

Our Reference: 10832.1 (FNDC)

20 March 2026

Resource Consents Department  
Far North District Council  
JB Centre  
KERIKERI

Dear Sir/Madam

**RE: Proposed Subdivision and Land Use (stormwater management) at 309 Waipapa Road, Kerikeri – C Billington and G Bondfield**

I am pleased to submit application on behalf of C Billington and G Bondfield, for a proposed subdivision and associated land use consent of land at 309 Waipapa Road, Kerikeri, zoned Rural Production. The application is a non complying activity.

The application fee of \$5,153 has been paid separately via direct credit.

Regards



Lynley Newport  
**Senior Planner**  
**THOMSON SURVEY LTD**

# Application for resource consent or fast-track resource consent

(Or Associated Consent Pursuant to the Resource Management Act 1991 (RMA)) (If applying for a Resource Consent pursuant to Section 87AAC or 88 of the RMA, this form can be used to satisfy the requirements of [Form 9](#)). Prior to, and during, completion of this application form, please refer to [Resource Consent Guidance Notes](#) and [Schedule of Fees and Charges](#) — both available on the Council's web page.

## 1. Pre-Lodgement Meeting

Have you met with a council Resource Consent representative to discuss this application prior to lodgement?

Yes  No

*Z-D tyPO*

## 2. Type of consent being applied for

(more than one circle can be ticked):

- Land Use  Discharge
- Fast Track Land Use\*  Change of Consent Notice (s.221(3))
- Subdivision  Extension of time (s.125)
- Consent under National Environmental Standard  
(e.g. Assessing and Managing Contaminants in Soil)
- Other (please specify) \_\_\_\_\_

*\*The fast track is for simple land use consents and is restricted to consents with a controlled activity status.*

## 3. Would you like to opt out of the fast track process?

Yes  No

## 4. Consultation

Have you consulted with Iwi/Hapū?  Yes  No

If yes, which groups have you consulted with?

Who else have you consulted with?

For any questions or information regarding iwi/hapū consultation, please contact Te Hono at Far North District Council, [tehonosupport@fndc.govt.nz](mailto:tehonosupport@fndc.govt.nz)

## 5. Applicant details

Name/s:

C Billington + G Bondfield

Email:

Phone number:

Postal address:

(or alternative method of service under section 352 of the act)

Have you been the subject of abatement notices, enforcement orders, infringement notices and/or convictions under the Resource Management Act 1991?  Yes  No

If yes, please provide details.


## 6. Address for correspondence

Name and address for service and correspondence (if using an Agent write their details here)

Name/s:

Lynley Newport

Email:

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Phone number:

Postal address:

(or alternative method of service under section 352 of the act)

All correspondence will be sent by email in the first instance. Please advise us if you would prefer an alternative means of communication.

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## 7. Details of property owner/s and occupier/s

Name and Address of the owner/occupiers of the land to which this application relates (where there are multiple owners or occupiers please list on a separate sheet if required)

Name/s:

as per item 5

Property address/  
location:


Postcode

## 8. Application site details

Location and/or property street address of the proposed activity:

Name/s:

as per item 5

Site address/  
location:

"  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
Postcode

Legal description:

\_\_\_\_\_

Val Number:

\_\_\_\_\_

Certificate of title:

\_\_\_\_\_

Please remember to attach a copy of your Certificate of Title to the application, along with relevant consent notices and/or easements and encumbrances (search copy must be less than 6 months old)

Site visit requirements:

Is there a locked gate or security system restricting access by Council staff?  Yes  No

Is there a dog on the property?  Yes  No

Please provide details of any other entry restrictions that Council staff should be aware of, e.g. health and safety, caretaker's details. This is important to avoid a wasted trip and having to re-arrange a second visit.

Nil  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

## 9. Description of the proposal

Please enter a brief description of the proposal here. Please refer to Chapter 4 of the *District Plan, and Guidance Notes*, for further details of information requirements.

To subdivide land in the Rural Production Zone to create one additional vacant lot; low use consent for a breach of Stormwater Management

If this is an application for a Change or Cancellation of Consent Notice conditions (s.221(3)), please quote relevant existing Resource Consents and Consent Notice identifiers and provide details of the change(s), with reasons for requesting them.

## 10. Would you like to request public notification?

Yes  No

## 11. Other consent required/being applied for under different legislation

(more than one circle can be ticked):

Building Consent

Regional Council Consent (ref # if known)

National Environmental Standard Consent

Other (please specify)

## 12. National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health:

The site and proposal may be subject to the above NES. In order to determine whether regard needs to be had to the NES please answer the following:

Is the piece of land currently being used or has it historically ever been used for an activity or industry on the Hazardous Industries and Activities List (HAIL)?  Yes  No  Don't know

Is the proposed activity an activity covered by the NES? Please tick if any of the following apply to your proposal, as the NESCS may apply as a result?  Yes  No  Don't know

Subdividing land

Disturbing, removing or sampling soil

Changing the use of a piece of land

Removing or replacing a fuel storage system

## 13. Assessment of environmental effects:

Every application for resource consent must be accompanied by an Assessment of Environmental Effects (AEE). This is a requirement of Schedule 4 of the Resource Management Act 1991 and an application can be rejected if an adequate AEE is not provided. The information in an AEE must be specified in sufficient detail to satisfy the purpose for which it is required. Your AEE may include additional information such as written approvals from adjoining property owners, or affected parties.

Your AEE is attached to this application  Yes

## 14. Draft conditions:

Do you wish to see the draft conditions prior to the release of the resource consent decision?  Yes  No

If yes, please be advised that the timeframe will be suspended for 5 working days as per s107G of the RMA to enable consideration for the draft conditions.

## 15. Billing Details:

This identifies the person or entity that will be responsible for paying any invoices or receiving any refunds associated with processing this resource consent. Please also refer to Council's Fees and Charges Schedule.

Name/s: (please write in full)

charlie Billington

Email:

Phone number:

Postal address:

(or alternative method of service under section 352 of the act)

### Fees Information

An instalment fee for processing this application is payable at the time of lodgement and must accompany your application in order for it to be lodged. Please note that if the instalment fee is insufficient to cover the actual and reasonable costs of work undertaken to process the application you will be required to pay any additional costs. Invoiced amounts are payable by the 20th of the month following invoice date. You may also be required to make additional payments if your application requires notification.

### 15. Billing details continued...

#### Declaration concerning Payment of Fees

I/we understand that the Council may charge me/us for all costs actually and reasonably incurred in processing this application. Subject to my/our rights under Sections 357B and 358 of the RMA, to object to any costs, I/we undertake to pay all and future processing costs incurred by the Council. Without limiting the Far North District Council's legal rights if any steps (including the use of debt collection agencies) are necessary to recover unpaid processing costs I/we agree to pay all costs of recovering those processing costs. If this application is made on behalf of a trust (private or family), a society (incorporated or unincorporated) or a company in signing this application I/we are binding the trust, society or company to pay all the above costs and guaranteeing to pay all the above costs in my/our personal capacity.

Name: (please write in full)

Charlie Billington

Signature:

(signature of bill payer)

### 16. Important Information:

#### Note to applicant

You must include all information required by this form. The information must be specified in sufficient detail to satisfy the purpose for which it is required.

You may apply for 2 or more resource consents that are needed for the same activity on the same form.

You must pay the charge payable to the consent authority for the resource consent application under the Resource Management Act 1991.

#### Fast-track application

Under the fast-track resource consent process, notice of the decision must be given within 10 working days after the date the application was first lodged with the authority, unless the applicant opts out of that process at the time of lodgement.

A fast-track application may cease to be a fast-track application under section 87AAC(2) of the RMA.

#### Privacy Information:

Once this application is lodged with the Council it becomes public information. Please advise Council if there is sensitive information in the proposal. The information you have provided on this form is required so that your application for consent pursuant to the Resource Management Act 1991 can be processed under that Act. The information will be stored on a public register and held by the Far North District Council. The details of your application may also be made available to the public on the Council's website, [www.fndc.govt.nz](http://www.fndc.govt.nz). These details are collected to inform the general public and community groups about all consents which have been issued through the Far North District Council.

### 17. Declaration

The information I have supplied with this application is true and complete to the best of my knowledge.

Name (please write in full)

Charlie Billington

Signature

See overleaf for a checklist of your information...

## Checklist

*Please tick if information is provided*

- Payment (cheques payable to Far North District Council)
- A current Certificate of Title (Search Copy not more than 6 months old)
- Details of your consultation with Iwi and hapū
- Copies of any listed encumbrances, easements and/or consent notices relevant to the application
- Applicant / Agent / Property Owner / Bill Payer details provided
- Location of property and description of proposal
- Assessment of Environmental Effects
- Written Approvals / correspondence from consulted parties
- Reports from technical experts (if required)
- Copies of other relevant consents associated with this application
- Location and Site plans (land use) AND/OR
- Location and Scheme Plan (subdivision)
- Elevations / Floor plans
- Topographical / contour plans

Please refer to Chapter 4 of the District Plan for details of the information that must be provided with an application. Please also refer to the RC Checklist available on the Council's website. This contains more helpful hints as to what information needs to be shown on plans.

**C Billington & G Bondfield**

**PROPOSED  
SUBDIVISION  
&  
LAND USE CONSENT  
(for Stormwater Management)**

**309 Waipapa Road, Waipapa**

**PLANNER'S REPORT &  
ASSESSMENT OF ENVIRONMENTAL EFFECTS**



**Thomson Survey Ltd  
Kerikeri**

## 1.0 INTRODUCTION

### 1.1 The Proposal

The applicants propose to carry out a subdivision of their title at 309 Waipapa Road to create a total of two lots, one additional (vacant). The property is Rural Production even though it, and all surrounding properties are of such a size as to be totally incapable of supporting any rural 'production' use any longer and in fact to do so would create reverse sensitivity issues given the density of residential development.

The proposal is to separate the existing house and access driveway onto its own title of 5440m<sup>2</sup>, and create an additional vacant Lot 1 of 3880m<sup>2</sup>, with its own separate access off Waipapa Road.

Refer to *Appendix 1* for a copy of the Scheme Plan.

In addition to the subdivision, land use consent is sought for the existing impermeable coverage to be within Lot 2 (caused by reduced area), and for future impermeable coverage allowable on the vacant Lot 1.

### 1.2 Scope of this Report

This assessment and report accompanies the Resource Consent Application made by our clients, and is provided in accordance with Section 88 and Schedule 4 of the Resource Management Act 1991. The application seeks consent to carry out a subdivision & land use as a non complying activity.

The name and address of the owner of the property is contained in the Form 9 Application form. There are no other activities that are part of the proposal to which the application relates, and no other resource consents required other than those addressed in this application.

## 2.0 PROPERTY DETAILS

Location: 309 Waipapa Road, Waipapa – refer to Location Map in Appendix 2

Legal description & CFS's: NA101C/190  
Copies of Records of Title are attached in Appendix 3, along with relevant instruments.

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### 3.0 SITE DESCRIPTION

#### 3.1 Physical characteristics

The site is on the south side of Waipapa Road, approximately 1.3km east of the intersection (roundabout) with State Highway 10. It has a total area of 9,420m<sup>2</sup> with the access located at the site's western end, adjacent to a bridge. The Whiriwhiritoa Stream forms the western boundary, and a shared metal driveway on adjacent land forms the eastern boundary.

The site contains an established dwelling, with swimming pool, and has extensive landscaping and planting around and adjacent to the dwelling. There is vacant grassed area on the entire front portion of the site, adjoining Waipapa Road. The site is within a broad, volcanic plateau and is near level to gently sloping, falling towards the stream on the western boundary.

The Civil Site Suitability Report in Appendix 4 comments that FNDC maps indicate a public stormwater catchpit lead and two culverts located adjacent to the northwestern boundary corner, and a public potable water main is located in Waipapa Road's northern berm. There are currently no 3 waters connections to the site.



**Looking north across proposed vacant Lot 1 towards Waipapa Road**

Properties to the west, south and east are developed residential sections with the exception of one that is currently vacant. Similarly across Waipapa Road, residential development dominates.



*Typical garden/landscaping internal to Lot 2, with pool in background*

### **3.2 Mapped characteristics**

Despite the predominant lot size in the area being well under 2ha, with a number of 4000m<sup>2</sup> – 9000m<sup>2</sup> lots; and despite the dominant land use being residential, the Council has zoned the entire area Rural Production in its Operative District Plan (ODP) and rather than take the opportunity to re-zone the area something more akin to actual land use and lot size, has persisted with that zone in its Proposed District Plan (PDP) for the south side of Waipapa Road, but not the north side – where a Rural Residential zone is proposed.

The Whiriwhiritoa Stream is mapped as an Esplanade Priority Area in the ODP but this notation has not been carried over into the PDP.

The site is not identified as containing any outstanding landscape or natural features and has no areas of indigenous vegetation other than along the riparian margin – which exhibits mixed species indigenous and some exotics. There are no mapped cultural or heritage resources on the title.

The site is mapped as being partially subject to a 10 and 100 year ARI flood event. This impacts on the site with the existing dwelling more than the proposed new lot.

The site is mapped as containing LUC Class 3 soils.

### **3.3 Legal Interests**

The title has an appurtenant drainage right.

### 3.4 Consent History

#### Subdivision Consent history

The site is one of two created by RC 1950402-RMASUB, issued in 1995.

#### Building Consent history:

BP1054516 was issued in 1980 for a dwelling – the dwelling currently on site;  
BC-1993-632 was issued in 1993 for the swimming pool;  
EBC-2023-419 was issued in 2022 for a replacement on site wastewater system.

## 4.0 SCHEDULE 4 – INFORMATION REQUIRED IN AN APPLICATION

### Clauses 2 & 3: Information required in all applications

<i>(1) An application for a resource consent for an activity must include the following:</i>	
<i>(a) a description of the activity:</i>	Refer Sections 1 and 5 of this Planning Report.
<i>(b) an assessment of the actual or potential effect on the environment of the activity:</i>	Refer to Section 6 of this Planning Report.
<i>(b) a description of the site at which the activity is to occur:</i>	Refer to Section 3 of this Planning Report.
<i>(c) the full name and address of each owner or occupier of the site:</i>	This information is contained in the Form 9 attached to the application.
<i>(d) a description of any other activities that are part of the proposal to which the application relates:</i>	The application is for subdivision, and land use consent for breaches of stormwater management, both pursuant to the FNDC's ODP.
<i>(e) a description of any other resource consents required for the proposal to which the application relates:</i>	None are required.
<i>(f) an assessment of the activity against the matters set out in Part 2:</i>	Refer to Section 7 of this Planning Report.
<i>(g) an assessment of the activity against any relevant provisions of a document referred to in section 104(1)(b), including matters in Clause (2):</i>	Refer to Sections 5 and 7 of this Planning Report.
<i>(a) any relevant objectives, policies, or rules in a document; and</i> <i>(b) any relevant requirements, conditions, or permissions in any rules in a document; and</i>	

<p>(c) any other relevant requirements in a document (for example, in a national environmental standard or other regulations).</p>	
<p>(3) An application must also include any of the following that apply:</p>	
<p>(a) if any permitted activity is part of the proposal to which the application relates, a description of the permitted activity that demonstrates that it complies with the requirements, conditions, and permissions for the permitted activity (so that a resource consent is not required for that activity under section 87A(1)):</p> <p>(b) if the application is affected by section 124 or 165ZH(1)(c) (which relate to existing resource consents), an assessment of the value of the investment of the existing consent holder (for the purposes of section 104(2A)):</p> <p>(c) if the activity is to occur in an area within the scope of a planning document prepared by a customary marine title group under section 85 of the Marine and Coastal Area (Takutai Moana) Act 2011, an assessment of the activity against any resource management matters set out in that planning document (for the purposes of section 104(2B)).</p>	<p>Refer to section 5.</p> <p>There is no existing resource consent. Not applicable.</p> <p>The site is not within an area subject to a customary marine title group. Not applicable.</p>
<p>(4) An application for a subdivision consent must also include information that adequately defines the following:</p>	
<p>(a) the position of all new boundaries:                  (b) the areas of all new allotments, unless the subdivision involves a cross lease, company lease, or unit plan:                  (c) the locations and areas of new reserves to be created, including any esplanade reserves and esplanade strips:                  (d) the locations and areas of any existing esplanade reserves, esplanade strips, and access strips:                  (e) the locations and areas of any part of the bed of a river or lake to be vested in a territorial authority under section 237A:                  (f) the locations and areas of any land within the coastal marine area (which is to become part of the common marine and coastal area under section 237A):                  (g) the locations and areas of land to</p>	<p>Refer to Scheme Plans in Appendix 1.</p>

be set aside as new roads.	
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**Clause 6: Information required in assessment of environmental effects**

<i>(1) An assessment of the activity's effects on the environment must include the following information:</i>	
<i>(a) if it is likely that the activity will result in any significant adverse effect on the environment, a description of any possible alternative locations or methods for undertaking the activity:</i>	Refer to Section 6 of this planning report. The activity will not result in any significant adverse effect on the environment.
<i>(b) an assessment of the actual or potential effect on the environment of the activity:</i>	Refer to Section 6 of this planning report.
<i>(c) if the activity includes the use of hazardous installations, an assessment of any risks to the environment that are likely to arise from such use:</i>	Not applicable as the application does not involve hazardous installations.
<i>(d) if the activity includes the discharge of any contaminant, a description of— (i) the nature of the discharge and the sensitivity of the receiving environment to adverse effects; and (ii) any possible alternative methods of discharge, including discharge into any other receiving environment:</i>	The subdivision does not involve any discharge of contaminant.
<i>(e) a description of the mitigation measures (including safeguards and contingency plans where relevant) to be undertaken to help prevent or reduce the actual or potential effect:</i>	Refer to Section 6 of this planning report.
<i>(f) identification of the persons affected by the activity, any consultation undertaken, and any response to the views of any person consulted:</i>	Refer to Section 9 of this planning report.
<i>(g) if the scale and significance of the activity's effects are such that monitoring is required, a description of how and by whom the effects will be monitored if the activity is approved:</i>	No monitoring is required as the scale and significance of the effects do not warrant it.
<i>(h) if the activity will, or is likely to, have adverse effects that are more than minor on the exercise of a protected customary right, a description of possible alternative locations or</i>	No protected customary right is affected.

methods for the exercise of the activity (unless written approval for the activity is given by the protected customary rights group).

