Tokanui Landfill Upgrade

Assessment of Environmental Effects

Toitū Te Whenua Land Information New Zealand

Prepared by:

SLR Consulting New Zealand

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Revision Record

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Basis of Report

This report has been prepared by SLR Consulting New Zealand (SLR) with all reasonable skill, care and diligence, and taking account of the timescale and resources allocated to it by agreement with Toitū Te Whenua Land Information New Zealand (the Client). Information reported herein is based on the interpretation of data collected, which has been accepted in good faith as being accurate and valid.

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Abbreviations

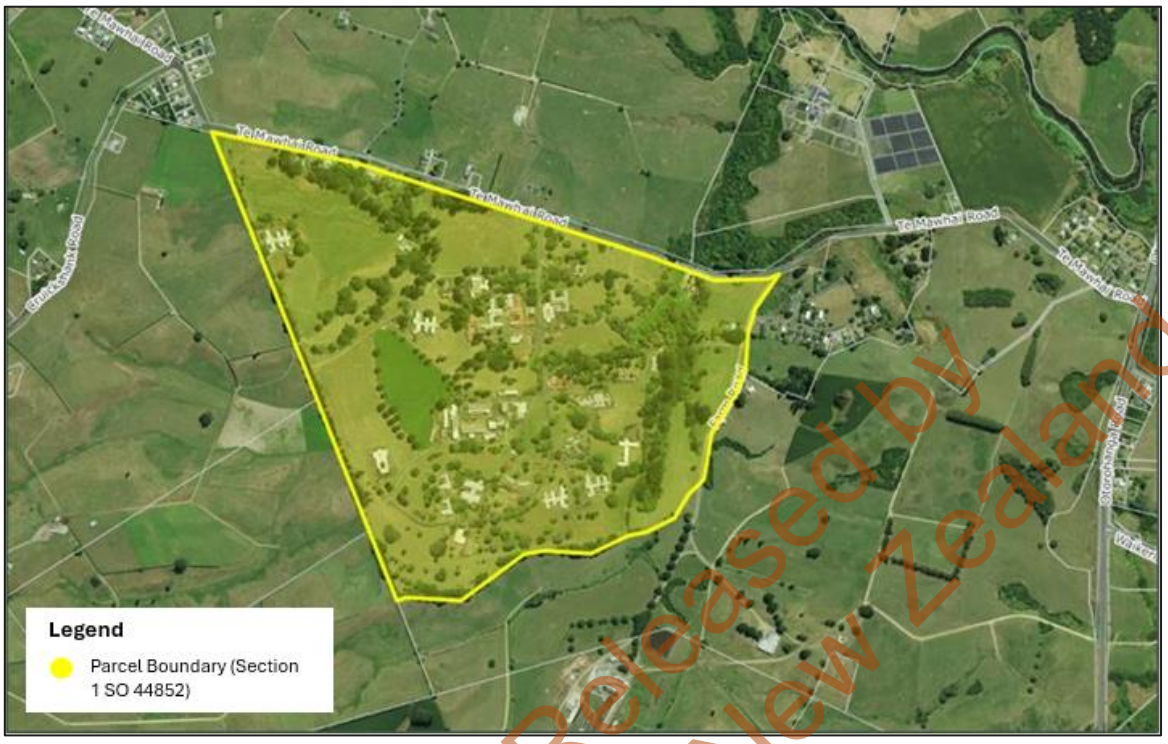
Abbreviation	Meaning
AEE	Assessment of Environmental Effects
AEP	Annual Exceedance Probability
AMP	Aftercare and Monitoring Plan
ANZECC	Australian and New Zealand Environment and Conservation Council
bgl	Below ground level
BMP	Bat Management Plan
CMP	Construction Management Plan
CoC	Certificate of Compliance
CIA	Cultural Impact Assessment
DSI	Detailed Site Investigation
EcIA	Ecological Impact Assessment
ESCP	Erosion and Sediment Control Plan
FMP	Fish Management Plan
FTL	Fraser Thomas Limited
HAIL	Hazardous Activities and Industries List
HNZPT	Heritage New Zealand Pouhere Taonga
LFG	Landfill Gas
LINZ	Toitū Te Whenua Land Information New Zealand
NES-CS	National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health
NES-F	National Environmental Standards for Freshwater
NPS-FM	National Policy Statement for Freshwater Management
NPS-IB	National Policy Statement for Indigenous Biodiversity
ITA	Integrated Transportation Assessment
PAH	Polycyclic Aromatic Hydrocarbons
PMP	Planting and Maintenance Plan

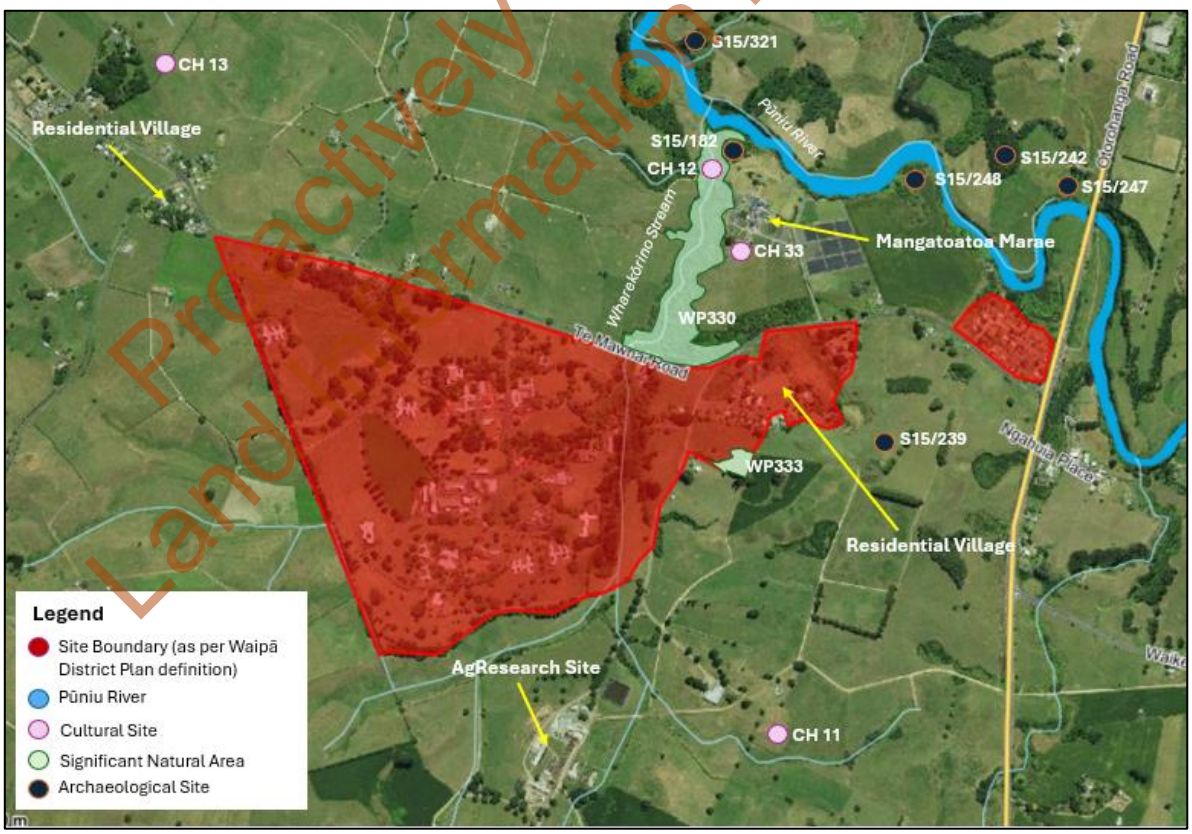
Abbreviation	Meaning
PSI	Preliminary Site Investigation
RAP	Remedial Action Plan
RMA	Resource Management Act 1991
RUWR	Existing Disposal Site Repair and Upgrade Works Report (FTL, 2024)
SNA	Significant Natural Area
TAR	Tokanui Action Rōpū
TNN	Te Nehenehenui Trust
WDC	Waipā District Council
WDP	Waipā District Plan
WRC	Waikato Regional Council
WRP	Waikato Regional Plan
WRPS	Waikato Regional Policy Statement
WWPS	Wastewater Pumping Station
WWTP	Wastewater Treatment Plant

Application details

Consent authority:	Waipā District Council Waikato Regional Council
Applicant:	Toitū Te Whenua Land Information New Zealand
Address for service:	SLR Consulting New Zealand Level 2, 214 Collingwood Street Hamilton 3204 Emily.buckingham@slrconsulting.com
Address for fees:	Toitū Te Whenua Land Information New Zealand Private Bag 4721 Christchurch 8140 Attn: Bryan Daly bdaly@linz.govt.nz
Site:	149 Te Mawhai Road & 23 Farm Road, Tokanui
Legal description:	Section 1 SO 44852 & Section 3 SO 534156
Site area:	79.0174 ha
Plan(s):	Waipā District Plan Waikato Regional Plan National Environmental Standards – Freshwater National Environmental Standard – Contaminants in Soil
Zone(s):	Rural Zone
Overlay(s) or control(s):	High Class Soil
Regional Plan Zone:	Waipā Catchment Management Zone
Brief description of the proposed activity:	Temporary opening of a closed landfill to dispose of medium to low level contaminated soil and undertaking enhancement works before closing landfill again.
Resource consents required:	Waipā District Council: - Earthworks, including in proximity to waterbodies and cultural sites - Unlisted activity in Rural zone (landfill) Waikato Regional Council: - Discharge of cleanfill, contaminants and stormwater - Temporary damming and diversion of surface water - Permanent diversion of groundwater - Bed disturbance and alteration of culvert in riverbed - Soil disturbance NES-CS: Disturbance of contaminated soil NES-F: New culvert
Status of the proposed activity:	Non-Complying (Waipā District Plan) Discretionary (Waikato Regional Plan) Restricted Discretionary (NES-CS) Discretionary (NES-F)

Figure 1. Locality plans of the site





Executive Summary

Toitū Te Whenua Land Information New Zealand (LINZ) seeks resource consent to undertake upgrade works to the closed landfill (existing disposal sites)[1] at the former Tokanui Psychiatric Hospital site at 149 Te Mawhai Road, and 23 Farm Road, Tokanui.

The former Tokanui Psychiatric Hospital is a deferred selection property in the Ngāti Maniapoto Deed of Settlement and forms part of the Maniapoto Settlement Claims Act 2022, which gives effect to the Deed. LINZ is the Government agency responsible for delivering this project as part of the Crown's requirements under the Deed. Once the works are completed, the site will be offered to the Ngāti Maniapoto Post Settlement Governance Entity, Te Nehenehenui Trust, for purchase. The project is unique, as no other property included in a Treaty settlement has required demolition and remediation on this scale, or included a commitment to undertake remediation in a Deed of Settlement. The Deed also acknowledges the presence of the existing landfill on the Site, and states that the Crown is to maintain valid land use resource consents for the landfill at all times.

Two resource consent applications are being made to Waipā District Council and Waikato Regional Council:

- The first application is for the substantial remediation works across the main hospital site (west of the Wharekōrino Stream) to return the site to vacant land that is suitable for rural and rural residential activities, referred to as the **Remediation Application**.
- The second application is for a discrete package of works to the closed landfill on the eastern portion of the site, referred to as the **Landfill Upgrade Application**. LINZ's preferred option for the disposal of contaminated soil from the main hospital site is to utilise this existing landfill and undertake enhancement works to the landfill at the same time. However, LINZ also has the option of disposing of the contaminated soil at an approved facility offsite; therefore, the Remediation Application does not rely on the Landfill Upgrade Application.

This Assessment of Environment Effects (AEE) report (including appended reports and documentation) supports the **Landfill Upgrade Application**.

Landfill Upgrade Application

The key elements of the Landfill Upgrade Application are summarised as follows:

- Allow LINZ to take a holistic and proactive approach to long-term management of the closed landfill as the Crown will remain responsible for management of these landfills going forward;
- Relocation of existing fill/refuse material (from 'Area H' and part of 'Area A2', as well as from the landfill area located on Section 3 SO 534156) into the existing landfill;
- Isolated removal of medical waste (in 'Area F') from an existing landfill cell;
- Deposition of contaminated soil from hospital remediation works into the existing landfill;
- Works near streams, including alteration of a culvert ('Culvert 3') that runs through the landfill and underneath a farm track, and partial stream reinstatement;

[1] Existing disposal sites mean the two existing sites (as described in the existing disposal consents) located on one of the Tokanui Hospital deferred selection properties that the Crown historically used to dispose of waste.

- Upgraded capping of the entire landfill;
- Reinstatement of the site following earthworks, so that it is free of any debris and stabilised by grassing; and
- Renewing the existing resource consents for the entire landfill.

The proposal has a Non-Complying activity status under the Waipā District Plan (WDP), Restricted Discretionary activity status under the National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health (NES-CS), Discretionary activity status under the Waikato Regional Plan and Discretionary activity status under the National Environmental Standards for Freshwater (NES-F).

Extensive iwi consultation has been undertaken over a number of years and a Cultural Impact Assessment (CIA) has been prepared by mana whenua in relation to the demolition and remediation works. However, there are a number of interested iwi parties, and no formal endorsement relating to the Landfill Upgrade Application has been provided. Given the importance of the site to iwi and hapū, LINZ requests that both applications are limited notified to iwi and hapū to ensure that they have the opportunity to identify any additional cultural effects and mitigation measures that have not already been recorded.

The application's effects are otherwise assessed to be less than minor, with substantial positive effects. The proposal has been assessed as being consistent with Part 2 of the RMA and relevant statutory and non-statutory documents.

1.0 Information requirements

This resource consent application has been prepared in accordance with the requirements of Schedule 4 of the Resource Management Act 1991 (the Act or the RMA) and the specific information requirements for this proposal contained in Section 21.2 of the Waipā District Plan (WDP) and Section 8 of the Waikato Regional Plan (WRP). The application is made on behalf of Toitū Te Whenua Land Information New Zealand (LINZ) to upgrade and use the existing closed landfill at the former Tokanui Hospital site (the Site) for the remediation of the main hospital site and undertake enhancement works at the same time.

The relevant Waipā District Council and Waikato Regional Council application forms are attached in **Appendix S**.

2.0 Background

2.1 Site history

The Site is part of 1,194ha of Māori land (the Pokuru 1B block) taken under the Public Works Act in 1910 for the Tokanui Hospital. This was by far the largest public works taking in the Ngāti Maniapoto rohe and was strongly opposed by Ngāti Maniapoto. The Crown has acknowledged the acquisition of the land was a Treaty breach.

Ngāti Maniapoto are an iwi based in Te Rohe Pōtae (the King Country), in and around Te Kūiti, Ōtorohanga and Te Awamutu. The Waitangi Tribunal's *Te Mana Whatu Ahuru Report on Te Rohe Pōtae Claims* describes the cultural significance of the Tokanui site to Maniapoto and the hurt the Crown's compulsory acquisition of the Site caused. This included the loss of their tūrangawaewae, the destruction of waahi tapu including ancestral burial sites, and the loss of resources and opportunities for economic development.

Section 5 of the Cultural Impact Assessment (CIA) (**Appendix K**) provides a historical overview of the long-established connection Tangata Whenua have had in the Waipa – Pūniu area. In brief, Tainui iwi first settled in the Waipa area in the early 14th century. In the early history of Pokuru, Ngāti Kahupungapunga occupied much of the valley of the Waikato. Ngāti Kahupungapunga occupation remained undisturbed in this region for perhaps 300 years. The CIA then traces the ancestry from the tupuna Whaita, his son the tupuna Ngutu, and the hapū Ngutu and Ngāti Pala whose descendants occupied the area up to the time when the land was taken under the Public Works Act. Reference should be had to the CIA for the full historical overview.

The Tokanui Hospital opened in 1912 and closed in 1998. The Site was then transferred into the Treaty Settlements Landbank in 1999 (managed by the Ministry of Justice at the time) to potentially be used as redress to settle historical claims. The Site was transferred to LINZ in 2016 with the remainder of Treaty Settlements Landbank property portfolio and is currently managed by LINZ.

The hospital had its own landfill comprising two separate areas, located off Farm Road (private road), directly east of the main hospital complex and Wharekōrino Stream, within the site boundary. The landfill was closed in 2000 following the closure of the hospital.

2.2 Maniapoto Deed of Settlement

The Site is now listed as a Deferred Selection Property in the Ngāti Maniapoto Deed of Settlement (the Deed). The Deed was signed by the Maniapoto Māori Trust Board and the

Minister of Treaty of Waitangi Negotiations and became effective on 11 November 2021.[2] The Property Redress Schedule of the Deed requires the Crown to demolish buildings and infrastructure and remediate soil contamination to agreed standards before offering the Site to Te Nehenehenui Trust (TNN), being the Maniapoto Post Settlement Governance Entity, for purchase. The Maniapoto Settlement Claims Act 2022, which gives effect to the settlement, came into force on 28 September 2022.

The specific terms in the Property Redress Schedule (Part 9: Tokanui Hospital Deferred Selection Process) that the Crown is obliged to meet include (but are not limited to):

- apply for all necessary resource consents for the demolition and remediation works on the Site and existing and/or new disposal sites within two years of the settlement date (by 24 November 2024) and complete the demolition and remediation works within seven years of consent being granted;
- demolish all vertical (e.g. above ground) building structures;
- remove horizontal infrastructure to a determined extent;
- remediate the soil in accordance with remediation standards, being a minimum of 85% of total land area to rural residential standards, and a contiguous area not exceeding 15% of total land area to a managed remediation standard (if applicable); and
- leave the land free of building debris and stabilise it by grassing.

The Tokanui situation is unique as no other property included in a Treaty settlement has required demolition and remediation on this scale, or included a commitment to undertake remediation in a deed of settlement. LINZ is the Government agency responsible for delivering this project on the Crown's behalf.

The Deed also acknowledges the presence of existing closed landfills (defined as existing disposal sites in the Deed) on the Site, and states that the Crown is to maintain valid land use resource consents and liability for those disposal sites at all times and in perpetuity. Under clause 9.1.12 of the Deed, existing disposal sites means two existing sites (as described in the existing disposal consents)[3] historically used to dispose of waste when the hospital was operational, shown in Area 1 of the attachments (see Figure 2). The Crown has no commitment under the Deed to carry out remedial works on the existing disposal sites, except as might be required to comply with resource consents.

The Deed granted the Crown discretion to decide two matters, with consideration of TNN's views, being:

- the extent of horizontal infrastructure, including roading and underground services, to be removed; and
- whether demolition waste, including hazardous building materials, will be transported off-site for disposal or contained within a new engineered landfill to be constructed on-site.

Decisions on these matters were made by the three relevant Ministers at the end of September 2023 (see section 2.3 following), which has informed the scope of work for this application. The decisions aligned with the preferred option of TNN and mana whenua.

[2] https://www.tearawhiti.govt.nz/te-kahui-whakatau-treaty-settlements/find-a-treaty-settlement/maniapoto/

[3] Existing disposal consents means the land use resource consents numbered 102269.01.01, 102270.01.01 and 102271.01.01 (clause 9.1.12).

In accordance with the requirements of the Deed, LINZ is now applying for the necessary resource consents to remediate the contaminated soil identified at the Site and to remove the agreed extent of horizontal infrastructure. It is noted that the Deed divides the Site into four deferred selection properties areas (also see Figure 2), allowing for staged transfer of the Site to TNN as demolition and remediation works are completed; however, the consent applications are being made for the entire Site.

Once demolition and remediation are completed by LINZ, subject to the contractor's programme, the available Tokanui Hospital deferred selection property area(s) will be offered to TNN for purchase following the process set out in the Deed.

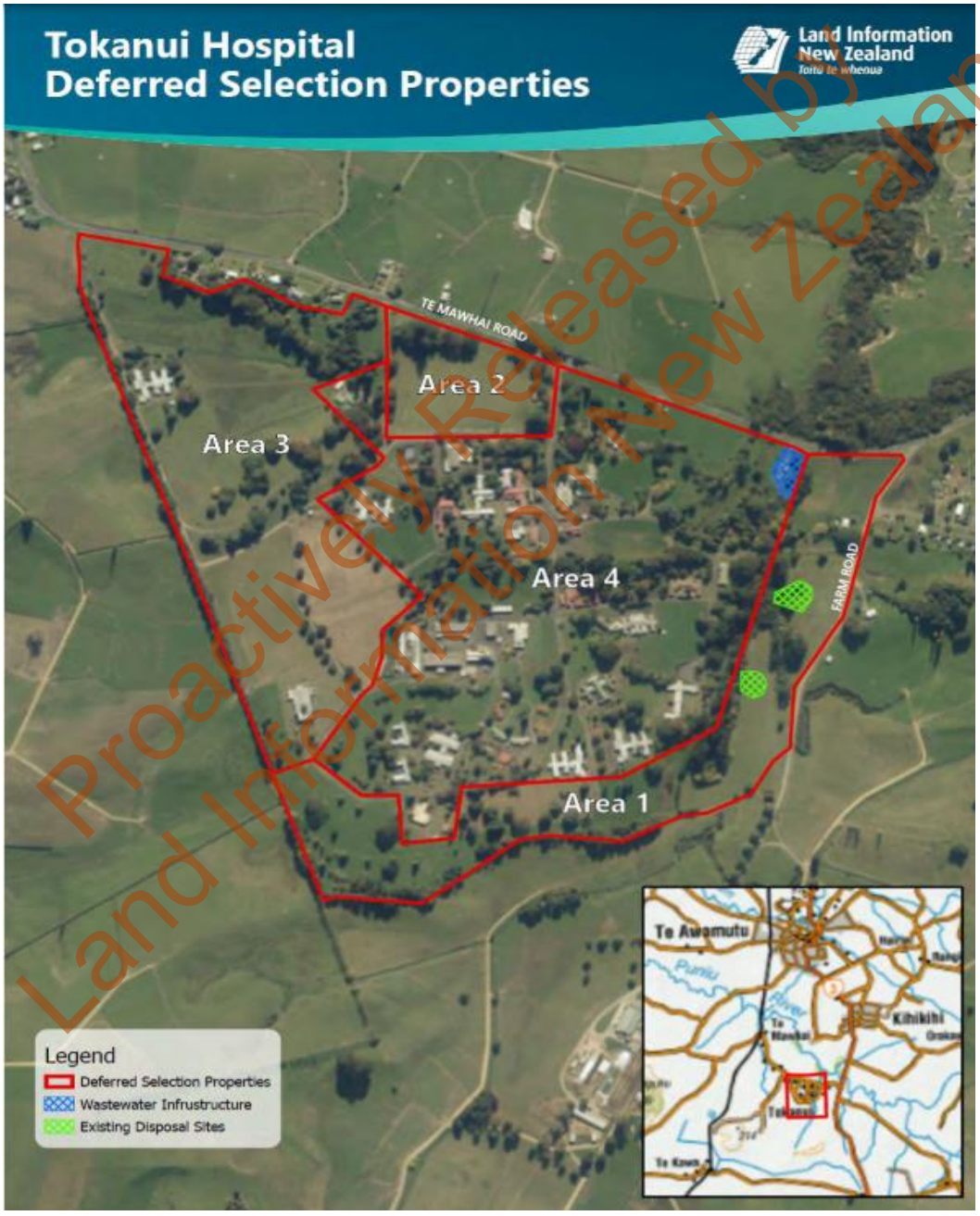


Figure 2. Deferred selection properties and existing disposal sites map from the Deed

2.3 Remedial Option & Landfill Long-Term Management Strategy

At the time the Deed was executed, there was not enough information to agree the final extent of work required to complete the demolition and remediation works described in the Remediation Application. So as to not delay the Crown's Treaty Settlement with Ngāti Maniapoto, it was agreed that Ministerial decisions were required on the extent of infrastructure to be removed from the Site and options for managing demolition waste because of the scale of works required. The Deed granted the Crown discretion to decide two matters, with consideration of TNN's views, being:

- the extent of horizontal infrastructure, including roading and underground services, to be removed; and
- whether demolition waste, including hazardous building materials, will be transported off-site for disposal or contained within a new engineered landfill to be constructed on-site.

However, the remedial options for contaminated soil were not within the scope of those decisions because the process for determining the extent of remediation follows the Ministry for the Environment's Contaminated Land Management Guidelines (CLMG) and it was agreed with Ngāti Maniapoto as part of negotiating the terms of the Deed that the Crown would use best endeavours to remediate the soil in accordance with remediation standards defined in the Deed, being a minimum of 85% of total land area to rural residential standards, and a contiguous area not exceeding 15% of total land area to a managed remediation standard (if applicable). The process is therefore set out in the Deed, and as such, several investigations have been undertaken in accordance with relevant CLMG's, including a Remedial Options Report which has informed LINZ's preferred remedial option for the Remediation Application. That is, to utilise the closed landfill for the remediation of the main hospital site by disposing of low- and moderate-level contaminated soil in the existing landfill, as it was not feasible to do in situ remediation and the alternative remedial options included haulage of soils to landfill in Auckland. The scope of the Remediation Application is in line with those decisions.

While LINZ has no requirement beyond remaining compliant with the existing disposal consents, it wanted to take a holistic and proactive approach to long-term management of the closed landfill, as the Crown will remain responsible for management of these landfills going forward. As part of early investigations to inform the scope of the demolition and remediation works, LINZ engaged Fraser Thomas Ltd (FTL) in 2022 to assess various repair and upgrade options to ensure that human health, social and cultural values and the environment are protected from closed landfill hazards, to ensure responsible long-term taxpayer value for money, and to reduce the Crown's long-term liability. To inform options, in 2022, FTL undertook an intrusive investigation (**Appendix C**) of the closed landfill to identify any consent compliance issues and hazards related to the existing landfill, as well as compliance with existing resource consents to inform a long-term management strategy. LINZ also asked FTL to explore any opportunities for any physical works on the landfill to be delivered concurrently with the demolition and remediation component of the demolition and remediation project.

Following the intrusive investigation, FTL prepared the Existing Disposal Site Repair and Upgrade Works Report (RUWR) (**Appendix B**) which included an analysis of several options for LINZ to consider implementing as part of long-term management of the closed landfill. In summary, working concurrently with the remedial works required under the Deed (as described in detail in the Remedial Options Report (FTL and HAIL Environmental, 2024) and the Remediation Application), disposing of low- and moderate-level contaminated soil from the main hospital complex remediation to the existing landfill presented the opportunity to reduce heavy traffic movements and provide a source of backfill material for the hospital remedial works while also providing an opportunity to improve the integrity and resilience of

the landfill itself. As set out in section 4 of the RUWR report, Option 4 (advanced works) was chosen as the preferred option for addressing existing compliance issues and hazards. This option also includes improved capping, groundwater diversion and flood risk reduction works which will ultimately reduce existing adverse effects on the surrounding environment.

The options analysis is set out in the RUWR in **Appendix B**.

If the repair and upgrade was not proposed in conjunction with the hospital remediation works that are required under the Deed, it is unlikely that the existing landfill would be upgraded to modern standards at this time, and only minor repairs would be made to the existing landfill cap to ensure compliance with existing resource consent requirements.

2.4 Consultation

2.4.1 Consultation with mana whenua

It is in all parties' interests that the Site is remediated to a condition that is acceptable for TNN to purchase. LINZ has undertaken extensive consultation, and continues to engage with, TNN and mana whenua in relation to the project via in person hui, online meetings and email communications. A record of iwi consultation undertaken in relation to this project's milestones is included in **Appendix J**. The consultation includes four larger scale public hui since 2023; however, it is also noted that discussions with LINZ around inclusion of the Site within the Deed go back at least to 2016/17, and there was iwi engagement throughout initial feasibility studies over 2018/19 as well as during the Deed negotiations in 2020/21.

LINZ also obtained a CIA, which was delivered over the course of 2021 by TAR Block Ltd. The Tokanui Action Rōpū (TAR) was formed in August 2019. TAR's purpose was to act as a strategic and advisory body for the claimants and landowners of WAI 440. As described in the CIA, TAR is a subset of hapū with traditional and customary authority over the former hospital site, comprised of Ngāti Paia, Ngāti Ngutu, Ngāti Huiao and Ngāti Paretekawa. The CIA is included as **Appendix K** and has also been used to help inform decision making throughout the project.

It is noted that the CIA prepared by TAR states that Tangata Whenua (being represented by TAR) have not yet reached a settlement with the Crown for their treaty claims, and many Tangata Whenua who belong to the hapū of Ngāti Paia, Ngāti Ngutu, Ngāti Paretekawa and others, do not unanimously support the Maniapoto Deed of Settlement. They do not believe that their treaty claims have been provided for in the Maniapoto Deed of Settlement. The CIA states that this is likely to remain an on-going issue, although Tangata Whenua believe that this should not hinder the planning and implementation of the demolition and remediation project. However, until a Deed of Settlement is approved with Tangata Whenua there is no statutory relationship between Tangata Whenua and the Crown nor are there any Statutory Acknowledgements that Tangata Whenua recognise.

