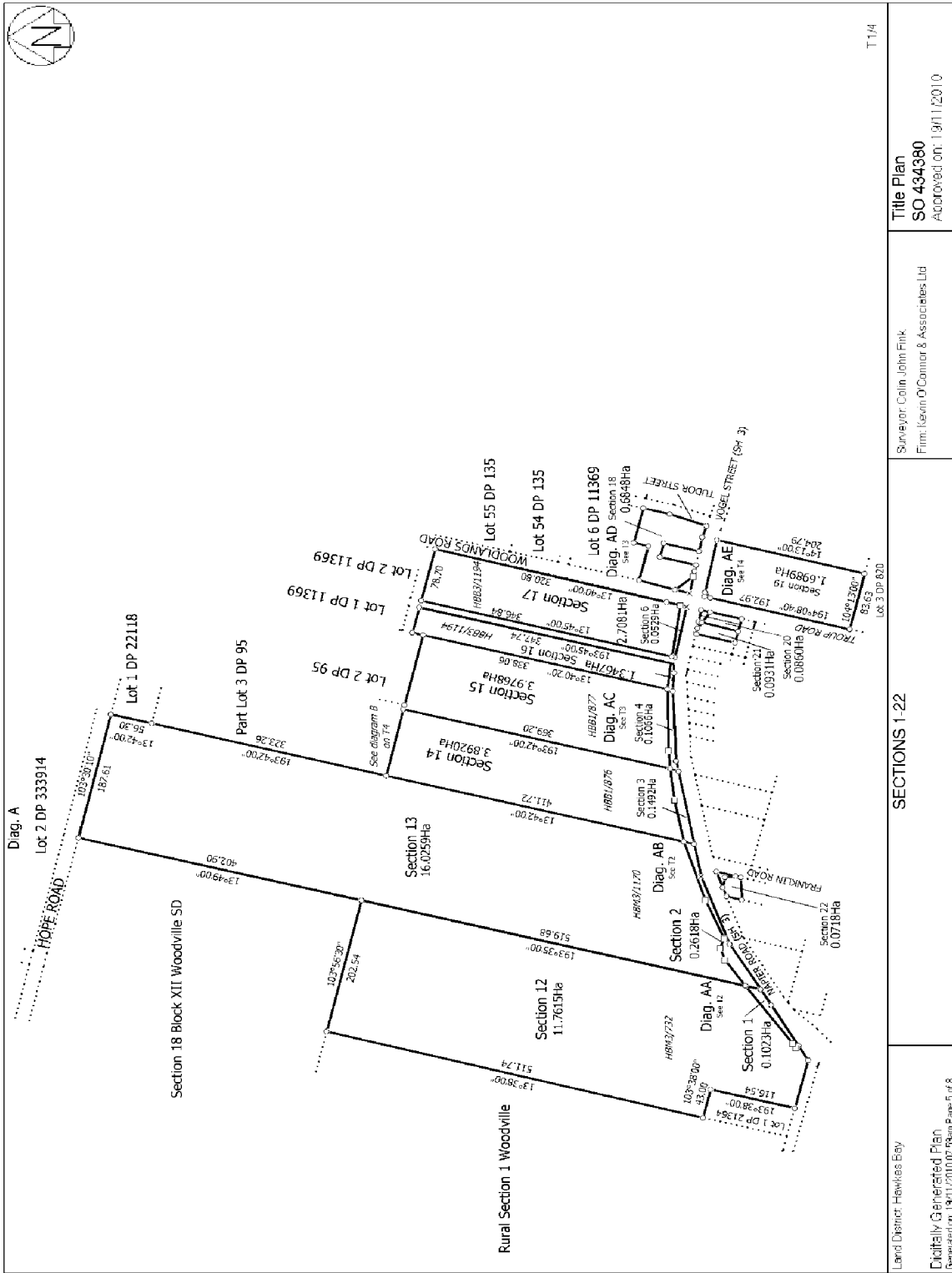
Estate Fee Simple
Area 4.0548 hectares more or less
Legal Description Section 16-17 Survey Office Plan 434380

Registered Owners

Murray Alexander Pringle as Executor

Interests

Subject to a right to convey water over part created by Transfer 493762.2 - 8.6.1988 at 2:46 pm
11529009.1 Notice pursuant to Section 18 Public Works Act 1981 - 26.8.2019 at 1:56 pm
11638995.1 Compensation Certificate pursuant to Section 19 Public Works Act 1981 by Her Majesty the Queen -
11.12.2019 at 1:46 pm



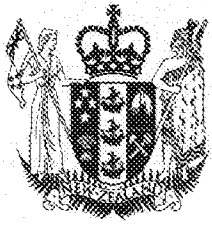
T 114

Title Plan
SO 434380
 Approved on: 19/11/2010

Surveyor: Colin John Fink
 Firm: Kevin O'Connor & Associates Ltd

SECTIONS 1-22

Land District: Hawke's Bay
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R. W. Muir
Registrar-General
of Land

Identifier **568665**
Land Registration District **Hawkes Bay**
Date Issued 25 October 2011

Prior References

HBB1/877

Estate Fee Simple
Area 3.9768 hectares more or less
Legal Description Section 15 Survey Office Plan 434380

Registered Owners

Murray Alexander Pringle as Executor

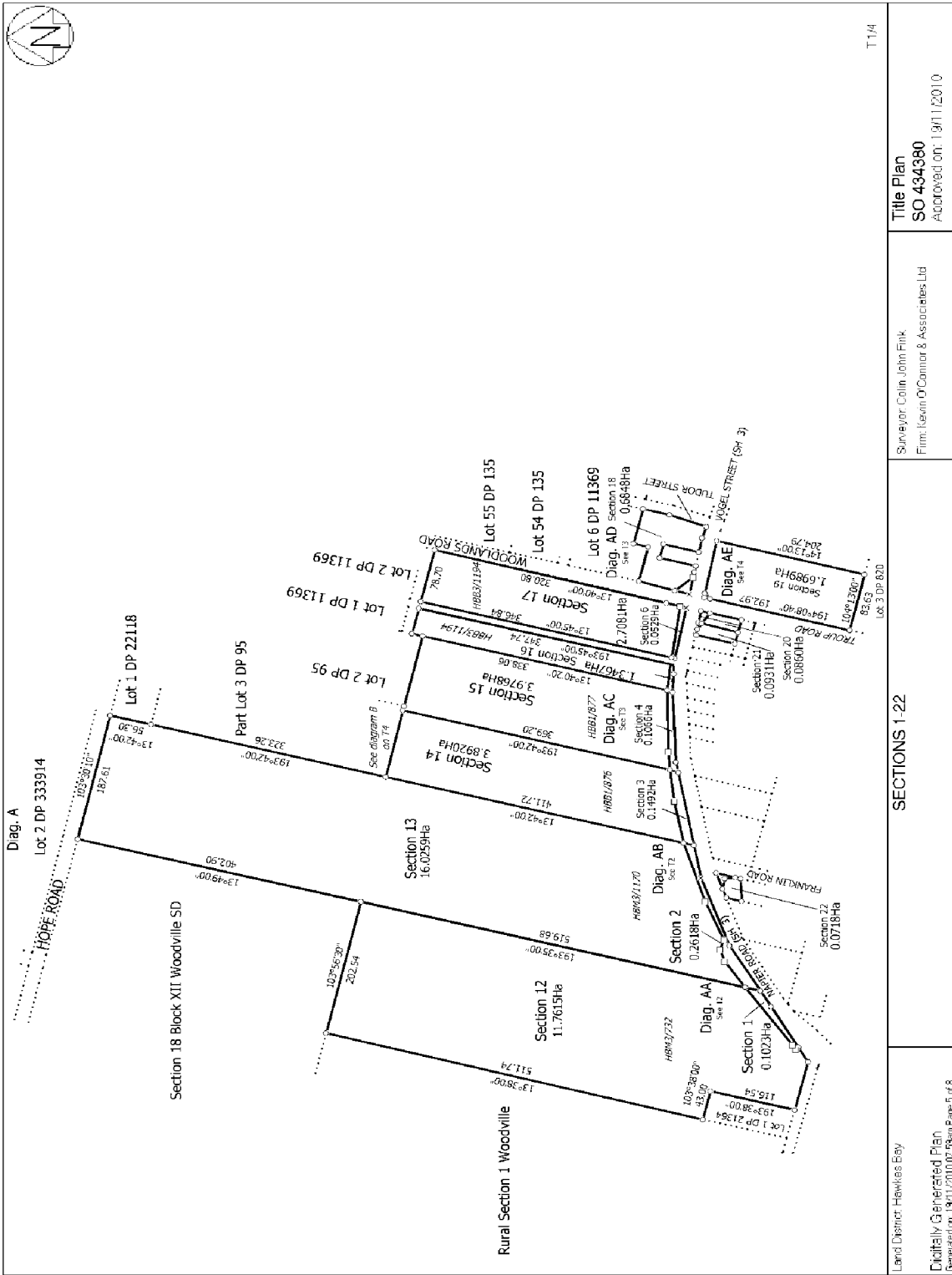
Interests

Appurtenant hereto is a right to convey water created by Transfer 493762.2 - 8.6.1988 at 2.46 pm

11302713.1 Compensation Certificate pursuant to Section 19 Public Works Act 1981 by Her Majesty the Queen - 30.11.2018 at 11:15 am

11529009.1 Notice pursuant to Section 18 Public Works Act 1981 - 26.8.2019 at 1:56 pm

11638995.1 Compensation Certificate pursuant to Section 19 Public Works Act 1981 by Her Majesty the Queen - 11.12.2019 at 1:46 pm



SECTION 1-22

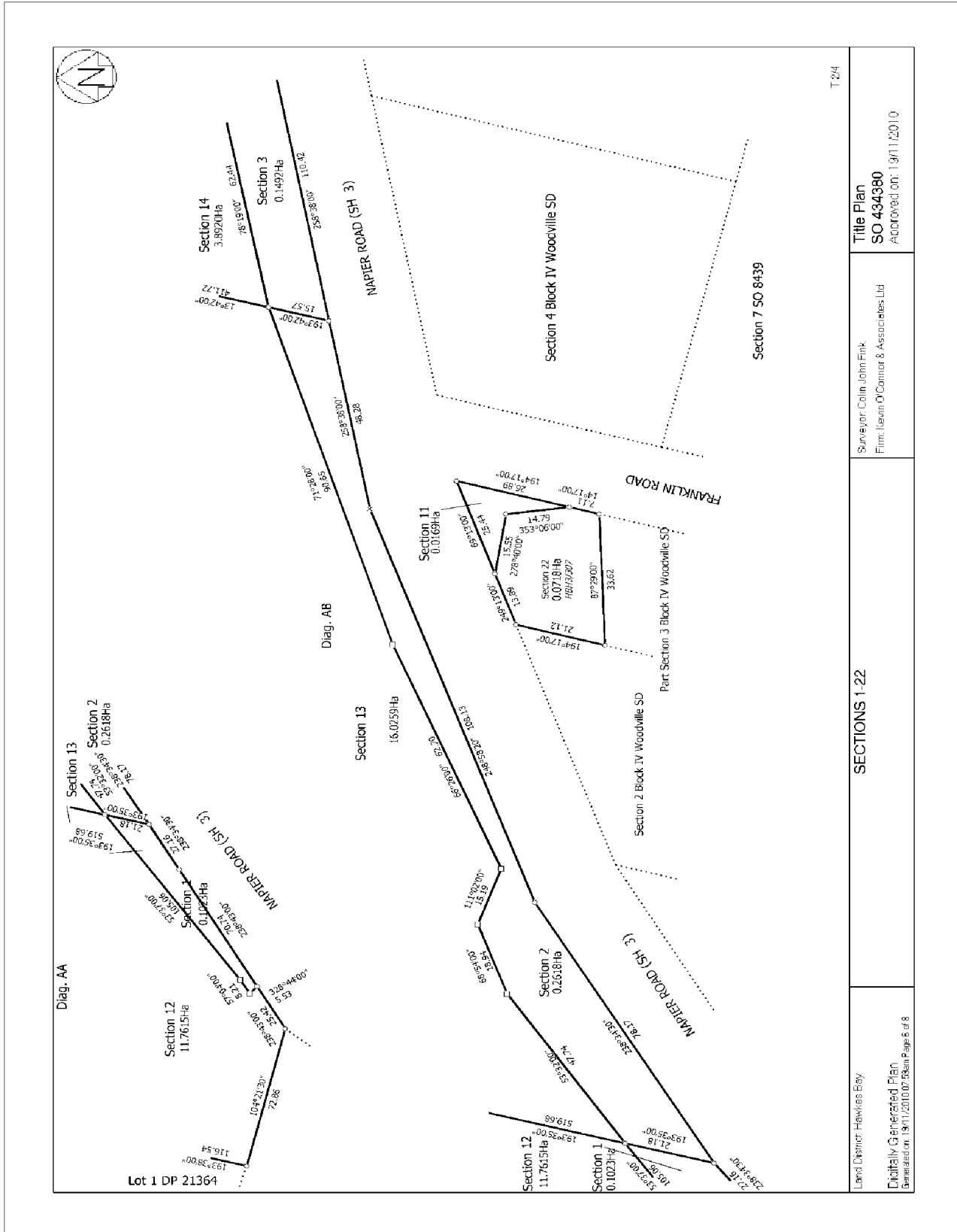
Surveyor: Colin John Fink
 Firm: Kevin O'Connor & Associates Ltd

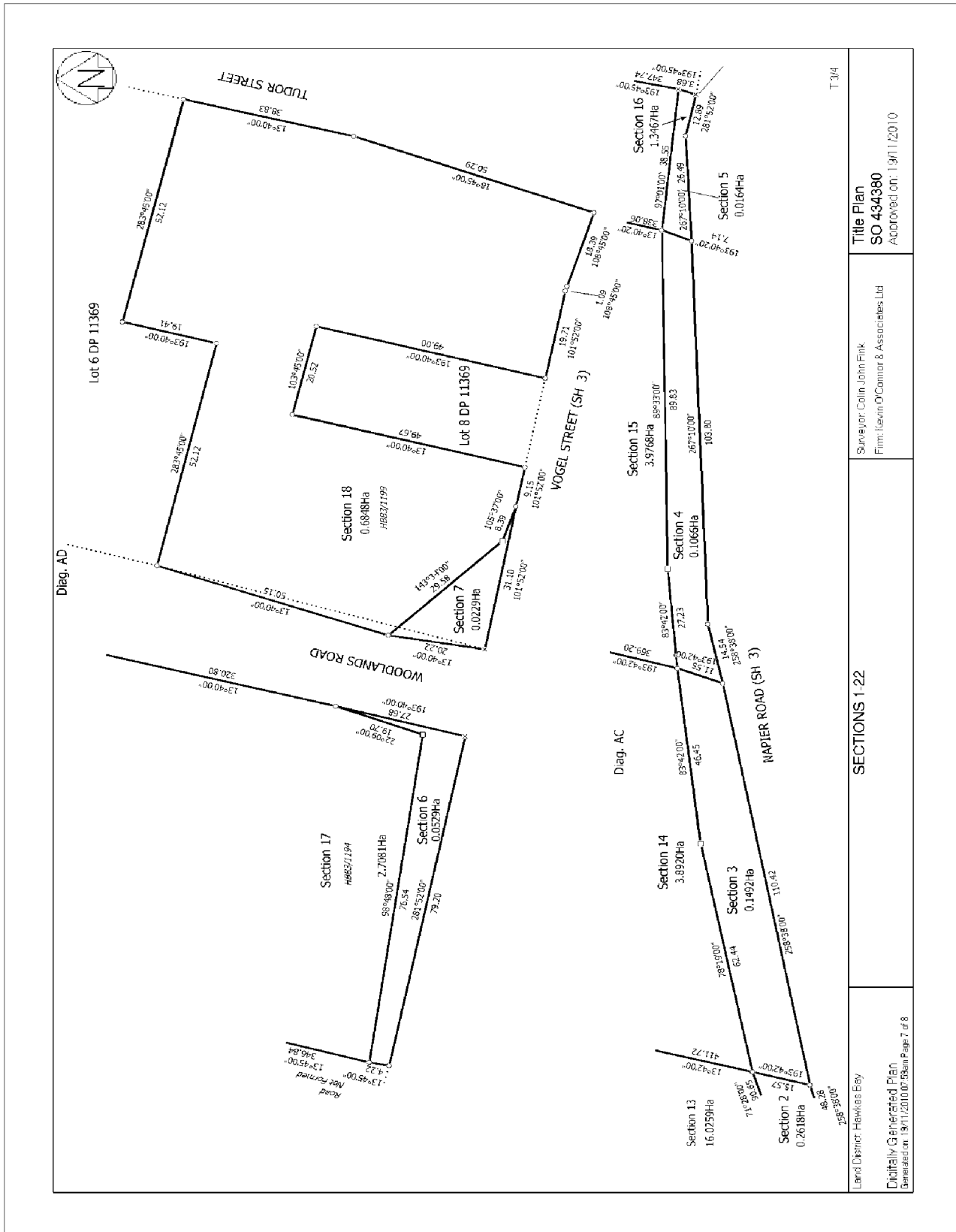
Title Plan
SO 434380
 Approved on: 19/11/2010

Land District: Hawke's Bay

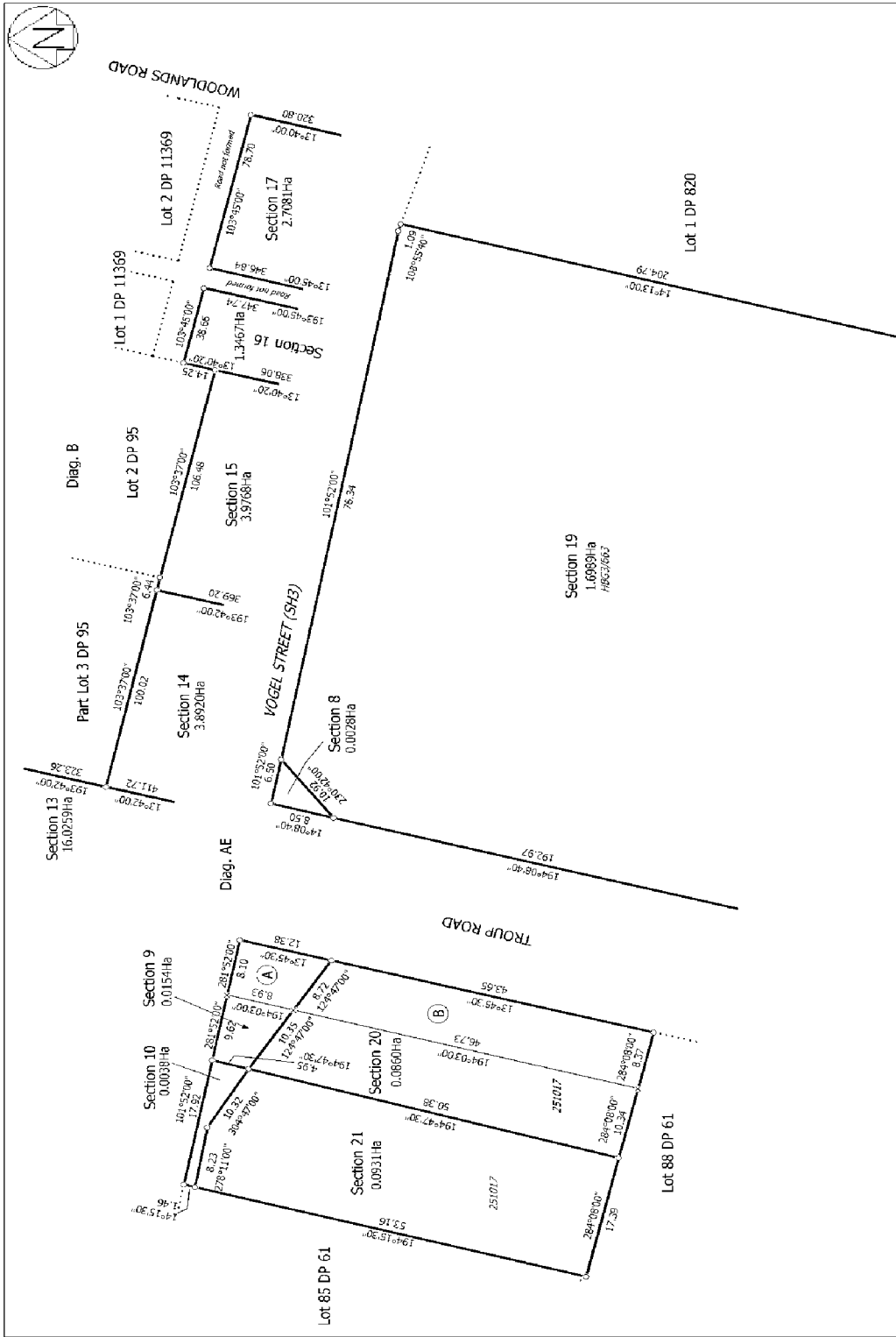
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T 114





<p>Land District: Hawke's Bay</p>	<p>Surveyor: Colin John Fink Firm: Kevin O'Connor & Associates Ltd</p>	<p>SECTIONS 1-22</p>	<p>Digitally Generated Plan Generated: 19/11/2010 07:09am Page 7 of 8</p>
<p>Title Plan SO 434380 Approved on: 19/11/2010</p>		<p>T 3/4</p>	



T. 44

Title Plan
SO 434380
 Approved on: 19/11/2010

Surveyor: Colin John Fink
 Firm: Kevin O'Connor & Associates Ltd

SECTIONS 1-22

Land District: Hawke's Bay
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UNDER LAND TRANSFER ACT 2017
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R. W. Muir
Registrar-General
of Land

Identifier **568664**
Land Registration District **Hawkes Bay**
Date Issued 25 October 2011

Prior References

HBB1/876

Estate Fee Simple
Area 3.8920 hectares more or less
Legal Description Section 14 Survey Office Plan 434380

Registered Owners

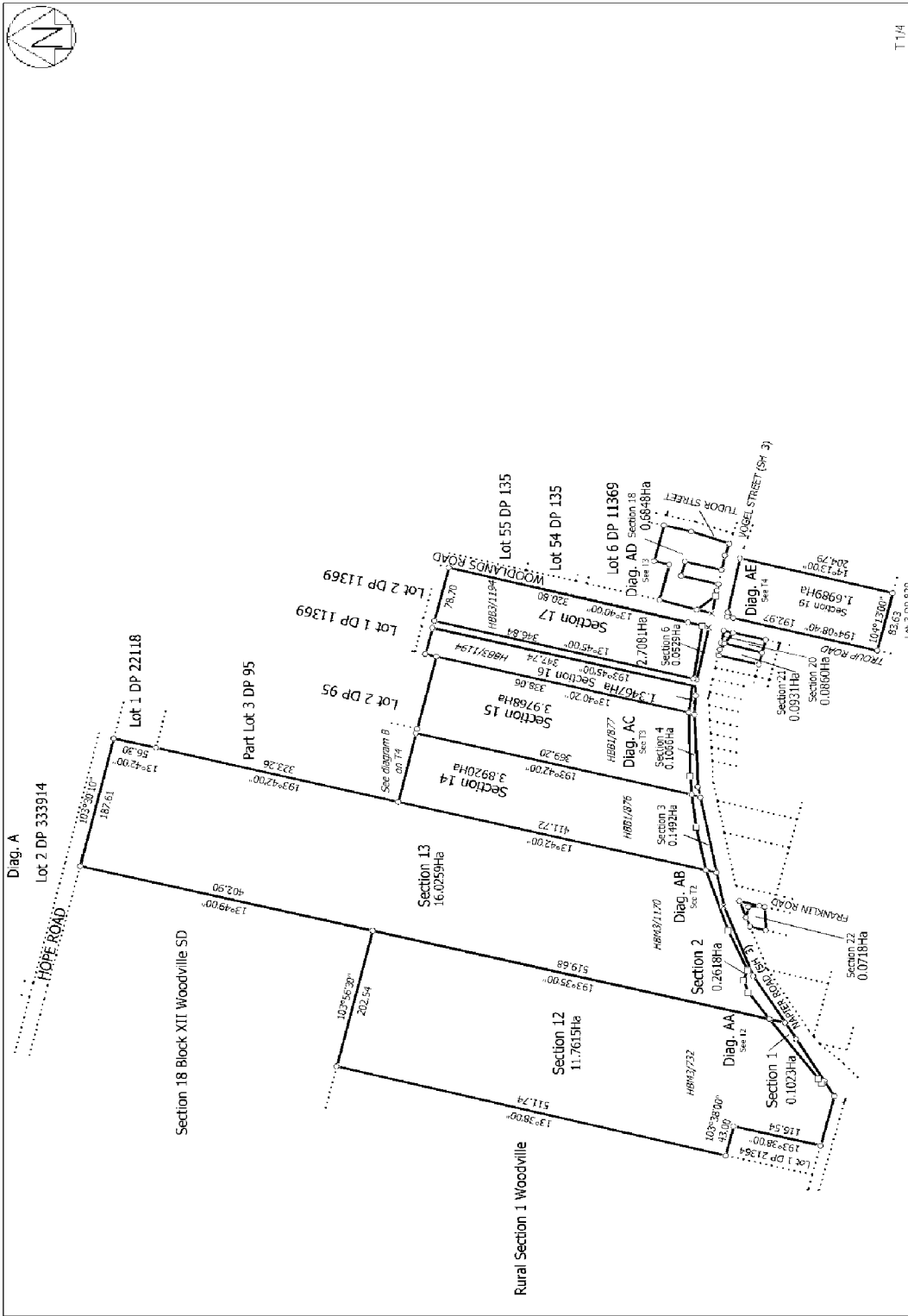
Murray Alexander Pringle as Executor

Interests

11302713.1 Compensation Certificate pursuant to Section 19 Public Works Act 1981 by Her Majesty the Queen -
30.11.2018 at 11:15 am

11529009.1 Notice pursuant to Section 18 Public Works Act 1981 - 26.8.2019 at 1:56 pm

11638995.1 Compensation Certificate pursuant to Section 19 Public Works Act 1981 by Her Majesty the Queen -
11.12.2019 at 1:46 pm



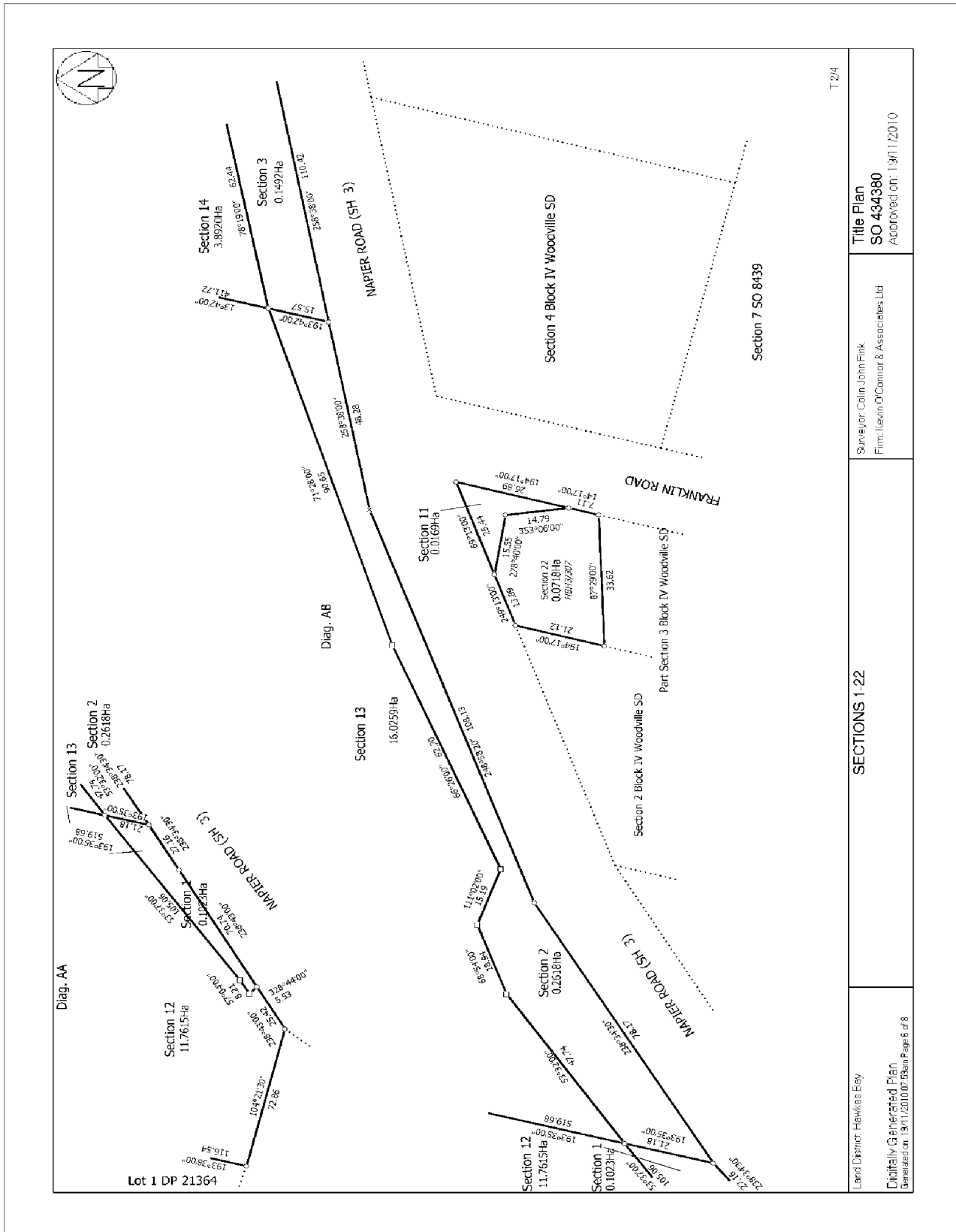
T 114

Title Plan
SO 434380
 Approved on: 19/11/2010

Surveyor: Colin John Fink
 Firm: Kevin O'Connor & Associates Ltd

SECTIONS 1-22

Land District: Hawke's Bay
 Digitally Generated Plan
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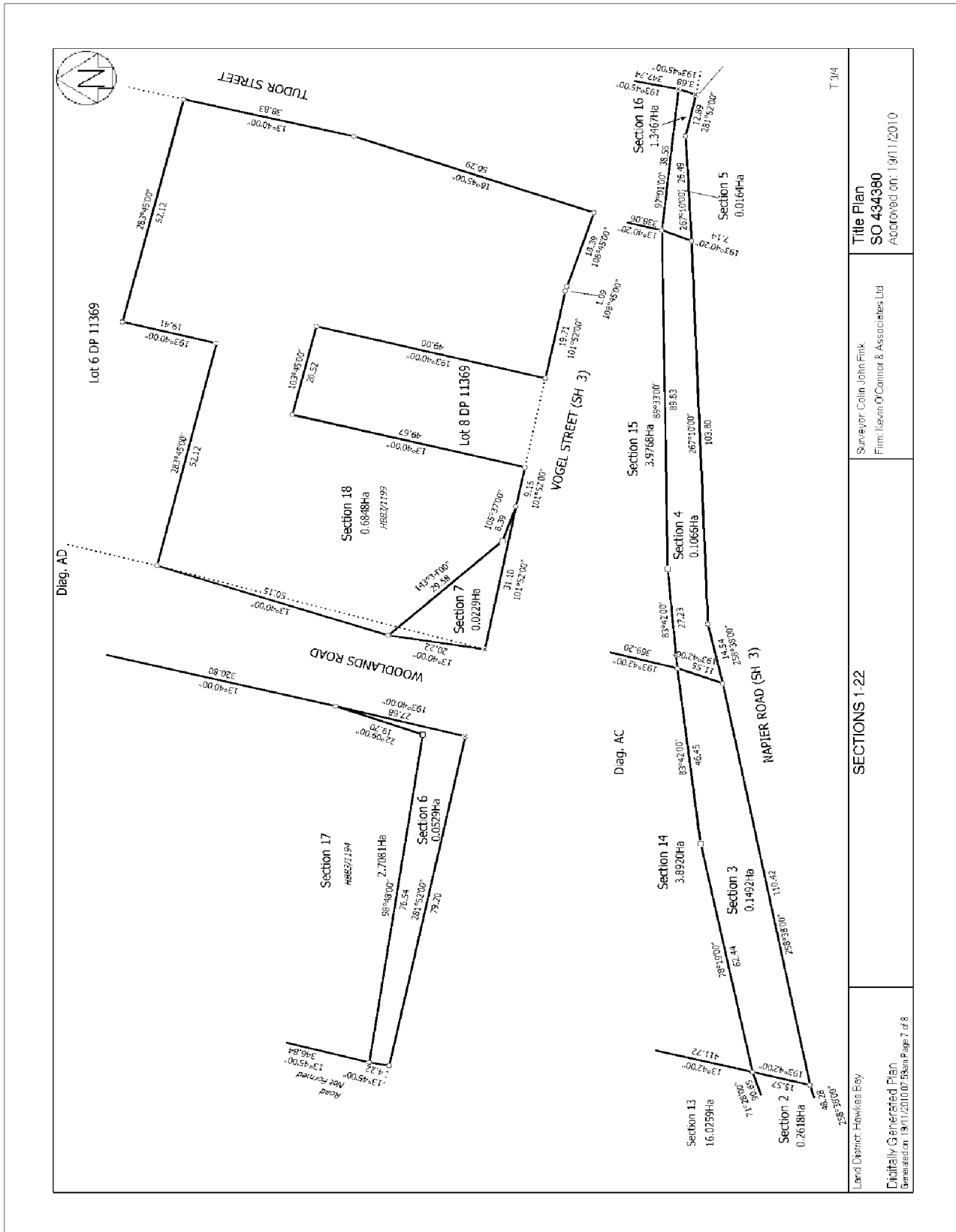
T 284

Title Plan
SO 434380
Approved on: 19/11/2010

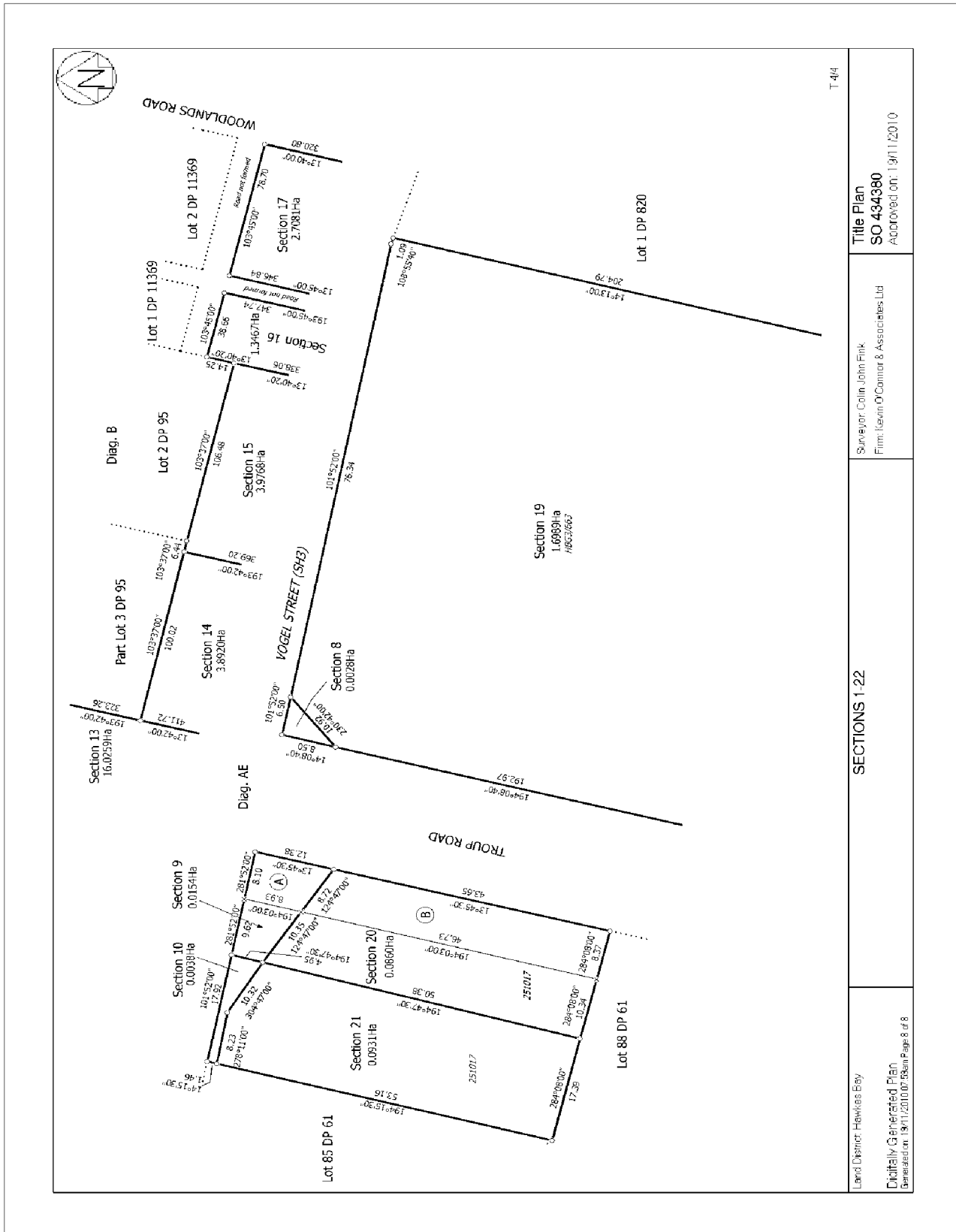
Surveyor: Colin John Fink
Firm: Nexin O'Connor & Associates Ltd

SECTIONS 1-22

Land District: Hawke's Bay
Digitally Generated Plan
Generated: 19/11/2010 07:09am Page 6 of 8

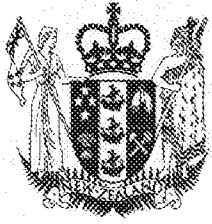


<p>Title Plan SO 434380 Approved on: 19/11/2010</p>	<p>Surveyor: Colin John Finik Firm: Kevin O'Connor & Associates Ltd</p>	<p>SECTIONS 1-22</p>	<p>Land District: Hawke's Bay Digitally Generated Plan Generated: 19/11/2010 07:09am Page 7 of 8</p>
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T. 44

<p>Land District: Hawke's Bay</p>	<p>Surveyor: Colin John Finik Firm: Kevin O'Connor & Associates Ltd</p>	<p>SECTIONS 1-22</p>	<p>Digitally Generated Plan Generated on: 19/11/2010 07:09am Page 8 of 8</p>
<p>Title Plan SO 434380 Approved on: 19/11/2010</p>			



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UNDER LAND TRANSFER ACT 2017
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R. W. Muir
Registrar-General
of Land

Identifier **556950**
Land Registration District **Hawkes Bay**
Date Issued 31 May 2011

Prior References

HBM3/1170

Estate Fee Simple
Area 16.0259 hectares more or less
Legal Description Section 13 Survey Office Plan 434380

Registered Owners

Andrew William Bolton and Diane Margaret Bolton

Interests

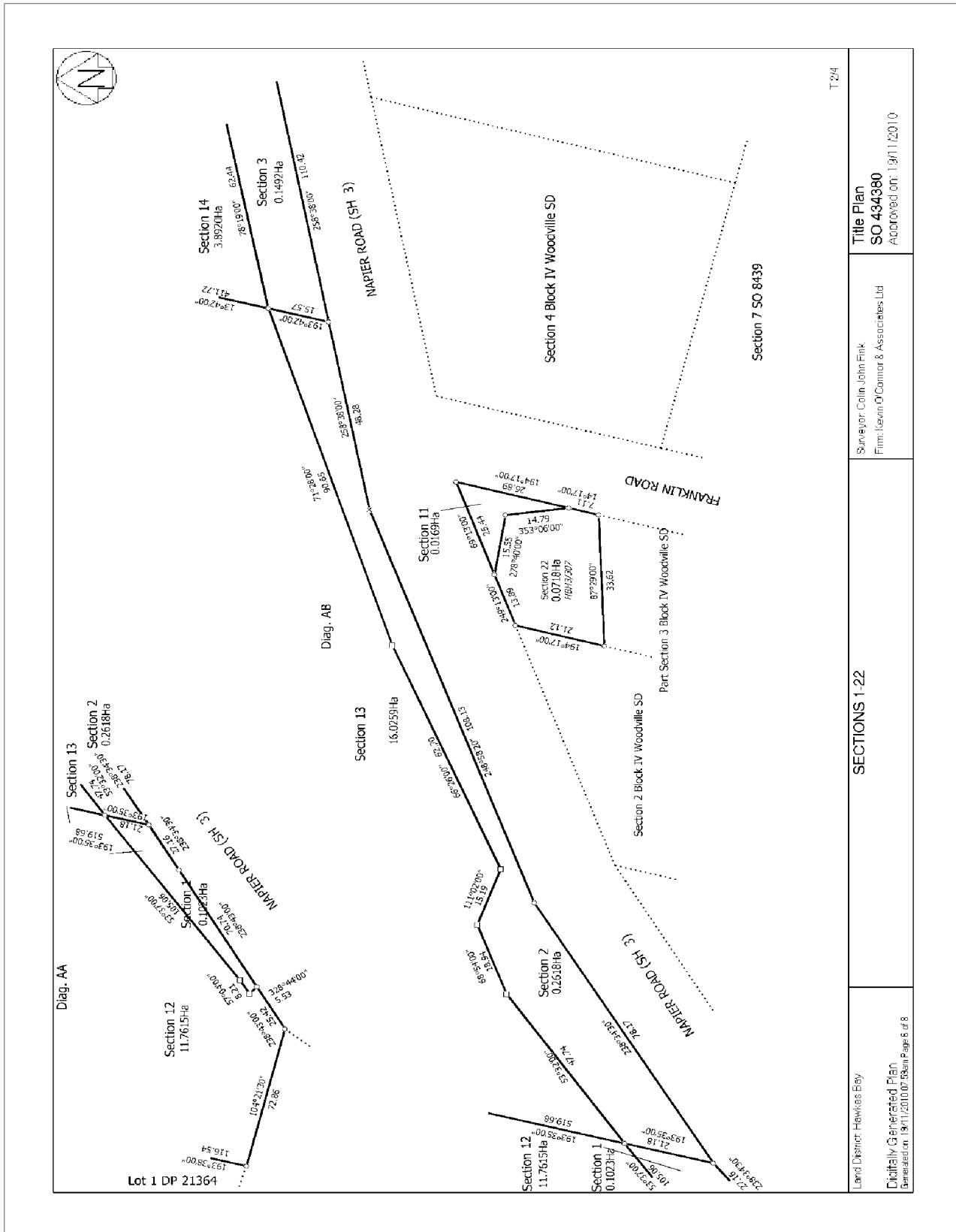
8059138.6 Mortgage to Bank of New Zealand - 2.7.2009 at 2:06 pm

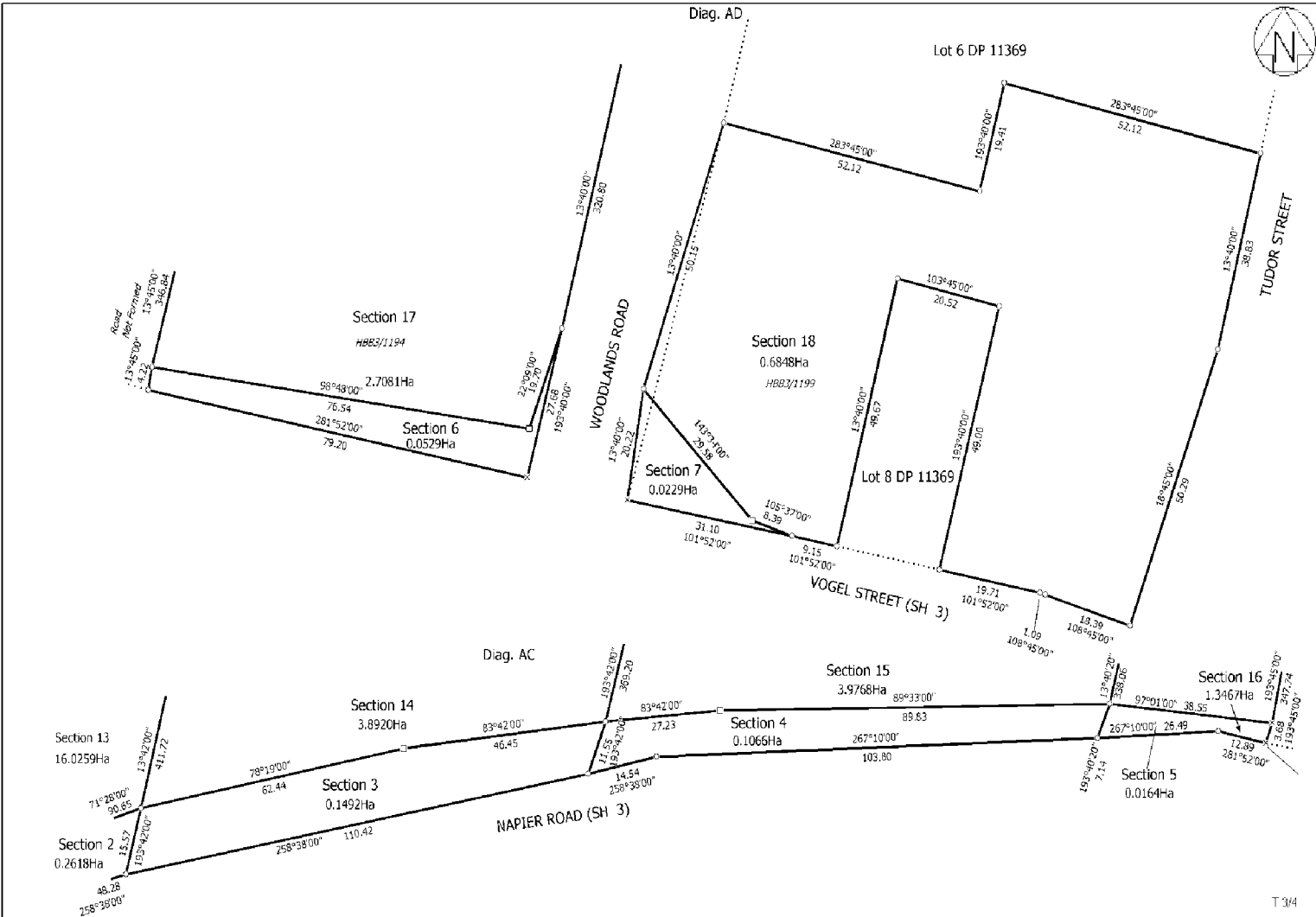
8059138.7 Mortgage to Diane Margaret Bolton and to Diane Margaret Bolton and Thomas Joseph Anthony Fouhy and to Diane Margaret Bolton and Thomas Joseph Anthony Fouhy in shares - 2.7.2009 at 2:06 pm

11286839.1 Compensation Certificate pursuant to Section 19 Public Works Act 1981 by Her Majesty the Queen - 15.11.2018 at 1:49 pm