#### Clause 7: Matters that must be addressed by assessment of environmental effects (RMA)

(1) An assessment of the activity's effects on the environment must address the following matters:

(a) any effect on those in the neighbourhood and, where relevant, the wider community, including any social, economic, or cultural effects:	Refer to Sections 6 and 9 of this planning report and also to the assessment of objectives and policies in Section 7.
(b) any physical effect on the locality, including any landscape and visual effects:	Refer to Section 6. The site has no high or outstanding landscape or natural character values.
(c) any effect on ecosystems, including effects on plants or animals and any physical disturbance of habitats in the vicinity:	Refer to Section 6. The subdivision has no effect on ecosystems or habitat.
(d) any effect on natural and physical resources having aesthetic, recreational, scientific, historical, spiritual, or cultural value, or other special value, for present or future generations:	Refer to Section 6. The site has no aesthetic, recreational, scientific, historical, spiritual or cultural values that I am aware of, that will be adversely affected by the act of subdividing.
(e) any discharge of contaminants into the environment, including any unreasonable emission of noise, and options for the treatment and disposal of contaminants:	The subdivision will not result in the discharge of contaminants, nor any unreasonable emission of noise.
(f) any risk to the neighbourhood, the wider community, or the environment through natural hazards or hazardous installations.	The subdivision site is partially subject to natural hazard (flooding) but not the degree that it precludes development and not the degree that poses a risk to the neighbourhood or wider community.

## 5.0 ACTIVITY STATUS

### 5.1 Operative Far North District Plan

The properties are zoned Rural Production. No Resource features apply.

Table 13.7.2.1 Minimum Lot Sizes applies:

(i) RURAL PRODUCTION ZONE

Controlled Activity Status (Refer also to 13.7.3)	Restricted Discretionary Activity Status (Refer also to 13.8)	Discretionary Activity Status (Refer also to 13.9)
The minimum lot size is 20ha. Note 1: Reference should also be made to the minimum lot size	1. Subdivision that complies with the controlled activity standard, but is within 100m of the	1. The minimum lot size is 4ha; or 2. A maximum of 3 lots in any subdivision, provided that the

<p>applying to land within an Outstanding Landscape, Outstanding Landscape Feature or Outstanding Natural Feature (see below in this Table and Rule 13.7.2.5). Note 2: Subdivision in the Pouerua Heritage Precinct (refer Maps 35, 41 and HP1), is a discretionary subdivision activity. Note 3: Subdivision within 100m of the boundary of the Minerals Zone is a restricted discretionary activity.</p>	<p>boundary of the Minerals Zone; 2. The minimum lot size is 12ha; or 3. A maximum of 3 lots in any subdivision, provided that the minimum lot size is 4,000m<sup>2</sup> and there is at least 1 lot in the subdivision with a minimum lot size of 4ha, and provided further that the subdivision is of sites which existed at or prior to 28 April 2000, or which are amalgamated from titles existing at or prior to 28 April 2000; or 4. A maximum of 5 lots in a subdivision (including the parent lot) where the minimum size of the lots is 2ha, and where the subdivision is created from a site that existed at or prior to 28 April 2000;.....</p>	<p>minimum lot size is 2,000m<sup>2</sup> and there is at least 1 lot in the subdivision with a minimum size of 4ha, and provided further that the subdivision is of sites which existed at or prior to 28 April 2000, or which are amalgamated from titles existing at or prior to 28 April 2000; or 3. A subdivision in terms of a management plan as per Rule 13.9.2 may be approved. 4. Subdivision in the Pouerua Heritage Precinct (refer Maps 35, 41 and HP1), is a discretionary subdivision activity. Note 1: There is no restriction on the number of 4ha lots in a subdivision (clause 1). Note 2: The effect of the rule under clause 2 is that there is a once-off opportunity to subdivide a maximum of two small lots from a site existing at 28 April 2000. Subdivision of small lots which does not meet this rule is a noncomplying activity unless the lots are part of a Management Plan application.</p>
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The lots are less than 2ha in area. The proposal is a non complying subdivision activity.

**Other Rules:**

Zone Rules:

The proposal results in the existing impermeable surfaces within proposed Lot 2 exceeding 15% coverage, but within the controlled activity threshold of 20%. Future development within Lot 1 is expected to also exceed 15% if a similar level of development to that on Lot 2 is to occur. **Consent is sought in both instances (Lots 1 & 2) for breaches of Rule 8.6.5.1.3 (15%).**

Existing and proposed building coverage on all lots will remain below 12.5% of total site area (permitted activity).

District Wide Rules:

Chapter 12.1 Landscapes and Natural Features does not apply as there is no landscape or natural feature overlay applying to the site.

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Chapter 12.2 Indigenous Flora and Fauna does not apply as no clearance of indigenous vegetation is proposed.

Chapter 12.3 Soils and Minerals does not apply as no subdivision site works (earthworks) will be required other than minor works at the access. No earthworks internal to the lots will be required as part of subdivision site works.

Chapter 12.4 Natural Hazards does not apply as the site is not subject to any coastal hazard as currently mapped in the Operative District Plan (the only hazards with rules). There are no area of trees/bush within 20m of any building site within the vacant lot.

Rules in Chapters 12.5, 5A and 5B Heritage do not apply as the site contains no heritage values or sites, no notable trees, no Sites of Cultural Significance to Maori and no registered archaeological sites. The site is not within any Heritage Precinct.

Chapter 12.7 Waterbodies – buildings and other impermeable surfaces can be established more than 30m from any stream, and an on-site wastewater system can also be more than 30m from any stream. There is no indigenous wetland within the site.

Chapter 12.8 Hazardous Substances does not apply as the activity being applied for is not a hazardous substances facility.

Chapter 12.9 does not apply as the activity does not involve renewable energy.

Chapter 14 Financial Contributions (esplanade reserve) has been considered. At time of the subdivision to create the site (less than 4ha in area), no esplanade reserve was required. The consent was issued in 1995, so the Resource Management Act 1991 was in place. The survey plan for DP 167286 – attached as part of Appendix 3 – indicates Whiriwhiritoa Stream to have an average width less than 3m, although no survey work has been undertaken pursuant to this application to verify width.

#### Chapter 15.1 Traffic, Parking and Access

I have not identified any breaches of rules in Chapter 15.1. There is existing legal access to the dwelling to be within Lot 2 and no change additional use of that access is proposed. Instead new Lot 1 will have its own crossing at the eastern end of the frontage, sufficiently separated from a power pole within road reserve in the same vicinity. The crossing will be to the appropriate Council standard.

## **5.2 Proposed District Plan**

The FNDC publicly notified its PDP on 27<sup>th</sup> July 2022. Whilst the majority of rules in the PDP will not have legal effect until such time as the FNDC publicly notifies its decisions on submissions, there are certain rules that have been identified in the PDP as having immediate legal effect and that may therefore need to be addressed in this application and may affect the category of activity under the Act. These include:

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Rules HS-R2, R5, R6 and R9 in regard to hazardous substances on scheduled sites or areas of significance to Maori, significant natural areas or a scheduled heritage resource.

There are no scheduled sites or areas of significance to Maori, significant natural areas or any scheduled heritage resource on the site, therefore these rules are not relevant to the proposal.

Heritage Area Overlays – N/A as none apply to the application site.

Historic Heritage rules and Schedule 2 – N/A as the site does not have any identified (scheduled) historic heritage values.

Notable Trees – N/A – no notable trees on the site.

Sites and Areas of Significance to Maori – N/A – the site does not contain any site or area of significance to Maori.

Ecosystems and Indigenous Biodiversity – Rules IB-R1 to R5 inclusive.

No indigenous vegetation clearance is proposed.

Subdivision (specific parts) – only subdivision provisions relating to land containing Significant Natural Area or Heritage Resources have immediate legal effect. The site contains no scheduled or mapped Significant Natural Areas or Heritage Resources.

Activities on the surface of water – N/A as no such activities are proposed.

Earthworks – Only some rules and standards have legal effect. These are Rules EW-R12 and R13 and related standards EW-S3 and ES-S5 respectively. EW-R12 and associated EW-S3 relate to the requirement to abide by Accidental Discovery Protocol if carrying out earthworks and artefacts are discovered. EW-R13 and associated EW-S5 refer to operating under appropriate Erosion and Sediment Control measures. Both aspects can be conditions of consent of advice notes.

Signs – N/A – signage does not form part of this application.

Orongo Bay Zone – N/A as the site is not in Orongo Bay Zone.

There are no zone rules in the PDP with immediate legal effect that affect the proposal's activity status.

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## 6.0 ASSESSMENT OF ENVIRONMENTAL EFFECTS

### 6.1 Allotment sizes and dimensions

Lot 2 supports existing residential development. Lot 1 can support a 30m x 30m square building envelope complying with the zone's 10m boundary setback, as well as any water body setback requirement. Portions of Lot 1 are mapped as being at risk of flooding, however a building envelope can readily be accommodated, clear of such areas.

### 6.2 Natural and Other Hazards

The application is supported by a Civil Site Suitability Report that addresses/ assesses flood hazard risk in its section 8. Refer to Appendix 4. This describes the flood hazard in detail and assesses the risks. It specifies minimum finished floor level requirements for both lots (should any future development occur on the already developed Lot 2), in accordance with freeboard requirements. In information provided by the NRC's Rivers Team, no flooding has been recorded in the area proposed for a building site on Lot 1. The Civil report notes that access and parking associated with new development on Lot 1 is clear of any flood area.

In summary the risk of inundation is minimized. It is expected that future building work should not accelerate, worsen or result in further flooding on the site or neighbouring properties.

The application is also supported by a Site Assessment (Geotech) Report – refer Appendix 5. This concludes in its section 9 that *"in terms of section 106 of the Resource Management Act and its current amendments, either:*

- a) *No land in respect of which the consent is sought, nor any structure on that land, is, nor is likely to be subject to material damage by erosion, falling debris, subsidence, or slippage from any source, or*
- b) *No subsequent use that is likely to be made of the land is likely to accelerate, worsen, or result in material damage to that land, other land, or structure, by erosion, falling debris, subsidence, or slippage from any source."*

The report in Appendix 5 makes recommendations in regard to building foundation design.

### 6.3 Water Supply

The Civil Site Suitability report in Appendix 4 recommends potable water be provided for by rainwater tanks. It recommends providing at least 2 x 25,000L tanks for potable usage for a new dwelling. The new lot should be subject to a consent notice requirement to ensure sufficient potable and fire fighting water supply is provided at time of building consent.

### 6.4 Stormwater Disposal

Stormwater management is covered comprehensively in the Civil Site Suitability Report by Wilton Joubert Consulting Engineers and attached to this application in Appendix 4. Refer specifically to Section 7 of that report.

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The existing impermeable coverage to be within Lot 2 exceeds the permitted % coverage by approximately 111m<sup>2</sup>. Stormwater attenuation via a detention volume within the upper section of the existing potable water storage system is recommended. Stormwater calculations show the current potable water overflow configuration, is sufficient to attenuate peak flows to below the permitted discharge rate for the 1% AEP storm event, adjusted for climate change. The report recommends continued use of the lot's existing discharge point to the stream.

The report contains recommendations in regard to attenuation for future impermeable surfaces to be within Lot 1.

The report assesses stormwater disposal pursuant to the criteria in section 13.10.4 of the ODP – refer to the report's section 7.3.

### **6.5 Sanitary Sewage Disposal**

The Civil Site Suitability Report in Appendix 4 addresses wastewater in its section 6. The existing system for the dwelling within Lot 2 was installed in 2023, is a permitted activity with existing use rights, and is entirely within the new Lot 2 boundaries (evidenced in building consent information in the property file).

The report uses a 6 person residential dwelling scenario to show feasibility for on site wastewater treatment and disposal for the new vacant lot 1. All required setback distances can be achieved (NRC's Regional Plan permitted activity standards). The report assesses the existing and any proposed system against Rules C.6.1.1 and C.6.1.3 of the Regional Plan for Northland and confirms permitted activity status is achievable.

### **6.6 Energy Supply & Telecommunications**

Power and telecommunications services are existing for the existing residential development. Connections to these services are not a requirement of rural subdivisions. Notwithstanding this, the proposed new lot has frontage to Waipapa Road, along which power and telecommunications services are laid within road corridor. I do not envisage any difficulty or issue in obtaining one additional connection.

### **6.7 Easements for any purpose**

There are no proposed easements.

### **6.8 Property Access**

The crossing to the existing dwelling is well established, with concrete apron – refer to photo below.



**Existing crossing into proposed Lot 2, taken from just inside Lot 2's Gateway, looking north towards Waipapa Road.**

It is proposed to construct a new separate crossing into proposed Lot 1. This will be located at the eastern end of the property frontage, appropriately setback from an existing power pole.



**New crossing to be constructed, over footpath, on the near side of the power pole.**

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## 6.9 Effects of Earthworks and Utilities

No major earthworks will be required to give effect to this subdivision. Any site works required for the formation of a new crossing can be subject to erosion and sediment control measures.

## 6.10 Building Locations & Amenity

The future residential development to be within new Lot 1 will likely be centrally located within that lot in order to obtain the required setback from road and internal boundaries, and avoid areas potentially subject to hazard, with minimum floor levels recommended for a habitable building. The photo below indicates likely location in relation to the existing dwelling to be within Lot 2 and its well established landscape planting / vegetation (view looking south). I do not believe a future dwelling will unduly impose on the existing dwelling's privacy and open space, and vice versa.



Amenity values associated with the area are not rural – they are large lot residential. When standing within the area to be Lot 1 the dwelling and open space area on adjacent property to the west is not visible. The same applies to the adjacent site to the east – separated by an access driveway and vegetation. Views across Waipapa Road are limited due to the presence of road side hedge plantings on both sides of Waipapa Road. In short, the addition of one more residential dwelling in this location has less than minor effects on amenity and character.

## 6.11 Preservation and enhancement of heritage resources (including cultural), vegetation, fauna and landscape, and land set aside for conservation purposes

The site contains no heritage resource (including cultural). It contains no areas of indigenous vegetation or habitat other than riparian plantings. The site has no landscape values or features.

There is no kiwi habitat nearby. The surrounding land is developed for residential use, with some commercial uses near but not immediately adjacent. Development is existing and nearby lots developed for residential use do not appear to be subject to any restrictions in regard to dogs and cats. There are no existing restrictions in regard to the keeping of dogs or cats on the application title. I do not believe it is reasonable to place any restrictions on the keeping of dogs or cats.

### **6.12 Soil**

The area proposed for an additional lot and future residential development is effectively one small 'paddock' – not stocked. The soils across this area have limitations in that they are poorly drained. The conversion from what is effectively nothing more than open space, to large lot residential use, does not adversely affect the life supporting capability of soil.

### **6.13 Access to waterbodies**

The site is adjacent to the Whiriwhiritoa Stream. At the time of the subdivision that created the site (1995) and in a subsequent subdivision in 2002, no esplanade reserve or strip was required or taken along the banks of the stream. This proposal does not include any offer of esplanade reserve or strip based on the above. No survey has been undertaken to verify or re-assess width.

The stream flows south to north where it forms the property's boundary, and also forms the northern boundary of the large Council-owned (and accessible to the public) Te Puawaitanga – Bay of Islands Sports Hub grounds. There is no linkage from the sports hub grounds to Waipapa Road along the stream, with the entire stream bed mapped as flood hazard.

### **6.14 Land use compatibility (reverse sensitivity)**

This is an unusual situation in that continuing a productive use on this site creates more chance of reverse sensitivity issues arising than creating an additional residential site does. The surrounding area is dominated by large lot residential development. Providing for one more large lot residential development does not create any reverse sensitivity issues.

### **6.15 Proximity to Airports**

Not relevant.

### **6.16 Natural Character of the Coastal Environment**

The sites are not zoned Coastal and are not defined as being within the Regional Policy Statement's "coastal environment".

### **6.17 Energy Efficiency and renewable Energy Development/Use**

Not relevant.

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## 6.18 National Grid Corridor

Not relevant. The National Grid does not run through the application site.

## 6.19 Other Matters

### Cumulative Effect:

The proposal creates potential for a future large lot residential development, with an area already supporting and dominated by, large lot residential development. Cumulative visual impact can be mitigated by the lack of clear view shafts into the site and within the site. In addition, Waipapa Road is capable of providing safe and efficient access to an additional site, without adverse cumulative effects.

### Precedent Effect:

Where an application is a non complying activity, consideration of precedent effects is required. The site remains zoned Rural Production despite the current density and character being residential / semi urban as opposed to 'rural'. Council recognised the lot sizes and character on the north side of Waipapa Road and has proposed Rural Residential zoning on that side of the road. The density level/ character is no different on the south side and I am of the understanding that the reason the Council chose not to propose a re-zoning to Rural Residential is in order to discourage and not allow additional development in what it regards as a flood hazard area. This is not sound or acceptable planning practice. The proposed plan has provisions specifically addressing the need for mitigation of flood hazard. It is these provisions that can and should be relied on for managing/controlling future built development, not a zoning that the land use is entirely inconsistent with.

The site has land outside of any flood hazard area so is capable of future residential use with minimal mitigation required.

I believe this to be a significant point of difference sufficient to ensure that the granting of this application does not set an adverse precedent effect that threatens the integrity of the District Plan.

## 7.0 STATUTORY ASSESSMENT

### 7.1 District Plan Objectives and Policies

#### Subdivision Objectives

13.3.1 To provide for the subdivision of land in such a way as will be consistent with the purpose of the various zones in the Plan, and will promote the sustainable management of the natural and physical resources of the District, including airports and roads and the social, economic and cultural well being of people and communities.

13.3.2 To ensure that subdivision of land is appropriate and is carried out in a manner that does not compromise the life-supporting capacity of air, water, soil or ecosystems, and that any actual or potential adverse effects on the environment which result directly from subdivision, including reverse

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sensitivity effects and the creation or acceleration of natural hazards, are avoided, remedied or mitigated.

13.3.5 To ensure that all new subdivisions provide a reticulated water supply and/or on-site water storage and include storm water management sufficient to meet the needs of the activities that will establish all year round.

13.3.7 To ensure the relationship between Maori and their ancestral lands, water, sites, wahi tapu and other taonga is recognised and provided for.