LINZ also entered into a second contractual agreement with TAR Block Ltd to implement several of the recommendations from the CIA. As part of that engagement in early February 2023, during the initial investigations used to inform this AEE and as part of a pilot trial for how site inductions and cultural monitoring could be run during the demolition and remediation works, the project team attended a cultural induction at the Mangatoatoa Marae. The purpose of the cultural induction was to improve participants' understanding from a Tangata Whenua perspective of the cultural importance and significance of the impacts and changes which will occur on the whenua as a result of the proposed demolition and remediation works. Participants were introduced to Tangata Whenua cultural frameworks and the relevance and use of these within the context of Kaitiakitanga responsibilities and the proposed demolition and remediation program.

Following the completion of the CIA and supplementary contractual agreement, it is understood that TAR Block Ltd may no longer represent views of all hapū with an interest in Pokuru 1B. LINZ have continued to host public hui to ensure they reach as wide an audience as possible to deliver updates on the project and seek feedback from mana whenua representatives. Any new person attending a hui has been added to LINZ's mailing list for future communications and hui invitations.

The purpose of the more recent consultation has been to share updates on key stages of the project and provide an opportunity to receive feedback from mana whenua on the delivery of the project - notably where there have been options to consider in regards to the management of contaminated soil and the closed landfill, but also to assist in directing works or ensuring impacts could be mitigated or minimised and to respond to concerns.

A range of verbal feedback has been received at hui and taken into account in project reports. However, no formal written feedback on the project as a whole has been requested from mana whenua since the Ministerial decisions were made with TNN and mana whenua input. In particular, while written feedback was invited, none was received with regards to the remediation options for low to moderate level contaminated soil, its potential disposal in the existing closed landfill, and associated enhancement works to the landfill (this Landfill Upgrade Application).

2.4.2 Pre-application discussions

A pre-application meeting was held with Waipā District Council (WDC) on 1 May 2024 to provide an overview of the Tokanui Demolition and Remediation project as a whole, as well as discuss the planned CoC application. However, the landfill upgrade and repair works were not discussed with WDC at this time. Notes from this meeting are attached in **Appendix J**. LINZ also met with WDC Assets and Roading separately on 21 August 2024 and 16 October 2024 to discuss matters relating to Te Mawhai Road flooding and the Wastewater Pumping Station.

A pre-application meeting was also held with Waikato Regional Council (WRC) on 16 August 2024 to provide an overview of this proposal as well as the Remediation Application. No minutes were provided as no specific feedback was being sought at this meeting.

Following the meetings, correspondence occurred regarding rule interpretation and relevant triggers for resource consent with both the WRC and WDC.

2.4.3 Written approvals

2.4.3.1 AgResearch Limited

AgResearch Limited own the site at 23 Farm Road (Section 3 SO 534156). Written approval has been obtained from AgResearch Limited and is attached in **Appendix J**.

2.5 Consent history

2.5.1 Certificate of Compliance

A CoC application was lodged with Waipā District Council in May 2024 for the demolition of above ground buildings and structures at the site, referred to as Phase 1. No regional consents were required for this activity.

The CoC was granted on 19 June 2024 (ref PG/0067/24). Demolition has not yet commenced. LINZ is in discussions around contractual engagement for the required karakia and

whakawātea and procurement processes for appointment of demolition contractors, which needs to be resolved before demolition commences.

2.5.2 Regional Consents

Table 1 lists the existing regional consents applicable to the site.

Table 1. Existing regional consents

Resource consent	Status	Description	Commenced	Expiry
AUTH102269.01.01	Current	Discharge leachate into land in circumstances that may result in contaminants entering groundwater	17/04/2000	10/03/2035
AUTH102270.01.01	Current	Divert & discharge stormwater into the Wharekōrino Stream	17/04/2000	10/03/2035
AUTH102271.01.01	Current	Discharge contaminants to air	17/04/2000	10/03/2035
AUTH102272.01.01	Current	Undertake earthworks within 5 metres of the Wharekōrino Stream	17/04/2000	10/03/2035
AUTH971371.01.01	Current	Discharge stormwater to the Wharekōrino Stream	16/09/1997	1/09/2032

The first four consents relate to the closed landfill on the site and are discussed further in section 3.1.1.1. Via these consents, the closed landfill is authorised to discharge leachate to land, discharge stormwater into the Wharekōrino Stream, undertake earthworks in proximity to Wharekōrino Stream, and discharge contaminants to air. The consents were publicly notified in 1999, granted in 2000 and expire in 2035.

Consent AUTH971371.01.01 also applies to the Site and authorises the Consent Holder (LINZ) to discharge up to 3.65m^3/s of stormwater to the Wharekōrino Stream in the vicinity of Tokanui Road, at or about map reference NZMS 260 S15:146-462. This consent is understood to authorise the discharge from the hospital grounds stormwater system. It was granted in 1997 and expires in 2032.

2.5.3 HNZPT Authority

An Archaeological Authority from Heritage New Zealand Pouhere Taonga (HNZPT) was granted to undertake geotechnical and soil investigations in two areas of the Site. These were areas where the archaeological assessment found reasonable cause to suspect that previously unrecorded archaeological sites may be present.

The archaeological authority to modify or destroy archaeological sites was issued on 14 August 2023 (ref 2024/018 – see **Appendix H**). The soil investigations were completed in accordance with the project management plan including inductions and spot checks. LINZ undertook the works with cultural monitoring in place as per the cultural monitoring protocol and the requirements of the HNZPT authority. No unrecorded sites were discovered. A completion report was provided to HNZPT as per the conditions of authority 2024/018.

A second archaeological authority from HNZPT will be applied for to ensure appropriate archaeological management for the main works including landfill works.

3.0 Site and surrounding environment

3.1 Site description

The Site is located at 149 Te Mawhai Road, and 23 Farm Road, Tokanui, approximately 14 kilometres southeast of Te Awamutu, Waikato. It is known as Pokuru 1B Block, legally described as Section 1 SO 44852 and its Record of Title has been cancelled (previously RT SA56A/866, attached in **Appendix L**). Note that the two areas of land to the east of the Site, commonly referred to as the Tokanui Villages, legally described as Section 1 SO 59771 and Section 3 SO 44852 are under the same cancelled title as the Site, therefore included in the WDP definition of the 'site'.

The application site also includes a small area of Section 3 SO 534156 (23 Farm Road) owned by AgResearch Limited. Due to misalignment between the fence line and legal boundaries, part of Area A1 of the existing landfill is located within Section 3 SO 534156. The landfill area within Section 3 SO 534156 is approximately 370m^2. The following description of the site is also relevant to the portion of the landfill within Section 3 SO 534156.

The Site is approximately 79 hectares in size and (prior to any demolition) contained 84 buildings/structures, a now decommissioned wastewater treatment plant (WWTP), a swimming pool, eight substations, substantial underground services, a closed landfill and substantial roading infrastructure. The Tokanui Hospital closed in 1998 following a move from residential to community-based mental health care. The hospital was declared surplus and transferred to the Landbank to potentially be used for Treaty Settlement redress. Consequently, minimal maintenance works have been undertaken over the last 26 years.

Portions of the site without built structures are in rural farmland used for grazing. There is an existing License to Occupy over the grassed portions of the Site, as shown in Figure 3 below.

Figure 3. Grazing areas

Of relevance to this application are the historic landfill areas towards the eastern extent of the site and within proximity to Wharekōrino Stream.

3.1.1 Landfill Characteristics

While the hospital was operational, landfilling of waste occurred on the eastern part of the Site, in close proximity to Wharekōrino Stream, which transects the property. The landfill area is approximately 1.8ha. Landfilling ceased with the closure of the hospital in 1998. The landfill was then closed and capped in 2000 and is currently used for pastoral grazing.

The landfill areas shown in Figure 4 and are summarised in Table 2. The 370m^2 portion of the landfill located on the adjoining AgResearch site is shown in Figure 5.

The Wharekōrino Stream is culverted, referred to as Culvert 3, and then runs in an open channel alongside the western extent of the landfill until passing through Culvert 2.

An Intrusive Investigation Report (IIR) was completed by FTL which investigated the existing landfill areas. A copy of this report is included in **Appendix C**. The investigation includes a summary of existing landfill characteristics, as well as current risks. The characteristics and age of the existing landfill areas are summarised in Table 2. It was identified as part of this investigation that where the Wharekōrino Stream is culverted, it passes through the southern part of landfill area (Area A2), which is outside of the existing disposal consents.

Of note, Area I was found to be more an isolated opportunistic fill area and is not considered part of the historical landfill. Area I is therefore not addressed in this application, but is dealt with in the **Remediation Application.**

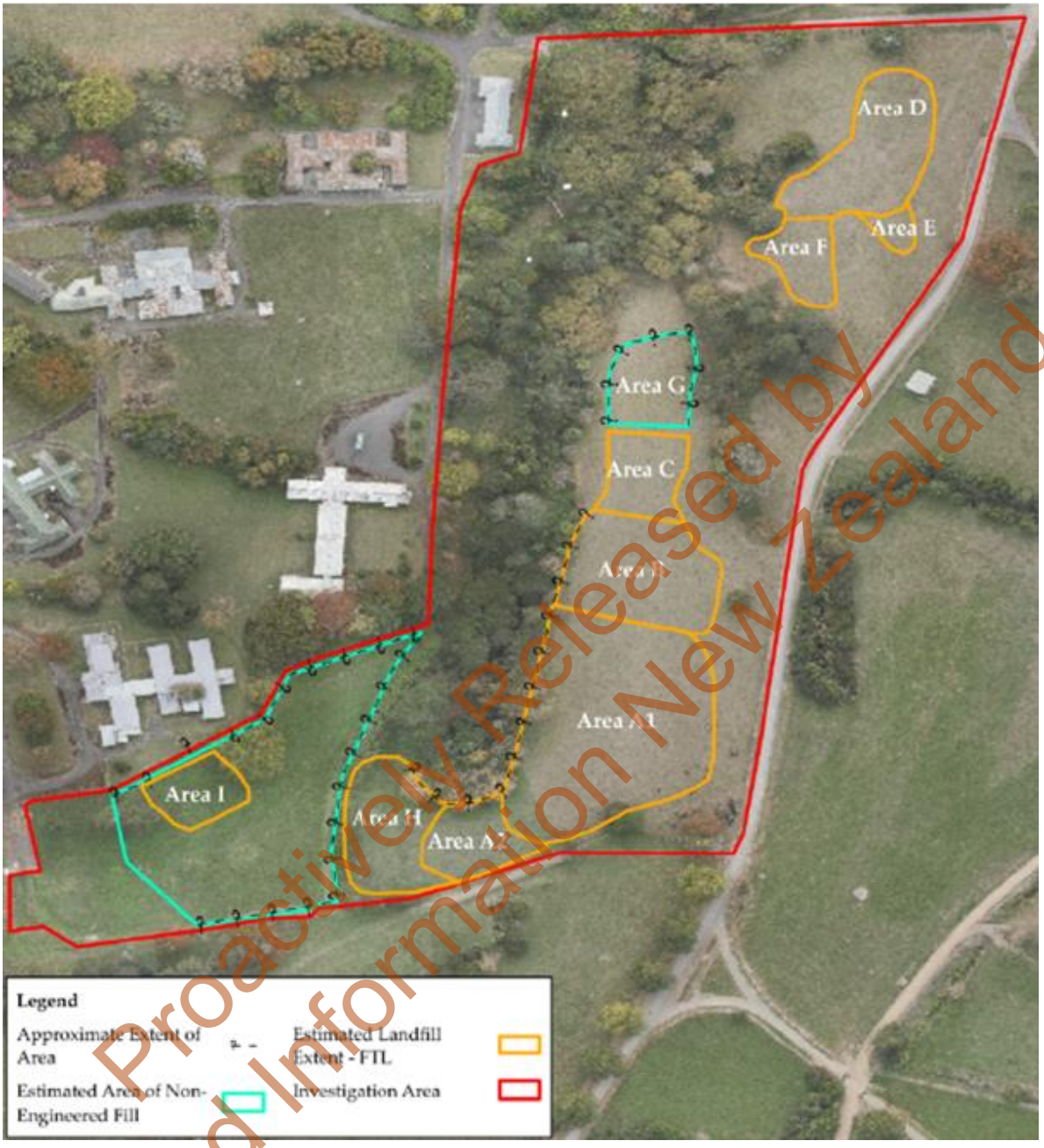


Figure 4. Areas subject to historic landfilling

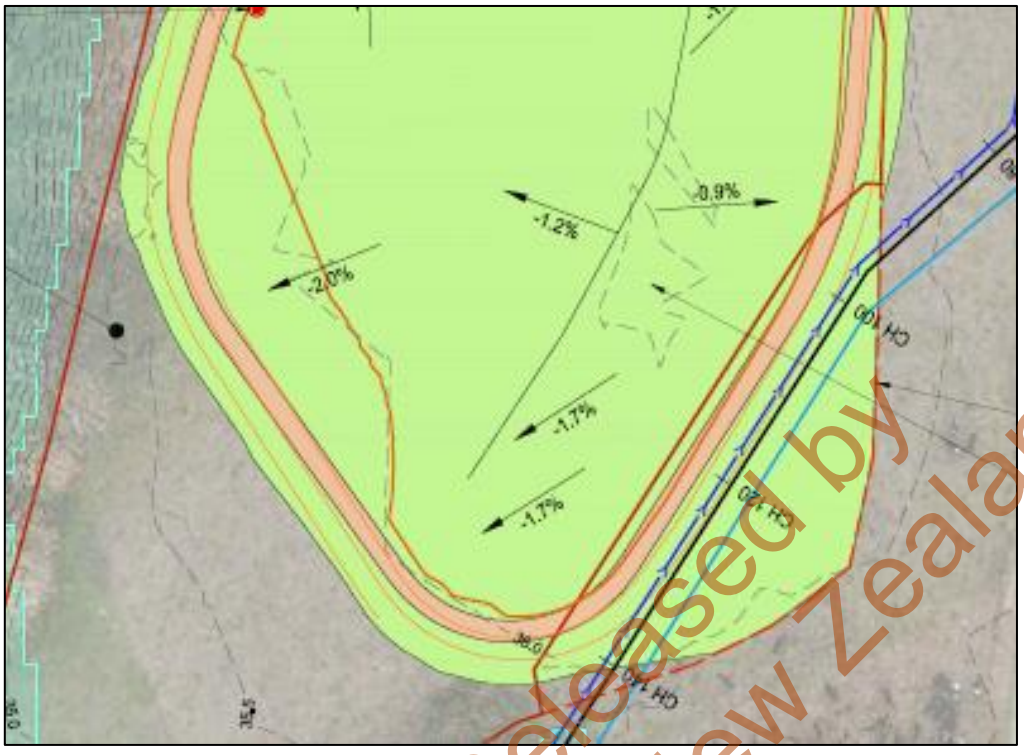


Figure 5. Portion of Area A1 located within AgResearch site (red outline)

Table 2. Existing Disposal Site areas and characteristics

Area	Area (m^2)	Fill volume (m^3)	Estimated date for end of filling	Fill description	Cap thickness – range (average (mm))	Topsoil cover – range (average) (mm)	Cap permeability (m/s)
A	7,990	12,960-16,310	1988	Construction & general waste, burnt material, inferred boiler ash, asbestos	100-800 (522)	100-300 (145)	10^{-7} except TP2
B	2,790	3,420	1979	Construction/demolition waste, some burnt debris	100-400 (275)	100-200 (157)	10^{-7}
C	1,180	1,350	1997	General & construction waste	400-600 (476)	100-200 (162)	10^{-7}
D	2,440	3,870	1979	Construction waste, including wood, metal, concrete and bricks	0-250 (155)	50-200 (139)	10^{-7}
E	660	0	1979	None	200 (1 Testpit)	100	10^{-7}
F	930	3,730	1979	Medical waste buried in multiple small offal pits	300 (1 Testpit)	200	10^{-7}
G	1,310	0	1979	Reworked Material	0	100-200 (151)	N/A
H	1,980	910	1979	Construction & general waste, burnt material, tree stumps/wood fragments	0	0	N/A

3.1.1.1 Existing resource consents

As discussed in Section 2, the Crown is responsible for maintaining valid resource consents for the existing disposal sites at all times. Regional consents for the landfill capping and closure were granted in 2000, as well as for various discharges from the landfill (as set out in section 2.5.2).

The indicative plan of the landfill extent from the Tokanui Hospital Landfill Closure Assessment of Environmental Effects (1998) depicted various disposal areas shown in Figure 6 below (Areas A, B, C, D, E, and F). The AEE also noted that there was information to indicate that there were areas filled on the western side of Wharekōrino Stream, but no reliable detail had been found on the extent of filling in this area at that time. These areas have subsequently been located and verified as Areas A2 and H.

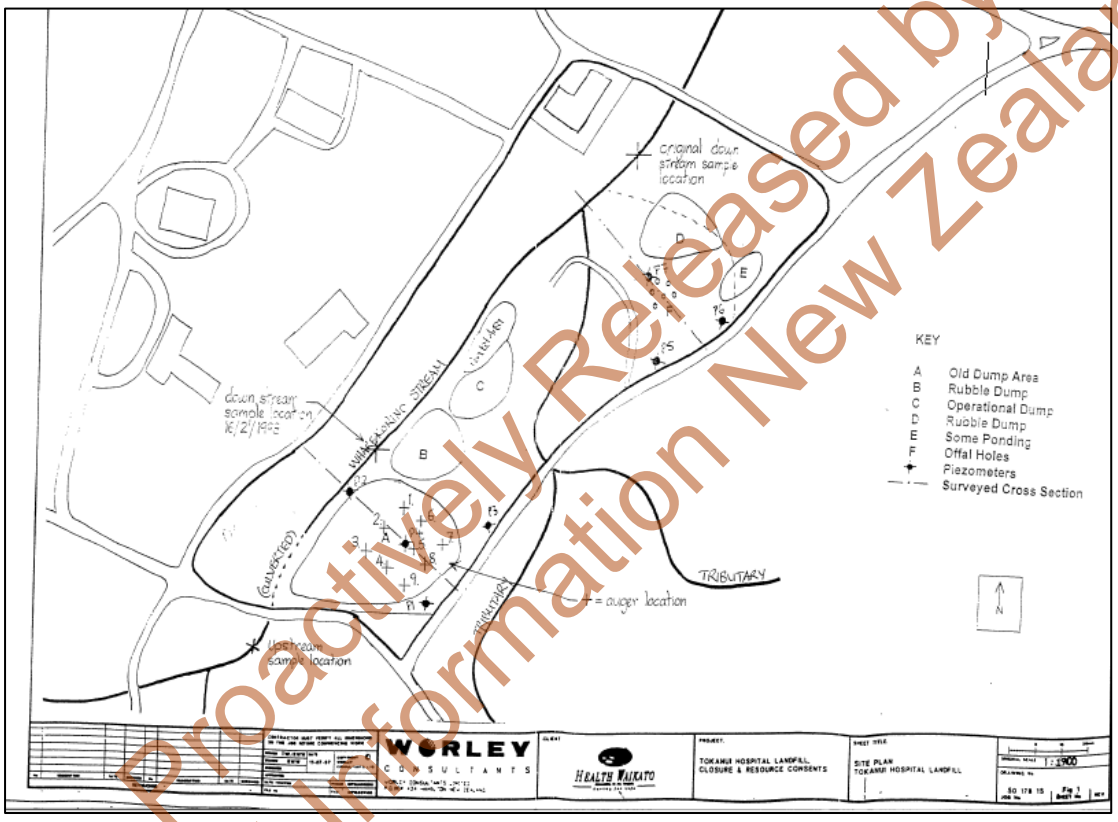


Figure 6. Closed Landfill Site Plan

It is noted that while AUTH102270.01.01 and AUTH102271.01.01 were granted to authorise the discharge of stormwater and discharge of contaminants to air from the landfill, subsequent reporting does not suggest that there is any air discharge or stormwater discharge resulting from the landfill.

The Tokanui Closed Landfill Aftercare Plan was prepared in 2000 in accordance with condition 6 of resource consent AUTH102269.01.01. The Aftercare Plan requires grassing and grazing of the landfill areas, riparian management (including planting and fencing off of riparian margins), and visual inspections of the landfill surface and cap, ongoing monitoring of surface and ground water.

In 2012, a consent compliance audit report was prepared by WRC for all resource consents relating to the site. This is included in **Appendix R**, and documents that the landfill was highly or fully compliant with the applicable consent conditions. Aspects recorded as in full

compliance included the cap, the Aftercare Plan, stream survey and riparian planting. The minor matters of non-compliance were that annual cap inspections and water quality monitoring were not undertaken for a period of time. In recent years however, LINZ has complied with all of its annual monitoring requirements.

The 2024 IIR (**Appendix C**) relooked at condition compliance and found that while the landfill is generally compliant with these consent requirements, the existing landfill cap does not comply with the conditions of AUTH102269.01.01 which authorises the discharge of leachate from the landfill. Areas A, C, do not comply with the topsoil and cap depths, and Area F does not comply with cap depths required by Condition 3 of this consent. Likewise, Areas B and D do not comply with the topsoil and cap depths specified in Condition 4.

3.1.1.2 Topsoil contamination

Topsoil testing (refer to the IIR in **Appendix C**) found that topsoil quality is at or below background levels in Area E only. Topsoil is within adopted NES-CS guidelines in Areas B, D, F and G and 20 - 83% of Area A, C and H samples. It exceeds the NES-CS rural residential standards in 9.5% of Area A samples, 20% of Area H samples, and exceeds both the NES-CS rural residential and commercial/industrial guidelines in 50% of Area C samples (due to asbestos contamination). Hence, topsoil quality does pose a human health risk in relation to asbestos in parts of Areas A, C, and H.

3.1.1.3 Existing landfill cap

The landfill areas generally comprise grassed, relatively flat farm paddocks, that are routinely grazed. The IIR noted that there were various instances of individual refuse items (e.g., wooden posts, planks, cement blocks) protruding through the landfill surface, consistently around the edges of the landfill areas. Areas A and D show small, localised damage to the landfill cap. Observations suggest the landfill cap has been breached in a number of locations. Some of the existing landfill cap areas have inadequate capping thickness and/or permeability and topsoil cover and do not comply with the existing resource consent requirements for the site.

3.1.1.4 Landfill gas

No landfill gas (LFG) was detected by gas monitoring during the FTL intrusive investigation. The fill material observed in landfill areas contains very little, if any, decomposable material that is necessary to generate landfill gas. Given the age of the landfills, any landfill gas generation from any decomposable material present in the waste material would be tapering off by now and expected to be at low levels, if any. The landfill areas can be classified as a “shallow” landfill, with LFG able to escape from it relatively easily through the landfill cap or laterally.

The landfill has no passive or active LFG extraction system and there are no known services trenches, drains or penetrations within the landfill areas that could provide a preferential pathway for LFG migration, other than likely some shallow water reticulation to the animal water troughs, which would likely be buried in the ground with no drainage media around it and thus not providing a preferential pathway for LFG migration.

3.1.1.5 Leachate management

The landfill is not lined and there is no leachate collection system in place as per typical landfilling practice at the time these landfills were constructed. This means that leachate flows through the landfill to the groundwater table and the lack of landfill base and side liners, and

groundwater subsoil drainage allows groundwater to come into direct contact with the buried refuse at some locations.

Discharge of leachate from the landfill is currently authorised by resource consent AUTH102269.01.01.

3.1.1.6 Surface water runoff

The risk of contaminated surface water runoff from the landfills is low as surface water only comes into contact with the landfill surface soils (i.e., topsoil, of which only a small portion (9.5% Area A, 50% Area C, & 20% Area H) represents a human health risk). The contaminants found in the topsoil are expected to generally be well bound to the soil matrix and hence would primarily be lost to runoff as particulate material, associated with soil scour and/or erosion. The investigation found that there is relatively low evidence of this occurring.

3.1.1.7 Groundwater contamination

Groundwater flow in the landfill area is towards Wharekōrino Stream. The existing landfill does not have base or side liners, nor any evidence of groundwater subsoil drainage. This allows groundwater to come into direct contact with refuse in Areas A1, A2, and possibly F. The investigation found that there is a direct connection between groundwater and refuse, and a direct pathway to the stream at groundwater monitoring location P2.

The IIR determined that there is a complete migration pathway for contaminants from the deposited fill material to be taken up by groundwater and flow into the Wharekōrino Stream. The main contaminant of concern identified from regular groundwater and surface water monitoring is boron. This is believed to be associated with the presence of coal ash in the existing disposal sites which is understood to have been used as cover material in some landfilling areas. Areas A and C are the likely sources of elevated boron levels in groundwater. Long term monitoring data indicates that boron is leaching from the landfill into the stream.

Surface water sampling and groundwater sampling have been undertaken twice yearly as required by conditions of resource consent AUTH102269.01.01. Water monitoring reports are available for the following periods:

- 2008 to 2017 – Analysis of Leachate and Ecological Effects (Opus)
- Wharekorino Stream and Bore Water Sampling & Landfill Cap Assessments for 2018 to 2021 (WSP/OPUS)
- Water Quality Annual Report 2022 (Fraser Thomas Ltd)
- Water Quality Annual Report 2023 (Fraser Thomas Ltd)
- Water Quality Annual Report 2024 (Fraser Thomas Ltd)

Monitoring reports from 2022 to 2024 are attached in **Appendix O**. Older monitoring reports are available upon request.

Monitoring has demonstrated that contaminant concentrations were generally stable over this time, with no parameters showing an increase, while some, such as chlorides and sulphates, appear to show a gradual decline. Dissolved mercury and Polycyclic Aromatic Hydrocarbons (PAH) remain extremely low or are not present, being below laboratory detection limits. Sampling indicates that leachate is still discharging into the stream.

Monitoring sampling completed by FTL over the period 2022 to 2024 for the purposes of complying with existing resource consent conditions (AUTH102269.01.01) indicated that the historic landfilling activity is not affecting the surface water quality in Wharekōrino Stream,

other than for boron. Boron is the main concern in terms of water quality in the stream, as although levels are below Australia and New Zealand Environment and Conservation Council (ANZECC) 95% Freshwater guidelines for aquatic species protection, monitoring demonstrates that boron levels are consistently higher downstream of the landfill.

3.1.1.8 Reporting and investigations

As noted above in section 3.1.1.7, surface water and groundwater monitoring has been an ongoing requirement of the existing consents.

Preliminary Site Investigations (PSI) and Detailed Site Investigations (DSI) have also been undertaken across the wider site and including the landfill areas. This included hundreds of soil samples from all parts of the Site. Of most relevance to this application is the IIR in **Appendix C** which includes a desktop review of the closed landfills, test pitting and trenching, sampling and laboratory analysis, as well as a landfill construction and risk assessment. The IIR constitutes a DSI for the purposes of meeting requirements under the NES-CS. In regard to the landfill areas, the IIR investigations concluded that:

- The closed landfill areas (defined as existing disposal sites in the Deed) east of the Wharekōrino Stream are greater in extent than had been realised; there are suspected additional filling areas in the southwest of the site identified during PSI and DSI. Fill materials generally appear to comprise construction debris in a silt or sand matrix; samples from these areas have identified elevated arsenic, copper, lead, zinc and asbestos.

A Remedial Options Report (2024) was jointly prepared by FTL and HAIL Environmental Ltd for the **Remediation Application**. This includes details of the material to be transferred from the hospital site to the landfills.

Following the above investigations, an options assessment was undertaken by FTL for the landfill upgrade works (2024). This is included in **Appendix B**.

3.1.2 Cultural Values and Significance

The CIA prepared by TAR Block Ltd in 2021 is included in **Appendix K**. It is noted that the CIA was prepared with respect to the Remediation Application with a focus on potential impacts from the demolition and remedial works rather than the Landfill Upgrade Application; however, as the projects are occurring on the same Site the information within the CIA has high relevance. For ease of reference, a brief summary of the cultural significance of the Site expressed in the CIA is provided below; however, this should not be considered a complete summary and reference should be had to the full CIA.

The Site is of high cultural significance to Tangata Whenua, being a subset of hapū with traditional and customary authority over the Site and surrounding geographical area. These hapū include Ngāti Ngutu, Ngāti Huiao, Ngāti Paia, and Ngāti Paretekawa. The ancestral lands of Tangata Whenua, their *taonga*, rivers, food sources, tikanga and more were lost through whenua raupatu (compulsory Crown acquisition) which displaced tangata whenua. Tangata Whenua views on this project are positioned in relation to whenua raupatu because they are inextricably linked to their whakapapa and the history of their land.