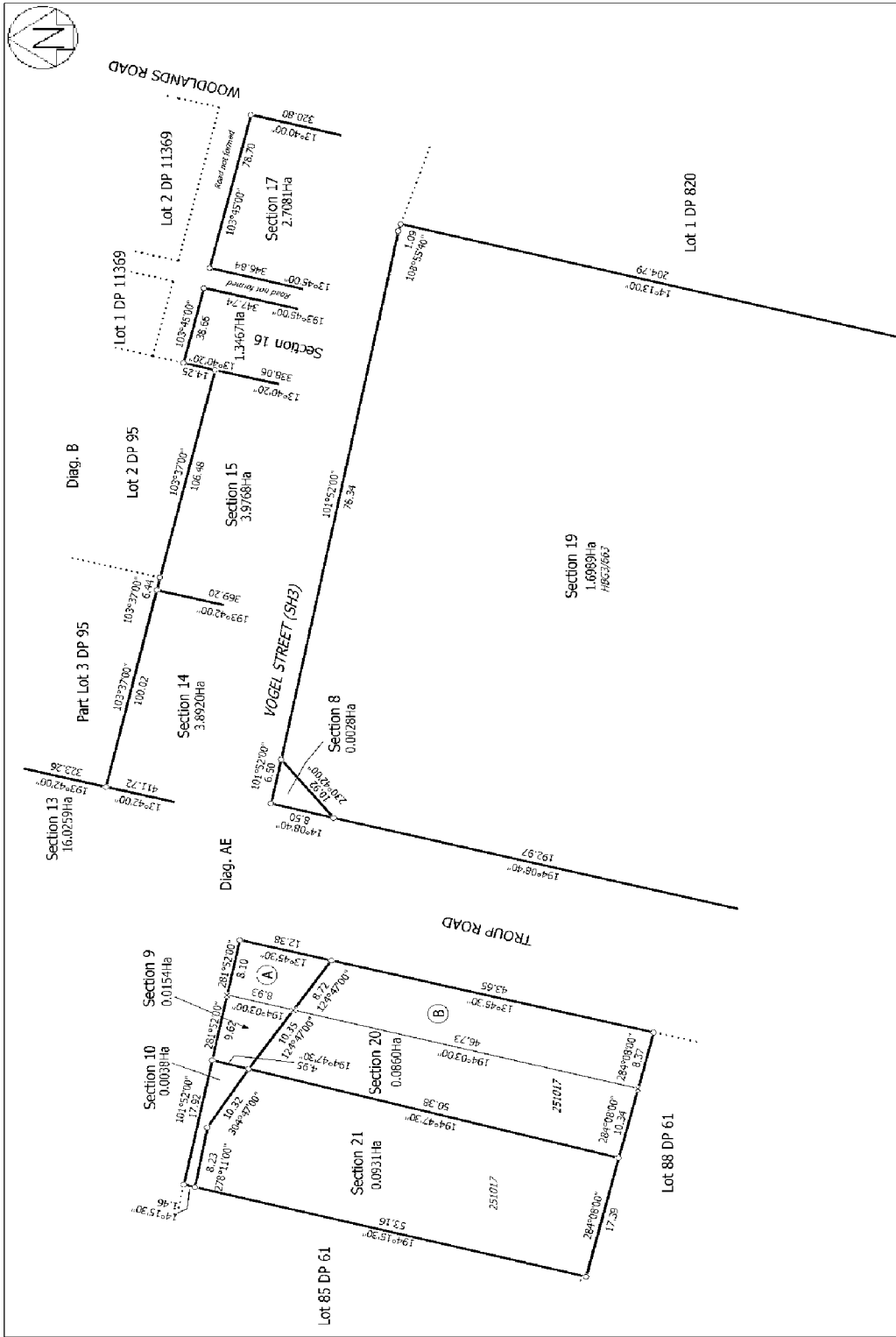
11529046.1 Notice pursuant to Section 18 Public Works Act 1981 - 26.8.2019 at 1:56 pm

11624092.1 Compensation Certificate pursuant to Section 19 Public Works Act 1981 by Her Majesty the Queen - 28.11.2019 at 3:36 pm





Land District: Hawkes Bay	SECTIONS 1-22	Surveyor: Colin John Fink	Title Plan SO 434380
Digitally Generated Plan Generated on: 19/11/2010 07:59am Page 7 of 8		Firm: Kevin O'Connor & Associates Ltd	Approved on: 19/11/2010



T. 44

Title Plan
SO 434380
 Approved on: 19/11/2010

Surveyor: Colin John Fink
 Firm: Kevin O'Connor & Associates Ltd

SECTIONS 1-22

Land District: Hawke's Bay
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UNDER LAND TRANSFER ACT 2017
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R. W. Muir
Registrar-General
of Land

Identifier **556949**
Land Registration District **Hawkes Bay**
Date Issued 31 May 2011

Prior References

HBM3/732

Estate Fee Simple
Area 11.7615 hectares more or less
Legal Description Section 12 Survey Office Plan 434380

Registered Owners

Andrew William Bolton and Diane Margaret Bolton

Interests

Subject to Section 59 Land Act 1948

1707 Proclamation defining the middle line of portion of the Napier-Palmerston North State Highway - 16.7.1937 at 9.30 am

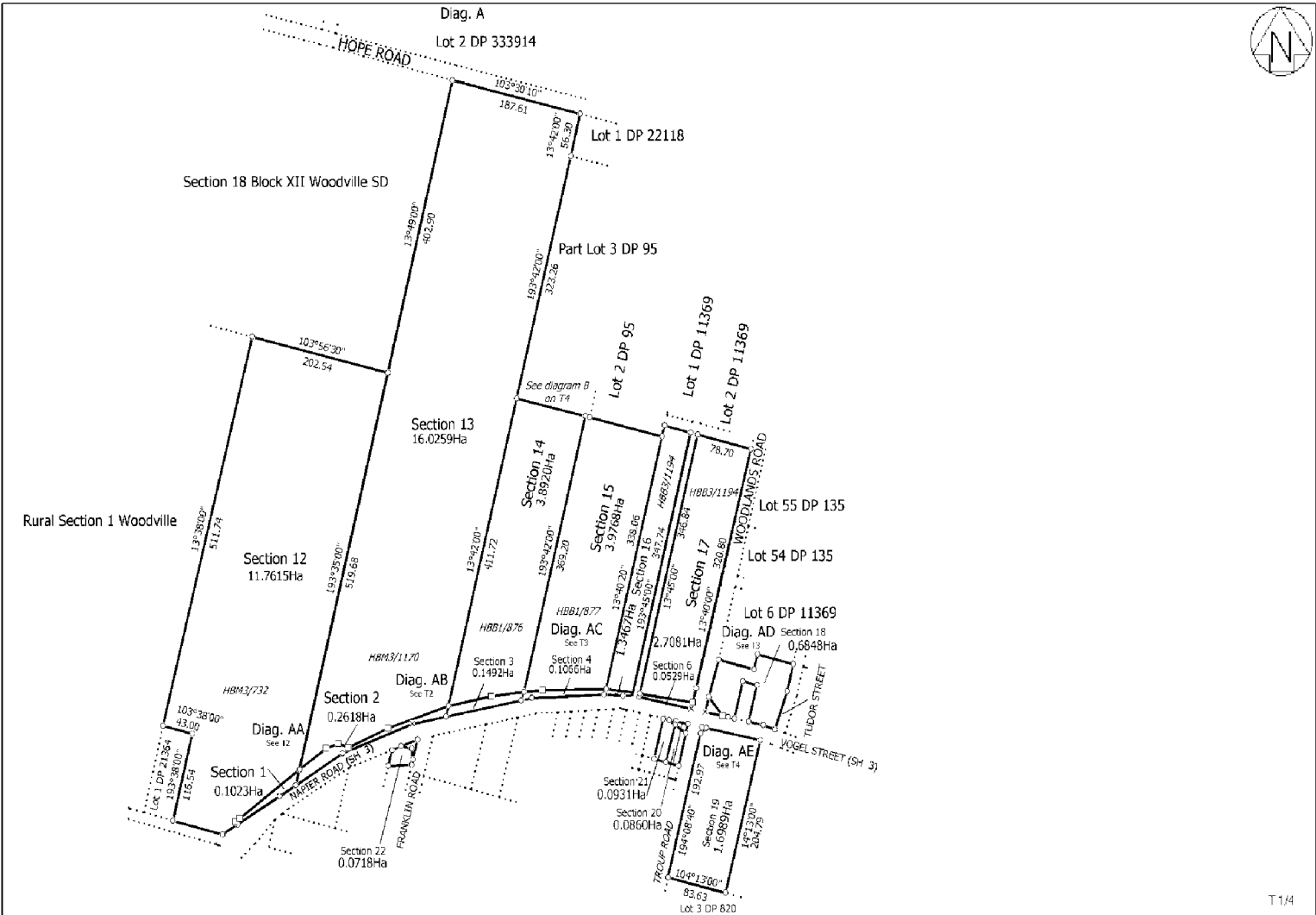
8059138.6 Mortgage to Bank of New Zealand - 2.7.2009 at 2:06 pm

8059138.7 Mortgage to Diane Margaret Bolton and to Diane Margaret Bolton and Thomas Joseph Anthony Fouhy and to Diane Margaret Bolton and Thomas Joseph Anthony Fouhy in shares - 2.7.2009 at 2:06 pm

11286839.1 Compensation Certificate pursuant to Section 19 Public Works Act 1981 by Her Majesty the Queen - 15.11.2018 at 1:49 pm

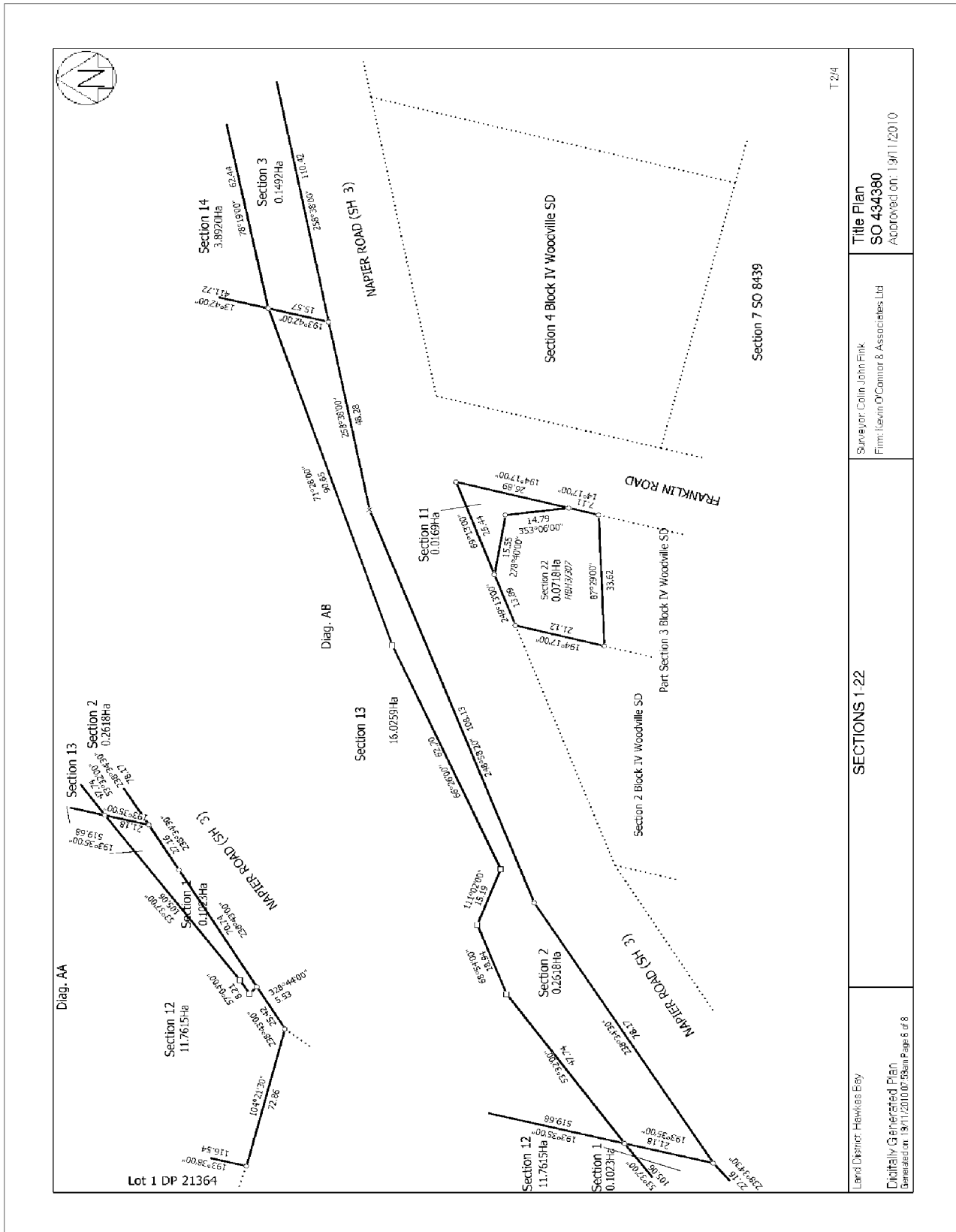
11529046.1 Notice pursuant to Section 18 Public Works Act 1981 - 26.8.2019 at 1:56 pm

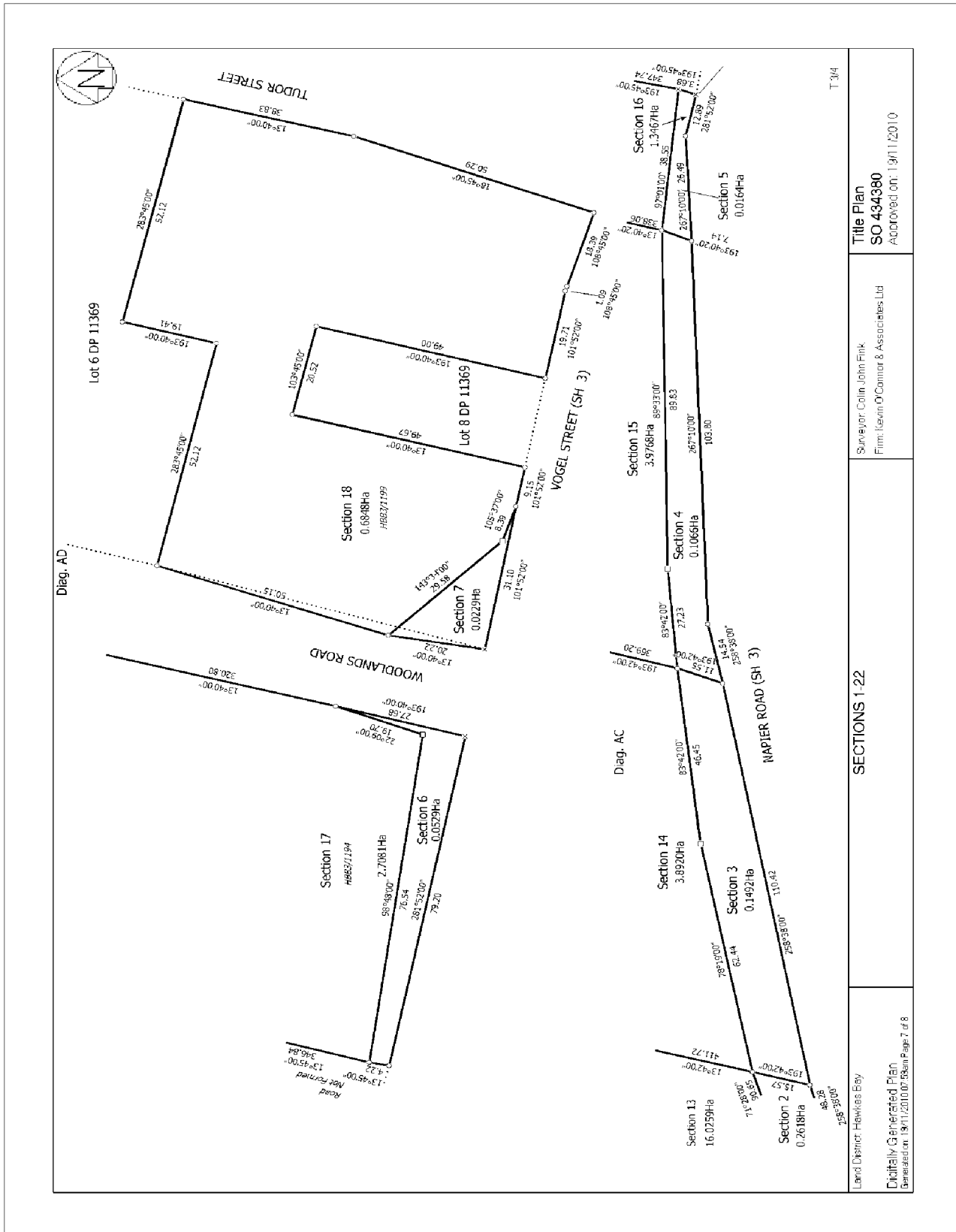
11624092.1 Compensation Certificate pursuant to Section 19 Public Works Act 1981 by Her Majesty the Queen - 28.11.2019 at 3:36 pm



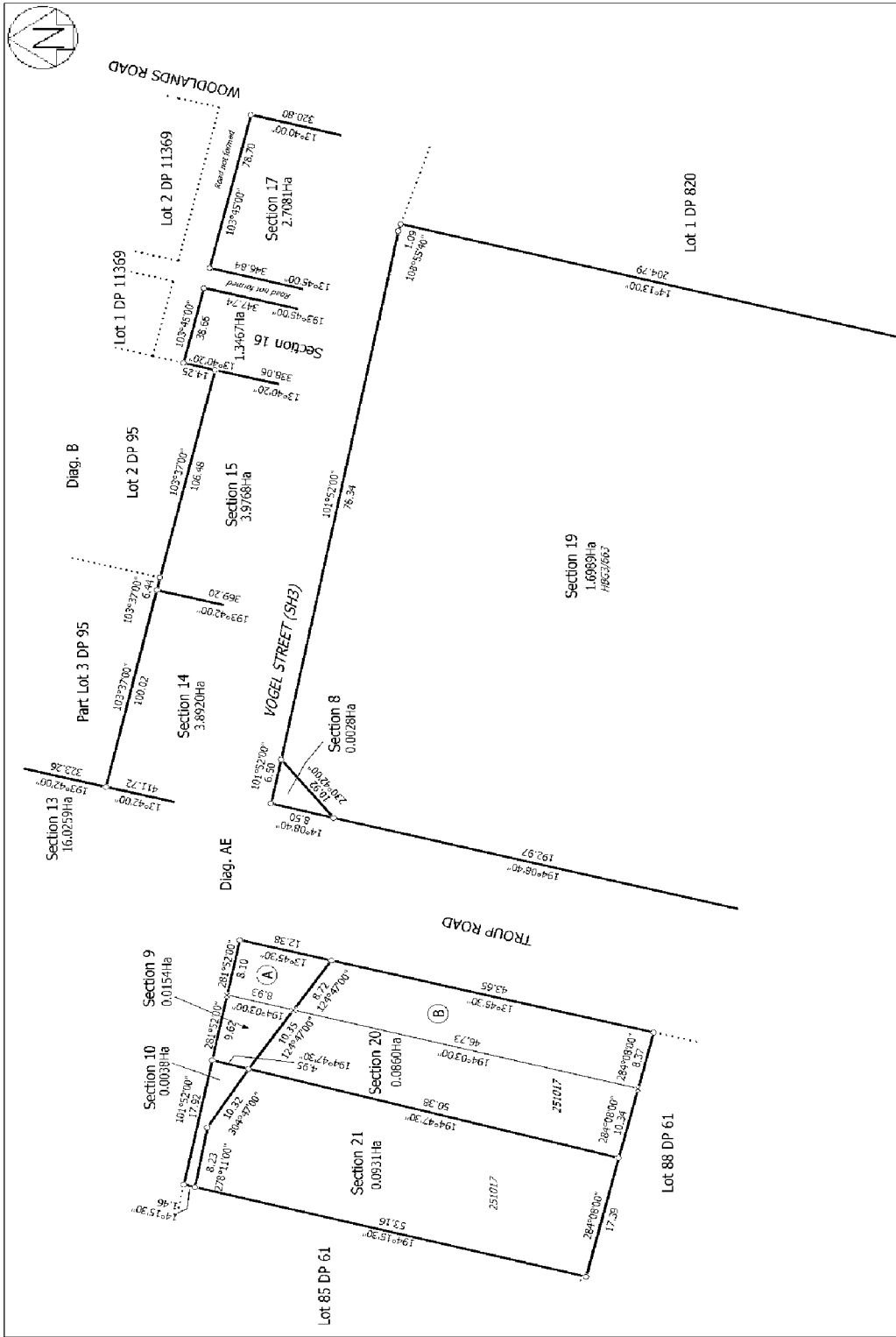
T 1/4

Land District: Hawkes Bay	SECTIONS 1-22	Surveyor: Colin John Fink Firm: Kevin O'Connor & Associates Ltd	Title Plan SO 434380
Digitally Generated Plan Generated on: 19/11/2010 07:59am Page 5 of 8			Approved on: 19/11/2010





<p>Title Plan SO 434380 Approved on: 19/11/2010</p>	<p>Surveyor: Colin John Fink Firm: Kevin O'Connor & Associates Ltd</p>	<p>SECTIONS 1-22</p>	<p>Land District: Hawke's Bay Digitally Generated Plan Generated: 19/11/2010 07:09am Page 7 of 8</p>
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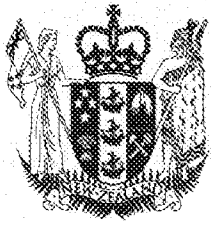
T. 44

Title Plan
SO 434380
 Approved on: 19/11/2010

Surveyor: Colin John Finik
 Firm: Kevin O'Connor & Associates Ltd

SECTIONS 1-22

Land District: Hawke's Bay
 Digitally Generated Plan
 Generated on: 19/11/2010 07:09am Page 8 of 8



**RECORD OF TITLE
UNDER LAND TRANSFER ACT 2017
FREEHOLD
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R. W. Muir
Registrar-General
of Land

Identifier **547419**
Land Registration District **Wellington**
Date Issued 18 May 2011

Prior References

522195

Estate	Fee Simple
Area	21.4215 hectares more or less
Legal Description	Section 439 Town of Fitzherbert and Lot 2 Deposited Plan 440506

Registered Owners

Shannon & Co Limited

Interests

Subject to Section 11 Crown Minerals Act 1991

Subject to Section 241(2) Resource Management Act 1991 (affects DP 440506)

9205531.1 Notice pursuant to Section 195(2) Climate Change Response Act 2002 - 19.10.2012 at 11:15 am (affects Lot 2 DP 440506)

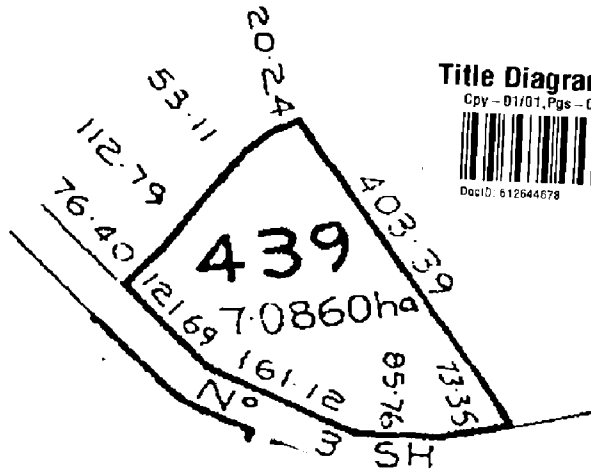
11281380.1 Compensation Certificate pursuant to Section 19 Public Works Act 1981 by Her Majesty the Queen - 9.11.2018 at 11:55 am

11528832.1 Notice pursuant to Section 18 Public Works Act 1981 - 26.8.2019 at 1:53 pm

11631584.1 Compensation Certificate pursuant to Section 19 Public Works Act 1981 by Her Majesty the Queen - 5.12.2019 at 2:22 pm

11659848.1 Compensation Certificate pursuant to Section 19 Public Works Act 1981 by Her Majesty the Queen - 16.1.2020 at 4:48 pm

Section 439 Town of Fitzherbert



Title Diagram 547419

Copy - 01/01, Pgs - 001, 30/05/11, 10:29



DocID: 612644678

Total Area : 7.0860 ha



**RECORD OF TITLE
UNDER LAND TRANSFER ACT 2017
FREEHOLD
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R. W. Muir
Registrar-General
of Land

Identifier **153849**
Land Registration District **Hawkes Bay**
Date Issued 13 December 2004

Prior References

193845

Estate Fee Simple
Area 130.5024 hectares more or less
Legal Description Lot 1 Deposited Plan 337483

Registered Owners

Meridian Energy Limited

Interests

Subject to a right of way for vehicles and stock over part marked A and B on DP 337490 created by Easement Instrument 6248862.3 - 13.12.2004 at 9:00 am

Subject to a windpower development and generation right (in gross) over the within land in favour of (now) Mel (Te Apiti) Limited created by Easement Instrument 6363556.1 - 31.3.2005 at 9:00 am

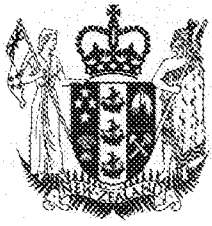
6436318.2 Encumbrance of Easement Instrument 6363556.1 to Victor Mark Smith - 26.5.2005 at 9:00 am

11128125.1 Compensation Certificate pursuant to Section 19 Public Works Act 1981 by Her Majesty the Queen - 25.5.2018 at 12:51 pm

11302294.1 Compensation Certificate pursuant to Section 19 Public Works Act 1981 by Her Majesty the Queen - 30.11.2018 at 7:06 am

11528976.1 Notice pursuant to Section 18 Public Works Act 1981 - 26.8.2019 at 1:54 pm

11624788.1 Compensation Certificate pursuant to Section 19 Public Works Act 1981 by Her Majesty the Queen - 29.11.2019 at 2:33 pm



**RECORD OF TITLE
UNDER LAND TRANSFER ACT 2017
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R. W. Muir
Registrar-General
of Land

Identifier 33896
Land Registration District Hawkes Bay
Date Issued 21 August 2002

Prior References

HBH4/627

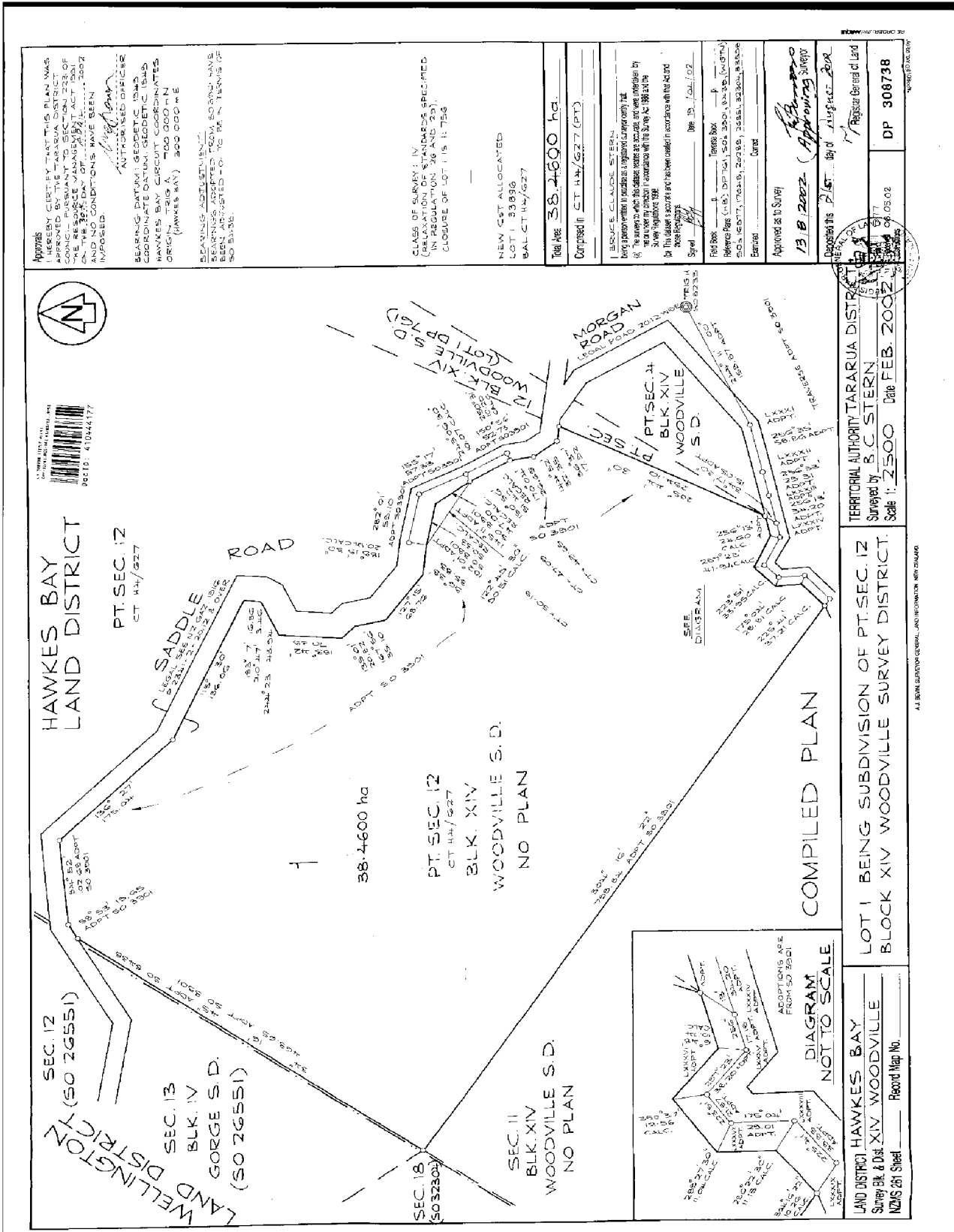
Estate Fee Simple
Area 38.4600 hectares more or less
Legal Description Lot 1 Deposited Plan 308738

Registered Owners

Meridian Energy Limited

Interests

415442.1 Proclamation defining the middle line of part of the Hawke's Bay Pipeline - 17.12.1982 at 10.45 am
435573.1 Pipeline Certificate pursuant to Section 71 of the Petroleum Act 1937 - 15.6.1984 at 11.30 am
Subject to a windpower development and generation right (in gross) over the within land in favour of (now) Mel (Te Apiti) Limited created by Easement Instrument 6363556.1 - 31.3.2005 at 9:00 am
6436318.2 Encumbrance of Easement Instrument 6363556.1 to Victor Mark Smith - 26.5.2005 at 9:00 am
11218233.1 Compensation Certificate pursuant to Section 19 Public Works Act 1981 by Tararua District Council - 11.9.2018 at 8:09 am
11302294.1 Compensation Certificate pursuant to Section 19 Public Works Act 1981 by Her Majesty the Queen - 30.11.2018 at 7:06 am
11528976.1 Notice pursuant to Section 18 Public Works Act 1981 - 26.8.2019 at 1:54 pm
11624788.1 Compensation Certificate pursuant to Section 19 Public Works Act 1981 by Her Majesty the Queen - 29.11.2019 at 2:33 pm



Approvals
 I HEREBY CERTIFY THAT THIS PLAN WAS APPROVED BY THE TARARUA DISTRICT COUNCIL IN ACCORDANCE WITH SECTION 223 OF THE RESOURCE MANAGEMENT ACT 1991 ON THE 28th DAY OF FEBRUARY 2002 AND NO CONDITIONS HAVE BEEN IMPOSED.

[Signature]
 AUTHORIZED OFFICER

SEARNS PARTIAL GEODETIC 1994
 COORDINATE DATUM GEODETIC 1949
 HAWKES BAY CIRCUIT COORDINATES
 ORIGIN TRIG A 700 000 m N
 (HAWKES BAY) 300 000 m E

SEARNS ADJUSTMENT
 SEARNS ADJUSTED TO 2001 SO THAT HAVE BEEN ADJUSTED TO THE M.A.N. TERMS OF SO 26551.

CLASS OF SURVEY: IV UNLESS SPECIFIED
 (RELAXATION OF 5% AND 25%)
 CLOSURE OF LOT 1 IS 1:754

NEW GST ALLOCATED
 LOT 1 33896
 BAL CT 44/527

Total Area 38.4600 ha.
 Computed in CT 44/527 (PT)

EDUICE CLAUDE STERN
 Being a person who is a registered surveyor, I hereby certify that this plan was prepared in accordance with the Survey Act 1988 and the Survey Regulations 1988.
 I, the surveyor, have been called in accordance with the Act and have been called in accordance with the Act and have been called in accordance with the Act.

Scale 1:2500 Date FEB. 2002

Approved as to Survey
 13.10.2002 (Approving Surveyor)

Witnesses: P. St. ... Day of August 2002

Register Office of Land
 DP 308738
 05.02

SEARNS PARTIAL GEODETIC 1994
 COORDINATE DATUM GEODETIC 1949
 HAWKES BAY CIRCUIT COORDINATES
 ORIGIN TRIG A 700 000 m N
 (HAWKES BAY) 300 000 m E

SEARNS ADJUSTMENT
 SEARNS ADJUSTED TO 2001 SO THAT HAVE BEEN ADJUSTED TO THE M.A.N. TERMS OF SO 26551.

CLASS OF SURVEY: IV UNLESS SPECIFIED
 (RELAXATION OF 5% AND 25%)
 CLOSURE OF LOT 1 IS 1:754

NEW GST ALLOCATED
 LOT 1 33896
 BAL CT 44/527

Total Area 38.4600 ha.
 Computed in CT 44/527 (PT)

EDUICE CLAUDE STERN
 Being a person who is a registered surveyor, I hereby certify that this plan was prepared in accordance with the Survey Act 1988 and the Survey Regulations 1988.
 I, the surveyor, have been called in accordance with the Act and have been called in accordance with the Act.

Scale 1:2500 Date FEB. 2002

Approved as to Survey
 13.10.2002 (Approving Surveyor)

Witnesses: P. St. ... Day of August 2002

Register Office of Land
 DP 308738
 05.02



**RECORD OF TITLE
UNDER LAND TRANSFER ACT 2017
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R. W. Muir
Registrar-General
of Land

Identifier **HBP4/498**
Land Registration District **Hawkes Bay**
Date Issued 05 March 1993

Prior References

GN 312613.1

Estate	Fee Simple
Area	4.7082 hectares more or less
Legal Description	Section 26 and Section 28 Survey Office Plan 6251, Section 38 Survey Office Plan 6313, Section 30 Survey Office Plan 1944 and Section 34-35 Survey Office Plan 1945

Registered Owners

AgResearch Limited

Interests

Subject to Section 8 Atomic Energy Act 1945

Subject to Section 3 Geothermal Energy Act 1953

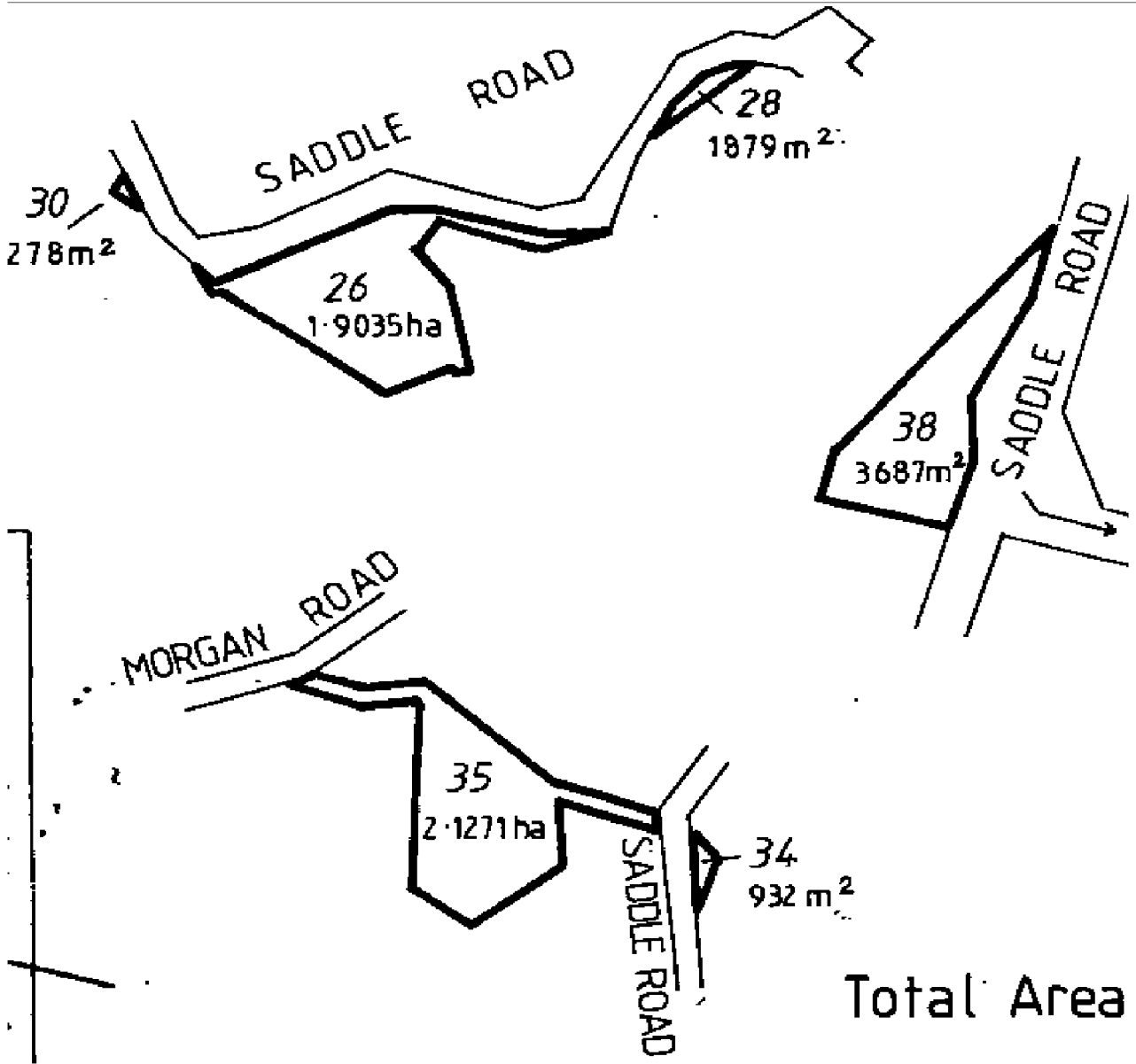
Subject to Part IV A Conservation Act 1987

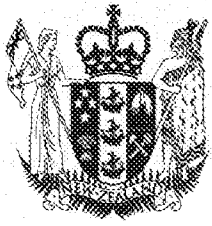
Subject to Section 11 Crown Minerals Act 1991

586488.5 CAVEAT BY HER MAJESTY THE QUEEN PURSUANT TO SECTION 31(1) OF THE CROWN RESEARCH INSTITUTES ACT 1992 - 5.3.1993 AT 11.25 AM

Subject to a right (in gross) to an electricity transmission easement over part marked J on DP 349736 in favour of Meridian Energy Limited created by Easement Instrument 7496163.1 - 9.8.2007 at 9:00 am

11528998.1 Notice pursuant to Section 18 Public Works Act 1981 - 26.8.2019 at 1:55 pm (affects Section 35 Survey office Plan 1945)





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R. W. Muir
Registrar-General
of Land

Identifier **HBD4/1160**
Land Registration District **Hawkes Bay**
Date Issued 18 October 1971

Prior References

HB74/249

Estate	Fee Simple
Area	80.9371 hectares more or less
Legal Description	Section 7-8 Block XIV Woodville Survey District

Registered Owners

Murray Alexander Pringle as Executor

Interests

Appurtenant hereto is a right of way for vehicles and stock created by Easement Instrument 6248862.3 - 13.12.2004 at 9:00 am

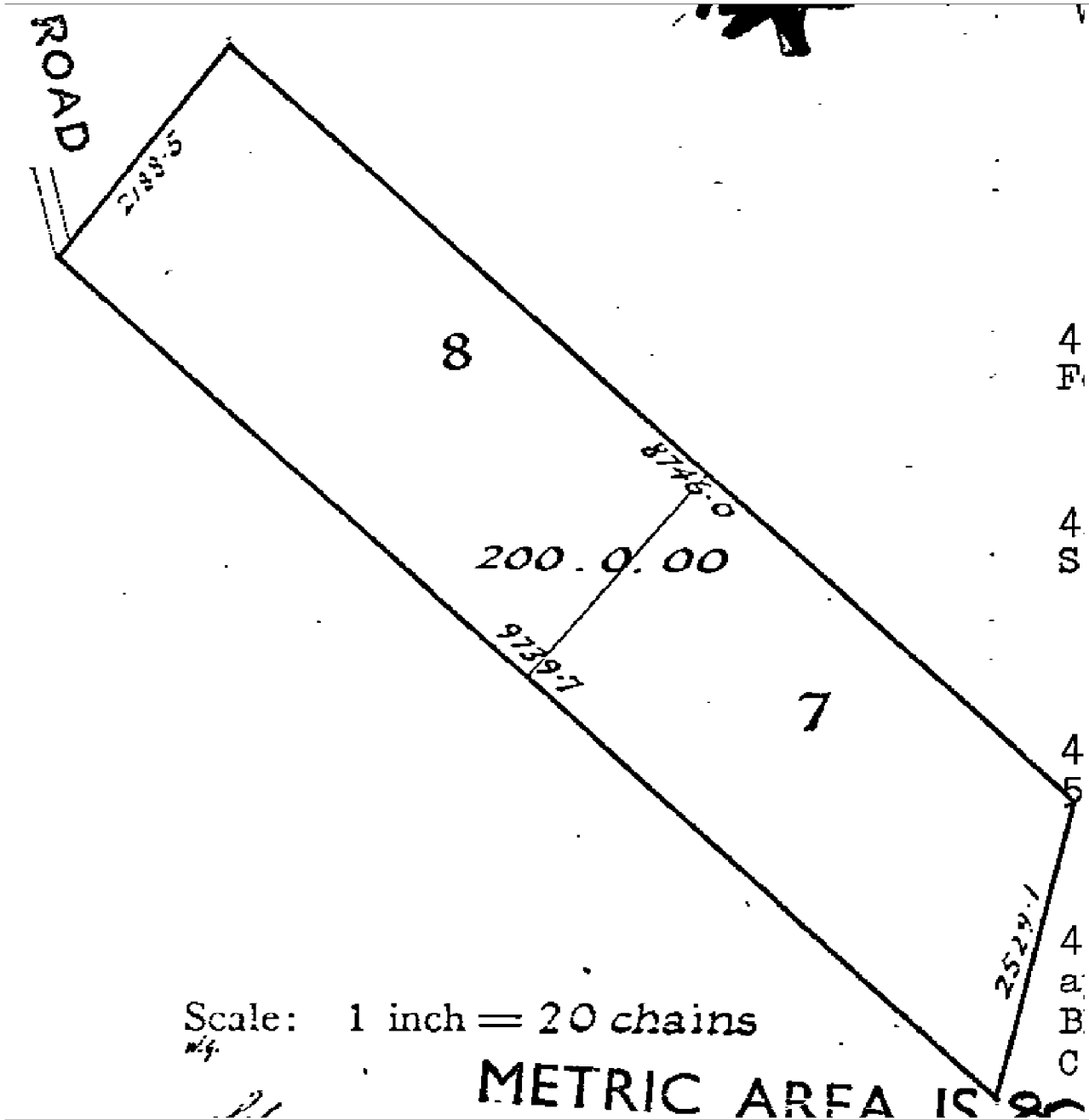
8887830.1 Notice pursuant to Section 195(2) Climate Change Response Act 2002 - - 13.10.2011 at 9:48 am (affects Section 8 Block XIV Woodville SD)

11024801.1 Compensation Certificate pursuant to Section 19 Public Works Act 1981 by Her Majesty the Queen - 9.2.2018 at 9:47 am

11302713.1 Compensation Certificate pursuant to Section 19 Public Works Act 1981 by Her Majesty the Queen - 30.11.2018 at 11:15 am

11529009.1 Notice pursuant to Section 18 Public Works Act 1981 - 26.8.2019 at 1:56 pm

11638995.1 Compensation Certificate pursuant to Section 19 Public Works Act 1981 by Her Majesty the Queen - 11.12.2019 at 1:46 pm



Scale: 1 inch = 20 chains

METRIC AREA IS 90



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R. W. Muir
Registrar-General
of Land

Identifier **HBB3/779**
Land Registration District **Hawkes Bay**
Date Issued 11 May 1966

Prior References

HB124/119

Estate	Fee Simple
Area	2.2923 hectares more or less
Legal Description	Part Section 4, 12 Block XIV Woodville Survey District

Registered Owners

Tararua District Council

Interests

6606405.1 Certificate pursuant to Section 348 Local Government Act 1974 - 12.10.2005 at 9:00 am

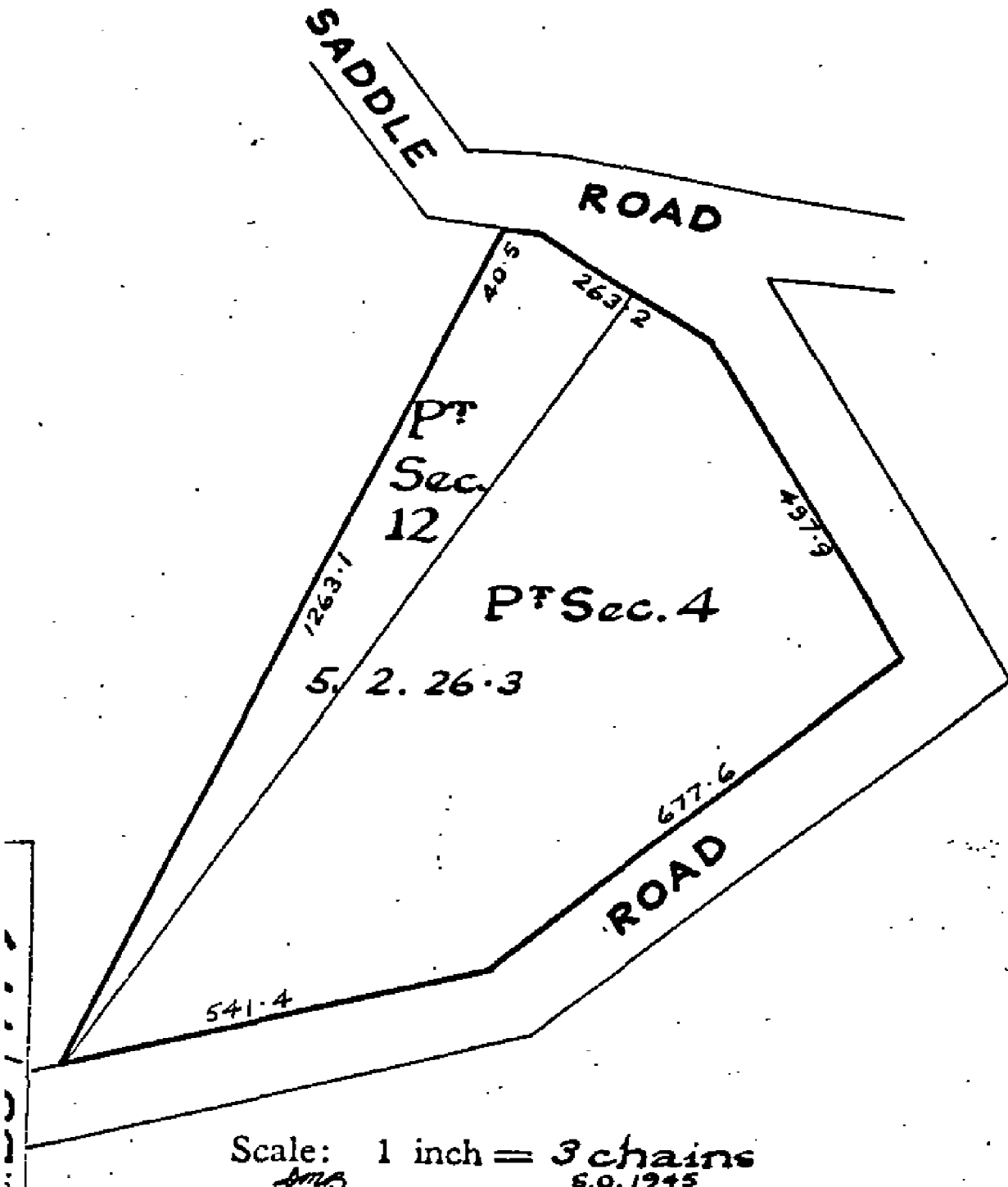
Subject to a electricity transmission in gross over parts marked A & B on DP 349736 , airspace area in gross over part marked A and a right of way in gross over part marked B on DP 347498 in favour of (now) Mel (Te Apiti) Limited created by Easement Instrument 6606405.2 - 12.10.2005 at 9:00 am

11400793.1 Compensation Certificate pursuant to Section 19 Public Works Act 1981 by Her Majesty the Queen - 29.3.2019 at 2:08 pm

11528984.1 Notice pursuant to Section 18 Public Works Act 1981 - 26.8.2019 at 1:55 pm

11567338.1 Compensation Certificate pursuant to Section 19 Public Works Act 1981 by Her Majesty the Queen - 2.10.2019 at 11:41 am