13.3.9 To ensure, to the greatest extent possible, that all new subdivision supports energy efficient design through appropriate site layout and orientation in order to maximise the ability to provide light, heating, ventilation and cooling through passive design strategies for any buildings developed on the site(s).

Section 6.0 of this report addresses the matters raised in the above objectives. The subdivision cannot be considered 'consistent' with the purpose of the zone because the existing site is already inconsistent with the purpose of the zone. It is not rural production. None of the adjacent sites are rural production. The proposal does, however, promote sustainable management of natural and physical resources of the District because it proposes the best utilisation of the land.

Development can be carried out without creating adverse effects, including reverse sensitivity effects, of a minor or more than minor nature. Whilst there are areas subject to flood hazard, there is ample scope within the proposed additional lot to develop clear of any such area. Water supply and on-site wastewater treatment and disposal can be provided for within proposed additional lot's boundaries.

The interests of Maori have been taken into account.

### Policies

13.4.1 That the sizes, dimensions and distribution of allotments created through the subdivision process be determined with regard to the potential effects including cumulative effects, of the use of those allotments on:

- (a) natural character, particularly of the coastal environment;
- (b) ecological values;
- (c) landscape values;
- (d) amenity values;
- (e) cultural values;
- (f) heritage values; and
- (g) existing land uses.

The values listed in (a) through (f) inclusive above have been taken into account in determining lot size and layout. Natural character values associated with the waterway on the western boundary are not affected. The site has no known landscape, cultural or heritage values. The amenity values of the area are relatively high, and urban in nature rather than rural. Existing land uses have been a major consideration in this proposal, noting that the surrounding area is now dominated by large lot residential development.

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13.4.2 That standards be imposed upon the subdivision of land to require safe and effective vehicular and pedestrian access to new properties.

Safe and effective access can be provided to the new site.

13.4.3 That natural and other hazards be taken into account in the design and location of any subdivision.

Flood hazard has been taken into consideration in the design and layout of the subdivision.

13.4.5 That access to, and servicing of, the new allotments be provided for in such a way as will avoid, remedy or mitigate any adverse effects on neighbouring property, public roads (including State Highways), and the natural and physical resources of the site caused by silt runoff, traffic, excavation and filling and removal of vegetation.

Refer to comments under 13.4.2. The additional lot can accommodate onsite servicing with nil adverse effects on neighbouring properties, public roads and the natural and physical resources of the site. No vegetation removal is required.

13.4.8 That the provision of water storage be taken into account in the design of any subdivision.

The additional site is capable of providing for water storage.

13.4.11 That subdivision recognises and provides for the relationship of Maori and their culture and traditions, with their ancestral lands, water, sites, waahi tapu and other taonga and shall take into account the principles of the Treaty of Waitangi.

I am not aware of any cultural values associated with the site. There is a stream boundary and this will remain with the existing house lot, with the new Lot having no water boundary. The proposal does not impact on that stream boundary as a result. Development within the additional lot will not adversely impact on ancestral lands (none known), water, sites (none known), waahi tapu (none known) and other taonga.

13.4.13 Subdivision, use and development shall preserve and where possible enhance, restore and rehabilitate the character of the applicable zone in regards to **s6 matters**. In addition subdivision, use and development shall avoid adverse effects as far as practicable by using techniques including:

(a) clustering or grouping development within areas where there is the least impact on natural character and its elements such as indigenous vegetation, landforms, rivers, streams and wetlands, and coherent natural patterns;

(b) minimising the visual impact of buildings, development, and associated vegetation clearance and earthworks, particularly as seen from public land and the coastal marine area;

(c) providing for, through siting of buildings and development and design of subdivisions, legal public right of access to and use of the foreshore and any esplanade areas;

(d) through siting of buildings and development, design of subdivisions, and provision of access that recognise and provide for the relationship of Maori with their culture, traditions and taonga including concepts of mauri, tapu, mana, wehi and karakia and the important contribution Maori culture makes to the character of the District (refer Chapter 2 and in particular Section 2.5 and Council's "Tangata Whenua Values and Perspectives" (2004);

(e) providing planting of indigenous vegetation in a way that links existing habitats of indigenous fauna and provides the opportunity for the extension, enhancement or creation of habitats for indigenous fauna, including mechanisms to exclude pests;

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(f) protecting historic heritage through the siting of buildings and development and design of subdivisions.

(g) achieving hydraulic neutrality and ensuring that natural hazards will not be exacerbated or induced through the siting and design of buildings and development.

The subdivision cannot preserve the character of the Rural Production Zone because there is no rural production character in existence already. To undertake any productive use of the land risks reverse sensitivity issues arising.

The proposal is effectively a sensible and practical 'in fill', enabling the clustering/grouping of built environment. The proposal has less than minor impact on natural character, indigenous vegetation and waterbodies. Visual impact of future built development will be minimal given limited view shafts into and within the site. There is no need to plant additional indigenous vegetation within the site and there are no heritage or cultural values associated with the site that I am aware of.

On site stormwater management can be achieved with no off site effects.

#### Rural Production Zone Objectives and Policies

##### Objectives:

8.6.3.1 To promote the sustainable management of natural and physical resources in the Rural Production Zone.

8.6.3.2 To enable the efficient use and development of the Rural Production Zone in a way that enables people and communities to provide for their social, economic, and cultural well being and for their health and safety.

8.6.3.3 To promote the maintenance and enhancement of the amenity values of the Rural Production Zone to a level that is consistent with the productive intent of the zone.

8.6.3.6 To avoid, remedy or mitigate the actual and potential conflicts between new land use activities and existing lawfully established activities (reverse sensitivity) within the Rural Production Zone and on land use activities in neighbouring zones.

8.6.3.7 To avoid remedy or mitigate the adverse effects of incompatible use or development on natural and physical resources.

8.6.3.8 To enable the efficient establishment and operation of activities and services that have a functional need to be located in rural environments.

8.6.3.9 To enable rural production activities to be undertaken in the zone.

##### Policies

8.6.4.1 That a wide range of activities be allowed in the Rural Production Zone, subject to the need to ensure that any adverse effects on the environment, including any reverse sensitivity effects, on the environment resulting from these activities are avoided, remedied or mitigated and are not to the detriment of rural productivity.

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8.6.4.2 That standards be imposed to ensure that the off site effects of activities in the Rural Production Zone are avoided, remedied or mitigated.

8.6.4.3 That land management practices that avoid, remedy or mitigate adverse effects on natural and physical resources be encouraged.

8.6.4.4 That the type, scale and intensity of development allowed shall have regard to the maintenance and enhancement of the amenity values of the Rural Production Zone to a level that is consistent with the productive intent of the zone.

8.6.4.5 That the efficient use and development of physical and natural resources be taken into account in the implementation of the Plan.

8.6.4.7 That although a wide range of activities that promote rural productivity are appropriate in the Rural Production Zone, an underlying goal is to avoid the actual and potential adverse effects of conflicting land use activities.

8.6.4.8 That activities whose adverse effects, including reverse sensitivity effects cannot be avoided remedied or mitigated are given separation from other activities

8.6.4.9 That activities be discouraged from locating where they are sensitive to the effects of or may compromise the continued operation of lawfully established existing activities in the Rural production zone and in neighbouring zones.

The above objectives and policies are repetitious, around four main themes:

- (a) Enabling a wide range of activities;
- (b) Ensuring reverse sensitivity effects are avoided, remedied or mitigated so that production uses can continue;
- (c) Maintenance and enhancement of amenity values;
- (d) Sustainable and efficient use and development of natural and physical resources.

I consider the proposal to be consistent with the above objectives and policies. Objective 8.6.3.3 and Policy 8.6.4.4 seek to promote the maintenance and enhancement of the amenity values of the Rural Production Zone to a level that is consistent with the productive intent of the zone. It is not possible to be consistent with this objective in its entirety because the site is already incapable of productive use – which is the intent of the zone. The proposal does, however, maintain amenity values per se.

## **7.2 Proposed District Plan (PDP) Objectives and Policies**

Relevant objectives and policies in the PDP include those pertaining to Subdivision and those pertaining to the Rural Production Zone.

### **SUB-O1**

*Subdivision results in the efficient use of land, which:*

- a. achieves the objectives of each relevant zone, overlays and district wide provisions;*
- b. contributes to the local character and sense of place;*
- c. avoids reverse sensitivity issues that would prevent or adversely affect activities already established on land from continuing to operate;*
- d. avoids land use patterns which would prevent land from achieving the objectives and policies of the zone in which it is located;*
- e. does not increase risk from natural hazards or risks are mitigated and existing risks reduced; and*

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f. manages adverse effects on the environment.

**SUB-O2**

Subdivision provides for the:

- a. Protection of highly productive land; and
- b. Protection, restoration or enhancement of Outstanding Natural Features, Outstanding Natural Landscapes, Natural Character of the Coastal Environment, Areas of High Natural Character, Outstanding Natural Character, wetland, lake and river margins, Significant Natural Areas, Sites and Areas of Significance to Māori, and Historic Heritage.

**SUB-O3** Infrastructure is planned to service the proposed subdivision and development where:

- a. there is existing infrastructure connection, infrastructure should provided in an integrated, efficient, coordinated and future-proofed manner at the time of subdivision; and
- b. where no existing connection is available infrastructure should be planned and consideration be give n to connections with the wider infrastructure network.

**SUB-O4**

Subdivision is accessible, connected, and integrated with the surrounding environment and provides for:

- a. public open spaces;
- b. esplanade where land adjoins the coastal marine area; and
- c. esplanade where land adjoins other qualifying water bodies

I consider the subdivision to be more consistent than not with SUB-O1. Whilst it cannot achieve all the objectives of the Rural Production Zone, this is the case currently, prior to any proposal to subdivide. The situation is not worsened and in fact is improved by reducing the risk of reverse sensitivity issues arising. The proposal contributes to the local character and sense of place; avoids reverse sensitivity issues; does nothing additional that would prevent land from achieving the objectives and policies of the zone as these cannot be achieved currently in any event; risk from natural hazards can be appropriately managed and mitigated; and adverse effects on the environment are considered less than minor.

The subdivision does not provide for the protection of highly productive land, however expert opinion from a Land Management consultant (refer to report in Appendix 6) finds that the land is already subject to long term constraints such that it cannot be utilised for productive purposes, and that it is therefore exempt from any requirements to preserve land defined as highly productive (SUB-O2). The site contains none of the features listed in part (b) of this objective except for a stream margin. The additional lot is not adjacent to the stream and will not adversely impact on it.

On-site servicing can be provided for (SUB-O3). Based on previous subdivisions, esplanade requirements have not been considered (SUB-O4).

**SUB-P1**

Enable boundary adjustments that:

.....

Not relevant – application is not a boundary adjustment.

**SUB-P2**

Enable subdivision for the purpose of public works, infrastructure, reserves or access.

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Not relevant.

**SUB-P3**

Provide for subdivision where it results in allotments that:

- a. are consistent with the purpose, characteristics and qualities of the zone;
- b. comply with the minimum allotment sizes for each zone;
- c. have an adequate size and appropriate shape to contain a building platform; and
- d. have legal and physical access.

The subdivision results in lots that are not consistent with the characteristics and qualities of the zone, but which are consistent with the surrounding area. The lots do not comply with minimum lot sizes, but are entirely consistent with the lot sizes provided for in what is considered a more appropriate zoning, namely Rural Residential.

The lots are of an adequate size and appropriate shape to contain building platforms (existing on two lots in any event), and that have legal and physical access.

**SUB-P4**

Manage subdivision of land as detailed in the district wide, natural environment values, historical and cultural values and hazard and risks sections of the plan

The subdivision has had regard to all the matters listed, where relevant.

**SUB-P5**

Manage subdivision design and layout in the General Residential, Mixed Use and Settlement zone....

N/A.

**SUB-P6** Require infrastructure to be provided in an integrated and comprehensive manner by:

- a. demonstrating that the subdivision will be appropriately serviced and integrated with existing and planned infrastructure if available; and
- b. ensuring that the infrastructure is provided in accordance the purpose, characteristics and qualities of the zone.

The subdivision is not in an urban area where there is Council administered or operated infrastructure except for the water main on the far side of Waipapa Road. It is proposed that the additional lot be self sufficient in terms of servicing.

**SUB- P7**

Require the vesting of esplanade reserves when subdividing land adjoining the coast or other qualifying water bodies.

Refer to earlier comments.

**SUB-P8** Avoid rural lifestyle subdivision in the Rural Production zone unless the subdivision:

- a. will protect a qualifying SNA in perpetuity and result in the SNA being added to the District Plan SNA schedule; and
- b. will not result in the loss of versatile soils for primary production activities.

Rural lifestyle lots are not being created. The term 'rural lifestyle' infers much larger lots where a residential dwelling is established in a rural setting with space to run stock or establish a productive food crop. What is being proposed here is effectively a large residential lot with generous open space.

**SUB-P9**

Avoid subdivision [sic] rural lifestyle subdivision in the Rural Production zone and Rural residential subdivision in the Rural Lifestyle zone unless the development achieves the environmental outcomes required in the management plan subdivision rule.

As above.

**SUB-P10**

To protect amenity and character by avoiding the subdivision of minor residential units from Principal residential units where resultant allotments do not comply with minimum allotment size and residential density.

N/A.

**SUB-P11**

Manage subdivision to address the effects of the activity requiring resource consent including ( but not limited to) consideration of the following matters where relevant to the application:

- a. consistency with the scale, density, design and character of the environment and purpose of the zone;
- b. the location, scale and design of buildings and structures;
- c. the adequacy and capacity of available or programmed development infrastructure to accommodate the proposed activity; or the capacity of the site to cater for on-site infrastructure associated with the proposed activity;
- d. managing natural hazards;
- e. Any adverse effects on areas with historic heritage and cultural values, natural features and landscapes, natural character or indigenous biodiversity values; and
- f. any historical, spiritual, or cultural association held by tangata whenua, with regard to the matters set out in Policy TW-P6.

No consent is required under the PDP so the above policy has little relevance. In summary I believe the proposed subdivision to be more consistent than not with relevant PDP objectives and policies in regard to subdivision. As previously stated, it is difficult for this subdivision to be entirely consistent with the purpose of the Rural Production Zone because the underlying land is already inconsistent with that purpose, as are all properties in the immediate area.

The site is zoned Rural Production in the Proposed District Plan. Earlier in my report I express the view that this is not an appropriate zoning and provide reasons for that opinion. Notwithstanding that, the proposal is assessed below.

**Objectives****RPROZ-O1**

The Rural Production zone is managed to ensure its availability for primary production activities and its long-term protection for current and future generations.

The site is incapable of ensuring the long term protection of land for primary production for current and future generations. The Council should therefore never have zoned the site Rural Production.

**RPROZ-O2**

The Rural Production zone is used for primary production activities, ancillary activities that support primary production and other compatible activities that have a functional need to be in a rural environment.

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This objective is in a zone chapter, not subdivision, and is aimed at 'activities'. No primary production activity is being applied for.

**RPROZ-O3**

Land use and subdivision in the Rural Production zone:

- a. protects highly productive land from sterilisation and enables it to be used for more productive forms of primary production;
- b. protects primary production activities from reverse sensitivity effects that may constrain their effective and efficient operation;
- c. does not compromise the use of land for farming activities, particularly on highly productive land;
- d. does not exacerbate any natural hazards; and
- e. is able to be serviced by on-site infrastructure.

The site does contain land that would meet the definition of highly productive land, It is LUC class 3w2. However, the supporting Soil and Resource Report in Appendix 6 of this planning report, concludes that the site can be exempt from consideration under the National Policy Statement for Highly Productive Land because it is subject to long term constraints that would prevent its productive capability.

Reverse sensitivity effects are reduced by the proposed subdivision. The surrounding area is not used for farming activities. The proposed additional lot can provide for development without exacerbating natural hazards. The site is able to be serviced by on-site infrastructure.

**RPROZ-O4**

The rural character and amenity associated with a rural working environment is maintained.

There is very little, if any 'rural' character remaining in the immediate environs.

**RPROZ-P1**

Enable primary production activities, provided they internalise adverse effects onsite where practicable, while recognising that typical adverse effects associated with primary production should be anticipated and accepted within the Rural Production zone.

The proposal is not for a primary production activity. Not applicable.

**RPROZ-P2**

Ensure the Rural Production zone provides for activities that require a rural location by:

- a. enabling primary production activities as the predominant land use;
- b. enabling a range of compatible activities that support primary production activities, including ancillary activities, rural produce manufacturing, rural produce retail, visitor accommodation and home businesses.

Activity based policy. Not applicable.

**RPROZ-P3**

Manage the establishment, design and location of new sensitive activities and other non-productive activities in the Rural Production Zone to avoid where possible, or otherwise mitigate, reverse sensitivity effects on primary production activities.

Refer to earlier comments in regard to a reduction in the risk of reverse sensitivity issues arising.

**RPROZ-P4**

*Land use and subdivision activities are undertaken in a manner that maintains or enhances the rural character and amenity of the Rural Production zone, which includes:*

- a. *a predominance of primary production activities;*
- b. *low density development with generally low site coverage of buildings or structures;*
- c. *typical adverse effects such as odour, noise and dust associated with a rural working environment; and*
- d. *a diverse range of rural environments, rural character and amenity values throughout the District.*

Primary production is not the predominant use in the area of the proposed subdivision. The development, whilst not compliant with Rural Production minimum site size, is consistent with the Rural Residential minimum site size, and is considered low density in the context of the existing character of the area.

**RPROZ-P5**

*Avoid land use that:....*

N/A. Activity is not a land use.

**RPROZ-P6**

*Avoid subdivision that:*

- a. *results in the loss of highly productive land for use by farming activities;*
- b. *fragments land into parcel sizes that are no longer able to support farming activities, taking into account:*
  1. *the type of farming proposed; and*
  2. *whether smaller land parcels can support more productive forms of farming due to the presence of highly productive land.*
- c. *provides for rural lifestyle living unless there is an environmental benefit.*

Refer to earlier comments. The subdivision does not provide for rural lifestyle living. It proposes to create a lot suitable for residential use with open space, within an area already dominated by that same land use.