While the hospital was in operation, some whanau were employed and had access to social services. Any benefits from employment were short lived and minimal compared to the overall detrimental effects on Tangata Whenua.

Before the whenua raupatu and the hospital opened, the waterways on the site had provided resources to sustain life including kai, *rongoā* (medicine), building materials and drinking water. The whenua surrounding the hospital had an abundance of trees for building *whare*

(houses) and fertile soil for plants, harakeke for weaving, and *maara kai* (gardens) were abundant. Wetlands covered much of the area before being drained and filled to make way for buildings, agriculture and horticulture. The indigenous biodiversity within these wetlands included harakeke, pūkeko and other bird species, and eels. All of these natural resources provided sustenance and materials for Tangata Whenua to support their physical and spiritual wellbeing, while the produce also provided an income through trade. Another important feature the ecosystem offered was protection from flooding as wetlands provided a natural storage and filtering system.

There are many stories and events relating to the landscape and the associated tūpuna. The CIA describes that "significance to waahi tapu are reflected in names of mountain, streams, rivers and places where food was gathered, stories of *taniwha, patupaiarehe, pakanga whenua, pūrakāu kōrero*, and much more."[4] "Stories that associate events with places are important because these are the landscapes which identify Tangata Whenua. They may not be tangible landscapes, but they are associated with whakapapa which is intangible."[5] Other significant landscapes are associated with urupā (burial grounds) and pakanga whenua because people are interred there. There is an unidentified urupā within the hospital grounds.

In a separate 'Waahi Tapu Investigation and Cultural Induction Summary' report provided by TAR in June 2023 (also appended in **Appendix K**), waahi tapu and sites of cultural significance to Tangata Whenua were identified for the purpose of managing intrusive soil investigations. The identified areas have been incorporated on the works plans. The report also explains that due to the very sensitive nature of identifying names, places and locations of cultural significance, and that whānau could or would not share precisely where certain waahi tapu were located on the map, not all areas will be identified.

3.1.3 Heritage and archaeological values

There are no buildings with heritage status on the Site. No archaeological sites are currently recorded within the boundaries of the Site. However, it is located in proximity to (~700m) the southern bank of the Pūniu River, which was central to the pre-European Māori settlement of the area, adjacent to major battles during the Waikato War, and would become the southern boundary of Te Rohe Pōtae, all of which suggests previously unrecorded archaeological material may be present. Further, based on discussions with mana whenua and site characteristics, there is reasonable cause to suspect that there may have been undefended settlements / kāinga and urupā within parts of the hospital grounds.

An Archaeological Assessment has been undertaken (see **Appendix H**) which has identified three areas on the Site where archaeological monitoring is recommended during the works (see Figure 7). One of these areas encompasses the location of the proposed landfill repair and upgrade works, being:

- A low lying area incorporating the current and former alignments of the Tarutahi and Wharekōrino waterways along the eastern edge of the Site. Includes a north-facing highpoint where the former morgue stands at the confluence of the Wharekōrino and Tarutahi waterways.

This refers to the natural ground under and surrounding the landfill, rather than the landfill itself. Given the age of the landfill, the landfill itself is not considered to be an archaeological site based on the legal definition in the HNZPT Act (2014).

[4] CIA Section 6.2.10

[5] Ibid

It is noted that the waahi tapu and sites of cultural significance to Tangata Whenua referred to in section 3.1.2 above differ from the archaeological monitoring areas.

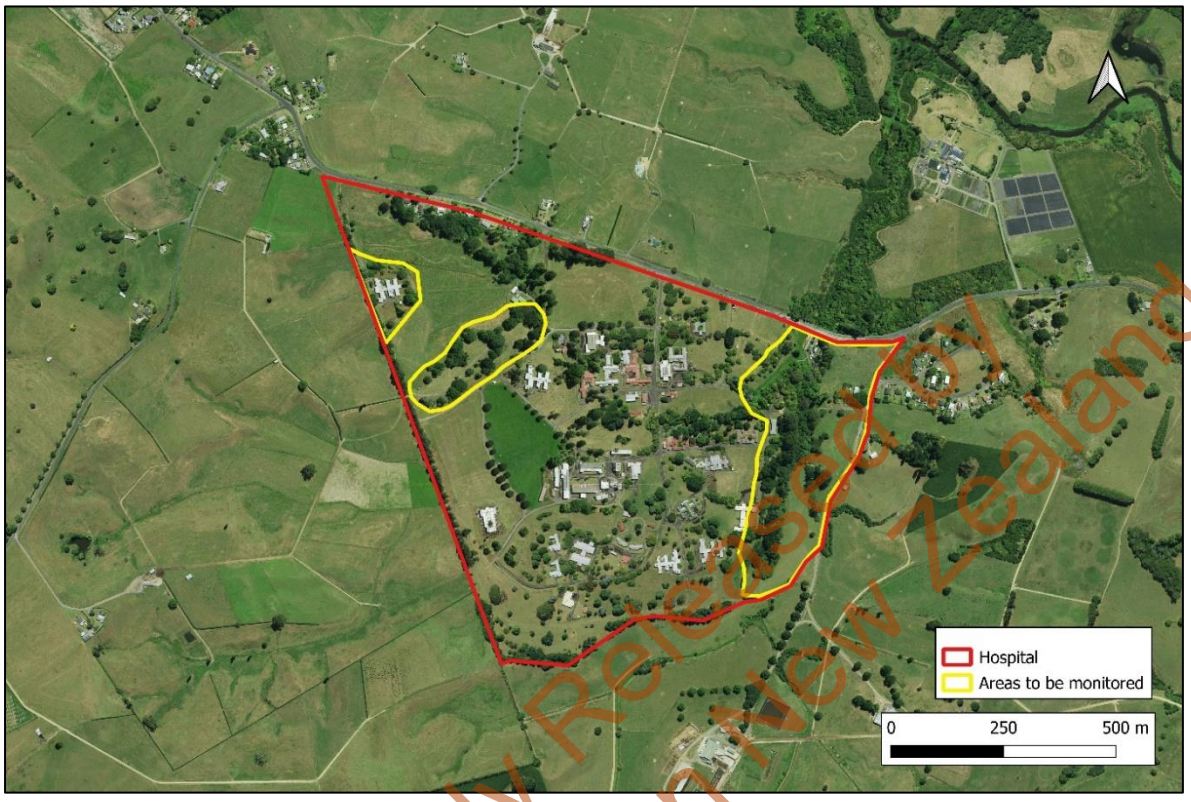


Figure 7. Identified areas on the Site requiring archaeological monitoring to disturb

3.1.4 Terrestrial ecology

An Ecological Impact Assessment (EcIA) has been undertaken (see **Appendix G**) which identifies the existing terrestrial ecological features and values on the Site; those features are summarised in the following paragraphs. Note that these summaries apply to the entire Site, not just the closed landfills.

Terrestrial vegetation types within the site are predominately exotic, with a number of pest plant species observed. Native trees present sporadically across the site include totara, rimu, miro and kauri. The overall ecological value of terrestrial vegetation on site is assessed as Low to Negligible.

Avifauna identified on site included a number of native and exotic species, all typical of highly modified environments. No “At-Risk” of “Threatened” avifauna species were observed, and it is unlikely that any are present on site. Native avifauna may utilise the large trees on site for nesting. Ecological value of avifauna is assessed as Low.

No herpetofauna species were observed on site. As a result of the high modification of the site and likely high numbers of mammalian pest species in and surrounding the site it is unlikely native skinks are present or they are at undetectable numbers. No native gecko or frog species are likely to be present as the site does not provide appropriate habitat to support them. The ecological value of herpetofauna onsite is assessed as Negligible.

Long-tailed bats have been recorded on site. Long-tailed bats are classified as “Threatened – Nationally Critical”. The many large exotic trees on Site and linear habitats provide potential

habitat for roosting, commuting and foraging habitat for long-tailed bats. Ecological value of long-tailed bats is assessed as Very High.

3.1.5 Freshwater ecology

The EcIA (**Appendix G**) also identifies the existing freshwater features and values on the Site, which are summarised below.

Riparian vegetation around the Wharekōrino Stream is predominantly exotic but is continuous and dense. The abundance of macrophytes, deep pools, and over hanging *Tradescantia* provides a large amount of habitat for freshwater fish. In addition, some woody debris and root mats also provide habitat diversity for macroinvertebrates. The channel of Wharekōrino Stream upstream of Culvert 3 is incised and dominated by gypsywort) in the flood plain, with planted native species on the upper banks. The overall ecological value of the stream reach is assessed as High.

A fish survey was undertaken and identified shortfin eel (Not Threatened) and longfin eel (At-Risk – Declining) and elvers within the stream. Banded kokopu and giant kokopu may be present within the reach but were not captured. The pest species Gambusia was observed downstream of Culvert 2. The ecological value of fish species present is assessed as High.

Approximately 721m of artificial watercourse is present within pasture to the northwest of the site. Riparian vegetation is predominantly exotic grass and there is a lack of suitable instream habitat for native fish species. Artificial watercourses have been assessed as having Negligible ecological value.

Two natural inland wetlands (as defined under the National Policy Statement for Freshwater Management (NPS-FM)) have also been identified on Site (see Figure 8). Wetland 1 downstream of the landfill is a riverine wetland encompassing the southern extent of the Wharekōrino Stream in the site and its floodplains. Vegetation present is predominantly exotic. Native freshwater fish, including At-Risk species, likely reside within the wetland. The wetland provides important habitat in a region lacking wetland habitat and provides connection to stream habitat upstream. Its ecological value is assessed as Moderate. Wetland 2 is not relevant to this application.

Wetland 1 and the Wharekōrino Stream meet criteria for indigenous biodiversity significance under the Waikato Regional Policy Statement (WRPS).

The stream reaches within the Site have not been given a particular water management class under the WRP.

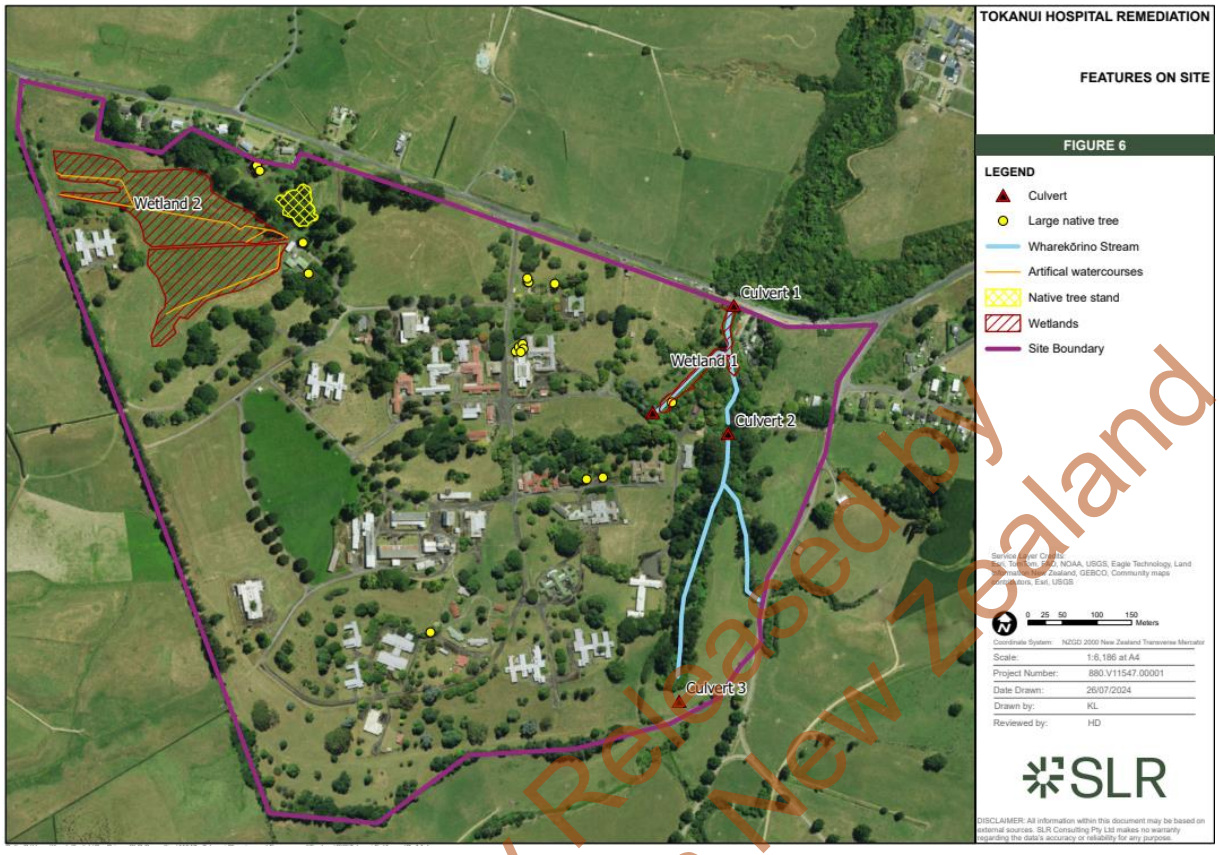


Figure 8. Locations of freshwater bodies

3.1.6 Hydrology

Two main catchments have been delineated on the site (see Figure 9). The southern catchment (440ha) drains to the Wharekōrino Stream, which flows through it in a south to north direction. The western catchment (166ha) drains through the Site's detention storage areas and enters the Wharekōrino Stream near Te Mawhai Road.

The Wharekōrino Stream flows into the Pūniu River which then flows into the Waipā River. The Site is within the Waipā Catchment Management Zone under the Waikato Regional Plan.

Four culverts have been identified on site (see Figure 10). Three of the culverts intersect the Wharekōrino Stream: Culvert 3 is at the most upstream extent on site beneath a farm crossing; Culvert 1 is located at the northernmost extent of the site, beneath Te Mawhai Road; and Culvert 2 is within the site, beneath an earth embankment created for a previous access road to Tokanui Hospital. Culvert 4 is fully operational while Culverts 1 and 2 could not be sighted and are likely "drowned" (i.e. fully submerged) due to the flat nature of the stream through this area. Culvert 3 is considered to be fully operational as water was observed flowing through it, although the culvert is also largely submerged.

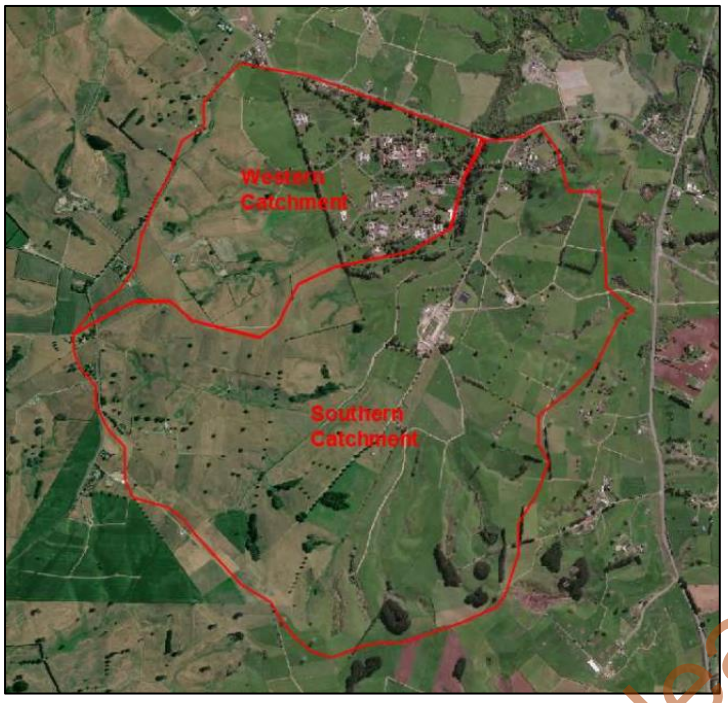


Figure 9. Catchment areas

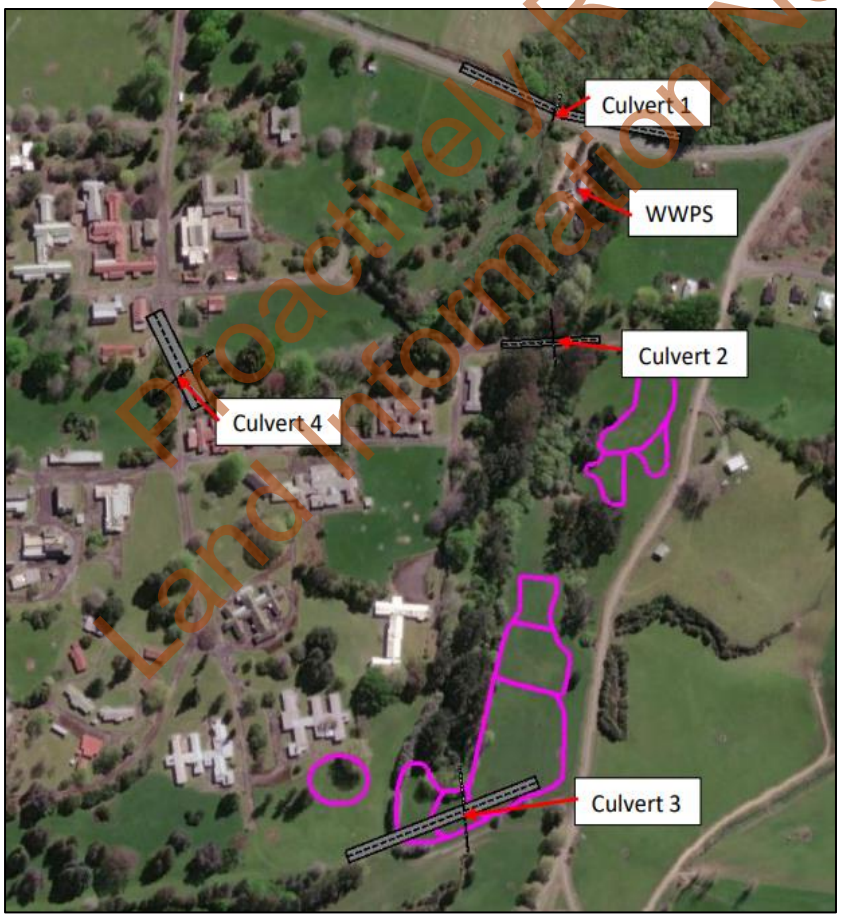


Figure 10. Culvert locations

The Site is shown as being partially affected by the Regional Scale Flood Hazard layer on the Waikato Regional Hazards Portal, which means that WRC holds information to suggest that part of the site will be affected by regionwide flooding (see Figure 11). The information indicates that during a 100 year flood the Waipā River will likely cause backflow up the Pūniu River, including up the Wharekōrino Stream.

The WDP maps do not identify any flood hazard areas on the Site. However, directly downstream (to the north of Te Mawhai Road), the floodplain of the Wharekōrino Stream and Pūniu River is mapped. Site-specific flood modelling has been undertaken for this project, identifying that flooding is concentrated around the stream (**Appendix I**).

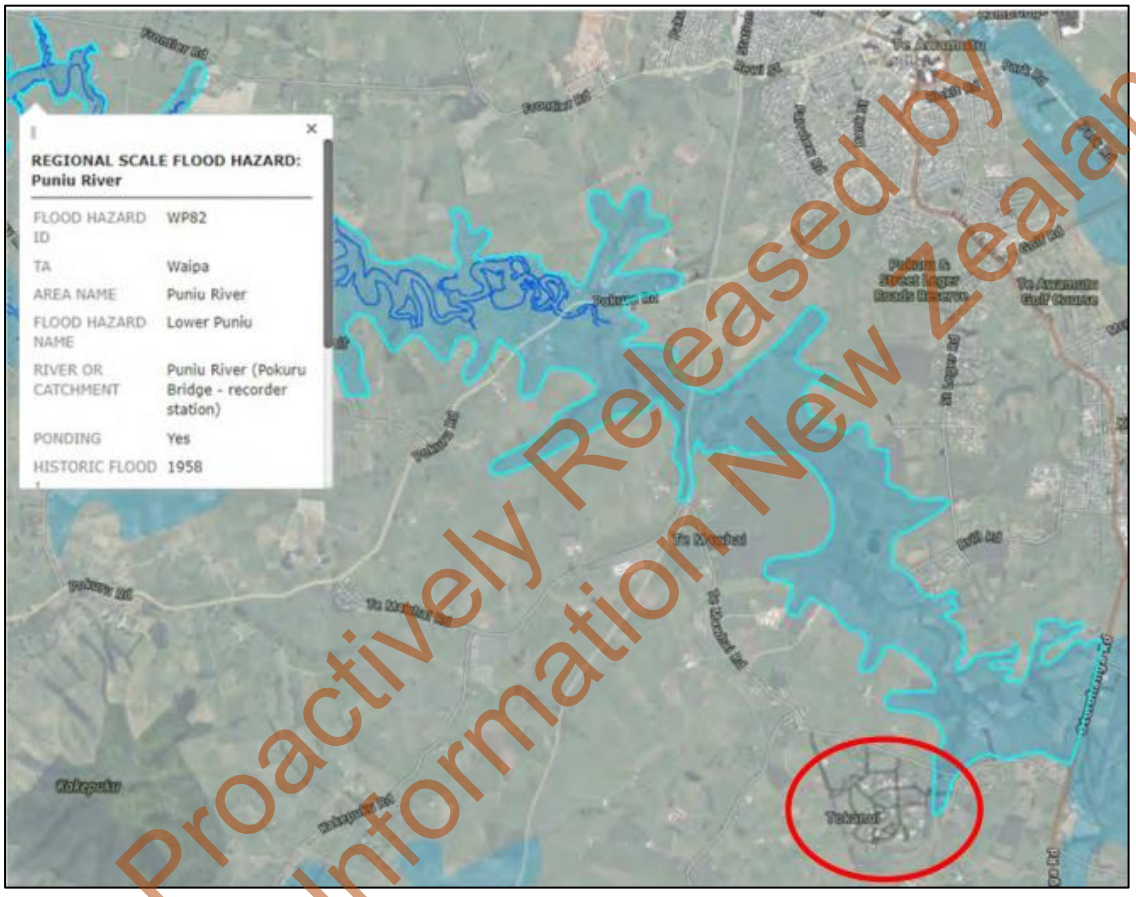


Figure 11. Regional Scale Flood Hazard – Pūniu River in Waikato Regional Hazards Portal (site circled in red).

3.1.7 Soils

The majority of the site rests on volcanic soils with moderate drainage, with some patches of yellow-brown loams. The Site is Land Use Capability Class 2 land as per the NZ Land Resource Inventory maps (see Figure 12).

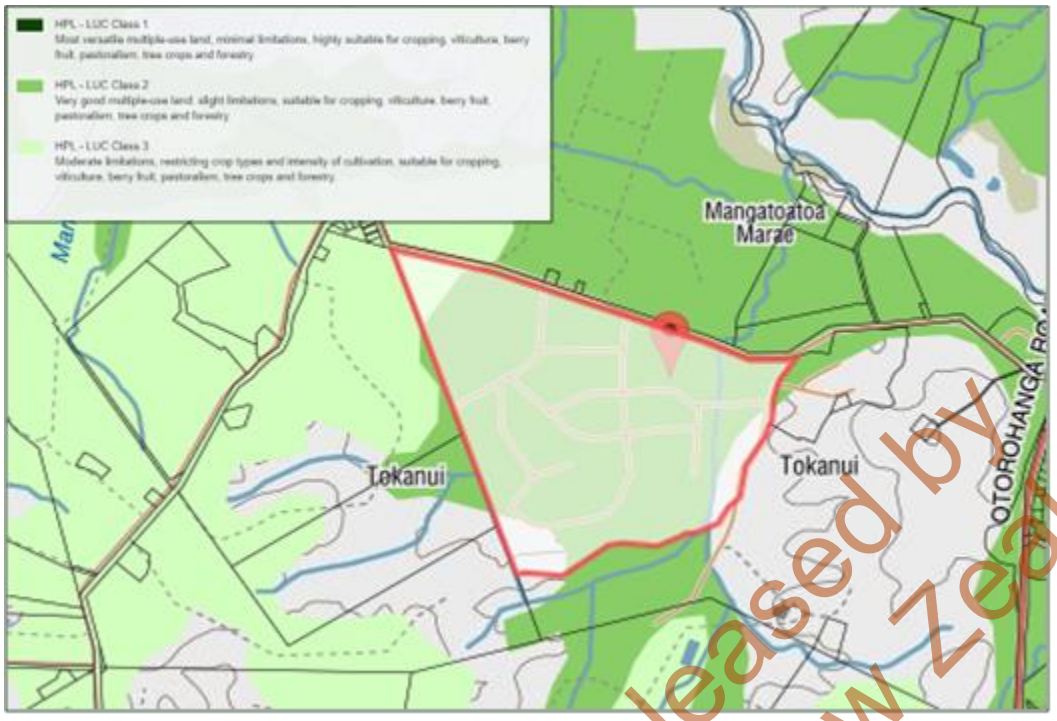


Figure 12. HPL soil classification map (Source: NZLRI)

3.1.8 Transport / Access

Primary access to the Site is via the main access gate on Te Mawhai Road (locked and monitored by security) which forms the northern boundary of the Site and is a local road. Farm Road, a private road, comes off Te Mawhai Road and runs along the eastern boundary of the Site. It provides some access to the eastern side of the Site as well as the neighbouring AgResearch site and residential village. There is a formed vehicle crossing from Farm Road to the northern extent of the landfill area, adjacent to Culvert 2. There is an unformed farm access from Farm Road at the southern extent of the landfill area, adjacent to Culvert 3.

Internal vehicle access to the landfill areas from the main site entrance is possible via the road crossing over Culvert 2.

Te Mawhai Road has typical traffic volumes of 585 vehicles per day. It is a two-way, two-laned road with a marked centreline. The posted speed limit is 70km/h for the western half of the site frontage increasing to 100km/h across the eastern half of the site frontage. The Integrated Transport Assessment (ITA) in **Appendix N** contains a full description of the transport environment.

3.1.9 District Plan Zoning, Overlays, Controls

The site is within the Rural zone and within the High-Class Soil overlay of the WDP (see Figures 13 and 14).

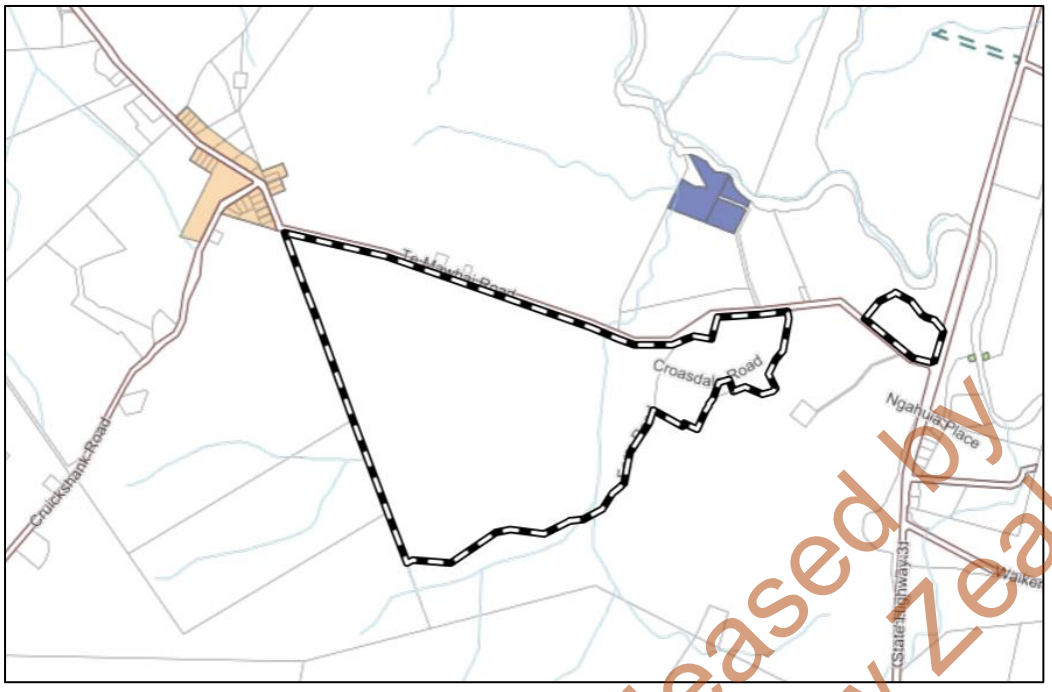


Figure 13. Zoning map from Waipā District Plan

Figure 14. High Class Soil overlay from Waipā District Plan

There are no other WDP designations, overlays, controls or notations that are relevant to this proposal.