11567338.2 Compensation Certificate pursuant to Section 19 Public Works Act 1981 by Her Majesty the Queen - 2.10.2019 at 11:41 am





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R. W. Muir
Registrar-General
of Land

Identifier **HBB3/780**
Land Registration District **Hawkes Bay**
Date Issued 11 May 1966

Prior References

HB124/119

Estate	Fee Simple
Area	95.6199 hectares more or less
Legal Description	Part Section 4, 12 Block XIV Woodville Survey District

Registered Owners

AgResearch Limited

Interests

Subject to Section 8 Atomic Energy Act 1945

Subject to Section 3 Geothermal Energy Act 1953

Subject to Part IV A Conservation Act 1987

Subject to Section 11 Crown Minerals Act 1991

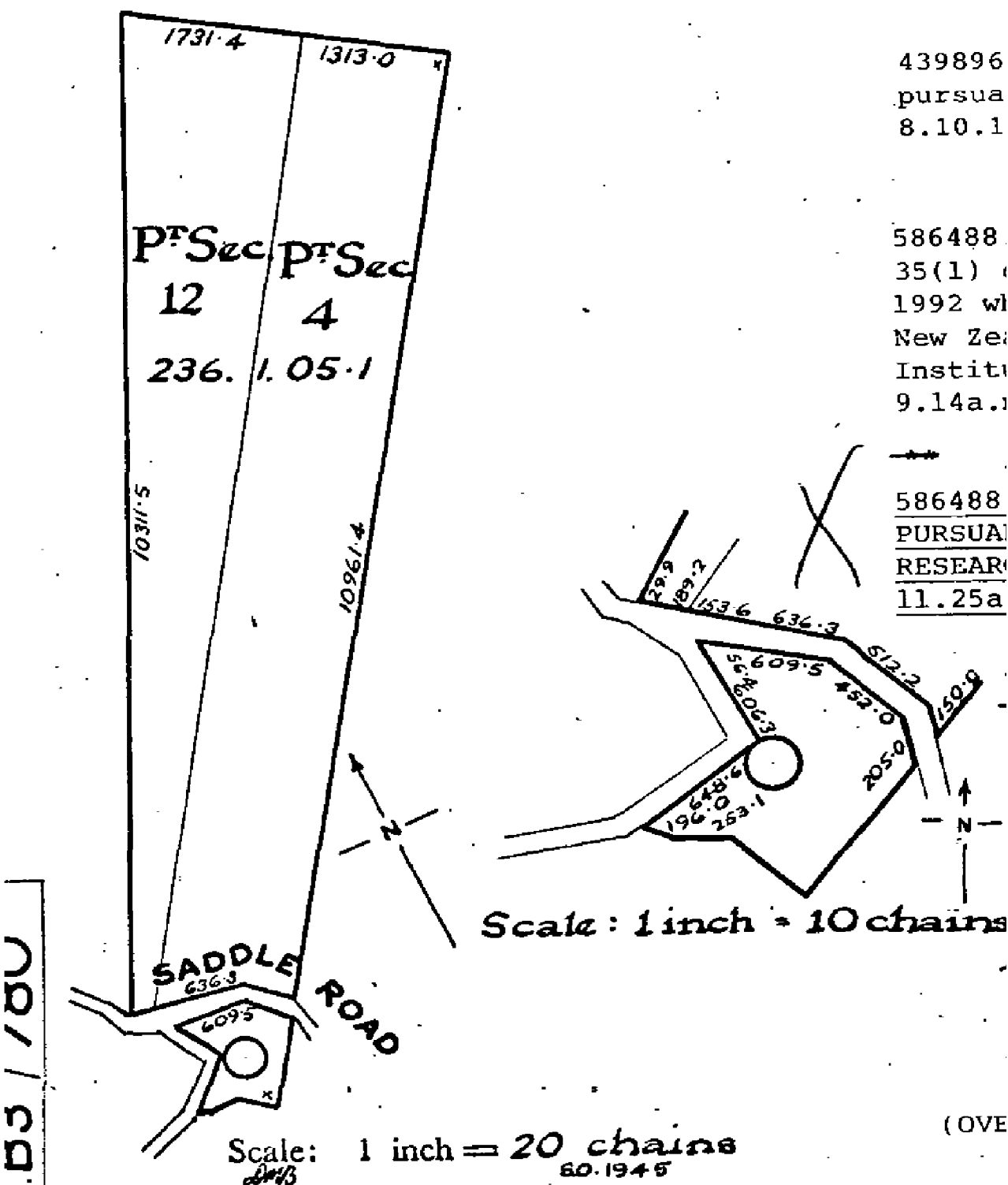
415442.1 Proclamation defining the middle line of part of the Hawke's Bay Pipeline - 17.12.1982 at 10.45 am

439896.1 Pipeline Certificate pursuant to Section 71 of the Petroleum Act 1937 - 8.10.1984 at 11.25 am

586488.5 CAVEAT BY HER MAJESTY THE QUEEN - 5.3.1993 AT 11.25 AM (PURSUANT TO SECTION 31(1) OF THE CROWN RESEARCH INSTITUTES ACT 1992)

Subject to a right (in gross) to an electricity transmission easement over parts marked C and F on DP 349736 in favour of Meridian Energy Limited created by Easement Instrument 7496163.1 - 9.8.2007 at 9:00 am

11528998.1 Notice pursuant to Section 18 Public Works Act 1981 - 26.8.2019 at 1:55 pm (affects Section 4 Block XIV Woodville Survey District)



03 / 100



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R. W. Muir
Registrar-General
of Land

Identifier **HBC3/290**
Land Registration District **Hawkes Bay**
Date Issued 27 May 1968

Prior References

HB114/251

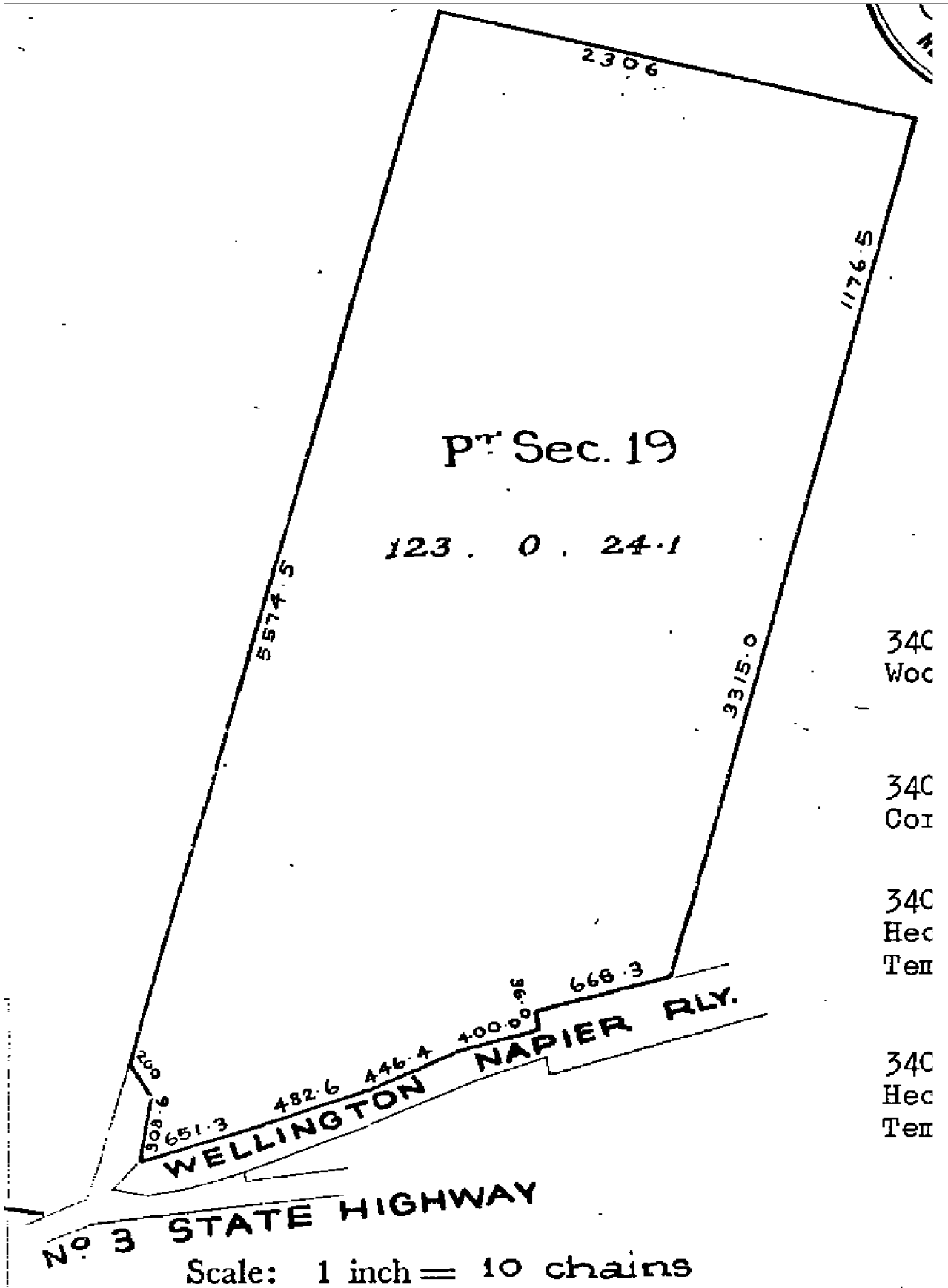
Estate	Fee Simple
Area	49.8373 hectares more or less
Legal Description	Part Section 19 Woodville Special Settlement

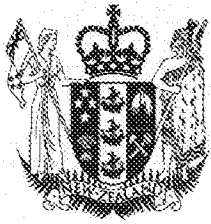
Registered Owners

Andrew William Bolton and Diane Margaret Bolton

Interests

1707 Proclamation defining the middle-line of portion of the No 30 Napier-Palmerston North State Highway
8059138.6 Mortgage to Bank of New Zealand - 2.7.2009 at 2:06 pm
8059138.7 Mortgage to Diane Margaret Bolton and to Diane Margaret Bolton and Thomas Joseph Anthony Fouhy and to Diane Margaret Bolton and Thomas Joseph Anthony Fouhy in shares - 2.7.2009 at 2:06 pm
8902430.1 Notice pursuant to Section 195(2) Climate Change Response Act 2002 - - 31.10.2011 at 4:47 pm
11286839.1 Compensation Certificate pursuant to Section 19 Public Works Act 1981 by Her Majesty the Queen - 15.11.2018 at 1:49 pm
11529046.1 Notice pursuant to Section 18 Public Works Act 1981 - 26.8.2019 at 1:56 pm
11624092.1 Compensation Certificate pursuant to Section 19 Public Works Act 1981 by Her Majesty the Queen - 28.11.2019 at 3:36 pm





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R. W. Muir
Registrar-General
of Land

Identifier **HBB3/50**
Land Registration District **Hawkes Bay**
Date Issued 22 November 1965

Prior References

HB129/151	HB39/101	HB51/8
HB65/86	HBA4/177	HBA4/179
HBA4/181	HBA4/182	

Estate	Fee Simple
Area	2.3118 hectares more or less
Legal Description	Lot 69-76, Lot 81-84 and Lot 90-100 Deposited Plan 61

Registered Owners

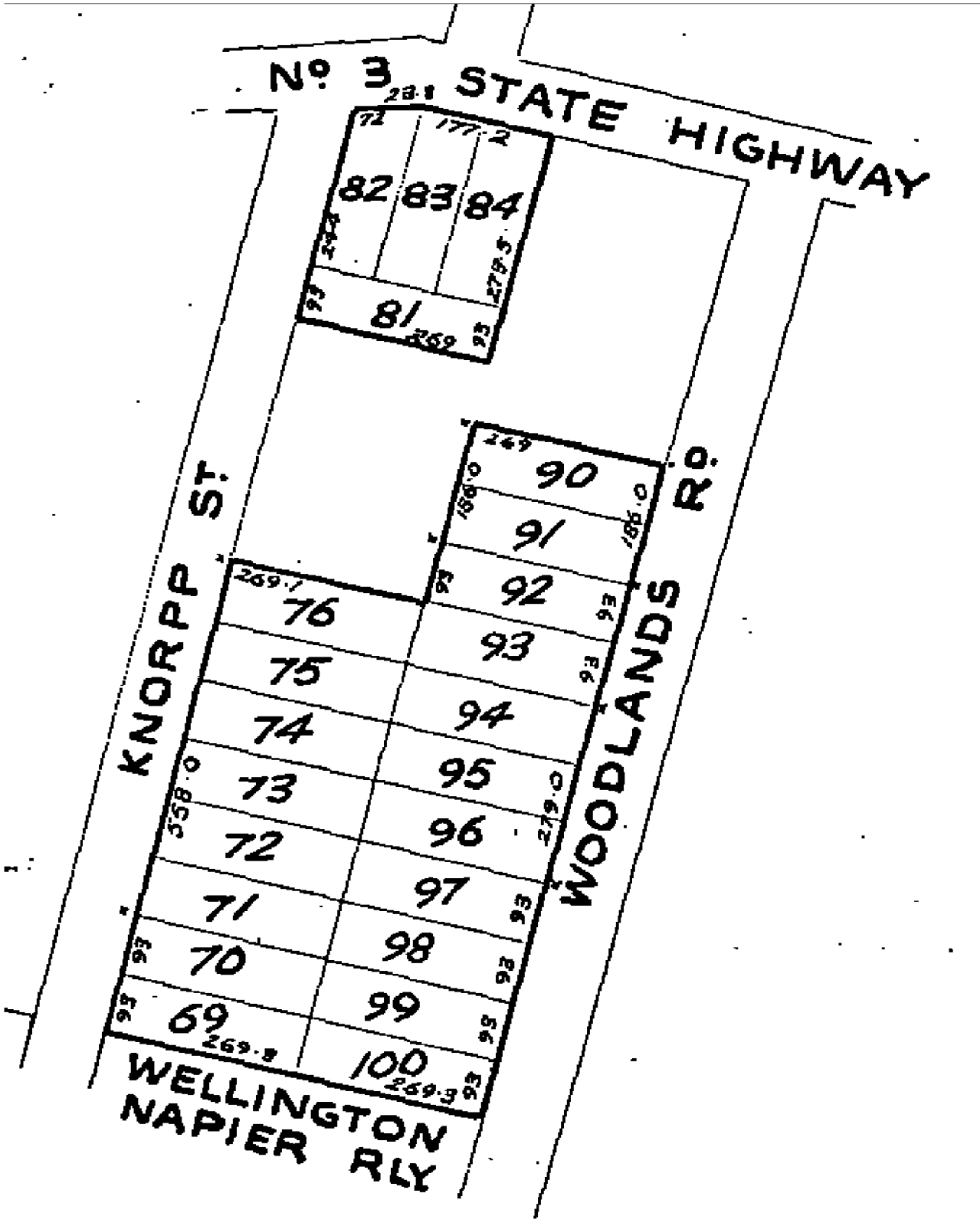
Oasis Base Spaces Limited

Interests

This is an Interim Certificate of Title but has by Effluxion of time become "Conclusive" as defined by Section 2 of the Land Transfer (Hawke's Bay) Act 1931 as to all matters except the description and delineation of the land 6961416.2 COVENANT UNDER SECTION 240 RESOURCE MANAGEMENT ACT 1991 (ALSO AFFECTS 251017) - 25.7.2006 at 9:00 am

Subject to a right (in gross) to convey electricity and telecommunications over Lot 90 DP 61 over part marked D on DP 423742 and over Lot 91 DP 61 over part marked E on DP 423742 and over Lot 92 DP 61 over part marked F on DP 423742 and over Lot 93 DP 61 over part marked G on DP 423742 and over Lot 94 DP 61 over part marked H on DP 423742 and over Lot 95 DP 61 over part marked I on DP 423742 and over Lot 96 DP 61 over part marked J on DP 423742 and over Lot 97 DP 61 over part marked K on DP 423742 and over Lot 98 DP 61 over part marked L on DP 423742 and over Lot 99 DP 61 over part marked M on DP 423742 and over Lot 100 DP 61 over part marked N on DP 423742 in favour of Transpower New Zealand Limited created by Easement Instrument 8427758.1 - 26.2.2010 at 12:37 pm

11457111.1 Compensation Certificate pursuant to Section 19 Public Works Act 1981 by Her Majesty the Queen - 5.6.2019 at 7:00 am





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R. W. Muir
Registrar-General
of Land

Identifier **HBA2/1069**
Land Registration District **Hawkes Bay**
Date Issued 19 June 1963

Prior References

HB7/287

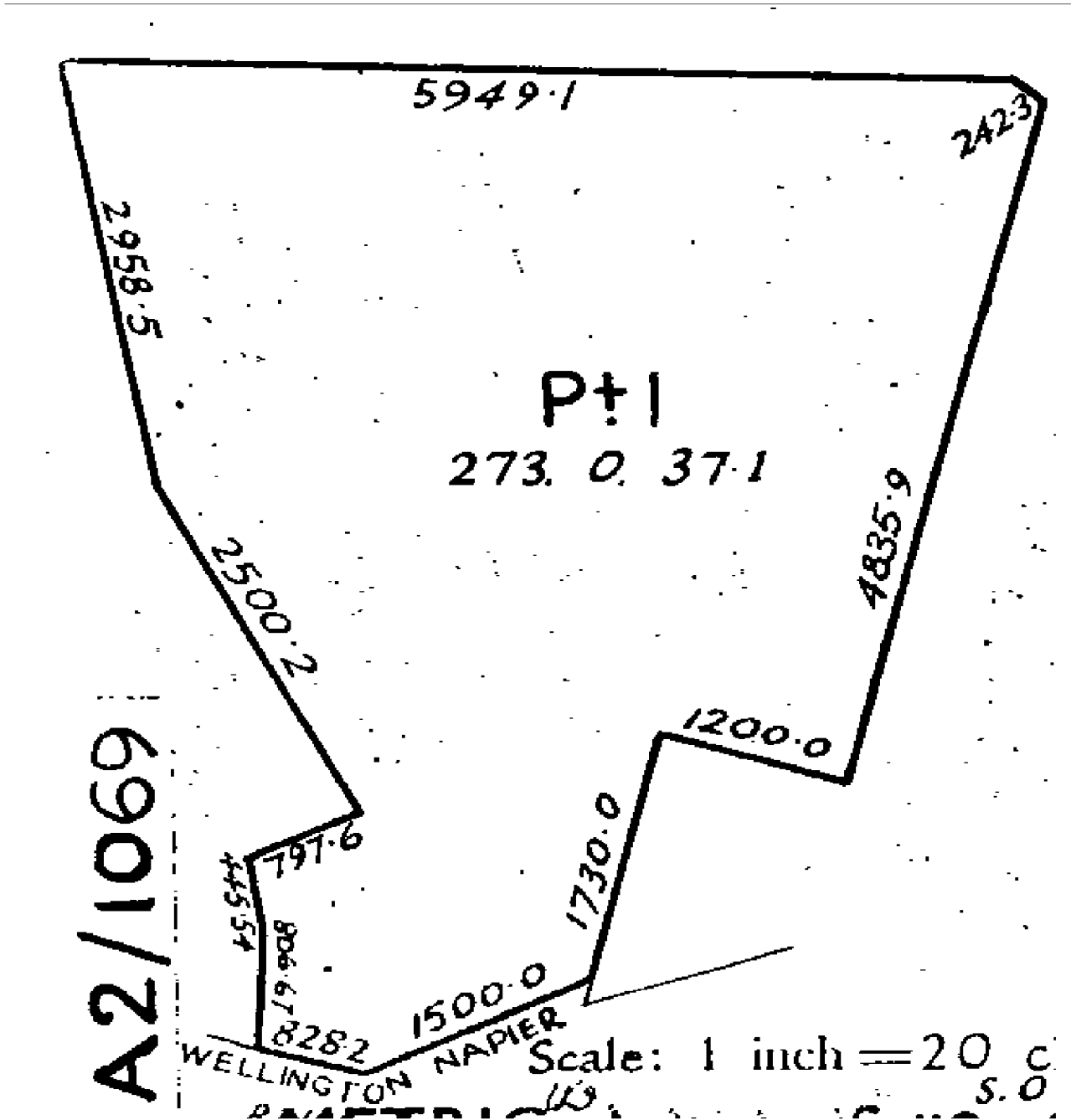
Estate	Fee Simple
Area	110.5730 hectares more or less
Legal Description	Part Section 1 Block XIV Woodville Survey District

Registered Owners

Andrew William Bolton and Diane Margaret Bolton

Interests

8059138.6 Mortgage to Bank of New Zealand - 2.7.2009 at 2:06 pm
8059138.7 Mortgage to Diane Margaret Bolton and to Diane Margaret Bolton and Thomas Joseph Anthony Fouhy and to Diane Margaret Bolton and Thomas Joseph Anthony Fouhy in shares - 2.7.2009 at 2:06 pm
8902430.1 Notice pursuant to Section 195(2) Climate Change Response Act 2002 - - 31.10.2011 at 4:47 pm
11286839.1 Compensation Certificate pursuant to Section 19 Public Works Act 1981 by Her Majesty the Queen - 15.11.2018 at 1:49 pm
11529046.1 Notice pursuant to Section 18 Public Works Act 1981 - 26.8.2019 at 1:56 pm
11624092.1 Compensation Certificate pursuant to Section 19 Public Works Act 1981 by Her Majesty the Queen - 28.11.2019 at 3:36 pm





**RECORD OF TITLE
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R. W. Muir
Registrar-General
of Land

Identifier **HBA2/1068**
Land Registration District **Hawkes Bay**
Date Issued 19 June 1963

Prior References

HB7/286

Estate	Fee Simple
Area	125.4525 hectares more or less
Legal Description	Section 9-10 Block XIV Woodville Survey District

Registered Owners

Andrew William Bolton and Diane Margaret Bolton

Interests

Appurtenant hereto is a right of way for vehicles and stock created by Easement Instrument 6248862.3 - 13.12.2004 at 9:00 am

8059138.6 Mortgage to Bank of New Zealand - 2.7.2009 at 2:06 pm

8059138.7 Mortgage to Diane Margaret Bolton and to Diane Margaret Bolton and Thomas Joseph Anthony Fouhy and to Diane Margaret Bolton and Thomas Joseph Anthony Fouhy in shares - 2.7.2009 at 2:06 pm

11002037.1 Compensation Certificate pursuant to Section 19 Public Works Act 1981 by Her Majesty the Queen - 11.1.2018 at 1:35 pm

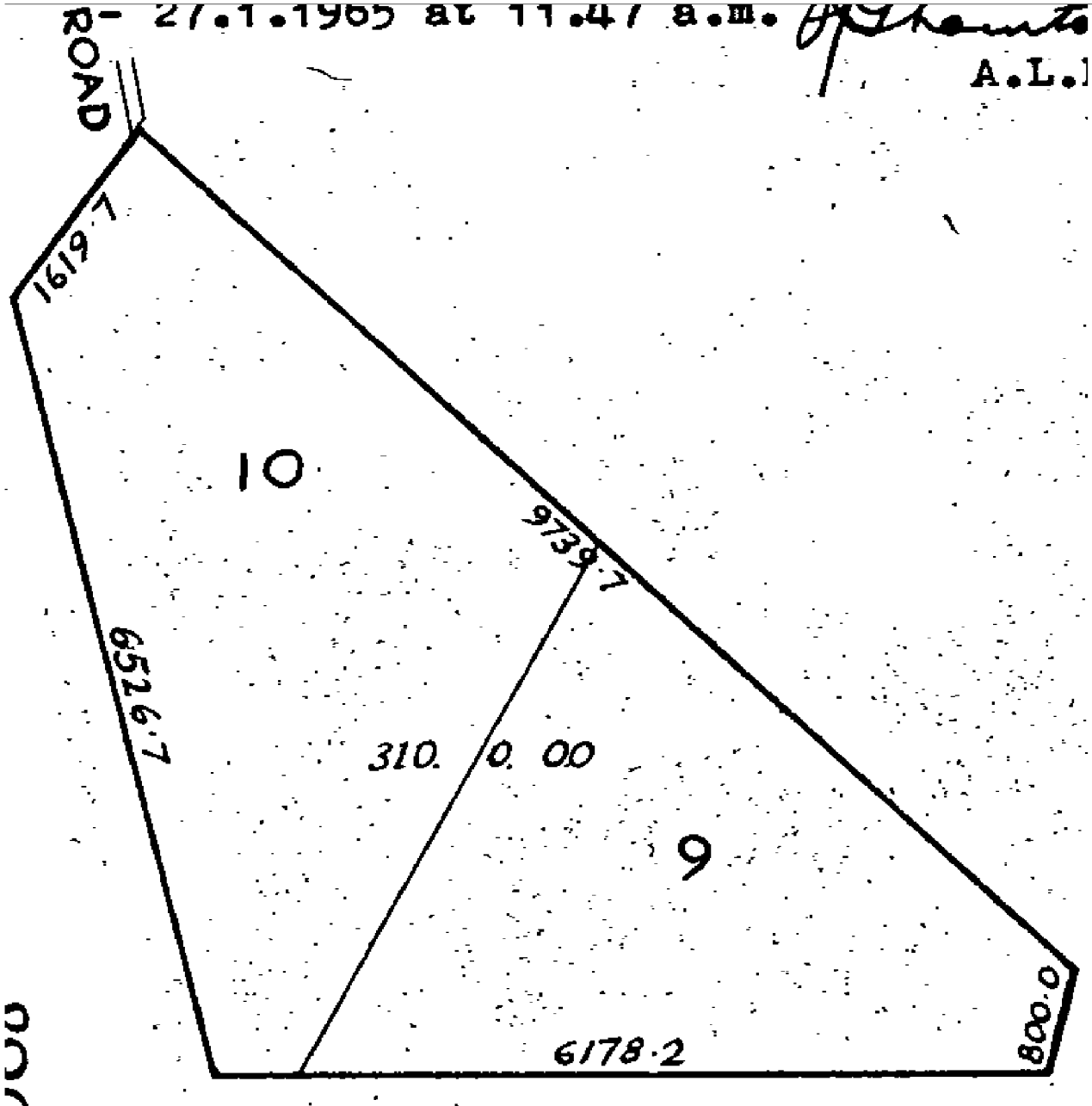
11286839.1 Compensation Certificate pursuant to Section 19 Public Works Act 1981 by Her Majesty the Queen - 15.11.2018 at 1:49 pm

11529046.1 Notice pursuant to Section 18 Public Works Act 1981 - 26.8.2019 at 1:56 pm

11624092.1 Compensation Certificate pursuant to Section 19 Public Works Act 1981 by Her Majesty the Queen - 28.11.2019 at 3:36 pm

27.1.1965 at 11.47 a.m.

A.L.L.





**RECORD OF TITLE
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R. W. Muir
Registrar-General
of Land

Identifier **HB168/150**
Land Registration District **Hawkes Bay**
Date Issued 04 August 1958

Prior References

HB26/234

Estate Fee Simple
Area 12.1406 hectares more or less
Legal Description Rural Section 1 Woodville

Registered Owners

Andrew William Bolton and Diane Margaret Bolton

Interests

1707 Proclamation defining the middle line of portion of the No. 30 Napier Palmerston North State Highway (N.Z. Gazette No. 45 of 8.7.1937 at page 1596) - 16.7.1937 at 9.30 am

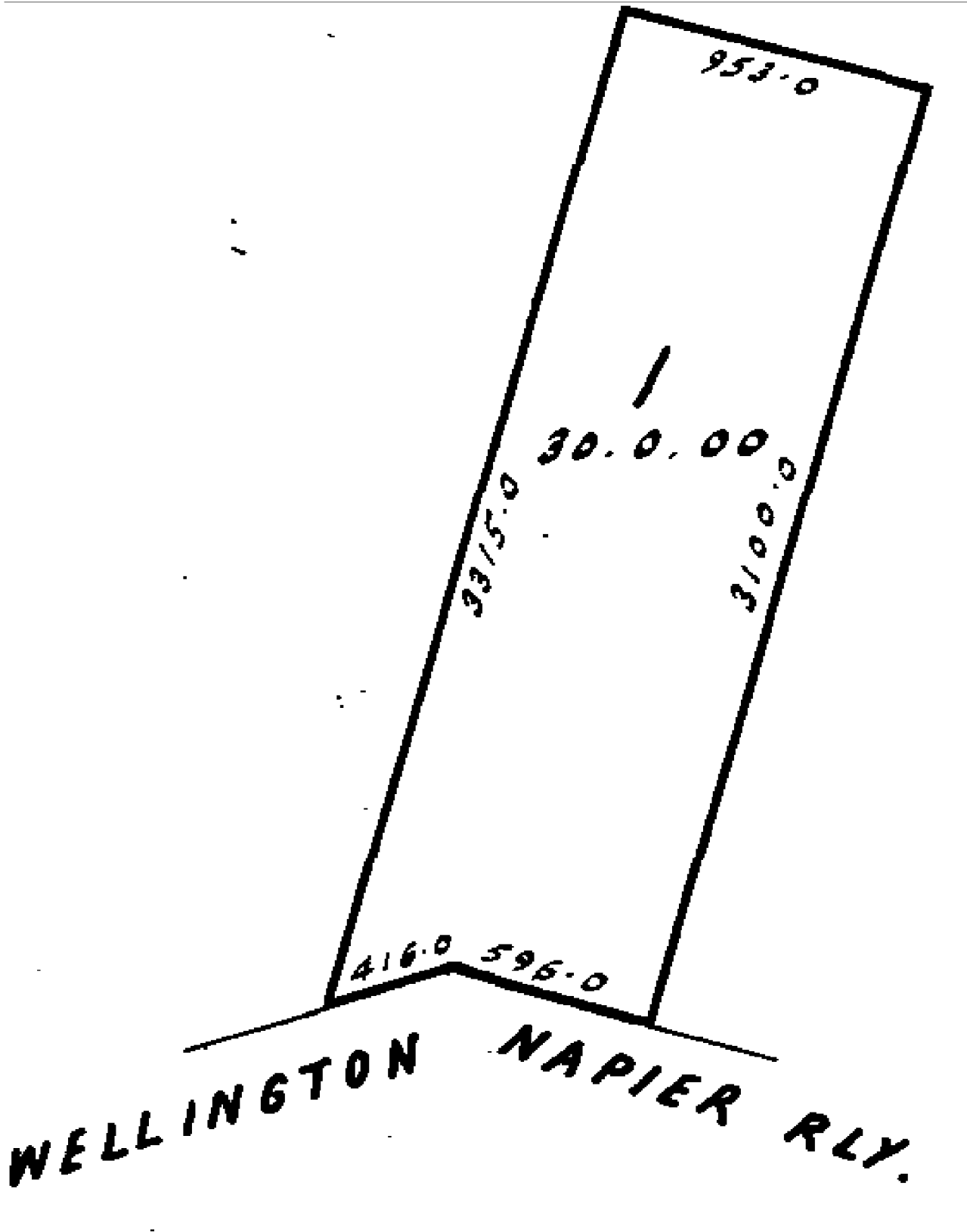
8059138.6 Mortgage to Bank of New Zealand - 2.7.2009 at 2:06 pm

8059138.7 Mortgage to Diane Margaret Bolton and to Diane Margaret Bolton and Thomas Joseph Anthony Fouhy and to Diane Margaret Bolton and Thomas Joseph Anthony Fouhy in shares - 2.7.2009 at 2:06 pm

11286839.1 Compensation Certificate pursuant to Section 19 Public Works Act 1981 by Her Majesty the Queen - 15.11.2018 at 1:49 pm

11529046.1 Notice pursuant to Section 18 Public Works Act 1981 - 26.8.2019 at 1:56 pm

11624092.1 Compensation Certificate pursuant to Section 19 Public Works Act 1981 by Her Majesty the Queen - 28.11.2019 at 3:36 pm





**RECORD OF TITLE
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R. W. Muir
Registrar-General
of Land

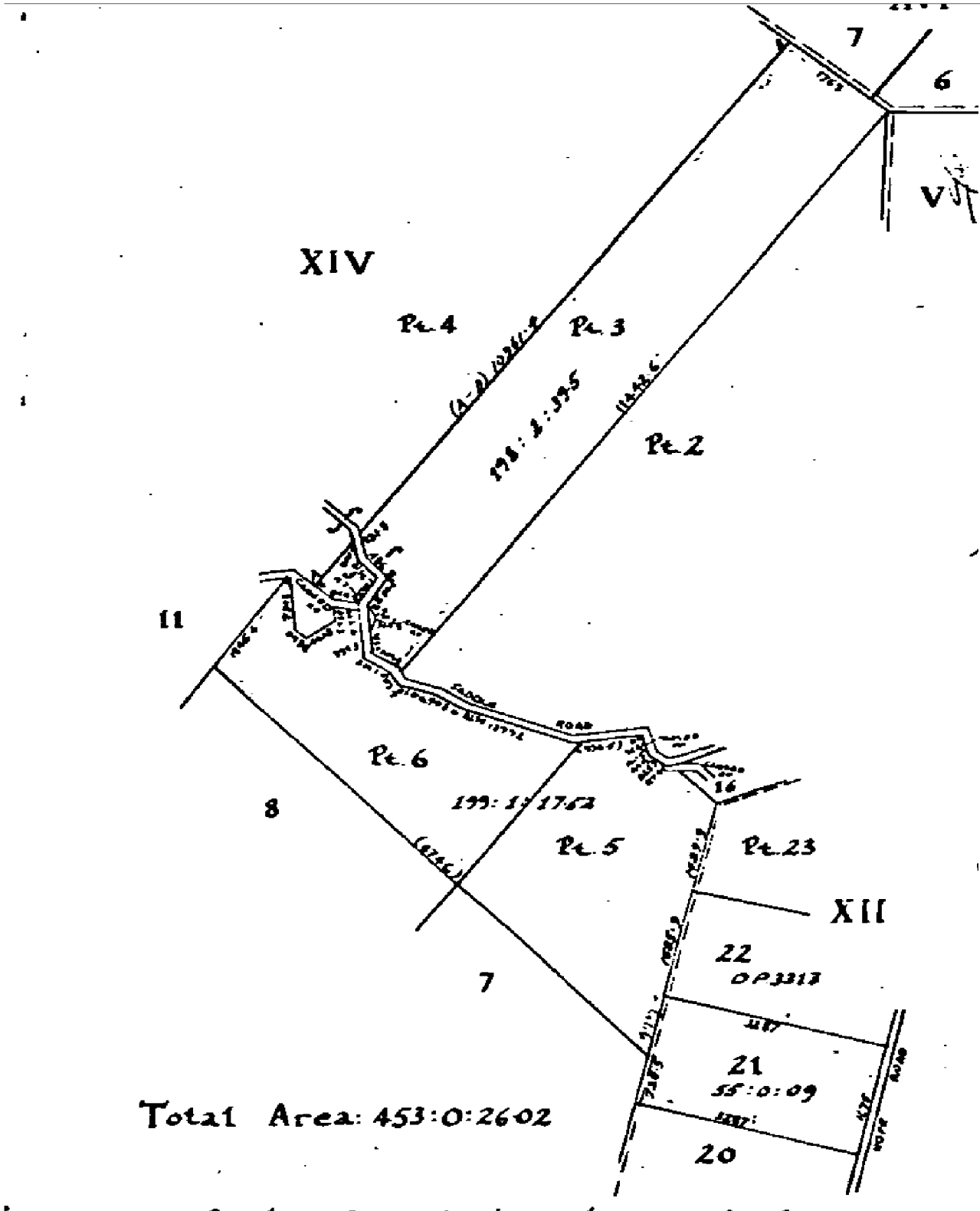
Identifier **HB124/121**
Land Registration District **Hawkes Bay**
Date Issued 15 August 1949

Estate Fee Simple
Area 183.3884 hectares more or less
Legal Description Section 21 Block XII Woodville Survey
District and Part Section 3 and Part Section
5-6 Block XIV Woodville Survey District

Registered Owners
AgResearch Limited

Interests

Subject to Section 8 Atomic Energy Act 1945
Subject to Section 3 Geothermal Energy Act 1953
Subject to Part IV A Conservation Act 1987
Subject to Section 11 Crown Minerals Act 1991
415442.1 Proclamation defining the middle line of part of the Hawke's Bay Pipeline - 17.12.1982 at 10.45 am
439896.1 Pipeline Certificate pursuant to Section 71 of the Petroleum Act 1937 - 8.10.1984 at 11.25 am
586488.5 CAVEAT BY HER MAJESTY THE QUEEN PURSUANT TO SECTION 31(1) OF THE CROWN RESEARCH INSTITUTES ACT 1992 - 5.3.1993 AT 11.25 AM
Subject to a right (in gross) to an electricity transmission easement over parts marked E and G on DP 349736 in favour of Meridian Energy Limited created by Easement Instrument 7496163.1 - 9.8.2007 at 9:00 am
9218768.1 Notice pursuant to Section 195(2) Climate Change Response Act 2002 - 26.10.2012 at 11:21 am (Affects Part Sections 3 and 5 Block XIV Woodville Survey District)
9278384.1 Notice pursuant to Section 195(2) Climate Change Response Act 2002 - 17.1.2013 at 3:48 pm (affects Part Section 3, 5-6 Block XIV Woodville Survey District)
11144423.1 Compensation Certificate pursuant to Section 19 Public Works Act 1981 by Her Majesty the Queen - 13.6.2018 at 7:32 am
11528998.1 Notice pursuant to Section 18 Public Works Act 1981 - 26.8.2019 at 1:55 pm (affects Part Section 6 Block XIV Woodville Survey District)





**RECORD OF TITLE
UNDER LAND TRANSFER ACT 2017
FREEHOLD
Search Copy**




R. W. Muir
Registrar-General
of Land

Identifier **HBC3/288**
Land Registration District **Hawkes Bay**
Date Issued 27 May 1968

Prior References

HB26/235

Estate Fee Simple
Area 23.4262 hectares more or less
Legal Description Lot 18 Deposited Plan 3313

Registered Owners

Andrew William Bolton and Diane Margaret Bolton

Interests

8059138.6 Mortgage to Bank of New Zealand - 2.7.2009 at 2:06 pm

8059138.7 Mortgage to Diane Margaret Bolton and to Diane Margaret Bolton and Thomas Joseph Anthony Fouhy and to Diane Margaret Bolton and Thomas Joseph Anthony Fouhy in shares - 2.7.2009 at 2:06 pm

11002037.1 Compensation Certificate pursuant to Section 19 Public Works Act 1981 by Her Majesty the Queen - 11.1.2018 at 1:35 pm

11286839.1 Compensation Certificate pursuant to Section 19 Public Works Act 1981 by Her Majesty the Queen - 15.11.2018 at 1:49 pm

11529046.1 Notice pursuant to Section 18 Public Works Act 1981 - 26.8.2019 at 1:56 pm

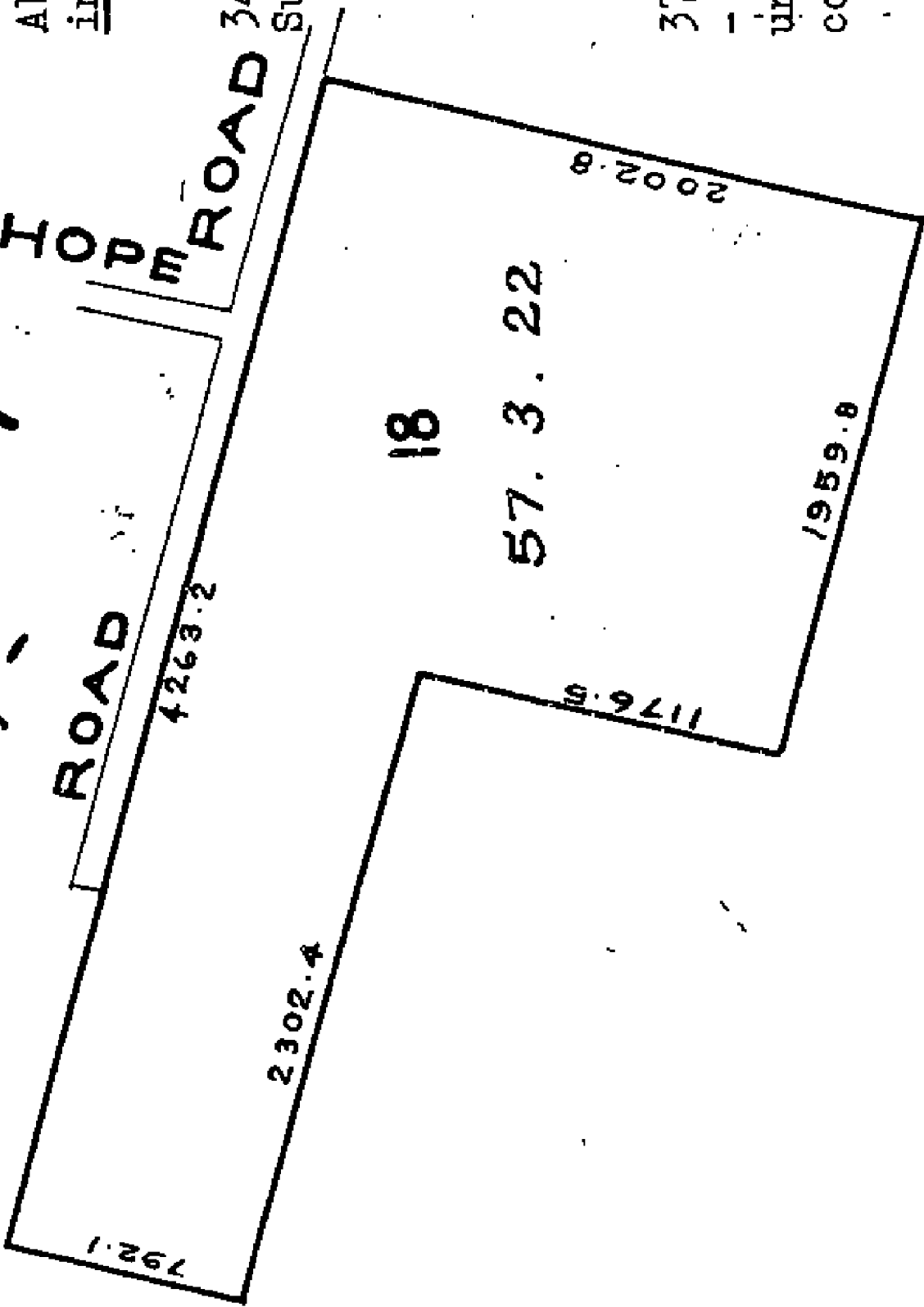
11624092.1 Compensation Certificate pursuant to Section 19 Public Works Act 1981 by Her Majesty the Queen - 28.11.2019 at 3:36 pm

34 tc AI II

37 - UR CC

you
A.I.R.
ROAD

HOP ROAD
34 St



Appendix C – Rule Assessment

Table 1: Chapter 13 Land Use Activities and Indigenous Biological Diversity

Rule Reference	Activity	Activity Status	Conditions/Standards/Terms	Control/Discretion	Comment	Consents required
13-5 Vegetation Clearance	<p>Except as regulated by Rules 13-6, 13-8 and 13-9, any vegetation clearance pursuant to s9(2) RMA and any ancillary:</p> <p>a) diversion of water pursuant to s14(2) RMA on the land where the vegetation clearance is undertaken,</p> <p>b) discharge of sediment into water pursuant to s15(1) RMA resulting from the vegetation clearance.</p>	Permitted	<p>a) The activity must not take place on land that is within a coastal foredune.</p> <p>b) Any ancillary discharge of sediment into water must not, after reasonable mixing, cause the receiving water body to breach the water quality standards for visual clarity set out in Schedule E for that water body.</p> <p>c) The activity must not occur on land that is in, or within 5m of:</p> <p>i. The bed of a river that is permanently flowing</p> <p>ii. The bed of a river that is not permanently flowing and has an active bed width greater than 1m</p> <p>iii. The bed of a lake</p> <p>d) The activity must not occur on land that is in, or within 10m of:</p> <p>i. A wetland as identified in Schedule F</p> <p>ii. Sites valued for Trout Spawning as identified in Schedule B</p>		<p>There are no coastal foredunes, Sites valued for Trout Spawning as identified in Schedule B or Sites of Significance - Aquatic as identified in Schedule B within the Project area in accordance with Standard (a) and (d)(ii).</p> <p>There are no 'risk at' Schedule F habitats within the Project extent. However, there are 'rare' and 'threatened' Schedule F habitats, as identified in the Terrestrial Ecosystems Plans (Volume III). Vegetation clearance within these areas are subject to Rule 13-9.</p> <p>There are also a number of watercourses within the Project extent, therefore this rule applies to all vegetation clearance for the Project which is not within 5m of watercourse or a Schedule F wetland in accordance with Standard (c) and (e)(i).</p> <p>Vegetation clearance which is not subject to this rule will comply with the other standards. Namely, the vegetation clearance will be undertaken in accordance with the EMP and ESCP (both included in Volume VII) which will ensure that the water quality standards for visual clarity set out in Schedule E can be met in accordance with Standard (b).</p>	<p>■ Vegetation clearance (and associated diversion of water and discharge of sediment) pursuant to s9(2) of the RMA and Rule 13-5 is a permitted activity and no resource consent is sought in the following circumstances:</p> <p>a) Outside of the Hill Country Erosion Management Area, the vegetation clearance is:</p> <p>i. not in an at-risk, rare or threatened habitat;</p> <p>ii. more than 5m from the bed of a river;</p> <p>iii. more than 10m from a wetland identified in Schedule F.</p> <p>b) In the Hill Country Erosion Management Area, the vegetation clearance is:</p> <p>i. not in an at-risk, rare or threatened habitat;</p> <p>ii. 1ha or greater per property;</p> <p>iii. vegetation greater than seven years of age;</p> <p>iv. more than 10m from the bed of a river or wetland identified in Schedule F.</p>
13-6 Specified vegetation clearance, land disturbance or cultivation in a Hill Country Erosion Management Area	<p>Pursuant to s9(2) RMA, except as regulated by Rule 13-8 and 13-9, any:</p> <p>a) land disturbance of more than 100m² per property per 12-month period, or</p> <p>b) vegetation clearance of 1ha or greater per property per 12-month period where the age of the vegetation in the area to be cleared is greater than seven years, or</p> <p>c) cultivation,</p> <p>undertaken within a Hill Country Erosion Management Area and any ancillary:</p> <p>a) diversion of water pursuant to s14(2) RMA on the land where the vegetation clearance, land disturbance or cultivation is undertaken, or</p> <p>b) discharge of sediment into water pursuant to s15(1) RMA resulting from the vegetation clearance, land disturbance or cultivation.</p>	Restricted Discretionary	<p>a) The activity must not take place on land that is within a coastal foredune.</p> <p>b) The activity must not occur on land that is in, or within 10m of:</p> <p>i. The bed of a river that is permanently flowing,</p> <p>ii. the bed of a river that is not permanently flowing and has an active bed width greater than 1m,</p> <p>iii. the bed of a lake,</p> <p>iv. a wetland as identified in Schedule F,</p> <p>v. sites valued for Trout Spawning as identified in Schedule B,</p> <p>vi. Sites of Significance - Aquatic as identified in Schedule B.</p>	<p>Discretion is restricted to:</p> <p>a) the location, nature, scale, timing and duration of the activity,</p> <p>b) effects of the activity and associated sediment run-off on soil conservation, surface water quality and aquatic ecology and the methods to be taken to avoid, remedy or mitigate them,</p> <p>c) the requirement to provide an Erosion and Sediment Control Plan, the content of and standard to which the plan must be prepared, the implementation of the plan, and the timing of when it must be prepared and submitted,</p> <p>d) the provision of greater setback distances from water bodies than those specified under condition (b) to provide greater protection to a water body if required,</p> <p>e) the extent of non-compliance with the water quality target for visual clarity set out in Schedule E,</p> <p>f) duration of consent,</p> <p>g) review of consent conditions,</p> <p>h) compliance monitoring,</p>	<p>It is assumed that all properties that are traverse by the Project will, at least in part, be located in a Hill Country Erosion Management Area which is defined as 'any area of land with a pre-existing slope of 20 degrees or greater.</p> <p>On that basis, Rule 13-2 does not apply to the proposed works, and Rule 13-6 applies as it relates to land disturbance in a Hill Country Erosion Management Area</p> <p>Earthworks and vegetation clearance within these areas, but not:</p> <p>a) in a rare, at risk or threatened habitat; and</p> <p>b) not within 10m of a watercourse;</p> <p>are subject to this rule.</p> <p>It is anticipated that this rule also provides for the discharge of water from any dewatering (with a water permit sought pursuant to Rule 16-9).</p>	<p>■ A land use consent is sought pursuant to s9(2) of the RMA and Rule 13-6 of the One Plan as a restricted discretionary activity for land disturbance and vegetation clearance (and associated diversion of water and discharge of sediment) within a Hill Country Erosion Management Area, but outside of a rare, at risk or threatened habitat; and not within 10 m of a watercourse.</p>

Rule Reference	Activity	Activity Status	Conditions/Standards/Terms	Control/Discretion	Comment	Consents required
				i) the matters in Policy 14-9.		
13-7 Vegetation clearance, land disturbance, cultivation or forestry that does not comply with Rules 13-1 to 13-6	Except as regulated by Rule 13-8 and 13-9, any vegetation clearance, land disturbance, cultivation or forestry pursuant to s9(2) RMA that does not meet the conditions, standards or terms of Rules 13-1, 13-2, 13-3, 13-4, 13-5 or 13-6 and any ancillary: a) disturbance of the bed of a river or lake by forestry authorised by those rules pursuant to s13(1) RMA b) diversion of water authorised by those rules pursuant to s14(2) RMA; or c) discharge of sediment or slash authorised by those rules pursuant to s15(1) RMA.	Discretionary			Rule 13-7 applies to land disturbance and vegetation clearance in a Hill Country Erosion Management Area and within 10m of a watercourse, but not in a rare, at risk or threatened habitat. It is anticipated that this rule also provides for the discharge of water from any dewatering (with a water permit sought pursuant to Rule 16-9).	<ul style="list-style-type: none"> A land use consent is sought pursuant to s9(2) of the RMA and Rule 13-7 of the One Plan as a discretionary activity for large scale earthworks and vegetation clearance (and associated diversion of water and discharge of sediment) within 10m of a watercourse, but outside of a rare, at risk or threatened habitat.
13-9 Some activities within rare habitats and threatened habitats	Except as regulated by Rules 14-5, 14-13, 14-24, 16-9, 17-2, 17-4, 17-5, 17-7 in relation to any existing small dam structure, 17-14 and 17-15, any of the following activities within a rare habitat, threatened habitat: a) vegetation clearance, land disturbance or cultivation pursuant to s9(2) RMA b) forestry pursuant to s9(2) RMA that does not meet condition, standard or term of Rule 13-3 (b)(iii) or (e) c) the drilling, construction or alteration of any bore pursuant to s9(2) RMA d) activities restricted by s13(1) or s13(2) RMA in the beds of rivers or lakes e) the taking, using, damming or diverting of water pursuant to s14(2) RMA f) discharge of water or contaminants into water or onto or into land pursuant to s15(1) or s15(2A) RMA. This rule does not apply to activities described in paragraphs (a) to (f) where they are carried out for the purposes of protecting or enhancing the habitat, including the control of pest animals and pest plants.	Non-complying			There are habitats identified as 'a rare habitat, threatened habitat;' in accordance with Schedule F, as shown on the Terrestrial Ecosystems Plans (Volume III). The Eco Viaduct (BR 03) is partly located within rare and threatened habitats, and therefore a land use consent pursuant to s13 of the RMA and Rule 13-9 is required. Five culverts (CU-07, CU-08A, Cu-09, Cu-14, CU-15), one treatment device (Wetland 03), and one stream diversion (SD-EC05-01) and six cutoff drains are located within Schedule F habitats These activities and the construction of the Eco Bridge, will require earthworks and vegetation clearance of these habitats, therefore a land use consent pursuant to s9(2), s13, s14 and s15 of the RMA and Rule 13-9 is required. It is anticipated that this rule also provides for the taking and discharge of water as a result of dewatering during earthwork activities. The discharge of sediment during earthworks in a rare habitat, threatened habitat is also subject to this rule.	<ul style="list-style-type: none"> A land use consent is sought pursuant to s9(2) of the RMA and Rule 13-9 of the One Plan as a non-complying activity for earthworks and vegetation clearance within a rare habitat or threatened habitat. A land use consent is sought pursuant to s13 of the RMA and Rule 13-9 of the One Plan as a non-complying activity for activities in the bed of any lake or river, within a rare habitat or threatened habitat. A water permit is sought pursuant to s14 of the RMA and Rule 13-9 of the One Plan as a non-complying activity for the taking and diversion of water within a rare habitat or threatened habitat. A discharge permit is sought pursuant to s15 of the RMA and Rule 13-9 of the One Plan as a non-complying activity for discharges to a rare habitat or threatened habitat.