**RPROZ-P7**

*Manage land use and subdivision to address the effects of the activity requiring resource consent, including (but not limited to) consideration of the following matters where relevant to the application: ...*

The proposal does not require consent under the PDP's zone provisions and is not a land use activity in any event, so the policy is of limited relevance.

## 7.2 Part 2 Matters

5 Purpose

- (1) *The purpose of this Act is to promote the sustainable management of natural and physical resources.*

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

The proposal is considered to provide for the sustainable management of natural and physical resources.

#### 6 Matters of national importance

In achieving the purpose of this Act, all persons exercising functions and powers under it, in relation to managing the use, development, and protection of natural and physical resources, shall recognise and provide for the following matters of national importance:

- (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;
- (b) the protection of outstanding natural features and landscapes from inappropriate subdivision, use, and development;
- (c) the protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna;
- (d) the maintenance and enhancement of public access to and along the coastal marine area, lakes, and rivers;
- (e) the relationship of Maori and their culture and traditions with their ancestral lands, water, sites, waahi tapu, and other taonga;
- (f) the protection of historic heritage from inappropriate subdivision, use, and development;
- (g) the protection of protected customary rights;
- (h) the management of significant risks from natural hazards.

The application site is not coastal, contains no outstanding landscape or features and no significant indigenous vegetation or habitat. Historic subdivisions creating the site and two others to the south along the same stream bed boundary, were not required to provide for public access. There are no heritage or cultural values associated with the site and development can occur on the additional lot without significant risk from natural hazards. I consider the proposal appropriate for the site.

#### 7 Other matters

In achieving the purpose of this Act, all persons exercising functions and powers under it, in relation to managing the use, development, and protection of natural and physical resources, shall have particular regard to—

- (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:
  - (e) [Repealed]
  - (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.

Regard has been had to any relevant parts of Section 7 of the RMA, "Other Matters". Maintenance of amenity values, and quality of the environment have been considered and the proposed subdivision design has had regard to these aspects. The subdivision does not create any additional impact on natural and physical resources.

#### 8 Treaty of Waitangi

*In achieving the purpose of this Act, all persons exercising functions and powers under it, in relation to managing the use, development, and protection of natural and physical resources, shall take into account the principles of the Treaty of Waitangi (Te Tiriti o Waitangi).*

The principles of the Treaty of Waitangi have been considered and it is believed that this proposed subdivision does not offend any of those principles.

In summary, it is considered that all matters under s5-8 inclusive have been adequately taken into account.

### 7.3 National Policy Statement – Highly Productive Land

The National Policy Statement for Highly Productive Land is relevant given that (a) the site is zoned Rural Production (under the ODP – the only plan with legal effect in regard to zoning); and (b) the application site is mapped as containing LUC 3 soils - according to the 1:50,000 LUC maps used by the Council.

The NPS HPL has recently been amended, however, to change that definition in regard to LUC 3 soils.

Clause 3.5(7) now reads:

*Until a regional policy statement containing maps of highly productive land in the region is operative, each relevant territorial authority and consent authority must apply this National Policy Statement as if references to highly productive land were references to land that,:*

*(a) is*

*(i) zoned general rural or rural production at the commencement date; and*

*(ii) LUC 1, 2, or 3 land; but*

---

*(b) is not:*

*(i) identified for future urban development at the commencement date; or*

*(ii) subject to a Council initiated, or an adopted, notified plan change to rezone it from general rural or rural production to urban or rural lifestyle at the commencement date; or*

*(iii) subject to a resource consent application for subdivision, use or development on LUC 3 land for any activity other than rural lifestyle, where that consent has been lodged at or after the commencement date.*

The commencement date was 15<sup>th</sup> January 2026. The application is being lodged after that date. The soils are LUC 3. The activity is not rural lifestyle – a term not defined in the NPS HPL but which is taken to equate to the PDP's Rural Lifestyle zone and its purpose, where minimum lot size is 2ha and where the purpose is to enable people to undertake primary production activities or primarily undertake a residential activity while having the option of growing their own food. I do not believe the density and lot size proposed in this application can be considered 'rural lifestyle', and that it is more residential in nature.

As such I am of the opinion that the site does not meet the amended definition of highly productive land.

Notwithstanding that, prior to the January amendment, the applicant commissioned a report from Land Management Specialist Ian Harmon – refer to Appendix 6. The NPS HPL provides for the exemption for highly productive land subject to long term constraints – Clause 3.10 and its subclauses refer.

I will not repeat the findings of the Soil and Resource Report suffice to say that the proposal meets the requirements for an exemption from the provisions of the NPS HPL under Clause 3.10.

This, along with the amended definition discussed earlier, lead me to the conclusion that no further regard need be had to the NPS-HPL.

#### **7.4 Other National Policy Statements and National Environmental Standards**

I do not believe there are any other National Policy Statements, and no National Environmental Standards, relevant to the application. As far as I can ascertain the site has never supported an activity covered by the NES for Contaminated Soils.

#### **7.5 Regional Policy Statement**

The Regional Policy Statement for Northland contains objectives and policies related to infrastructure and regional form and economic development. These are enabling in promoting sustainable management in a way that is attractive for business and investment. The proposal is consistent with these objectives and policies.

##### **Objective 3.6 Economic activities – reverse sensitivity and sterilisation**

*The viability of land and activities important for Northland's economy is protected from the negative impacts of new subdivision, use and development, with particular emphasis on either:*

---

(a) Reverse sensitivity for existing:

(i) Primary production activities; .....

The associated Policy to the above Objective is **Policy 5.1.1 – Planned and coordinated development**.

Subdivision, use and development should be located, designed and built in a planned and co-ordinated manner which: ....

(c) Recognises and addresses potential cumulative effects of subdivision, use, and development, and is based on sufficient information to allow assessment of the potential long-term effects; ...

(e) Should not result in incompatible land uses in close proximity and avoids the potential for reverse sensitivity;

(f) Ensures that plan changes and subdivision to / in a primary production zone, do not materially reduce the potential for soil-based primary production on land with highly versatile soils, or if they do, the net public benefit exceeds the reduced potential for soil-based primary production activities; and ...

Policy 5.1.1 seeks to ensure that subdivision in a primary production zone does not "materially reduce the potential for soil-based primary production on land with highly versatile soils, or if they do, the net public benefit exceeds the reduced potential for soil-based primary production activities".

This has been discussed at length elsewhere in this planning report. The subdivision does not "materially reduce the potential for soil-based primary production on land with highly versatile soils" primarily because it has extremely limited potential right now.

### **5.1.3 Policy – Avoiding the adverse effects of new use(s) and development**

Avoid the adverse effects, including reverse sensitivity effects of new subdivision, use and development, particularly residential development on the following:

(a) Primary production activities in primary production zones (including within the coastal marine area);.....

In regard to this subdivision, it is considered that adverse reverse sensitivity issues are likely to be less than minor and in fact may be reduced.

## **8.0 s104D GATEWAY TEST FOR NON COMPLYING ACTIVITIES**

S104D of the Act requires a consent authority to be satisfied of one or other, or both, of the following thresholds to be met, before it can consider granting consent.

- (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.*

The application will not create adverse effects on the environment of a more than minor nature. I do not believe the application to be contrary to the objectives and policies of the Operative District Plan and Proposed District Plans in their entirety or to the extent that the proposal should not proceed. I consider the proposal to meet at least one of the gateway tests, if not both.

## **9.0 s95A-E ASSESSMENT & CONSULTATION**

### **9.1 S95A Public Notification Assessment**

A consent authority must follow the steps set out in s95A to determine whether to publicly notify an application for a resource consent. Step 1 specifies when public notification is mandatory in certain circumstances. No such circumstances exist. Step 2 of s95A specifies the circumstances that preclude public notification. No such circumstance exists and Step 3 of s95A must be considered. This specifies that public notification is required in certain circumstances, neither of which exists. The application is not subject to a rule or national environmental standard that requires public notification. This report and AEE concludes that the activity will not have, nor is it likely to have, adverse effects on the environment that are more than minor. In summary public notification is not required pursuant to Step 3 of s95A.

### **9.2 S95B Limited Notification Assessment**

A consent authority must follow the steps set out in s95B to determine whether to give limited notification of an application for a resource consent, if the application is not publicly notified pursuant to s95A. Step 1 identifies certain affected groups and affected persons that must be notified. None exist in this instance. Step 2 of s95B specifies the circumstances that preclude limited notification. No such circumstance exists and Step 3 of s95B must be considered. This specifies that certain other affected persons must be notified. The application is not for a boundary activity and the s95E assessment below concludes that there are no affected persons to be notified. There is no requirement to limited notify the application pursuant to Step 3.

### **9.3 S95D Level of Adverse Effects**

The AEE in this report assesses effects on the environment and concludes that these will be no more than minor.

---

## 9.4 S95E Affected Persons

A person is an 'affected person' if the consent authority decides that the activity's adverse effects on the person are minor or more than minor (but are not less than minor). A person is not an affected person if they have provided written approval for the proposed activity.

Despite the category of activity being non complying, I do not believe there are minor or more than minor effects on any adjacent properties. The site of the additional lot cannot be seen from any adjacent property to the west, east or south. Waipapa Road forms the northern boundary and the property on the north side of Waipapa Road has no views into the additional lot because of roadside screening vegetation on both sides of Waipapa Road.

No existing access is to be shared with any adjacent property, with the proposed additional lot to have its own driveway entrance. There are no adverse amenity effects noting the existing character of the immediate area.

The site is essentially in an area dominated by large lot residential land use and not in any area known to contain sites of significance to Maori. The site has no heritage values. The site contains no significant indigenous vegetation. The site does not adjoin, and is not near to, state highway. No pre lodgement consultation has been considered necessary with tangata whenua, Heritage NZ, Department of Conservation or NZTA (Waka Kotahi).

## 10.0 CONCLUSION

The site is considered suitable for the proposed subdivision, and effects on the wider environment are no more than minor.

The existing site and land use, and those in the immediate area are already inconsistent with the purpose of the Rural Production Zone, calling into question the wisdom and appropriateness of the zoning the Council has applied to the property and continues to seek to apply to the property in its PDP. If the rationale for this is to prevent development because of a potential flood hazard, then the Council should instead be relying on its natural hazard rules to address that potential and not simply apply an entirely inappropriate zoning, the purpose of which – rural production – is not capable of being achieved by either this site or any of the adjacent sites.

This existing inconsistency with objectives and policies is not rendered any worse by the proposal, which I believe to be more consistent than not with the *relevant* objectives and policies of the Operative and Proposed District Plans.

I consider the proposal to be consistent with relevant objectives and policies of the Regional Policy Statement and relevant National Policy Statements, as well as Part 2 of the Resource Management Act.

---

There is no District Plan rule or national environmental standard that requires the proposal to be publicly notified and no persons have been identified as adversely affected by the proposal. No special circumstances have been identified that would suggest notification is required.

It is therefore requested that the Council grant approval to the subdivision on a non notified basis, subject to appropriate conditions.



Signed  
**Lynley Newport,**  
**Senior Planner**  
**Thomson Survey Ltd**

Dated

9<sup>th</sup> March 2026

## 11.0 LIST OF APPENDICES

<b>Appendix 1</b>	Scheme Plan(s)
<b>Appendix 2</b>	Location Plan
<b>Appendix 3</b>	Records of Title and Relevant Instruments
<b>Appendix 4</b>	Civil Site Suitability Report
<b>Appendix 5</b>	Site Assessment Report (Geotech)
<b>Appendix 6</b>	Soil and Resource Report

## **Appendix 1**

Scheme Plan(s)



THIS DRAWING AND DESIGN REMAINS THE PROPERTY OF THOMSON SURVEY LTD AND MUST NOT BE REPRODUCED WITHOUT THE WRITTEN PERMISSION OF THOMSON SURVEY LTD  
 AREAS AND MEASUREMENTS ARE SUBJECT TO FINAL SURVEY  
 TOPOGRAPHICAL DETAIL IS APPROXIMATE ONLY AND SCALED FROM AERIAL PHOTOGRAPHY

Local Authority: Far North District Council  
 Comprised in: NA101C/190  
 Total Area: 9420m<sup>2</sup>  
 Zoning: Rural Production  
 Resources features: NIL

This plan and accompanying report(s) have been prepared for the purpose of obtaining a Resource Consent only and for no other purpose. Use of this plan and/or information on it for any other purpose is at the user's risk.

0 7.5 37.5 75m  
 Bar Scale 1:750 @ A3

**THOMSON SURVEY**  
 Limited  
 315 Kerikeri Rd  
 P.O. Box 372 Kerikeri  
 Email: kerikeri@tsurvey.co.nz  
 Ph: (09) 4077360  
 www.tsurvey.co.nz

Registered Land Surveyors, Planners & Land Development Consultants

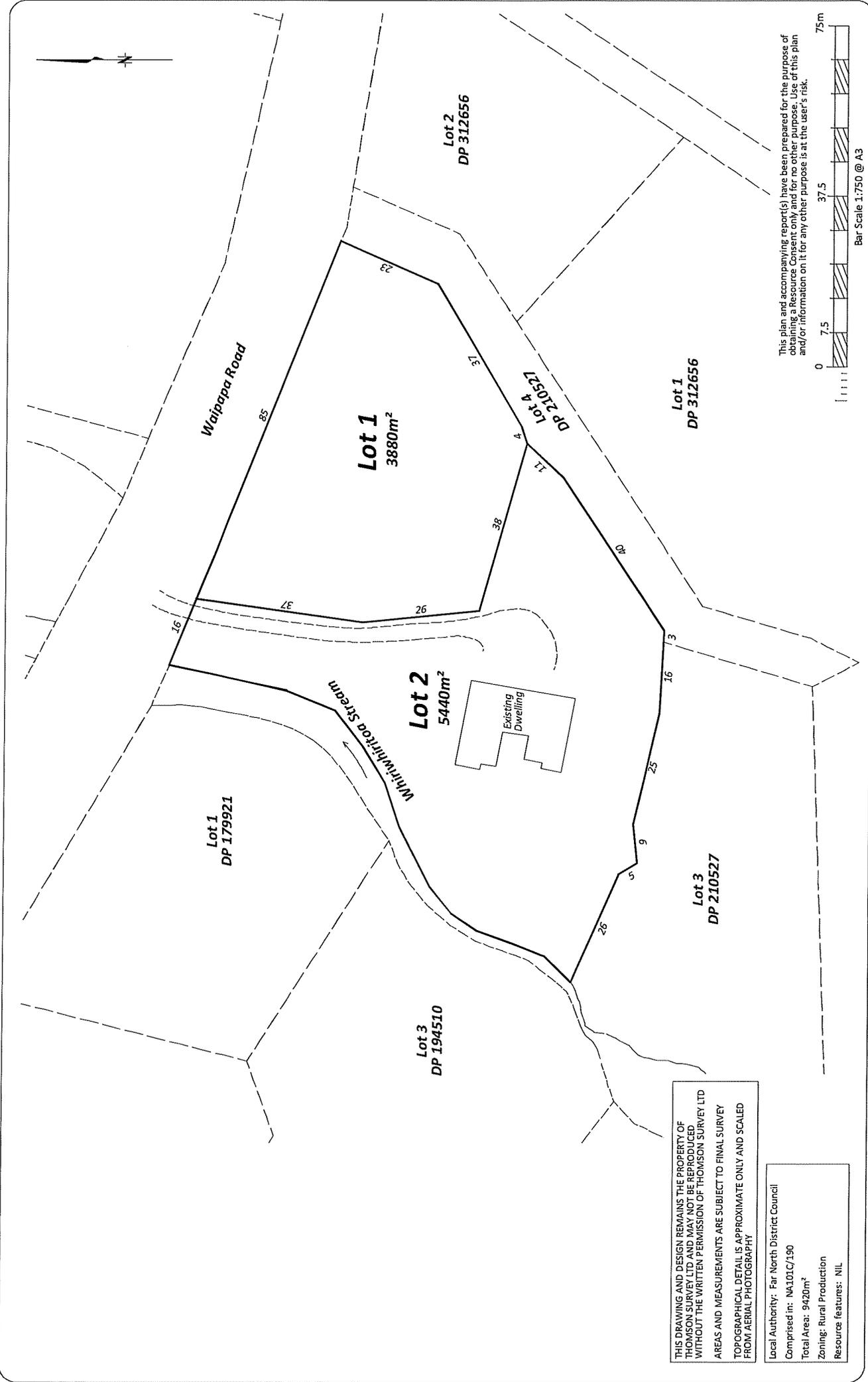
**PROPOSED SUBDIVISION OF  
 LOT 1 DP 167286  
 309 WAIAPAPA ROAD, KERIKERI**

PREPARED FOR: C. BILLINGTON

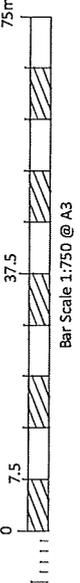
Survey	Name	Date	ORIGINAL
Design			SCALE
Drawn	KY	18.12.25	1:750
Approved			SHEET SIZE
Rev			A3

10832 Scheme

Surveyors Ref. No: **10832**  
 Sheet 1 of 1



This plan and accompanying report(s) have been prepared for the purpose of obtaining a Resource Consent only and for no other purpose. Use of this plan and/or information on it for any other purpose is at the user's risk.



THIS DRAWING AND DESIGN REMAINS THE PROPERTY OF THOMSON SURVEY LTD AND MAY NOT BE REPRODUCED WITHOUT THE WRITTEN PERMISSION OF THOMSON SURVEY LTD. AREAS AND MEASUREMENTS ARE SUBJECT TO FINAL SURVEY TOPOGRAPHICAL DETAIL IS APPROXIMATE ONLY AND SCALED FROM AERIAL PHOTOGRAPHY.