3.1.10 Regional Plan Zoning, Overlays, Controls

The Site is within the Waipā Catchment Management Zone as used by WRC to manage the region's catchments. There are no regional plan overlays applicable to the Site and the stream reaches through the Site have no water management classification.

3.2 Surrounding environment

The surrounding environment (see Figure 15) is primarily rural in character, with some residential activities also present. Directly to the north, west and south are large lots in pasture. This includes AgResearch's 'Tokanui Dairy Research Farm' to the south and east. Tokanui hospital cemetery (Section 3A Block X Puniu SD) and a Māori burial reserve (Tokanui 1C Block) are also located on smaller sites carved off from the Dairy Research Farm.

The eastern boundary of the Site partially adjoins a residential village of tenanted houses (managed by LINZ), and a second residential village (also managed by LINZ) is located approximately 700m east of the Site at the corner of Te Mawhai and Otorohanga Roads, both of which are within the same (cancelled) Record of Title as the Site, and zoned Rural. To the west of the Site at the intersection of Cruickshank Road and Te Mawhai Road is another small village with smaller residential allotments (in individual ownerships) zoned Large Lot Residential, being the closest residential zoned area to the site. There are also two smaller rural-residential sites on the northern side of Te Mawhai Road within the Rural zone.

The private Farm Road comes off Te Mawhai Road and runs along the eastern boundary of the Site. It provides access to Croasdale and Symonds Roads serving the eastern village. There is also an easement over the road securing right-of-way for the AgResearch site, the cemetery and Māori burial reserve, and the right to convey electricity and telecommunications for AgResearch.

Around 500m north-east of the site, located next to the convergence of the Pūniu River and Wharekōrino Stream is Mangatoatoa Marae and Paa accessed via a gravel road from Te Mawhai Road. This site is zoned Marae Development Zone under the WDP.

There are several cultural and archaeological sites and significant natural areas located near the Site, which are listed under the WDP, including:

- Cultural sites approximately 400m to the north/north-east of the Site: CH12 (Urupā) and CH33 (Mangatoatoa Pā).
- Archaeological sites along Pūniu River north of the Site: S15/182, 321, 248, 242 and 247 (Pā/Urupā).
- Archaeological site S15/239 (Pā/Urupā) approximately 500m to the east of the site (the Māori burial reserve within the AgResearch site).
- Cultural site CH11 (Urupā) approximately 500m to the south-east of the site (the hospital cemetery site within the AgResearch site).
- A significant natural area, WP333 – Forest patch 250m east of Wharekōrino Stream Tokanui Township (local significance, unprotected).
- A significant natural area, WP330 – Te Māwhai Road willow wetland, to the north of the Site along the Wharekōrino Stream.
- Cultural site CH13 (Urupā) located approximately 500m north-west of the Site, off Te Mawhai Road.

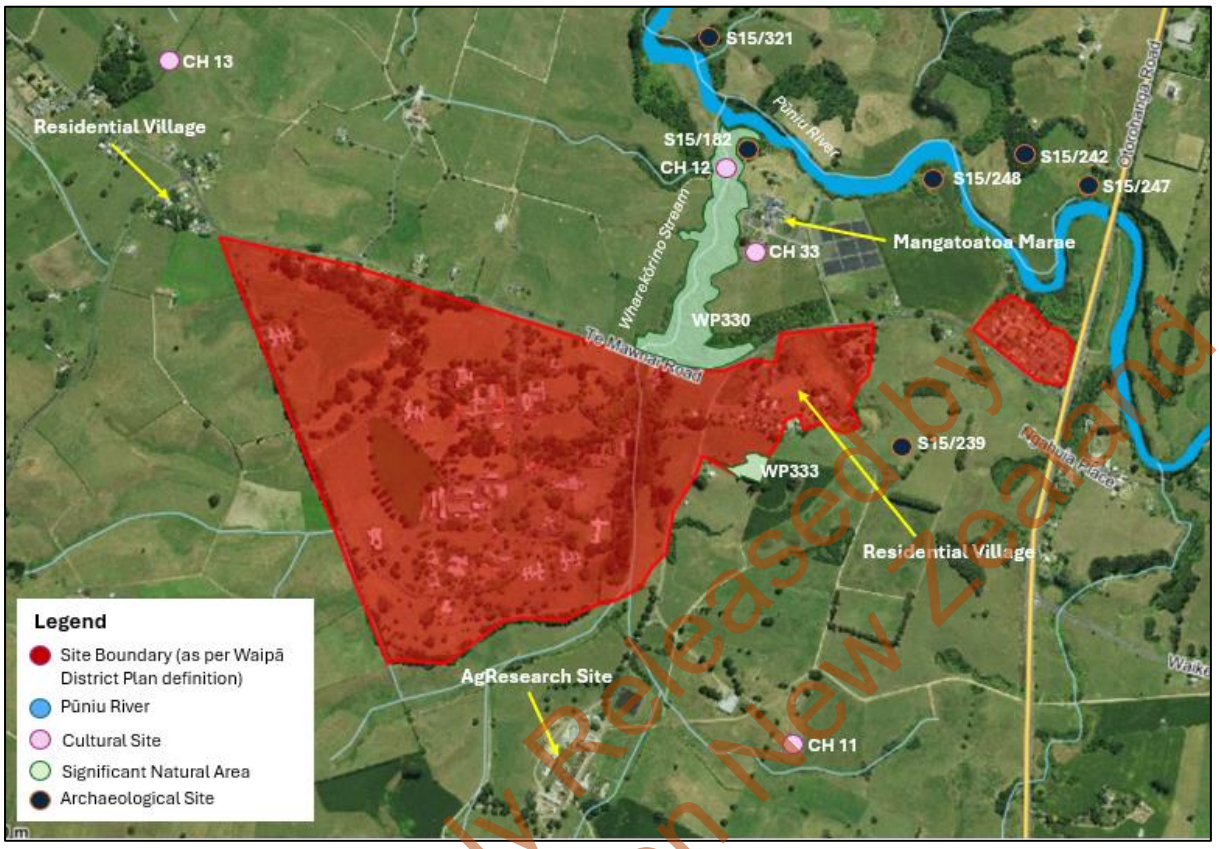


Figure 15. Features in the surrounding environment

Downstream of the Site, Pūniu River Care have a resource consent AUTH144702.01.01 valid until October 2037 to take water from the Wharekōrino Stream for irrigation of a 3ha plant nursery during September-March inclusive, based on a daily maximum take of 100m^3 and total annual take of not more than 10,000m^3.

The table below, taken from the Acoustic Assessment (**Appendix M**), shows the approximate distances between the closest occupied dwellings and the landfill area. The closest dwellings are to the east and north-east of the Site.

Table 3. Closest residential receivers

Receiver	Address	Approximate distance to extent of landfill works	Comments
R1	23 Farm Road	50	Single-storey dwelling located off the subject site
R2	52 Croasdale Road	100	Single-storey dwelling – located on the subject site
R3	51 Croasdale Road	120	Single-storey dwelling – located on the subject site

Kihikihi is the closest town, located approximately 3km away via Te Mawhai Road east and then north along Otorohanga Road (SH3).

4.0 Proposal

4.1 Summary

As outlined in section 2.3, the preferred option to utilise the closed landfill as part of the wider demolition and remediation of the Tokanui Hospital complex to dispose of low to moderate levels of contaminated soils from the hospital site to the existing onsite landfill presented an opportunity to repair and upgrade the closed landfill. While there are currently only minor consent compliance issues with the closed landfill, the IIR identified several potential issues and hazards that would impact LINZ's long-term management of the landfill. As such, options for a long-term management strategy for LINZ to implement were developed and included options relating to repair and upgrade works on the landfill in conjunction with the remedial works. LINZ's preferred option is to repair and upgrade the landfill in accordance with Option 4 – advanced works; this option forms the basis for this resource consent application. It is intended that the landfill activities currently authorised by resource consent will also be included in this application, and for this application to replace the existing resource consents.

Option 4 includes the relocation of landfill and fill material currently located to the west of the Wharekōrino Stream to within the consented landfill area, removal of medical waste from Area F, transfer of low to moderately contaminated soil from the hospital remediation works, realignment of a culvert and reinstatement of the adjoining stream, and improved capping of the entire landfill. Once these reinstatement measures have been completed, the paddocks within which the landfill is located will likely be used for farming and grazing again at the discretion of the future landowner.

The works will be divided into two stages as further outlined in sections 4.2 and 4.3 below. These stages may be undertaken in any order in conjunction with works proposed in the **Remediation Application**.

In Stage 1, Areas E and F will first be excavated and then contaminated material from the hospital remediation will be transferred to these areas. Areas E and F will then be capped and topsoiled. The existing cap on Area D will also be removed and replaced with new, compliant capping.

In Stage 2, refuse from Area H and part of Area A2 will be transferred to Area A1. This will include realignment of Wharekōrino Stream, installation of a toe bund and new culvert, and closure of Culvert 3. The portion of Area A1 on land owned by AgResearch Ltd will also be transferred to within the boundaries of the hospital site. Areas A1 and B and the residual portion of Area A2 will then be capped and topsoiled. The existing cap on Area C will also be removed and replaced with new, compliant capping as part of this stage of works.

The specific works involved are described below, followed by a description of construction methodology and management measures applicable to the entire landfill repair and upgrade works. Total earthworks volumes for all of the upgrade and repair works are provided in section 4.6. Full details of the proposed works are provided in the RUWR attached in **Appendix B** and detailed plans are included in **Appendix A**.

4.2 Areas D, E and F

These works will be done in two phases, with works in Areas E and F completed first followed by recapping on Area D.

It is proposed that low and moderate level contaminated soils (i.e., those exceeding the established site-specific soil guideline values for rural residential use) excavated during the hospital remediation works would be placed in Areas E and F. Moderate level contamination

(exceeding site specific managed remedial standard) is estimated to be ~1,450m³ in volume. Low level contamination (exceeding site specific rural residential soil remedial standard but not the managed remedial standard) is estimated to be ~1,800m³ in volume. Provisional allowances for a 'halo scrape' and subfloor space scrape and inferred contaminated soil around asbestos watermains are estimated at ~3,150m³. In total it is estimated that a maximum of 7,800m³ of contaminated soil from the hospital demolition works may need to be disposed of to Areas E and F comprising low and moderate contaminated soil, including 1,400m³ of contingency for accidental discovery.

Material would be transferred from the hospital site to Areas E and F via the road embankment over Culvert 2.

A summary of the contaminated material proposed to be transferred to Areas E and F from the hospital site is shown in Table 4.

Table 4. Summary of contaminated material transferred from hospital site

Contamination Level Classification	Contaminated Soils Description	Source	Estimated Volumes (m³)
Low Level (Management)	Exceeds site specific rural residential soil remedial standard but not the managed remedial standard.	Near Buildings	**977**
		Other Areas[4]	**797**
Moderate Level (Remedial)	Exceeds site specific managed remedial standard.	Near Buildings	**1,426**
		Other Areas[4]	**55**
TOTAL			**3,255**
PROVISIONAL ALLOWANCES			
Estimated halo scrape post-building demolition[2]		Some	**869**
Estimated building subfloor space scrape, post-building demolition[3]		Some	**1,930**
Inferred asbestos contaminated soil around asbestos watermains[1]		Likely	**328**
Contingency		Some Likely	**1,400**
TOTAL INCLUDING PROVISIONAL ALLOWANCES (Rounded)			**7,782 (7,800)**

Notes:

1. Assumed that on average a 100 mm wide ring of soil around the asbestos watermains that are to be removed is contaminated with asbestos. Soil testing may be undertaken at the time of watermain removal at the discretion of the assessor to confirm the volume of soil requiring remediation. This is addressed further in the separate Demolition Management Plan for the Site.
2. Provisional allowance made for soil scrape around all buildings, post-demolition and post-contaminated soils removal, comprising 1m wide strip x 150 mm deep, excluding areas already remediated (Halo Scrape).

Contamination Level Classification	Contaminated Soils Description	Source	Estimated Volumes (m^3)
3.	Provisional allowance made for soil scrape across the subfloor space of all buildings excluding those with concrete floor slabs, post-demolition and post-contaminated soils removal comprising building foot-print areas x 150 mm depth.		
4.	Other areas comprise Area I, Culvert 2 embankment, the WWTP, agricultural area and demolished structure area.		

To enable this, Areas E and F first need to be excavated. Areas E and F were found to contain only isolated refuse material, and therefore the applicant proposes to reuse the non-refuse material from these areas as backfill for remediation works at the hospital site. Suitable non-engineered fill from Areas E and F will be transferred to the hospital site for use as backfill. Area F has an estimated fill volume of 3,730m^3, and during investigations 7 x 600mm diameter 'offal pits' were encountered containing isolated pockets of medical waste (needles, razors, blood bags, and bottles). Medical waste will be removed and disposed of to a Class 1 landfill. Other refuse material will be separated out and transferred to Area A1 or off-site to a Class 1 landfill.

Erosion and sediment control measures will be in place for the duration of works including silt fences or super silt fences, and/or Decanting Earth Bunds on the downgradient side of the works area, and clean water diversion channels on the upgradient side. Existing vegetation on the works area will be removed as well as topsoil and the existing cap. These materials will be stockpiled outside of the works area for future reuse as cover material if suitable. Additional fill material will then be removed to expose the 'offal pits' containing medical waste. Once material has been transferred from the hospital site to Areas E and F, these areas will then be capped, re-topsoiled, and grassed. The cap will consist of a geosynthetic clay liner, underlain by a minimum 150mm bedding/protection layer and overlain by a minimum 150mm thick protection layer, 300mm thick agricultural growth layer and 150mm thick topsoil, followed by regrassing.

As part of this stage, the landfill cap of Area D will also be upgraded. This will include stripping of topsoil and existing capping material down to 200mm above refuse. Material will be stockpiled for future reuse as cover material, if suitable, or for placement within the landfill. Lower quality, existing landfill cap material will be replaced on top of the refuse to form a 150 to 300mm thick base layer. Then a new low permeability cap comprising a geosynthetic clay liner or similar, overlain by a 150mm thick protection layer will be installed. Capping materials will then be placed on top as a protection layer to form a 300mm thick agricultural growth layer, followed by 150mm thick, verified clean topsoil.

Erosion and sediment controls will be removed once sufficient ground stabilisation is achieved for Areas D, E, and F, and the areas grassed.

4.3 Areas A - C

In conjunction with realigning Wharekōrino Stream and installing a new culvert to replace Culvert 3 (section 4.4) which currently runs through Area A2, fill and refuse material from disposal Area H and part of Area A2 will be transferred into disposal area A1 of the landfill. The existing landfill cap on Area A1, B and C will also be upgraded as part of this stage.

4.3.1 Area A1/B

The existing cap and topsoil on Area A1/B will be stripped and removed, except for the bottom 200 to 300mm of the cap which will be left in place to avoid exposing historic refuse. Excavated

material will be stockpiled for future reuse as cover material. A perimeter bund will be constructed to form a “toe bund” around the area to be filled and will also divert clean water from the works area. The perimeter bund will comprise of compacted clay or other suitable materials from Area A1/B. Erosion and sediment control measures will be in place for the duration of works, including silt fences around Area A1.

Due to a misalignment between the fence line and legal boundaries, a portion of Area A1 is currently located on land owned by AgResearch Ltd (Section 3 SO 534156, 23 Farm Road). This area of the landfill is approximately 370m^2. As part of the works to upgrade Area A1/B, the portion of landfill on Section 3 SO 534156 will be removed and transferred to Area A1/B within Section 1 SO 44852. The estimated volume of refuse to be removed is 850m^3. A new toe bund will be constructed abutting the site boundary, including a groundwater diversion trench under the toe bund. The excavated area will be backfilled with cleanfill (subsoils and a minimum of 150mm topsoil, followed by regrassing).

Material from Areas H and part of A2 will then be transferred and placed in Area A1/B by truck. Fill material (that is not refuse) will either be transferred to Area A1/B or used for other purposes (e.g. cap) depending on its contamination status. Further details on material to be removed from Areas H and A2 are provided in section 4.3.2.

The previous landfill cap materials will then be placed on top of the refuse within Area A1/B to form a 150mm to 300mm thick base layer. A new low permeability cap comprising a geosynthetic clay liner (1.5mm thick) will then be installed, overlain by a 150mm thick protection layer, using previous acceptable landfill cap materials. A 300mm thick agricultural growth layer will then be placed on top of this, overlain by 150mm of clean topsoil. The agricultural growth layer can comprise previous landfill cap materials, if suitable, or imported soil. An alternative 600mm compacted clay cap may also be used.

The transfer of waste from Section 1 SO 44852, Areas H, and part of A2 to A1 will only result in a small increase in capping requirements based on the raised expanded fill profile. The transfer of refuse to Area A1 will raise the height of Area A1 by up to 1.5m above existing ground levels (refer Figure 16).

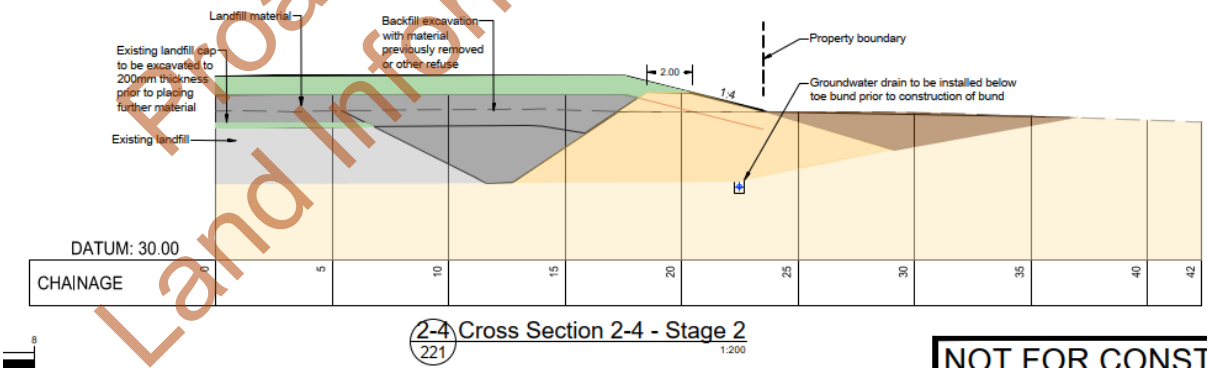


Figure 16. Cross-section of final proposed Area A1 including toe bund & groundwater drain

If damaged during works, the groundwater monitoring bore (P2) will be reinstated or relocated, as will any farm troughs and associated water supply lines.

A groundwater cutoff drain will then be constructed upgradient of the landfill adjacent to Farm Road, within the site boundary and extend along the eastern side of the landfill to suitable discharge points for gravity discharge to the stream. The groundwater drain would be based

on a 160mm diameter novacoil drain at 0.5%, with gravel surrounding it to target shallow groundwater. Based on this design, the drain would have capacity for around 5.5L/s with additional capacity via flow through the gravel trench surround.

The location of the groundwater cutoff drain is shown in Figure 17 below.

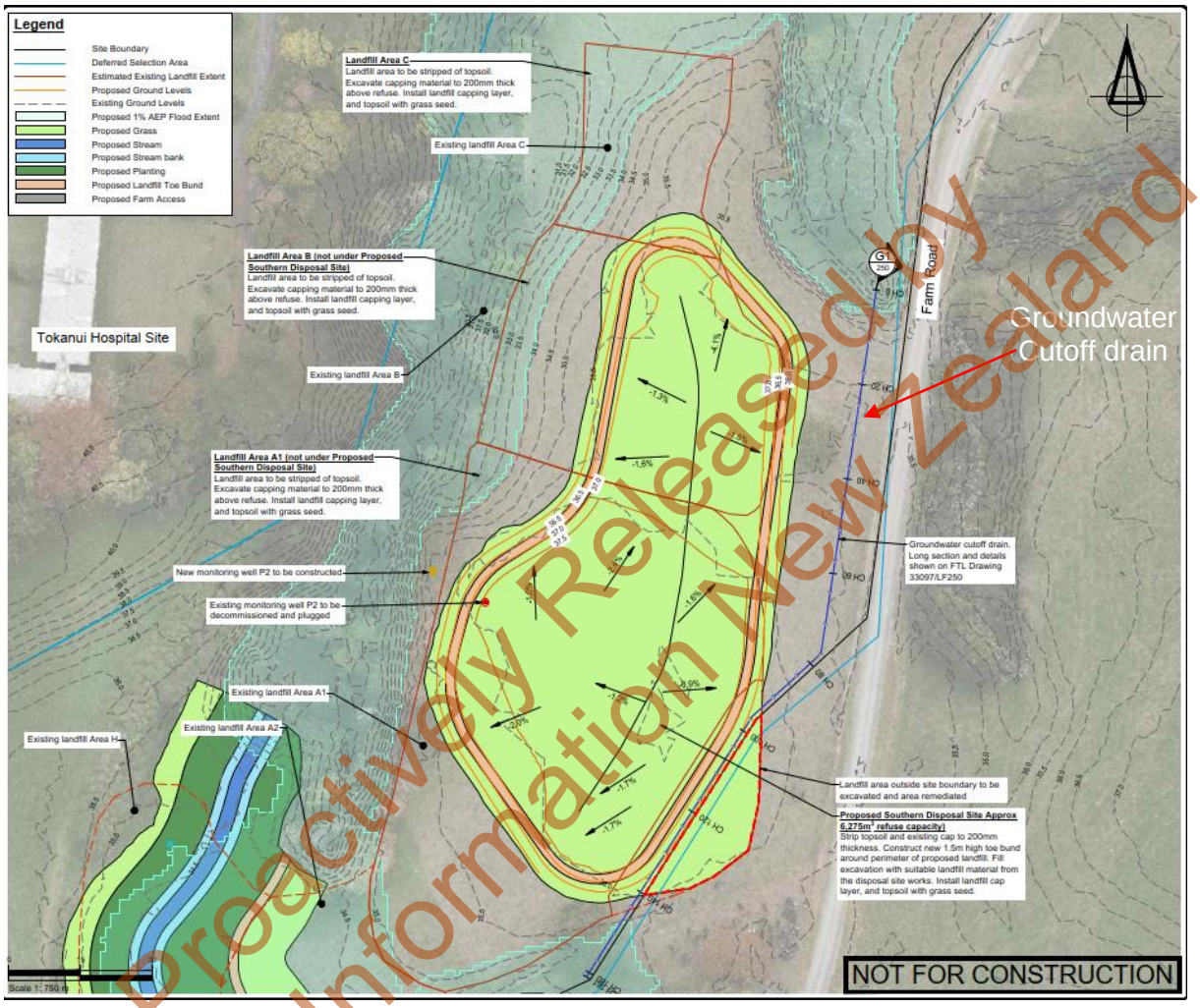


Figure 17. Area A1 showing proposed groundwater cutoff drain

4.3.2 Areas A2 and H

A dirty water diversion drain will be installed at the downstream end of the works area and a decanting earth bund or portable sediment removal device within Area H for treatment of dirty runoff pumped into it from the works area. Silt fences will also be installed. The existing farm crossing will be used as a clean water diversion bund upstream of the works, with Culvert 3 being maintained live for as long as possible.

Groundwater was not encountered in all Area H test pits to the depths excavated (1.1-2.0m below ground level). Groundwater in Area A2 was reached in 5 test pits at depths of 2.9-4.0m bgl. Groundwater piezometers will be installed to check groundwater depths in Areas A2 and H prior to works. Depending on groundwater depths, dewatering wells or wellpoints, or temporary pumps for dewatering to lower the groundwater table within the works area may be required and is included in this application as a precaution. As the earthworks area is a basin,

water will naturally pond within it. Therefore, any ponded water will need to be pumped from the excavation area with a portable pump into a decanting earth bund or portable sediment removal device for treatment.

Existing topsoil and the landfill cap from the works area will be removed and stockpiled separately outside of the works area. Refuse layers will then be removed and transferred to Area A1/B by truck via the existing farm crossing. Fill material (that is not refuse) will either be transferred to Area A1 or used for other purposes (e.g. cap) depending on its contamination status.

Once the refuse has been transferred, a compacted toe bund will be installed along the western side of the residual A2 Area. Stockpiled landfill material will be placed in the void between the toe bund and refuse as necessary. A low permeability cap will then be placed over the material followed by topsoil. Capping details will be as for Area A1.

Any suitable stockpiled capping material or clean fill material from Area H will be used to fill any depressions within Area A2.

The characteristics of the landfill areas to be disturbed are summarised in Table 5.

Table 5. Landfill Areas to be Disturbed – Areas H and part of A2

Disposal Area	Area (m^2)	Volume (m^3)	Depth (BGL)	Relevant test pits
H	1,700m^2	Cover/Topsoil: 75m^3 Fill/Refuse: 1,800m^3 **Total: 1,875m^3**	Cover/Topsoil: 0.2 – 0.5m (mix of topsoil, gravel and silt) Refuse: 0.3 – 1.5m bgl (TP32 only); no refuse found in other test pits	TP32, TP33, TP34, TP37, TP54 & TP55
Part of A2	715m^2	Refuse: 1,600m^3 Cap: 340m^3 Topsoil: 132m^3 **Total: 2,072m^3**	Topsoil: from 0.1-0.3m Landfill cap: 0.5-1.0m bgl Fill/refuse material: 2.3-4.0m bgl	TP1, TP2, TP3, TP4, TP35, TP38 and TP39

Lab results and visual observation indicate that transfer of the refuse waste will need to be done as asbestos related works within Areas A2 and H. Class B asbestos controls would be implemented in any localised areas if necessary based on site observations.

4.3.3 Area C

As part of this stage, the landfill cap of Area C will also be upgraded. This will include stripping of topsoil and existing capping material down to 200mm above refuse before installing the new landfill cap and covering with topsoil.

4.4 Culverts & Stream Realignment

The road across Culvert 3 is a farm access track and the culvert currently pipes the stream under this road and through disposal area A2. Historical aerial photographs from the 1940s indicate that this track was present prior to landfilling of the area. Culvert 3 has a diameter of 1350mm and is approximately 4m deep below the existing ground surface. It has an approximate length of 60m. It is estimated that the culvert is between 44 to 65 years old and is potentially subject to differential settlement from landfill activity which may have resulted in

leaking joints, while ultimately this pipe may fail due to impacts from the landfill and the age of the culvert. There is a risk that pipe failure could result in refuse washout into the stream. The location of Culvert 3 through Area A2 is shown in Figure 18.

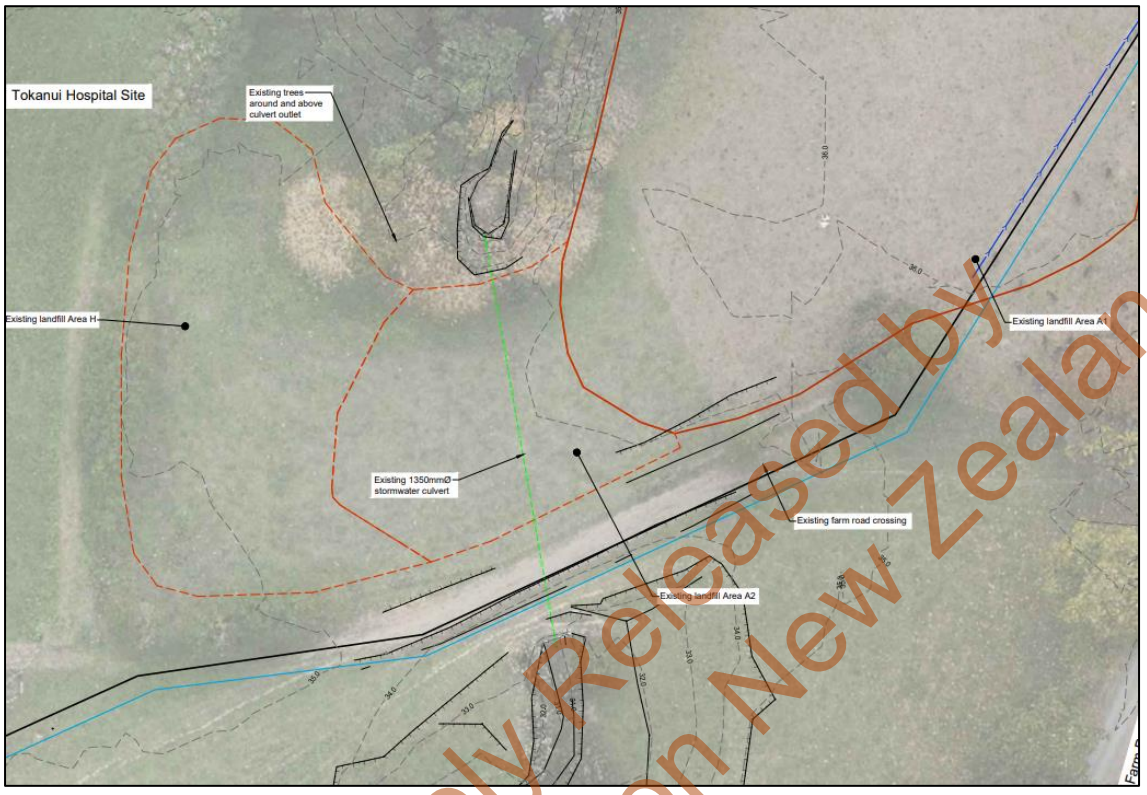


Figure 18. Location of Culvert 3 in relation to landfill areas

Based on previous test pit investigations, the refuse extends to the depth within which the pipe is located but is not likely below the lower 10 to 20% of the pipe or pipe base. However, no test pits were taken directly above or adjacent to this pipe to verify this. Therefore, it is unclear whether the culvert is located in good ground or backfilled with good material over its entire length, or whether it is in contact or near contact with landfill materials, particularly between the top and bottom sections.