Table 2: Chapter 14 Discharges to Land and Water

Rule Reference	Activity	Activity Status	Conditions/Standards/Terms	Control/Discretion	Comment	Consents required
14-12 Discharges of water to water	The discharge of water into water pursuant to s15(1) RMA (excluding drainage water which is regulated by Rules 16-10 and 16-11 and the discharge of water into water that is part of the normal operation* of a dam which is regulated by Rule 17-7 or Rule 17-8).	Permitted	(a) The discharge must not cause or exacerbate the flooding of any neighbouring property*. (b) The discharge must not cause any scouring or erosion of any land or bed of a water body beyond the point of discharge. (c) The discharge must not alter the natural course of any water body. (d) The discharge must not be to any rare habitat*, threatened habitat* or at-risk habitat* (discharges into at-risk habitats* are discretionary activities under Rule 13-8 and into rare habitats* or threatened		In the event that dewatering occurs outside a rainfall event, (i.e. the groundwater is not contaminated with sediment) the groundwater could be discharged back to the source (to the closest waterbody). Provided the activity is not within an at-risk habitat or a rare or threatened habitat, the discharge of groundwater will be a permitted activity pursuant to Rule 14-12. Should the groundwater be entrained with sediment, and not able to meet the other	<ul style="list-style-type: none"> The discharge of groundwater to water outside rare, threatened or at-risk habitats is a permitted activity pursuant to s15 of the RMA and Rule 14-12 and no resource consent is sought.

Rule Reference	Activity	Activity Status	Conditions/Standards/Terms	Control/Discretion	Comment	Consents required
			habitats* are non-complying activities under Rule 13-9). (e) The discharge must not, after reasonable mixing*, change the natural temperature of the receiving water by more than the maximum temperature or temperature change specified by the water quality standards for the Water Management Sub-zone* listed in Schedule E.		conditions of this rule, and the groundwater will be treated via the sediment control pond/devices and will be subject to the resource consent requirements under Chapter 13.	
14-18 Discharges of stormwater to surface water and land	The discharge of stormwater into surface water pursuant to s15(1) RMA or onto or into land pursuant to ss15(1) or 15(2A) RMA, and any ancillary takes or diversions of stormwater pursuant to s14(2) RMA forming part of the stormwater system.	Permitted	<p>a) The discharge must not include stormwater from any:</p> <ul style="list-style-type: none"> i. industrial or trade premises where hazardous substances stored or used may be entrained by the stormwater ii. contaminated land where the contaminants of concern may be entrained by the stormwater iii. operating quarry or mineral extraction site unless there is an interceptor system in place. <p>b) The discharge must not cause or exacerbate the flooding of any other property.</p> <p>c) The activity must not cause erosion of any land or the bed of any water body beyond the point of discharge unless this is not practicably avoidable, in which case any erosion that occurs as a result of the discharge must be remedied as soon as practicable.</p> <p>d) There must be no discharge to any rare habitat, threatened habitat, at-risk habitat, or reach of river or its bed with a Schedule B Value of Natural State.</p> <p>e) For discharges of stormwater onto or into land:</p> <ul style="list-style-type: none"> i. the discharge must be below a rate that would cause flooding outside the design discharge soakage area, except in rain events equivalent to or greater than the 10% annual exceedance probability design storm. Any exceedance must go into designated overland flow paths ii. there must not be any overland flow resulting in a discharge to a natural surface water body, except in rain events equivalent to or greater than the 10% annual exceedance probability design storm iii. the discharge must not contain concentrations of hazardous substances that are toxic to aquatic ecosystems, or accumulate in soil. <p>f) For discharges of stormwater into surface water bodies the discharge must not cause any permanent reduction of the ability of the receiving water body or its bed to convey flood flows.</p> <p>g) For discharges of stormwater into surface water bodies the discharge must not cause, after reasonable mixing, any of the</p>		<p>There are rare habitat, threatened and at-risk habitat within the Project extent. However, these areas are limited to those identified in the Terrestrial Ecosystems Plans (Volume III) and resource consent for operational related stormwater discharges in these areas is required by Rules 13.8 (at-risk habitat) and 13.9 (rare or threatened habitat).</p> <p>As set out in the Stormwater Design report, all other stormwater discharges from the treatment devices (i.e. operational stormwater discharges) which are within not rare, threatened or at risk habitats can comply with the permitted activity standards of Rule 14-18. Specifically:</p> <ul style="list-style-type: none"> a) Wetland and wetland swales have been designed to provide peak flow attenuation; b) All wetland, wetland swale and TS05 outlets have designed rock riprap aprons in accordance with HEC 14 to protect receiving environment from erosion. c) The network drainage system has been designed to capture and convey runoff from the road surface during all events up to the 100-year ARI storm event without overtopping. d) All treatment devices meet the Transport Agency Treatment Standard 2010 (table 5-7 for water quality capability breakdown). Stormwater Management Practices and Water Quantity/Quality Control. 	<ul style="list-style-type: none"> ■ The discharge of construction and operational stormwater outside of rare, threatened or at-risk habitats is a permitted activity pursuant to s15 of the RMA and Rule 14-18 and no resource consent is sought.

Rule Reference	Activity	Activity Status	Conditions/Standards/Terms	Control/Discretion	Comment	Consents required
			<p>following effects in the receiving water body:</p> <ul style="list-style-type: none"> i. the production of conspicuous oil or grease films, scums or foams, or floatable or suspended materials ii. any conspicuous change in the colour or visual clarity of the receiving water iii. any emission of objectionable odour iv. the rendering of fresh water unsuitable for consumption by farm animals v. toxicity to aquatic ecosystems. <p>h) The activity must not be to any historic heritage identified in any district plan or regional plan.</p>			
14-21 Discharges of cleanfill material	<p>The discharge of cleanfill material onto or into land pursuant to ss15(1) or 15(2A) RMA and any ancillary discharge of contaminants into water pursuant to s15(1) RMA or air pursuant to ss15(1) or 15(2A) RMA except as regulated by other rules in this Plan.</p> <p>The stockpiling of gravel ancillary to gravel extraction and roading activities is not restricted by this rule.</p>	Permitted	<ul style="list-style-type: none"> a) The siting, design, installation and management must be in accordance with A Guide to the Management of Cleanfills (Ministry for the Environment, 2002). b) The rate of cleanfill material discharge must be no more than 2,500m³/y per property. c) The cleanfill material must not be discharged within: <ul style="list-style-type: none"> i. a rare habitat, threatened habitat or at-risk habitat ii. land with a slope greater than 20° iii. 50m from any historic heritage identified in any district plan or regional plan. d) Records of the source and composition of all cleanfill material discharged at the site must be maintained and made available to the Regional Council upon request. e) The discharge of the cleanfill material must be undertaken and maintained in a manner so as to ensure its long-term physical stability. 		<p>Where filling occurs (cut to fill) at a site, it is considered that this falls within the One Plan definition of 'land disturbance' and consent for this activity, where required, is sought under the rules in Chapter 13.</p> <p>Where filling (including the disposal of excess cut material) occurs using material sourced from the Project (that is, the material is not imported) it is considered that this falls within the One Plan, definition of 'cleanfill material' in the One Plan and Rule 14-21 applies.</p> <p>In addition, the use of material imported to the Project site as engineered fill and for track and road surfacing falls within the definition of 'cleanfill material' in the One Plan and Rule 14-21 applies.</p> <p>However, the placement of fill will potentially not comply with the volume limits of Rule 14-21(b) the location standards in Rule 14-21(c) and resource consent is required under Rule 14-30.</p>	
14-28 Discharges of contaminants onto or into land that may enter water	<p>The discharge of contaminants onto or into land in circumstances which may result in those contaminants (or any other contaminant emanating as a result of natural processes from those contaminants) entering water, pursuant to ss15(1)(b) or 15(2A) RMA, except as regulated by other rules in this Plan.</p>	Permitted	<ul style="list-style-type: none"> a) The discharge must comply with all of the conditions of Rule 14-26. b) The discharge must comply with all of the conditions of Rule 14-27, except (a). c) The discharge must be at least 600 mm above the seasonally highest water table. d) The discharge must comply with the following separation distances: <ul style="list-style-type: none"> i. at least 30 m from any bore* ii. at least 20 m from any surface water body, artificial watercourse* and the coastal marine area. e) The discharge must not be located within any rare habitat*, threatened habitat* or at-risk habitat*. f) There must be no surface ponding in the area of discharge, or run-off of any contaminant into a surface water body or its bed, artificial watercourse* or the coastal marine area as a result of the discharge. g) The discharge must not cause any more than minor reduction in the quality of groundwater. 		<p>The PSI and DSI (Volume V Technical Assessment G) identified some contaminated land within the footprint of the Project alignment. However, these areas will be remediated prior to earthworks associated with the main alignment. None of these areas are within the Schedule F rare habitat, threatened habitat or at-risk habitat.</p> <p>There will be a CSMP (Volume VII) to address accidental discovery of contaminated so and to ensure there is no potential for contaminants (entrained in the sediment) to be discharged onto or into land which may enter water. Therefore, this rule does not apply, as there will be no discharges of contaminants as a result of the Project (other than sediment, which is addressed under Chapter 13).</p>	

Rule Reference	Activity	Activity Status	Conditions/Standards/Terms	Control/Discretion	Comment	Consents required
			h) The discharge must not result in any airborne liquid contaminant being carried beyond the boundary of the property*. With the exception of standard (e) in relation to any rare habitat* or threatened habitat* these standards do not apply to the discharge of live ammunition for weapons training purposes on any defence area (as defined in section 2 of the Defence Act 1990) owned by the Crown where it is undertaken in accordance with that Act.			
14-30 Discharges of water or contaminants to land or water not covered by other rules in this Plan or chapter	The discharge of water or contaminants into surface water pursuant to s15(1)(a) RMA or discharge of contaminants onto or into land pursuant to ss15(1)(b), 15(1)(d) or 15(2A) RMA which are not regulated by other rules in this Plan, or which do not comply with the permitted activity, controlled activity or restricted discretionary activity rules in this chapter.	Discretionary			As discussed in reference to Rule 14-21 above, the discharge of fill is not likely to comply with permitted activity standard 14-21(b) and(c) and resource consent is required pursuant to default Rule 14-30.	<ul style="list-style-type: none"> A discharge permit is sought pursuant to s15 of the RMA and Rule 14-30 of the One Plan as a discretionary activity for discharge of fill to land and water not complying with Rule 14-21.

Table 3: Chapter 15: Discharges to Air

Rule Reference	Activity	Activity Status	Conditions/Standards/Terms	Control/Discretion	Comment	Consents required
15-16 Discharges from specified mobile sources	The discharge of contaminants into air pursuant to ss15(1) or 15(2A) RMA from: a) equipment to treat road surfaces by heat to remove impaired surfaces except where the burning of bitumen is involved b) mobile aggregate crushing and screening plants c) mobile asphalt plants d) earthmoving or harvesting equipment.	Permitted	a) The discharge must not result in offensive or objectionable odour, dust, smoke or water vapour at the boundary of any sensitive area as defined in Policy 15-2(d) b) The discharge must not result in any noxious or dangerous levels of gases or particulates at the boundary of any sensitive area as defined in Policy 15-2(d). c) The discharge of dust from the source at any site where minerals or aggregates are dried or heated or prepared for the manufacture of hot mix asphalt must not exceed 5kg/hr. d) A mobile asphalt plant must not be located at any one site or property for more than 24 continuous months. e) Mobile asphalt plants must be equipped with temperature sensors and aggregate proximity sensors that limit and control operating temperatures within the drum. f) Air pollution control equipment for mobile asphalt plants must be designed so that the discharge of particulates (corrected to 0°C, 12% CO ₂ , 1 atmosphere, and a dry gas basis) is no greater than: i. 50 mg/m ³ for plants established after the date of notification of this Plan (31 May 2007); ii. 150 mg/m ³ for plants established on or before the date of notification of this Plan (31 May 2007); except that these limits may be exceeded for a maximum of 30 minutes when starting		Policy 15-2(d) defines sensitive areas as: a) Residential buildings; b) Public places and amenity areas where people congregate; c) Education facilities; d) Public roads; e) Surface water bodies; f) Wahi tapu, marae and other sites of significance to hapū and iwi; g) Domestic, commercial and public water supply catchments and intakes; h) Rare habitats, threatened habitats and at-risk habitats; and i) Sensitive crops or farming systems (including certified organically farmed properties and greenhouses). The Project includes the use of earthmoving equipment within rare, threatened and at-risk habitats and in proximity to other areas that are 'sensitive' in accordance with Policy 15-2(d). Subject to appropriate ESC measures, Air Quality -Technical Assessment E confirms compliance with standards of Rule 15-16.	<ul style="list-style-type: none"> The discharge of dust during earthmoving is a permitted activity pursuant to s15 of the RMA and Rule 15-16 and no resource consent is sought

Rule Reference	Activity	Activity Status	Conditions/Standards/Terms	Control/Discretion	Comment	Consents required
			<p>the fuel-burning equipment from cold, providing the opacity of the discharge is minimised as far as practicable.</p> <p>f) The discharge must not cause a reduction in visibility on any designated commercial or military flight path.</p> <p>g) The vertical velocity of the discharge must not exceed 4.3m/s, at 60m above ground level or the discharge does not penetrate the obstacle limitation surface of an aerodrome.</p>			

Table 4: Chapter 16: Takes, Uses and Diversions of Water, and Bores

Rule Reference	Activity	Activity Status	Conditions/Standards/Terms	Control/Discretion	Comment	Consents required
16-9 Other takes and uses of water	The take or use of surface water or groundwater pursuant to s14(2) RMA, which is not regulated by any other rules in this chapter or which does not comply with the permitted activity or controlled activity rules in this chapter, or the take or use of groundwater at a rate exceeding 50m ³ /day per property, except takes for bore or groundwater testing permitted under Rule 16-4.	Discretionary			<p>Groundwater levels across the site are set out in Geotechnical Technical Memorandum, Appendix A of the DCR.</p> <p>As stated in the memo, groundwater will be encountered in a number of cuts along the route and dewatering/ drainage measures will be required.</p> <p>On that basis, the take of groundwater may exceed the maximum volume per property standard and therefore Rule 16-9 applies (rather than Rule 16-2).</p> <p>Where dewatering occurs in an at-risk, rare or threatened habitat Rules 13-8 or 13-9 apply to water takes for dewatering in these locations.</p>	<ul style="list-style-type: none"> A water permit is sought pursuant to s14(2) of the RMA and Rule 16.9 of the One Plan as a discretionary activity for the taking of water/dewatering outside of at-risk, rare or threatened habitats.
16-11 New Drainage	The take, diversion or discharge of drainage water, and any ancillary damming of water, or discharge of sediment or other contaminants in the drainage water into water or onto or into land pursuant to s14(2) and ss15(1) or 15(2A) RMA arising from the establishment and operation of new land drainage	Permitted	<p>a) The diversion or discharge must not cause or exacerbate the flooding of any property, unless the flooding is in accordance with an approved Regional Council drainage scheme design.</p> <p>b) The diversion or discharge must not cause any scouring or erosion of any land or water body beyond the point of discharge.</p> <p>c) The diversion or discharge must not alter the natural course of any natural water body.</p> <p>d) There must be no diversion or discharge to or from any natural lake, rare habitat, threatened habitat or at-risk habitat, or reach of river or its bed with a Schedule B Value of Natural State.</p> <p>e) The activity must not result in the lowering of water levels in any wetland that is a rare habitat or threatened habitat.</p> <p>f) The diversion or discharge must be to the same Water Management Zone to which the drainage water would naturally flow.</p> <p>g) The diversion or discharge must not cause, after reasonable mixing, any of</p>		<p>The taking, discharge and diversion of drainage water outside of at-risk, rare or threatened habitats are covered by this rule and will comply with the relevant standards as outlined in Stormwater Management -Technical Assessment B.</p> <p>The taking, diversion or and discharge of drainage water in rare and threatened habitats (being those areas identified in Terrestrial Ecosystems Plans (Volume III)). are subject to Rules 13.9.</p>	<ul style="list-style-type: none"> The taking, diversion and discharge of drainage water pursuant to s14 and 15 of the RMA and Rule 16-11 outside of at-risk, rare or threatened habitats is a permitted activity and no resource consent is sought.

Rule Reference	Activity	Activity Status	Conditions/Standards/Terms	Control/Discretion	Comment	Consents required
			<p>the following effects in the receiving water body:</p> <ul style="list-style-type: none"> i. the production of conspicuous oil or grease films, scums or foams, or floatable or suspended materials ii. any conspicuous change in the colour or visual clarity of the receiving water iii. any emission of objectionable odour iv. the rendering of fresh water unsuitable for consumption by farm animals v. the natural temperature of the receiving water to change by more than 3°C vi. toxicity to aquatic ecosystems. <p>h) The diversion or discharge must not, after reasonable mixing, cause the dissolved oxygen of the receiving water body to fall below 80% saturation concentration, unless the dissolved oxygen is already below this limit in which case the discharge must not lower it further.</p> <p>i) The activity must not be to any historic heritage identified in any district plan or regional plan.</p>			
<p>16-12 New diversions</p>	<p>The following activities where they are associated with the establishment and operation of a new diversion, except as expressly provided for by other rules within this Plan:</p> <ul style="list-style-type: none"> a) the take, diversion or discharge of water and any ancillary damming of water pursuant to s14(2) and ss15(1) or 15(2A) RMA b) any ancillary discharge of sediment or other contaminants in the water into water or onto or into land 	<p>Permitted</p>	<ul style="list-style-type: none"> a) The activity must involve: <ul style="list-style-type: none"> i. a diversion of groundwater, ii. a diversion from or within an artificial watercourse, iii. a diversion from or within an existing drain that is within the RMA definition of "river", or iv. a diversion wholly contained within the bed of a river provided the diversion is no more than two times the bed width of the river in any 2 km length of river in any 12-month period and must not exceed a length of 20 metres. b) The activity must not involve the diversion of water associated with new drainage which is regulated under Rule 16-11. c) The diversion must not be located within 200 m of any wetland that is a rare habitat or threatened habitat and must not lower the water level in any wetland that is a rare habitat or threatened habitat. d) The diversion must not be to or from any rare habitat, threatened habitat or at-risk habitat. e) The diversion must not increase land instability or the risk of erosion. f) The diversion must not cause or contribute to flooding on any other property. g) The diversion must not adversely affect any lawfully established water take or 		<p>The diversion of water (SD-EC05-01) is within a rare or threatened habitats and is therefore being applied for pursuant to Rule 13-9 above.</p> <p>Approximately 39 other stream diversions are required as part of the Project. As stated in Stormwater Management-Technical Assessment B none of the stream diversions can comply with the permitted activity standards of Rule 16-12, due to their length and proximity to infrastructure.</p> <p>Therefore, diversions which cannot comply with Rule 16-12 (but are not within at-risk, rare and threatened habitat) require resource consent pursuant to Rule 16-13 below.</p>	<p>■</p>

Rule Reference	Activity	Activity Status	Conditions/Standards/Terms	Control/Discretion	Comment	Consents required
			<p>use which existed at the time that the diversion commenced.</p> <p>h) The diversion must not prevent the passage of fish in water bodies containing fish.</p> <p>i) The diversion must not be undertaken where any infrastructure is located in, on, under or over the bed within 1 km upstream or downstream of the diversion.</p> <p>j) Any realigned bed must have at least the same capacity as the original bed to carry the diverted flow.</p> <p>k) For diversions of surface water from an artificial watercourse or drain, the diverted water must not cause a reduction in the water quality of any downstream water body.</p> <p>l) Any discharge of sediment ancillary to the activity must not, after reasonable mixing, cause a conspicuous change in the colour or visual clarity of the receiving water.</p> <p>m) The construction of a new diversion located within a river must comply with the general conditions listed in Section 17.3 Table 17.2.</p>			
<p>16-13 Diversions that do not comply with permitted activity and controlled activity rules</p>	<p>Any diversion pursuant to s14(2) RMA that does not comply with one or more conditions, standards or terms of a permitted activity or controlled activity rule in this chapter, but which is not expressly classified as a discretionary activity or prohibited activity.</p>	<p>Discretionary</p>	<p>a) The diversion must not be to or from any rare habitat, threatened habitat or at-risk habitat.</p>		<p>The diversion of water (SD-EC05-01) is within a rare or threatened habitats and is therefore being applied for pursuant to Rule 13-9 above</p> <p>Approximately 39 stream diversions are required as part of the Project which cannot comply with the permitted activity standards of Rule 16-12, due to their length and proximity to infrastructure.</p> <p>Diversions which cannot meet the permitted activity standards of Rule 16-12 but are not covered by Rule 13-8 or Rule 13-9, resource consent is sought under Rule 16-13.</p>	<ul style="list-style-type: none"> ■ A water permit is sought pursuant to s14 of the RMA and Rule 16-13 of the One Plan as a discretionary activity for diversions outside of at-risk, rare or threatened habitats not complying with Rule 16-11 or Rule 16-12.

Table 5: Chapter 17: Activities in Beds of Rivers and Lakes

Rule Reference	Activity	Activity Status	Conditions/Standards/Terms	Control/Discretion	Comment	Consents required
17-1	<p>The erection or placement of a dam structure pursuant to s13(1) RMA in or on the bed of the following rivers, and any ancillary damming of water pursuant to s14(2) RMA:</p> <p>a) the Manganui o te Ao River and its tributaries, the Makatote River, the Mangaturuturu River, the Waimarino Stream and the Orautoha Stream</p> <p>b) the Rangitikei River itself and all its tributaries above the confluence of the Makahikatoa Stream, the Rangitikei River itself from the confluence of the Makahikatoa Stream to the Mangarere Bridge, the Whakaurekau River and all its tributaries and the Kawhatao River and all its tributaries, namely the Pouranaki River and the Mangakokeke Stream</p> <p>c) the Hautapu River above its confluence with the Oraukura Stream and its tributaries, the Irirangi Stream and the Waouru Stream</p> <p>d) the main stem of the Makuri River and the Makuri-iti Stream</p> <p>e) the Mangatainoka River and its tributaries, the Makakahi River (and its Bruce Stream tributary), the Mangaroo, Mangamaire, Makotukutuku and Mangaraupiu Streams, and an unnamed tributary entering the Mangatainoka River at map reference NZMS 260 T25:368-654</p> <p>f) the main stem of the Whanganui River from its source at map reference NZMS 260 T19:383-286 to the boundary of the coastal marine area, and the main stem of the Whakapapa River and the main stems of its tributaries the Whakapapaiti and Whakapapanui Streams</p> <p>g) the main stem of the Manawatu River through the Manawatu Gorge from the Ballance Bridge to the confluence of the Pohangina and Manawatu Rivers</p> <p>h) the main stem of the Pohangina River from its source to its confluence with the Manawatu River near the Manawatu Gorge</p> <p>i) the main stem of the Oroua River from its source to its confluence with the Mangoira Stream at map reference NZMS 260 T22:578-378.</p>	Prohibited			<p>The construction of the Manawatu River bridge (BR02) will require the temporary placement of a coffer dam to erect the middle pier, within the extent described in (g) of Rule 17-1.</p> <p>However, it is considered this rule does not apply as the coffer dam is more accurately described as a diversion of water. Furthermore, as it is not creating a reservoir, it does not meet the definition of a 'dam' pursuant to the Building Act 2004:</p> <p><i>(a) means an artificial barrier, and its appurtenant structures, that—</i></p> <p><i>(i) is constructed to hold back water or other fluid under constant pressure so as to form a reservoir; and</i></p> <p><i>(ii) is used for the storage, control, or diversion of water or other fluid; and</i></p> <p><i>(iii) [Repealed]</i></p> <p><i>(b) includes—</i></p> <p><i>(i) a flood control dam; and</i></p> <p><i>(ii) a natural feature that has been significantly modified to function as a dam; and</i></p> <p><i>(iii) a canal; but</i></p> <p><i>(c) does not include a stopbank designed to control floodwaters</i></p>	

Rule Reference	Activity	Activity Status	Conditions/Standards/Terms	Control/Discretion	Comment	Consents required
17-3 Structures and disturbances involving a reach of river or its bed with Schedule B Values of Natural State, Sites of Significance - Aquatic and Sites of Significance - Cultural	<p>Except as prohibited by Rule 17-1, any of the following activities pursuant to s13(1) RMA within:</p> <p>a) a reach of river or its bed with a Schedule B Value of Natural State</p> <p>i. The erection, placement or extension of any structure in, on, under or over the bed except for lines, cables and ropeways that are suspended above the water and do not require a support structure in, on, over or under the bed of the river</p> <p>ii. Any excavation, drilling, tunnelling or other disturbance of the bed including gravel extraction and any ancillary:</p> <p>i. damming or diversion of water pursuant to s14(2) RMA</p> <p>ii. discharge of water or sediment into water or onto or into land pursuant to ss15(1) or 15(2A) RMA</p> <p>iii. deposition of substances in or on the bed pursuant to s13(1).</p> <p>b) Sites of Significance - Aquatic and Sites of Significance – Cultural</p> <p>i. The erection, placement or extension of any structure in, on, under or over the bed, except for lines, cables and ropeways that are suspended above the water and do not require a support structure in, on, over or under the bed and except for those activities regulated by Rule 17-14</p> <p>ii. Any excavation, drilling, tunnelling or other disturbance of the bed, except for those activities regulated by Rules 17-5 and 17-14;</p> <p>and any ancillary</p> <p>i. damming or diversion of water pursuant to s14(2) RMA</p> <p>ii. discharge of water or sediment into water or onto or into land pursuant to ss15(1) or 15(2A) RMA</p> <p>iii. deposition of substances in or on the bed pursuant to s13(1).s14(2) RMA</p>	Discretionary			<p>The Project involves a bridge (BR02) over the Manawatu River, including a pier in the river bed which requires excavation and piling.</p> <p>The construction of the bridge will require temporary ancillary activities including the diversion of water.</p> <p>The Manawatu River, at the location of the bridge is identified as a Sites of Significance – Cultural in accordance with Schedule B.</p>	<ul style="list-style-type: none"> A land use consent is sought pursuant to s13(1) of the RMA and Rule 17-3 of the One Plan as a discretionary activity for the Manawatu Bridge (BR02) (and associated disturbance, diversion, deposition and discharges), within a Site of Significance – Cultural.
17-10 Culverts	<p>The erection, placement, or extension of a culvert in, on, under or over the bed of a river or lake pursuant to s13(1) RMA and any ancillary:</p> <p>a) excavation, drilling, tunnelling or other disturbance of the river or lake bed pursuant to s13(1) RMA</p> <p>b) damming or diversion of water pursuant to s14(2) RMA</p> <p>c) discharge of water or sediment into water or onto or into land pursuant to ss15(1) or 15(2A) RMA</p> <p>d) deposition of substances in or on the bed of the river or lake pursuant to s13(1).</p>	Permitted	<p>a) A new culvert must not be erected or placed in:</p> <p>i. a river or lake regulated under Rule 17-3</p> <p>ii. a reach of a river with a Schedule B Value of Flood Control and Drainage, unless the work is undertaken by or on behalf of the Regional Council.</p> <p>b) Where multiple culverts are placed side by side, the total cross-sectional area of the multiple culverts must not be less than that of a single culvert which complies with this rule.</p> <p>c) The culvert, associated fill and culvert placement must comply with the following dimensions:</p> <p>i. a maximum culvert length of 20 m</p>		<p>Five culverts (CU-07, CU-08A, Cu-09, Cu-14, CU-15), are located within Schedule F habitats and therefore land use consent pursuant to, s13 and of the RMA and Rule 13-9 is required, as described above.</p> <p>As set out in the Stormwater Management Design Report (Technical Assessment B) the other 20 cross culverts (CU01 to CU20), and six of the eight access culverts (ACU02 to ACU07) exceed the maximum length set out in the standards of Rule 17-10.</p> <p>ACU01 is 12.3m in length but does not comply with c)iv as 10% AEP headwater is higher than min road level at inlet. ACU08 is 12.6m in length</p>	

Rule Reference	Activity	Activity Status	Conditions/Standards/Terms	Control/Discretion	Comment	Consents required
			<ul style="list-style-type: none"> ii. for circular culverts a culvert diameter of 0.3 m to 1.2 m (inclusive) iii. for non-circular culverts a width and height of 0.3 m to .2 m each (inclusive) iv. a maximum fill height of 2 m above the top of the culvert unless a spillway is constructed to enable the passage of a 200-year flood without the fill being overtopped v. a minimum culvert installation depth below the bed of 20% of the width of the culvert. d) The culvert must be positioned so that its alignment and gradient are the same as the river. e) The culvert must be constructed to allow: <ul style="list-style-type: none"> i. the flow from a 5% annual exceedance probability (20-year return period) flood event without overtopping, unless the overtopping flows to a specifically designed spillway ii. the flow from a 2-year return period flood event without any flow impediment. f) The culvert inlet and outlet must be protected against erosion. g) All practicable steps must be used to minimise the release of sediment during construction. h) The culvert must be constructed and maintained to avoid any aggradation or erosion of the bed. i) The culvert must be kept clear of accumulated debris. j) The activity must comply with the general conditions listed in Section 17.3. k) The activity must not take place in any rare habitat, threatened habitat or at-risk habitat. 		<p>but does not comply with c) v as it is not embedded</p> <p>Therefore, all culverts require consent pursuant to Rule 17-23.</p>	
<p>17-15 Activities affecting Schedule B Value of Flood Control and Drainage</p>	<p>Except as regulated by Rule 17-5, the following activities pursuant to s9(2) and 13(1) RMA in, on or under an artificial watercourse or a reach of a river with a Schedule B Value of Flood Control and Drainage or adjacent land as defined in (j) to (m):</p> <ul style="list-style-type: none"> a) the planting of a tree or shrub b) the erection, placement or extension of any building or other structure (including accessways) c) the erection, placement or extension of a fence perpendicular to a river or artificial watercourse d) the erection, placement or extension of a fence greater than 1.2 m high parallel to a river or artificial watercourse e) the deposition of any rock, shingle, earth, debris or other cleanfill material f) any excavation, drilling, tunnelling or other disturbance likely to undermine the functional integrity of a stop bank or river control structure 	Discretionary			<p>The Project involves the construction of a new bridge (BR07) over the Mangamanaia Stream.</p> <p>The banks of the Mangamanaia Stream will be modified to accommodate farm access tracks. Scour protection is also proposed around the bridge abutments. The Mangamanaia, at the location of the bridge, is identified as a having Schedule B Value of Flood Control and Drainage.</p>	<ul style="list-style-type: none"> ■ A land use consent is sought pursuant to ss 9(2) and s13 (1) of the RMA and Rule 17-15 of the One Plan as a discretionary activity for the BR07 and associated disturbance, diversion, deposition and discharges, within the Mangamanaia Stream which has Schedule B Value of Flood Control and Drainage.

Rule Reference	Activity	Activity Status	Conditions/Standards/Terms	Control/Discretion	Comment	Consents required
	<p>g) any land disturbance that impedes access required for maintenance of a river or drainage scheme</p> <p>h) the upgrade, reconstruction, alteration, extension, removal or demolition of any structure that is maintained by the Regional Council for the purposes of flood control or erosion protection or drainage and any ancillary:</p> <ul style="list-style-type: none"> i. excavation, drilling, tunnelling or other disturbance of the river or lake bed pursuant to s13(1) RMA ii. damming or diversion of water pursuant to s14(2) RMA iii. discharge of water or sediment into water or onto or into land pursuant to ss15(1) or 15(2A) RMA iv. deposition of substances in or on the bed of the river or lake pursuant to s13(1) v. land disturbance pursuant to s9(2) RMA where the activities listed in (a) to (h) are undertaken in any of the following areas: <ul style="list-style-type: none"> i) within the bed of a river or within an artificial watercourse j) on a stop bank k) on any strip of land between an artificial watercourse or bed of a river and 8m inland of the landward toe of a stop bank l) for areas without stop banks, anywhere within 10 m of an artificial watercourse or the bed of a river m) Only land use activities described under (f) and (g) are controlled under this rule on land described under (j) and (k) on and adjacent to the Manawatu River secondary stop bank located between Ruahine Street at Fitzroy Bend and Ruamahanga Crescent. The other listed land use activities are not controlled in that area. <p>This rule does not apply to activities undertaken by or on behalf of the Regional Council.</p>					
<p>17-23 Activities that do not comply with permitted activity, controlled activity or restricted discretionary activity rules and all other s13(1) RMA activities not covered by this chapter</p>	<p>Any activity that does not comply with one or more conditions, standards or terms of a permitted activity, controlled activity or restricted discretionary activity rule in this chapter, but which is not expressly classified as a discretionary activity, non-complying activity or prohibited activity or is a s13(1) RMA activity not covered by this chapter, including any ancillary:</p> <ul style="list-style-type: none"> a) excavation, drilling, tunnelling or other disturbance of the bed pursuant to s13(1) RMA b) damming or diversion of water pursuant to s14(2) RMA c) discharge of water or sediment into water or onto or into land pursuant to ss15(1) or 15(2A) RMA d) deposition of substances in or on the bed of the river or lake pursuant to s13(1). 	<p>Discretionary</p>			<p>Rule 17-22 provides for culverts which cannot comply with Condition j) of Rule 17-10 but can comply with the other conditions of Rule 17-10.</p> <p>As stated above, all culverts cannot meet conditions of Rule 17-10 and therefore resource consent is required pursuant to Rule 17.23.</p> <p>It is noted that approximately 13 culverts proposed are to be constructed 'offline' and not within the streambed. That is, the primary activity is a stream diversion being applied for pursuant to Rule 16-13. However, for completeness, a land use consent pursuant to s13 (1) of the RMA is being sought for all culverts proposed as part of the Project.</p> <p>Culverts in at-risk, rare and threatened habitats (being those areas identified in the Terrestrial Ecosystems Plans (Volume III)) are subject to Rules 13.8 and 13.9</p>	<ul style="list-style-type: none"> ■ A land use consent is sought pursuant to s13 (1) of the RMA and Rule 17-23 of the One Plan as a discretionary activity for the proposed culverts and associated disturbance, diversion, deposition and discharges, within watercourses not within rare., threatened or at-risk habitats but cannot comply with Rule 17-10.

Appendix D – Relevant Statutory and Planning Provisions

Appendix D -Statutory and Planning Provisions

The statutory and planning provisions (other than the RMA) assessed in Section 8 and 9 of this AEE are listed in this appendix for quick reference.

- Relevant statutory documents (Section 1)
- National Policy Statements (Section 2);
- National Environmental Standards (Section 3);
- Transport-related plans and policies (Section 4);
- Horizons' One Plan (Section 5);
- District Plans (Section 6);
- Other relevant policies and plans (Section 7).

1. Statutory Provisions

STATUTE	DISCUSSION
Land Transport Management Act 2003 (LTMA)	The LTMA provides the statutory framework for the management of New Zealand's land transport network. The purpose of the LTMA, as set out at section 3, is "to contribute to an effective, efficient, and safe land transport system in the public interest". The Transport Agency's objective is set out in section 94: "The objective of the Agency is to undertake its functions in a way that contributes to an effective, efficient, and safe land transport system in the public interest."
Rangitāne o Manawatu Claims Settlement Act 2016 (including Statutory Acknowledgements)	The Rangitāne o Manawatu Claims Settlement Act describes the significant and abiding relationship between Rangitāne o Manawatu and the land that is identified as their 'area of interest'. This includes land that is to be designated for the Project. The Act identifies a number of statutory acknowledgement areas (Manawatū River and tributaries, Manawatū Gorge Scenic Reserve and Pohangina River) that consent authorities must have regard to under in section 30 of the Act.
Rangitāne Tū Mai Rā (Wairarapa Tamaki nui-ā-Rua) Claims Settlement Act 2017	The Rangitāne Tū Mai Rā (Wairarapa Tamaki nui-ā-Rua) Claims Settlement Act describes the significant and abiding relationship between Rangitāne Tū Mai Rā (Wairarapa Tamaki nui-ā-Rua) and the land that is identified as their 'area of interest'. The Act includes a statutory acknowledgement of the Manawatū River and its tributaries that consent authorities must have regard to under section 29 of the Act.
Heritage New Zealand Pouhere Taonga Act 2014 (HNZPTA)	The HNZPTA establishes Heritage New Zealand Pouhere Taonga. Section 42 of the Act provides that an archaeological site, recorded or not, may not be damaged or destroyed unless an Authority to modify the site is granted. While no known or recorded archaeological sites will be damaged or destroyed during construction of the Project, it is anticipated that unidentified sites may be within the footprint of the works for which resource consents are sought. For this reason, the Transport Agency is separately seeking an Authority under section 44(a) of the HNZPTA.
Te Ture Whenua Maori Act 1993	The Te Ture Whenua Maori Act 1993 establishes the following principles of the Act in its preamble: "Nā te mea i riro nā te Tiriti o Waitangi i motuhake ai te noho a te iwi me te Karauna: ā, nā te mea e tika ana kia whakaūtia anō te wairua o te wā i riro atu ai te kāwanatanga kia riro mai ai te mau tonu o te rangatiratanga e takoto nei i roto i te Tiriti o Waitangi: ā, nā te mea e tika ana kia mārama ko te whenua he taonga tuku iho e tino whakaaro

STATUTE	DISCUSSION
	<p><i>nuitia ana e te iwi Māori, ā, nā tērā he whakahau kia mau tonu taua whenua ki te iwi nōna, ki ō rātou whānau, hapū hoki, a, a ki te whakangungu i ngā wāhi tapu hei whakamāmā i te nohotanga, i te whakahaeretanga, i te whakamahitanga o taua whenua hei painga mō te hunga nōna, mō ō rātou whānau, hapū hoki: ā, nā te mea e tika ana kia tū tonu he Te Kooti, ā, kia whakatakototia he tikanga hei āwhina i te iwi Māori kia taea ai ēnei kaupapa te whakatinana.</i></p> <p><i>Whereas the Treaty of Waitangi established the special relationship between the Maori people and the Crown: And whereas it is desirable that the spirit of the exchange of kawanatanga for the protection of rangatiratanga embodied in the Treaty of Waitangi be reaffirmed: And whereas it is desirable to recognise that land is a taonga tuku iho of special significance to Maori people and, for that reason, to promote the retention of that land in the hands of its owners, their whanau, and their hapu, and to protect wahi tapu: and to facilitate the occupation, development, and utilisation of that land for the benefit of its owners, their whanau, and their hapu: And whereas it is desirable to maintain a court and to establish mechanisms to assist the Maori people to achieve the implementation of these principles.”</i></p> <p>Parahaki Island is Māori freehold land as defined by section 129 of Te Ture Whenua Maori Act, and is therefore subject to the provisions of Act. The Project achieves the principles of the Act (as set out above) by avoiding Parahaki Island such that values associated with the Island are recognised and the land is retained for the use of its owners.</p>
Wildlife Act 1953	The Wildlife Act deals with the protection and control of wild animals and birds and the management of game. The Project has effects on areas of ecological value and therefore the Wildlife Act is relevant such that the Project will require an authorisation(s) given by the Director-General of Conservation under section 53 of the Wildlife Act for the disturbance of any protected wildlife.
Queen Elizabeth the Second National Trust Act 1977	The QEII Trust Act established the Queen Elizabeth II National Trust. The Act sets out the functions and powers of the Trust, including in respect of land that is subject to a ‘QEII covenant’. The Project area includes two areas of QEII covenanted land.

2. National Policy Statements

National Policy Statement for Freshwater Management

The National Policy Statement for Freshwater Management 2014 (NPSFM) came into effect on 1 August 2014. Amendments made in August 2017 took effect on 7 September 2017. The NPSFM is relevant to the effects of the Project on the quality of freshwater, freshwater ecosystems and values associated with freshwater bodies.

REFERENCE	PROVISION
AA. Te Mana o te Wai	
Objective AA1	To consider and recognise Te Mana o te Wai in the management of fresh water.
A. Water Quality	
Objective A1	To safeguard: <ul style="list-style-type: none"> a) the life-supporting capacity, ecosystem processes and indigenous species including their associated ecosystems, of fresh water; and b) the health of people and communities, as affected by contact with fresh water;

REFERENCE	PROVISION
	in sustainably managing the use and development of land, and of discharges of contaminants.
Objective A2	The overall quality of fresh water within a freshwater management unit is maintained or improved while: <ul style="list-style-type: none"> a) protecting the significant values of outstanding freshwater bodies; b) protecting the significant values of wetlands; and c) improving the quality of fresh water in water bodies that have been degraded by human activities to the point of being over-allocated.
Objective A3	The quality of fresh water within a freshwater management unit is improved so it is suitable for primary contact more often, unless: <ul style="list-style-type: none"> a) regional targets established under Policy A6(b) have been achieved; or b) naturally occurring processes mean further improvement is not possible.
Objective A4	To enable communities to provide for their economic well-being, including productive economic opportunities, in sustainably managing freshwater quality, within limits. This objective is supported by Policy A1 to A7.
B. Water quantity	
Objective B1	To safeguard the life-supporting capacity, ecosystem processes and indigenous species including their associated ecosystems of fresh water, in sustainably managing the taking, using, damming, or diverting of fresh water.
Objective B2	To avoid any further over-allocation of fresh water and phase out existing over-allocation.
Objective B3	To improve and maximise the efficient allocation and efficient use of water.
Objective B4	To protect significant values of wetlands and of outstanding freshwater bodies.
Objective B5	To enable communities to provide for their economic well-being, including productive economic opportunities, in sustainably managing fresh water quantity, within limits. This objective is supported by Policy B1 to B7.
C. Integrated management	
Objective C1	To improve integrated management of fresh water and the use and development of land in whole catchments, including the interactions between fresh water, land, associated ecosystems and the coastal environment. This objective is supported by Policy C1 and C2.
Objective C1A	To provide an approach to establish freshwater objectives for national values, and any other values, that: <ul style="list-style-type: none"> a) is nationally consistent; and b) recognises regional and local circumstances. This objective is supported by Policy CA1 to CA4.
Objective CB1	To provide for an approach to the monitoring of progress towards, and the achievement of freshwater objectives and the values identified under Policy CA2(b). This objective is supported by Policy CB1 to CB4.
Objective CC1	To improve information on freshwater takes and sources of freshwater contaminants, in order to: <ul style="list-style-type: none"> a) ensure the necessary information is available for freshwater objective and limit setting and freshwater management under this national policy statement; and b) ensure information on resource availability is available for current and potential resource users. This objective is supported by Policy CC1 to CC2.
D. Tangata whenua roles and interests	
Objective D1	To provide for the involvement of iwi and hapū, and to ensure that tangata whenua values and interests are identified and reflected in the management of fresh water

REFERENCE	PROVISION
	including associated ecosystems, and decision-making regarding freshwater planning, including on how all other objectives of this national policy statement are given effect to. This objective is supported by Policy CC1 to CC2

National Policy Statement for Renewable Electricity Generation

The National Policy Statement for Renewable Electricity Generation 2011 (NPSREG) came into effect on 13 May 2011. The NPSREG is relevant to the effects of the Project on the Te Āpiti Wind Farm.