Local Authority: Far North District Council  
 Comprised in: NA101C/190  
 Total Area: 9420m²  
 Zoning: Rural Production  
 Resource features: NIL

**THOMSON SURVEY**  
 315 Kerikeri Rd  
 P.O. Box 372 Kerikeri  
 Email: kerikeri@tsurvey.co.nz  
 Ph: (09) 4077360  
 www.tsurvey.co.nz

Registered Land Surveyors, Planners & Land Development Consultants

**PROPOSED SUBDIVISION OF  
 LOT 1 DP 167286  
 309 WAIKAPA ROAD, KERIKERI**

PREPARED FOR: C. BILLINGTON

Survey	Name	Date	ORIGINAL SCALE	SHEET SIZE
Design	KY	18.12.25	1:750	A3
Approved				
Rev				

10832 Scheme

Surveyors Ref. No:  
**10832**  
 Sheet 1 of 1

## **Appendix 2**

### Location Plan



## **Appendix 3**

Records of Title and Relevant Instruments



**RECORD OF TITLE  
UNDER LAND TRANSFER ACT 2017  
FREEHOLD  
Search Copy**



  
R. W. Muir  
Registrar-General  
of Land

**Identifier** NA101C/190  
**Land Registration District** North Auckland  
**Date Issued** 14 July 1995  
**Prior References**  
NA76C/442

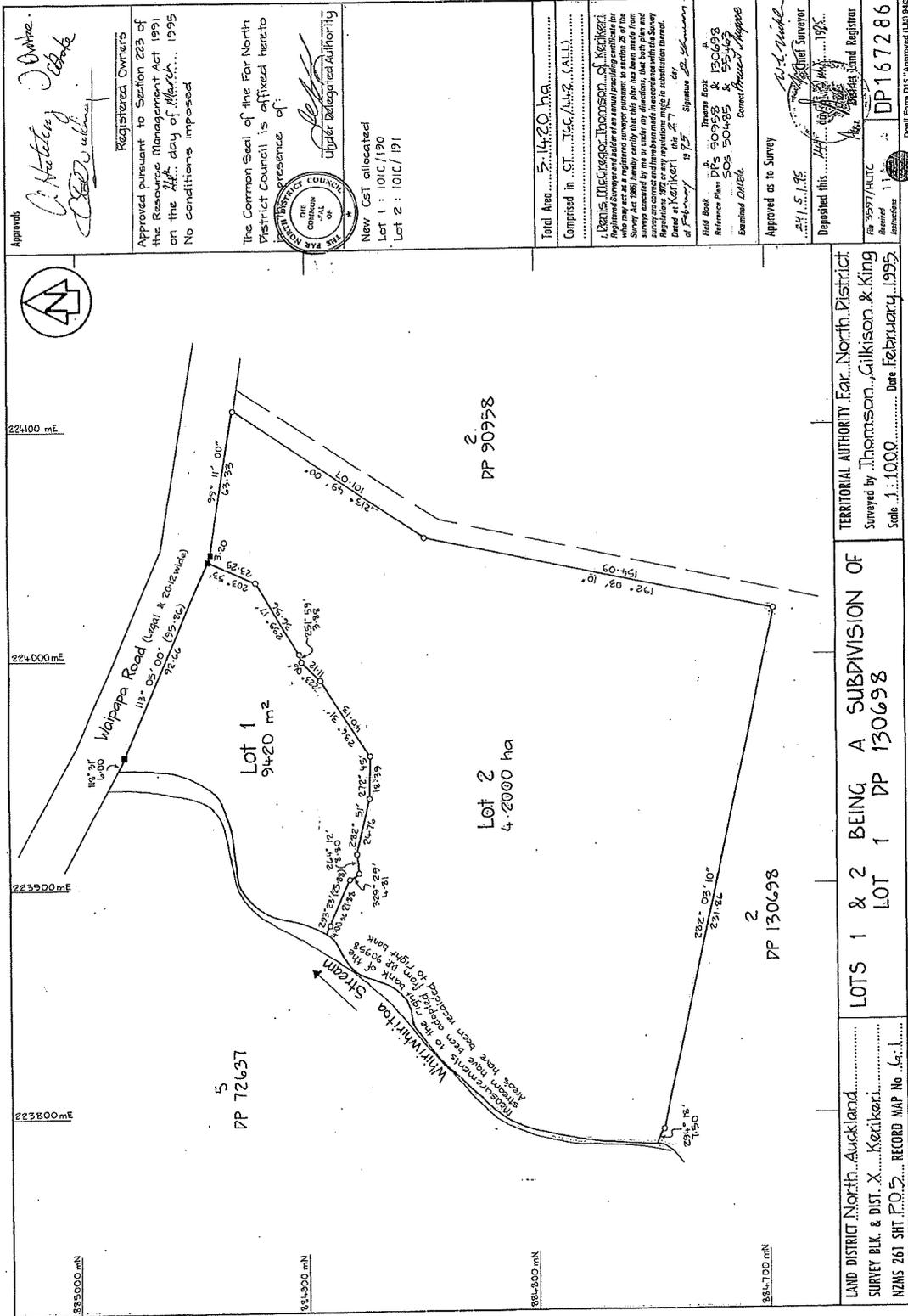
---

**Estate** Fee Simple  
**Area** 9420 square metres more or less  
**Legal Description** Lot 1 Deposited Plan 167286  
**Registered Owners**  
Charlie James Billington and Georgina Martine Bondfield

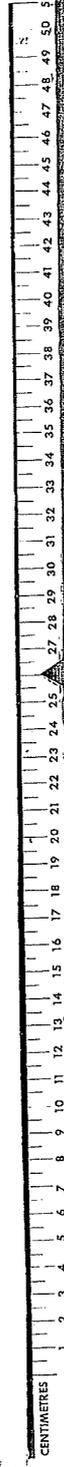
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**Interests**

Appurtenant hereto is a drainage right created by Transfer 963844.1  
13211443.2 Mortgage to ASB Bank Limited - 28.3.2025 at 2:13 pm



25 JUN 1995



Approved: *C. Hatcher*  
*D. O'Brien*

Registered Owners:  
Approved pursuant to Section 223 of the Resource Management Act 1991 on the 14th day of March, 1995. No conditions imposed.

The Common Seal of the Far North District Council is affixed hereto in presence of:



Updater: *[Signature]*  
New CST allocated:  
Lot 1: 101C/190  
Lot 2: 101C/191

Total Area: 5,142.0 ha  
Comprised in: 766/442 (ALL)

**Deanis Macrae, Thompson & Kerikeri**  
Registered Surveyors and Valuers in accordance with the Survey Act 1980. I hereby certify that this plan has been made from surveys conducted by me or under my direction, that both plan and field notes are true and correct, and that I am a duly qualified Surveyor under the provisions of the Survey Act 1980 or any regulations made in substitution thereof.  
Dated at Kerikeri, this 27th day of February, 1995. Signature: *[Signature]*

Reference Plan: DP 90958 & 130698  
SOS: 50485 & 55469  
Examined: *[Signature]*  
Examined: *[Signature]*

Approved as to Survey: *[Signature]*

Deposited this: 14th day of June, 1995

DP 167286  
No: 5597/HUTC  
Reference: 11  
District: 11  
Dealt Form D15 - Approved (L1) 947

LAND DISTRICT North Auckland  
SURVEY BLK. & DIST. X Kerikeri  
NZMS 261 SHT P.O.5 RECORD MAP No. 641

TERRITORIAL AUTHORITY Far North District  
Surveyed by Thomson, Galkison & King  
Scale 1:1000 Date February, 1995

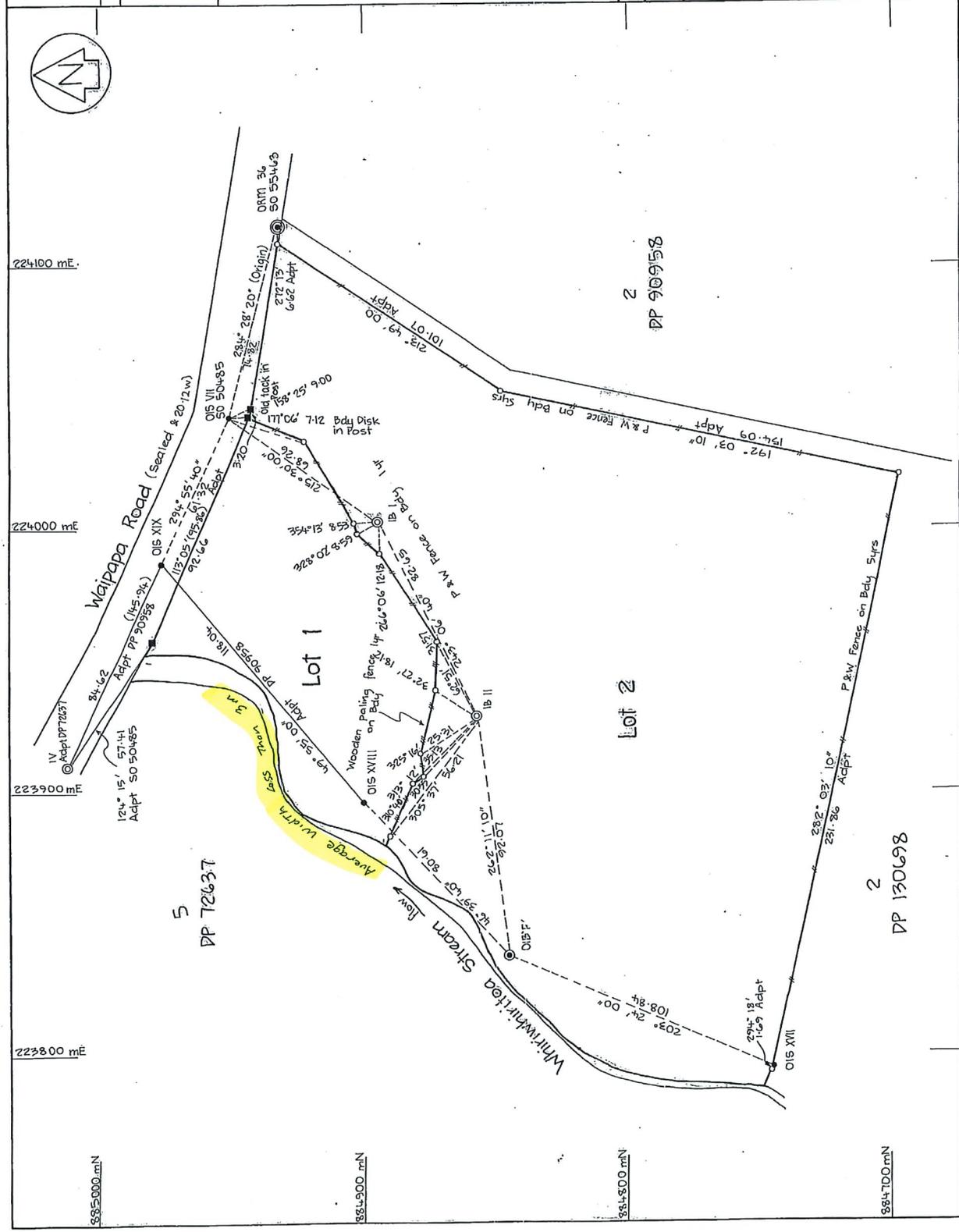


Approvals  
 Bearing and Coordinate Datum Geodetic 1949  
 M Eden Circuit Coordinates  
 Origin M Eden 700 000 mN 900 000 mE

Schedule of Coordinates	mN	mE
ORM 36	50 5544.2	884971.48
(Origin of Coordinates)	224114.14	222114.14
O15 VII	50 50485	884950.17
IB 1	884884.40	224002.74
IB 11	884851.22	223923.05
O16 F	DP 90958	884844.10
		223831.82

All old marks are from DP 90958 unless otherwise stated.  
 All adoptions are from DP 130698 unless otherwise stated.  
 Boundaries are not occupied unless otherwise stated.  
 Measurements to right bank of stream have been adopted from DP 90958.  
 Instrument used - Topcon CTS/1

Total Area .....  
 Comprised in .....  
 I, Paris McKeegan Thompson of Kerikeri  
 Registered Surveyor and holder of an annual practising certificate for who  
 may act as a registered surveyor pursuant to section 25 of the Survey Act  
 1989 hereby certify that this plan has been made from surveys executed  
 under my direct supervision and that the same are in accordance with the  
 provisions of the Survey Regulations 1972 or any  
 regulations made in substitution thereof.  
 Dated at Kerikeri, this 31<sup>st</sup> day  
 of February, 1995. Signature Paris McKeegan Thompson  
 Field Book Traverse Book 145, 17-78  
 Reference Plans DP 90958 & 130698  
SDS 50485 & 55463  
 Examined DP 90958 by Corrigan Bruce J. Appare  
 Approved as to Survey  
 24.15.95 Chief Surveyor  
 Deposited this 14th day of July 1995  
 Registered Land Registrar  
 File 3597/HUTC  
 Received Instructions DP 167286



TERRITORIAL AUTHORITY Ear North District  
 Surveyed by Thomson, Gilkison & King  
 Scale 1:1000 Date February 1995

LOTS 1 & 2 BEING A SUBDIVISION OF  
 LOT 1 DP 130698

LAND DISTRICT North Auckland  
 SURVEY BLK. & DIST. X Kerikeri  
 NTMS 961 SHT P05 RECORD MAP No 6-1

## **Appendix 4**

### Civil Site Suitability Report

<b>SITE</b>	<b>309 Waipapa Road, Kerikeri</b>
<b>LEGAL DESCRIPTION</b>	<b>Lot 1 DP 167286</b>
<b>PROJECT</b>	<b>Proposed 2-Lot Subdivision</b>
<b>CLIENT</b>	<b>Charlie Billington</b>
<b>REFERENCE NO.</b>	<b>144132</b>
<b>DOCUMENT</b>	<b>Civil Site Suitability Report</b>
<b>STATUS/REVISION NO.</b>	<b>01– Resource Consent</b>
<b>DATE OF ISSUE</b>	<b>29 January 2026</b>

Report Prepared For	Attention	Email
Charlie Billington	Lynley Newport	charlie.billington@gmail.com lynley@tsurvey.co.nz

<b>Authored by</b>	<b>G.M. Brant</b> <i>(Be (Hons) Civil)</i>	Civil Engineer	gustavo@wjl.co.nz	
<b>Reviewed &amp; Approved by</b>	<b>B. Steenkamp</b> <i>(CPEng, BEng Civil, CMEngNZ, BSc (Geology))</i>	Senior Civil Engineer	bens@wjl.co.nz	

## 1 EXECUTIVE SUMMARY

The following table is intended to be a concise summary which must be read in conjunction with the relevant report sections as referenced herein.

<b>Legal Description:</b>	Lot 1 DP 167286
<b>Lot Sizes:</b>	Proposed Lot 1 – 3,880m <sup>2</sup> Proposed Lot 2 – 5,440m <sup>2</sup>
<b>Scope:</b>	Civil Site Suitability Investigation: <ul style="list-style-type: none"><li>- Potable Water</li><li>- Wastewater Assessment</li><li>- Stormwater Assessment</li><li>- Flood Assessment</li></ul>
<b>Development Proposals Supplied:</b>	Subdivision Scheme Plan supplied by Thomson Survey (Ref No: 10832, dated: 18.12.2025)
<b>District Plan Zone:</b>	Rural Production Zone
<b>Wastewater:</b>	Recommendations for wastewater are provided in Section 6.
<b>Stormwater Management – District Plan Rules:</b>	<p><b>Permitted Activity:</b> 8.6.5.1.3 STORMWATER MANAGEMENT – The maximum proportion of the gross site area covered by buildings and other impermeable surfaces shall be 15%.</p> <p><b>Controlled Activity:</b> 8.6.5.2.1 STORMWATER MANAGEMENT – The maximum proportion of the gross site area covered by buildings and other impermeable surfaces shall be 20%.</p>
<b>Stormwater Management:</b>	<p>To comply with the parameters of the Permitted Activity Rule (8.6.5.1.3), Lots 1 &amp; 2 must not exceed an impermeable area of 582m<sup>2</sup> and 816m<sup>2</sup> respectively.</p> <p>Future development of Lot 1 is expected to fall within the Controlled / Discretionary Activity range. A stormwater attenuation report including a District Plan Assessment will be required for any future development within Lot 1 that does not comply with Permitted Activity Rule (8.6.5.1.3) at Building Consent stage.</p> <p>The existing development within Lot 2 exceeds 15% of the site area and therefore does not comply with Permitted Activity Rule (8.6.5.1.3) and is considered a Controlled Activity.</p> <p>Stormwater mitigation recommendations are provided in Section 7.</p>
<b>Approximate Ground Level at Building Platform:</b>	<u>Lot 1:</u> 67.50m - 68.20m (NZVD2016) <u>Lot 2:</u> 67.50m - 68.00m (NZVD2016)
<b>NRC Flood Levels near Proposed Building Platform:</b>	The applicable flood level for the determination of the minimum finished floor level for Lot 1 is 67.86m NZVD2016 and for Lot 2 is 68.32m.

<b>Minimum Freeboard Requirements:</b>	Habitable Buildings	=	500mm
	Non-Habitable Buildings	=	300mm

---

<b>Recommended Minimum Finished Floor Level:</b>	<u>Lot 1</u>		
	Habitable Structures	=	<b>68.36m</b> (NZVD2016)
	Non-Habitable Structures	=	<b>68.16m</b> (NZVD2016)
	<u>Lot 2</u>		
	Habitable Structures	=	<b>68.82m</b> (NZVD2016)
	Non-Habitable Structures	=	<b>68.62m</b> (NZVD2016)

---

**FOR HABITABLE DWELLING USE ONLY:**

---

**Public Road Flooding at Existing Vehicle Crossing:** Less than 300mm Peak depth during 100yr + CC Storm Event

---

**Outside Parking:** Lot 1's parking area can be formed clear of any flooding.  
Lot 2's existing parking is clear of any flooding.  
Any future parking areas should be formed less than 300mm below the 100-year CC flood level.

---

**Site Access:** Access to Lot 1 can be formed clear of any flooding.  
Lot 2's existing accessway will be partially inundated during the 100-year flood event, however, we do not expect flood levels to be high enough to pose risks regarding access to and from the site during the 100-year flood event.

---

## 2 SCOPE OF WORK

Wilton Joubert Ltd (WJL) was engaged by the client to undertake a civil site suitability assessment (potable water, wastewater, stormwater and flooding) to support a two-lot subdivision of Lot 1 DP 167286 as per the supplied Scheme Plan prepared by Thomson Survey (Ref No: 10832, dated: 18.12.2025).