Therefore, it is proposed to close off Culvert 3 and leave it in place. The entirety of Culvert 3 will be filled to eliminate the potential of its collapse in future. This portion of Wharekōrino Stream will be realigned through Area H and a new, shorter culvert installed. The proposed works for realignment of the stream and location on the new culvert are shown in Figure 19. The final changes to ground levels are shown in Figure 20. Further details of this are provided following.

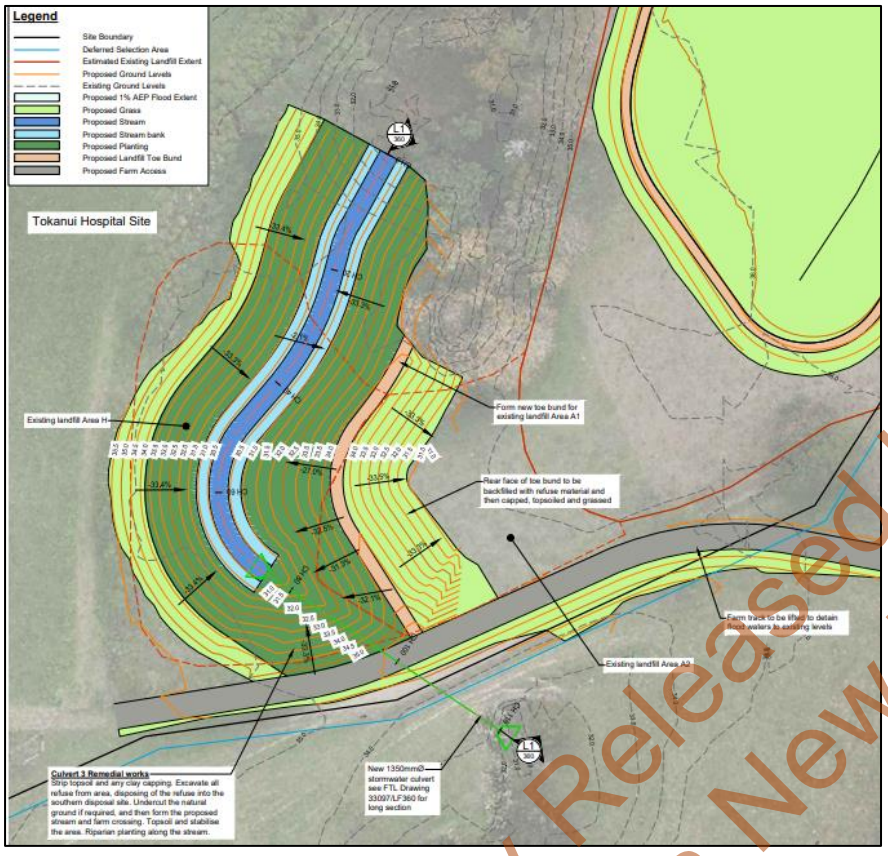


Figure 19. Proposed realignment of Wharekōrino Stream and new culvert

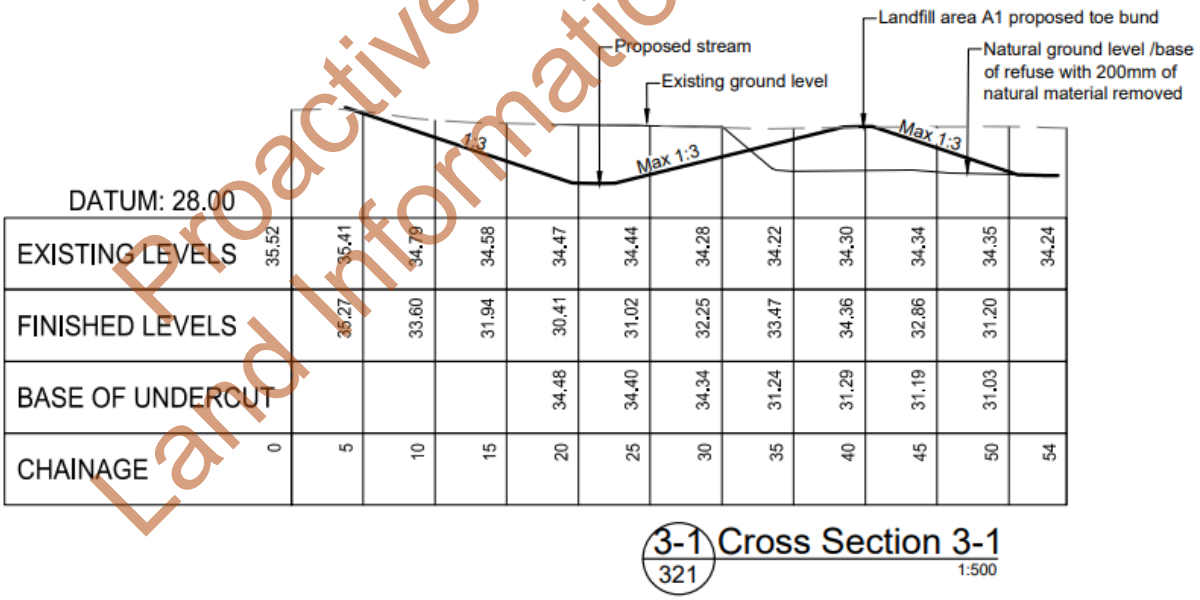


Figure 20. Cross section of final proposed ground levels around Wharekōrino Stream and toe bund

Once Area H has been remediated and the toe bund installed as described in section 4.3.2, a new, shorter culvert will be installed in the realigned stream bed. The new stream bed will be approximately 75m long with a base width of 3m with side slopes of 1V:3H, with some

meanders. The new channel will be re-topsoiled and lined with biodegradable coir matting to stabilise it, followed by planting with native species and placement of rocks and logs.

For the new outfall to the stream, vegetation will be cleared and a temporary dam will be installed comprising steel shields or similar around the outfall works area to pump out water from inside the dam. The stream channel will then be continued to connect and discharge into the existing stream. To date, this connection has been designed based on LiDAR levels, and the exact location and design will be confirmed prior to construction beginning. The outfall area will then be lined with biodegradable coir matting to stabilise it, followed by planting as above.

The new culvert will be 44m long with a 1350mm diameter. It will have a pipe capacity of 3.9m^3/s and a pipe size and gradient of 0.50%. The new culvert will be installed in a downstream to upstream direction from the top of the new channel and will be embedded so that at least 25% of its diameter is below the level of the stream bed. A cross section of the proposed culvert is shown in Figure 21.

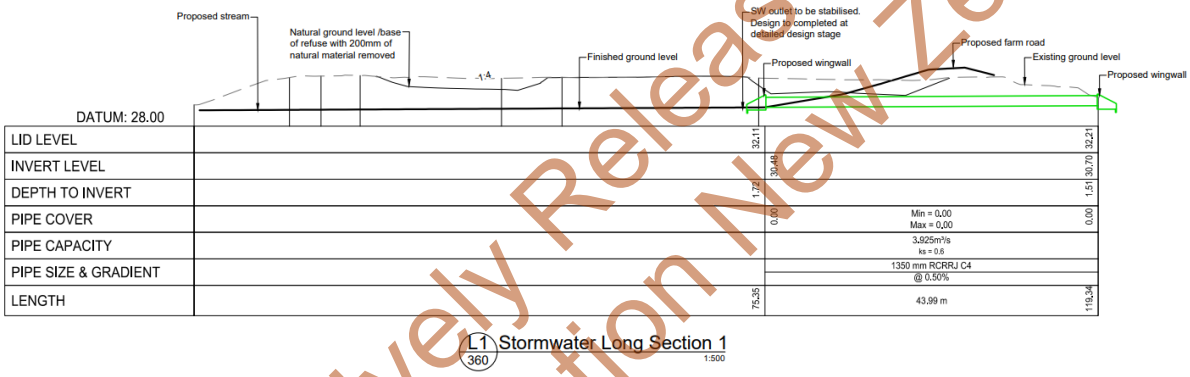


Figure 21. Cross section of proposed culvert

A temporary dam will be installed on the western side of the existing Culvert 3 inlet, to isolate the area where the new culvert inlet will be installed from water in the existing stream which will continue to flow through the existing culvert. Water will then be pumped out from inside the dam. Once the new culvert is “live”, the temporary dams at each end of the stream diversion will be relocated to block off the inlet and outlet to the existing culvert. Culvert 3 will then be filled with flowable concrete fill or similar (~86m^3), with both ends of this culvert being sealed. Water within this culvert will be pumped out if necessary, or alternatively expelled naturally during the filling process.

A short section of existing stream (28m) between the existing and new culvert outlets will be kept, but will no longer receive direct inflows from Culvert 3, as these will be discharged from the new stream outlet. This existing section of stream will still receive localised overland flow inputs, while it is expected that the water level in it will remain essentially the same, due to the flat nature of the stream bed.

4.5 Earthworks summary

A summary of the total earthworks area and volumes proposed for the above works is summarised in Table 6. Some of these earthworks are in proximity to, and within, Wharekōrino Stream.

In terms of cleanfill material to be imported to the site for capping and topsoil, final volumes will depend on the amount of material that can be reused on site. It is anticipated that up to approximately 2,000m^3 of clay material will be imported, as well as approximately 1,500m^3 of topsoil.

Table 6. Earthworks Summary

Item	Area D, E, F	Area A1, B, C	Area A2 & H	Total
Area (m^2)	6,400	11,800	4,800	23,000
Cut Volumes (m^3)				
Topsoil stripping to stockpile	750	2,380	130	3,360
Cap stripping to stockpile	470	5,300	400	6,170
Clay	5,900	-	4,800	10,700
Unsuitables	50	100	50	200
Refuse	800	850	3,400	5,150
Total:	**7,970**	8,630	**8,780**	**25,580**
Fill Volume (m^3)				
Refuse/Unsuitables	7,900	7,200	-	15,100
Capping	4,150	7,300	450	11,900
Topsoil	1,000	1,670	700	3,370
Clay	-	1,350	2,400	3,750
Total:	**13,050**	**17,520**	**3,550**	**34,120**

4.6 Construction Methodology and Management

4.6.1 Construction Management Plan

Section 5 of the RUWR (**Appendix B**) outlines the works methodology for the above works.

In summary, works will be undertaken over two stages:

1. Areas D to F (including Culvert 2 works – subject to the **Remediation Application** will also be done at this time)
2. Areas A to C, and H (including Culvert 3 works and partial stream reinstatement)

No remediation works are required for Area G, as no fill or contamination was found in this area.

It is anticipated that the works involving Culvert 3 will be done between January and March so that seasonal surface water flows and groundwater levels are at a minimum.

A Construction Management Plan (CMP) will be prepared and provided to Council for certification prior to the commencement of any physical works on site. The CMP will be the overarching management plan in place for the duration of works to detail how works will be undertaken, various responsibilities for contractors, and site management measures. The following management plans will also be incorporated into the CMP:

- An Asbestos Removal Control Plan;

- Contaminated Site Management Plan / Remedial Action Plan (including site validation requirements).

4.6.2 Erosion and Sediment Control

A draft Erosion and Sediment Control Plan (ESCP) has been prepared and is attached in **Appendix D** in accordance with WRC's 'Erosion & Sediment Control Guidelines for Soil Disturbing Activities TR2009/02'. All erosion and sediment control measures will be established prior to the commencement of works and be in place for the duration of works. The ESCP also includes methodology for stream temporary diversion during the Area A2/H works.

Erosion and sediment control measures will include the following:

- Minimising the areas of disturbance, extent and duration of works (i.e., completing works in stages to reduce the risk of sediment run-off)
- Installation of perimeter controls (i.e., diversion drains, silt fences, super silt fences, and decanting earth bunds, as well as construction entrances to prevent sediment leaving the site)
- Sediment removal devices to minimise amount of sediment laden runoff leaving the site
- Flocculation management
- Dust control measures
- Stabilising exposed areas as soon as practicable by sowing or mulching
- Adverse weather event protocols
- Site rehabilitation prior to removal of sediment control measures.

4.6.3 Traffic management

The traffic generation from the Remediation Application has been assessed in the Integrated Transportation Assessment Report prepared by CKL based on information provided by LINZ on the volumes of material required to be transported to and from the Site.

The theoretical worst-case scenario is for Phase 1 and Phases 2/3 of the hospital remediation work to be operating in full capacity and overlapping. This would generate a maximum of 80 vehicles per day and 21 vehicles in the peak hour.

Should this Landfill Upgrade Application be granted, the traffic generation from the Remediation Application would significantly reduce. Most traffic movements required to transport materials to and from the landfill will be internal to the site as material is proposed to be moved between the hospital site and the landfill area. The exceptions are the medical waste from Area F to be disposed of at an offsite landfill and any imported capping / topsoil material. Additional traffic may be generated by importing cleanfill material to the site, with approximately 2,000m^3 of clay and 1,500m^3 of topsoil to be potentially imported. Truck and trailer units with an 18 tonne or 28m^3 to 38m^3 capacity would likely be used to import cleanfill material, generating approximately 92 vehicle movements.

4.6.4 Noise management

An Acoustic Assessment has been prepared by SLR (**Appendix M**) to model the amount of noise generated by the proposal. The acoustic assessment finds that the most significant noise levels would be produced by the operation of large machinery during works.

The nearest sensitive receptor is the dwelling at 23 Farm Road located approximately 50m from the works area of Area D, E and F. Written approval has been obtained from this landowner (AgResearch Ltd). Two other sensitive receptors are identified at 100-120m away from the landfill works area.

At a distance of 25-45m from the works location, noise generation from other machinery (including excavators up to 30 tonnes, vibratory and non-vibratory compaction and chainsaws) is expected to comply with NZS 6803:1999, without any acoustic mitigation measures, between normal construction hours of 7.30am to 6pm Monday to Saturday.

The acoustic assessment notes that compliance with the NZS6803:1999 noise requirement at the closest receivers can readily be achieved by controlling the size of compactor used in Areas D, E and F.

4.6.5 Fish Management Plan

Instream works are required for the realignment of Culvert 3 intersecting the Wharekōrino Stream. A Fish Management Plan (FMP) has been prepared to avoid injury and/or mortality of native fish species during instream works. This sets out when fish relocation will be required, how fish will be captured, and how fish will be protected from being sucked up pumps during diversions. The FMP is appended to the EcIA in **Appendix G**.

4.6.6 Planting and Maintenance Plan

Vegetation removal for the landfill repair and upgrade works primarily involves grass (pasture) removal from the works areas and removal of some trees from around the existing Culvert 3 inlet/outlet and along the route of the new culvert and new section of stream (Area A2/H). The approximate area of vegetation removal around Culvert 3 is 2,200m^2. Indicative vegetation removal requirements are shown on drawing 33097/LF311.

Existing vegetation removal required around the existing Culvert 3 inlet/outlet is provisional and will depend on the contractor's methodology for getting access to these areas to seal the existing culvert, particularly how they will isolate the works area from the normal stream flows. Any riparian vegetation that has to be removed to facilitate this or is accidentally damaged during the works will be reinstated on works completion.

Riparian vegetation will be planted along the new stream section following the works as per the Planting and Maintenance Plan (PMP) appended to the EcIA in **Appendix G**. Following completion of works, the PMP also requires that any areas used for grazing will be fenced off from planted areas.

4.6.7 Aftercare and Monitoring Plan

As noted in section 3.1.1.1, the Tokanui Closed Landfill Aftercare Plan was prepared in 2000 in accordance with condition 6 of resource consent AUTH102269.01.01. The existing Aftercare Plan requires grassing and grazing of the landfill areas, riparian management (including planting and fencing off of riparian margins), and visual inspections of the landfill surface and cap, ongoing monitoring of surface and ground water. As the existing resource consent will be replaced by the current application, so too will the Aftercare Plan.

A draft updated Aftercare and Monitoring Plan (AMP) has been prepared for the closed landfill, based on the preferred repair and upgrade works set out in this report having been completed. The draft AMP is attached in **Appendix Q**.

This plan will supersede the existing Aftercare Plan. The main changes from the existing plan are:

(a) Removal of mercury and PAHs from the monitoring suite, as concentrations of these parameters have not been detected in any samples collected twice yearly over the period from 2016-2024.
(b) Deletion of sampling point S4, as only PAHs were required to be monitored here and they are being deleted as per item (a).
(c) Revised groundwater sampling locations, as a result of the repair and upgrade works.

Upon completion of the proposed upgrade and repair works, a final AMP will be submitted to WRC for certification.

4.7 Replacement of existing resource consents

As part of the above scope of works, it is proposed that the existing resource consents in place for the closed landfill will be replaced, including:

Table 7. Resource consents to be replaced

Consent number	Summary	Date Granted	Expiry
AUTH102269.01.01	Discharge leachate into land in circumstances that may result in contaminants entering groundwater	17/04/2000	10/03/2035
AUTH102270.01.01	Divert & discharge stormwater into the Wharekōrino Stream	17/04/2000	10/03/2035
AUTH102271.01.01	Discharge contaminants to air	17/04/2000	10/03/2035
AUTH102272.01.01	Undertake earthworks within 5 metres of the Wharekōrino Stream	17/04/2000	10/03/2035

These consents will be surrendered pursuant to section 138 of the Act, following granting of the replacement resource consents.

4.8 Any other activities that are part of the proposal

Clause 2(1)(d) of Schedule 4 of the Act requires the Applicant to identify other activities that are part of their proposal. This is intended to capture activities which need permission or licensing outside of the Act, for example, activities under the Building Act 2004 or the Hazardous Substances and New Organisms Act 1996.

The activities described as part of this proposal require authority from Heritage New Zealand Pouhere Taonga, which will be sought, as previously described.

5.0 Reasons for the application

An assessment of the proposal against the relevant statutory documents has been undertaken and the following reasons for consent have been identified. A detailed rules assessment is provided in **Appendix E**.

5.1 Waipā District Plan

The Plan requires resource consent for the following reasons:

Section 4 – Rural Zone

- Rule 4.4.1.4(a) – **Discretionary Activity** (The proposed earthworks will exceed 1,000m^3 in total volume and therefore not comply with Performance Standard 4.4.2.75).
- Rule 4.4.1.5(b) – **Non-Complying Activity** (Landfill activity is not provided for under any other rule in the Plan and is therefore a Non-complying activity under this rule).

Section 22 – Heritage and Archaeology

- Rule 22.4.1.1(m) – **Restricted Discretionary Activity** (Earthworks within 20m of a cultural site is a Restricted Discretionary activity)

Section 26 – Lakes and Water bodies

- Rule 26.4.1.3(a) – **Restricted Discretionary Activity** (Earthworks will be undertaken within 23m of the edge of Wharekōrino Stream and therefore do not comply with Performance Standard 26.4.2.1).

5.2 National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health

The NES-CS is a relevant consideration to this application because Landfill Sites are a HAIL activity (G3). A Preliminary Site Investigation (PSI) and Intrusive Investigation Report for the landfill area are attached in Appendix C. These assessments confirm that soil contamination in some areas exceeds the standards in Regulation 7.

The proposed disturbance of soil is not a permitted or controlled activity. Therefore, resource consent is required under Regulation 10(2) of the NES-CS as a **Restricted Discretionary** activity.

5.3 Overall activity status – Waipā District Council

Overall, resource consent is required for a non-complying activity.

5.4 Waikato Regional Plan

The Plan requires resource consent for the following reasons:

Chapter 3 Water Module

- Rule 3.5.4.5 (Discharge of contaminant to water) – **Discretionary Activity** (Discharge of leachate from the landfill to Wharekōrino Stream and for the possible discharge of water pumped from the excavations of Area A2 during dewatering).
- Rule 3.5.11.8 (Discharge of stormwater) – **Discretionary Activity** (Discharge of stormwater from proposed activity and landfill areas).
- Rule 3.6.4.9 (Off-stream diversion) – **Controlled Activity** (The groundwater diversion drain around Area A1).
- Rule 3.6.4.14 (New Dams/damming of water) – **Discretionary Activity** (Temporary damming and diversion required during construction works).

Chapter 4 River and Lake Bed Module

- Rule 4.2.9.3 (Culverts for Catchment Areas Not Exceeding 500 hectares) – **Controlled Activity** (Alteration of Culvert 3).
- Rule 4.3.4.4 (Bed Disturbance Activities) – **Discretionary Activity** (Excavation works within bed of Wharekōrino stream)

Chapter 5 Land and Soil Module

- Rule 5.1.4.13 (Soil disturbance, Roading and Tracking and Vegetation Clearance) – **Discretionary Activity** (Works will be undertaken within Wharekōrino Stream, including soil disturbance during removal of material from Disposal Area A2 and removal/replacement of Culvert 3. Works outside the High Risk Erosion Area may not comply with suspended solids standards).
- Rule 5.1.4.15 (Soil disturbance, roading, tracking, vegetation clearance in high-risk erosion areas) – **Discretionary Activity** (The site is classified as a high risk erosion area, and the proposed soil disturbance does not comply with Controlled Activity standards under Rule 5.1.4.14).
- Rule 5.2.5.6 (Cleanfill Disposal in High-Risk Locations) – **Discretionary Activity** (Importation of cleanfill for capping and topsoil material & reuse of excavated cleanfill material elsewhere on site)
- Rule 5.2.7.1 (New and currently operating landfills) – **Discretionary Activity** (Discharge of contaminants to land and subsequent discharges to water and air as part of opening and temporarily operating the existing landfill for repair and remediation works)
- Rule 5.2.7.3 (Closed Landfills) – **Discretionary Activity** (To allow for the continued discharge of contaminants from the landfill once closed).

5.5 National Environmental Standards for Freshwater (NES-F)

The National Environmental Standards for Freshwater (NES-F) are a relevant consideration in this application because a new culvert will be installed to replace Culvert 3 (which will be closed off and remain in place).

The new culvert will not comply with Regulation 70 of the NES-F, in particular Regulation 70(2)(d) as a culvert width of 2.9m is required whereas the proposed culvert will have a width of 1.35m, and therefore resource consent is required under Regulation 71 as a **Discretionary** activity.

5.6 Overall activity status – Waikato Regional Council

Overall, resource consent is required for a **discretionary activity**.

5.7 Permitted activities that form part of the proposal

A detailed rules assessment is provided in **Appendix E** and the permitted activities that form part of the proposal are summarised below:

National Environmental Standards for Freshwater (NES-F)

An assessment against the regulations of the NES-F is included in **Appendix E**. As Wetland 1 is located over 100m from the nearest point of the landfill (Disposal Area D), none of the activities listed under Regulation 45B and 54 will occur.

Works associated with removal of Culvert 2, which is within 100m of Wetland 1, are not part of this application.

Subpart 3 (Passage of fish affected by structures) does not apply to works to close off Culvert 3 as this culvert has been in place prior to 2 September 2020.

Subpart 3 does apply to the temporary dams, however, resource consent is not required for the temporary dams required for construction works under the NES-F. The NES only requires details about their location, design, dimensions and materials to be provided to the regional council. If a proposed dam, ford or non-passive flap gate requires a resource consent from the council, the monitoring and maintenance requirements in the NES must also be met.

Waipā District Plan

- The proposed provision of parking, loading and manoeuvring space for the works is permitted under Rules 16.4.2.13 and 16.4.2.14.
- The use and handling of hazardous substances is permitted under the performance standards of Rule 19.4.2.
- The site will meet the permitted standards in Rule 20.4.2.4-20.4.2.7 for maintenance of buildings and sites.
- The trimming and removal of indigenous vegetation not identified within an overlay and the planting of indigenous vegetation is permitted under 24.4.1.1.
- The proposed works comply with rules in Chapter 20 relating to odour and dust (Rule 20.4.2.1).

5.8 Other resource consent requirements

This application covers both the territorial authority and regional council consent applications required for the landfill repair and upgrade works. As outlined in the Executive Summary, a separate application is being made for Remediation works, which is related to this application.

Therefore, there are no other resource consent requirements associated with this proposal; all applicable consents are applied for.

6.0 Assessment of effects on the environment

6.1 Introduction

Having reviewed the relevant plan provisions, visited the site and taking into account the matters that must be addressed by an assessment of effects on the environment as outlined in clause 7 of Schedule 4 of the Act, the effects that warrant consideration as part of this application are listed below.

As the application to WDC is for a non-complying activity, and the application to WRC is for a discretionary activity, the relevant effects that the consent authorities can consider are not restricted. Notwithstanding the ability of the consent authorities to consider all effects, only the following effects are considered relevant:

- Effects of earthworks and construction
- Effects on human health
- Effects on water quality
- Effects on hydrology and flooding

- Effects on ecological values
- Effects on the transport network
- Effects on cultural values
- Effects on heritage and archaeological values
- Effects on amenity and rural character
- Effects on soil quality and productivity
- Positive effects.

An assessment of these effects, that corresponds with the scale and significance of the effects that the proposed activity may have on the environment, is provided below. Clause 7(2) notes that the requirement to address matters in the assessment of effects on the environment is subject to the provisions of any policy statement or plan. The relevant documents are also assessed in this report.

6.1.1 Permitted baseline

The "permitted baseline" is relevant to the assessments under sections 95A to 95G and 104 of the Act. Under these sections, the consent authority may disregard an adverse effect on the environment if a national environmental standard or the plan permits an activity with that effect. This is the permitted baseline. It is only the adverse effects over and above those forming a part of the baseline that are relevant when considering an application.

The purpose of the permitted baseline test is to isolate, and make irrelevant, the effects of activities on the environment that are permitted by the plan. When applying the baseline, such effects cannot then be taken into account when assessing the effects of a particular resource consent application. The baseline has been defined by case law as comprising the "existing environment" and non-fanciful (i.e., credible) activities that would be permitted as of right by the plan and/or national environmental standard in question.

In this case, the permitted baseline is not relevant to this application.

6.1.2 Receiving environment

In assessing the potential effects on the environment, the "receiving environment" for effects must be considered.

The receiving environment is a mandatory consideration that is defined by case law, and it is the environment beyond the site upon which a proposed activity might have effects. This includes the future state of the environment upon which effects will occur, including:

- the environment as it might be modified by the utilisation of rights to carry out permitted activities; and
- the environment as it might be modified by implementing resource consents that have been granted at the time a particular application is considered, where it appears likely that those resource consents will be implemented.

In this case, the receiving environment is as described in Section 3.0 of this report.

6.1.3 Other considerations

Sections 95D(d) to 95D(e) and 104(3)(a) of the Act require that assessments must disregard:

- trade competition, or the effects of trade competition; and

- any effect on a person who has given written approval to this application.

Trade competition and written approval are not relevant to this application.

6.2 Effects of earthworks and construction

6.2.1 Permanent Effects

Finished ground levels will be similar to existing, ensuring that the area remains suitable for agricultural use (grazing) post-landfilling. However, there will be some isolated minor changes to ground contours primarily at Areas A1, A2, H, E and F.

Areas E and F will increase by up to 1.5m height above existing ground level to accommodate low and moderate level contaminated soil transferred from the hospital remediation works.

Area A1 will increase by up to 1.5m in height above existing ground level to accommodate waste material transferred from Areas A2 and H. The portion of landfill within Area A1 that is located within the AgResearch property will be excavated, with any refuse found shifted into Area A1, followed by backfilling with cleanfill material to match current ground levels. The change in contours will not affect the ability of this area to be used for pastoral land use following completion of works.

Areas A2 and H will be lower than existing ground levels once waste is removed but will be recontoured to merge with surrounding landforms and reinstate Wharekōrino Stream. Suitable excavated material from Area H will be used to fill any depressions in Area A2.

The closing of Culvert 3, installation of a new culvert, and creation of the new stream channel will have some permanent effects on hydrology, which are discussed separately in section 6.5. Once the channel is formed, it will be stabilised and planted to prevent sediment runoff.