REFERENCE	PROVISION
Objective	To recognise the national significance of renewable electricity generation activities by providing for the development, operation, maintenance and upgrading of new and existing renewable electricity generation activities, such that the proportion of New Zealand's electricity generated from renewable energy sources increases to a level that meets or exceeds the New Zealand Government's national target for renewable electricity generation.
Objective A Recognising the benefits of renewable electricity generation activities - Policy A	Decision-makers shall recognise and provide for the national significance of renewable electricity generation activities, including the national, regional and local benefits relevant to renewable electricity generation activities. These benefits include, but are not limited to: <ul style="list-style-type: none"> a) maintaining or increasing electricity generation capacity while avoiding, reducing or displacing greenhouse gas emissions; b) maintaining or increasing security of electricity supply at local, regional and national levels by diversifying the type and/or location of electricity generation; c) using renewable natural resources rather than finite resources; d) the reversibility of the adverse effects on the environment of some renewable electricity generation technologies; e) avoiding reliance on imported fuels for the purposes of generating electricity.
Objective B Acknowledging the practical implications of achieving New Zealand's target for electricity generation from renewable resources - Policy B	Decision-makers shall have particular regard to the following matters: <ul style="list-style-type: none"> a) maintenance of the generation output of existing renewable electricity generation activities can require protection of the assets, operational capacity and continued availability of the renewable energy resource; and b) even minor reductions in the generation output of existing renewable electricity generation activities can cumulatively have significant adverse effects on national, regional and local renewable electricity generation output; and c) meeting or exceeding the New Zealand Government's national target for the generation of electricity from renewable resources will require the significant development of renewable electricity generation activities.
Objective C Acknowledging the practical constraints associated with the development, operation, maintenance and upgrading of new and existing renewable electricity generation activities – Policy C1	Decision-makers shall have particular regard to the following matters: <ul style="list-style-type: none"> a) the need to locate the renewable electricity generation activity where the renewable energy resource is available; b) logistical or technical practicalities associated with developing, upgrading, operating or maintaining the renewable electricity generation activity; c) the location of existing structures and infrastructure including, but not limited to, roads, navigation and telecommunication structures and facilities, the distribution network and the national grid in relation to the renewable electricity generation activity, and the need to connect renewable electricity generation activity to the national grid; d) designing measures which allow operational requirements to complement and provide for mitigation opportunities; and e) adaptive management measures.
Objective D Managing reverse sensitivity effects on renewable	Decision-makers shall, to the extent reasonably possible, manage activities to avoid reverse sensitivity effects on consented and on existing renewable electricity generation activities.

REFERENCE	PROVISION
electricity generation activities – Policy D	

National Policy Statement on Electricity Transmission

The National Policy Statement on Electricity Transmission (NPSET) came into force on 10 April 2008. The NPSET may be relevant to the effects of the Project on the National Grid, where the construction works are in the vicinity of the Mangamaire – Woodville A 110kV transmission line.

REFERENCE	PROVISION
Objective	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: <ul style="list-style-type: none"> managing the adverse environmental effects of the network; and managing the adverse effects of other activities on the network.

Managing the environmental effects of transmission

Policy 2	In achieving the purpose of the Act, decision-makers must recognise and provide for the effective operation, maintenance, upgrading and development of the electricity transmission network.
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Managing the adverse effects of third parties on the transmission network

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 operation, maintenance, upgrading, and development of the electricity transmission network is not compromised.
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3. National Environmental Standards

National Environmental Standards (NES) are made under section 43 of the RMA and are regulations that prescribe specific technical standards, methods or other requirements for environmental matters. These are described in the following table:

NATIONAL ENVIRONMENTAL STANDARD	REGULATIONS
Resource Management (National Environmental Standards for Air Quality) Regulations 2004 (NES _{AQ})	The NES Air are to protect public health and the environment by, among other things, setting concentration limits for certain air pollutants. The proposal does not require consents under the NES _{AQ} .
Resource Management (National Environmental Standards for Sources of Human Drinking Water) Regulations 2007 (NES Drinking Water)	The NES Drinking Water came into effect on 20 June 2008. The NES Drinking Water aims to reduce the risk of contamination of drinking water sources by requiring regional councils to consider the effects of certain activities on drinking water sources when granting water permits or discharge permits.
Resource Management (National Environmental Standard for Assessment and Managing Contaminants in Soil to Protect Human Health) Regulations 2011 (NES _{CS})	Provides a nationally consistent set of planning controls and soil contaminant values; Ensures that land affected by contaminants in soil is appropriately identified and assessed before it is developed and if necessary the land is remediated, or the contaminants contained to make the land safe for human use. The NES _{CS} identifies permitted activities and resource consent requirements for certain activities on land affected or potentially affected by contaminants in soil. Regulation 5(7) of the NES _{CS} states that these regulations apply to land where an activity or industry scheduled in the HAIL is being, or has been, undertaken on that land.

NATIONAL ENVIRONMENTAL STANDARD	REGULATIONS
Resource Management (National Environmental Standards for Plantation Forestry) Regulations 2017 (NES _{PF})	The NES _{PF} aims to maintain or improve the environmental outcomes associated with plantation forestry activities nationally and increase certainty and efficiency in the management of plantation forestry activities.
Resource Management (National Environmental Standards Electricity Transmission Activities) Regulations 2009 (NES _{ETA})	The NES _{ETA} came into effect on 14 January 2010. It aims to provide national consistent planning requirements for activities (operation, maintenance and upgrade) on existing high voltage electricity transmission lines. The NES _{ETA} identified permitted activities and consent requirements to ensure those activities do not have a significant adverse effect on the environment.
Resource Management (National Environmental Standard for Telecommunication Facilities) Regulations 2016 (NES _{TF})	The NES _{TF} provides national consistent rules surrounding the development of telecommunications infrastructure across New Zealand while ensuring the effects on the environment are minimised and managed appropriately.

4. Transport related Plans and Policies

REFERENCE	PROVISION
Government Policy Statement on Land Transport: 2018/19 - 2027/28 (GPS)	<p>The GPS outlines the Government's strategy to guide land transport investment over the next 10 years. It also provides guidance to decision-makers about where the Government will focus resources. The GPS operates under the LTMA, which sets out the scope and requirements for the GPS.</p> <p>There are four strategic priorities (Safety, Access, Environment and Value for Money) of the GPS which outline what the Government wants to achieve in land transport.</p> <p>The GPS can be accessed in full at the Ministry of Transport website: https://www.transport.govt.nz/assets/Uploads/Our-Work/Documents/c6b0fea45a/Government-Policy-Statement-on-land-transport-2018.pdf</p>
National Land Transport Programme 2018 – 2021 (NLTP)	<p>The NLTP is a three year programme of the planned activities and a 10 year forecast of revenue and expenditure prepared by the Transport Agency to give effect to the GPS. The NLTP is a partnership between the Transport Agency, which invests NLTF funding on behalf of the Crown and local government, which invests funding on behalf of ratepayers. The NLTP identifies the Project as a key priority and confirms an initial investment for its design and construction. The NLTP can be accessed in full at the Transport Agency website: https://nzta.govt.nz/assets/planning-and-investment/nltp/NLTP-2018-21.pdf</p>
Horizons Regional Land Transport Plan 2015 - 2025 (2018 review)	<p>The RLTP sets out the strategic direction for land transport in the region over the next 10 years. It describes that the regional is seeking to achieve in order to contribute to an effective, efficient and safe land transport system.</p> <p>Regional Issues:</p> <ul style="list-style-type: none"> ■ Land use pressures ■ Network efficiency ■ Economic Development, tourism and growth ■ Road Safety ■ Local Roads and Freight ■ Environmental ■ Resilience <p>The RLTP identifies an alternative to the Manawatū Gorge route as the first priority project for funding purposes, and therefore the Project is fundamental to the achievement of this Plan. The RLTP can be accessed in full at the Horizons website: https://www.horizons.govt.nz/HRC/media/Media/Publication/Draft-RLTP-document.pdf?ext=.pdf</p>

5. Horizons One Plan

Part 1: Regional Policy Statement

The Horizons One Plan was made operative of 19 December 2014. The Regional Policy Statement provisions are included in Part 1.

Chapter 1 – Setting the Scene

REFERENCE	PROVISION
Issue 1: Surface Water Quality Degradation	Run-off of nutrients, sediment and bacteria from farms is now the single largest threat to water quality in the Region. In some water bodies it is risky to swim or gather food, and aquatic life is being damaged. Priority catchments for water quality enhancement include those listed in Table 14.1 in Part II of the Plan which sets out the specified Water Management Zones and Sub-zones (priority catchments) where management of intensive farming land use activities will be specifically controlled. These are: Mangapapa River, Mangatainoka River, Upper Manawatu River above Hopelands, Waikawa Stream, Manawatu River above Gorge, other south-west catchments (Papaitonga), and other coastal lakes (Northern Manawatu).
Issue 2: Increasing Water Demand	The amount of water used from ground and surface water resources increases each year. At certain times of the year public water supply and irrigation demand exceed what some water bodies in the Region can supply.
Issue 3: Unsustainable Hill Country Land Use	Unsustainable pasture-based farming practices in the Region's steeper hill country damage soil structure and accelerate erosion causing muddy rivers, increasing river siltation downstream and reducing the protection level of flood control schemes.
Issue 4: Threatened Indigenous Biological Diversity	Due to more than a century of landscape modification, the Region has lost much of its indigenous habitat. Habitat remnants continue to be threatened by land development and by pest plants and pest animals.

Chapter 2 – Te Ao Māori

REFERENCE	PROVISION
Objective 2-1: Resource Management	<ol style="list-style-type: none"> a) To have regard to the mauri of natural and physical resources to enable hapū and iwi to provide for their social, economic and cultural wellbeing. b) Kaitiakitanga must be given particular regard and the relationship of hapū and iwi with their ancestral lands, water, sites, wāhi tapu and other taonga (including wāhi tūpuna) must be recognised and provided for through resource management processes.
Policy 2-1: Hapū and iwi involvement in resource management	<p>The Regional Council must enable and foster kaitiakitanga and the relationship between hapū and iwi and their ancestral lands, water, sites, wāhi tapu and other taonga (including wāhi tūpuna) through increased involvement of hapu and iwi in resource management processes including:</p> <ol style="list-style-type: none"> a) Memoranda of partnership between the Regional Council and hapū or iwi which set clear relationship and communication parameters to address resource management objectives, b) Recognition of existing arrangements and agreements between resource users, local authorities and hapū or iwi c) Development of catchment based forums, involving the Regional Council, hapū, iwi and other interested groups, including resource users, for information sharing, planning and research d) Development, where appropriate, of hapū and iwi cultural indicator monitoring programmes by the Regional Council e) Assistance from the Regional Council to hapū or iwi to facilitate research, projects, seminars and training, f) Development of joint management agreements between the Regional Council and hapū and iwi where appropriate,

REFERENCE	PROVISION
	<p>g) The Regional Council having regard to iwi management plans lodged with Council,</p> <p>h) Involvement of hapū or iwi in resource consent decision-making and planning processes in the ways agreed in the memoranda of partnership and joint management agreements developed under (a) and (f) above, and</p> <p>i) The Regional Council advising and encouraging resource consent applicants to consult directly with hapū or iwi where it is necessary to identify</p> <ol style="list-style-type: none"> i. The relationship of Māori and their culture and traditions with their ancestral lands, water, sites, wāhi tapu and other taonga (including wāhi tūpuna), and ii. The actual and potential adverse effects of proposed activities on those relationship
Policy 2-2: Wāhi tapu, wāhi tūpuna and other sites of significance	<p>a) Wāhi tapu, wāhi tūpuna and other sites of significance to Māori identified:</p> <ol style="list-style-type: none"> i. in the Regional Coastal Plan and district plans, ii. as historic reserves under the Reserves Act 1977, iii. as Māori reserves under the Te Ture Whenua Māori Act 1993, iv. as sites recorded in the New Zealand Archaeological Association's Site Recording Scheme, and v. as registered sites under the HNZPTA <p>must be protected from inappropriate subdivision, use or development that would cause adverse effects on the qualities and features which contribute to the values of these sites.</p> <p>b) The Regional Council must facilitate hapū and iwi recording the locations of wāhi tapu, wāhi tūpuna and other sites of significance to Māori in an appropriate publicly-available database.</p> <p>c) Potential damage or disturbance (including that caused by inappropriate subdivision, use or development) to wāhi tapu, wāhi tūpuna and other sites of significance to Māori not identified (for confidentiality and sensitivity reasons) by hapū or iwi under (a), above, must be minimised by the Regional Council facilitating the compilation of databases by hapū and iwi to record locations which need to remain confidential.</p> <p>d) The Regional Council must ensure that resource users and contractors have clear procedures in the event wāhi tapu or wāhi tūpuna are discovered.</p>
Policy 2-3: The mauri of water	<p>a) The Regional Council must have regard to the mauri of water by implementing Policy 2-1(a) to (i) above and by restricting and suspending water take in times of minimum flow consistent with Policy 5-18 in Chapter 5.</p> <p>b) In exceptional circumstances the Regional Council, following advice and guidance of hapū or iwi and consultation with potentially affected resource users, may facilitate a voluntary rāhui – temporary cessation of resource activities (with the exception of public water supply).</p>
Policy 2-4: Other resource management issues	<p>The specific issues listed in 2.2 which were raised by hapū and iwi must be addressed in the manner set out in Table 2.1 below.</p> <p>Table 2.1 highlights issues of significance to the Region's hapū and iwi, provides explanations in the context of Māori belief and demonstrates how the Regional Council must address these matters. The issues and explanations do not in any way represent a complete picture of hapū and iwi concerns, but they offer possible explanations as to the depth of feeling and connection hapū and iwi have with the Region's natural resources.</p>

Table 2.1 Resource management issues of significance to hapū and iwi

Resource issue of significance to hapū and iwi.	Resource issue in the context of tikanga Māori	Relevant part of One Plan where issue is addressed
a) Management of water quality and quantity throughout the Region does not provide for the special qualities significant to Māori.	<p>Mauri</p> <p>Wai Māori (pure water) is essential to hapū and iwi in the Region to ensure activities conducted for cultural purposes, such as spiritual cleansing, baptismal rituals and food gathering, are achievable.</p> <p>Mauri acts as a balancing agent to ensure the life-supporting qualities within the water are maintained.</p>	<p>Surface water quality</p> <p>Chapter 2 - Te Ao Māori</p> <p>Objective 2-1</p> <p>Policy 2-3</p> <p>Chapter 2 Methods</p> <p>Chapter 5 - Water</p> <p>Objective 5-1</p> <p>Policy 5-1</p> <p>Chapter 5 Methods</p>

Resource issue of significance to hapū and iwi.	Resource issue in the context of tikanga Māori	Relevant part of One Plan where issue is addressed
b) Hazardous substances and nitrate run-off need to be better managed to avoid contaminants entering water.	Human activities, application of impure agents, loss of water capacity, and contaminants all affect the ability of the mauri to perform its role effectively, therefore resulting in a standard of water not suitable for hapū and iwi to perform their relevant tikanga Māori or cultural activities associated with its use.	Rules, Chapter 14 -Discharges to Land and Water Surface water quality Chapter 5 - Water Objective 5-2 Policy 5-8 Chapter 5 Methods Rules, Chapter 14 -Discharges to Land and Water
c) Lakes and streams (for example, Punahau/Waipunahau (Lake Horowhenua and Hokio Stream)) have suffered degradation which continues and are considered culturally unclean.		Surface water quality Chapter 5 - Water Objectives 5-1 and 5-2, Policies 5-1 to 5-5 and 5-8 to 5-10 Chapter 5 Methods Rules, Chapter 14 -Discharges to Land and Water
d) Access to and availability of clean water to exercise cultural activities such as food gathering and baptismal rituals have diminished.		Surface water quality Chapter 5 - Water Objective 5-2 Policies 5-2 to 5-11 Chapter 5 Methods
f) Excessive groundwater abstraction can adversely affect water and existing groundwater users.		Manaakitanga (hospitality) The hau kainga (home people) will always ensure the essential needs of their manuhiri (visitors) are accommodated during their stay at the marae, whether it be for hui (social gatherings), tangihanga (funerals), or wānanga (learning institutions). This is a sign of mana. In some circumstances, water shortages have affected the ability to meet these needs.
g) Water diversion from one catchment to another is considered culturally abhorrent. Land-based treatment is preferred.	Mauri Hapū and iwi may have differing views on the diversion of water from one catchment to another. If more information is required on the issue of diverting water from one catchment to another, consultation with the relevant hapū or iwi may clarify their position on this matter.	Water diversions Refer to rules regarding water diversion in Chapter 16 - Takes, Uses and Diversions of Water, and Bores
i) More riparian retirement and planting is needed to protect river banks from erosion. Several iwi believe harakeke (flax) would provide the most desirable outcome.	Manaaki whenua (nurturing the land) Hapū and iwi would like to see more measures put in place to plant river banks throughout the Region to avoid bank erosion and silt build-up in rivers. Harakeke	Surface water quality Chapter 5 - Water Objective 5-2 Policy 5-8 Rules, Chapter 14 -Discharges to Land and Water and Water Quality
j) Land management plans need to be encouraged to ensure		

Resource issue of significance to hapū and iwi.	Resource issue in the context of tikanga Māori	Relevant part of One Plan where issue is addressed
consistent land management practices Region-wide.	(common New Zealand flax) would be the ideal choice.	Standards in Schedule D
k) Adverse effects of land use continue to have a detrimental effect on traditional food gathering areas, native habitats and ecosystems.	Land management plans give hapū and iwi more certainty that landowners have an holistic land use management approach. Traditional food gathering sites and associated native habitats and ecosystems are valued very highly by Māori.	Land use management Chapter 4 - Land Objective 4-1 Policy 4-1 Chapter 4 Methods Rules, Chapter 13 – Land Use Activities and Indigenous Biological Diversity
l) The removal, destruction or alteration of wāhi tapu and wāhi tūpuna by inappropriate activities continues to have a detrimental effect on those sites and upon hapū and iwi.	Wāhi tapu and wāhi tūpuna Hapū and iwi view wāhi tapu and wāhi tūpuna as western cultures view cemeteries and churches - as locations that are a significant part of history which require protection and preservation. Wāhi tapu are sites that remain tapu (sacred), given the nature of their location and purpose. Ancient urupā (burial sites) are prominent throughout the Region and their locations more often than not remain the intellectual property of hapū or iwi members charged with keeping them safe from harm.	Land use management Chapter 4 - Land Objective 4-1 Policy 4-1 Chapter 4 Method Rules, Chapter 14 -Discharges to Land and Water Chapter 6 – Indigenous biological diversity, landscape and historic heritage Objective 6-3 Policies 6-11 and 6-12 Method 6-10 Rules and conditions protecting wāhi tapu throughout the Plan.
m) The transfer of indigenous plants from rohe to rohe is considered culturally unnatural.	Tapu (sacred) The transfer of indigenous plants from one rohe to another can result in the cross-pollination of plants native to a particular rohe, affecting elements of tapu. The act of artificially cross-pollinating plants including trees or removing and planting them away from their points of origin is not common practice to hapū and iwi. Ideally, they would like the integrity of each rohe preserved in its natural state.	Chapter 6 - Indigenous biological diversity, landscape and historic heritage Objective 6-1 Policies 6-1 to 6-5 Chapter 6 Methods Rules, Chapter 13 - Land Use Activities and Indigenous Biological Diversity
n) Indigenous plants and animals continue to be under increased threat by human and pest activity.	Hapū and iwi are advocating for assistance via policy and funding to protect the integrity of indigenous plants and animals from human activity and pest plants and pest animals.	Indigenous biological diversity Chapter 6 - Indigenous biological diversity, landscape and historic heritage Objective 6-1 Policies 6-1 to 6-5 Chapter 6 Methods Rules, Chapter 13 - Land Use Activities and Indigenous Biological Diversity
p) Biodiversity research needs more funding.	Tiro whakamua (a glance at the future) Many Māori landowners are actively involved in restoring and preserving wetlands to maintain native habitats for future generations.	Threatened indigenous biological diversity Chapter 6 - Indigenous biological diversity, landscape and historic heritage Objective 6-1 Policies 6-1 to 6-4 Chapter 6 Methods

Resource issue of significance to hapū and iwi.	Resource issue in the context of tikanga Māori	Relevant part of One Plan where issue is addressed
		Rules, Chapter 13 - Land Use Activities and Indigenous Biological Diversity
(q) Monitoring and enforcement of environmental standards, including those contained in regional plans, district plans and resource consents, are insufficient at times.	Te aroturuki me te ūruhitanga (monitoring and enforcement) Māori wish to see a greater level of monitoring undertaken for resource use activities. Many Māori also wish to see those who do not comply with resource consent or permitted activity conditions undertake remedial work to remedy their actions.	Monitoring and enforcement Chapter 12 Policy 12-8

Chapter 3 – Infrastructure, Energy, Waste, Hazardous Substances and Contaminated Land

REFERENCE	PROVISION
Objective 3-1: Infrastructure and other physical resources of regional or national importance	Have regard to the benefits of infrastructure and other physical resources of regional or national importance by recognising and providing for their establishment, operation, maintenance and upgrading.
Objective 3-2: Energy	An improvement in the efficiency of the end use of energy and an increase in the use of renewable energy resources within the Region.
Objective 3-5: Waste, hazardous substances and contaminated land	The Regional Council and Territorial Authorities must work together in a regionally consistent way to: <ul style="list-style-type: none"> i. minimise the quantity of waste generated in the Region and ensure it is disposed of appropriately, ii. manage adverse effects from the use, storage, disposal and transportation of hazardous substances, and iii. manage adverse effects from contaminated land.
Policy 3-1: Benefits of infrastructure and other physical resources of regional or national importance	<ul style="list-style-type: none"> a) The Regional Council and Territorial Authorities must recognise the following infrastructure as being physical resources of regional or national importance: <ul style="list-style-type: none"> i. facilities for the generation of more than 1 MW of electricity and its supporting infrastructure where the electricity generated is supplied to the electricity distribution and transmission networks ii. the National Grid and electricity distribution and transmission networks defined as the system of transmission lines, subtransmission and distribution feeders (6.6kV and above) and all associated substations and other works to convey electricity iii. pipelines and gas facilities used for the transmission and distribution of natural and manufactured gas iv. the road and rail networks as mapped in the Regional Land Transport Strategy v. the Palmerston North and Wanganui airports vi. the RNZAF airport at Ohakea vii. telecommunications and radiocommunications facilities viii. public or community sewage treatment plants and associated reticulation and disposal systems ix. public water supply intakes, treatment plants and distribution systems x. public or community drainage systems, including stormwater systems xi. the Port of Wanganui. b) The Regional Council and Territorial Authorities must recognise the following facilities and assets as being physical resources of regional or national importance:

REFERENCE	PROVISION
	<ul style="list-style-type: none"> i. solid waste facilities including landfills, transfer stations and resource recovery facilities that deal with municipal waste ii. existing flood protection schemes iii. New Zealand Defence Force facilities. <p>c) The Regional Council and Territorial Authorities must, in relation to the establishment, operation, maintenance, or upgrading of infrastructure and other physical resources of regional or national importance, listed in (a) and (b), have regard to the benefits derived from those activities.</p> <p>d) The Regional Council and Territorial Authorities must achieve as much consistency across local authority boundaries as is reasonably possible with respect to policy and plan provisions and decision-making for existing and future infrastructure.</p>
<p>Policy 3-2: Adverse effects of other activities on infrastructure and other physical resources of regional or national importance</p>	<p>The Regional Council and Territorial Authorities must ensure that adverse effects on infrastructure and other physical resources of regional or national importance from other activities are avoided as far as reasonably practicable, including by using the following mechanisms:</p> <ul style="list-style-type: none"> a) ensuring that current infrastructure, infrastructure corridors and other physical resources of regional or national importance, are identified and had regard to in all resource management decision-making, and any development that would adversely affect the operation, maintenance or upgrading of those activities is avoided as far as reasonably practicable, b) ensuring that any new activities that would adversely affect the operation, maintenance or upgrading of infrastructure and other physical resources of regional or national importance are not located near existing such resources or such resources allowed by unimplemented resource consents or other RMA authorisations, c) ensuring that there is no change to existing activities that increases their incompatibility with existing infrastructure and other physical resources of regional or national importance, or such resources allowed by unimplemented resource consents or other RMA authorisations, d) notifying the owners or managers of infrastructure and other physical resources of regional or national importance of consent applications that may adversely affect the resources that they own or manage, e) ensuring safe separation distances are maintained when establishing rules and considering applications for buildings, structures and other activities near overhead electric lines and conductors eg., giving effect to the New Zealand Code of Practice for Electrical Safe Distances (NZECP 34:2001), prepared under the Electricity Act 1992, and the Electricity (Hazards from Trees) Regulations 2003 prepared under the Electricity Act 1992, f) ensuring safe separation distances are maintained when establishing rules and considering applications for buildings, structures and other activities near transmission gas pipelines eg., giving effect to the Operating Code Standard for Pipelines - Gas and Liquid Petroleum (NZS/AS 2885) and the Gas Distribution Networks (NZS 5258:2003), the latter promulgated under the Gas Act 1992, g) ensuring that any planting does not interfere with existing infrastructure, eg., giving effect to the Electricity (Hazards from Trees) Regulations 2003 promulgated under the Electricity Act 1992 and Section 6.4.4 External Interference Prevention of the Operating Code Standard for Pipelines - Gas and Liquid Petroleum (NZS/AS 2885), and h) ensuring effective integration of transport and land use planning and protecting the function of the strategic road and rail network as mapped in the Regional Land Transport Strategy.
<p>Policy 3-3: Adverse effects of infrastructure and other physical resources of regional or national importance on the environment</p>	<p>In managing any adverse environmental effects arising from the establishment, operation, maintenance and upgrading of infrastructure or other physical resources of regional or national importance, the Regional Council and Territorial Authorities must:</p> <ul style="list-style-type: none"> a) recognise and provide for the operation, maintenance and upgrading of all such activities once they have been established, b) allow minor adverse effects arising from the establishment of new infrastructure and physical resources of regional or national importance, and

REFERENCE	PROVISION
	<p>c) avoid, remedy or mitigate more than minor adverse effects arising from the establishment of new infrastructure and other physical resources of regional or national importance, taking into account:</p> <ul style="list-style-type: none"> i. the need for the infrastructure or other physical resources of regional or national importance, ii. any functional, operational or technical constraints that require infrastructure or other physical resources of regional or national importance to be located or designed in the manner proposed, iii. whether there are any reasonably practicable alternative locations or designs, and iv. whether any more than minor adverse effects that cannot be adequately avoided, remedied or mitigated by services or works can be appropriately offset, including through the use of financial contributions.
<p>Policy 3-6: Renewable energy</p>	<p>a) The Regional Council and Territorial Authorities must have particular regard to:</p> <ul style="list-style-type: none"> i. the benefits of the use and development of renewable energy resources including: <ul style="list-style-type: none"> A. contributing to reduction in greenhouse gases, B. reduced dependency on imported energy sources, C. reduced exposure to fossil fuel price volatility, and D. security of supply for current and future generations, ii. the Region's potential for the use and development of renewable energy resources, and iii. the need for renewable energy activities to locate where the renewable energy resource is located, and iv. the benefits of enabling the increased generation capacity and efficiency of existing renewable electricity generation facilities, and v. the logistical or technical practicalities associated with developing, upgrading, operating or maintaining an established renewable electricity generation activity. <p>b) The Regional Council and Territorial Authorities must generally not restrict the use of small domestic-scale renewable energy production for individual domestic use.</p>
<p>Policy 3-14: Identification of priority contaminated land</p>	<p>The Regional Council and Territorial Authorities shall jointly identify priority contaminated land.</p> <p>Priority contaminated land is land that:</p> <ul style="list-style-type: none"> a) Is listed on a register of verified contaminated land help by Regional Council or a Territorial Authority, or b) Would have been the site of an activity identified on HAIL, including horticulture and sheep dips, and site investigations have verified that the land is contaminated, and c) Is expected to be subject to a change of land use within the next 10 years that is likely to increase the risks to human health or the environment, including where land is identified for future residential zoning or where a specific development is proposed.
<p>Policy 3-15: Management of priority contaminated land</p>	<p>Where land use changes are likely to increase the risks to human health or the environment from priority contaminated land (as identified under Policy 3-14) the Regional Council and Territorial Authorities must ensure that:</p> <ul style="list-style-type: none"> a) the landowner or land developer fully investigates the extent and degree of contamination prior to the granting of consent allowing development (assistance with investigations may be provided by the Regional Council in some cases), b) land is made suitable for its intended use through an appropriate level of remediation or management (including engineering) controls, and c) land remains suitable for its intended use through appropriate monitoring of residual contaminant levels and associated risks and through the use of management controls on the activities undertaken on the land.

Chapter 4 – Land

REFERENCE	PROVISION
Objective 4-2: Regulating potential causes of accelerated erosion	<p>Land is used in a manner that ensures:</p> <ul style="list-style-type: none"> a) accelerated erosion and increased sedimentation in water bodies (with resultant adverse effects on people, buildings and infrastructure) caused by vegetation clearance, land disturbance, forestry, or cultivation are avoided as far as reasonably practicable, or otherwise remedied or mitigated, and b) sediment loads entering water bodies as a result of accelerated erosion are reduced to the extent required to be consistent with the water management objectives and policies for water quality set out in Chapter 5 of this Plan.
Policy 4-2: Regulation of land use activities	<ul style="list-style-type: none"> a) In order to achieve Objective 4-2 the Regional Council must regulate vegetation clearance, land disturbance, forestry and cultivation through rules in this Plan and decisions on resource consents, so as to minimise the risk of accelerated erosion, minimise discharges of sediment to water, and maintain the benefits of riparian vegetation for water bodies. b) Territorial Authorities may regulate, through rules in district plans and decisions on resource consents, the actual or potential effects of the use, development, or protection of land, in order to achieve Objective 4-2. However, Territorial Authorities must not have rules that are contradictory to the rules in this Plan that control the use of land. c) The Regional Council will generally allow small scale vegetation clearance, land disturbance, forestry and cultivation to be undertaken without the need for a resource consent if conditions are met. Vegetation clearance and land disturbance require a resource consent if they are undertaken adjacent to some water bodies (including certain wetlands) in Hill Country Erosion Management Areas or in coastal foredune areas. Any other large scale land disturbance will also require a resource consent.

Chapter 5 – Water

REFERENCE	PROVISION
Objective 5-1: Water management Values	<p>Surface water bodies and their beds are managed in a manner which safe guards their life supporting capacity and recognises and provides for the Values in Schedule B1.</p>
Objective 5-2: Water quality	<ul style="list-style-type: none"> a) Surface water quality is managed to ensure that: <ul style="list-style-type: none"> i. water quality is maintained in those rivers and lakes where the existing water quality is at a level sufficient to support the Values in Schedule B. ii. water quality is enhanced in those rivers and lakes where the existing water quality is not at a level sufficient to support the Values in Schedule B. b) Groundwater quality is managed to ensure that existing groundwater quality is maintained or where it is degraded/over allocated as a result of human activity, groundwater quality is enhanced.
Objective 5-3: Water quantity and allocation	<p>Water quantity is managed to enable people, industry and agriculture to take and use water to meet their reasonable needs while ensuring that:</p> <ul style="list-style-type: none"> a) For surface water: <ul style="list-style-type: none"> i. minimum flows and allocation regimes are set for the purpose of maintaining or enhancing (where degraded) the existing life-supporting capacity of rivers and their beds and providing for the other Values in Schedule B as appropriate ii. takes and flow regimes for existing hydroelectricity are provided for before setting minimum flow and allocation regimes for other uses iii. in times of water shortage, takes are restricted to those that are essential to the health or safety of people and communities, or drinking water for animals, and other takes are ceased iv. the amount of water taken from lakes does not compromise their existing life-supporting capacity v. the requirements of water conservation orders are upheld

REFERENCE	PROVISION
	<p>vi. the instream geomorphological components of natural character are provided for. For the avoidance of doubt this list is not hierarchical.</p> <p>b) For groundwater:</p> <ul style="list-style-type: none"> i. takes do not cause a significant adverse effect on the long-term groundwater yield ii. groundwater takes that are hydrologically connected to rivers, are managed within the minimum flow and allocation regimes established for rivers iii. groundwater takes that are hydrologically connected to lakes or wetlands are managed to protect the life-supporting capacity of the lakes or wetlands iv. the significant adverse effects of a groundwater take on other groundwater and surface water takes are avoided v. saltwater intrusion into coastal aquifers, induced by groundwater takes, is avoided. <p>In all cases, water is used efficiently.</p>
<p>Objective 5-4: Beds of rivers and lakes</p>	<p>The beds of rivers and lakes will be managed in a manner which:</p> <ul style="list-style-type: none"> a) sustains their life supporting capacity b) provides for the instream morphological components of natural character c) recognises and provides for the Schedule B Values d) provides for infrastructure and flood mitigation purposes. <p>The land adjacent to the bed of reaches with a Schedule B Value of Flood Control and Drainage will be managed in a manner which provides for flood mitigation purposes.</p>
<p>Policy 5-1: Water Management Zones and Values</p>	<p>For the purposes of managing water quality, water quantity, and activities in the beds of rivers and lakes, the catchments in the Region have been divided into Water Management Zones and Water Management Sub-zones in Schedule A.2 Groundwater has been divided into Groundwater Management Zones in Schedule D.</p> <p>The rivers and lakes and their beds must be managed in a manner which safeguards their life supporting capacity and recognises and provides for the Schedule B Values when decisions are made on avoiding, remedying or mitigating the adverse effects of activities or in relation to any other function under the Resource Management Act 1991 exercised by the Regional Council or Territorial Authorities. The individual Values and their associated management objectives are set out in the Schedule B Surface Water Management Values Key and repeated in Table 5.2.</p>
<p>Policy 5-2: Water quality targets</p>	<p>In Schedule E4, water quality targets relating to the Schedule B Values (repeated in Table 5.2) are identified for each Water Management Sub-Zone. Other than where they are incorporated into permitted activity rules as conditions to be met, the water quality targets in Schedule E must be used to inform the management of surface water quality in the manner set out in Policies 5-3, 5-4 and 5-5.</p>
<p>Policy 5-3: Ongoing compliance where water quality targets are met</p>	<ul style="list-style-type: none"> a) Where the existing water quality meets the relevant Schedule E water quality targets within a Water Management Sub-zone, water quality must be managed in a manner which ensures that the water quality targets continue to be met beyond the zone of reasonable mixing (where mixing is applicable). b) For the avoidance of doubt: <ul style="list-style-type: none"> i. in circumstances where the existing water quality of a Water Management Sub-zone meets all of the water quality targets for the Sub-zone (a) applies to every water quality target for the Sub-zone ii. in circumstances where the existing water quality of a Water Management Sub-zone meets some of the water quality targets for the Sub-zone (a) applies only to those water quality targets that are met iii. for the purpose of (a) reasonable mixing is only applicable to a discharge from an identifiable location.
<p>Policy 5-4: Enhancement where water quality targets are not met</p>	<ul style="list-style-type: none"> a) Where the existing water quality does not meet the relevant Schedule E water quality targets within a Water Management Sub-zone, water quality within that sub-zone must be managed in a manner that enhances existing water quality in order to meet: <ul style="list-style-type: none"> i. the water quality target for the Water Management Zone in Schedule E, and/or ii. the relevant Schedule B Values and management objectives that the water quality target is designed to safeguard.

REFERENCE	PROVISION
	<p>b) For the avoidance of doubt:</p> <ul style="list-style-type: none"> i. in circumstances where the existing water quality of a Water Management Sub-zone does not meet all of the water quality targets for the Sub-zone, (a) applies to every water quality target for the Sub-zone ii. in circumstances where the existing water quality of a Water Management Sub-zone does not meet some of the water quality targets for the Sub-zone, (a) applies only to those water quality targets not met.
<p>Policy 5-5: Management of water quality in areas where existing water quality is unknown</p>	<p>a) Where there is insufficient data to enable a comparison of the existing water quality with the relevant Schedule E water quality targets, water quality within the Water Management Sub-Zone must be managed in a manner which, beyond the zone of reasonable mixing (where reasonable mixing is applicable):</p> <ul style="list-style-type: none"> i. maintains or enhances the existing water quality ii. has regard to the likely effect of the activity on the relevant Schedule B Values that the water quality target is designed to safeguard iii. has regard to relevant information about the existing water quality in upstream or downstream Water Management Subzones, where such information exists. <p>b) For the avoidance of doubt:</p> <ul style="list-style-type: none"> i. in circumstances where there is insufficient data to enable a comparison of the existing water quality with all of the water quality targets for a Water Management Sub-zone (a) applies to every water quality target for the Sub-zone ii. in circumstances where there is insufficient data to enable a comparison of the existing water quality with some of the water quality targets for a Water Management Sub-zone (a) applies only to those water quality targets with insufficient data iii. for the purpose of (a) reasonable mixing is only applicable to a discharge from an identifiable location.
<p>Policy 5-6: Maintenance of groundwater quality</p>	<p>a) Discharges and land use activities must be managed in a manner which maintains the existing groundwater quality, or where groundwater quality is degraded/over allocated as a result of human activity, it is enhanced.</p> <p>b) An exception may be made under (a) where a discharge onto or into land better meets the purpose of the RMA than a discharge to water, provided that the best practicable option is adopted for the treatment and discharge system.</p>
<p>Policy 5-10: Point source discharges to land</p>	<p>Discharges of contaminants onto or into land must be managed in a manner which:</p> <ul style="list-style-type: none"> a) does not result in pathogens or other toxic substances accumulating in soil or pasture to levels that would render the soil unsafe for agricultural, domestic or recreational use b) has regard to the strategies for surface water quality management set out in Policies 5-3, 5-4 and 5-5, and the strategy for groundwater management set out in Policy 5-6 c) maximises the reuse of nutrients and water contained in the discharge to the extent reasonably practicable d) results in any discharge of liquid to land generally not exceeding the available water storage capacity of the soil (deferred irrigation) e) ensures that adverse effects on rare habitats, threatened habitats and at-risk habitats are avoided, remedied or mitigated.
<p>Policy 5-22: General management of the beds of rivers and lakes</p>	<p>Activities in, on, under or over the beds of rivers and lakes must generally be managed in a manner which:</p> <ul style="list-style-type: none"> a) recognises and provides for the Schedule B Values for the Water Management Sub-zone(s) in which the activity takes place, in the manner described in Policies 5-23, 5-24 and 5-25 b) avoids any significant reduction in the ability of a river and its bed to convey flood flows, or significant impedance to the passage of floating debris c) avoids, remedies or mitigates any significant adverse effects on the stability and function of the beds of rivers and lakes, and existing structures including flood and erosion control structures d) avoids, remedies or mitigates any significant reduction in the habitat diversity, including the morphological diversity, of the river or lake or its bed

REFERENCE	PROVISION
	<ul style="list-style-type: none"> e) manages effects on natural character and public access in accordance with the relevant policies in Chapter 6. Natural character can include the natural style and dynamic processes of the river, such as bed style and width and the quality and quantity of bed habitat f) provides for the safe passage of fish both upstream and downstream g) ensures that the existing nature and extent of navigation of the river or lake are not obstructed h) ensures that access required for the operation, maintenance, and upgrade of infrastructure and other physical resources of regional or national importance is not obstructed i) provides for continued public access in accordance with Policy 6-10.
Policy 5-23: Activities in sites with a Value of Natural State, Sites of Significance – Cultural, or Sites of Significance – Aquatic	<p>In sites with a Schedule B Value of Natural State, Sites of Significance - Cultural or Sites of Significance - Aquatic, activities in, on, under or over the beds of rivers and lakes must be managed in a manner which:</p> <ul style="list-style-type: none"> a) avoids adverse effects on these Values in the first instance, or b) for infrastructure and other resources of regional and national importance, or activities that result in an environmental benefit, remedies or mitigates those effects where it is not practicable to avoid them, and c) maintains the habitat and spawning requirements of the species identified.
Policy 5-24: Activities in rivers or lakes and their beds with a Value of Flood Control and Drainage	<p>In reaches of rivers or lakes and their beds with a Schedule B Value of Flood Control and Drainage, activities in, on, under or over the beds of rivers and lakes and on land adjacent to the bed where the Value is located must be managed in a manner which:</p> <ul style="list-style-type: none"> a) enables the degree of flood hazard and erosion protection existing at the time of Plan notification (31 May 2007) to be maintained or enhanced b) addresses adverse effects by: <ul style="list-style-type: none"> i. in the first instance, avoiding, remedying or mitigating adverse effects on the instream morphological components of natural character and other Schedule B Values ii. providing consent applicants with the option of making an offset iii. allowing compensation by way of a financial contribution in accordance with the policies in Chapter 19.
Policy 5-25: Activities in Rivers or lakes and their beds with other Schedule B Values	<p>In sites with Schedule B Values other than Natural State, Sites of Significance - Cultural, Sites of Significance - Aquatic, or Flood Control and Drainage, activities in, on, under or over the beds of rivers and lakes must be managed in a manner which:</p> <ul style="list-style-type: none"> a) in the first instance avoids, remedies or mitigates significant adverse effects on the instream morphological components of natural character and Schedule B Values b) provides consent applicants with the option of making an offset. c) allows compensation by way of a financial contribution in accordance with the policies in Chapter 19.
Policy 5-26: Essential and beneficial activities	<p>Activities in, on, under or over the beds of rivers and lakes that are essential or result in an environmental benefit must generally be allowed, including:</p> <ul style="list-style-type: none"> a) the use, maintenance and upgrading of existing infrastructure and other existing physical resources of regional or national importance b) works designed to maintain or improve the stability and functionality of existing structures c) the removal of derelict, unlawful or non-functional structures d) the restoration or enhancement of natural habitats.

Table 5.2 Surface Water Management Values and Management Objectives

Value Group	Individual Values	Management Objective
Ecosystem Values	NS	Natural State
	LSC	Life-supporting Capacity

Value Group	Individual Values	Management Objective	
	SOS-A	Sites of Significance – Aquatic	Sites of significance for indigenous aquatic biodiversity are maintained or enhanced
	SOS-R	Sites of Significance – Riparian	Sites of significance for indigenous riparian biodiversity are maintained or enhanced IS Inanga Spawning The water body and its bed sustain healthy inanga spawning and egg development
	WM	Whitebait Migration	The water body and its bed are maintained or enhanced to provide safe passage of inwardly migrating juvenile native fish known collectively as whitebait
Recreational and Cultural Values	CR	Contact Recreation	The water body and its bed are suitable for contact recreation
	AM	Amenity	The amenity values of the water body and its bed (and its margins where in public ownership) are maintained or enhanced
	MAU	Mauri	The mauri of the water body and its bed is maintained or enhanced
	SOS-C	Sites of Significance - Cultural	Sites of significance for cultural values are maintained
	TF	Trout Fishery	The water body and its bed sustain healthy rainbow or brown trout fisheries
	TS	Trout Spawning	The water body and its bed meet the requirements of rainbow and brown trout spawning and larval and fry development
	AE	Aesthetics	The aesthetic values of the water body and its bed are maintained or enhanced
Water Use	WS	Water Supply	The water is suitable, after treatment, as a drinking water source for human consumption
	IA	Industrial Abstraction	The water is suitable as a water source for industrial abstraction or use, including for hydroelectricity generation
	I	Irrigation	The water is suitable as a water source for irrigation
	SW	Stockwater	The water is suitable as a supply of drinking water for livestock
	DFS	Domestic Food Supply	The water is suitable for domestic food production
Social/Economic Values	CAP	Capacity to Assimilate Pollution	The capacity of a water body and its bed to assimilate pollution is not exceeded
	FC/D	Flood Control and Drainage	The integrity of existing flood and river bank erosion protection structures and existing drainage structures is not compromised and the risks associated with flooding and erosion are managed sustainably
	EI	Existing Infrastructure	The integrity of existing infrastructure is not compromised

Chapter 6 – Indigenous Biological Diversity, Landscape and Historic Heritage

REFERENCE	PROVISION
Objective 6-1: Indigenous biological diversity	Protect areas of significant indigenous vegetation and significant habitats of indigenous fauna and maintain indigenous biological diversity, including enhancement where appropriate.
Objective 6-2: Outstanding natural features and landscapes, and natural character	<ul style="list-style-type: none"> a) The characteristics and values of: <ul style="list-style-type: none"> i. the Region's outstanding natural features and landscapes, including those identified in Schedule G, and ii. the natural character of the coastal environment, wetlands, rivers and lakes and their margins are protected from inappropriate subdivision, use and development. b) Adverse effects, including cumulative adverse effects, on the natural character of the coastal environment, wetlands, rivers and lakes and their margins, are: <ul style="list-style-type: none"> i. avoided in areas with outstanding natural character, and ii. avoided where they would significantly diminish the attributes and qualities of areas that have high natural character, and iii. avoided, remedied or mitigated in other areas. c) Promote the rehabilitation or restoration of the natural character of the coastal environment, wetlands, rivers and lakes and their margins.
Policy 6-2: Regulation of activities affecting indigenous biological diversity	<p>For the purpose of managing indigenous biological diversity in the Region:</p> <ul style="list-style-type: none"> a) Habitats determined to be rare habitats and threatened habitats under Schedule F must be recognised as areas of significant indigenous vegetation or significant habitats of indigenous fauna. b) At-risk habitats that are assessed to be significant under Policy 13-5 must be recognised as significant indigenous vegetation or significant habitats of indigenous fauna. c) The Regional Council must protect rare habitats, threatened habitats and at-risk habitats identified in (a) and (b), and maintain and enhance other at-risk habitats by regulating activities through its regional plan and through decisions on resource consents. d) Potential adverse effects on any rare habitat, threatened habitat or at-risk habitat located within or adjacent to an area of forestry must be minimised. e) When regulating the activities described in (c) and (d), the Regional Council must, and when exercising functions and powers described in Policy 6-1, Territorial Authorities must: <ul style="list-style-type: none"> i. allow activities undertaken for the purpose of pest plant and pest animal control or habitat maintenance or enhancement, ii. consider indigenous biological diversity offsets in appropriate circumstances as defined in Policy 13-4, iii. allow the maintenance, operation and upgrade of existing structures, including infrastructure and other physical resources of regional or national importance as identified in Policy 3-1, and iv. not unreasonably restrict the existing use of production land where the effects of such land use on rare habitat, threatened habitat or at-risk habitat remain the same or similar in character, intensity and scale.
Policy 6-8: Natural character	<ul style="list-style-type: none"> a) The natural character of the coastal environment, wetlands, rivers and lakes and their margins must be preserved and these areas must be protected from inappropriate subdivision, use and development. b) The natural character of these areas must be restored and rehabilitated where this is appropriate and practicable. c) Natural character of these areas may include such attributes and characteristics as: <ul style="list-style-type: none"> i. Natural elements, processes and patterns, ii. Biophysical, ecological, geological, geomorphological and morphological aspects, iii. Natural landforms such as headlands, peninsulas, cliffs, dunes, wetlands, reefs, freshwater springs and surf breaks,

REFERENCE	PROVISION
	<ul style="list-style-type: none"> iv. The natural movement of water and sediment including hydrological and fluvial processes, v. The natural darkness of the night sky, vi. Places or areas that are wild and scenic, vii. A range of natural character from pristine to modified, and viii. Experiential attributes, including the sounds and smell of the sea; and their content or setting.
Policy 6-9: Managing natural character	<p>In relation to the natural character of:</p> <ul style="list-style-type: none"> a) the component of the coastal environment which is not coastal marine area (CMA), and b) wetlands, rivers and lakes and their margins. <p>subdivision, use or development must generally (but without limitation) be considered appropriate if it:</p> <ul style="list-style-type: none"> c) is compatible with the existing level of modification to the environment, d) has a functional necessity to be located in or near the component of the coastal environment which is not coastal marine area (CMA), wetland, river or lake and no reasonably practicable alternative locations exist e) is of an appropriate form, scale and design to be compatible with the existing landforms, geological features and vegetation, f) will not, by itself or in combination with effects of other activities, significantly disrupt natural processes or existing ecosystems, and g) will provide for the restoration and rehabilitation of natural character where that is appropriate and practicable.
Policy 6-10: Public access to and along rivers and lakes and their margins	<ul style="list-style-type: none"> a) Activities within or near rivers and lakes must be established and operated in a manner which readily provides for public access. Public access may be restricted only where necessary for safety, cultural or conservation purposes, or to ensure a level of security appropriate for activities authorised by a resource consent. b) Public access for recreational purposes must recognise the need to protect rare habitats, threatened habitats* and at-risk habitats. c) Public access must recognise existing private property rights.