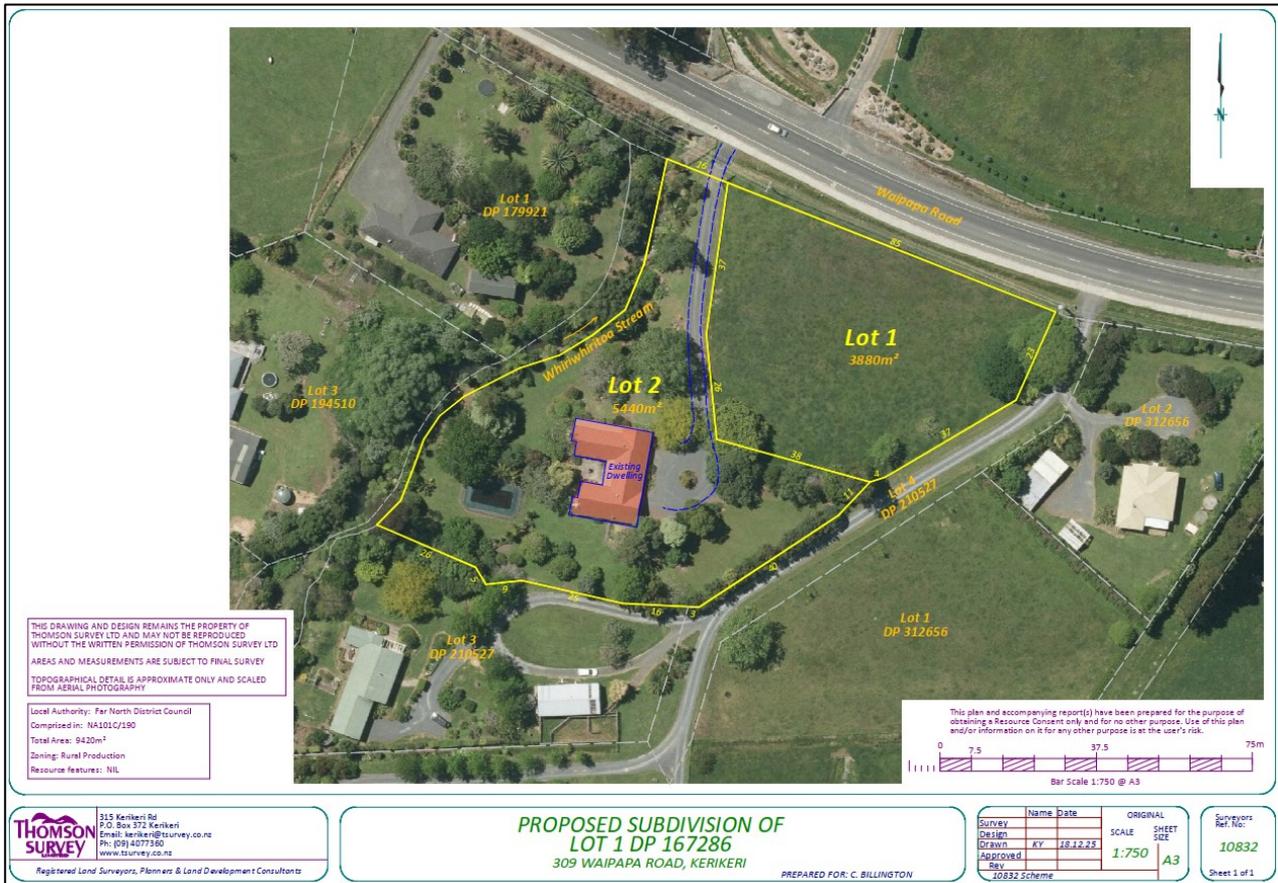


Figure 1: Snip of scheme plan prepared by Thomson Survey (Ref No: 10832, dated: 18.12.2025)

A Geotechnical Site Suitability Report (WJL Ref. 144131) has been prepared by WJL for the subject site which should be read in conjunction with this report.

Any revision of the supplied drawings and/or development proposals with potable water, wastewater, stormwater and/or flooding implications should be referred back to us for review. This report is not intended to support Building Consent applications for the future proposed lots, and any revision of supplied drawings and/or development proposals including those for Building Consent, which might rely on potable water, wastewater, stormwater and/or flooding assessments herein, should be referred to us for review.

### 3 SITE DESCRIPTION

The proposed development will be created across the following property (the site), which is located off the southern side of Waipapa Road, accessed 1.3km east of the State Highway 10 intersection:

- 309 Waipapa Road, Kerikeri, legally described as Lot 1 DP 167286.



**Figure 2: Snip from The Far North District Council (FNDC) on-line GIS Water Services Map showing site boundaries (cyan), 1m contours (orange), public potable water (blue) and public stormwater (green)**

The surface area of the subject site is 9,420m<sup>2</sup> and is accessed at the northwestern boundary corner via a gravel driveway from Waipapa Road. The eastern boundary is bound by a shared, gravel right-of-way (ROW).

Built development on-site comprises an existing dwelling at the southwestern portion of the site. Vegetation comprises mainly pasture and lawn, with trees and small bush generally surrounding the dwelling.

Topographically speaking, the property lies within a broad, volcanic plateau and is near level to gently sloping, falling towards the Whiriwhiritoa Stream along the western boundary.

The Far North District Council (FNDC) on-line GIS Water Services Map indicates that a public stormwater catchpit lead and two culverts are located adjacent to the northwestern boundary corner. A public potable water main is located in Waipapa Road's northern berm. No public stormwater, wastewater or potable water connections are shown on the GIS map.

#### 4 PUBLISHED GEOLOGY

Local geology at the subject site is noted on the GNS Science New Zealand Geology Web Map, Scale 1:250,000 as; **Kerikeri Volcanic Group Late Miocene Basalt of Kaikohe – Bay of Islands Volcanic Field**, described as; “*Basalt lava, volcanic plugs and minor tuff*”. Refer to GNS Science Website.



*Figure 3: Screenshot aerial view from the New Zealand Geology Web Map.*

In addition to the above, hand auger testing was conducted by WJL within the subject site.

The subsoils encountered during WJL’s fieldwork consisted predominantly of SILT. Approximately 250mm-300mm of TOPSOIL was overlying the investigated area. Groundwater was observed at 1.2m below ground level at one of the three tested locations. Refer to the appended ‘BH Logs’.

Given the above, the site’s subsoils have been classified as **Category 4** in accordance with the TP58 design manual.

#### 5 POTABLE WATER SUPPLY

It is recommended that Lot 1’s potable water be provided for by rainwater tanks in accordance with the Countryside Living Toolbox requirements. It is recommended to provide at least 2 x 25,000L tanks for potable water usage per new dwelling. The type of tank and volume is for the client to confirm.

## 6 WASTEWATER

### Lot 1

No existing wastewater management system is present within proposed Lot 1. As such, a new site-specific design in accordance with the ASNZS: 1547 / TP58 design manual will be required by FNDC for any future development within the proposed lot.

### Lot 2

An existing on-site wastewater treatment system currently services Lot 2's residential dwelling.

If the existing on-site wastewater treatment system is functional, fit for the existing dwelling and located within Lot 2's proposed boundaries it may continue to operate.

If any part of the wastewater system, including any trenches or disposal fields are not located within proposed Lot 2 or located in the 50-year flood level identified in Section 8.1, the system can either be relocated to a suitable location and/or upgraded, or it can be decommissioned and replaced with a new on-site wastewater treatment system in accordance with the recommendations in Section 6.1 below.

### 6.1 DESIGN PARAMETERS

The following table is intended to be a concise summary of the design parameters, which must be read in conjunction with the relevant report sections as referenced herein.

The below wastewater design has been completed to show feasibility of on-site wastewater management within the proposed Lots. As no development proposals are available at this stage for the eventual residential development within the Lots, our recommendations have been based on a moderate size dwelling containing 4 bedrooms.

Given the subsoils encountered during WJL's fieldwork investigation, we recommend secondary level treatment or higher for any new wastewater system within the Lots.

Although dripper irrigation is recommended and shown below, alternative trench or bed setup with secondary level treatment may also be acceptable subject to specific design.

#### 6.1.1 Summary of Preliminary Design Parameters for a PCDI Secondary Treatment System

Development Type:	Residential Dwellings
Effluent Treatment Level:	Secondary (<BOD5 20 mg/L, TSS 30 mg/L)
Fill Encountered in Disposal Areas:	Not encountered
Water Source:	Rainwater Collection Tanks
Site Soil Category (TP58):	Category 4 – SILT – Moderate Drainage
Estimate House Occupancy:	6 Persons
Loading Rate:	PCDI System – 5mm/day
Estimated Total Daily Wastewater Production:	1,080L/day
Typical Wastewater Design Flow Per Person:	Rainwater Supply: 180L/pp/day (Estimated –water conservation devices may enable lower design flows)
Application Method:	Surface / Subsurface Laid PCDI Lines
Loading Method:	Dosed

Minimum Tank size:	>1,080L
Emergency Storage:	24 hours
Estimated Min. Disposal Area Requirement:	216m <sup>2</sup>
Required Min. Reserve Area:	30%
Buffer Zone:	Not anticipated to be required
Cut-off Drain:	Not anticipated to be required

## 6.2 REQUIRED SETBACK DISTANCES

The disposal and reserve areas must be situated outside the relevant exclusion areas and setbacks described within Table 9 of the PRPN: Exclusion areas and setback distances for on-site domestic wastewater systems:

Table 9 of the PRPN (Proposed Regional Plan for Northland)			
Feature	Primary treated domestic wastewater	Secondary treated domestic wastewater	Greywater
<b>Exclusion areas</b>			
Floodplain	5% AEP	5% AEP	5% AEP
<b>Horizontal setback distances</b>			
Identified stormwater flow paths (downslope of disposal area)	5 meters	5 meters	5 meters
River, lake, stream, pond, dam or wetland	20 meters	15 meters	15 meters
Coastal marine area	20 meters	15 meters	15 meters
Existing water supply bore	20 meters	20 meters	20 meters
Property boundary	1.5 meters	1.5 meters	1.5 meters
<b>Vertical setback distances</b>			
Winter groundwater table	1.2 meters	0.6 meters	0.6 meters

### 6.3 NORTHLAND REGIONAL PLAN ASSESSMENT

The existing wastewater disposal system servicing Lot 2 should meet the compliance points below, stipulated within Section C.6.1.1 of the Proposed Regional Plan for Northland:

C.6.1.1 Existing on-site domestic type wastewater discharge – permitted activity	
The discharge of domestic type wastewater into or onto land from an on-site system that was a permitted activity at the notification date of this Plan, and the associated discharge of any odour into air from the onsite system, are permitted activities, provided:	
#	Rule
1	the discharge volume does not exceed:
	a) three cubic metres per day, averaged over the month of greatest discharge, and
	b) six cubic metres per day over any 24-hour period, and
2	the following reserve disposal areas are available at all times:
	a) one hundred percent of the existing effluent disposal area where the wastewater has received primary treatment or is only comprised of greywater, or
	b) thirty percent of the existing effluent disposal area where the wastewater has received at least secondary treatment, and
3	the on-site system is maintained so that it operates effectively at all times and maintenance is undertaken in accordance with the manufacturer's specifications, and
4	wastewater irrigation lines are at all times either installed at least 50 millimetres beneath the surface of the disposal area or are covered by a minimum of 50 millimetres of topsoil, mulch, or bark, and
5	the discharge does not contaminate any groundwater supply or surface water, and
6	there is no surface runoff or ponding of wastewater, and
7	there is no offensive or objectionable odour beyond the property boundary.

We envision that there will be no issue meeting the Permitted Activity Status requirements as outlined above.

Any future wastewater disposal system should meet the compliance points below, stipulated within Section C.6.1.3 of the Proposed Regional Plan for Northland:

C.6.1.3 Other on-site treated domestic wastewater discharge– permitted activity	
The discharge of domestic type wastewater into or onto land from an on-site system and the associated discharge of odour into air from the on-site system are permitted activities, provided:	
#	Rule
1	The on-site system is designed and constructed in accordance with the Australian/New Zealand Standard. On-site Domestic Wastewater Management (AS/NZS 1547:2012), and
2	The volume of wastewater discharged does not exceed two cubic metres per day, and
3	The discharge is not via a spray irrigation system or deep soakage system, and

4	The slope of the disposal area is not greater than 25 degrees, and
5	The wastewater has received secondary or tertiary treatment and is discharged via a trench or bed in soil categories 3 to 5 that is designed in accordance with Appendix L of Australian/New Zealand Standard. On-site Domestic Wastewater Management (AS/NZS 1547:2012); or is via an irrigation line system that is:
	a) dose loaded, and
	b) covered by a minimum of 50 millimetres of topsoil, mulch, or bark, and
	For the discharge of wastewater onto the surface of slopes greater than 10 degrees:
6	a) the wastewater, excluding greywater, has received at least secondary treatment, and
	b) the irrigation lines are firmly attached to the disposal area, and
	c) where there is an up-slope catchment that generates stormwater runoff, a diversion system is installed and maintained to divert surface water runoff from the up-slope catchment away from the disposal area, and
	d) a minimum 10 metre buffer area down-slope of the lowest irrigation line is included as part of the disposal area, and
	e) the disposal area is located within existing established vegetation that has at least 80 percent canopy cover, or
	f) the irrigation lines are covered by a minimum of 100 millimetres of topsoil, mulch, or bark, and
7	the disposal area and reserve disposal area are situated outside the relevant exclusion areas and setbacks in Table 9: Exclusion areas and setback distances for on-site domestic wastewater systems, and
8	for septic tank treatment systems, a filter that retains solids greater than 3.5 millimetres in size is fitted on the outlet, and
9	the following reserve disposal areas are available at all times:
	a) 100 percent of the existing effluent disposal area where the wastewater has received primary treatment or is only comprised of greywater, or
	b) 30 percent of the existing effluent disposal area where the wastewater has received secondary treatment or tertiary treatment, and
10	the on-site system is maintained so that it operates effectively at all times and maintenance is undertaken in accordance with the manufacturer's specifications, and
11	the discharge does not contaminate any groundwater water supply or surface water, and
12	there is no surface runoff or ponding of wastewater, and
13	there is no offensive or objectionable odour beyond the property boundary.

We envision that there will be no issue meeting the Permitted Activity Status requirements outlined above.

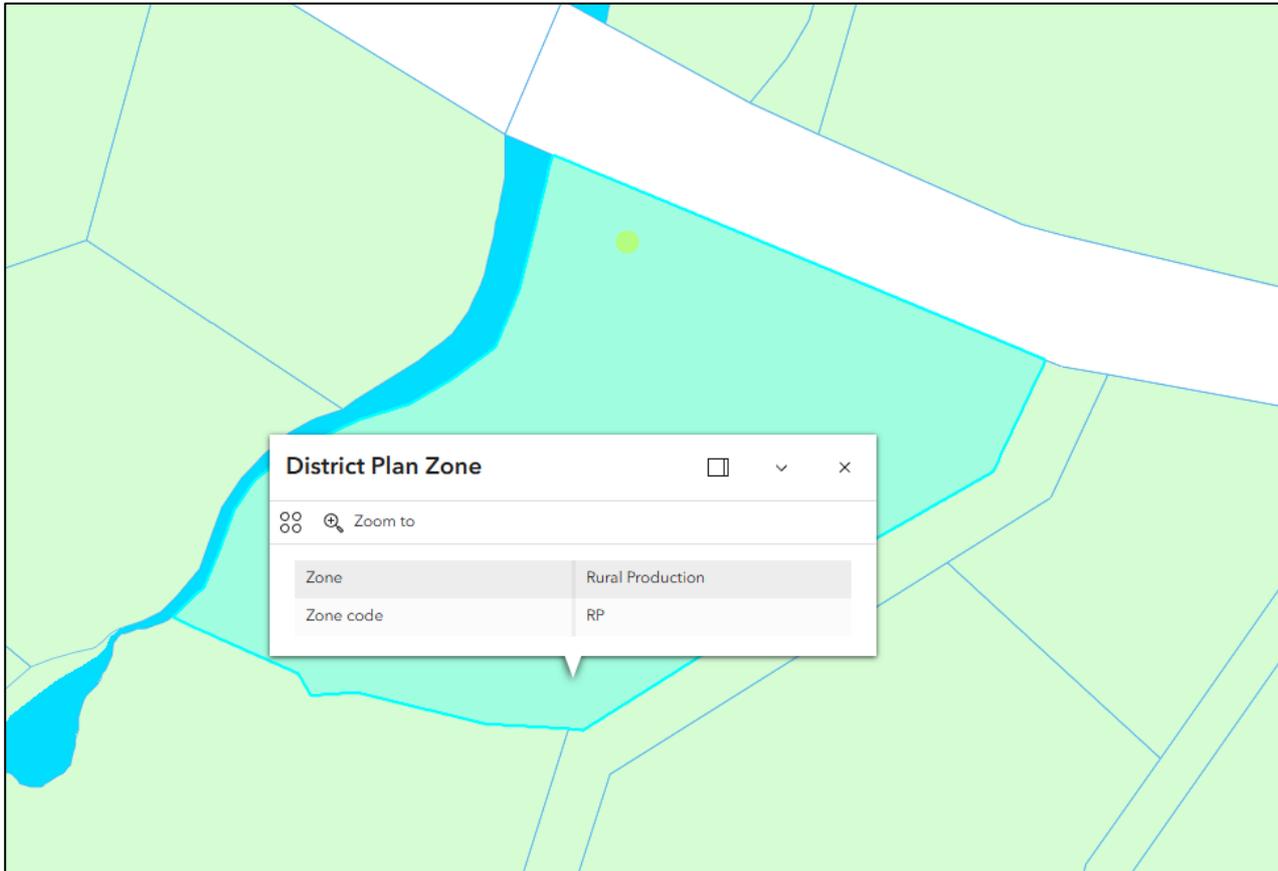
Based on current observations and topography, the Lots contain sufficient undeveloped natural ground to accommodate both the primary and reserve wastewater disposal areas in accordance with AS/NZS1547 and TP58. Final sizing and positioning will be confirmed at Building Consent stage.

## 7 STORMWATER MANAGEMENT

### 7.1 ASSESSMENT CRITERIA

The stormwater assessment has been completed in accordance with the recommendations and requirements contained within the Far North District Engineering Standards and the Far North District Council District Plan.

As below, the site resides in a Rural Production Zone.