Therefore, there will not be any permanent effects on drainage, flooding or amenity associated with the majority of the earthworks.

6.2.2 Temporary Effects

Earthworks will be undertaken across the landfill area (approximately 22,000m^2) with a total cut volume of 22,850m^3 and a total fill volume of 31,925m^3. As noted in section 4.0, the works will be undertaken in two stages in any order in conjunction with works proposed in the **Remediation Application**. Earthworks related to the closing of Culvert 3, installation of a new culvert, and removal and transfer of waste from disposal Areas H and A2 need particular consideration in assessing potential and actual adverse effects on Wharekōrino Stream. Effects of the proposed works on hydrology are discussed separately in section 6.5. Cultural and archaeological effects associated with land disturbance are separately discussed in sections 6.8 and 6.9 below.

An ESCP will be in place for the duration of works and will comply with WRC guidelines, as set out in section 4.6.2. A draft ESCP is appended in **Appendix D**. The implementation of the ESCP will minimise any potential for sediment generation and protect water quality and land stability. LINZ proffers consent conditions requiring a final ESCP to be prepared and certified by WRC prior to the commencement of any physical works. The ESCP will include measures such as perimeter controls (i.e., diversion drains, silt fences, super silt fences, and decanting earth bunds, as well as construction entrances to prevent sediment leaving the site), sediment removal devices to minimise sediment laden runoff leaving the site, adverse weather protocols, dust management, and site rehabilitation following completion of works. For works within the stream, the relatively flat stream bed gradient through the works area means the

stream is a low energy environment, making installation and maintenance of the erosion and sediment control measures easier.

Works in the landfill areas will be undertaken in a number of stages so as to reduce the total area of land exposed at any one time. There are unlikely to be significant or long-term stockpiles as any suitable material will be reused as backfill as appropriate and any unsuitable or surplus material will be regularly transported away for disposal, however, any temporary stockpiles will be stabilised. Works within the stream will also be undertaken between January and March so that seasonal surface water flows and groundwater levels are at a minimum. Undertaking works during the drier period, as well as temporary damming and pumping of flow around the works area, will help to minimise any risk of erosion and scouring.

There is the possibility of dust emissions from disturbed soil surfaces during works which may cause nuisance, health hazards, traffic safety problems if not properly managed. The ESCP will include measures to mitigate dust emissions during earthworks and these measures will be in accordance with the *Good Practice Guide for Assessing and Managing Dust (Ministry for the Environment, 2016).* Mitigation measures will likely include suspending works in dry and windy conditions, or watering the disturbance area to minimise dust generation. Dust will also be controlled by minimising the extent of exposed areas at any one time, limiting traffic speeds and maintaining road surfaces, limiting stockpile heights, consolidating and sealing off loose surface material.

WRC has advised that measures will also need to be in place to clean machinery coming onto and off-site to ensure that all seed and/or plant matter has been removed. These measures should apply to all machinery involved in earthworks and cleanfill on site. A condition of consent to this end is proffered in **Appendix P**.

There is a potential risk of landfill erosion or slips during works in and around Culvert 3. It is considered that the proposed methodology and erosion and sediment control measures are sufficient to mitigate this risk.

The disturbed land around Area H and the new culvert and realigned stream will be stabilised before the flow through Culvert 3 is cut off and diverted to the new channel and culvert.

Following completion of works, the stream banks will be stabilised by implementation of the PMP for the lower slopes, and re-grassing upper slopes.

Earthworks will be undertaken within the northern boundary of the AgResearch site to relocate waste in Area A1 so that the landfill is wholly located within Section 1 SO 44852, as well as works related to Culvert 3 and raising of the existing farm crossing embankment. Given the works will remove the portion of the landfill that is currently located on the adjoining land, and will reduce the extent of upstream flooding and risk of refuse washout, the overall effect on the adjoining AgResearch site will be positive. Written approval has been obtained from AgResearch for the proposed works and is attached in **Appendix J**.

Overall, the adverse effects from earthworks and construction activities will be less than minor.

6.3 Effects on human health

6.3.1 Temporary Effects

The IIR (**Appendix C**) examined the existing disposal sites, determined their horizontal and vertical extents, and also identified the nature and estimated depth and volume of the deposited fill materials. Based on this, there is a risk of direct contact or ingestion of the contaminated fill materials by workers and potential inhalation of asbestos fibres, as well as

medical waste/sharps during the construction phase. These effects will be limited to workers on site, as the site is not accessible to the general public.

Landfill gas was not detected during the intrusive investigation. Based on the nature of the landfill, LFG risk is considered low, and no action is required to mitigate or manage LFG.

Effects on persons during landfill repair and upgrade works will be mitigated through all workers following a CMP. The CMP will be prepared prior to the commencement of any works on site and is proffered as a condition of consent. The CMP will include an Asbestos Removal Control Plan as some of the proposed works will include disturbance and transportation of materials containing asbestos, particularly works around Area H.

The CMP will also detail handling of contaminated materials, potential and actual contamination issues, and any associated validation sampling requirements.

Works disturbing contaminated land will be undertaken by suitably qualified and experienced contractors and observed by a Suitably Qualified and Experienced Contaminated Land Practitioner.

Landfill material will be completed removed in Areas H, part of A2, and part of A1 on AgResearch land. These areas will require site validation testing of the natural ground following completion of works to ensure compliance with site specific rural residential standards.

Site validation testing will also be undertaken for the landfill cap and topsoil material to ensure compliance with the site specific rural residential standards. This can be achieved in advance using existing data for on-site materials and cleanfill verification material for imported materials, supplemented by additional verification testing as required. Validation sampling may also be undertaken of the cap and topsoil, following placement, if necessary.

The above site validation requirements are proffered as conditions of consent.

Proof will also need to be provided that all medical waste in Area F has been disposed of off-site to a Class 1 landfill. The medical waste is located in well defined and contained “offal pits” (cylindrical holes). This proof would include SQEP visual observation, photographs, landfill dockets and possibly validation sampling of the adjacent soil. This is proffered as a condition of consent.

6.3.2 Permanent Effects

Ultimately, the upgraded capping (which will consist of cleanfill material) will ensure that contaminated material within the landfill is appropriately contained to reduce the likelihood of any ongoing adverse effects on human health. A condition of consent is proffered requiring any cleanfill imported to the site to meet appropriate standards.

An AMP will be in place following works to provide for ongoing monitoring of the landfill. A draft AMP is appended in **Appendix Q** and a final AMP will be provided to WRC as a condition of consent. The AMP will set out any ongoing monitoring requirements, including surface and groundwater monitoring, reporting requirements, contingency measures, and ongoing maintenance of the landfill cap.

The general capping works will reduce rainfall infiltration into the landfill and therefore reduce subsequent leaching of contaminants into the stream, which is a positive effect.

Overall, the adverse effects on human health will be less than minor.

6.4 Effects on water quality

6.4.1 Permanent / long term effects

Water quality will improve as a result of the removal and transfer of waste material from disposal Area H/A2 to Area A1/B, realignment of Wharekōrino Stream, and installation of a toe bund between the landfill area and the stream. Once the refuse has been transferred from Area H, a compacted toe bund will be installed between Areas A2 and H. Stockpiled landfill material will be placed in the void between the toe bund and refuse as necessary. A low permeability cap will then be placed over the material followed by topsoil. This will reduce the likelihood of inundation and subsequent leaching of contaminants into the stream from disposal area A2.

The general capping upgrade works to the existing disposal areas will also reduce rainfall infiltration into the landfill and therefore reduce subsequent leaching of contaminants into the stream. Although there will continue to be a discharge of leachate, given that the landfill cells are unlined, this will be reduced due to the improved capping and reduced permeability.

The construction of a groundwater cut off drain along the edge of Area A1 will result in groundwater flowing around this part of the landfill, rather than through. This will likely result in less contaminants from the landfill areas entering the stream, improving water quality.

Although the landfill is classified as ‘end of life’ and demonstrates typical characteristics of a later stage landfill (including low concentrations of leachate in groundwater, pH being approximately neutral, no landfill gas detected, and the majority of landfill settlement having already occurred), there is an ongoing risk of boron leaching, although this risk will likely be reduced following the proposed landfill upgrades. As described in Section 3.0, there is a significant boron reservoir as a result of coal ash deposition in the landfill. Boron is soluble and likely to leach out slowly over a long period, resulting in elevated boron levels in the groundwater and stormwater. This is still occurring as of sampling taken in 2024. The ‘endpoint’ for the potential adverse environmental effects for boron is yet to be reached and therefore monitoring of groundwater and surface water is still required. As such, ongoing monitoring will be required and is proffered as conditions of consent (**Appendix P**).

However, it is noted that there will be a reduction in leachate generation and subsequent groundwater contamination as a result of both the improved capping, reduced rainwater infiltration, and diversion of upgradient groundwater around Area A1 so that it no longer passes through the landfill area.

Surface water sampling and groundwater sampling has been undertaken twice annually as required by conditions of resource consent 102269 related to the discharge of leachate. Prior to the proposed remediation and upgrade works, sampling indicated that the water quality test parameters should be reviewed as some parameters have consistently not been detected for many sampling rounds (i.e. mercury, PAHs). As such, ongoing bi-annual monitoring of surface water and groundwater is proposed to continue as per the previous consent (102269) authorising the discharge of leachate from the landfills, with minor modifications to the monitoring parameters as follows:

(a) Removal of mercury and PAHs from the monitoring suite, as concentrations of these parameters have not been detected in any samples collected twice yearly over the period from 2016-2024.
(b) Deletion of sampling point S4, as only PAHs were required to be monitored here and they are being deleted as per item (a).
(c) Revised groundwater sampling locations, as a result of the repair and upgrade works.

The final AMP (draft provided in **Appendix Q**) will contain all surface and groundwater monitoring requirements.

Overall, the proposal will result in positive effects for water quality once the landfill is repaired and upgraded.

6.4.2 Temporary effects

There is the potential for washout during removal of waste material in Area A2 and H, and during works to realign Wharekōrino Stream and install the new culvert. To mitigate this risk, appropriate erosion and sediment control measures (in accordance with WRC 'Erosion & Sediment Control Guidelines for Soil Disturbing Activities TR2009/02) will be implemented for all instream works. Stream works will also be undertaken during a summer low-flow period to further reduce the risk of washout. It is therefore unlikely that sedimentation will impact the habitat or water quality of the Wharekōrino Stream.

Dirty water and clean water diversion channels will also be in place for the duration of works to prevent sediment laden and potentially contaminated water entering surface and groundwater. The relatively flat stream bed gradient through the works area means the stream is a low energy environment, making installation and maintenance of the diversions and erosion and sediment control measures easier.

During the refuse transfer works, localised earthen bunds or filter socks will be placed around exposed refuse areas to trap any gross solids or debris that may get washed off. Runoff from the works area that comes into contact with refuse will be tested and either treated prior to discharge or tinkered off-site for disposal.

Pūniu River Care has an irrigation surface water take from the Wharekōrino Stream which has an intake structure with a mesh size of 1.9mm. The contractor will liaise with Pūniu River Care during the works over any increased blockage frequency of the intake screen and assist with cleaning it, if caused by the landfill works.

Depending on the depth of groundwater within Area A2, dewatering may be required. Any ponded water will be pumped from the excavation area into a portable system for treatment (or similar) followed by appropriate disposal (either to an adjacent grass area or taken via sucker truck for further treatment and disposal).

Overall, the adverse effects on water quality will be less than minor provided mitigation measures are in place during works, and monitoring continues to be undertaken of surface and groundwater following completion of works.

6.5 Effects on hydrology and flooding

6.5.1 Permanent effects

FTL undertook initial flood modelling of Wharekōrino Stream to assess the existing flood risk to the landfill area; this work was reported on in an initial flood modelling memo dated 17 July 2023. The assessment found that disposal areas A, B, C, G and H are likely to be inundated during a 1% AEP event, particularly if the culverts are blocked or become blocked. This would result in increased infiltration into the landfill and potentially increase the leaching of contaminants from the landfill area. In particular, disposal areas A2 and H, west of the stream, are likely to be eroded by flood waters.

Local scale flood modelling for the Wharekōrino Stream has been completed to assess the combined effects of removing Culvert 2 (part of the Remediation Application) and altering

Culvert 3 on the extent and velocity of flooding upstream and downstream of the Site (see Flood Risk & Mitigation Assessment Report in **Appendix I**).

The 1% Annual Exceedance Probability (AEP) storm event with climate change was used for the modelling. As preliminary flood modelling showed that the removal of Culvert 2 caused significant increases in peak flows and flood levels downstream, multiple mitigation scenarios were run to test different options to mitigate these offsite effects. The scenarios identified for further in depth consideration were 'Scenario 9', involving a shorter Culvert 3 further upstream and raising the associated embankment for a farm track crossing, and 'Scenario 14', involving the above works as well as upgrading Culvert 1 under Te Mawhai Road with an additional 2.5m diameter culvert.

The site-specific modelling predicted that Scenario 9 would result in the following effects in the 1% AEP event:

- Minor (5%) reduction in upstream flooded area extent on neighbouring land, representing an improvement on the existing situation. This includes a significant reduction in flood extent at the existing landfill.
- Increased peak flows and water levels at Te Mawhai Rd compared with the existing situation. The duration of flow across the road is predicted to be 14.3 hours, compared to 15.7 hours for the existing situation. The flood hazard is increased to H5 (unsafe for vehicles, people and buildings) from H3 (unsafe for vehicles, children and the elderly) in the existing situation.
- Increase in peak flows and water levels downstream of Te Mawhai Road, with no impact on the Marae.

Scenario 14 (an additional culvert under Te Mawhai Road) was predicted to have better results at Te Mawhai Road, reducing water levels and duration of flow across the road in the 1% AEP event. However, the site-specific modelling did not take into account potential tailwater effects from the Pūniu and Waipā Rivers. The flood model was extended downstream and tailwater sensitivity testing was undertaken in order to understand these likely effects. This showed that two culverts under Te Mawhai Road would in fact have no measurable additional flood mitigation benefit over a single culvert in the 1% AEP storm event.

In respect of the Wastewater Pumping Station (WWPS) located adjacent to the Wharekōrino Stream, this is predicted to be flooded under 520mm depth of water in the existing situation (1% AEP event). None of the scenarios modelled are able to stop it from being flooded. The best outcome is Scenario 14 which reduces the flood level at the pump station location to 33.25m RL (320mm flood depth).

Further modelling was then undertaken of more frequent storm events (50%, 20% and 5% AEP storms with climate change) for the existing situation and Scenario 9 to understand effects on Te Mawhai Road. This found that:

- 50% AEP storm – no flooding occurs of Te Mawhai Rd or the WWPS for the existing situation and Scenario 9.
- 20% AEP storm – no flooding of Te Mawhai Rd or the WWPS occurs for the existing situation. Some flooding of Te Mawhai Rd and WWPS will occur for Scenario 9. The WWPS will be under 170mm of water and the flood depth across Te Mawhai Rd will be 200mm and velocity 0.29m/s – this corresponds to flood hazard category H1 (generally safe for people, vehicles and buildings).
- 5% AEP storm – flooding of the WWPS occurs for all scenarios. For Scenario 9, the flood depth at the WWPS will decrease from 470mm to 460mm, while the flood depth

across Te Mawhai Rd will decrease from 500 to 490mm. The flood hazard will remain the same at H2 (unsafe for small vehicles).

The modelling results show that Option 9 will have a minor effect on Te Mawhai Road in more frequent storms, causing slightly more “nuisance” flooding but no significant increased adverse effects in terms of flood hazard compared with the existing situation.

The Flood Risk & Mitigation Assessment Report also sets out that emergency access/egress is maintained for all residents living either side of Te Mawhai Road in the 1% AEP storm event. Velocities in all scenarios are within permissible velocities to control stream erosion, therefore stream erosion is unlikely to be an issue.

On the basis of the above, Scenario 9 is considered to be the best practicable option, as it has no significant increased adverse effects for more regular storms (50%-5% AEP events), and its effects on the flood hazard across Te Mawhai Road in the 1% AEP event would be unlikely to be of significance in light of the tailwater effects that are expected in such an event. The selection of the best practicable option also takes into account that the constructability and affordability of Scenario 14 is questionable, for reasons set out in the Flood Risk & Mitigation Assessment Report.

The above assessment relates primarily to the flooding effects of removing Culvert 2, which is not part of this application, however it is provided for overall context as the Culvert 3 works proposed as part of this application form a part of Scenario 9. In relation to this specific application, the following is noted:

- The new landfill toe bund embankment will ensure that the existing landfill material within Areas A2/A1 is protected and not exposed during flood events following completion of the upgrade and repair works.
- None of the other earthworks within proximity to waterbodies are expected to result in any impediment to the passage of flood flows. For completeness, it is also noted in in section 6.2.1, that there will be no permanent effects on hydrology from the remainder of the earthworks where the ground is to be reinstated to existing levels following the works.
- The new culvert in the realigned portion of Wharekōrino Stream will not comply with Regulation 70(2)(d) of the NES-F which requires, based on an average streambed width of 2.2m at this location, a culvert width of 2.9m. The proposed culvert width (1.35m) is based on the existing Culvert 3 width (also 1.35m), and relies on there being some detention of flows upstream of Culvert 3. If a larger culvert was used, this would adversely affect downstream flooding at Te Mawhai Road.

Permanent hydrological and flooding effects resulting from the proposal are assessed to be less than minor.

6.5.2 Temporary effects

The proposed methodology for closing off Culvert 3, installing a new culvert, and realigning Wharekōrino Stream through Area H once excavated, has been set out in section 4.4.

Works will all take place in low flow conditions with erosion control measures in place, in order to mitigate the potential for flood waters to wash out silt and sediment downstream during a storm event.

There will be no need to divert the stream during works as the flow through Culvert 3 will be maintained ‘live’ until the new culvert is in place. Once the new culvert and stream are established, the flow will be redirected and Culvert 3 filled. The new landfill embankment (toe bund) and new stream channel will be constructed in advance of the new culvert being

installed. These measures will mitigate the potential for flood waters washing silt/sediment down the stream during a storm, while the new landfill toe bund embankment will protect the existing landfilled material from being exposed to flooding.

If dewatering is required within Area A2, extracted water will likely require treatment and may not go back into nearby groundwater for recharge. However, given any dewatering is likely to be of small volumes, the adverse effects of this on wider hydrology of the site will be less than minor.

Overall, the adverse effects on hydrological functions and flooding will be less than minor.

6.6 Effects on ecological values

An EcIA by SLR Consulting is provided in **Appendix G**.

6.6.1 Effects on terrestrial ecology

There is potential for some disturbance of avifauna during works, however, this will be temporary. The surrounding landscape provides similar habitat for avifauna to utilise if temporary displacement occurs due to disturbance from works. The works have been assessed to have a Very Low level of effect on avifauna.

It is highly unlikely that native lizards are present within the site. The works will, therefore, not impact native lizard species. As such, the effects on herpetofauna are assessed as Very low.

The removal of large exotic trees on site has the potential to impact long-tailed bats as the species may be roosting in them so there is increased risk of injury and/or mortality. As noted earlier, most tree removal on the Site is a permitted activity, however there are applicable requirements under the Wildlife Act 1953 that will be followed. Bat management protocols will be implemented in accordance with a Bat Management Plan (BMP) (proffered as a condition of consent) to ensure adverse effects on bats are minimised as much as possible. This will result in an overall Low level of effect on long-tailed bats.

Vegetation around the landfill works area will be stripped, however, this primarily consists of grass (pasture). The proposed works will result in the removal of riparian vegetation directly upstream and downstream of Culvert 3 (approximately 2,200m^2), however, the vegetation is predominantly exotic and planting of native vegetation will be undertaken after works are completed. Vegetation removal will be restricted to as few areas as possible, with the majority of the vegetation on site being retained.

A Planting and Maintenance Plan (PMP) has been prepared by SLR and attached as part of the EcIA in **Appendix G**. This relates to the planting and management efforts required to ensure successful establishment of riparian vegetation following works to realign Wharekōrino Stream and close off Culvert 3, and remove and transfer material from disposal Area H. The area of vegetation removal is small and with post-works native planting it is expected that a contiguous native canopy will fully form after 3-5 years. The PMP includes specific provisions for the toe bund which can only be planted with shallow rooting plants so as to avoid undermining the integrity of the toe bund. Following the completion of works, the PMP will also require any areas to be used for grazing to be fenced off from newly planted areas.

As the proposed vegetation removal is minimal and the area will be revegetated, there will be a minor deviation from baseline conditions. Therefore, the adverse effect on all terrestrial vegetation is less than minor.

6.6.2 Effects on freshwater ecology

The EcIA identifies Wharekōrino Stream as having High ecological values and meets the WRC criteria for significant indigenous biodiversity. Works around Area A2/H and to install the new culvert and stream channel have the greatest risk of adversely affecting ecological values of Wharekōrino Stream.

Appropriate erosion and sediment control measures will be implemented for all instream works. It is therefore unlikely that sedimentation will impact the habitat or water quality of the Wharekōrino Stream.

Fish relocation from Wharekōrino Stream will be necessary for the replacement of Culvert 3 and removal and transfer of material from Disposal Areas A2 and H. A Fish Management Plan (FMP) has been prepared by SLR and is attached in **Appendix G**. The relocation requirements will depend on site conditions and will be determined by the Ecologist undertaking the relocation works. Native species will be captured and transferred to containers with water from Wharekōrino Stream and ultimately released into the same catchment. An appropriate release site will be determined by the Ecologist based on site conditions.

The realignment of the stream, closure of Culvert 3, and installation of the new culvert will not change the stream invert levels. This, combined with the flat nature of the stream (an estimated gradient of 0.11% between Culverts 1 and 3) means that no changes to stream flows are expected that could affect aquatic life. The new stream channel will be constructed to some meanders and designed to include fish habitat (i.e., planted with natives and with rocks/logs located throughout). A condition of consent is proposed requiring the final design to be reviewed by an ecologist. The water depth within the new stream section is expected to be similar to the culvert (i.e., 1.2-1.4m).

The proposed works will ultimately result in a loss of 28m of stream which will be replaced with the constructed channel, which could impact stream hydrology as flows through this section will reduce to overland flow. This will change the hydrology, however, the overall flow through Wharekōrino Stream will be maintained through the new channel. The construction of a new channel represents an opportunity to create new stream habitat with features (i.e., varied substrates and flow regimes) that will support a diversity of instream fauna. Although 28m of stream extent will be lost, an additional 47m of freshwater habitat will be gained, resulting in an overall net gain and positive ecological effects.

The installation of a shorter culvert that will replace Culvert 3 will improve fish passage for swimming and climbing fish species. In addition, flow velocity through these culverts will not increase in comparison to current flow velocities through the existing structures. Therefore, these works result in a positive magnitude of effect for native fish, achieving an overall Net gain level of effect for ecological values.

Provided the FMP and the ESCP are in place for the duration of works, the effect on freshwater ecology is overall positive.

6.6.3 Effects on wetland

Wetland 1 is located approximately 100m north (downstream) of the nearest landfill disposal area (Area D). No physical works are proposed within Wetland 1 as part of the landfill upgrade works. Given the flat gradient of the stream, the installation of a new culvert and closing off of Culvert 3 can be done without changing stream invert levels, meaning that no changes to stream flows are expected.

The EcIA has confirmed that replacement of Culvert 3, along with removal of Culvert 2, will not have an impact on water levels throughout the stream or Wetland 1 during normal conditions and normal rainfall events. This is because the gradient of the stream is flat within

the site boundaries. Appropriate erosion and sediment control measures will be in place for the duration of works. Any areas with vegetation impacted by the works will be planted with native species identified as appropriate. Overall, adverse effects on Wetland 1 will be less than minor.

6.7 Effects on the transport network

Primary access to the Site is via the main access gate on Te Mawhai Road (locked and monitored by security) which forms the northern boundary of the Site and is a local road. Farm Road, a private road, comes off Te Mawhai Road and runs along the eastern boundary of the Site. It provides some access to the eastern side of the Site as well as the neighbouring AgResearch site and residential village.

In relation to the Landfill Upgrade works, traffic movements will be largely internal to the site and make use of existing internal roads, i.e.:

- the transfer of contaminated soil from the Hospital to Areas E, and F, and the transfer of backfill material from Area E, and F to the hospital, via the internal Culvert 2 em-bankment road, avoiding any traffic movements on public roads.
- The transfer of refuse material from Area H and A2 to Area A1 and B via the internal existing farm track or else directly across the landfill areas themselves.

External traffic on public roads will involve the removal of small amounts of medical waste from Area F, small amounts of unsuitable materials, both to a Class 1 landfill, and the import of any additional fill materials required (clay for toe bund construction, imported capping soil and topsoil). Impacts on the surrounding roading network are therefore expected to be less than minor.

As outlined in section 4.6.3, the granting the **Landfill Upgrade Application** will ultimately reduce traffic generation arising from works authorised by the **Remediation Application**, as most traffic movements would then be internal to the site, with material being moved between the hospital site and the landfill area. This finding is supported by the Integrated Transportation Assessment Report prepared by CKL (**Appendix N**).

Overall, the adverse effects on the transport network will be less than minor.

6.8 Effects on cultural values

The full CIA is attached in **Appendix K**. Although the CIA was prepared primarily for the Remediation Application it includes useful information for assessing the adverse effects of the Landfill Upgrade application on cultural values. Section 6 of the CIA describes the key concerns of tangata whenua in relation to the proposed demolition and remediation and includes a cultural and historic narrative of the whenua provided as context for the cultural impacts.

The types of cultural effects identified with regard to the remediation of the site include:

- effects on waahi tapu, sites of cultural significance and the wider cultural landscape;
- changes to natural environment and landscapes, including view shafts to sites of cultural significance, temporary alteration of natural contours, loss of indigenous vegetation;
- effects on mauri and water quality of Wharekōrino and Pūniu awa and taonga species;
- effects on indigenous flora, fauna and mahinga kai;

- effects on mauri of air and air quality;
- effects on tangata whenua's relationship with Papatūānuku.

Key cultural impacts and risks to tangata whenua were summarised in Table 5 of the CIA, copied as Figure 22 below. Many of these overlap with other categories of effects discussed in this AEE.

	IMPACTS	RISKS
WHENUA	Waahi Tapu Waahi Taonga Archaeology Natural heritage	Earthworks disrupt waahi tapu. Hazardous waste materials Changes to the landscape Ground disturbance impacts cultural sites of significance and destroy taonga
TE TAIAO	Ecology Bio-diversity Air quality	Pollution to waterways Dust effects bad for environment and people Destruction of wetlands Damage to ecology and bio-diversity Air pollution Loss of natural habitats (native flora and fauna) Noise pollution (traffic from construction activities)
WAAHI TAPU	Taonga and Artifacts Urupā Sites of historical significance	Disruption of culturally significant sites. Lack of protocols to deal with accidental archaeological discoveries Ground disturbance. Disturbance of koiwi tangata (human remains)
WAI	Water/Waterways Wetlands	Loss of freshwater habitats Pollutants entering water system
TANGATA	Kaitiakitanga Mana Motuhake Wairua Tino Rangatiratanga Manaakitanga Whanaungatanga Treaty Settlements	No partnership relationship agreements give Tangata Whenua no authority to make decisions No consultation or engagement with Tangata Whenua disregards tikanga and treaty obligations to engage with Tangata Whenua Lack of consideration to kaitiaki and cultural obligations Wrong people are consulted

Figure 22: Cultural Impacts table from CIA

The CIA also notes a potential positive effect, being that should the site be returned to a state that is safe for future generations to live on, Tangata Whenua are excited to think about future opportunities for the land.

Recommendations to mitigate potential risks are set out in section 8 of the CIA. These are summarised in Table 8 below along with comments in response.

Table 8: CIA Recommendations and Comments

Recommendation	Comments
Tangata Whenua rights to protect their taonga are guaranteed as stated under Article 2 of the Treaty of Waitangi.	The proposed work incorporates procedures that are intended to enable Tangata Whenua to protect their taonga.