Chapter 7 – Air

REFERENCE	PROVISION
Objective 7-1: Ambient Air quality	A standard of ambient air quality is maintained which is not detrimental to amenity values, human health, property or the life-supporting capacity of air and meets the national ambient air quality standards.
Objective 7-2: Fine particle (PM ₁₀ *) levels	<ul style="list-style-type: none"> a) Fine particle levels in Taihape and Taumarunui are reduced to comply with the national ambient air quality standard for PM₁₀ by 1 September 2013. b) Fine particle levels in other areas are managed in a manner which ensures ongoing compliance with the national ambient air quality standard for PM₁₀.
Policy 7-1: National Environmental Standards	<p>The National Environmental Standards set out in Table 7.1 must be adopted as ambient air quality standards for the Region and ambient air quality must be:</p> <ul style="list-style-type: none"> a) maintained or enhanced in those areas which meet the standards, and b) enhanced in those airsheds which do not meet the standards <p>in accordance with the air quality categories and designated responses in Table 7.2.</p>
Policy 7-2: Regional standards for ambient air quality	In addition to the National Environmental Standards set out in Policy 7-1, ambient air quality must be managed in accordance with the regional standards set out in Table 7.3.
Policy 7-3: Regulation of discharges to air	<p>Discharges of contaminants into air will be generally allowed, provided:</p> <ul style="list-style-type: none"> a) the effects of the discharge are consistent with the approach set out in Policy 7-1 for implementing the National Environmental Standards for ambient air quality, and

REFERENCE	PROVISION
	b) the discharge is consistent with the regional standards for ambient air quality set out in Policy 7-2.

Table 7.1 National Environmental Standards for Ambient Air Quality

Contaminant	Threshold Concentration	Permissible Excess
Carbon monoxide	10 mg/m ³ (running 8-hour mean)	One 8-hour period in any 12-month period
Nitrogen dioxide	200 µg/m ³ (1-hour mean)	Nine 1-hour periods in any 12-month period
Ozone	150 µg/m ³ (1-hour mean)	Not to be exceeded at any time
Fine particles (PM ₁₀)	50 µg/m ³ (24-hour mean)	One 24-hour period in any 12-month period
Sulphur dioxide	350 µg/m ³ (1-hour mean)	Nine 1-hour periods in any 12-month period
	570 µg/m ³ (1-hour mean)	Not to be exceeded at any time

Table 7.2 Air Quality Categories and Designated Response

Category	Measured Value	Designated Response
Unacceptable	Greater than the threshold concentration in the National Environmental Standards for Air Quality, and exceeds the permissible excess in Table 7.1	<ul style="list-style-type: none"> • Enhance • Establish long-term strategy • Monitor • Publicly notify exceedances
Degraded	66% to 100% of the threshold concentration in the National Environmental Standards for Air Quality in Table 7.1, with one exceedance	<ul style="list-style-type: none"> • Maintain, and enhance where practicable • Establish awareness programmes • Monitor where practicable
Acceptable	Up to 66% of the threshold concentration in the National Environmental Standards for Air Quality in Table 7.1, with one exceedance	<ul style="list-style-type: none"> • Maintain

Table 7.3 Regional Standards for Ambient Air Quality

Contaminant	Regional Standard
Odour	• A discharge must not cause any offensive or objectionable odour beyond the property boundary.
Dust	• A discharge must not cause any noxious, offensive or objectionable dust beyond the property boundary.
Smoke and water vapour	• A discharge must not result in any objectionable or offensive smoke or water vapour beyond the property boundary.
Agrichemicals	• A discharge must not give rise to noxious or dangerous levels of agrichemicals in terms of human health, non-target plants or animals, or property.
Gases and other airborne contaminants	• A discharge must not result in noxious or dangerous levels of gases or other airborne contaminants beyond the property boundary.

Chapter 9 – Natural Hazards

REFERENCE	PROVISION
Objective 9-1: Effects of natural hazard events	The adverse effects of natural hazard events on people, property, infrastructure and the wellbeing of communities are avoided or mitigated.
Policy 9-1: Responsibilities for natural hazard management	<p>In accordance with s62(1)(i) RMA, local authority responsibilities for natural hazard management in the Region are as follows:</p> <ul style="list-style-type: none"> a) The Regional Council and Territorial Authorities must be jointly responsible for: <ul style="list-style-type: none"> i. Raising public awareness of the risks of natural hazards through education, including information about what natural hazards exist in the Region, what people can do to minimise their own level of risk, and what help is available. b) The Regional Council must be responsible for: <ul style="list-style-type: none"> i. Developing objectives and policies for Region-wide management of activities for the purpose of avoiding or mitigating natural hazards, ii. Developing specific objectives, policies and methods (including rules) for the control of: <ul style="list-style-type: none"> A. All land use activities in the coastal marine area, B. Erosion protection works that cross or adjoin mean high water springs C. All land use activities in the beds of rivers or lakes, For the purpose of avoiding or mitigating natural hazards and iii. Taking the lead role in collecting, analysing and storing regional natural hazards information and communicating this information to Territorial Authorities c) Territorial Authorities must be responsible for: <ul style="list-style-type: none"> i. Developing objectives, policies and methods (including rules) for the control of the use of land to avoid or mitigate natural hazards in all areas and for all activities except those areas and activities described in (b)(ii) above, and ii. Identifying floodways (as shown in Schedule J) and other areas known to be inundated by a 0.5% annual exceedance probability (AEP) flood event on planning maps in district plans and controlling land use activities in these areas in accordance with Policies 9-2 and 0-3.
Policy 9-3: New critical infrastructure	<p>The placement of new critical infrastructure in an area likely to be inundated by a 0.5% AEP (1 in 200 year) flood event (including floodways mapped in Schedule J), or in an area likely to be adversely affected by another type of natural hazard, must be avoided, unless there is satisfactory evidence to show that the critical infrastructure:</p> <ul style="list-style-type: none"> a) will not be adversely affected by floodwaters or another type of natural hazard, b) will not cause any adverse effect on the environment in the event of a flood or another type of natural hazard, c) is unlikely to cause a significant increase in the scale or intensity of natural hazard events, and d) cannot reasonably be located in an alternative location.
Policy 9-4: Other types of natural hazards	<p>The Regional Council and Territorial Authorities must manage future development and activities in areas susceptible to natural hazard events (excluding flooding) in a manner which:</p> <ul style="list-style-type: none"> a) ensures that any increase in risk to human life, property or infrastructure from natural hazard events is avoided where practicable, or mitigated where the risk cannot be practicably avoided, b) is unlikely to reduce the effectiveness of existing works, structures, natural landforms or other measures which serve to mitigate the effects of natural hazard events, and c) is unlikely to cause a significant increase in the scale or intensity of natural hazard events.
Policy 9-5: Climate change	<p>The Regional Council and Territorial Authorities must take a precautionary approach when assessing the effects of climate change and sea level rise on the scale and frequency of natural hazards with regard to decisions on:</p> <ul style="list-style-type: none"> a) stormwater discharges and effluent disposal, b) coastal development and coastal land use, c) activities adjacent to rivers,

REFERENCE	PROVISION
	<ul style="list-style-type: none"> d) water allocation and water takes, e) activities in a Hill Country Erosion Management Area, f) flood mitigation activities, and g) managing storm surge.

Part 2: Regional Plan

The Horizons One Plan was made operative of 19 December 2014. The Regional Plan provisions are included in Part 2.

Chapter 12 – General Objectives and Policies

REFERENCE	PROVISION
Objective 12-1: Resource Management in the Region	<ul style="list-style-type: none"> a) The regulation of activities in a manner which maximises certainty and avoids unnecessary costs on resource users and other parties. b) The regulation of activities in a manner which gives effect to the provisions of Part 1 of this Plan, the Regional Policy Statement
Objective 12-2: Consent duration, review and enforcement	<ul style="list-style-type: none"> a) The provisions of the RMA dealing with the duration of resource consents, review of consent conditions, and enforcement procedures must be implemented in a manner that provides the maximum reasonable certainty to resource users, affected parties and submitters b) The Regional Council will provide user-friendly consents of appropriate duration and will carefully monitor and manage compliance
Policy 12-4: Consent conditions	<ul style="list-style-type: none"> a) The Regional Council will grant consents with conditions identified as necessary during the resource consent process, including conditions proposed by the application as a result of pre-application consultation agreements b) In respect of (a) above, the Regional Council will draft consent conditions that ensure: <ul style="list-style-type: none"> i. The applicant is certain how compliance will be achieved and monitored; ii. The conditions are specific to the activity being undertaken; iii. The conditions are fair, reasonable and practical; iv. The conditions are in plain English; and v. The conditions are enforceable.
Policy 12-5: Consent durations	<ul style="list-style-type: none"> a) Other than as provided for under (b) the Regional Council will generally grant resource consents for the term sought by the applicant unless reasons are identified during the consent process that make this inappropriate. b) Resource consent durations for applications required under s13, 14 and 15 of the RMA will generally be set to the next common catchment expiry date listed in Table 12.1. The dates listed in Table 12.1 show the initial expiry or review dates for consents within the catchment. Future dates for expiry or review of consents within that catchment must occur again every 10 years thereafter. Consents granted within three years prior to the relevant common catchment expiry date may be granted with a duration to align with the second common expiry date (that is the number of years up to the next expiry date plus 10 years). Dates may also be extended in 10 year increments where a term longer than 10 years can be granted after considering the following criteria: <ul style="list-style-type: none"> i. the extent to which an activity is carried out in accordance with a recognised code of practice, environmental standard or good practice guideline; ii. the most appropriate balance between environmental protection and investment by the applicant; iii. the provision of s128 review opportunities to enable matters of contention to be periodically reviewed in light of monitoring and compliance information; and iv. whether the activity is infrastructure; water, sewage or stormwater treatment plants and facilities; or publicly accessible solid waste facilities including landfills, transfer stations and resource recovery facilities.

REFERENCE	PROVISION
	<p>For a consent which is granted for a duration longer than 10 years, review of the consent must occur, as a minimum, on the review date in Table 12.1 and every 10 years thereafter until consent expiry. Extra review dates may be set in accordance with Policy 12-6.</p> <p>c) Matters to be considered in determining a shorter consent duration than that requested under (a):</p> <ol style="list-style-type: none"> i. whether it is necessary for an activity to cease at a specified time; ii. whether the activity has effects that are unpredictable and potentially serious for the locality where it is undertaken and a precautionary approach is needed; iii. the risks of long-term allocation of a resource whose availability changes over time in an unpredictable manner, requiring a precautionary approach; and iv. in the case of existing activities, whether the consent holder has a good or poor compliance history in relation to environmental effects for the same activity.
Policy 12-6: Consent review	<p>In addition to the reasons specified in s128(1)(a)(i) and (ii) RMA, the Regional Council will, under s128(1)(a)(iii) RMA, generally impose consent conditions that specify a review of consent conditions during the term of the consent for:</p> <ol style="list-style-type: none"> a) reviewing the appropriateness of any condition requiring the consent holder to supply the consent authority with information relating to the exercise of the resource consent; b) reviewing any unknown or uncertain adverse effects caused as a result of planned or required changes or upgrades to the activity; c) reviewing the conditions of a consent at the same time as review of other consents within the same Water Management Sub-zone - for example, at a common catchment expiry or review date; and d) reviewing the effectiveness of consent conditions to avoid, remedy or mitigate any adverse effects of the activity on the environment. <p>The Regional Council will generally initiate reviews of conditions when monitoring results or other evidence demonstrate a review is required.</p>
Policy 12-7: Sites with multiple activities, and activities covering multiple sites	<p>For applications made to the Regional Council for either:</p> <ol style="list-style-type: none"> a) a site with a number of different activities requiring consent; or b) a particular type of activity that will be undertaken by the consent holder at a number of sites, <p>consent applicants may combine some or all activities or sites under umbrella consents. If the Council considers that such an approach is appropriate then it must establish consent conditions, durations and review provisions which enable an integrated approach to be taken for managing environmental effects from the site or activity as a whole. There may be circumstances where individual activities are considered at their given classification rather than the most stringent activity classification. There may also be circumstances where specific conditions are required to address site-specific circumstances and effects.</p>

Chapter 13 – Land Use Activities and Indigenous Biological Diversity

REFERENCE	PROVISION
Objective 13-1: Accelerated erosion – regulation of vegetation clearance, land disturbance, forestry and cultivation	<p>The regulation of vegetation clearance, land disturbance, forestry and cultivation in a manner that ensures:</p> <ol style="list-style-type: none"> a) accelerated erosion and any associated damage to people, buildings and infrastructure and other physical resources of regional or national importance are avoided as far as reasonably practicable or otherwise remedied or mitigated, and b) increased sedimentation in water bodies as a result of human activity is avoided as far as reasonably practicable, or otherwise mitigated.
Objective 13-2: Regulation of activities affecting indigenous biological diversity	<p>The regulation of resource use activities to protect areas of significant indigenous vegetation and significant habitats of indigenous fauna or to maintain indigenous biological diversity, including enhancement where appropriate.</p>

REFERENCE	PROVISION
<p>Policy 13-1: Regional Rules for vegetation clearance, land disturbance, forestry and cultivation</p>	<p>The Regional Council must:</p> <ul style="list-style-type: none"> a) regulate vegetation clearance, land disturbance, forestry and cultivation through regional rules in accordance with Objectives 12-1, 12-2 and 13-1 and Policies 12-1 to 12-8, and b) manage the effects of vegetation clearance, land disturbance and cultivation by requiring resource consents for those activities: <ul style="list-style-type: none"> i. adjacent to some water bodies, ii. involving the removal of some woody vegetation in Hill Country Erosion Management Areas, iii. involving land disturbance or cultivation in Hill Country Erosion Management Areas, iv. Involving large-scale land disturbance, or v. Within the coastal foredune.
<p>Policy 13-2: Consent decision-making for vegetation clearance, land disturbance, forestry and cultivation</p>	<p>For vegetation clearance, land disturbance, forestry or cultivation and ancillary discharges to and diversions of surface water that requires resource consent under Rule 13-2, Rule 13-6 or Rule 13-7, the Regional Council must make decisions on consent applications and set consent conditions on a case-by-case basis, having regard to:</p> <ul style="list-style-type: none"> a) the Regional Policy Statement, particularly Objective 4-2 and Policies 4-2 and 4-3, b) managing the effects of land disturbance, including large-scale earthworks, by requiring Erosion and Sediment Control Plans or other appropriate plans to be prepared, c) managing the effects of forestry by requiring sustainable forestry management practices to be adopted and Erosion and Sediment Control Plans or other appropriate plans to be prepared, d) managing the effects of cultivation on water bodies through the use of sediment run-off control methods and setbacks from water bodies, e) the appropriateness of establishing infrastructure and other physical resources of regional or national importance as identified in Policy 3-1, f) generally allowing the clearance of woody vegetation on established pasture if that clearance will not lead to accelerated erosion or the increased sedimentation of water bodies, g) generally allowing activities that are for the purpose of managing natural hazards, including the reduction of flood risk, h) generally allowing forestry for soil conservation purposes, i) generally allowing activities that result in improved land stability or enhanced surface water quality, j) any relevant codes of practice, standards, guidelines, or environmental management plans and accepting compliance with them to the extent that they can be used as conditions on resource consents, k) sediment and erosion control measures required to reasonably minimise adverse effects, including those caused by rainfall and storm events, l) achieving integrated management through consents that are Region-wide or cover large areas for activities that are widespread and undertaken by or on behalf of a single consent holder including, but not limited to, infrastructure and other physical resources of regional or national importance, or forestry, provided any such consents are subject to conditions, including review provisions, enabling site-specific matters to be addressed as necessary, and m) for activities involving an ancillary discharge to surface water, the matters in Policy 14-9.
<p>Policy 13-3: Regional Rules for activities affecting indigenous biological diversity</p>	<p>The Regional Council must require resource consents to be obtained for vegetation clearance, land disturbance, cultivation, bores, discharges of contaminants into or onto land or water, taking, use, damming or diversion of water and activities in the beds of rivers or lakes within rare habitats, threatened habitats and at-risk habitats, and for forestry that does not minimise potential adverse effects on those habitats, through regional rules in accordance with Objectives 12-1, 12-2 and 13-2 and Policies 12-1 to 12-8.</p>

REFERENCE	PROVISION
<p>Policy 13-4: Consent decision-making for activities in rare habitats, threatened habitats and at-risk habitats</p>	<ul style="list-style-type: none"> a) For activities regulated under Rule 13-8 and 13-9, the Regional Council must make decisions on consent applications and set consent conditions on a case-by-case basis: <ul style="list-style-type: none"> i. For all activities, having regard to: <ul style="list-style-type: none"> a. the Regional Policy Statement, particularly Objective 6-1 and Policy 6-2, b. a rare habitat or threatened habitat is an area of significant indigenous vegetation or a significant habitat of indigenous fauna, c. the significance of the area of habitat, in terms of its representativeness, rarity and distinctiveness, and ecological context, as assessed under Policy 13-5, d. the potential adverse effects of the proposed activity on significance, e. for activities regulated under ss13, 14 and 15 RMA, the matters set out in Policy 13-2(k) and relevant objectives and policies in Chapters 5, 14, 16 and 17, and f. for activities involving a discharge, the matters in Policy 14-9. ii. For electricity transmission and renewable energy generation activities, providing for any national, regional or local benefits arising from the proposed activity. b) Consent must generally not be granted for resource use activities in a rare habitat, threatened habitat or at-risk habitat assessed to be an area of significant indigenous vegetation or a significant habitat of indigenous fauna under Policy 13-5, unless: <ul style="list-style-type: none"> i. any more than minor adverse effects on that habitat's representativeness, rarity and distinctiveness, or ecological context assessed under Policy 13-5 are avoided. ii. where any more than minor adverse effects cannot reasonably be avoided, they are remedied or mitigated at the point where the adverse effect occurs. iii. where any more than minor adverse effects cannot reasonably be avoided, remedied or mitigated in accordance with (b)(i) and (ii), they are offset to result in a net indigenous biological diversity gain. c) Consent may be granted for resource use activities in an at-risk habitat assessed not to be an area of significant indigenous vegetation or a significant habitat of indigenous fauna under Policy 13-5 when: <ul style="list-style-type: none"> i. there will be no significant adverse effects on that habitat's representativeness, rarity and distinctiveness, or ecological context as assessed in accordance with Policy 13-5, or ii. any significant adverse effects are avoided. iii. where any significant adverse effects cannot reasonably be avoided, they are remedied or mitigated at the point where the adverse effect occurs. iv. where significant adverse effects cannot reasonably be avoided, remedied or mitigated in accordance with (c)(ii) and (iii), they are offset to result in a net indigenous biological diversity gain. d) An offset assessed in accordance with b(iii) or (c)(iv), must: <ul style="list-style-type: none"> i. provide for a net indigenous biological diversity gain within the same habitat type, or where that habitat is not an area of significant indigenous vegetation or a significant habitat of indigenous fauna, provide for that gain in a rare habitat or threatened habitat type, and ii. reasonably demonstrate that a net indigenous biological diversity gain has been achieved using methodology that is appropriate and commensurate to the scale and intensity of the residual adverse effect, and iii. generally be in the same ecologically relevant locality as the affected habitat, and iv. not be allowed where inappropriate for the ecosystem or habitat type by reason of its rarity, vulnerability or irreplaceability, and v. have a significant likelihood of being achieved and maintained in the long term and preferably in perpetuity, and vi. achieve conservation outcomes above and beyond that which would have been achieved if the offset had not taken place.

REFERENCE	PROVISION
<p>Policy 13-5: Criteria for assessing the significance of, and the effects of activities on, an area of habitat</p>	<p>a) Rare habitats are areas of significant indigenous vegetation or significant habitats of indigenous fauna under criterion (ii)(e) below. Threatened habitats are areas of significant indigenous vegetation or significant habitats of indigenous fauna under criterion below. An area of rare habitat or threatened habitat may also be an area of significant indigenous vegetation or significant habitat of indigenous fauna under one or more of the other criteria below. An at-risk habitat may be recognised as being an area of significant indigenous vegetation or a significant habitat of indigenous fauna if one or more of the following criteria are met:</p> <ul style="list-style-type: none"> i. in terms of representativeness, that habitat: <ul style="list-style-type: none"> a. comprises indigenous habitat type that is under-represented (20% or less of known or likely former cover), or b. is an area of indigenous vegetation that is typical of the habitat type in terms of species composition, structure and diversity, or that is large relative to other areas of the same habitat type in the Ecological District or Ecological Region, or has functioning ecosystem processes. or ii. in terms of rarity and distinctiveness, that habitat supports an indigenous species or community that: <ul style="list-style-type: none"> a. is classified as threatened (as determined by the New Zealand Threat Classification System and Lists), or b. is distinctive to the Region, or c. is at a natural distributional limit, or d. has a naturally disjunct distribution that defines a floristic gap, or e. was originally (ie., prehuman) uncommon within New Zealand, and supports an indigenous species or community of indigenous species. or iii. in terms of ecological context, that habitat provides: <ul style="list-style-type: none"> a. connectivity (physical or process connections) between two or more areas of indigenous habitat, or b. an ecological buffer (provides protection) to an adjacent area of indigenous habitat (terrestrial or aquatic) that is ecologically significant, or c. part of an indigenous ecological sequence or connectivity between different habitat types across a gradient (eg., altitudinal or hydrological), or d. important breeding areas, seasonal food sources, or an important component of a migration path for indigenous species, or e. habitat for indigenous species that are dependent on large and contiguous habitats. <p>b) The potential adverse effects of an activity on a rare habitat, threatened habitat or at-risk habitat must be determined by the degree to which the proposed activity will diminish any of the above characteristics of the habitat that make it significant, while also having regard to any additional ecological values and to the ecological sustainability of that habitat.</p>

Chapter 14 – Discharges to Land and Water

REFERENCE	PROVISION
<p>Objective 14-1: Management of discharges to land and water and land uses affecting groundwater and surface water quality</p>	<p>The management of discharges onto or into land (including those that enter water) or directly into water and land use activities affecting groundwater and surface water quality in a manner that:</p> <ul style="list-style-type: none"> a) safeguards the life supporting capacity of water and recognises and provides for the Values and management objectives in Schedule B, b) provides for the objectives and policies of Chapter 5 as they relate to surface water and groundwater quality, and c) where a discharge is onto or into land, avoids, remedies or mitigates adverse effects on surface water or groundwater.
<p>Policy 14-1: Consent decision-</p>	<p>When making decisions on resource consent applications, and setting consent conditions, for discharges of water or contaminants into water, the Regional Council must specifically consider:</p>

REFERENCE	PROVISION
making for discharges to water	<ul style="list-style-type: none"> a) the objectives and Policies 5-1 to 5-5 and 5-9 of Chapter 5, and have regard to: b) avoiding discharges which contain any persistent contaminants that are likely to accumulate in a water body or its bed, c) the appropriateness of adopting the best practicable option to prevent or minimise adverse effects in circumstances where: <ul style="list-style-type: none"> i. it is difficult to establish discharge parameters for a particular discharge that give effect to the management approaches for water quality and discharges set out in Chapter 5, or ii. the potential adverse effects are likely to be minor, and the costs associated with adopting the best practicable option are small in comparison to the costs of investigating the likely effects on land and water, and d) the objectives and policies of Chapters 2, 3, 6, 9 and 12, extent that they are relevant to the discharge.
Policy 14-2: Consent decision-making for discharges to land	<p>When making decisions on resource consent applications, and setting consent conditions, for discharges of contaminants onto or into land the Regional Council must have regard to:</p> <ul style="list-style-type: none"> a) the objectives and policies of Chapter 5 regarding the management of groundwater quality and discharges, b) where the discharge may enter surface water or have an adverse effect on surface water quality, the degree of compliance with the approach for managing surface water quality set out in Chapter 5, c) avoiding as far as reasonably practicable any adverse effects on any sensitive receiving environment or potentially incompatible land uses, in particular any residential buildings, educational facilities, churches, marae, public areas, infrastructure and other physical resources of regional or national importance identified in Policy 3-1, wetlands, surface water bodies and the coastal marine area, d) the appropriateness of adopting the best practicable option to prevent or minimise adverse effects in circumstances where: <ul style="list-style-type: none"> i. it is difficult to establish discharge parameters for a particular discharge that give effect to the management approaches for water quality and discharges set out in Chapter 5, ii. the potential adverse effects are likely to be minor, and the costs associated with adopting the best practicable option are small in comparison to the costs of investigating the likely effects on land and water, e) avoiding discharges which contain any persistent contaminants that are likely to accumulate in the soil or groundwater, and f) the objectives and policies of Chapters 2, 3, 6, 9 and 12, extent that they are relevant to the discharge.
Policy 14-3: Industry-based standards	<p>The Regional Council will examine on an on-going basis relevant industry-based standards (including guidelines and codes of practice), recognising that such industry based standards generally represent current best practice, and may accept compliance with those standards as being adequate to avoid, remedy or mitigate adverse effects to the extent that those standards address the matters in Policies 14-1, 14-2, 14-4 and 14-5.</p>
Policy 14-4: Options for discharges to surface water and land	<p>When applying for consents and making decisions on consent applications for discharges of contaminants into water or onto or into land, the opportunity to utilise alternative discharge options, or a mix of discharge regimes, for the purpose of mitigating adverse effects, applying the best practicable option, must be considered, including but not limited to:</p> <ul style="list-style-type: none"> a) discharging contaminants onto or into land as an alternative to discharging contaminants into water, b) withholding from discharging contaminants into surface water at times of low flow, and c) adopting different treatment and discharge options for different receiving environments or at different times (including different flow regimes or levels in surface water bodies).

REFERENCE	PROVISION
Policy 14-8: Monitoring requirements for consent holders	<p>Point source discharges of contaminants to water must generally be subject to the following monitoring requirements:</p> <ul style="list-style-type: none"> a) the regular monitoring of discharge volumes on discharges smaller than 100m³/day and making the records available to the Regional Council on request, b) the installation of a pulse-count capable meter in order to monitor the volume discharged for discharges of 100m³/day or greater, c) the installation of a Regional Council compatible telemetry system on discharges of 300m³/day or greater, and d) monitoring and reporting on the quality of the discharge at the point of discharge before it enters surface water and the quality of the receiving water upstream and downstream of the point of discharge (after reasonable mixing) may also be required. This must align with the Regional Council's environmental monitoring programme where reasonably practicable to enable cumulative impacts to be measured.
Policy 14-9: Consent decision making requirements from the National Policy Statement for Freshwater Management	<ul style="list-style-type: none"> a) This policy applies to any application for the following discharges (including a diffuse discharge by any person or animal): <ul style="list-style-type: none"> i. a new discharge; or ii. a change or increase in any discharge – of any contaminant into fresh water, or onto or into land in circumstances that may result in that contaminant (or, as a result of any natural process from the discharge of that contaminant, any other contaminant) entering fresh water. b) When considering any application for a discharge the Regional Council must have regard to the following matters: <ul style="list-style-type: none"> i. the extent to which the discharge would avoid contamination that will have an adverse effect on the life-supporting capacity of fresh water including on any ecosystem associated with fresh water; and ii. the extent to which it is feasible and dependable that any more than minor adverse effect on fresh water, and on any ecosystem associated with fresh water, resulting from the discharge would be avoided. <p>This clause of the policy does not apply to any application for consent first lodged before the National Policy Statement for Freshwater Management 2011 took effect on 1 July 2011.</p> c) When considering any application for a discharge the Regional Council must have regard to the following matters: <ul style="list-style-type: none"> i. the extent to which the discharge would avoid contamination that will have an adverse effect on the health of people and communities as affected by their secondary contact with fresh water; and ii. the extent to which it is feasible and dependable that any more than minor adverse effect on the health of people and communities as affected by their secondary contact with fresh water resulting from the discharge would be avoided. <p>This clause of the policy does not apply to any application for consent first lodged before the National Policy Statement for Freshwater Management 2014 took effect on 4 July 2014.</p>

Chapter 15 – Discharges to Air

REFERENCE	PROVISION
Objective 15-1: Air quality	<p>The management of air quality in a manner that has regard to:</p> <ul style="list-style-type: none"> a) maintaining or enhancing ambient air quality in a manner that safeguards the health of the Region's community, b) meeting the regional ambient air standards (Table 7.3) and National Environmental Standards (Table 7.1), c) managing air quality so that it is not detrimental to amenity values, and d) managing fine particle (PM₁₀) levels to ensure that they are reduced in unacceptable airsheds and managed in other areas to ensure compliance with the national ambient air quality standard for PM₁₀.

REFERENCE	PROVISION
Policy 15-2: Consent decision-making for other discharges into air	<p>When making decisions on resource consent applications and setting consent conditions for discharges of contaminants into air, the Regional Council must have regard to:</p> <ul style="list-style-type: none"> a) the objectives and policies of Chapter 7 including: <ul style="list-style-type: none"> i. the degree of consistency with the approach set out in Policy 7-1 for implementing the National Environmental Standards for ambient air quality, ii. the degree of compliance with the regional standards for ambient air quality set out in Policy 7-2, and iii. for discharges of fine particles, the approaches for managing fine particles (PM10) in Policies 7-5, 7-6 and 7-7, and the likely contribution of the proposed discharge to cumulative adverse effects in an unacceptable airshed or degraded area as identified under these policies, b) the guidelines in Section 15.3 for managing noxious, dangerous, offensive and objectionable effects, c) any national policy statements, national regulations, or nationally-accepted guidelines or codes of practice relevant to the activity, including the matters in Policy 14-9 for activities involving an ancillary discharge, d) the location of the discharge in relation to, and any associated effects on, sensitive areas including, but not limited to: <ul style="list-style-type: none"> i. residential buildings, ii. public places and amenity areas where people congregate, iii. education facilities, iv. public roads, v. surface water bodies, vi. wāhi tapu, marae and other sites of significance to hapū and iwi, vii. domestic, commercial and public water supply catchments and intakes, viii. rare habitats, threatened habitats and at-risk habitats, and ix. sensitive crops or farming systems (including certified organically farmed properties and greenhouses), e) effects on scenic, landscape, heritage and recreational values, f) the appropriateness of adopting the best practicable option to prevent or minimise adverse effects in circumstances where: <ul style="list-style-type: none"> i. numerical guidelines or standards establishing a level of protection for a receiving environment are not available or cannot easily be established, ii. insufficient monitoring data is available to establish the existing air quality with sufficient certainty, or iii. the likely adverse effects are minor, and the costs associated with adopting the best practicable option are small in comparison to the costs of investigating the likely effects on air quality, g) the need for contingency measures to avoid accidental discharges, including discharges arising from mechanical failure, and h) adverse effects on aircraft safety from high velocity vertical discharges to air.

Chapter 16 –Takes, Uses and Diversions of Water, and Bores

REFERENCE	PROVISION
Objective 16-1: Regulation of takes, uses and diversions of water	<p>The regulation of takes, uses and diversions of water in a manner that:</p> <ul style="list-style-type: none"> a) recognises and provides for the Values and management objectives in Schedule B, and b) provides for the objectives and policies of Chapter 5 as they relate to surface water and groundwater use and allocation.
Policy 16-1: Consent decision-making for takes and uses of surface	<p>When making decisions on resource consent applications under s104-104D RMA, and setting consent conditions, for takes and uses of surface water or groundwater the Regional Council must:</p>

REFERENCE	PROVISION
water and groundwater	<ul style="list-style-type: none"> a) seek to avoid any adverse effects on other lawful activities, particularly on other surface water takes, including takes allowed by s14(3)(b) of the RMA, and groundwater takes from properly-constructed, efficient and fully-functioning bores (as described in Policies 16-4 and 16-5), b) enable non-consumptive uses of water including the use and recycling of water, and c) have regard to the objectives and policies of Chapters 2, 3, 5, 6, 9 and 12, extent that they are relevant to the activity.
Policy 16-3: Consent decision-making for diversions and drainage	<p>When making decisions on resource consent applications, and setting consent conditions, for the diversion of water, including diversions associated with drainage, the Regional Council must:</p> <ul style="list-style-type: none"> a) manage effects on rare habitats, threatened habitats and at-risk habitats in accordance with Chapter 6 and the relevant objective and policies in Chapter 13, b) manage effects on the natural character of water bodies in accordance with Chapter 6, c) seek to avoid any adverse effects on any other lawful activity, particularly on other surface water takes, including those allowed by s14(3)(b) of the RMA and groundwater takes from properly-constructed, efficient and fully-functioning bores (as described in Policies 16-4 and 16-5), and d) have regard to the objectives and policies of Chapters 2, 3, 5, 9 and 12, extent that they are relevant to the activity.
Policy 16-5: Effects of groundwater takes on other groundwater takes	<ul style="list-style-type: none"> a) Consent applications to take groundwater must include pumping tests and hydrogeological assessments in order to determine the likely impact on existing groundwater takes in the vicinity b) Consent conditions restricting the rate and duration of pumping must be imposed on new takes of groundwater where this is necessary to avoid significant drawdown impacts on existing groundwater takes from properly-constructed, efficient and fully-functioning bores in the vicinity. A groundwater take is considered to be from a properly-constructed, efficient and fully-functioning bore* in circumstances where the bore penetrates the aquifer from which water is being drawn at a depth sufficient to enable water to be drawn all year (ie., the bore depth is below the range of seasonal fluctuations in groundwater level), the pump and bore are adequately maintained, the bore is of sufficient diameter and is screened to reasonably minimise drawdown, and the bore has a pump capable of drawing water from its base to the land surface. c) Consent conditions specifying short-term restrictions on the rate and duration of pumping may also be imposed on new takes of groundwater where this is necessary to avoid significant drawdown impacts on existing bores that are not properly-constructed, efficient and fully-functioning, in order to allow sufficient time for such bores to be upgraded or replaced. d) The Regional Council may encourage consent applicants to consider the option of providing water to neighbouring properties in circumstances where this would be more practical than meeting the requirements of (b) or (c).

Chapter 17 – Activities in Artificial Watercourses, Beds of Rivers and Lakes, and Damming

REFERENCE	PROVISION
Objective 17-1: Regulation of structures and activities in artificial watercourses and in the beds of rivers and lakes and damming	<p>The regulation of structures and activities in artificial watercourses and in the beds of rivers and lakes, and damming, in a manner that:</p> <ul style="list-style-type: none"> a) safeguards life supporting capacity, and recognises and provides for the Values and management objectives in Schedule B, and b) has regard to the objectives and policies of Chapter 5 that relate to structures and activities in artificial watercourses and in the beds of rivers and lakes, and damming.
Policy 17-1: Consent decision-making for activities in, on, under or over the beds of rivers	<p>When making decisions on resource consent applications, and setting consent conditions, for activities in, on, under or over the bed of a river or lake (including modified watercourses but excluding artificial watercourses) the Regional Council must:</p>

REFERENCE	PROVISION
and lakes (including modified watercourses but excluding artificial watercourses)	<ul style="list-style-type: none"> a) have regard to the extent to which the activity is consistent with best management practices, b) seek to avoid where reasonably practicable any adverse effects on any other lawful activity in, on, under or over the bed of the river or lake, including existing structures, c) have regard to whether the activity is of a temporary nature or is associated with necessary maintenance work, d) have regard to the objectives and policies of Chapters 2, 3, 5, 6, 9 and 12, extent that they are relevant to the activity, and e) have regard to the matters in Policy 14-9.

6. District Plans

Palmerston North City Council District Plan

A sectional review of the Palmerston North City Council District Plan (PNCCDP) was completed in May 2019 and the PNCCDP is fully operative (noting that there are notified, location specific, plan changes that are not relevant to the Project). Within the jurisdiction of Palmerston North City, the Project is located in the Water Recreation Zone, Flood Protection Zone and the Rural Zone.

PNCCDP Objectives and Policies that are relevant are set out below.

Section 2: The City View Objectives

REFERENCE	PROVISION
Objective 2	The provision of infrastructure, particularly within identified growth areas, shall be efficient, timely, environmentally sensitive and economically sustainable.
Objective 3	The integrated and efficient provision of, and access to, infrastructure, network utilities and local services is facilitated for all residents.
Objective 9	Subdivisions, buildings and infrastructure are designed and constructed to promote a coordinated, healthy and safe environment
Objective 10	The visual appeal of the City is enhanced.
Objective 11	The principles of good urban design are given effect to for all new subdivisions, urban intensification and major building developments, particularly those located within the City Centre or fronting key transportation routes.
Objective 15	Active engagement from tangata whenua within resource management decisions.
Objective 17	The natural and cultural heritage features of the City are preserved and enhanced, including the margins of the Manawatu River and sites of significance to tangata whenua.
Objective 19	The effects of natural hazards are avoided or mitigated taking into account the effects of climate change and the significant social disruption caused by natural hazard events.
Objective 21	A broad range of recreation and leisure opportunities are provided for in the City which contribute towards an enhanced quality of life.
Objective 23	Infrastructure operates in a safe and efficient manner, and the effects of activities which could impact on the safe and efficient operation of this infrastructure are avoided, remedied or mitigated
Objective 24	All forms of transport, including public transport, walking, cycling and private vehicles are adequately provided for to assist with sustainable energy use and a healthy lifestyle.
Objective 25	Infrastructure and physical resources of regional or national importance are recognised and provided for by enabling their establishment, operation, maintenance, upgrading and protection from the effects of other activities

Section 3: Tangata Whenua and Resource Management

REFERENCE	PROVISION
Objective 1	To acknowledge Rangitāne o Manawatū as Tangata Whenua within Palmerston North City.
Policy 1.2	To recognise marae as an appropriate venue for consultation with Tangata Whenua.
Policy 1.4	To follow Rangitanenuiarawa in resource management processes which Rangitāne o Manawatū are involved in.
Objective 2	To ensure that consultation is undertaken with Tangata Whenua on resource management issues.
Policy 2.1	To consult early on with Tangata Whenua, including Rangitāne o Manawatū, in resource management processes.
Policy 2.2	To consult Tangata Whenua with regard to the identification of and appropriate protection of urupā, wāhi tapu, wāhi tupuna and other sites.
Policy 2.3	To ensure ongoing consultation and communication is maintained with regard to resource management issues of particular concern to Tangata Whenua.
Objective 4	To actively protect sites of cultural, historic and natural significance to Tangata Whenua.

Section 9: Rural Zone

REFERENCE	PROVISION
Objective 2	To encourage the effective and efficient use and development of the natural and physical resources of the rural area.
Policy 2.2	To ensure that the adverse effects of activities in the rural area are avoided, remedied or mitigated such that the amenities of the area and nearby urban areas are maintained.
Policy 2.3	To control the actual or potential environmentally adverse effects of activities in the rural area, including the adverse effects of: <ul style="list-style-type: none"> - odour; - noise; - traffic; - visual impact.
Policy 2.5	To identify areas subject to natural hazards, and to ensure the adverse effects of the natural hazard are avoided, remedied or mitigated and, where appropriate, prohibit use and development of hazard prone areas.
Objective 3	To maintain or enhance the quality and natural character of the rural environment.
Policy 3.3	To control the adverse visual effects on the rural environment (including effects on rural dwellers) of activities that disturb the land surface, introduce buildings, remove and/or process natural material.

Section 17: Cultural and Natural Heritage

REFERENCE	PROVISION
17.3B Sites and Objects of Cultural and Natural Heritage Value to Tangata Whenua	
Objective 1	To facilitate the Tino Rangatiratanga and Kaitiakitanga of Tangata Whenua in relation to sites and objects of cultural and natural heritage value to Tangata Whenua.
Policy 1.2	To protect identified sites and objects of significant cultural and natural heritage value to tangata whenua.
Policy 1.3	To avoid, remedy or mitigate the effects of activities or development which could disturb or destroy the intrinsic cultural and natural heritage values associated with an identified site or object.

REFERENCE	PROVISION
Policy 1.4	To consult Tangata Whenua regarding the identification, protection and management of sites and objects considered to be of cultural and natural heritage value.

Section 20: Land Transportation

REFERENCE	PROVISION
Objective 1	The City's land transport networks are maintained and developed to ensure that people and goods move safely and efficiently through and within the City.
Policy 1.2	All roads in the City have function and design characteristics consistent with their place in the roading hierarchy.
Policy 1.3	Maintain and upgrade the existing roads in the City and provide for new roads to meet the current and future needs of the City.
Policy 1.4	The road network stormwater control system shall protect the road, road users and adjoining land from the adverse effects of water from roads and minimise any adverse effect on the environment.
Policy 1.5	Require all new public roads, private roads and vehicle accesses to be designed and constructed to meet performance standards relating to the safety and efficiency of vehicle movement, and to ensure the safe use of the road transport network for all users, particularly in respect of: <ul style="list-style-type: none"> (a) Road width and alignment which should be sufficient for two vehicle lanes except where traffic volumes are insufficient; (b) The formation and surface sealing of all roads and vehicle accesses to standards appropriate to the volume of traffic expected to be carried; (c) Provision for necessary network utility facilities within roads; and (d) Safe design and construction of roads, road access points and intersections, including alignment, gradient, vehicle parking, manoeuvring and turning requirements.
Policy 1.6	Encourage the development of safe and accessible pedestrian paths and cycleways, as well as convenient and accessible cycle parking, to support the opportunity for people to use active and non-vehicular modes of transport throughout the City.
Objective 2	The land transport network is safe, convenient and efficient while avoiding, remedying or mitigating adverse effects in a way that maintains the health and safety of people and communities, and the amenity values and character of the City's environment.
Policy 2.4	Avoid adverse effects on amenity and character by ensuring that new roads are well designed and visually complement the character of the surrounding areas.

Section 22: Natural Hazards

REFERENCE	PROVISION
Objective 2	To control development on land which is or might be adversely affected by natural hazards.
Policy 2.1	To exclude development on hazard-prone land where the effects of the hazard cannot be effectively avoided, remedied or mitigated.
Policy 2.2	To establish appropriate controls to avoid, remedy or mitigate the effects of natural hazards.
Policy 2.3	To control subdivision and development within the Flood Protection Zone and within Flood Prone Areas to avoid or mitigate adverse effects of flooding hazards on people, property, infrastructure and the environment.
Policy 2.6	To avoid development on land subject to liquefaction where the effects of the hazard cannot be effectively avoided, remedied or mitigated.

Manawatū District Plan

The Manawatū District Plan (MDP) was made operative on 1 December 2002. There have been a number of plan changes to the MDP, the majority of which are fully operative. Plan Change 55 is operative in part (16 August 2018). Where Plan Change 55 provisions remain subject to appeal, these are shown in blue.

Plan Change 65: Outstanding Natural Features and Landscapes was notified on 6 February 2020. The Plan Change also introduces provisions that apply to identified outstanding natural features and landscape. These provisions are shown in green.

No other notified plan changes (or those that are not fully operative) are relevant to the Project.

Within the jurisdiction of Manawatū District, the Project is located in the Rural 2 Zone and the Flood Channel 2 Zone and is located within the area identified as 'Pohangina Valley'. Plan Change 65 lists an area of land Manawatū Gorge (where within MDC's jurisdiction) that is traversed by the Project as ONF13 in 'NFL - APP1 – Outstanding Natural Features and Landscapes'. MDP Objectives and Policies that are relevant are set out below.

Chapter 3B – Transport

REFERENCE	PROVISION
Objective 1	To maintain and enhance the safe, efficient and integrated operation of the transport network within the District.
Objective 3	To mitigate the adverse effects of roads and vehicles on amenity values of the District.
Policy 3.3	To support and encourage walking and cycling as alternative modes of transport.

Chapter 3D – Earthworks

REFERENCE	PROVISION
Objective 1	To ensure earthworks do not result in adverse effects on the visual amenity, landscape, or historic heritage values of the area.
Policy 1.1	To mitigate any visual amenity effects arising from earthworks.
Policy 1.3	To restrict earthworks in Outstanding Natural Features or Landscapes as scheduled in NFL-APP1 Appendix 4C, except where earthworks are necessary to manage risk to human health and safety.
Policy 1.4	To ensure the scale of earthworks are appropriate for the site they are located on to avoid visual amenity effects on or beyond the site.
Objective 2	To ensure that earthworks are designed and undertaken in a manner to minimise the risk of land instability and accelerated erosion.
Policy 2.1	To manage the scale of earthworks on sites susceptible to erosion and land instability.
Policy 2.2	To require rehabilitation measures be undertaken to avoid accelerated erosion following earthworks.
Policy 2.3	To ensure all adverse effects from earthworks including dust and sediment run-off are managed onsite so that particulate matter does not cause a nuisance or affect the safety or operation of other activities.
Policy 2.4	To ensure that earthworks do not affect the functioning of known overland flow paths.
Objective 3	To protect the operation of the National Grid and infrastructure of regional and national importance by avoiding earthworks that could undermine their integrity and functioning.

Section 4: Managing Land Use Effects

REFERENCE	PROVISION
4.2 General Objectives	
Objective LU 1	To recognise the potential adverse effects of activities upon the natural and physical environment, land and ecosystems and to avoid, remedy or mitigate these effects.
Objective LU 2	To protect present and future District residents from potential adverse effects of land uses upon their amenities and their health and safety.
Objective LU 4	To recognise the need for the Tangata Whenua to be able to use their land and traditional resources according to their cultural heritage.
Objective LU 5	To maintain and enhance the amenity values which make the District a pleasant place to live in and visit.
Objective LU 6	To promote integrated management of land and water resources.
Policy a.	To ensure that adverse effects of land use and surface water activities on the natural environment, land, water and ecosystems are avoided, remedied or mitigated.
Policy c.	To minimise the potential for conflict between new activities and lawfully existing activities.
Policy e.	To provide opportunities for participation by the Tangata Whenua in making resource allocation and land use decisions, including setting conditions on land use consents where appropriate.
Policy f.	To avoid, remedy or mitigate any adverse effects resulting from the activities of others upon resources or other taonga valued by the Tangata Whenua.
Policy g.	To remove impediments which limit the ability of the Tangata Whenua to use their land or resources according to their cultural heritage.
4.3.1 Sustainable use of Soil Resources	
Objective LU 7	To promote sustainable use of the District's land and related resources, particularly by: <ul style="list-style-type: none"> a) Safeguarding the qualities of the District's soils which contribute to their life supporting capacity, including soil depth, soil structure, water holding capacity, organic matter and soil fauna. b) Maintaining options for future generations to use, develop or protect the soil resource. c) Managing the effects of urban communities and urban growth upon the environment, including upon the soil resource.
Policy a.	To avoid damage to the soil resource from land uses which might result in chemical contamination, excavation, erosion or soil compaction.
4.3.3 Outstanding Landscapes	
Objective LU 9	To protect and where appropriate enhance the quality of the District's outstanding landscapes, namely: a) Pohangina River and river valley.
Policy a.	To minimise the effect of new subdivision and development, particularly housing, upon the character of the parts of the Pohangina, Oroua and Rangitikei Valleys identified above, specifically: i) The scenic qualities provided by the river and valley landscapes, prominent hills, the Ruahine Ranges, gorges, terrace formations, high bluffs and riparian margins. ii) The ecological value provided by forest remnants, and iii) The recreational, ecological and fisheries value of the rivers themselves.
4.12 Hazardous Substances and Contaminated Sites	
Objective LU 26	To minimise the risk to people and the environment from the use, transport and storage of hazardous substances and from contaminated sites.
Policy f.	To limit future land uses in or around contaminated sites, if necessary to protect human health.

Section 6: Esplanade Management

REFERENCE	PROVISION
Objective EM 1	To maintain and enhance public access to and along the District's coastline and rivers.
Objective EM 2	To maintain and enhance opportunities for public recreational use of the coastline and rivers.
Objective EM 3	To preserve the natural character of the coast, wetlands, lakes and rivers and their margins.
Objective EM 4	To protect areas of significant indigenous vegetation, wetlands and aquatic habitats.
Objective EM 5	To promote riparian management practices which improve the quality and natural functions of adjacent water bodies.
Objective EM 6	To maintain the efficiency of river control and drainage schemes.
Policy c.	To protect the conservation values of those riparian margins which have a high value due to areas of indigenous vegetation adjoining the water's edge, including the Mangaone West Stream between Te Rakehou Road and Awahuri Road.
Policy d.	To seek better public access to the coast and the District's major rivers, namely the Rangitikei, Manawatu, and Oroua Rivers.
Policy f.	To improve public access for recreation to those parts of the following streams which are relatively close to formed road access or reserves: i) Pohangina River;

Section 8: Natural Hazards

REFERENCE	PROVISION
Objective NH 1	To reduce the potential impact of natural hazard events, where these events represent a significant risk to human health and safety, to natural values or to property due to their potential severity and likelihood of occurrence.
Objective NH 2	To avoid development which would adversely affect people's health and safety including by placing unnecessary demands upon response agencies, including Civil Defence, during and after a hazard event.
Policy d.	To help reduce the severity of flooding and land erosion events.
Policy f.	To ensure that all buildings which are potentially affected by 100 year flood events (ie those with a 1% probability of happening in any given year) do not significantly impede or divert the flow of flood waters.