*Figure 4: Snip of FNDC Maps showing site in Rural Production Zone.*

The following Stormwater Management Rules Apply:

**Permitted Activity:** 8.6.5.1.3 STORMWATER MANAGEMENT – The maximum proportion of the gross site area covered by buildings and other impermeable surfaces shall be 15%.

**Controlled Activity:** 8.6.5.2.1 STORMWATER MANAGEMENT – The maximum proportion of the gross site area covered by buildings and other impermeable surfaces shall be 20%.

To comply with the parameters of the Permitted Activity Rule (8.6.5.1.3), Lots 1 & 2 must not exceed an impermeable area of 582m<sup>2</sup> and 816m<sup>2</sup> respectively.

Future development of Lot 1 is expected to fall within the Controlled / Discretionary Activity range. A stormwater attenuation report including a District Plan Assessment will be required for any future development within Lot 1 that does not comply with Permitted Activity Rule (8.6.5.1.3) at Building Consent stage.

The existing development within Lot 2 exceeds 15% of the site area and therefore does not comply with Permitted Activity Rule (8.6.5.1.3) and is considered a Controlled Activity.

Attenuation for the 1% AEP storm event should be provided for runoff resulting from existing / future proposed impermeable areas exceeding the Permitted Activity threshold to mitigate adverse effects of runoff on the downstream receiving environment.

Indicative tank attenuation design parameters are given below to demonstrate the feasibility of implementing attenuation on-site. The Type IA storm profile was utilised in attenuation calculations in accordance with TR-55. HydroCAD® software has been utilised in calculations for a 1% AEP rainfall value of 316mm with a 24-hour duration. Rainfall data was obtained from HIRDS and increased by 20% to account for climate change.

To appropriately mitigate stormwater runoff from the existing and future proposed impermeable areas, we recommend utilising Low Impact Design Methods as a means of stormwater management. Design guidance should be taken from 'The Countryside Living Toolbox' design document, and where necessary, 'Technical Publication 10, Stormwater Management Devices – Design Guidelines Manual' Auckland Regional Council (2003).

Stormwater management recommendations are provided below.

## **7.2 PRIMARY STORMWATER**

### **7.2.1 Stormwater Runoff from Roof Areas**

Stormwater runoff from the roof of any future buildings must be captured by a gutter system and conveyed to potable water / detention tanks on the corresponding lot.

Discharge and overflow from the rainwater tanks should be directed to a discharge point as specified below via sealed pipes.

### **7.2.2 Stormwater Runoff from Hardstand Areas**

Where driveways are formed perpendicular to the slope of the topography, the driveway may shed runoff to lower-lying grassed areas via even sheet flow, well clear of any structures. Runoff passed through grassed areas will be naturally filtered of entrained pollutants and will act to mitigate runoff by way of ground recharge and evapotranspiration.

Where even sheet flow is not practicable, concentrated flows must be managed with swales to prevent erosion/scouring. These should be sized to manage and provide capacity for secondary flows and mitigate flow velocity where appropriate. Swales are to direct runoff to silt traps with suitably sized grate / scruffy dome inlets, from which runoff may be piped to the discharge point.

Alternatively, if sealed, driveways may be formed to shed runoff to catchpits installed per E1 of the NZ Building Code. Runoff collected via catchpits is to be directed to an outlet as specified below via sealed pipes.

Due to water quality concerns, runoff resulting from hardstand areas should not be allowed to drain to any potable water tanks.

### **7.2.3 Lot 1 Attenuation Feasibility**

Lot 1 is expected to require attenuation in accordance with the criteria outlined in Section 7.1 of this report for future impermeable areas exceeding the permitted threshold.

It is recommended that the upper section of potable water tanks, or a separate detention tank(s) be used to attenuate runoff resulting from future impermeable areas back to the permitted peak flow for the 1% AEP storm event, adjusted for climate change.

### 7.2.4 Lot 2 Attenuation Feasibility

The existing impervious area within Lot 2 exceeds the permitted coverage threshold by ~111m<sup>2</sup>. To address this exceedance, it is recommended that stormwater attenuation be provided via a detention volume within the upper section of the existing potable water storage system.

Stormwater calculations demonstrate that the current potable water overflow configuration, comprising two 90mmØ overflow outlets, is sufficient to attenuate peak flows to below the maximum permitted discharge rate for the 1% AEP storm event, adjusted for climate change. It is recommended that a suitably qualified drainlayer or maintenance contractor be engaged to verify that the two 90mmØ overflow outlets and the associated discharge point are in good operational condition. If found to be in good condition, it is recommended that the existing overflow arrangement be retained. Refer to the appended Site Plan (144132-C001) and calculation set for clarification.

### 7.2.5 Stormwater Runoff Discharge Point

Discharge and overflow from future potable water tanks / detention tank(s) and any hardstand catchpits / silt traps should be directed an appropriately sized dispersal device within each lot, unless discharge is directed to an open channel, where an appropriate riprap outlet is required for erosion protection. The dispersal device or discharge point should be positioned on/in stable ground downslope of any buildings and wastewater disposal, with setbacks as per the relevant standards.

It is recommended to continue to utilise Lot 2's existing discharge point to the Whiriwhiritoa Stream.

## 7.3 DISTRICT PLAN ASSESSMENT

This section has been prepared to demonstrate the likely effects of the activity on stormwater runoff and the means of mitigating runoff.

In assessing an application under this provision, the Council will exercise discretion to review the following matters below, (a) through (r). In respect of matters (a) through (r), we provide the following comments:

#### 13.10.4 – Stormwater Disposal

<i>(a) Whether the application complies with any regional rules relating to any water or discharge permits required under the Act, and with any resource consent issued to the District Council in relation to any urban drainage area stormwater management plan or similar plan.</i>	No discharge permits are required. No resource consent issued documents stipulating specific requirements are known for the subject site or are anticipated to exist.
<i>(b) Whether the application complies with the provisions of the Council's "Engineering Standards and Guidelines" (2004) - Revised March 2009 (to be used in conjunction with NZS 4404:2004).</i>	The application is deemed compliant with the provisions of the Council's "Engineering Standards and Guidelines" (2004) - Revised March 2009
<i>(c) Whether the application complies with the Far North District Council Strategic Plan - Drainage.</i>	The application is deemed compliant with the Far North District Council Strategic Plan - Drainage

<p><i>(d) The degree to which Low Impact Design principles have been used to reduce site impermeability and to retain natural permeable areas.</i></p>	<p>Stormwater management should be provided for the subject lot by utilising Low Impact Design Methods. Guidance for design should be taken from 'The Countryside Living Toolbox' design document, and where necessary, "Technical Publication 10, Stormwater Management Devices – Design Guidelines Manual" Auckland Regional Council (2003). All roof runoff will be collected by rainwater tanks for conveyance to a safe outlet point. Hardstand areas should be shaped to shed to swales/catchpits for runoff conveyance to a safe outlet location.</p>
<p><i>(e) The adequacy of the proposed means of disposing of collected stormwater from the roof of all potential or existing buildings and from all impervious surfaces.</i></p>	<p>As above. Runoff from new roof areas will be collected, directed to rainwater tanks and discharged in a controlled manner to a designated outlet, reducing scour and erosion. Hardstand areas should be shaped to shed runoff to lower-lying lawn areas as passive mitigation, or to swales/catchpits for runoff conveyance to a safe outlet location.</p>
<p><i>(f) The adequacy of any proposed means for screening out litter, the capture of chemical spillages, the containment of contamination from roads and paved areas, and of siltation.</i></p>	<p>Runoff from roof areas is free of litter, chemical spillages, or contaminants from roads. Hardstand areas should be shaped to shed runoff to lower-lying lawn areas as passive mitigation, or to swales/catchpits for runoff conveyance to a safe outlet location. Large downslope pasture areas and swales act as bio-filter strips to filter out entrained pollutants and catchpits/silt traps allow for the settlement of sediment.</p>
<p><i>(g) The practicality of retaining open natural waterway systems for stormwater disposal in preference to piped or canal systems and adverse effects on existing waterways.</i></p>	<p>No alteration to waterways is proposed.</p>
<p><i>(h) Whether there is sufficient capacity available in the Council's outfall stormwater system to cater for increased run-off from the proposed allotments.</i></p>	<p>Not applicable.</p>
<p><i>(i) Where an existing outfall is not capable of accepting increased run-off, the adequacy of proposals and solutions for disposing of run-off.</i></p>	<p>Not applicable.</p>
<p><i>(j) The necessity to provide on-site retention basins to contain surface run-off where the capacity of the outfall is incapable of accepting flows, and where the outfall has limited capacity, any need to restrict the rate of discharge from the subdivision to the same rate of discharge that existed on the land before the subdivision takes place.</i></p>	<p>Not applicable.</p>

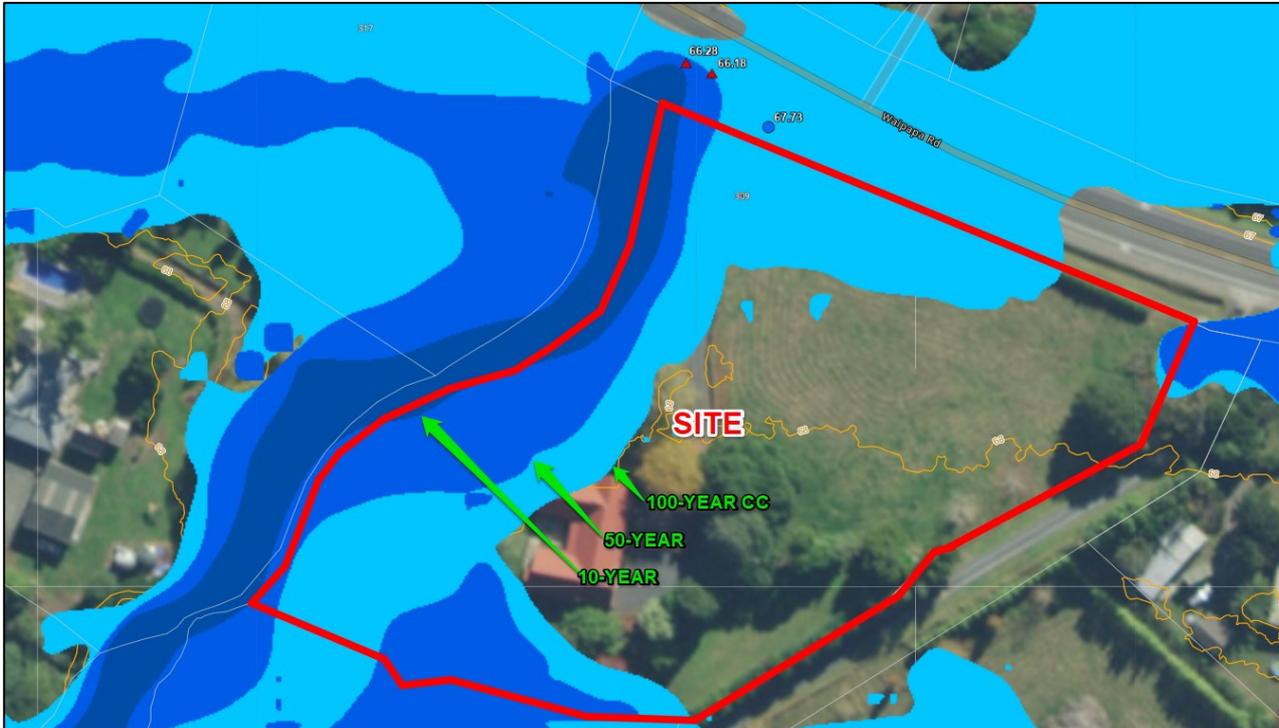
<i>(k) Any adverse effects of the proposed subdivision on drainage to, or from, adjoining properties and mitigation measures proposed to control any adverse effects.</i>	Outlet locations are to be determined during detailed design and are to be located such that there are no adverse effects on adjacent properties.
<i>(l) In accordance with sustainable management practices, the importance of disposing of stormwater by way of gravity pipe lines. However, where topography dictates that this is not possible, the adequacy of proposed pumping stations put forward as a satisfactory alternative.</i>	Not applicable.
<i>(m) The extent to which it is proposed to fill contrary to the natural fall of the country to obtain gravity outfall; the practicality of obtaining easements through adjoining owners' land to other outfall systems; and whether filling or pumping may constitute a satisfactory alternative.</i>	Not applicable.
<i>(n) For stormwater pipes and open waterway systems, the provision of appropriate easements in favour of either the registered user or in the case of the Council, easements in gross, to be shown on the survey plan for the subdivision, including private connections passing over other land protected by easements in favour of the user.</i>	Not applicable.
<i>(o) Where an easement is defined as a line, being the centre line of a pipe already laid, the effect of any alteration of its size and the need to create a new easement.</i>	Not applicable.
<i>(p) For any stormwater outfall pipeline through a reserve, the prior consent of the Council, and the need for an appropriate easement.</i>	Not applicable.
<i>(q) The need for and extent of any financial contributions to achieve the above matters.</i>	Not applicable.
<i>(r) The need for a local purpose reserve to be set aside and vested in the Council as a site for any public utility required to be provided.</i>	Not applicable.

## 8 FLOODING

### 8.1 FLOOD HAZARD

At the time of preparing this report, the Northland Regional Council (NRC) online GIS Hazard Maps show that the property lies within the 10-year, 50-year and 100-year CC Priority Rivers Flood Hazards extents.

Specific flood levels for eight locations across the subject site were supplied by Northland Regional Council's Rivers Team. See Table 1.



*Figure 5: Screenshot aerial view from the NRC on-line GIS Hazard Maps showing Priority Rivers Hazards (indicated in green) and subject site boundary (indicated in red).*

The existing dwelling on Lot 2 predates current flood hazard and freeboard requirements and may not comply with the minimum finished floor levels identified in this report. This assessment does not seek to retrospectively assess or upgrade the existing dwelling. Any future replacement or substantial redevelopment of the dwelling would be required to comply with the minimum finished floor levels specified.



Figure 6: Snip of Specific River Flood Level Locations from Flood Level Report provided by NRC.

Table 1: Priority River Flood Levels at Locations Given in Figure 3, Supplied by NRC Rivers Team

Location	50-year (NZVD2016)	100-year + CC (NZVD2016)
1	67.58m	67.60m
2	No Flooding	67.43m
3	No Flooding	67.56m
4	67.02m	67.77m
5	No Flooding	67.86m
6	67.45m	67.97m
7	68.18m	68.32m
8	No Flooding	68.56m

Locations 1 - 5 would be applicable for Lot 1 and locations 5 - 7 for Lot 2.

## 8.2 FLOOD HAZARD ASSESSMENT CRITERIA

The assessment has been based on The Regional Policy Statement for Northland. This development falls under Section 7.1.2 and 7.1.3 of this document:

### ***“7.1.2 Policy – New subdivision and land use within 10-year and 100- year flood hazard areas***

*New subdivision, built development (including wastewater treatment and disposal systems), and land use change may be appropriate within 10-year and 100-year flood hazard areas provided all of the following are met:*

- a. Hazardous substances will not be inundated during a 100-year flood event.*
- b. Earthworks (other than earthworks associated with flood control works) do not divert flood flow onto neighbouring properties, and within 10-year flood hazard areas do not deplete flood plain storage capacity;*
- c. A minimum freeboard above a 100-year flood event of at least 500mm is provided for residential buildings.*
- d. Commercial and industrial buildings are constructed so as to not be subject to material damage in a 100 year flood event.*
- e. New subdivision plans are able to identify that building platforms will not be subject to inundation and / or material damage (including erosion) in a 100-year flood event;*
- f. Within 10-year flood hazard areas, land use or built development is of a type that will not be subject to material damage in a 100-year flood event; and*
- g. Flood hazard risk to vehicular access routes for proposed new lots is assessed.*

The Far North District Council Engineering Standards (May 2023) states the following in ‘Section 4.3.10.7 Freeboard Requirements:

### ***“4.3.10.7 Freeboard Requirements***

*Freeboard above the secondary flow level is required to cater for inaccuracies in flow estimation and practicable blockage/failure of the primary system.*

*The minimum freeboard above the calculated 1% AEP storm shall be:*

- a. 0.5m for habitable building floors, and,*
- b. 0.3m for commercial and industrial buildings,*

*Unless specific assessment demonstrates that a different freeboard is appropriate.*

*Minimum floor levels shall be identified for all lots within the area of the site where flood risks are for 1% AEP or lesser event. This assessment shall consider flooding caused by different sources including:*

- c. Rivers,*
- d. Tides,*
- e. Elevated groundwater, and*
- f. Surface water ponding.*

*Minimum floor levels in tidal areas shall be set by taking into consideration current information on natural hazards including storm surge, wave run-up tsunami, and sea level rise.*

*Development proposals shall demonstrate Safety in Design principles and may be required to provide for Escape routes from the flood hazardous areas/ properties within the development. The appropriate information shall be included in the engineering drawings.”*

The Natural Hazards Provisions Guidance document (Version 1, October 2023) states the following:

### ***Adequate provision to protect the land***

*It is only the land that is intimately connected with the building work that needs to be protected from inundation...*

...Figure 7 drawing contains two scenarios (A and B) for the extent of possible flooding on the site.

- In Scenario A, the natural hazard is affecting the land associated with the building work.
- In Scenario B, the natural hazard is not affecting the land associated with the building work.”

We reference the “Australian Disaster Resilience Handbook Collection Technical Flood Risk Management Guideline: Flood Hazard” guideline document as the criteria for outside parking. This criterion notes that the 100-year flooding levels of up to a depth of 300mm above ground level is acceptable in parking areas with low flood velocity (Flood Hazard Classification H1).