Recommendation	Comments
Consent condition to provide Tangata Whenua with 6 monthly ground and surface water quality reports.	Consent is sought for ongoing discharges related to the landfill. Conditions are proffered for ongoing monitoring of ground and surface water quality on a bi-annual basis.
Tangata Whenua to be involved in the development of a Remedial Action Plan for minimizing and mitigating risks arising from leachate.	This recommendation relates directly to the Remediation Application however is relevant to this proposal because the Landfill works are now linked to the remediation of the hospital. The draft Remedial Options Report has been discussed at three hui. A fact sheet and copy of the presentation was then circulated to the distribution list of attendees (refer to iwi consultation records in **Appendix J**. Following engagement, the ROR was finalised and the Remedial Action Plan to implement the preferred remediation option was subsequently prepared, and was informed by cultural considerations. The ROR and RAP will be published on the LINZ website with other supporting reports following lodgement of this application.
Protect waipuna/freshwater springs that may be discovered during remediation by employing appropriate measures to be considered in conjunction with Tangata Whenua.	No springs have been identified to date within the landfill site. The procedure for discovery of springs is addressed in the **Remediation Application.**
Continue to monitor excess nitrate levels to mitigate risk of water logging on pastures.	Grazing access for farming activities will be temporarily reduced during the works and may then resume on a temporary basis. Nitrate is monitored in the stream and groundwater as part of landfill monitoring and shows no impact on the stream from nitrate in groundwater passing through/under the landfill to the stream. The works will not change any ground topography that would cause any increase or decrease in water logging.
Prior to works commencing in the project area, Tangata Whenua shall identify those trees that will remain standing and those which will may be felled if required. Protocols be established for the removal of any Tupuna trees and Rakau mauri.	Ecologists have not identified large native trees within the Culvert 3 area. None of the vegetation to be cleared to enable the upgrade and repair works are understood to be significant for seed gathering. In the event that additional significant trees are identified by Tangata Whenua, LINZ will establish required protocols with the Cultural Monitor.
Regard be given to the specific provisions in the Heritage New Zealand Pouhere Taonga Act (2014) and the Protected Objects Act (2006) to protect waahi tapu, significant cultural sites and taonga.	LINZ has had regard to the NZHPT Act and Protected Objects Act. An archaeological authority was received as part of initial investigations to inform this consent application with cultural monitoring and archaeological management of the works. A second

Recommendation	Comments
	archaeological authority is being sought under the HNZPT Act and works will be undertaken in accordance with its conditions.
A robust Accidental Discovery Protocol (ADP) be developed and adopted for the duration of construction work. The ADP must be well understood by all stakeholders.	The Archaeological Authority to be obtained for the work will establish appropriate protocols to be followed by the contractor for any discoveries. A condition of consent is also anticipated. These protocols were implemented as part of initial investigations as a pilot trial for the main works.
Site management protocols be developed to ensure a precautionary approach to site works to manage the potential for waahi tapu and taonga tuku iho discovery.	The landfill area (natural ground) has been identified as requiring particular caution and archaeological and cultural monitoring of works. All contractors will be briefed on what to do in the event of a discovery from both a cultural and archaeological perspective as part of site induction and HNZPT requirements.
The adverse effects of resource use and activity operations are managed so as to appropriately protect areas and sites of significance.	The ground will be restored following the works. Measures will be in place for the protection of areas and sites of significance.
That LINZ work in good faith with Tangata Whenua and escalate the relationship to a formal partnership reflecting Te Tiriti o Waitangi principles as part of project preplanning phase, and to ensure Tangata Whenua are actively involved in key project planning, contracting and cultural monitoring roles and decision processes.	LINZ worked closely with Tangata Whenua in project planning and decision processes, and intends to engage Tangata Whenua in cultural monitoring roles for the works (see recommended conditions of consent in section 8.4 and **Appendix P**).
Include Tangata Whenua in the implementation of the recommendations outlined in this report.	Where possible, recommendations from the CIA were implemented during initial investigations. It is intended that Tangata Whenua be involved in the implementation of the CIA recommendations, as outlined in this table.
Cultural Monitors/Kaitiaki be appointed for the project to manage and monitor cultural safety protocols.	LINZ agrees to appoint cultural monitors to manage and monitor cultural safety protocols (see recommended conditions of consent in section 8.4). It is common that HNZPT will legally require tikanga protocols to be allowed for.

Having a CIA prepared earlier in the process has enabled the identified cultural effects to be considered upfront during project design. LINZ has also continued consultation, provided additional feedback opportunities for mana whenua and endeavoured to respond to cultural concerns throughout the project design phase. However, given the importance of the site to iwi and hapū and the number of interested iwi parties, LINZ requests that this application is limited notified to iwi and hapū to ensure that they have the opportunity to identify any additional cultural effects that are not already recorded in the CIA, and/or are not accounted for by the proffered consent conditions in response to the CIA recommendations.

6.9 Effects on heritage and archaeological values

The Archaeological Assessment by CFG Heritage in **Appendix H** contains a full assessment of the existing closed landfills and existing archaeological values present. This assessment identified three areas on the Site where archaeological monitoring is recommended during the works, one of which encompasses the location of the landfill upgrade proposal. The activities described as part of this proposal therefore require authority from Heritage New Zealand Pouhere Taonga, which will be sought, and this is reflected in the proffered conditions of consent in **Appendix P**.

Works will be undertaken in accordance with any requirements of an approved Archaeological Authority from HNZPT. It is anticipated that these requirements will include protocols for discovery of pre-European Māori land use, and it is expected mana whenua will provide recommendations on the cultural management of the works.

With any mitigation in place as recommended by HNZPT and mana whenua, it is considered that effects on archaeological values will be less than minor.

6.10 Effects on amenity and rural character

6.10.1 Air quality

Existing resource consent 102271 authorises the discharge of contaminants to air from the closed landfill and enforces two conditions. These conditions relate to ensuring odour does not cause an objectionable effect beyond the boundary of the landfill site, and if odour emissions do cause an objectionable effect, then a written report must be provided to WRC specifying the cause of the odour, the measures taken to avoid, remedy, or mitigate the odour, and steps taken to avoid future recurrence.

As part of the proposal, resource consent 102271 will be surrendered. No replacement air discharge consent is assessed as being required under the WRP rules. No particular odour discharge is expected from the landfill works. However, the above conditions have been proffered as conditions of consent.

Any dust emissions generated by the proposed construction-phase works will be appropriately managed by measures in the ESCP (refer to section 6.2).

Overall, the adverse effects of odour will be less than minor.

6.10.2 Noise

An Acoustic Assessment for the landfill upgrade and repair works is attached in **Appendix M**. The acoustic assessment finds that the most significant noise levels would be produced by operation of large machinery during works.

The nearest sensitive receptor is the dwelling at 23 Farm Road located approximately 50m from the works area of Area A1/A2 and H. Written approval has been obtained from this landowner (AgResearch) and therefore adverse noise effects on them must be disregarded. Two other sensitive receptors are identified at 100-120m away from the landfill works area.

At a setback distance of 25m to 45m from the works location, noise generation from other machinery (including excavators up to 30 tonnes, vibratory and non-vibratory compaction and chainsaws) is expected to comply with NZS 6803:1999, without any acoustic mitigation measures, between normal construction hours of 7.30am to 6pm Monday to Saturday.

The acoustic assessment notes that compliance with the NZS6803:1999 noise requirement at the closest receivers can be achieved by controlling the size of compactor used in Areas D, E and F.

As no additional mitigation measures are required to ensure compliance with NZS6803:1999, a standard condition is proposed in **Appendix P** requiring compliance with NZS6803:1999 to be achieved.

Overall, the adverse effects of noise will be less than minor.

6.10.3 Visual amenity & rural character

General site management will be required to manage any visual effects arising during the construction period. These measures are set out in the RUWR (**Appendix B**) and include:

- Stockpiling to occur in specified areas and any temporary stockpiling of soil for more than one month to be mulched or seeded.
- Mulching or revegetation of exposed areas to occur as soon as practicable.

There will be some isolated minor changes to ground contours primarily at Areas A1, A2, H, E and F. Area A1 will increase by up to 1.5m in height above existing ground level to accommodate waste material transferred from Areas A2, H, and the portion of landfill on the adjoining property. Areas A2 and H will be lower than existing ground levels once waste is removed but will be recontoured to merge with surrounding landforms and reinstate Wharekōrino Stream.

Areas E and F will increase by up to 1.5m above existing ground level to accommodate low and moderate level contaminated soil from the hospital remediation works.

The visibility of these areas will be limited to within the site itself and the adjoining property (23 Farm Road) owned by AgResearch Limited whose written approval is included with this application.

The visibility, and therefore any visual effects arising as a result of the proposal, is further limited by the large size of the site, the extent of vegetation to remain, the location of the bulk of works some distance from public viewpoints and the natural topography of the site. These factors mean that most works will not be visible from public places.

In addition, the above measures will ensure that any works, including those that are closer to public viewpoints and therefore visible, in part or in whole, are appropriately managed to ensure the site is maintained in a tidy state and any adverse visual effects are less than minor in nature.

Following completion of landfill upgrade and repair works, the site will still have the appearance of a rural site, maintained predominantly in pasture and vegetation. Therefore, although landfilling is not an anticipated activity within the Rural Zone, the site will continue to be rural in appearance and can be used for rural productive purposes (i.e., grazing) following works. In this way, the activity will have a less than minor adverse effect on rural character of the site and surrounding area.

Overall, the adverse effects on visual amenity will be less than minor.

6.11 Effects on soil quality and productivity

The IIR (**Appendix C**) notes that some of the existing topsoil and landfill capping material has minor contamination:

Topsoil testing found that topsoil quality is at or below background levels in Area E. It is within adopted NESCS guidelines in Areas B, D, F and G and 20- 83% of Area A, C & H samples. It exceeds the NESCS rural residential standards in 9.5% of Area A samples, 20% of Area H samples, and exceeds both the NESCS rural residential and commercial/industrial guidelines in 50% of Area C (due to asbestos contamination). Hence, topsoil quality poses a human health risk in relation to asbestos in parts of Areas A, C, & H (section 10.1).

As part of the proposed upgrade and repair works, topsoil will be stripped from the landfill area. Where excavated soil is not contaminated, it will be used for backfilling the excavations, thereby retaining high quality soils onsite.

Cleanfill will be imported for capping and topsoil material. This means topsoil contamination will be reduced as it will be replaced by cleanfill, making the land better suited for productive land use (i.e., grazing). Conditions are proposed to ensure any cleanfill imported to site meets regional council standards. Once the proposed upgrade and repair works have been completed, the paddock will likely be used for farming and grazing again.

Overall, the proposal is considered to have positive effects on soil quality and productivity.

6.12 Positive effects

The proposal will generate positive effects on the environment; many of these effects have been discussed in the above and are summarised in the following.

The proposal will result in overall improved management of the landfill. Removal of material from Areas A2 and H, as well as installation of a toe bund between A2 and Wharekōrino Stream, and the capping upgrades to all disposal areas will reduce the likelihood of inundation into the landfill areas and subsequent leaching into Wharekōrino stream.

Partial daylighting of Wharekōrino Stream as a result of installing a new culvert and closing off Culvert 3 will also have a positive effect on the water quality, ecology, and the overall amenity of Wharekōrino Stream. Daylighting will allow for improvement to fish passage, and better connection to an upstream section of the stream, whilst maintaining important flood detention functions. Most significantly, the proposal will eliminate the risk of Culvert 3 leaks or failure, which is currently the most significant long-term liability risk of the landfill.

There are also other discrete benefits included in the project such as improving water flow and fish passage through removing the road embankment crossing Wharekōrino Stream and Culvert 2, and the riparian enhancement planting in this location.

There will be a reduction in leachate generation and subsequent groundwater contamination as a result of both the improved capping, reduced rainwater infiltration, and diversion of upgradient groundwater so that it no longer passes through the landfill waste mass.

Riparian planting will also be undertaken comprising native species which will result in new native riparian areas within an area that is currently predominantly exotic in composition.

The proposal will also allow for low and moderate level contaminated soils from the hospital site to be disposed of within the existing landfill which will reduce the need for vehicle movements offsite (up to 15 truck and trailers per day will be diverted from travelling to an offsite landfill ~ over 100km away from the site). This will have positive effects in terms of reducing vehicle movements and subsequent emissions.

6.13 Conclusion

Overall, based on the preceding assessment, the effects of the proposed activity on the environment are considered to be less than minor and acceptable, with any additional cultural effects to be further ascertained through the notification process.

7.0 Statutory assessment

Section 104(1) of the Act requires that, when considering a resource consent application, the consent authority must have regard to the matters set out in subsections (1)(a), (ab), (b) and (c). These matters are addressed below, and all are subject to Part 2.

7.1 Section 104(1)(a) (Actual and potential effects)

Section 104(1)(a) requires the consent authority to have regard to "any actual and potential effects on the environment of allowing the activity".

As assessed in Section 6 of this report above, the proposed activity will have actual and potential effects on the environment that are less than minor and acceptable, with any additional cultural effects to be further ascertained through the notification process.

The project is also considered to provide for some very positive outcomes. Specifically, the completion of the proposed works will enable the landfill to be repaired and upgraded which will in turn improve water quality and ecological outcomes for the adjoining Wharekōrino Stream.

There are also other discrete benefits included in the project such as improving water flow and fish passage by installing a new culvert and realigning Wharekōrino Stream, and the riparian enhancement planting in this location.

The proposal will also allow for contaminated soils from the hospital site to be disposed of within the existing landfill which will reduce the need for vehicle movements offsite (up to 15 truck and trailers per day will be diverted from travelling to an offsite landfill). This will have positive effects in terms of reducing vehicle movements and subsequent emissions.

The landfill upgrade and repair project is also anticipated to have some flow on social and economic benefits for the local community. It is a substantial long-term project, and LINZ's criteria for appointing contractors include achieving broader outcomes such as local employment opportunities and upskilling.

7.2 Section 104(1)(ab) (Offsetting or compensation)

Section 104(1)(ab) requires the consent authority to consider "any measure proposed or agreed to by the applicant for the purpose of ensuring positive effects on the environment to offset or compensate for any adverse effects on the environment that will or may result from allowing the activity".

In this case, the proposed activity is not of a scale or nature that would require specific offsetting or environmental compensation measures to ensure positive effects on the environment.

7.3 Section 104(1)(b) (Statutory documents)

Section 104(1)(b) requires the consent authority to have regard to any relevant provisions of the following:

- a national environmental standard;

- other regulations;
- a national policy statement;
- a New Zealand coastal policy statement;
- a regional policy statement or proposed regional policy statement; and
- a plan or proposed plan.

An assessment of the relevant statutory documents that corresponds with the scale and significance of the effects that the proposed activity may have on the environment is provided below.

7.3.1 National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health

Under Regulation 10(3) of the NES-CS, discretion is restricted to the matters in Table 9 for the contaminated land disturbance. An assessment of these matters is provided below.

Table 9: NES-CS assessment

Matter of discretion	Assessment
(a) the adequacy of the detailed site investigation, including— (i) site sampling: (ii) laboratory analysis: (iii) risk assessment:	The Intrusive Investigation Report is appended (**Appendix C**) including site sampling, laboratory analysis, risk assessment. The investigation is comprehensive and adequate and has been prepared by a Suitably Qualified and Experienced Person.
(b) the suitability of the piece of land for the proposed activity, given the amount and kind of soil contamination:	The land will continue to be used as a landfill, with the exception of Area H which will be remediated (Wharekōrino Stream will be realigned through Area H).
(c) the approach to the remediation or ongoing management of the piece of land, including— (i) the remediation or management methods to address the risk posed by the contaminants to human health: (ii) the timing of the remediation: (iii) the standard of the remediation on completion: (iv) the mitigation methods to address the risk posed by the contaminants to human health: (v) the mitigation measures for the piece of land, including the frequency and location of monitoring of specified contaminants:	The approach to the remediation is set out in the RUWR and will be undertaken to a high standard with robust mitigation measures to address risk to human health.
(d) the adequacy of the site management plan or the site validation report or both, as applicable:	The RUWR sets out the proposed approach to site validation, which is considered to be suitable. Site Validation Testing will be provided following completion of works. An AMP will be in

Matter of discretion	Assessment
	place for ongoing management of the landfill.
(e) the transport, disposal, and tracking of soil and other materials taken away in the course of the activity:	Material will be transported between the landfill area and hospital site. Isolated medical waste from Area F will be removed and disposed of to a Class 1 landfill. Any material taken away will be documented.
(f) the requirement for and conditions of a financial bond:	No financial bond is required.
(g) the timing and nature of the review of the conditions in the resource consent:	Councils to impose review conditions as they see fit.
(h) the duration of the resource consent.	Physical works to upgrade the landfill will be undertaken within 7 years. Therefore, land use consent under the NES-CS is sought for a 7-year duration.

7.3.2 National Environmental Standards for Freshwater

The NES-F contains rules relating to activities which may affect freshwater. The proposal is a discretionary activity under Regulation 71 of the NES-F as a new culvert will be installed in Wharekōrino Stream.

Regulation 71 requires conditions to be imposed on any consent in accordance with Regulations 62, 63 and 69. These conditions relate to providing information about structures and passage of fish, and culverts, as well as monitoring and maintenance requirements. These required conditions are included in the set of proposed conditions appended in **Appendix P**.

Although a permitted activity under the NES-F, Regulation 66 also requires information to be provided to the Regional Council on any dams. The specified information does not appear to be particularly applicable to temporary dams. However, should WRC require such information about the temporary dams, a condition of consent can be imposed as appropriate.

7.3.3 National Policy Statement for Freshwater Management

The National Policy Statement on Freshwater Management 2020[6] (NPS-FM) sets out the objectives and policies for freshwater management under the RMA. An assessment against the objectives and policies of the NPS-FM is attached as **Appendix F**. In summary, the health and well-being of water bodies and freshwater ecosystems will be maintained during the project and although 28m of stream extent will be lost, an additional 47m of freshwater habitat will be gained, resulting in an overall net gain.

Overall, the proposal is considered to be consistent with the relevant objectives and policies of the NPS-FM.

[6] Incorporating various amendments that took effect from January 2023 and January 2024

7.3.4 National Policy Statement for Highly Productive Land

An assessment against the objectives and policies of the NPS-HPL is attached as **Appendix F**. The Waipā District Plan identifies the site as within the high-class soils overlay. Soils on site are classified as LUC 2 and 3, meaning the site meets the definition of Highly Productive Land under Clause 3.5(7) of the NPS-HPL. The NPS-HPL therefore applies to this application.

NPS-HPL Clause 3.9 applies to land use activities on highly productive land, and states that territorial authorities must avoid the inappropriate use or development of highly productive land that is not land-based primary production.

The proposed works meet the following subclause of the NPS-HPL, which indicates that the proposed land use activities are appropriate and do not need to be avoided:

- Clause 3.9(2)(g), as they are a temporary land use activity that has no impact on the productive capacity of the land.

Clause 3.9(2)(g) applies as the site is an existing landfill and the proposed works include upgrading and repairing the landfill. Works are limited to the area of the existing landfill and are small in scale. The duration of physical works is limited to the upgrade and repair works. The landfill will remain in place with a new compliant cap. Advice has been obtained from Soil and LUC Consultant, Dr Scott Fraser, that the proposed 60cm cap comprising good quality soil would restore this area as Highly Productive Land. Therefore, following completion of the works, the site will continue to be used for grazing and there will be no loss of productive capacity.

Under clause 3.9(3), there is no actual loss of highly productive land, and the area of the site available for land-based primary production will increase as a result of the works. There are no actual or potential reverse sensitivity effects on land-based primary production activities resulting from the proposal.

The proposal is also entirely consistent with the objective of the NPS-HPL, to protect highly productive land for use in land-based primary production, both now and for future generations.

7.3.5 National Policy Statement for Indigenous Biodiversity

The National Policy Statement for Indigenous Biodiversity (NPS-IB) came into force on 4 August 2024. Its objective is to maintain indigenous biodiversity across the country so that there is no overall loss. It contains policy direction for managing indigenous biodiversity in the terrestrial environment both within and outside of Significant Natural Areas (SNA).

As noted in section 3.1.5, Wetland 1 and the Wharekōrino Stream as freshwater habitats meet criteria for indigenous biodiversity significance under the WRPS. However, there are no SNA identified on the site in the WDP, nor is there any terrestrial indigenous biodiversity identified by the EcIA as meeting the SNA criteria in Appendix 1 of the NPS-IB.

Clause 3.16 of the NPS-IB states that for indigenous biodiversity outside SNAs, any significant adverse effects must be managed by applying the effects management hierarchy. There are no significant adverse effects identified in the EcIA. All other effects must be managed to give effect to the objective and policies of the NPS-IB. An assessment against the objective and policies of the NPS-IB is attached as **Appendix F**. In summary, the proposal is considered to give effect to these, as indigenous vegetation will be maintained and restored, and effects on long tailed bats will be mitigated through implementation of the BMP.

7.3.6 Waikato Regional Policy Statement

The WRPS (Te Tauākī Kaupapahere O Te Rohe O Waikato) provides an overview of the resource management issues in the Waikato region, and the ways in which integrated

management of the region's natural and physical resources will be achieved. An assessment against the objectives and policies of the WRPS is attached as **Appendix F**. In summary:

- The proposal will protect the life supporting capacity of soils and primary production potential of high class soils.
- Indigenous biodiversity will be maintained or enhanced.
- Freshwater quality, riparian areas, natural character and wetland values will be maintained or enhanced.
- Appropriate management of contaminated soil will protect people and the environment from risk.
- The proposal avoids the creation of new intolerable natural hazard risks and reduces the risk to the landfill from natural hazards in future.
- Historical and cultural values will be recognised and provided for.

Overall, the proposal is considered to be consistent with the relevant objectives and policies of the WRPS.

7.3.7 Waikato Regional Plan

An assessment against the objectives and policies of the WRP is attached as **Appendix F**. In summary:

- The proposal will permanently improve fish passage, while implementation of the FMP during damming and diversion will mitigate potential temporary effects on fish passage/mortality.
- The extent, natural character and water quality of the water bodies present on site will be protected and enhanced.
- The proposal will not affect the availability or flows of surface water.
- Although groundwater flows will be changed, this will ultimately improve groundwater quality by diverting groundwater away from refuse within the landfill.
- The implementation of erosion and sediment control measures will minimise any downstream effects of sediment runoff during earthworks.
- Existing soil contamination will be appropriately managed, and imported cleanfill for capping material l will not contain hazardous substances.

Overall, the proposal is considered to be consistent with the relevant objectives and policies of the WRP.

7.3.8 Waipā District Plan

An assessment against the objectives and policies of the WDP is attached as **Appendix F**. In summary:

- The proposal contributes towards upholding the principles of Te Tiriti o Waitangi.
- Rural character and amenity and productive soil resources will be maintained and ultimately enhanced as a result of the proposal.
- Adverse effects on aquatic and riparian ecosystems and the natural character of water bodies will be avoided or mitigated through erosion and sediment control measures and reinstatement of natural ground.

- Works near potential cultural and archaeological sites will be monitored to ensure that any sites discovered are appropriately managed.
- Appropriate measures will be in place for the duration of works to ensure that the risk to human health from disturbing, transporting and handling contaminated soil and hazardous substances is appropriately mitigated.

Overall, the proposal is considered to be consistent with the relevant objectives and policies of the WDP.

7.3.9 Conclusion

The above assessments demonstrate that the proposal is consistent with the relevant provisions of the relevant statutory documents, subject to fair and reasonable conditions being imposed as recommended in Section 8.4 of this report.

7.4 Section 104(1)(c) (Other matters)

In addition to the matters of regard covered under subsections (1)(a), (ab) and (b), subsection (1)(c) states that consideration must be given to "any other matters that the consent authority considers relevant and reasonably necessary to determine the application."

The Maniapoto Settlement Claims Act 2022 is a relevant other matter and has been discussed in Section 2.2 of this report. Iwi Management Plans and other legislation are also relevant to this application and are discussed below.

7.4.1 Iwi Management Plans

The CIA appended in Appendix K notes the following Iwi Management Plans as relevant to the proposed works:

- Ko Tā Maniapoto Mahere Taiao, Maniapoto Environmental Management Plan
- Raukawa Iwi Management Plan
- Waikato-Tainui Iwi Environmental Management Plan

These Iwi Environmental Management Plans (IEMPs) are important documents as they provide a mechanism for councils (in exercising their functions and powers) to consider Iwi cultural environmental values. The relevant objectives and policies of these iwi management plans as they relate to the proposed works are addressed in the following sections.

7.4.1.1 Ko Tā Maniapoto Mahere Taiao, Maniapoto Environmental Management Plan

Ko Tā Maniapoto Mahere Taiao is Maniapoto's second generation Environmental Management Plan (2018) prepared by the Maniapoto Māori Trust Board. Ngāti Ngutu, Ngāti Paia, and Ngāti Paretekawa (Tangata Whenua for the Tokanui site) are listed in the plan as hapū who are entitled to exercise kaitiakitanga within their section of Maniapoto. Sections B to E of the plan are deemed relevant in the CIA.

Sections B and C contain objectives and policies relating to engagement with Maniapoto and Protecting and Enhancing Cultural Capital. It is considered that through ongoing consultation with Maniapoto prior to lodgement of this application and through the limited notification process, these objectives and policies will be met.

Section D concerns Protecting and Enhancing the Natural Environment, and includes objectives and policies relating to the management of air, freshwater, wetlands, land, natural heritage and biodiversity, and natural hazards.

Those objectives and policies under Part 14 (Fresh Water) are considered particularly relevant to this application. These objectives and policies seek to recognise the Rangatiratanga and kaitiaki role of Maniapoto in management of freshwater resources, improving water quality and aquatic ecosystems, managing sedimentation, enhancing the physical characteristics of waterways, and monitoring activities which may affect waterbodies. In this case, it is considered that the proposal is consistent with these objectives and policies as the upgrade and repair works will ultimately result in enhancements of water quality and aquatic ecosystems in Wharekōrino Stream by reducing the risk of refuse washout into the stream, reducing rainfall infiltration into the landfills, and restoring and daylighting an increased portion of the stream. Ongoing surface and groundwater monitoring is also proposed.

Part 15 includes objectives and policies relating to wetlands and include enhancing the mauri of wetland areas and making sure adjacent land-use activities do not adversely affect wetlands. In this instance, the proposed works will ultimately improve water quality and therefore reduce the downstream impact on Wetland 1.

Part 18 includes objectives and policies related to inappropriate land use activities. Policy 18.3.1.2 is particularly relevant as it seeks to ensure contaminated land is managed effectively and contamination is mitigated, and land restored where possible. The proposed works will achieve this policy as the landfill will be upgraded to allow for better management of the contaminated material, and Area H will be restored.

Part 19 concerns natural heritage and biodiversity with objectives and policies seeking to maintain, enhance and restore indigenous biodiversity. Through restoration of part of Wharekōrino Stream and planting of the new riparian area, it is considered that indigenous biodiversity at the site can be enhanced.

Part 20 includes objectives and policies relating to natural hazards. As the proposal will reduce the risk of flood inundation of the landfill area and will not exacerbate the existing flood risk, the proposal is considered to be consistent with these objectives and policies.

Section E concerns Infrastructure and Industry and includes management of Solid and Hazardous Waste (Part 24.0) which is relevant to this application. The objectives and policies in this part seek to avoid the adverse effects of solid and hazardous waste disposal. Through upgrading and repairing the existing landfill, and ensuring an AMP is in place, it is considered that these objectives and policies will be met.

7.4.1.2 Raukawa Iwi Management Plan

The CIA notes that "*although Ngāti Raukawa do not have exclusive or predominant interests in the project area their environmental management plan includes several matters of relevance to Tangata Whenua and the project*". It states that "*the Raukawa Iwi Management Plan takes a holistic view towards best practice environmental management which includes three domains:*

- *Mana atua (spiritual),*
- *Mana whenua (physical/natural), and*
- *Mana tāngata (human).*

Tangata Whenua have strongly expressed the importance of these domains as the core foundations of their cultural beliefs. To give authenticity to their voices, in view of their status as indigenous people, it would be helpful for non-Māori State agency, Local Government

employees and Contractors to understand these beliefs, how they are intricately connected and how they can be incorporated into planning and decision making in order to meet statutory obligations."

The project team has attended a cultural induction and has worked with Tangata Whenua to incorporate cultural beliefs into the planning and decision making for this project.

7.4.1.3 Waikato-Tainui Environmental Plan, Tai Tumu, Tai Pari, Tai Ao

The CIA states that "*the relationship between Tangata Whenua and Waikato-Tainui stem from the waka Tainui. Tangata Whenua have a shared history with Waikato-Tainui since time immemorial and whakapapa that intertwines. It is obvious then that Tangata Whenua share the sentiments and values as described in the Waikato-Tainui Iwi Environmental Plan - Tai Tumu, Tai Pari, Tai Ao*."

The Tai Tumu, Tai Pari, Tai Ao is the Waikato-Tainui environmental planning document. The CIA identifies several matters in the Waikato-Tainui Environmental Plan that correspond with Tangata Whenua cultural values, particularly in Section C: Chapter 14 – Customary Activities. It identifies that the following matters are also of relevance to Tangata Whenua:

- *Recognising customary activities including fishing and hunting*
- *Enhancing biodiversity particularly restoration of wetlands*
- *Identifying and protecting Sites of significance including wāhi tapu*
- *Managing the accidental discovery of taonga koiwi and Sites of significance*
- *Apply cultural and environmental principles to design.*

The proposal is considered to have a positive effect on the ability to undertake customary activities on the site in future. A robust approach is proposed in relation to waahi tapu sites and accidental discovery. There is no new development proposed as part of this application that cultural and environmental principles can be applied to.