NFL-Natural Features and Landscapes

REFERENCE	PROVISION
NFL-O2	The characteristics and values of the Outstanding Natural Features and Landscapes identified in NFL-APP1 are protected from inappropriate use and development.
NFL-O4	The characteristics and values of Outstanding Natural Features and Landscapes, and Significant Amenity Features are maintained or enhanced.
NFL-P3	To avoid inappropriate use and development within Outstanding Natural Features identified in NFL-APP1 except where it is demonstrated that the identified characteristics and values of the area are protected and maintained.
NFL-P4	To restrict the use and development within Outstanding Natural Features identified in NFL-APP1 except where it is demonstrated that the identified characteristics and values of the area are protected and maintained.
NFL-P6	To avoid significant adverse cumulative effects from use and development on the characteristics and values of Outstanding Natural Features and Landscapes identified in NFL-APP1.

REFERENCE	PROVISION
NFL-P7	Except as required by NFL-P6, avoid adverse effects on Outstanding Natural Features and Landscapes as far as reasonably practicable and where avoidance is not reasonably practicable, remedy or mitigate adverse effects on the characteristics and values identified in NFL-APP1.
NFL-P10	To restrict the development of new buildings or structures within an Outstanding Natural Feature where these are visible from a public space and create a visual intrusion or has an adverse effect on characteristics and values of the feature identified in NFL-APP1.
NFL-P11	To restrict the removal of indigenous vegetation from Outstanding Natural Features and Landscapes identified in NFL-APP1.
NFL-P15	To protect existing indigenous vegetation.
NFL-P16	To encourage restoration and planting with locally sourced indigenous species of Outstanding Natural Features and Landscapes and Significant Amenity Features.

Tararua District Plan

The Tararua District Plan (TDP) was made operative on 1 September 2012. The TDP also includes Plan Change 1 that was made operative on 19 August 2019. The Project is located wholly in the Rural Zone and also traverses areas identified as “covenant areas”. TDP Objectives and Policies that are relevant are set out below.

2.3 Rural Land Use Management

REFERENCE	PROVISION
2.3.4 Environmental Quality and Amenity	
2.3.4.1 Objective	To ensure a high level of environmental quality and amenity throughout the rural areas of the District.
2.3.4.2 Policy a.	To ensure that any actual or potential adverse environmental effects of activities are avoided, remedied or mitigated.
2.3.4.2 Policy b.	To maintain and/or enhance the character, level of amenity and environmental quality of the District's rural areas.

2.5 Natural Hazards

REFERENCE	PROVISION
2.5.2 Minimising Risks from Natural Hazards	
2.5.2.1 Objective	To reduce the risks imposed by, and the effects of, natural hazards on the people, property and infrastructure of the Tararua District.
2.5.2.2 Policy b.	To reduce the risk from natural hazards in the District by minimising the intensity of development in hazard prone areas and implementing mitigation measures and response procedures as appropriate.

2.6 Amenity and Environmental Quality

REFERENCE	PROVISION
2.6.2 Maintenance and Enhancement of Environmental Quality and Amenity	
2.6.2.1 Objective	To maintain and/or enhance amenity values and environmental quality in the District, for present and future generations.
2.6.2.2 Policy a.	To manage the adverse effects of activities on amenity values by specifying minimum environmental standards for the development and maintenance of such activities.

REFERENCE	PROVISION
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2.6.4 Protection of Natural Features and Landscapes, Significant Trees and Significant Indigenous Vegetation and Significant Habitats of Indigenous Fauna

2.6.4.1 Objective	To protect natural features and landscapes, trees and areas of indigenous vegetation and habitats of indigenous fauna that are of district, regional or national significance from inappropriate subdivision, use and development.
2.6.4.2 Policy b.	To identify trees, indigenous vegetation and habitats of indigenous fauna in the District that contribute in a significant way to the amenity and environmental quality of the District and to classify them according to their significance and relative value to the community. In determining their significance, the following matters will be considered: <ul style="list-style-type: none"> • representativeness; • diversity and pattern; • naturalness; • rarity and distinctiveness; • long term viability; • importance for breeding, feeding, roosting, or loafing areas for indigenous fauna on a regular or annual basis;. • importance of contribution to the habitat requirements of rare, vulnerable or endangered indigenous flora or fauna.
2.6.4.2 Policy c.	To encourage the protection of significant trees, significant indigenous vegetation, significant habitats of indigenous fauna, and identified natural features and landscapes from inappropriate subdivision, development or use, and to promote public access where this will not adversely affect conservation or private property values.

2.6.6 Waterbodies and their Margins

2.6.6.1 Objective	To protect the natural, scenic, ecological, cultural and amenity values of the District's lakes, rivers, and wetlands and maintain and/or enhance public access to and along their margins.
2.6.6.2 Policy a.	To maintain, and enhance where appropriate, the natural character of the District's wetlands, lakes and rivers and their margins, and to protect them from inappropriate subdivision, use and development.
2.6.6.2 Policy b.	To maintain existing public access to and along rivers and lakes, except where such access is in conflict with other riparian management objectives where conservation values are of higher priority.
2.6.6.2 Policy e.	To encourage and promote public access and the provision of facilities in areas of conservation, recreational and amenity value within the District.

2.8 Infrastructure

REFERENCE	PROVISION
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2.8.2 Network Utility and Infrastructure Operations

2.8.2.1 Objective	To maintain and develop the District's infrastructure to meet the community's needs in a safe, effective and efficient manner while avoiding, remedying or mitigating adverse environmental effects.
2.8.2.2 Policy a.	To enable the activities of network utility operators and the establishment and maintenance of network utility equipment and facilities (including roads) to be undertaken, provided that adverse environmental effects are avoided, remedied or mitigated.
2.8.2.2 Policy d.	To ensure that any adverse effects of the subdivision, use and development of land on the safe and efficient operation of network utilities and infrastructure, are avoided, remedied or mitigated.
2.8.2.2 Policy e.	To take into account the technical and operational requirements of network utilities and infrastructure in the assessment of resource consent applications for these activities.

2.8.3 Transportation Network and Adjacent Activities

REFERENCE	PROVISION
2.8.3.1 Objective	To ensure the safe, efficient and effective operation of the District's transportation networks while avoiding, remedying or mitigating adverse environmental effects.
2.8.3.2 Policy g.	To encourage the use of "environmentally friendly" forms of transportation through the provision and enhancement of safe cycling and pedestrian facilities, particularly in town centres.
2.8.3.2 Policy h.	To avoid, remedy or mitigate the adverse effects of transportation activities on the environment.
2.8.4 Electricity Generation from Renewable Sources including Wind Farms	
2.8.4.1 Objective	To recognise the potential of the District's Rural Management Area for renewable electricity generation and wind farms in particular.
2.8.4.2 Policy a.	To recognise the local, regional and national benefits to be derived from the development of renewable energy resources, and wind farms, in particular.

7. Other relevant policies and plans

PLAN/ POLICY	DISCUSSION
Horizons Regional Council Region Pest Management Strategy 2017 – 2037 (2017)	<p>The purpose of the Plan is to outline the regulatory framework for efficient and effective management or eradication of specified animal and plant organisms in the Manawatū-Wanganui Region so as to:</p> <ul style="list-style-type: none"> ■ Prevent, reduce, or eliminate the adverse effects of those organisms and their management; and ■ Maximise the effectiveness of individual pest management action by way of a regionally coordinated approach. <p>The Strategy can be found in full at the Horizons website: http://www.horizons.govt.nz/HRC/media/Media/Pests/2017-2037-Regional-Pest-Management-Plan.pdf</p>
Manawatū District Council: Growing Manawatū - Economic Growth Strategy (2017) (Growing Manawatū)	<p>Growing Manawatū provides a strategy that recognised the fundamental role of community and the business sector. Its vision focuses on the economy being prosperous and diverse to offer a high quality life for all residents. Additionally, it outlines strategic outcomes, objectives, economic goals, actions and measurements of success.</p> <p>Growing Manawatū can be accessed in full at the MDC website: https://www.mdc.govt.nz/files/content/public/documents/strategies/mdc_economic_development_strategy_updated.pdf</p>
Manawatū Gorge Governance Group: Te Āpiti Master Plan (draft 2019)	<p>It is acknowledged that a Te Āpiti Master Plan is being prepared at the directive of the Manawatū Gorge Governance Group (that includes the Councils, Iwi and the Department of Conservation).</p>
OURS: The Manawatū River Leaders Accord 2010 and OURS: The Manawatū River Leaders Accord Action Plan 2016-21	<p>In August 2010, members of the Manawatū River Leaders' Forum signed an Accord to take action to improve the state of the Manawatū River. The Accord set out a focus, vision, and goals for the River. Specific goals set out in the Accord are:</p> <ol style="list-style-type: none"> 1. <i>The Manawatū River becomes a source of regional pride and mana.</i> 2. <i>Waterways in the Manawatū Catchment are safe, accessible, swimmable, and provide good recreation and food resources.</i> 3. <i>The Manawatū Catchment and waterways are returned to a healthy condition.</i> 4. <i>Sustainable use of the land and water resources of the Manawatū Catchment continues to underpin the economic prosperity of the Region.</i> <p>In addition, an Action Plan has been prepared by the Accord. Within the Action Plan, the goals of the Accord are mentioned, an overarching goal has been developed, and is set out below;</p>

PLAN/ POLICY	DISCUSSION
	<p><i>“Our goal is to improve the Manawatū River, the mauri (lifeforce) of the Manawatū River Catchment such that it sustains fish species and is suitable for contact recreation, in balance with the social, cultural and economic activities of the catchment community”</i></p> <p>The Action Plan can be found in full at Horizons website: https://www.horizons.govt.nz/HRC/media/Media/Reserves%20and%20Projects/MRLA-Action-Plan-2016-21.pdf?ext=.pdf</p>
<p>Ashhurst Domain Development and Management Plan 1997</p>	<p>The Management Plan’s purpose is to provide for the protection, use, enjoyment and maintenance of the reserve in keeping with the existing character of the area and within the limits of the resources available.</p> <p>The Management Plan can be found in full at the PNCC website: https://www.pncc.govt.nz/media/2885138/recreation_ashhurst_domain_reserve_management_plan_august_1997.pdf</p>

Appendix E – Proposed Conditions

Appendix E – Proposed Conditions of the Resource Consents

Conditions Index

CONDITION NUMBER	CONDITION
GENERAL	
General and Administration	
GA1	General Accordance
GA2	Complaints Management (Construction)
GA3	Monthly Report
GA4	Annual Report
GA5	Review of Conditions
Tangata Whenua Values	
TW1	Karakia
TW2	Te Ahu a Turanga
TW3	Tangata Whenua Values Monitoring and Management Plan
TW4	Amending the Tangata Whenua Values Monitoring and Management Plan
Archaeology and Historic Heritage	
AH1	Archaeology Discovery Protocol and Archaeological Authority
Construction Management - General	
CM1	Project Representative
CM2	Pre-Construction Site Meetings
CM3	Construction Management Standards
CM4	Construction Environmental Management Plan
CM5	Amending the Construction Environmental Management Plan
Ecology	
EC1	Wetlands, Indigenous Vegetation and Habitats of Indigenous Fauna Removal
EC2	Salvage and Replacement of Threatened Plant Species
EC3	Pest Plants in QEII Trust Open Space Covenant Areas
EC4	'At Risk' or 'Threatened' Braided River Bird Species Standards and Effects Management
EC5	Cryptic Wetland Bird Species Standards and Effects Management
EC6	Forest Bird Species (Including Whiteheads) Standards and Effects Management
EC7	New Zealand Pipit Standards and Effects Management
EC8	Australian Coot and New Zealand Dabchick Standards and Effects Management
EC9	Lizard Standards and Effects Management
EC10	Bat Standards and Effects Management
EC11	Terrestrial Invertebrates Standards and Effects Management
EC12	Standards to Offset and Compensate Residual Adverse Effects on Terrestrial and Wetland Ecology
EC13	Fish Salvage, Relocation and Fish Passage (Construction)
EC14	Fish Passage (Operation)

CONDITION NUMBER	CONDITION
EC15	Standards to Offset Residual Adverse Effects on Freshwater Ecology
EC16	Site Specific Ecology Offset and Compensation Plan/s
EC17	Amending a Site Specific Ecology Offset and Compensation Plan
EC18	Sites for Offset and Compensation Measures (Freshwater and Terrestrial Ecology)
EC19	Amending the Ecology Management Plan
EC20	Biosecurity
EC21	'At-Risk' or 'Threatened' Flora and Fauna Discovery Protocol
Land Disturbance	
LD1	Cleanfill Material
LD2	Former Woodville Landfill Site
LD3	Air Quality Standard
LD4	Cut and Fill Stability
LD5	End-of-Season Stability
LD6	Winter Works
LD7	Dewatering
LD8	Contaminated Soil Discovery Protocol
Erosion and Sediment Control	
ES1	Supervision
ES2	Erosion and Sediment Control Standards
ES3	Amending the Erosion and Sediment Control Plan and Appendices
ES4	Site Specific Erosion and Sediment Control Plans
ES5	Site Specific Erosion and Sediment Control Plans Certification
ES6	Amending the Certified Site Specific Erosion and Sediment Control Plans
ES7	As-Built Plans
ES8	Erosion and Sediment Control Monitoring
ES9	Removal of Erosion and Sediment Control Measures
Stormwater	
SW1	Operational Stormwater Standards
Bridges (Manawatū River, Eco-Bridge and Mangamanaia Stream)	
BD1	Bridge Design Standard
BD2	Bridge Construction and Operation Standards
BD3	Public Access and River Navigation
BD4	Flood Contingency Management Plan (Manawatū River)
BD6	Amending the Flood Contingency Management Plan
BD7	Bridge As-Built Plans
Works in the Bed of Watercourses	
WW1	Culvert Design Standards
WW2	Works in the Bed of Watercourses Standards
WW3	Culvert As-Built Plans

Summary of Resource Consents and Applicable Conditions

The following table lists the resource consents sought, the conditions, lapse periods and expiry dates that apply to each resource consent:

CONSENT REF.	CONSENT	ACTIVITY DESCRIPTION AND LOCATION	APPLICABLE CONDITIONS	LAPSE PERIOD (sections 116 and 125(1))	EXPIRY (sections 116 and 123(c))
Construction Phase Resource Consents					
RC1	Land use (section 9(2), section 14 and section 15) - Rule 13-6	The activity authorised by this consent is land disturbance and vegetation clearance (including associated diversion of water, discharge of sediment and discharge of water from any dewatering that may be required) within the Hill Country Erosion Management Area, but not a) within 10 metres of a watercourse (Manawatū River, Mangamanaia Stream, and various unnamed streams); or b) in an at-risk, rare or threatened habitat (in accordance with Schedule F of the One Plan) shown on drawings TAT-3-DG-E-4131 to TAT-3-DG-E-4137.	GA1- GA5 TW1 - TW4 AH1 CM1 - CM5 EC1- EC21 LD1 - LD8 ES1 - ES9	10 years	10 years
RC2	Land use (section 9(2), section 14 and section 15) – Rule 13-7	The activity authorised by this consent is land disturbance and vegetation clearance (including associated diversion of water, discharge of sediment and discharge of water from any dewatering that may be required) within 10 metres of a watercourse (Manawatū River, Mangamanaia Stream, and various unnamed streams), but not in an at-risk, rare or threatened habitat (in accordance with Schedule F of the One Plan) shown on drawings TAT-3-DG-E-4131 to TAT-3-DG-E-4137.	GA1- GA5 TW1 - TW4 AH1 CM1 - CM5 EC1- EC21 LD1 - LD8 ES1 - ES9	10 years	10 years
RC3	Land use consent (section 9(2)) – Rule 13-9	The activity authorised by this consent is land disturbance and vegetation clearance in a rare or threatened habitat (in accordance with Schedule F of the One Plan) shown on drawings TAT-3-DG-E-4131 to TAT-3-DG-E-4137.	GA1- GA5 TW1 - TW4 AH1 CM1 - CM5 EC1- EC12, EC16 – EC21 LD1 – LD6, LD8 ES1 - ES9	10 years	10 years

CONSENT REF.	CONSENT	ACTIVITY DESCRIPTION AND LOCATION	APPLICABLE CONDITIONS	LAPSE PERIOD (sections 116 and 125(1))	EXPIRY (sections 116 and 123(c))
RC4	Discharge permit (section 15) – Rule 13-9	The activity authorised by this consent is the discharge of sediment in a rare or threatened habitat (in accordance with Schedule F of the One Plan) shown on drawings TAT-3-DG-E-4131 to TAT-3-DG-E-4137.	GA1- GA5 TW1 - TW4 CM1 - CM5 EC1- EC21 LD1 - LD8 ES1 - ES9	10 years	10 years
RC5	Water permit (section 14) – Rule 16-9	The activity authorised by this consent is the taking of water (dewatering) where groundwater is encountered in cuts outside of an at-risk, rare or threatened habitat (in accordance with Schedule F of the One Plan) shown on drawings TAT-3-DG-E-4131 to TAT-3-DG-E-4137.	GA1- GA5 TW1 - TW4 CM1 - CM5 EC1- EC21 LD7 ES1 - ES9	10 years	10 years
Operational Phase Resource Consents					
RC6	Land use consent (section 13) – Rule 13-9	The activities authorised by this consent are the Eco-Bridge (BR03) stream diversion (SD-EC05-01) and five culverts (CU-07, CU-08A, CU-09, CU-14, CU-15) and associated disturbance in the bed of a river that is in a rare or threatened habitat (in accordance with Schedule F of the One Plan) shown on drawings TAT-3-DG-E-4131 to TAT-3-DG-E-4137.	GA1- GA5 TW1 - TW4 AH1 CM1 - CM5 EC1- EC21 LD1 – LD8 ES1 - ES9 BD1, BD2, BD6 WW1-WW3	10 years	35 years
RC7	Water permit (section 14) – Rule 13-9	The activity authorised by this consent is the taking and diversion of water (dewatering, stream diversion and drainage) in a rare or threatened habitat (in accordance with Schedule F of the One Plan) shown on drawings TAT-3-DG-E-4131 to TAT-3-DG-E-4137.	GA1-GA5 TW1-TW4 CM1-CM5 EC13-EC21 LD7 WW2	10 years	35 years

CONSENT REF.	CONSENT	ACTIVITY DESCRIPTION AND LOCATION	APPLICABLE CONDITIONS	LAPSE PERIOD (sections 116 and 125(1))	EXPIRY (sections 116 and 123(c))
RC8	Discharge permit (section 15) – Rule 13-9	The activity authorised by this consent is the discharge of stormwater (once operational from Wetland 03) into water or onto or into land in a rare or threatened habitat (in accordance with Schedule F of the One Plan) shown on drawings TAT-3-DG-E-4131 to TAT-3-DG-E-4137.	GA1-GA5 TW1-TW4 CM1-CM5 EC13-EC21 SW1	10 years	35 years
RC9	Discharge permit (section 15) – Rule 14-30	The activity authorised by this consent is the discharge of fill to land and surface water where the conditions, standards or terms in Rule 14-21 are not met.	GA1-GA5 TW1-TW4 CM1-CM5 EC1-EC21 LD1-LD6 ES1-ES9 WW2	10 years	35 years
RC10	Water permit (section 14) – Rule 16-13	The activity authorised by this consent is the diversion of streams outside of a 'rare habitat' or 'threatened habitat' (in accordance with Schedule F of the One Plan) shown on drawings TAT-3-DG-E-4131 to TAT-3-DG-E-4137 that are: a) greater than two times the bed width of diverted length; or b) within 1km of any infrastructure located in, on, over or under the riverbed.	GA1-GA5 TW1-TW4 CM1-CM5 EC13-EC21 WW2	10 years	35 years
RC11	Land use consent (section 13) – Rule 17-3	The activity authorised by this consent is the placement of a bridge (known as BR02) and associated disturbance, diversion, deposition and discharges, over the Manawatū River (being subject to a 'Sites of Significance – Cultural' notation in Schedule B to the One Plan).	GA1-GA5 TW1-TW4 AH1 CM1-CM5 EC1-EC21 ES1-ES9 BD1-BD6 WW2	10 years	35 years

CONSENT REF.	CONSENT	ACTIVITY DESCRIPTION AND LOCATION	APPLICABLE CONDITIONS	LAPSE PERIOD (sections 116 and 125(1))	EXPIRY (sections 116 and 123(c))
RC12	Land use consent (section 13) – Rule 17-15	The activity authorised by this consent is the placement of a bridge (known as BR07) and associated disturbance, diversion, deposition and discharges, over the Mangamanaia Stream (being subject to a 'Flood Control and Drainage' notation in Schedule B to the One Plan).	GA1-GA5 TW1-TW4 AH1 CM1-CM5 EC1-EC21 ES1-ES9 BD1-BD6 WW2	10 years	35 years
RC13	Land use consent (section 13) – Rule 17-23	The activity authorised by this consent is the placement of culverts CU01 to CU20 (excluding CU-07, CU-08A, CU-09, CU-14 and CU-15) and ACU01 to ACU08, and associated disturbance, diversion, deposition and discharges, within watercourses that are outside of a 'rare habitat', 'at-risk habitat' or 'threatened habitat' and not subject to the following notations in Schedule B to the One Plan: a) 'Natural State'; b) 'Sites of Significance – Cultural'; or c) 'Sites of Significance – Aquatic'.	GA1-GA5 TW1-TW4 AH1 CM1-CM5 EC13-EC21 ES1-ES9 BD1-BD6 WW1-WW3	10 years	35 years

Definitions and Abbreviations

ABBREVIATION/ TERM/ACRONYM	TERM/DEFINITION
Act	Resource Management Act 1991
CEMP	Construction Environmental Management Plan
Cleanfill	Has the same meaning as in the glossary of terms in the Manawatū-Whanganui Regional Council's One Plan
CSMP	Contaminated Soils Management Plan
CTMP	Chemical Treatment Management Plan
DBH	Diameter at breast height
DEB	Decanting earth bund
Dry weather	Dry weather is defined as sunny, partially cloudy or overcast, but does not include light or heavy precipitation.
ESC	Erosion and sediment control
EMP	Ecology Management Plan
ESCMP	Erosion and Sediment Control Monitoring Plan
ESCP	Erosion and Sediment Control Plan
FCMP	Flood Contingency Management Plan
FIDOL	Frequency, Intensity, Duration, Offensiveness, and Location
GD05	Auckland Council Guideline Document 2016/005 "Erosion and Sediment Control Guide for Land Disturbing Activities in the Auckland Region"
Project	Te Ahu a Turanga; Manawatū Tararua Highway Project
Project Iwi Partners	Rangitāne o Manawatū, Rangitāne o Tamaki Nui-ā-Rua, Ngāti Kahungunu ki Tāmaki Nui-ā-Rua, Ngāti Raukawa ki te Tonga
Settled weather	Settled weather is defined as sunny, partially cloudy or overcast and light precipitation of less than 2mm/hour and does not include heavy precipitation of greater than 2mm/hour.
Site	The area within which the construction of the Project is undertaken, including the extent of land subject to designations for the Project in favour of Waka Kotahi NZ Transport Agency.
SRP	Sediment retention pond
SSEOCP	Site Specific Ecology Offset and Compensation Plan/s
SSESCP	Site Specific Erosion and Sediment Control Plan
SUP	Shared Use Path
TSP	Total suspended particulate
TSS	Total suspended solids
TWVMMP	Tangata Whenua Values Monitoring and Management Plan

General – All Resource Consents

CONDITION NUMBER	CONDITION
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General and Administration

GA1	<p>General Accordance</p> <p>a) Except as modified by the conditions below (including through a certification process), the Project must be undertaken in general accordance with the <i>'Te Ahu a Turanga; Manawatū Tararua Highway - Application for Resource Consents'</i> and in particular the following supporting documents:</p> <ul style="list-style-type: none"> i. Chapter 3 Project Description in <i>'Volume 1: Assessment of Effects on the Environment'</i>; ii. <i>'Volume 2: Design and Construction Report'</i>; iii. <i>'Volume 3: Drawings'</i> as follows: <ul style="list-style-type: none"> A. Geometrics: General Arrangement Plans TAT-3-DG-R-0101 to TAT-3-DG-R-0117 and TAT-3-DG-R-0121 (Rev C); B. Geometrics: Typical Cross Sections TAT-3-DG-R-0201 to TAT-3-DG-R-0206 (Rev C); C. Geometrics: Plan and Long Section – State Highway 3 TAT-3-DG-R-0501 to TAT-3-DG-R-0509 (Rev C); D. Geometrics Plan and Long Section – Meridian Access TAT-3-DG-R-0530 to TAT-3-DG-R-0532, TAT-3-DG-R-0534 to TAT-3-DG-R-0536 (Rev C), TAT-3-DG-R-0537 to TAT-3-DG-R-0540 (Rev B), and Meridian Underpass TAT-3-DG-R-0533 (Rev C); E. Geotechnical: Earthworks Typical Details TAT-3-DG-G-1251 to TAT-DG-G-1257 (Rev C); F. Stormwater: Stormwater Drainage Layout Plan TAT-3-DG-H-1401 to TAT-3-DG-H-1417 and TAT-3-DG-H-1421 (Rev C); G. Stormwater: Stormwater Management Devices – Catchment Plan TAT-3-DG-H-1434 to TAT-DG-H-1439 (Rev A); H. Stormwater: Cross Culverts TAT-3-DG-H-1440 to TAT-3-DG-H-1441 (Rev C); I. Stormwater: Typical Stormwater Drainage Details TAT-3-DG-H-1450 to TAT-3-DG-H-1453 (Rev C); J. Structures: TAT-3-DG-S-2100, TAT-3-DG-S-2101, TAT-3-DG-S-2201, TAT-3-DG-S-2301, TAT-3-DG-S-2701 and TAT-3-DG-S-2702 (Rev C); K. Temporary Works: Accommodation Works TAT-3-DG-C-3601 to TAT-3-DG-C-3616 (Rev B); L. Spoil Sites: TAT-3-DG-C-3641 to TAT-3-DG-C-3645 and TAT-3-DG-C-3650 (Rev A); M. Erosion and Sediment Control: Concept Erosion and Sediment Control – Bulk Earthworks TAT-3-DG-E-3801 to TAT-3-DG-E-3817 and TAT-3-DG-E-3821 (Rev A); N. Erosion and Sediment Control: Site Specific Erosion and Sediment Control TAT-3-DG-E-3831 to TAT-DG-E-3835 (Rev A); O. Ecology: Terrestrial Ecosystems Plan TAT-3-DG-E-4131 to TAT-3-DG-E-4137 (Rev A); P. Ecology: Freshwater Ecosystems Plan TAT-3-DG-E-4141 to TAT-3-DG-E-4147 (Rev A); iv. <i>'Volume 7: Management Plans'</i> as follows: <ul style="list-style-type: none"> A. Contaminated Soils Management Plan; B. Ecology Management Plan, including the following: <ul style="list-style-type: none"> 1. Vegetation Clearance Management Plan; 2. Planting Establishment Management Plan; 3. Biosecurity Management Plan;
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CONDITION NUMBER	CONDITION
	<ul style="list-style-type: none"> 4. Lizard Management Plan; 5. Bat Management Plan; 6. Avifauna Management Plan; 7. Terrestrial Invertebrate Management Plan; 8. Freshwater Ecology Management Plan; 9. Residual Effects Management Plan; <p>C. Erosion and Sediment Control Plan;</p> <p>b) Where there is inconsistency between the documents listed in clause (a) and the requirements of these conditions, these conditions prevail.</p> <p>c) Where there is inconsistency between the documents listed in clause (a), provided as part of the application for resource consent, and information and plans provided at the Environment Court hearing, the most recent plans and information prevail.</p>
GA2	<p>Complaints Management (Construction)</p> <p>a) A permanent register of any complaint received regarding the construction activities authorised by these resource consents must be maintained at all times that physical works are being undertaken.</p> <p>b) The register must include:</p> <ul style="list-style-type: none"> i. the name and contact details (if supplied) of the complainant; ii. the nature and details of the complaint; iii. the location, date and time of the complaint and the alleged event giving rise to the complaint; iv. the weather conditions and wind direction at the time of the complaint, where relevant to the complaint; v. other activities in the area, unrelated to the Project, that may have contributed to the complaint; vi. the outcome of the consent holder's investigation into the complaint; and vii. a description of any measures taken to respond to the complaint. <p>c) The Manawatū-Whanganui Regional Council must be notified of any complaint as soon as reasonably practicable and no longer than two (2) working day after receiving the complaint.</p> <p>d) The consent holder must respond to any complainant as soon as reasonably practicable, as appropriate to the urgency of the circumstances, and within five (5) working days.</p>
GA3	<p>Monthly Report</p> <p>a) A Monthly Report must be provided to Manawatū-Whanganui Regional Council for the duration of the construction phase of the Project,</p> <p>b) The Monthly Report must be provided within five (5) working days of the last day of the prior month.</p> <p>c) During the months of May to September inclusive, the consent holder may agree with the Manawatū-Whanganui Regional Council that a Monthly Report is not required on the basis that the extent of works being undertaken is limited.</p> <p>d) The purpose of the Monthly Report is to provide regular updates in respect of works occurring, progress of works, including the undertaking and completion of activities required by these conditions of resource consent, and any issues that have arisen during the preceding month.</p> <p>e) As a minimum the Monthly Report must include:</p> <ul style="list-style-type: none"> i. a progress and programme update, including works that have been undertaken during the preceding month and works that are scheduled to occur in the subsequent month; ii. details of any non-compliances with conditions and actions undertaken to prevent the likelihood of future non-compliances;

CONDITION NUMBER	CONDITION
	<ul style="list-style-type: none"> iii. any complaints received, and actions taken (including to prevent the same or similar complaint in the future); iv. details of the programming of any management plan updates; and v. any other matters considered relevant by the consent holder. <p>f) A copy of each Monthly Report must be provided to the Project Iwi Partners.</p>
GA4	<p>Annual Report</p> <ul style="list-style-type: none"> a) An Annual Report for the prior 12 months ending 30 April must be provided to the Manawatū-Whanganui Regional Council by the 31st of July each year during the construction phase of the Project. b) The purpose of the Annual Report is to provide an overview of the works authorised by these resource consents, including activities required by these conditions of resource consent, that have been undertaken during the preceding year, including associated monitoring and reporting. c) As a minimum the Annual Report must include: <ul style="list-style-type: none"> i. monitoring reports required by management plans and/or the conditions of these resource consents; ii. monitoring data collected as requirement by management plans and/or by the conditions of these resource consents accompanied by an analysis of the monitoring data in respect of observed effects on the environment; iii. any reasons for non-compliance or difficulties achieving compliance with the conditions of these resource consents, including the requirements of management plans; iv. any works that have been undertaken to address compliance issues or to reduce adverse effects on the environment; v. recommendations on alterations to the monitoring to be implemented in the subsequent year; vi. an overview of works anticipated in the subsequent year, including any works to reduce adverse effects on the environment; and vii. any other matters considered relevant by the consent holder. d) A copy of each Monthly Report must be provided to the Project Iwi Partners.
GA5	<p>Review of Conditions</p> <ul style="list-style-type: none"> a) The Manawatū-Whanganui Regional Council may, under section 128 of the Act, initiate a review of any or all conditions of these resource consents within the months of August and September of any year for the duration of the resource consents. b) A review of conditions under clause (a) is for the purpose of ensuring that the Project meets the requirements of the conditions of these resource consents. c) A review of conditions under clause (a) may allow for the consideration of the following: <ul style="list-style-type: none"> i. the modification of monitoring activities, including the frequency of the monitoring; ii. the deletion, amendment or addition of new conditions as necessary to avoid, remedy or mitigate any adverse effects attributed to any breach of any conditions; iii. review of the exceptional circumstances for discharges and associated limits when such circumstances are regular rather than exceptional; d) A review of conditions under clause (a) may result in the following: <ul style="list-style-type: none"> i. the deletion or amendment of any conditions of the consents; and ii. the addition of new conditions requiring the adopting of the best practicable option.
Tangata Whenua Values	
TW1	<p>Karakia</p> <ul style="list-style-type: none"> a) A pre-start karakia must be undertaken prior to the commencement of works authorised by these resource consents.

CONDITION NUMBER	CONDITION
TW2	<p>Te Ahu a Turanga</p> <p>a) The design and landscape treatment of spoil site 25 (show on drawing TAT-3-DG-C-3643 Rev A attached to and forming part of these conditions) must be undertaken in consultation with the Project Iwi Partners.</p>
TW3	<p>Tangata Whenua Values Monitoring and Management Plan</p> <p>a) A Tangata Whenua Values Monitoring and Management Plan (TWVMMP) must form part of the Construction Environmental Management Plan.</p> <p>b) The objective of the TWVMMP is to recognise and provide for the tangata whenua values of the area affected by the Project and to develop mechanisms and processes to seek to avoid or minimise potential impacts on those values through the implementation of monitoring and mitigation measures.</p> <p>c) The TWVMMP must be prepared by a person (or persons) endorsed by the Project Iwi Partners and must include (but not be limited to):</p> <ol style="list-style-type: none"> i. cultural protocols and procedures for cultural inductions; ii. a description of specific monitoring activities to be undertaken, including pre-construction surveys and monitoring of taonga species, seed collection, earthworks oversight, stream diversions, stream retirement, and stream and terrestrial mitigation and offset and compensation areas (including selection and ongoing involvement in the stream and terrestrial mitigation and offset and compensation areas). This will include the development of a Te Awa o Manawatū Cultural Monitoring Tool and Framework; iii. confirmation of the roles and responsibilities of personnel in respect of clauses (i) and (ii); iv. approaches to the collection, harvesting and reuse of taonga vegetation, including the removal of dead fauna and the management of disturbed soil that includes leaf litter; v. opportunities for participation in planting, weed and pest control, fencing, fish surveys and/or transfer, species monitoring and translocation; vi. provision for the design and placement of signs for wayfinding and setting out the cultural narrative and values of the confluence of the Manawatū River and Pohangina River, as well as within the Wetland Experience Area (under the Eco Bridge (BR03), the Western Gateway Park, and on Bridge 02 and Bridge 03); vii. provision for the removal of weed pests from the riparian margins, and riparian planting 150 metres upstream and downstream of the stream crossing, of stream nine (9) (shown on TAT-3-DG-E-4147 attached to and forming part of these conditions) that is also known as the Mangakino Stream and Te Wai-whakatahe-o-Ngāti Kahungunu, subject to land owner approvals being obtained; viii. a requirement that seed for mitigation, offset and compensation planting be sourced from the rohe in which it is to be planted and/or otherwise eco-sourced, where practicable to do so, as required by Conditions EC12 and EC15; ix. setting out the detailed archaeology discovery protocol procedures consistent with Condition AH1 and any archaeological authority granted for the Project and including the opportunity for Project Iwi Partners to assist with any archaeological investigations; x. process for investigating the feasibility of translocating the two largest tī kōuka trees (located at 75 Cook Road, Ashhurst and legally described as Section 14 Block IV Gorge Survey District; NZTM 5535749mN, 1836999mE) between CH 5800 and CH5900 including identification of locations for the placement of the tī kōuka trees; xi. process for investigating opportunities to retire and/or otherwise enhance a karaka grove located on the Nut Cracker Farm (located at 1631 Napier Road, Ashhurst and legally described as Lot 49 DP 185; NZTM 5534633mN, 1834787mE); xii. consideration of potential effects on taonga species, or other species of significance to tangata whenua, including, but not limited to: <ol style="list-style-type: none"> A. koura;

CONDITION NUMBER	CONDITION
	<ul style="list-style-type: none"> B. tuna; C. kererū; D. parapara (<i>P. brunoniana</i>); E. tī kōuka; F. tōitoi; G. karaka; H. mataī; I. puku tawai; J. northern rātā; <ul style="list-style-type: none"> xiii. identification of opportunities for future access to provide for the ability for Project Iwi Partners to sustainably harvest resources from their maunga and traditional harvesting grounds; and xiv. any other matters or measures to avoid or mitigate potential impacts on tangata whenua values, customs and practices.
TW4	<p>Amending the Tangata Whenua Values Monitoring and Management Plan</p> <ul style="list-style-type: none"> a) If the Tangata Whenua Values Monitoring and Management Plan required by Condition TW2 is amended or updated, the revised Tangata Whenua Monitoring and Management Plan must be submitted to the Manawatū-Whanganui Regional Council within five (5) working days of the update being made.
Archaeology and Historic Heritage	
AH1	<p>Archaeology Discovery Protocol and Archaeological Authority</p> <ul style="list-style-type: none"> a) In the event that the activities authorised by these consents discover or disturb an archaeological site, kōiwi tangata, wāhi tapu or wāhi taonga, the consent holder must immediately cease further work in the immediate vicinity of the discovery or disturbance and inform: <ul style="list-style-type: none"> i. Rangitāne o Manawatū; ii. Rangitāne o Tamaki nui-ā-Rua; iii. Ngāti Kahungunu ki Tāmaki nui-a-Rua; iv. Ngāti Raukawa ki te Tonga; v. Heritage New Zealand Pouhere Taonga; vi. Manawatū-Whanganui Regional Council; and vii. New Zealand Police (only in the event of kōiwi tangata being discovered). b) Further work in the immediate vicinity of the discovery or disturbance must be suspended until: <ul style="list-style-type: none"> i. procedures for the removal of the taonga are completed; and ii. Manawatū-Whanganui Regional Council has advised that work can recommence. c) Clause (a) and (b) do not apply, and are superseded, where the works are subject to an archaeological authority granted under section 48 of the Heritage New Zealand Pouhere Taonga Act 2014.
Construction Management	
CM1	<p>Project Representative</p> <ul style="list-style-type: none"> a) Prior to the commencement of activities authorised by these resource consents, a representative(s) of the consent holder must be appointed as the Manawatū-Whanganui Council's principal contact person(s) in relation to these resource consents. The Manawatū-Whanganui Regional Council must be informed of the representative's name and how they can be contacted. Should the person change during the term of this resource consent, the Manawatū-Whanganui Regional Council must immediately be informed of the of the new representative's name and how they can be contacted.

CONDITION NUMBER	CONDITION
CM2	<p>Pre-Construction Site Meetings</p> <ul style="list-style-type: none"> a) Pre-construction site meetings must be held, as a minimum, annually prior to the commencement of land disturbance activities to be undertaken during the months of October to April inclusive. b) The purpose of the pre-construction site meetings is to share information in respect of the cultural landscape, works methods, erosion and sediment control measures, management plan requirements and compliance with the conditions of resource consent. c) The following parties must be invited to the pre-construction site meetings with a minimum of ten (10) working days' notice: <ul style="list-style-type: none"> i. the Manawatū-Whanganui Regional Council; ii. the Project Representative nominated under condition CM1; iii. the designer/s of the works and contractor/s undertaking the works; iv. the Project Iwi Partners; and v. any other relevant party representing the consent holder. d) The following information must be made available to the invited parties listed in clause (c): <ul style="list-style-type: none"> i. timeframes for key stages of the works authorised by these resource consents; ii. nature and application of the relevant conditions of resource consents; iii. the ESCP; iv. any archaeological authority granted for the Project and relevant plans identifying wāhi tapu and other sites of value to the Project Iwi Partners; and v. relevant SSESCP/s. e) If any of the invited parties listed in clause (c), other than the Project Representative, do not attend a pre-construction site meeting, this condition would have been met, provided the invitation requirement in clause (c) and information requirements in clause (d) are met.
CM3	<p>Construction Management Standards</p> <ul style="list-style-type: none"> a) A copy of the Construction Environmental Management Plan and these resource consents must be kept on-site at all times that physical works authorised by those consents are being undertaken. A copy of the Construction Environmental Management Plan and these resource consents must be produced without unreasonable delay on request from a servant or agent of the Manawatū-Whanganui Regional Council. b) The consent holder must make contractors aware of the requirement to comply with the conditions of these resource consents, including through the implementation of the Construction Environmental Management Plan. c) All earthmoving machinery, pumps, generators and ancillary equipment must be operated in a manner that ensures spillages of fuel, oil and similar contaminants are prevented, particularly during refuelling and machinery services and maintenance. d) Except where necessary for bridge construction activities or where managed so that any spill can be contained so that it does not enter a water body, refuelling and lubrication activities must be carried out away from any water body, ephemeral water body, or overland flow path.
CM4	<p>Construction Environmental Management Plan</p> <ul style="list-style-type: none"> a) A finalised Construction Environmental Management Plan (CEMP) must be submitted to Manawatū-Whanganui Regional Council for information at least twenty (20) working days prior to the commencement of the works authorised by these resource consents. b) The objective of the CEMP is to describe the measures that must be implemented to comply with the conditions of these resource consents in order to appropriately remedy or mitigate any adverse effects of the works authorised by these resource consents. c) The CEMP must include, but not be limited to, the following: <ul style="list-style-type: none"> i. EMP; ii. TWVMMP prepared in accordance with Condition TW3;

CONDITION NUMBER	CONDITION
	<ul style="list-style-type: none"> iii. ESCP; iv. CSMP; v. the roles and responsibilities of staff and contractors, including the Project Representative identified under Condition CM1 and supervisor identified under Condition ES1; vi. The environmental outcomes anticipated by: <ul style="list-style-type: none"> A. the Requiring Authority's 'Environmental and Social Responsibility Policy' (2011); B. relevant rules and associated conditions, standards and/or terms in the Manawatū-Whanganui Regional Council's One Plan; C. constraints or restrictions imposed by other authorisations or permissions; and D. the conditions of these resource consents. vii. A description of the Project including the programme and staging for the physical works authorised by these consents; <ul style="list-style-type: none"> A. the location of construction site infrastructure including fencing, site offices, site amenities, contractors' yard access, equipment unloading and storage areas; C. the approach to the management of any waste materials, taking into account the waste management hierarchy to reduce, re-use, recycle and recover, along with responsible disposal of residual waste; viii. a description of training and induction requirements for all site personnel (including employees, sub- contractors and visitors); ix. complaints management measures in accordance with Conditions GA2; x. compliance monitoring, environmental reporting and environmental auditing, including the provision of results or outcomes of monitoring, reporting and auditing to the Manawatū-Whanganui Regional Council under Condition GA3 and Condition GA4; xi. the details for emergency contact personnel who must be contactable twenty-four (24) hours a day, seven (7) days a week; xii. the proposed hours of work; xiii. site security arrangements; xiv. archaeological discovery protocol procedures consistent with Condition AH1 and any archaeological authority granted for the Project; xv. contaminated soil discovery protocol procedures consistent with Condition LD8; xvi. 'at-risk' or 'threatened' flora and fauna discovery protocol procedures consistent with Condition EC21; and xvii. methods for reviewing, amending, augmenting and updating the CEMP in a manner consistent with Condition CM5.
CM5	<p>Amending the Construction Environmental Management Plan</p> <ul style="list-style-type: none"> a) If the CEMP required by Condition CM4 (but not the EMP, ESCP or any SSES CP) is updated, the revised CEMP must be submitted to the Manawatū-Whanganui Regional Council within five (5) working days of the update being made. b) Amendments to the EMP, ESCP and any SSES CP must be made in accordance with Condition EC19, Condition ES3 and Condition ES6 respectively.

CONDITION NUMBER CONDITION

Ecology

EC1

Wetlands, Indigenous Vegetation and Habitats of Indigenous Fauna Removal

- a) The area of wetlands, indigenous vegetation or habitats removed pursuant to these resource consents, or through Project enabling works not authorised by these resource consents (including those authorised by designations or separate resource consents), must not exceed the maximum areas provided for in Table EC1: Vegetation Removal:

Table EC1: Vegetation Removal

Ecosystem type (shown on drawings TAT-3-DG-E-4131 to TAT-3-DG-E-4137 attached to and forming part of these conditions of resource consent)	Maximum area of vegetation or habitat able to be removed (ha)*
Secondary broadleaved forests with old-growth signatures	0.25
Old-growth treelands (including Ramarama Area)	0.13
Kānuka forests (CH4000 – 4400)	0.91
Kānuka forests (elsewhere)	0.39
Advanced secondary broadleaved forests (CH5600 – 5800)	0.04
Advanced secondary broadleaved forests (elsewhere)	0
Secondary broadleaved forests and scrublands (CH6100 – 6400)	0.025
Secondary broadleaved forests and scrublands (elsewhere)	6.68
Mānuka and kānuka shrublands (CH6100 – 6400)	0
Mānuka and kānuka shrublands (elsewhere)	2.11
Divaricating shrublands	0.33
Old-growth forests (alluvial)	0.10
Old-growth forests (hill country)	0.85
Raupō dominated seepage wetlands (high value)	0.11
Indigenous-dominated seepage wetlands (moderate value)	0.44
Pasture wetlands/exotic-dominated wetlands (low value)	4.42

* The maximum areas stated in Table EC1 are slope adjusted and have been calculated using lidar and topographic mapping information. The actual area when surveyed may vary. However, compliance is to be demonstrated using the same method following the completion of detailed design and construction surveys.

- b) Vegetation removal must be undertaken:
- i. in accordance with the tree removal protocols included in the Vegetation Clearance Management Plan; and
 - ii. in accordance with Conditions EC2, EC6, EC9, EC 10 and EC11.
- c) The removal of old-growth treelands, old-growth forest (alluvial) and old-growth forest (hill country) must be:
- i. supervised by a suitably experienced ecologist and arborist;
 - ii. preceded by the physical delineation of vegetation to be removed by temporary fencing or other delineation; and
 - iii. undertaken to ensure that vegetation is felled within the physically delineated area.
- d) Where practicable, all felled indigenous vegetation must be stockpiled adjacent to remaining vegetation for a minimum of one (1) month.

EC2

Salvage and Replacement of Threatened Plant Species

- a) Swamp maire must be planted at the following rates:
- i. one hundred (100) swamp maire trees for any existing swamp maire tree affected by more than 10% of live growth pruning as a result of works authorised by these

CONDITION NUMBER	CONDITION
	<p>resource consents, where the extent of pruning is determined by an independent, suitably qualified and experienced arborist;</p> <ul style="list-style-type: none"> ii. two hundred (200) swamp maire trees for any existing swamp maire tree that dies as a result of works authorised by these resource consents, as determined by an independent, suitably qualified and experienced arborist; <p>b) Where any ramarama greater than fifteen (15) centimetres tall is removed as a result of works authorised by these resource consents, replacement planting of ramarama must be undertaken at a rate of 1:100.</p> <p>c) Where practicable, in old-growth treelands (CH6500-CH6600), old-growth forest (alluvial) (CH4000) and old-growth forest (hill country) (CH5500-CH5600) nest epiphytes must be removed from felled trees and relocated to mature trees.</p> <p>d) Prior to the removal of vegetation in secondary broadleaved forests and scrublands at CH3900-CH4400 giant maidenhair ferns must be surveyed, identified and translocated.</p> <p>e) All giant maidenhair fern located outside of secondary broadleaved forests and scrublands that is to be removed as a result of works authorised by these resource consents must be translocated.</p> <p>f) Any translocated giant maidenhair fern that dies within six (6) months of translocation must be replaced at a rate of 1:15 before the end of next appropriate planting season.</p>
EC3	<p>Pest Plants in QEII Trust Open Space Covenant Areas</p> <p>a) Within the areas subject to the QEII Trust open space covenants, that are subject to a designation in favour of the Project, (at CH5400-CH5600; CH6100-CH6200 shown on the General Arrangement Plans TAT-3-DG-R-0104 to TAT-3-DG-R-106 attached to and forming part of these conditions of resource consent):</p> <ul style="list-style-type: none"> i. a pre-construction baseline survey of pest plants must be undertaken; and ii. all new pest plants must be controlled both during construction and for five years following completion of construction works to the same level or better than found in the pre-construction baseline survey.
EC4	<p>'At Risk' or 'Threatened' Braided River Bird Species Standards and Effects Management</p> <p>a) Prior to works authorised by these resource consents occurring in the Manawatū River riverbed during the months of July to March inclusive, a preconstruction survey to identify any nesting 'at risk' or 'threatened' braided river bird species must be undertaken in the manner required by the Avifauna Management Plan.</p> <p>b) Where an active nesting site is identified by the pre-construction survey required by clause (a), a fifty (50) metre exclusion zone (measured from the nest) must be established within which no person or machinery may enter, until the chicks have fledged or the nest has failed.</p> <p>c) Where no active nesting sites are present:</p> <ul style="list-style-type: none"> i. nest deterrents must be placed within the main construction area and within a fifty (50) metre buffer of that area; and ii. works authorised by these resource consents must commence within three (3) days of the survey being undertaken. <p>d) Where the nest deterrents required by clause (c)(i) are in place, a monthly survey must be undertaken to identify any nesting 'at risk' or 'threatened' braided river bird species.</p> <p>e) Where an active nesting sites is identified by a monthly survey required by clause (d), works may continue provided that:</p> <ul style="list-style-type: none"> i. the nesting birds are monitored and assessed by a suitably qualified and experienced ecologist; and ii. the ecologist confirms that the nesting 'at risk' or 'threatened' braided river bird species are not unduly impacted by the works authorised by these resource consents. <p>f) When the nest deterrents required by clause (c) are not in place and where construction works cease for a period of more than three (3) consecutive days during the months of July to March inclusive the survey required by clause (a), and the subsequent actions required by clauses (b) and (c), must be repeated.</p>

CONDITION NUMBER	CONDITION
EC5	<p>Cryptic Wetland Bird Species Standards and Effects Management</p> <p>a) A cryptic wetland bird nesting survey must be undertaken in the manner required by the Avifauna Management Plan prior to the commencement of works authorised by these resource consents where the works are:</p> <ul style="list-style-type: none"> i. to be undertaken during the months of September to December inclusive; and ii. located in raupō dominated seepage wetlands. <p>b) Where an active nest sites is identified by the pre-construction survey required by clause (a), a fifty (50) metre exclusion zone (measured from the nest) must be established within which no person or machinery may enter until the chicks have fledged or nest has been naturally abandoned.</p> <p>c) Where no active nesting sites are identified by the pre-construction survey required by clause (a) the works in raupō dominated seepage wetland must commence within three (3) days of the survey being undertaken.</p> <p>d) Where an active nesting site is established during construction, works may continue provided that:</p> <ul style="list-style-type: none"> i. the nesting birds are monitored and assessed by a suitably qualified and experienced ecologist; and ii. the ecologist confirms that the nesting cryptic wetland bird species are not unduly impacted by the works authorised by these resource consents. <p>e) Where construction works in raupō dominated seepage wetlands cease for a period of more than three (3) consecutive days during the months of September to December inclusive, the survey required by clause (a), and the subsequent actions required by clauses (b) and (c), must be repeated.</p>
EC6	<p>Forest Bird Species (Including Whiteheads) Standards and Effects Management</p> <p>a) Vegetation clearance must not exceed an area of 100m² of any contiguous area of the following ecosystem types when undertaken during the months of September to January inclusive:</p> <ul style="list-style-type: none"> i. old-growth forest (alluvial); ii. old-growth forest (hill country); iii. secondary broadleaved forests with old-growth signatures; iv. old-growth treelands; v. kānuka forests; vi. advanced secondary broadleaved forest; vii. secondary broadleaved forest and scrublands. <p>b) Clause (a) does not apply where a suitably qualified and experienced ecologist confirms that potential impacts of the vegetation clearance required for the Manawatū River bridge construction standing area and the construction of construction access can be appropriately managed at the following locations:</p> <ul style="list-style-type: none"> i. between CH 3550 and CH3920 (bridge construction staging area, south and north bank of the Manawatū River); ii. between CH 3920 and CH4350 (construction access track); and ii. between CH6100 and CH6200 (Meridian access track). <p>c) Where vegetation clearance is undertaken in accordance with clause (a) or (b), a nesting forest bird survey must be undertaken in the manner required by the Avifauna Management Plan a maximum of three (3) days prior to the commencement of relevant works authorised by these resource consents.</p> <p>d) Where an active nest is identified by the pre-construction survey required by clause (c):</p> <ul style="list-style-type: none"> i. the individual tree and immediately surrounding vegetation must be retained, clearly marked and cordoned until the chicks have fledged or the nest has been naturally abandoned; and ii. where nesting whitehead are present, a fifty (50) metre exclusion zone (measured from the nest) must be established in the forested area within which

CONDITION NUMBER	CONDITION
	<p>no vegetation clearance may be undertaken until the chicks have fledged or the nest has been naturally abandoned.</p> <p>e) Where an active whitehead nest establishes during vegetation clearance and construction works in the habitats listed in clause (a), these works may continue provided that:</p> <ul style="list-style-type: none"> i. the nesting whiteheads are monitored and assessed by a suitably qualified and experienced ecologist; and ii. the ecologist confirms that the nesting whiteheads are not unduly impacted by the works authorised by these resource consents. <p>f) Where construction works in the habitats listed in clause (a) cease for a period of more than three (3) consecutive days during the months of September to January inclusive, the survey required by clause (c), and the subsequent actions required by clauses (d) and (e), must be repeated.</p>
EC7	<p>New Zealand Pipit Standards and Effects Management</p> <p>a) Prior to works authorised by these resource consents occurring in pasture wetlands/exotic dominated wetlands and pasture grasslands at monthly intervals during the months of August to March (inclusive) a survey must be undertaken to identify any long grass New Zealand pipit habitat within the construction footprint.</p> <p>b) Where potential habitat is identified by the surveys required by clause (a), a New Zealand pipit nesting survey must be undertaken in the manner required by the Avifauna Management Plan up to a maximum of three (3) days prior to the commencement of works authorised by these resource consents.</p> <p>c) Where an active nesting site is identified by a pre-construction survey required by clause (a), a fifty (50) metre exclusion zone (measured from the nest) must be established within which no person or machinery may enter, until the chicks have fledged or the nest has failed.</p> <p>d) Where an active nesting site is identified by a monthly survey required by clause (a), works may continue provided that:</p> <ul style="list-style-type: none"> i. the nesting birds are monitored and assessed by a suitably qualified and experienced ecologist; and ii. the ecologist confirms that the nesting New Zealand pipit are not unduly impacted by the works authorised by these resource consents. <p>e) Where construction works in the potential habitats identified by the surveys required by clause (a) cease for a period of more than three (3) consecutive days during the months of August to March inclusive, the survey required by clause (b), and the subsequent actions required by clauses (c) must be repeated.</p>
EC8	<p>Australian Coot and New Zealand Dabchick Standards and Effects Management</p> <p>a) The freshwater ponds located between CH9200 and CH9600 must be fenced or delineated at a minimum distance of thirty (30) metres from the edge of the ponds during the months of September to December inclusive.</p> <p>b) No works authorised by these resource consents may be undertaken within the area fenced or otherwise delineated in accordance with clause (a) during the months of September to December inclusive except where a suitably qualified and experienced ecologist confirms that either:</p> <ul style="list-style-type: none"> i. there are no Australian coot or dabchick present and works can proceed; or ii. Australian coot or dabchick are not unduly impacted by the works authorised by these resource consents.
EC9	<p>Lizard Standards and Effects Management</p> <p>a) The clearance of vegetation in the following habitat types (that are, with the exception of rank grass, shown on drawings TAT-3-DG-E-4131 to TAT-3-DG-E-4137 attached to and forming part of these conditions) must not be undertaken between the months of May to September inclusive:</p> <ul style="list-style-type: none"> i. old-growth forest (alluvial); ii. old-growth forest (hill country);

CONDITION NUMBER	CONDITION
	<ul style="list-style-type: none"> iii. secondary broadleaved forests with old-growth signatures; iv. old-growth treelands; v. kānuka forest; vi. advanced secondary broadleaved forest; vii. secondary broadleaved forests and scrublands; viii. mānuka and kānuka shrublands; ix. divaricating shrublands; x. rank grass (being ungrazed and unmown improved pasture). <p>b) Prior to the clearance of vegetation in the habitat types listed in clause (a) above, pre-construction lizard surveys and salvaging must be undertaken in accordance with the Lizard Management Plan.</p> <p>c) Where lizards are salvaged as required by clause (b), the lizards must be salvaged and released to an identified relocation site as required by authorisation given under section 53 of the Wildlife Act 1953.</p> <p>d) Any injured or dead lizard found as a result of works authorised by these resource consents must be managed as required by authorisation given under section 53 of the Wildlife Act 1953.</p>
EC10	<p>Bat Standards and Effects Management</p> <p>a) The clearance of vegetation in the following habitat types (that are, with the exception of exotic forests, shown on drawings TAT-3-DG-E-4131 to TAT-3-DG-E-4137 attached to and forming part of these conditions) must not be undertaken between the months of May to September inclusive:</p> <ul style="list-style-type: none"> i. old-growth forest (alluvial); ii. old-growth forest (hill country); iii. secondary broadleaved forests with old-growth signatures; iv. old-growth treelands; v. exotic forest/treelands (CH4300-CH4400, CH4900, CH8700-CH8800, CH9300-CH9700, CH10400-CH11000 and CH11400-CH13300); <p>b) Except as provided for by clause (d), prior to the clearance of vegetation in the habitat types listed in clause (a) above, a presence/absence acoustic survey must be undertaken in accordance with the Bat Management Plan.</p> <p>c) If the acoustic survey detects multiple bats or bat roosting the tree removal protocols in the Bat Management Plan must be implemented.</p> <p>d) A presence/absence survey, required by clause (b), need not be undertaken if the tree removal protocols in the Bat Management Plan are implemented for the clearance of all vegetation in the habitat types listed in clause (a) above.</p> <p>e) Any active bat roosting site that is discovered as a result of pre-felling tree assessments required by the Bat Management Plan must be retained and managed in accordance with the Bat Management Plan.</p> <p>f) Any living, injured or dead bat found as a result of works authorised by these resource consents must be managed as required by authorisation given under section 53 of the Wildlife Act 1953.</p>
EC11	<p>Terrestrial Invertebrates Standards and Effects Management</p> <p>a) Pre-construction surveys must be undertaken in the manner described in the Terrestrial Invertebrates Management Plan to detect the presence of 'at-risk' or 'threatened' terrestrial invertebrates.</p> <p>b) Where the pre-construction surveys detect the presence of 'at-risk' or 'threatened' terrestrial invertebrates, the Terrestrial Invertebrate Management Plan must be updated in accordance with Condition EC19 to:</p> <ul style="list-style-type: none"> i. identify the vegetation or habitats that should be avoided in the first instance; ii. outline the optimal timing of vegetation clearance based on the 'At-Risk' or 'Threatened' taxa present in particular habitats; iii. where appropriate, describe the methods of direct invertebrate management;

CONDITION NUMBER	CONDITION																										
	<ul style="list-style-type: none"> iv. identify areas or habitats where measures to manage works authorised by these resource consents apply; v. describe approaches to the restoration of invertebrate taxa/community composition, including but not limited to: <ul style="list-style-type: none"> A. wood disk stepping-stones and long grass or shrubland corridors; B. the salvage and transfer of soils, coarse woody material or debris and leaf litter; C. detailed measures to create and/or restore habitats for populations of 'at-risk' or 'threatened' taxa; D. monitoring protocol for populations of 'at-risk' or 'threatened' taxa impacted by the Project; and E. biosecurity measures required in carrying out these activities. 																										
EC12	<p>Standards to Offset and Compensate Residual Adverse Effects on Terrestrial and Wetland Ecology</p> <ul style="list-style-type: none"> a) Residual adverse effects on terrestrial and wetland ecology must be offset and compensated through the provision of the following: <ul style="list-style-type: none"> i. areas of restoration planting as required by Table EC3: Restoration Planting: <p>Table EC3: Restoration Planting</p> <table border="1"> <thead> <tr> <th>Biodiversity type</th> <th>Area of restoration planting (ha)</th> </tr> </thead> <tbody> <tr> <td>Secondary broadleaved forests with old-growth signatures</td> <td>1.3</td> </tr> <tr> <td>Old-growth treelands</td> <td>0.6</td> </tr> <tr> <td>Kānuka forests</td> <td>2.3</td> </tr> <tr> <td>Advanced secondary broadleaved forests</td> <td>0.17</td> </tr> <tr> <td>Secondary broadleaved forests and scrublands</td> <td>24</td> </tr> <tr> <td>Mānuka and kānuka shrublands</td> <td>5.7</td> </tr> <tr> <td>Divaricating shrublands</td> <td>0.65</td> </tr> <tr> <td>Old-growth forests (alluvial)</td> <td>0.9</td> </tr> <tr> <td>Old-growth forests (hill country)</td> <td>10</td> </tr> <tr> <td>Raupō dominated seepage wetlands (high value)</td> <td>0.35</td> </tr> <tr> <td>Indigenous-dominated seepage wetlands (moderate value)</td> <td>1.2</td> </tr> <tr> <td>Pasture wetlands/exotic-dominated wetlands (low value)</td> <td>5</td> </tr> </tbody> </table> <ul style="list-style-type: none"> ii. additional average of ten (10) metre wide buffer planting around the areas of restored wetlands required by clause (a)(i); iii. ten (10) years of mammalian pest control within approximately 300ha of old-growth forest (hill country) in the Manawatū Gorge Scenic Reserve; iv. retirement of 48.3 hectares of bush and 0.4 hectares of wetland, including the exclusion of stock, ten (10) years of mammalian and plant pest control and legal protection; v. ten (10) years of mammalian pest control and plant pest control within 45.6 hectares of the forest restoration planting areas and 6.55 hectares of wetland restoration planting areas. b) The offset and compensation measures required by clause (a) must be managed in accordance with the Residual Effects Management Plan and Planting Establishment Management Plan and described in Site Specific Ecology Offset and Compensation Plan/s (SSEOCP) required by Condition EC16 to achieve the following standards: <ul style="list-style-type: none"> i. all restoration planting must be fenced or otherwise exclude livestock; ii. restoration planting must be implemented within three (3) years of the practical completion of construction; 	Biodiversity type	Area of restoration planting (ha)	Secondary broadleaved forests with old-growth signatures	1.3	Old-growth treelands	0.6	Kānuka forests	2.3	Advanced secondary broadleaved forests	0.17	Secondary broadleaved forests and scrublands	24	Mānuka and kānuka shrublands	5.7	Divaricating shrublands	0.65	Old-growth forests (alluvial)	0.9	Old-growth forests (hill country)	10	Raupō dominated seepage wetlands (high value)	0.35	Indigenous-dominated seepage wetlands (moderate value)	1.2	Pasture wetlands/exotic-dominated wetlands (low value)	5
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CONDITION NUMBER	CONDITION
	<ul style="list-style-type: none"> iii. access to restoration and retirement sites must be confirmed in accordance with Condition EC18; iv. all plant material must be sourced from the rohe in which it is to be planted and/or be otherwise eco-sourced except, where it is not practicable to do so, the SSEOCP must set out a process of consultation with the Project Iwi Partners and Manawatū-Whanganui Regional Council to confirm alternative source/s; v. plants must be a minimum of PB3 or root trainers; vi. Within twenty (20) metres of the formed carriageway of the new road, plantings must only include flowering plants primarily pollinated by wind or insects and must not include plants with large berries or prolific fruiting such as tawa, hīnau, rimu, kahikatea, miro or mātai. vii. restoration planting must achieve an 80% canopy cover within 10 years following the completion of construction; viii. 5% increase from a pre pest control baseline in forest bird (tui, bellbird, kererū, whitehead and rifleman) relative abundance using 5-minute bird count methodology after each pulsed pest control effort; and ix. 10% or better Chew Card Index or Residual Trap Catch for possums and 10% or better Tracking Tunnel Index for rats after each pulsed pest control effort. <p>c) If, following the completion of construction, the area of vegetation removed as a result of the works authorised by these resource consents is substantially less than the maximum areas in Table EC1: Vegetation Removal (Condition EC1), the offset and compensation measures required by clause (a) may be revised using the Biodiversity Offset Accounting Model (BOAM) and Biodiversity Compensation Model (BCM) decision support tools and (including through a revision of the Residual Effects Management Plan) and certified in accordance with Condition EC19.</p>
EC13	<p>Fish Salvage, Relocation and Fish Passage (Construction)</p> <ul style="list-style-type: none"> a) Up to a maximum of three (3) days prior to the commencement of construction works authorised by these resource consents in any stream or wetlands, fish and freshwater fauna must be salvaged and relocated in accordance with the fish recovery protocols included in the EMP. b) Where practicable fish passage will be provided on diversions and culverts for temporary works of greater than two days in duration during the migration period for target fish species.
EC14	<p>Fish Passage (Operation)</p> <ul style="list-style-type: none"> a) Following the completion of construction, fish passage upstream and downstream past any structure must be provided and maintained at all times in accordance with the Culvert Schedule (included in 'Volume 3 Drawings' as TAT-3-DG-H-1441 (Rev C) and attached to and forming part of these conditions).
EC15	<p>Standards to Offset Residual Adverse Effects on Freshwater Ecology</p> <ul style="list-style-type: none"> a) Residual adverse effects on freshwater ecology must be offset through the provision of the following: <ul style="list-style-type: none"> i. 9,520m² of new stream channel constructed and planted to a maximum width of twenty (20) metres; ii. riparian planting of 10,137m² of existing streambed area over an average width of twenty (20) metres on either bank. b) The offset and compensation measures required by clause (a) must be managed as required by the Residual Effects Management Plan, the Planting Establishment Management Plan, and the Freshwater Ecology Management Plan (including stream design principles) and described in Site Specific Ecology Offset and Compensation Plan/s (SSEOCP) required by Condition EC16 to achieve the following standards: <ul style="list-style-type: none"> i. all new stream channel and riparian planting must be fenced or otherwise exclude livestock; ii. stream creation and enhancement measures must be implemented within three (3) years of the completion of construction;

CONDITION NUMBER	CONDITION
	<ul style="list-style-type: none"> iii. access to offset sites must be confirmed in accordance with Condition EC18; iv. riparian planting must achieve an 80% canopy cover within 10 years following the completion of construction; v. all plant material must be sourced from the rohe in which it is to be planted and/or be otherwise eco-sourced except, where it is not practicable to do so, the SSEOCP must set out a process of consultation with the Project Iwi Partners and Manawatū-Whanganui Regional Council to confirm alternative source/s; vi. plants must be a minimum of PB3 or root trainers; and vii. within twenty (20) metres of the formed carriageway of the new road, plantings must only include flowering plants primarily pollinated by wind or insects and must not include plants with large berries or prolific fruiting such as tawa, hīnau, rimu, kahikatea, miro or mātai. <p>c) Following the completion of construction, the offset measures required by clause (a) must be recalculated using stream ecological valuations (SEV) and environmental compensation ratio (ECR) methodologies in respect of the final Project construction impact on stream habitat and confirmed locations for the offset.</p> <p>d) Where the recalculation required by clause (c) results in offset requirements that differ to those required by clause (a), the Residual Effects Management Plan, Planting Establishment Management Plan and EMP must be revised to provide for the new offset requirements and certified in accordance with Condition EC19.</p>
EC16	<p>Site Specific Ecology Offset and Compensation Plan/s</p> <ul style="list-style-type: none"> a) Site Specific Ecology Offset and Compensation Plan/s (SSEOCP) must be prepared for the restoration planting areas required by Condition EC12 and for the stream creation and riparian planting areas required by Condition EC15. b) Finalised SSEOCPs must be submitted to Manawatū-Whanganui Regional Council for information at least twenty (20) working days prior to the commencement of the planting and/or stream creation works. c) The SSEOCPs must be prepared in consultation with Project Iwi Partners and the Department of Conservation and must include, but not be limited to: <ul style="list-style-type: none"> i. a description of the offset or compensation measures to be implemented; ii. a site plan; iii. a programme for undertaking fencing, planting and pest control measures; iv. Vegetation Establishment Plans required by the Planting Establishment Plan.
EC17	<p>Amending a Site Specific Ecology Offset and Compensation Plan/s</p> <ul style="list-style-type: none"> a) If a SSEOCP required by Condition EC16 is updated, the revised SSEOCP must be submitted to the Manawatū-Whanganui Regional Council within five (5) working days of the update being made.
EC18	<p>Sites for Offset and Compensation Measures (Freshwater and Terrestrial Ecology)</p> <ul style="list-style-type: none"> a) Vegetation clearance, stream diversions or stream loss authorised by these resource consents must not commence until Manawatū-Whanganui Regional Council has been provided with written confirmation that the Transport Agency has entered into legal agreements and/or holds other authorisations necessary to allow entry onto land to carry out, continue and maintain all offset and compensation measures required by Conditions EC12 and EC15.
EC19	<p>Amending the Ecology Management Plan</p> <ul style="list-style-type: none"> a) The Ecology Management Plan (EMP) may be amended or updated without the need for certification where: <ul style="list-style-type: none"> i. the amendment/s are necessary to achieve consistency with any authorisation given by the Director-General of Conservation under section 53 of the Wildlife Act 1953; or ii. the amendment/s: <ul style="list-style-type: none"> A. achieve the objectives and outcomes of the EMP; B. meet the requirements of the conditions of these resource consents; and

CONDITION NUMBER	CONDITION
	<p>C. have no, or a de minimis adverse effect on the environment, or is a change that results in an improved environmental outcome; and</p> <p>iii. the revised EMP is provided to the Manawatū-Whanganui Regional Council and, within five (5) working days of receiving the revised EMP, the Manawatū-Whanganui Regional Council has not advised in writing that the amendment must be certified under clause (b) on the basis that the amendment/s do not meet the requirements of clauses (a)(i) or (a)(ii).</p> <p>b) Except as provided for in clause (a), amendments to the EMP must be certified in writing by the Manawatū-Whanganui Regional Council acting in a technical certification capacity prior to the commencement of any works to which the amended EMP relate.</p> <p>c) Prior to submitting an amended EMP for written certification, consultation must be undertaken with the Project Iwi Partners and the Department of Conservation in respect of the amendments to the EMP. The amended EMP must include, or be accompanied by, a written statement that demonstrates how the outcomes of this consultation has been taken into account.)</p> <p>d) Certification (or withholding certification) is based on the Manawatū-Whanganui Regional Council's confirming that the amended EMP adequately gives effect to the relevant condition(s) of these resource consents;</p> <p>e) If ten (10) working days have passed since the amended EMP has been provided to Manawatū-Whanganui Regional Council for certification, and Manawatū-Whanganui Regional Council has not certified the revised EMP or provided advice that the EMP is not suitable to certify, then works may commence in accordance with the EMP as provided.</p>
EC20	<p>Biosecurity</p> <p>a) In addition to the measures set out in the Freshwater Ecology Management Plan and the Biodiversity Management Plan, to avoid the spread of the pest organism <i>Didymosphenia geminata</i> (known as 'didymo'):</p> <ul style="list-style-type: none"> i. all notices and guidelines issued by Biosecurity New Zealand (refer to www.biosecurity.govt.nz/didymo) must be complied with; ii. machinery or vehicles entering a water body must either: <ul style="list-style-type: none"> A. have a stand down of at least forty-eight (48) hours prior to being in contact with any water body in a different catchment; or B. be subject to check, clean and dry procedures. iii. standard check, clean and dry procedures must be adopted for clothing or footwear that has been in contact with a water body in a different catchment within forty-eight (48) hours. <p>b) The risk of the spread of myrtle rust must be managed in accordance with the Biosecurity Management Plan so that, if myrtle rust is found at the site:</p> <ul style="list-style-type: none"> i. the Ministry for Primary Industries must be notified; and ii. any infected plant that is removed as part of works authorised by these resource consents must be either: <ul style="list-style-type: none"> A. buried on-site to a minimum depth of 50cm; or B. transported in a sealed container and disposed of as general waste at a landfill or transfer station. <p>c) The risk of plague skink invasion must be managed in accordance with the Biosecurity Management Plan and must ensure that all potting mix and plant material are inspected prior to entering the site.</p>
EC21	<p>'At-Risk' or 'Threatened' Flora and Fauna Discovery Protocol</p> <p>a) If, when undertaking works authorised by these resource consents, any 'at-risk' or 'threatened' flora or fauna (as defined by the Department of Conservation's New Zealand Threat Classification System) that are not specifically addressed by the conditions of these resource consents are discovered, the consent holder must determine a course of action that:</p> <ul style="list-style-type: none"> i. is based on the advice of an independent, suitably qualified and experienced ecologist;

CONDITION NUMBER	CONDITION
	<ul style="list-style-type: none"> ii, references the framework for the management of indigenous flora and fauna in the Ecology Management Plan; and iii. takes into account the outcomes of any consultation the Project Iwi Partners and the Department of Conservation. <p>b) The consent holder must advise the Manawatū-Whanganui Regional Council in writing of the course of action determined in accordance with clause (a).</p>
Land Disturbance	
LD1	<p>Cleanfill Material</p> <p>a) All earthworked material deposited as part of the works authorised by these consents must be cleanfill.</p>
LD2	<p>Former Woodville Landfill Site</p> <p>a) Land disturbance activities must not occur on the site of the former Woodville Landfill that is designated in the Tararua District Plan and legally described as Part Sections 4 and 12 Block XIV Woodville Survey District.</p>
LD3	<p>Air Quality Standard</p> <p>a) Dust arising from works authorised by resource consents for the Project must not cause a noxious, dangerous, offensive or objectionable effect at any point beyond the boundary of the site as assessed using the FIDOL factors described in the Ministry for the Environment publication 'Good Practice Guide for Assessing and Managing Dust' (2016).</p>
LD4	<p>Cut and Fill Stability</p> <p>a) Disturbed areas must not exceed a height of ten (10) metres without being stabilised. Natural cut faces that are left bare are considered to be stabilised.</p> <p>b) Disturbed areas, and areas identified in a certified SSESCP must be progressively temporarily stabilised, re-contoured and re-vegetated to minimise sediment runoff and erosion until the disturbed area is permanently stabilised in accordance with GD05 and clause (c).</p> <p>c) Areas of the site where earthworks have been completed must be stabilised to prevent erosion as soon as practicable and within fourteen (14) days of completion of any works authorised by these resource consents, unless otherwise provided for in a certified Site Specific Erosion and Sediment Control Plan. Completion is defined as where bulk earthworks are complete or where no further bulk earthwork is programmed to occur for three (3) months.</p> <p>d) Stabilisation (where required) must be undertaken by providing adequate measures (vegetative and/or structural) that will reduce sediment runoff and erosion.</p> <p>e) The consent holder must engage a suitably qualified and experienced engineer to ensure that the cut slopes and fill sites are appropriately assessed for stability during and following the filling operation. This engineer must also ensure drainage is installed and the fill placed to ensure long term stability of the fill sites.</p>
LD5	<p>End-of-Season Stabilisation</p> <p>a) The site must be appropriately stabilised to the extent practicable by 30 April of each year unless otherwise agreed in writing by Manawatū-Whanganui Regional Council where stabilisation may include vegetative and/or structural measures and including pavement, metalling, hydroseeding, re-vegetation and mulching) that will reduce erosion of exposed soil to the extent practicable.</p>
LD6	<p>Winter Works</p> <p>a) Earthworks must not be conducted during the period 1 May to 30 September inclusive, except where:</p> <ul style="list-style-type: none"> i. the works are explicitly described and managed as winter works by a Site Specific Erosion and Sediment Control Plan that has been certified in accordance with condition ES5; or ii. the works are necessary maintenance works or for the purpose of stabilisation at the direction of Manawatū-Whanganui Regional Council and are undertaken

CONDITION NUMBER	CONDITION
	within three (3) working days of being directed by the Manawatū-Whanganui Regional Council.
LD7	<p>Dewatering</p> <p>a) The taking of water from groundwater for the purpose of dewatering as a result of works authorised by these resource consents must:</p> <ol style="list-style-type: none"> i. not be located within 50m of a consented bore on any other property; and ii. continue only for the time required to carry out the works. <p>b) The discharge of water for the purpose of dewatering as a result of works authorised by these resource consents must be undertaken in accordance with the Dewatering Management Procedures included as Appendix 4 to the Erosion and Sediment Control Plan and, if necessary, the Contaminated Soils Management Plan.</p>
LD8	<p>Contaminated Soil Discovery Protocol</p> <p>a) In the event that the activities authorised by these resource consents discover or disturb contaminated soil:</p> <ol style="list-style-type: none"> i. the Project representative, Manawatū-Whanganui Regional Council and the relevant District or City Council must be immediately notified; ii. the procedures described in the Contaminated Soils Management Plan must be immediately implemented; iii. all details of the discovery or disturbance are recorded as required by the environmental incident and emergency management procedures and reported in the Monthly Report and Annual Report required by Conditions GA3 and GA4.
Erosion and Sediment Control	
ES1	<p>Supervision</p> <p>a) The erosion and sediment control measures to manage the effects of activities authorised by these resource consents must be managed and supervised by an appropriately qualified person experienced in the implementation and monitoring of erosion and sediment control measures. This person must ensure all contracted operations and personnel have clearly defined roles and responsibilities to monitor compliance with the conditions of these resource consents. With reasonable notice, this person must be available to meet with the servants or agents of the Manawatū-Whanganui Regional Council.</p>
ES2	<p>Erosion and Sediment Control Standards</p> <p>a) Sediment losses to natural water arising from activities authorised by these resource consents must be minimised for the duration of the physical works authorised by these resource consents and until the expiry of the resource consents through the establishment and maintenance of erosion and sediment control measures in accordance with the document titled '<i>Erosion and Sediment Control Guide for Land Disturbing Activities in the Auckland Region Guidance Document 2016/005 Incorporating Amendment 1</i>' (GD05) or as otherwise described in the Erosion and Sediment Control Plan or a certified SSESCP where an alternative approach results in the same or similar effects on the environment.</p> <p>b) The consent holder must undertake all works authorised by these resource consents in accordance with the Erosion and Sediment Control Plan and any relevant certified SSESCP.</p> <p>c) All sediment laden run-off resulting from works authorised by these resource consents must be treated by sediment retention structures, devices or measures established and maintained in accordance with a certified SSESCP.</p> <p>d) The consent holder must ensure that, as far as practicable, all clean water run-off from stabilised surfaces including catchment areas above the sites be diverted away from the exposed areas via a stabilised system to prevent erosion, including erosion at any associated outfall/s.</p> <p>e) The pH of any discharge from sediment retention devices to any water course must not be less than 5.5 or greater than 8.5.</p>

CONDITION NUMBER	CONDITION
ES3	<p>Amending the Erosion and Sediment Control Plan and Appendices</p> <p>a) The Erosion and Sediment Control Plan (ESCP), including the appendices to this Plan, may be amended or updated without the need for certification where:</p> <ul style="list-style-type: none"> i. the amendment is an administrative change, including nominating personnel; or ii. the amendment is part of an annual review of monitoring activities; and iii. the revised ESCP is provided to the Manawatū-Whanganui Regional Council and, within five (5) working days of receiving the revised ESCP, the Manawatū-Whanganui Regional Council has not advised in writing that the amendment must be certified under clause (b) on the basis that the amendment/s do not meet the requirements of clauses (a)(i) or (a)(ii). <p>b) Except as provided for in clause (a), amendments to the ESCP and its appendices must be certified in writing by the Manawatū-Whanganui Regional Council acting in a technical certification capacity prior to the commencement of any works to which the amended ESCP relate.</p> <p>c) Certification (or withholding certification) is based on the Manawatū-Whanganui Regional Council's assessment of whether the amended Erosion and Sediment Control Plan meets the requirements of the conditions of these resource consents and, in particular is consistent with the requirements and measures in 'Erosion and Sediment Control Guide for Land Disturbing Activities in the Auckland Region 2016 (GD05)';</p> <p>d) If ten (10) working days have passed since the amended ESCP has been provided to Manawatū-Whanganui Regional Council for certification, and Manawatū-Whanganui Regional Council has not certified the revised ESCP or provided advice that the ESCP is not suitable to certify, then works may commence in accordance with the ESCP as provided.</p>
ES4	<p>Site Specific Erosion and Sediment Control Plans</p> <p>a) Site Specific Erosion and Sediment Control Plans (SSESCP) must be prepared for all works areas.</p> <p>b) More than one (1) SSESCP may be prepared for a single work area over the duration of the physical works.</p> <p>c) The Site Specific Erosion and Sediment Control Plans must be prepared in accordance with '<i>Erosion and Sediment Control Guide for Land Disturbing Activities in the Auckland Region Guidance Document 2016/005 Incorporating Amendment 1</i>' (GD05) or as otherwise described in the ESCP.</p> <p>d) SSESCPs must include, but not be limited to, the following:</p> <ul style="list-style-type: none"> i. a description of the construction activities to be undertaken; ii. a site contour plan/s of a suitable scale to identify; <ul style="list-style-type: none"> A. the location of waterways; B. the extent of soil disturbance and vegetation removal; C. any exclusion or buffer area where works will not occur; D. areas of cut and fill; E. locations of topsoil and cleanfill stockpiles; F. all key erosion and sediment control structures; G. the boundaries and areas of catchments contributing to all stormwater impoundment structures; and H. any other relevant site information; iii. the design criteria, calculations and dimensions of all key erosion and sediment control structures; iv. construction timetable for the erosion and sediment control works and the bulk earthworks proposed; v. a detailed methodology for any stream works and culvert installation, including sizing calculations and drawing of stream diversions; and vi. temporary and permanent stabilisation methodologies.
ES5	<p>Site Specific Erosion and Sediment Control Plan Certification</p>

CONDITION NUMBER	CONDITION
	<ul style="list-style-type: none"> a) Each SSES CP must be certified in writing by the Manawatū-Whanganui Regional Council acting in a technical certification capacity prior to the commencement of works in the area subject to the SSES CP. b) Certification (or withholding certification) is based on the Manawatū-Whanganui Regional Council's assessment of whether the SSES CP meets the requirements of the conditions of these resource consents and, in particular is consistent with the requirements and measures in '<i>Erosion and Sediment Control Guide for Land Disturbing Activities in the Auckland Region Guidance Document 2016/005 Incorporating Amendment 1</i>' (GD05); c) If ten (10) working days have passed since a SSES CP has been provided to Manawatū-Whanganui Regional Council for certification, and Manawatū-Whanganui Regional Council has not certified the SSES CP or provided advice that the SSES CP is not suitable to certify, then the consent holder may commence works in accordance with the SSES CP as provided.
ES6	<p>Amending the Certified Site Specific Erosion and Sediment Control Plans</p> <ul style="list-style-type: none"> a) The following may be undertaken prior to a SSES CP being amended subject to a retrospectively amended SSES CP being prepared and provided to Manawatū-Whanganui Regional Council within ten (10) working days: <ul style="list-style-type: none"> i. the addition of silt fences and super silt fences; ii. changes to the dimensions or configuration of a sediment retention pond or decanting earth bund (where compliance with GD05 is achieved); iii. the installation of additional diversion bunds, diversion channels devices, dams and pipe drop structures; iv. construction of additional ESC where devices are within the permanent works footprint and do not affect construction of the ESC that are already constructed and approved. b) A SSES CP may be amended or updated without the need for certification where: <ul style="list-style-type: none"> i. the amendment does not result in works occurring during the period 1 May to 30 September inclusive; ii. the amendment is an administrative change; iii. the amendment is to the location of an erosion and sediment control where each control is sized for the captured area and shown on as-built plans in new location; iv. the amendment provides additional lay down areas within the area of works subject to the SSES CP; v. the amendment changes bund or diversion construction (excluding changes to dimension and capacity); and vi. the revised SSES CP is provided to the Manawatū-Whanganui Regional Council and, within five (5) working days of receiving the revised SSES CP, the Manawatū-Whanganui Regional Council has not advised in writing that the amendment must be certified under clause (c) on the basis that the amendment/s do not meet the requirements of clauses (a)(i) to (a)(viii). c) Except as provided for in clauses (a) and (b), amendments to a SSES CP must be certified in writing by the Manawatū-Whanganui Regional Council acting in a technical certification capacity prior to the commencement of any works to which the amended SSES CP relate. d) Certification (or withholding certification) is based on the Manawatū-Whanganui Regional Council's assessment of whether the amended SSES CP meets the requirements of the conditions of these resource consents and, in particular is consistent with the requirements and measures in '<i>Erosion and Sediment Control Guide for Land Disturbing Activities in the Auckland Region 2016 (GD05)</i>'; e) If five (5) working days have passed since the amended SSES CP has been provided to Manawatū-Whanganui Regional Council for certification, and Manawatū-Whanganui Regional Council has not certified the revised SSES CP or provided advice that the SSES CP is not suitable to certify, then works may commence in accordance with the SSES CP as provided.

CONDITION NUMBER	CONDITION
ES7	<p>As-Built Plans</p> <p>a) Prior to bulk earthworks commencing within an area subject to a SSES CP a certification statement and as-built plans must be provided to the Manawatū-Whanganui Regional Council to demonstrate that all structures (including sediment retention ponds, decanting earth bunds and diversion channels and/or bunds) have been constructed in accordance with the certified SSES CP.</p> <p>b) The as-built plans required by clause (a) must include the dose rate, and corresponding catch tray and header tank outlet pipe sizes, for each chemical treatment system to be implemented for sediment retention ponds and decanting earth bunds within the area covered by the SSES CP based on the Chemical Treatment Management Plan appended to the ESCP.</p>
ES8	<p>Erosion and Sediment Control Monitoring</p> <p>a) Two (2) telemetered rainfall monitoring stations must be installed on site to provide real-time continuous rainfall intensity and volume data.</p> <p>b) All erosion and sediment control structures must be inspected on a weekly basis and within twenty-four (24) hours of each rainstorm event with an intensity exceeding 25mm/day or 15mm/hour.</p> <p>c) Monitoring and maintenance of erosion and sediment control structures must be carried out as described in the Erosion and Sediment Control Monitoring Plan appended to the ESCP.</p> <p>d) The records of monitoring and maintenance activities required by clause (c) must be available to be provided to Manawatū-Whanganui Regional Council within seventy-two (72) hours of a written request to do so.</p>
ES9	<p>Removal of Erosion and Sediment Control Measures</p> <p>a) Erosion and sediment control measures must only be removed:</p> <ol style="list-style-type: none"> when the corresponding catchment area has been permanently stabilised; or in accordance with a certified SSES CP. <p>b) The removal of a sediment retention pond or decanting earth bund must only occur after consultation and the receipt of written advice from Manawatū-Whanganui Regional Council confirming the quality of discharged water and the receiving environment and the adequacy of soil stabilisation and/or covering vegetation.</p>

Operational Stormwater

SW1	<p>Operational Stormwater Standards</p> <p>a) Operational stormwater must be treated before discharge to the receiving environment in accordance with the New Zealand Transport Agency publication 'Stormwater Treatment Standard for State Highway Infrastructure' dated May 2010.</p> <p>b) Stormwater management devices must be designed and constructed to achieve the minimum design requirements in accordance with Table SW1 below taking into account a predicted 2.3°C temperature increase to 2120 for climate change.</p> <p>Table SW1: Minimum Stormwater Design Requirements</p> <table border="1"> <thead> <tr> <th>Receiving Catchment for Stormwater Discharge (shown on TAT-3-DG-E-4100 (Rev A) attached to and forming part of the conditions of these resource consents)</th> <th>Receiving Sub-Catchments for Stormwater Discharge</th> <th>10-year ARI Peak Flow Attenuation</th> <th>Extended Detention</th> <th>Approximate Area to be Treated to 75% TSS Removal (ha)</th> </tr> </thead> <tbody> <tr> <td>Catchment 1</td> <td>All</td> <td>Yes</td> <td>Yes</td> <td>3.30</td> </tr> <tr> <td></td> <td>Upper Catchment</td> <td>Yes</td> <td>Yes</td> <td>9.45</td> </tr> </tbody> </table>	Receiving Catchment for Stormwater Discharge (shown on TAT-3-DG-E-4100 (Rev A) attached to and forming part of the conditions of these resource consents)	Receiving Sub-Catchments for Stormwater Discharge	10-year ARI Peak Flow Attenuation	Extended Detention	Approximate Area to be Treated to 75% TSS Removal (ha)	Catchment 1	All	Yes	Yes	3.30		Upper Catchment	Yes	Yes	9.45
Receiving Catchment for Stormwater Discharge (shown on TAT-3-DG-E-4100 (Rev A) attached to and forming part of the conditions of these resource consents)	Receiving Sub-Catchments for Stormwater Discharge	10-year ARI Peak Flow Attenuation	Extended Detention	Approximate Area to be Treated to 75% TSS Removal (ha)												
Catchment 1	All	Yes	Yes	3.30												
	Upper Catchment	Yes	Yes	9.45												

CONDITION NUMBER	CONDITION				
	Catchment 2 (Mangamanaia catchment)	Middle Catchment	No*		
		Lower Catchment	No		
	Catchment 3	All	Yes	Yes	7.19
	Catchment 4	Upper Catchment	Yes	Yes	11.35
		Middle Catchment	No		
		Lower Catchment	No		
	Catchment 7	Upper Catchment	Yes	Yes	14.10
		Middle Catchment	Yes		
		Lower Catchment	No		
	Catchment 8	All	Yes	Yes	3.79
	Manawatū River	All	No	No	2.66

* except stream 2E where ten (10) year ARI peak flow attenuation will be provided.

- c) The design and location of stormwater management devices shown on the Stormwater Management Devices Catchment Plans TAT-3-DG-H-1434 to TAT-DG-H-1439 (Rev A) may be modified provided that the standards in clause (b) are achieved.
- d) Stormwater discharge structures must be designed to avoid erosion of the watercourse in the vicinity of the outfall; and
- e) Stormwater runoff must receive treatment using planted wetlands or swales before discharge.

Bridges (Manawatū River, Eco-Bridge and Mangamanaia Stream)

BD1	<p>Bridge Design Standard</p> <p>a) Bridges must be designed in accordance with the New Zealand Transport Agency's 'Bridge Manual SP/M/022 Third Edition, Amendment 3' dated October 2018.</p>
BD2	<p>Bridge Construction and Operation Standards</p> <p>a) The bridges must be constructed and maintained to avoid, to the extent practicable, any aggradation or scouring of the bed that may inhibit the passage of fish upstream and downstream at all flows.</p> <p>b) Prior to the commencement of works in the Manawatū River, a preconstruction survey of the geomorphology of the Manawatū River riverbanks and riverbed from 200m upstream of the Manawatū River bridge location and the confluence with the Pohangina River must be undertaken.</p> <p>c) Erosion, scour or instability of river banks and/or the channel to the south of Parahaki Island that is attributable to the presence of the bridge structures must be remedied as soon as is practicable.</p> <p>d) The works authorised by this consent must not affect the ability of the Manawatū River or Mangamanaia Stream to convey flood flows or floating or flood borne debris.</p>
BD3	<p>Public Access and River Navigation</p> <p>a) Public access to and along the Manawatū River and its margins must only be restricted where necessary to provide for the health and safety of the public.</p> <p>b) Prior to the commencement of works in the active flowing channel of the Manawatū River, signs must be installed upstream and downstream of the bridge site to warn river users of the works and to advise users of any specific navigation and/or safety restrictions required to maintain the safety of any river users.</p>

CONDITION NUMBER	CONDITION
BD4	<p>Flood Contingency Management Plan (Manawatū River)</p> <p>a) At least ten (10) working days prior to the commencement of works in the active flowing channel of the Manawatū River or Mangamanaia Stream, a Flood Contingency Management Plan (or Plans) (FCMP) must be submitted to the Manawatū-Whanganui Regional Council for information.</p> <p>b) The objective of the FCMP is to manage the risk of flooding on the Project and adjacent property and infrastructure during the construction of the Manawatū River bridge and Mangamanaia Stream bridge.</p> <p>c) The FCMP must include, but not be limited to procedures that will be carried out to secure the bridge sites and ensure that adjacent property and infrastructure are not put at risk during a flood event.</p>
BD5	<p>Amending the Flood Contingency Management Plan</p> <p>a) If the FCMP required by Condition BD4 is updated, the revised FCMP must be provided to the Manawatū-Whanganui Regional Council within five (5) working days of the update being made.</p>
BD6	<p>Bridge As-Built Plans</p> <p>a) Within twelve (12) months of the completion of construction of the Manawatū River, Eco-Bridge and Mangamanaia Stream bridge structures, a certification statement and as-built plans must be provided to the Manawatū-Whanganui Regional Council to demonstrate that the structures have been constructed in accordance with the conditions of these resource consents.</p>

Works in the Bed of Watercourses

WW1	<p>Culvert Design Standards</p> <p>a) Culverts must not adversely affect the ability of the watercourses to convey flood flows, up to and including 1% AEP (1-in-100 year) flood event via the culverts and associated overland flow paths.</p> <p>b) Culverts and any protection works must be free of any significant projections out of the smooth line of the works, and must tie into the water body banks upstream and downstream of the works in a secure and hydraulically smooth fashion.</p>
WW2	<p>Works in the Bed of Watercourses Standards</p> <p>a) Activities authorised by these resource consents must not result in the discharge of contaminants that are toxic to aquatic ecosystems.</p> <p>b) Except as provided for by clause (c), any materials (including stockpiles, mounds, depressions, trees/vegetation, excavated material, holes or surplus materials), machinery or equipment from the works authorised by these consents (including temporary structures) must:</p> <ol style="list-style-type: none"> i. not be stored in or on the bed of a water body; ii. be removed after the completion of works in that water body, including the removal of stockpiles from the floodplain; iii. be disposed of in an appropriate manner where it will not adversely affect the stream channel or impede the flow of water. <p>c) Clause (b) does not apply to the following in the Manawatū River that will remain in situ below riverbed level:</p> <ol style="list-style-type: none"> i. sheet piles or temporary piles that are not able to be practically extracted (and instead will be cut off); ii. sacrificial driving shoes used on temporary piles that will remain when the temporary piles are extracted; and iii. coffer dam blinding concrete (that will be covered by riprap protection work). <p>d) Any discharge of sediment into water directly caused by the works authorised by these resource consents must not, after reasonable mixing, cause any change in visual clarity by more than 30% for no more than twenty-four (24) hours in total across five (5) consecutive days. Reasonable mixing is defined as seven (7) times the bed width.</p>

CONDITION NUMBER	CONDITION
	<p>e) All measures must be taken to ensure that no uncured cement or cement-based products enter the flowing water of a water body. Any uncured concrete placed in or near the watercourse must be undertaken in a manner that no concrete or cement leaches out and enters the watercourse. Such measures may include, but will not be limited to:</p> <ul style="list-style-type: none"> i. working during summer low flow conditions; ii. containing new concrete in a watertight boxing. <p>f) New concrete or mortar must not be exposed to the flow of water before the concrete or mortar has hardened to a strength of at least 10 megapascal (MPa), or for at least forty-eight (48) hours from completion of pouring.</p> <p>g) Works in the bed of a stream or river must only commence where there is at least four (4) days of settled weather forecast by the New Zealand Meteorological Service for that water body's catchment.</p> <p>h) Remediation of erosion, scour or instability of the stream bed or banks that is attributable to the construction works authorised by these consents must be undertaken within ten (10) working days or as soon as practicable when conditions are safe.</p>
WW3	<p>Culvert As-Built Plans</p> <p>a) Within twelve (12) months of the installation of all culverts, as-built plans must be provided to the Manawatū-Whanganui Regional Council to demonstrate that the structures have been placed in accordance with the conditions of these resource consents.</p>

Attached drawings:

Condition TW2: TAT-3-DG-C-3643 Rev A Spoil Sites Sheet 3

Condition TW3: TAT-3-DG-E-4147 Rev A Freshwater Ecosystem Plan Sheet 7

Conditions EC1, EC9 and EC10: TAT-3-DG-E-4131 to TAT-3-DG-E-4137 Rev A Terrestrial Ecosystem Plans Sheet 1 to Sheet 7

Condition EC3: TAT-3-DG-R-0104 to TAT-3-DG-R-106 Rev C General Arrangement Plans Sheet 4 to Sheet 6

Condition EC14: TAT-3-DG-H-1441 Rev C Cross Culvert Schedule

Condition SW1: TAT-3-DG-E-4100 Rev A Waterways and Catchments – Overview Plan and TAT-3-DG-H-1434 to TAT-DG-H-1439 Rev A Stormwater Management Devices Catchment Plans Sheet 1 to Sheet 6