7.4.2 Ngā Wai o Maniapoto (Waipā River) Act

The Ngā Wai o Maniapoto (Waipā River) Act was enacted in 2012. The purpose of the Act is to *restore and maintain the quality and integrity of the waters that flow into and form part of the Waipā River for present and future generations*.

The Wharekōrino Stream running through the site flows into the Pūniu River which is a tributary of the Waipā River. The CIA states that the principles in the Waipā River Act are consistent with their cultural views.

The Maniapoto Priorities for the Restoration of the Waipā River Catchment was published in 2014 and is a direction setting document for the clean up of the Waipā River.

Through its proposed construction methodologies to protect water quality and the daylighting of part of the Wharekōrino Stream, the proposal is aligned with the Ngā Wai o Maniapoto (Waipā River) Act.

7.4.3 Te Ture Whaimana o Te Awa o Waikato – Vision and Strategy for the Waikato River

Te Ture Whaimana is the primary direction-setting document for the Waikato River and activities within its catchments affecting the Waikato River. Its goal is to restore and protect the health and wellbeing of the Waikato River.

The subject site is within the catchment of the Waipā River and Waikato River, and Te Ture Whaimana is relevant. As per above, the proposal will protect the health and wellbeing of the Awa by ensuring that water quality is protected during construction.

Additionally, the proposal achieves betterment for the Waipā and Waikato Rivers through the net gain to freshwater values achieved by shortening Culvert 3 and daylighting an extended section of Wharekōrino Stream along with undertaking native riparian planting, as assessed in section 6.6.

7.4.4 Heritage New Zealand Pouhere Taonga Act 2014

All archaeological sites, whether recorded or not, are protected by the provisions of the Heritage New Zealand Pouhere Taonga Act 2014 and may not be destroyed, damaged or modified without an authority issued by HNZPT. While there are no recorded archaeological sites on the subject site, there are three identified areas where the risk of archaeological deposits is higher and the works could negatively impact previously unrecorded archaeological sites, including natural ground under the landfill area which may be disturbed as part of the proposed works. For this reason, archaeological authority is being conservatively applied for under the HNZPT Act.

7.4.5 Wildlife Act 1953

The Wildlife Act 1953 provides statutory protection for and directs the management of indigenous fauna species, excluding those species listed in Schedules 1 to 5. This involves safeguarding them from harm, disturbance, or exploitation. The Wildlife Act does not specifically extend to the protection of the habitat which supports these species.

A BMP is proffered as a condition of consent, which will also ensure that the works comply with the requirement of the Wildlife Act not to harm pekapeka (long tailed bats).

7.4.6 Resource Management (Measurement and Reporting of Water Takes) Amendment Regulations 2020

These regulations apply to water permits allowing freshwater to be taken at a rate of 5 litres per second or more. Any dewatering of excavations associated with the proposal will be below this rate and the regulations will not apply.

8.0 Other relevant sections of the Act

8.1 Section 104D (Non-complying activities)

The resource consent application to WDC is a non-complying activity. Under section 104D, to be able to grant resource consent for a non-complying activity, the consent authority must be satisfied that either:

(a) the adverse effects of the activity on the environment (other than any effect to which section 104(3)(a)(ii) applies) will be minor; or

(b) the application is for an activity that will not be contrary to the objectives and policies of—

(i) the relevant plan, if there is a plan but no proposed plan in respect of the activity; or

(ii) the relevant proposed plan, if there is a proposed plan but no relevant plan in respect of the activity; or

(iii) both the relevant plan and the relevant proposed plan, if there is both a plan and a proposed plan in respect of the activity.

This consideration is commonly known as the “threshold test” or “gateway test”. If either of the limbs of this test can be passed, then the application is eligible for approval, but the proposed activity must still be considered under section 104. No primacy is given to either limb; if one limb can be passed then the test can be considered as passed.

The preceding assessments conclude that:

- the proposed activity’s adverse effects on the environment will be less than minor; and/or
- the proposed activity will not be contrary to the objectives and policies of the plan.

As such, the application can be considered under section 104 and a determination can be made on the application under section 104B.

8.2 Section 105 (Discharge permits)

Under section 105(1), and in addition to the matters under section 104(1), the consent authority must have regard to:

(a) the nature of the discharge and the sensitivity of the receiving environment to adverse effects; and

(b) the applicant’s reasons for the proposed choice; and

(c) any possible alternative methods of discharge, including discharge into any other receiving environment.

In the case of the proposed discharge, it will be acceptable due to:

- the nature of the proposed discharge;
- the nature of the receiving environment;
- the proposed monitoring and management;
- alternative methods and locations that have been assessed; and
- effects that will be avoided, remedied or mitigated by the nature of the activity and the proposed conditions of resource consent.

8.3 Section 107 (Discharge permits)

Under section 107, the consent authority must not grant a discharge or coastal permit that would have the following effects (unless there are exceptional circumstances, the discharge is temporary, or the discharge is associated with maintenance work):

(1) if, after reasonable mixing, the contaminant or water discharged (either by itself or in combination with the same, similar, or other contaminants or water), is likely to give rise to all or any of the following effects in the receiving waters:

…

(c) the production of any conspicuous oil or grease films, scums or foams, or floatable or suspended materials:

(d) any conspicuous change in the colour or visual clarity:

(e) any emission of objectionable odour:

(f) the rendering of fresh water unsuitable for consumption by farm animals:

(g) any significant adverse effects on aquatic life.

In the case of the proposed discharge, it will not give rise to the effects listed by section 107. In addition, ongoing monitoring of surface and groundwater is volunteered to manage any effects on water quality and aquatic ecosystems.

8.4 Section 108 (Proposed conditions of consent)

As identified in the preceding assessments, several conditions of consent are proposed to avoid, remedy or mitigate the potential adverse effects of the proposed activity on the environment. It is anticipated that the consent authority will adopt conditions relating to the following matters (a set of proposed conditions are appended in **Appendix P**)

- Preparation/finalisation and certification of management plans (CMP, ESCP, BMP, AMP)
- Facilitating the cultural monitoring of ground disturbance in waahi tapu areas
- Accidental discovery protocols (archaeology and contamination)
- Contaminated soil handling and disposal procedures
- Works in and near waterbodies to be undertaken in summer / low flow periods
- Stream design requirements and implementation of PMP and FMP
- Construction noise standards
- Management of erosion and sediment generation, including dust
- Minimising removal of mature trees and substantial undergrowth wherever practicable
- Stabilisation of exposed soil, and reinstatement of site
- Standards for imported fill
- Site Validation reporting
- Complaints management.

It is requested that draft conditions of consent are shared to SLR in advance of a decision being made on the application.

8.5 Section 123 (Duration of consent)

The duration requested for the regional consents relating to ongoing discharge from the landfill (discharge of contaminants, discharge of stormwater, diversion of groundwater, and operation of the landfill) is 35 years given that the nature and extent of adverse effects will be less than minor and ongoing monitoring and management conditions are proposed. For resource consents required for construction works (soil disturbance, damming and diversion of water, discharge of cleanfill) a duration of 7 years is sought.

In accordance with s123(b), the duration of the land use consents required from WDC would be unlimited.

8.6 Section 125 (Lapsing of consent)

Section 125 prescribes a standard consent period of five years in which all works must be undertaken, but this may be amended as deemed appropriate by the consent authority. It is requested that the standard five-year period be applied in this case.

9.0 Notification assessment

9.1 Public notification assessment

Section 95A of the Act requires the consent authority to follow specific steps to determine whether to publicly notify an application. An assessment of the application against these steps is provided below.

9.1.1 Step 1: Mandatory public notification in certain circumstances

An application must be publicly notified if it meets any of the criteria under section 95A(3):

> (3) (a) the applicant has requested that the application be publicly notified:
>
> (b) public notification is required under section 95C:
>
> (c) the application is made jointly with an application to exchange recreation reserve land under section 15AA of the Reserves Act 1977.

The Applicant does not request public notification and the application is not made jointly with an application to exchange recreation reserve land.

Therefore, Step 1 does not apply, and Step 2 must be considered.

9.1.2 Step 2: Public notification precluded in certain circumstances

An application must not be publicly notified if it meets any of the criteria under section 95A(5):

> (5) (a) the application is for a resource consent for 1 or more activities, and each activity is subject to a rule or national environmental standard that precludes public notification:
>
> (b) the application is for a resource consent for 1 or more of the following, but no other, activities:
>
> (i) a controlled activity:
>
> (iii) a restricted discretionary, discretionary, or non-complying activity, but only if the activity is a boundary activity:

None of these criteria apply to the application.

Therefore, Step 2 does not apply, and Step 3 must be considered.

9.1.3 Step 3: Public notification required in certain circumstances

An application must be publicly notified if it meets any of the criteria under section 95A(8):

> (8) (a) the application is for a resource consent for 1 or more activities, and any of those activities is subject to a rule or national environmental standard that requires public notification:
>
> (b) the consent authority decides, in accordance with section 95D, that the activity will have or is likely to have adverse effects on the environment that are more than minor.

9.1.3.1 Step 3 summary

There is no rule or national environmental standard that requires public notification. However, an assessment of adverse effects on the environment is required.

The assessment of environmental effects undertaken in Section 6.0 of this report concluded that the proposed activity will have less than minor effects on the environment as a whole, with the exception of cultural effects, which are to be further ascertained through the limited notification process.

Therefore, Step 3 does not apply, and Step 4 must be considered.

9.1.4 Step 4: Public notification in special circumstances

Under section 95A(9), an application must be publicly notified if the consent authority determines that "special circumstances" exist, notwithstanding that Steps 1 to 3 do not require or preclude public notification.

Special circumstances are not defined by the Act. Case law has, however, identified special circumstances as being "outside the common run of things which is exceptional, abnormal or unusual, but less than extraordinary or unique. A special circumstance would be one which makes notification desirable despite the general provisions excluding the need for notification."[7] The consent authority should also be satisfied that public notification may elicit additional information on those aspects of the proposal which require resource consent.

However, special circumstances must be more than:

- where the consent authority has had an indication that people want to make submissions;
- the fact that a large development is proposed; or
- the fact that some persons have concerns about the proposal.

No special circumstances exist that require the application being publicly notified as:

- The proposal involves a remediation and upgrading of an existing landfill in a rural zone and so it is neither exceptional nor unusual.
- Granting the application will lessen potential effects arising from material that would otherwise be transported offsite for disposal.

[7] *Far North District Council v Te Runanga-a-iwi o Ngati Kahu* [2013] NZCA 221 at [36] and [37].

- The proposal is not considered to be controversial or of significant public interest.
- The application and its supporting material have been prepared by a set of qualified professionals. It is very unlikely that notification would elicit any additional, relevant information.
- The proposal is self-contained and is not a prelude or first step towards a wider development.

9.1.5 Public notification summary

From the assessment above it is considered that the application does not need to be publicly notified, but an assessment of limited notification is required.

9.2 Limited notification assessment

If the consent authority determines not to publicly notify an application, it must then follow the steps of section 95B of the Act to determine whether to give limited notification of the application. An assessment of the application against these steps is provided below.

9.2.1 Step 1: Certain affected groups and affected persons must be notified

An application must be limited notified to the relevant persons if it meets the criteria under sections 95B(2) to 95B(4):

> (2) (a) affected protected customary rights groups; or
>
> (b) affected customary marine title groups (in the case of an application for a resource consent for an accommodated activity).
>
> (3) (a) whether the proposed activity is on or adjacent to, or may affect, land that is the subject of a statutory acknowledgement made in accordance with an Act specified in Schedule 11; and
>
> (b) whether the person to whom the statutory acknowledgement is made is an affected person under section 95E.
>
> (4) Notify the application to each affected group identified under subsection (2) and each affected person identified under subsection (3).

There are no protected customary rights groups or customary marine title groups that are relevant to this application. The site is within a Maniapoto statutory acknowledgment area mapped by the WRC. This applies to the Waipā River and its catchments and was provided for by the Ngā Wai o Maniapoto (Waipa River) Act 2012. TNN, the Ngāti Maniapoto Post Settlement Governance Entity, is considered an affected person under section 95E (see assessment following).

9.2.2 Step 2: Limited notification precluded in certain circumstances

An application must not be limited notified to any persons if it meets any of the criteria under section 95B(6):

> (6) (a) the application is for a resource consent for 1 or more activities, and each activity is subject to a rule or national environmental standard that precludes limited notification:
>
> (b) the application is for a controlled activity (but no other activities) that requires a resource consent under a district plan (other than a subdivision of land).

None of these criteria apply to the application.

Therefore, Step 2 does not apply, and Step 3 must be considered.

9.2.3 Step 3: Certain other affected persons must be notified

Other affected persons must be notified in the following circumstances specified by section 95B(7) and (8):

> (7) In the case of a boundary activity, determine in accordance with section 95E whether an owner of an allotment with an infringed boundary is an affected person.
>
> (8) In the case of any other activity, determine whether a person is an affected person in accordance with section 95E.

The proposal is not for a boundary activity.

In deciding whether a person is an affected person under section 95E, the consent authority under section 95E(2):

> (2) (a) may disregard an adverse effect of an activity on a person if a rule or national environmental standard permits an activity with that effect;
>
> (b) must disregard an adverse effect that does not relate to a matter for which a rule or environmental standard reserves control or restricts discretion; and
>
> (c) must have regard to every relevant statutory acknowledgement made in accordance with a statute set out in Schedule 11 of the Act.

9.2.3.1 Written approvals

The consent authority must not consider that a person is an affected person if they have given their written approval, or it is unreasonable in the circumstances to seek that person's written approval. For this application, written approval from the following persons has been obtained and is attached in **Appendix J**.

- AgResearch Limited
  - 23 Farm Road - Section 3 SO 534156 (property 7 on Figure 23).

9.2.3.2 Adjacent land

With respect to section 95D(a), the following land is adjacent to the subject site.

Table 10. Land adjacent to the subject site.

#	Address	Legal description
1	1/117 and 2/117 Cruickshank Road	Lot 2 DP 451755
2	194 and 158 Te Mawhai Road	Wipaea Manu Block
3	178 Te Mawhai Road	Pokuru 1A1A Block
4	168 Te Mawhai Road	Pokuru 1A1B1 Block

#	Address	Legal description
5	Te Mawhai Road	Part Tokanui 1B 2B 2C 3B Block & Part Tokanui 1B 2B 2C 3B Block
6	Tokanui Village Symonds Road / Croasdale Road	Section 1 SO 59771
7	23 Farm Road (AgResearch)	Section 3 SO 534156
8	Cruickshank Road	Lot 4 DP 361320
9	Cruickshank Road	Pokuru 3B2 Block

The Tokanui village marked as number 6 is part of the same site as the hospital, but no works are proposed on this site, therefore the additional properties adjacent to the village have not been included.

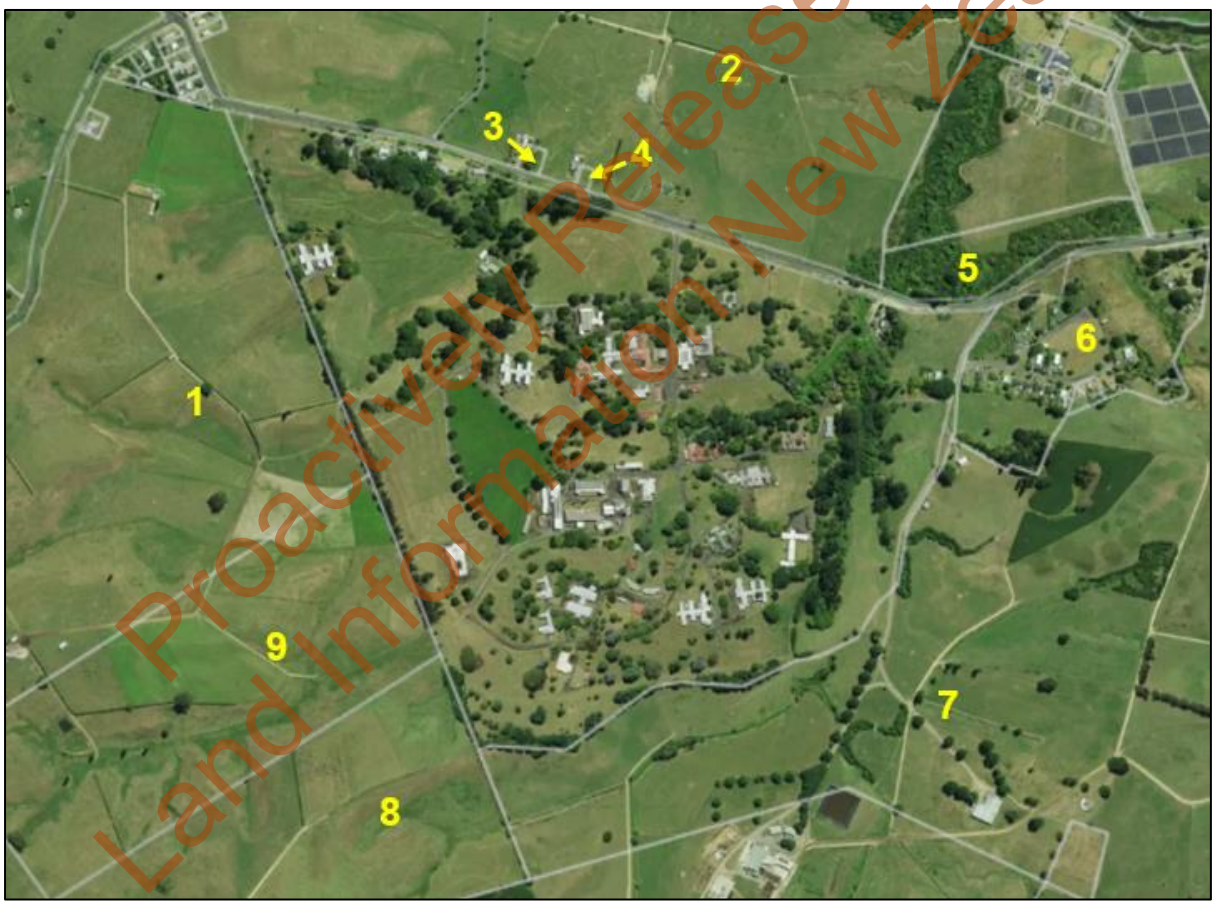


Figure 23. Adjacent land

The assessment of environmental effects undertaken in Section 6.0 of this report found that the potential adverse effects on the environment will be less than minor, with the exception of effects on cultural values. This includes effects on adjacent landowners and occupiers being less than minor, given that:

- There are no boundary-related non-compliances.

- The proposal complies with construction noise, lighting and general amenity rules.
- There are no air discharges anticipated beyond the site boundary, and no water or sediment discharges that will impact upon neighbouring properties.
- Contaminated soil will be managed in accordance with industry standards and will not affect human health on neighbouring properties.
- Additional vehicle movements will not have a significant impact on the local road network.
- Flood risk is not increased for adjacent properties.
- The majority of effects from the proposal are temporary.

Therefore, persons at adjacent properties will not be affected to a minor or more than minor degree.

9.2.3.3 Statutory acknowledgements

With respect to section 95E(2)(c), when deciding who is an affected person, the consent authority must have regard to every relevant statutory acknowledgement made in accordance with an Act that is specified under Schedule 11. Those named in that schedule are affected if the adverse effects are minor or more than minor.

The statutory acknowledgement which is relevant to the application is Ngā Wai o Maniapoto (Waipā River). Additionally, the site is a deferred selection property under the Maniapoto Settlement Claims Act 2022.

As set out in section 6.8, a CIA was prepared earlier in the process, the identified cultural effects were considered upfront during project design, and each of the recommendations of the CIA has been responded to – with the intention of mitigating those effects so as to be less than minor. LINZ has also continued consultation, provided additional feedback opportunities for mana whenua and endeavoured to respond to cultural concerns throughout the project design phase.

However, given the importance of the site to iwi and hapū and the number of interested iwi parties, LINZ requests that this application is limited notified to iwi and hapū to ensure that they have the opportunity to identify any additional cultural effects that are not already recorded in the CIA, and/or are not accounted for by the proffered consent conditions in response to the CIA recommendations.

Based on the statutory acknowledgement, Treaty Settlement legislation, the CIA and hui, the potentially affected iwi and hapū have been identified as per Table 11.

Table 11: Potentially affected iwi and hapū

Iwi/hapū	Contact person(s) as advised by TNN
Te Nehenehenui Trust, the Ngāti Maniapoto Post Settlement Governance Entity	Tramaine Murray Alethea Hikuroa
Ngāti Paia	June Elliot John Thomson Gordon Thomson

Iwi/hapū	Contact person(s) as advised by TNN
Ngāti Ngutu	June Elliot Kaawhia Te Muraahi
Ngāti Huiao	No contacts known - Ngāti Huiao was recorded in the CIA as a hapū with affiliations to the Site. At present, LINZ is not aware of which individuals we have engaged with who may be affiliated with Ngāti Huiao; the CIA also notes *"Those of Huiao would be under Ngutu when Huiao went south and never returned"*.
Ngāti Paretekawa	Robert Te Huia Maria Maniapoto Kelly Johnson Tuhiao Halling
Ngāti Rahurahu	Niketi Toatua Samuel Roa

A contact list for those that have provided contact details at any of the hui will be provided for the councils' use.

9.2.3.4 Step 3 summary

As affected persons have been identified, the application must be limited notified to them. In addition, Step 4 must be considered.

9.2.4 Step 4: Further notification in special circumstances

As required by section 95B(10), the consent authority must determine the following:

> (10) Determine whether special circumstances exist in relation to the application that warrant notification of the application to any other persons not already determined to be eligible for limited notification under this section (excluding persons assessed under section 95E as not being affected persons).

The proposal is for the use, remediation and upgrading of an existing landfill area and a consideration of adverse effects on any person has been undertaken under Step 3 where it was concluded that persons may be affected by the proposal. There are considered to be no special circumstances that warrant limited notification of any other persons who have not been identified in Step 3.

9.2.5 Limited notification assessment summary

It is recommended that the persons identified in Section 9.2 of this report above are given limited notification of this application.

9.3 Notification assessment conclusion

Pursuant to sections 95A to 95G of the Act, it is recommended that the application is limited notified based on the following reasons:

- The application does not require public notification in accordance with section 95A.
- Step 3 of section 95B: Limited notification must be given to the following certain other affected persons:
    - Te Nehenehenui Trust;
    - Ngāti Paia;
    - Ngāti Ngutu;
    - Ngāti Huiao;
    - Ngāti Paretekawa; and
    - Ngāti Rahurahu.

10.0 Part 2 of the Act

We consider that those aspects of the plan relevant to this application have been "competently prepared under the Act", in the sense referred to by the Court of Appeal.[8] The consent authority is therefore not obliged to conduct an evaluation under Part 2 of the Act, and Part 2 considerations should not be used to override the plan provisions.

However, for the sake of completeness, and to remove any doubt, the following assessment against Part 2 has also been undertaken.

Section 5 identifies the purpose of the Act as being the sustainable management of natural and physical resources. This means managing the use of natural and physical resources in a way that enables people and communities to provide for their social, cultural and economic well-being while sustaining those resources for future generations, protecting the life supporting capacity of ecosystems, and avoiding, remedying or mitigating adverse effects on the environment.

Section 6 of the Act sets out several matters of national importance, including:

> *(a) the preservation of the natural character of the coastal environment (including the coastal marine area), wetlands, and lakes and rivers and their margins, and the protection of them from inappropriate subdivision, use, and development:*
>
> *(c) the protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna:*
>
> *(e) the relationship of Maori and their culture and traditions with their ancestral lands, water, sites, waahi tapu, and other taonga:*
>
> *(h) the management of significant risks from natural hazards.*

The proposal will result in better management of the adverse effects associated with the landfill area. The proposal will improve the natural character of Wharekōrino Stream both in terms of water quality and through increased daylighting of part of the stream currently within Culvert 3 (s6(a) and (c)). The site is of significance to mana whenua and they have been actively engaged with throughout preparation of this application and will continue to be involved

[8] *R J Davidson Family Trust v Marlborough District Council* [2018] NZCA 316.

through the limited notification process, recognising their relationship with this land (s6(e)). The proposed upgrade and repair works also will allow for the existing flood risk to the landfill to be mitigated, to avoid refuse being washed into the stream during flood events (s6(h)).

Section 7 identifies a number of "other matters" to be given particular regard to in the consideration of any assessment for resource consent, including:

(a) kaitiakitanga:

(aa) the ethic of stewardship:

(b) the efficient use and development of natural and physical resources:

(ba) the efficiency of the end use of energy:

(c) the maintenance and enhancement of amenity values:

(d) intrinsic values of ecosystems:

(f) maintenance and enhancement of the quality of the environment:

(g) any finite characteristics of natural and physical resources:

(h) the protection of the habitat of trout and salmon:

(i) the effects of climate change:

(j) the benefits to be derived from the use and development of renewable energy.

The above matters have been addressed in the assessment of this proposal, in particular cultural values (kaitiakitanga), and the intrinsic values of ecosystems particularly those associated with Wharekōrino Stream. The upgrade and repair works will ultimately enhance the quality of the environment at this location and have an overall positive effect on the existing environment.

Section 8 requires the consent authority to take into account the principles of the Treaty of Waitangi, and this has also informed our assessment under section 104.

Overall, the application is considered to be consistent with the relevant provisions of Part 2, as expressed through the objectives, policies and rules that we reviewed in earlier sections of this application. Given this consistency, it is concluded that the proposal achieves the purposes of sustainable management set under section 5.

11.0 Conclusion

Through this Landfill Upgrade Application, LINZ seeks resource consent to upgrade the existing landfill cap, relocate refuse away from Wharekōrino Stream, dispose of low-moderate level contaminated soil from the hospital site, and install a new culvert and realign Wharekōrino Stream to provide greater physical separation between the stream and the landfill at the 79 hectare former Tokanui Psychiatric Hospital site at 149 Te Mawhai Road, Tokanui.

In terms of section 104(1)(a) of the Act, the actual and potential effects of the proposed activity on the environment will be less than minor, with the exception of cultural effects which will be further assessed as part of the limited notification process, as discussed in sections 6.0 and 7.0 of this report.

In particular:

- The earthworks will largely reinstate existing ground levels without having any permanent effects, and erosion and sediment control measures will protect water quality and land stability during the construction phase;
- Robust measures will be put in place for archaeological and cultural monitoring to mitigate the impacts of any accidental discovery;
- Robust measures will also be put in place to protect the health and safety of workers during the repair and upgrade of the landfill & transfer of contaminated soil;
- Replacement Culvert 3 has been designed so as not to adversely affect flooding on Te Mawhai Road;
- The hydrological function of wetlands and their habitat values will be maintained;
- There will be a net gain to freshwater values as a result of the project, and temporary effects on freshwater quality and habitat values can be mitigated through the proposed erosion and sediment controls along with fish management protocols;
- Vegetation removal will be minimised and will be primarily exotic vegetation with low ecological values; bat management protocols will be implemented to ensure adverse effects on long tailed bats are avoided; and
- The site will be kept tidy and will be largely screened from any public or neighbour's view. The CMP and proffered conditions of consent will manage dust and noise so that amenity effects are less than minor.

The proposed activity will also generate positive effects, particularly by improving surface and groundwater quality by reducing rainfall infiltration into groundwater and groundwater flow through the landfill and subsequent leaching of contaminants. The upgrade and repair works will also reduce the risk of flood inundation into the landfill areas and the risk of refuse being washed out. The proposal will also allow for the disposal of contaminated soil from the former hospital site, which will reduce total vehicle movements and associated emissions.

In terms of section 104(1)(b) of the Act, the proposal is considered to be consistent with the relevant objectives and policies of the NPS-F, NPS-HPL, NPS-IB, WRPS, WRP and WDP. The proposal has also been assessed against the relevant iwi management plans, other relevant legislation and the matters of discretion in the NES-CS.

It is also considered that the proposal will have less than minor adverse effects on the wider environment, and no special circumstances exist. As such, the application does not need to be publicly notified.

Hence, in accordance with sections 104B and 104D in relation to non-complying activities and discretionary activities, it is considered appropriate for consent to be granted after limited notification, subject to fair and reasonable conditions (such as those that have been proffered in this application).

A 35-year duration is requested for the ongoing discharges and a 7 year duration is requested for the temporary construction-related consents.