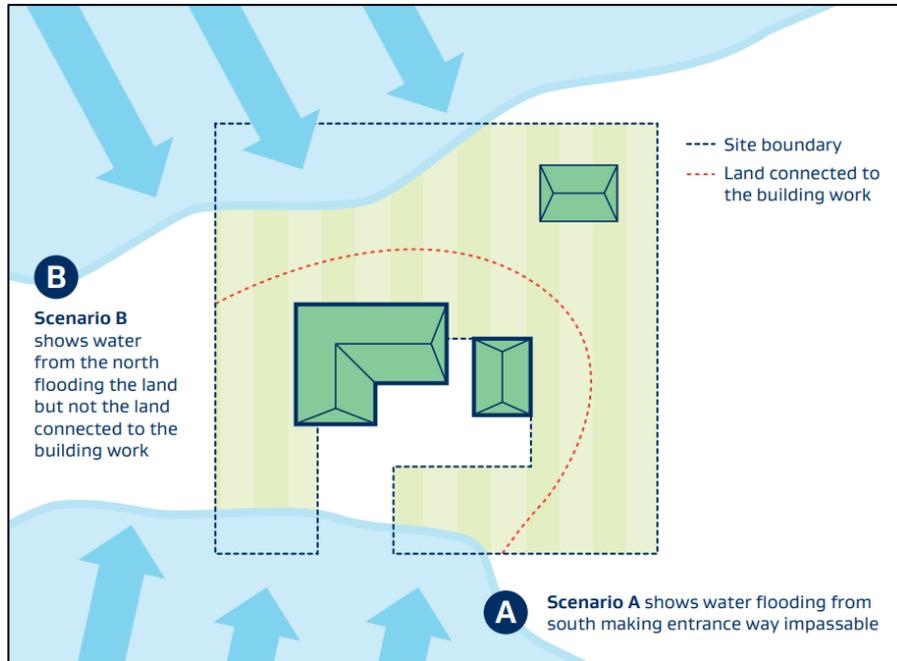


Figure 7: Natural Hazards Provisions Guidance document (Version 1, October 2023) Figure 7.

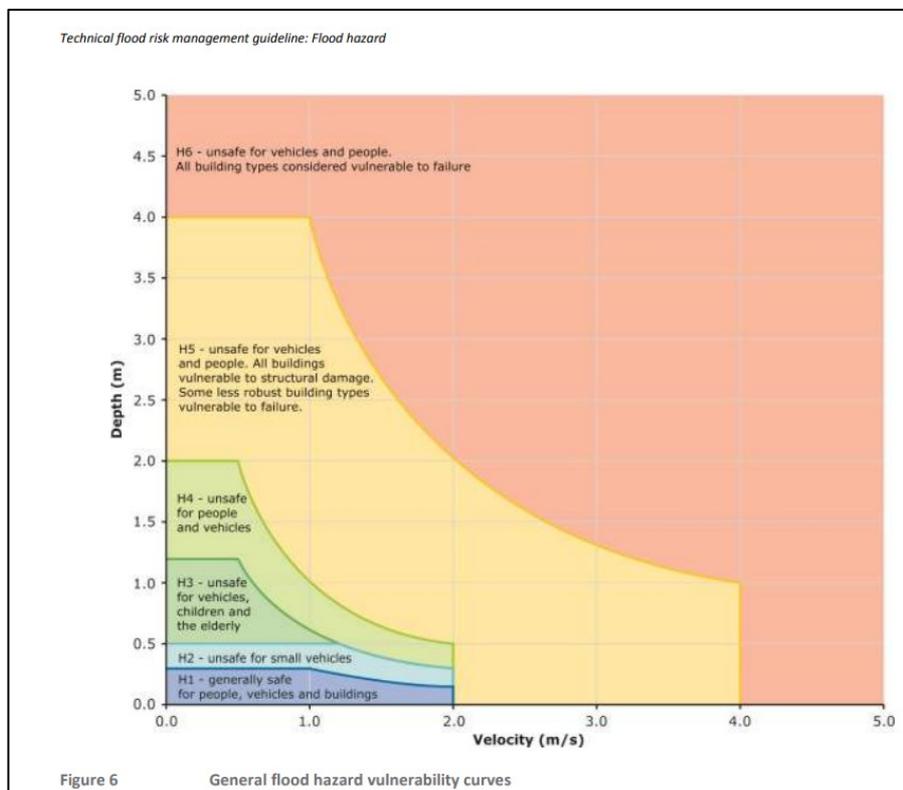


Figure 8: Australian Disaster Resilience Handbook Collection Technical Flood Risk Management Guideline: Flood Hazard Guideline 7-3 – Figure 6.

### 8.3 ASSESSMENT

Section 8.3.1 below is applicable to the proposed structure's minimum finished floor level requirements, while Sections 8.3.2 – 8.3.4 will be applicable if the proposed structure is to be utilised as a habitable dwelling. At the time of report-writing, the intended usage of the proposed structure is not known.

#### 8.3.1 Minimum Finished Floor Level Requirements

The applicable flood level for the determination of the minimum finished floor level for Lot 1 is 67.86m NZVD2016 and for Lot 2 is 68.32m – refer to Table 1 of this report.

In accordance with the freeboard requirements, the minimum finished floor levels for future buildings at the assessed development location are as follows:

##### Lot 1

Habitable Structures	=	<b>68.36m</b> (NZVD2016)
Non-Habitable Structures	=	<b>68.16m</b> (NZVD2016)

##### Lot 2

Habitable Structures	=	<b>68.82m</b> (NZVD2016)
Non-Habitable Structures	=	<b>68.62m</b> (NZVD2016)

LINZ Contour data suggests that the ground level at the Lot 1 Building Platform location ranges between approximately 67.5m to 68.2m NZVD2016 and Lot 2 dwelling ranges between approximately 67.5m to 68.0m NZVD2016.

We note that the elevation data referenced is dated 2018-2020 and may be outdated, and the accuracy of the dataset is limited. A site survey may increase the accuracy of the expected FFL to ground level difference.

The existing dwelling floor level is unknown, but any future redevelopment must comply with the minimum recommended floor levels.

#### 8.3.2 Existing Site Access

Access to Lot 1 can be formed clear of any flooding.

The existing access that will remain for Lot 2 is shown to be partially inundated during the 100-year flood event. LiDAR data suggests that the maximum flood depth within the existing driveway will be less than 100mm and less than 300mm at the site's access point on Waipapa Road. Given this, we expect that the flood hazard would be categorised '*H1 – Generally Safe*' in accordance with Figure 5 above. It is therefore expected that safe access to and from the site will be maintained during a 100-year flood event.

#### 8.3.3 Parking Areas

Lot 1's parking area can be formed clear of any flooding.

Lot 2's existing parking is clear of any flooding.

Any future parking areas should be formed less than 300mm below the 100-year CC flood level.

#### 8.3.4 Risk Category

The flood hazard velocity in proximity to the development is not known at the time of report-writing. As the predicted flood levels extend beyond the defined stream banks and spread across the adjacent floodplain, floodwaters within the affected areas of the site are expected to be relatively shallow and slow-moving compared to in-channel flows. Based on the known flood level and resulting depths based on LINZ LiDAR data alone, we anticipate that according to Figure 5 of this report the hazard will fall under the following Flood Hazard Vulnerability:

- Lot 1 - **Category H1**
- Lot 2 - **Category H1**

### 8.3.5 Conclusion

By setting minimum finished floor levels in accordance with regional freeboard requirements, the risk of inundation is minimized. The existing dwelling is to remain on Lot 2 but re-development would be subject to the minimum Finish Floor Levels specified in this report.

These recommendations provide measures to effectively mitigate flood risks to the proposed structures; however, intimately connected land surrounding the Lot 2 will still be affected by flooding to a lesser extent.

Although Lot 2's existing accessway will be partially inundated during the 100-year flood event, we do not expect flood levels to be high enough to pose risks regarding access to and from the site during the 100-year flood event.

It is recommended that any new parking areas associated with the proposed development be formed no lower than 300mm below the 100-year CC flood level.

Due to the site location and drainage pattern, we expect that the building work, combined with the recommendations, should not accelerate, worsen or result in further flooding on the site or neighbouring properties, given suitable stormwater measures are implemented in accordance with the FNDC EES.

## 9 LIMITATIONS

This report has been prepared for the benefit of the Client for the purpose of supporting a Resource/Subdivision Consent application for the project described herein and within the agreed scope of engagement. The report may be submitted to the relevant Territorial Authority for that purpose.

The Territorial Authority may rely on this report for the purposes of assessing the Resource Consent application, subject to the scope, assumptions, and limitations described herein. Any material changes to the development proposal, site conditions, or design assumptions from those described in this report should be referred to Wilton Joubert Limited for review.

This report remains the intellectual property of Wilton Joubert Limited. No responsibility or liability is accepted for the use of this report by any third party, or for any purpose other than that for which it was prepared, unless expressly agreed in writing. Any party choosing to rely on this report does so at their own risk.

While this report may be used in support of regulatory approvals, it does not remove the requirement for detailed, site-specific investigations, assessments, or inspections that may be required at subsequent design or Building Consent stages, in accordance with standard engineering practice.

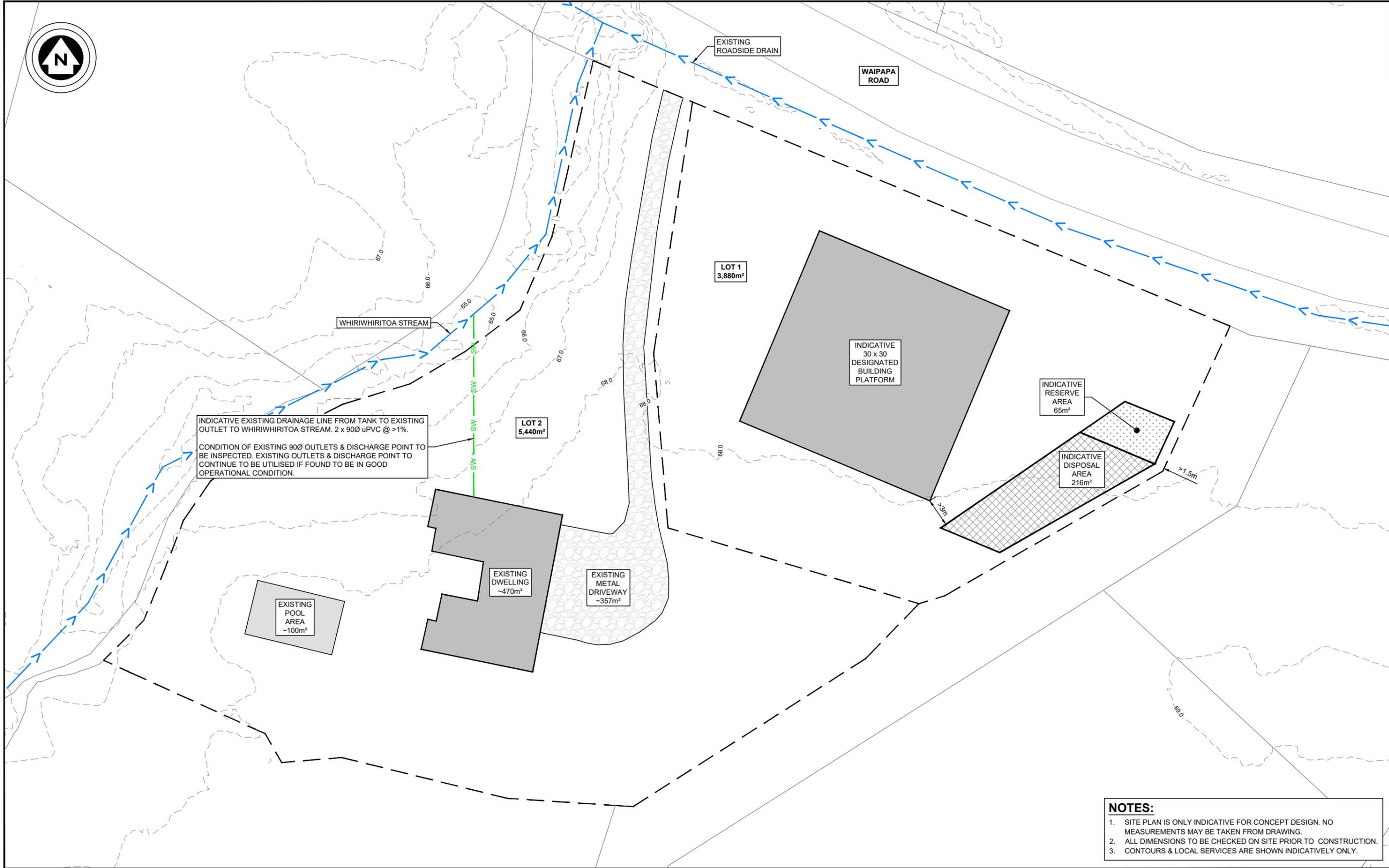
The conclusions and recommendations in this report are based on information available at the time of preparation and are dependent on appropriate implementation during construction. Variations in site conditions or construction practices may affect performance and should be reviewed by a suitably qualified and experienced engineer if encountered.

Yours faithfully,

**WILTON JOUBERT LIMITED**

### **Enclosures:**

- Site Plan – C001 (1 sheet)
- Hand Auger Borehole Records (3 sheets)
- Calculation Set
- Flood Level Report (5 sheets)



- NOTES:**
1. SITE PLAN IS ONLY INDICATIVE FOR CONCEPT DESIGN. NO MEASUREMENTS MAY BE TAKEN FROM DRAWING.
  2. ALL DIMENSIONS TO BE CHECKED ON SITE PRIOR TO CONSTRUCTION.
  3. CONTOURS & LOCAL SERVICES ARE SHOWN INDICATIVELY ONLY.

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ISSUE / REVISION			
No.	DATE	BY	DESCRIPTION
01	JAN '26	GMB	CIVIL SITE SUITABILITY REPORT

DESIGNED BY:	GMB
DRAWN BY:	GMB
CHECKED BY:	BGS
SURVEYED BY:	N/A

**SERVICES NOTE**  
WHERE EXISTING SERVICES ARE SHOWN, THEY ARE INDICATIVE ONLY AND MAY NOT INCLUDE ALL SITE SERVICES. WILTON JOUBERT LTD DOES NOT WARRANT THAT ALL, OR INDEED ANY SERVICES ARE SHOWN. IT IS THE CONTRACTORS RESPONSIBILITY TO LOCATE AND PROTECT ALL EXISTING SERVICES PRIOR TO AND FOR THE DURATION OF THE CONTRACT WORKS.

**BUILDING CONSENT**

DESIGN / DRAWING SUBJECT TO ENGINEERS APPROVAL

DRAWING TITLE:  
**SITE PLAN**

PROJECT DESCRIPTION:  
**CIVIL SITE SUITABILITY REPORT**

PROJECT TITLE:  
**LOT 1 DP 167286  
309 WAIPAPA ROAD  
KERIKERI  
NORTHLAND**

ORIGINAL DRAWING SIZE:	OFFICE:
A3	<b>OREWA</b>
DRAWING SCALE:	CO-ORDINATE SYSTEM:
<b>1:500</b>	NOT COORDINATED
DRAWING NUMBER:	ISSUE:
<b>144132-C001</b>	<b>01</b>
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# HAND AUGER : HA01

JOB NO.: 144131 SHEET: 1 OF 1

START DATE: 17/12/2025 NORTHING: GRID:

DIAMETER: 50mm EASTING:

SV DIAL: 1994 ELEVATION: Ground

FACTOR: 1.41 DATUM:

CLIENT: Charlie Billington  
PROJECT: 2-Lot Subdivision (1 Lot for Assessment)

SITE LOCATION: 309 Waipapa Road, Kerikeri

STRATIGRAPHY	SOIL DESCRIPTION	LEGEND	DEPTH (m)	WATER	SHEAR VANE				COMMENTS, SAMPLES, OTHER TESTS
					PEAK STRENGTH (kPa)	REMOULD STRENGTH (kPa)	SENSITIVITY	DCP - SCALA (Blows / 100mm)	
Topsail	TOPSOIL, dark brown, dry.		0.0 - 0.2						
	NATURAL: SILT, no to trace clay, greyish brown, stiff, dry, no plasticity.		0.2 - 0.4						
Kerikeri Volcanic Group	0.6m: Trace rootlets.	0.4 - 0.6			70	17	4.1		
	0.8m: Very stiff, moist.	0.6 - 0.8							
	1.0m: Minor clasts and gravels, wet.	0.8 - 1.0							
	1.2m: Minor clay, wet to saturated.	1.0 - 1.2	▽		UTP	-	-		
	EOH: 1.30m - Too Hard To Auger (Basalt Rock Inferred)	1.2 - 1.4			UTP	-	-	20+	
		1.4 - 1.6							
		1.6 - 1.8							
		1.8 - 2.0							

**REMARKS**

End of borehole @ 1.30m (Target Depth: 5.00m)  
Groundwater encountered @ 1.20m during drilling.

NZGS Definition of Relative Density for Coarse Grain soils: VL - Very Loose; L - Loose; MD - Medium Dense; D - Dense; VD - Very Dense

LOGGED BY: JEM

▽ Standing groundwater level

CHECKED BY: CSH

▽ GW while drilling



185 Waipapa Road, Kerikeri 0295  
Phone: 09-945 4188  
Email: jobs@wjl.co.nz  
Website: www.wiltonjoubert.co.nz

# HAND AUGER : HA02

JOB NO.: 144131 SHEET: 1 OF 1

START DATE: 17/12/2025 NORTHING: GRID:

DIAMETER: 50mm EASTING:

SV DIAL: 1994 ELEVATION: Ground

FACTOR: 1.41 DATUM:

CLIENT: Charlie Billington  
PROJECT: 2-Lot Subdivision (1 Lot for Assessment)

SITE LOCATION: 309 Waipapa Road, Kerikeri

STRATIGRAPHY	SOIL DESCRIPTION	LEGEND	DEPTH (m)	WATER	SHEAR VANE				COMMENTS, SAMPLES, OTHER TESTS	
					PEAK STRENGTH (kPa)	REMOULD STRENGTH (kPa)	SENSITIVITY	DCP - SCALA (Blows / 100mm)		
Topsoil	TOPSOIL, dark brown, dry.		0.0 - 0.2	Groundwater Not Encountered						
Kerikeri Volcanic Group	NATURAL: SILT, trace clay, greyish brown, very stiff, dry, no plasticity.		0.2 - 0.4			197+	-	-		
	Gravelly SILT, minor clasts, orangey brown, very stiff, dry, no plasticity.		0.4 - 0.8							
	EOH: 0.80m - Too Hard To Auger (Basalt Rock Inferred)		0.8 - 1.0			UTP	-	-	20+	
			1.0 - 1.2							
			1.2 - 1.4							
			1.4 - 1.6							
			1.6 - 1.8							
			1.8 - 2.0							

**REMARKS**  
End of borehole @ 0.80m (Target Depth: 5.00m)

NZGS Definition of Relative Density for Coarse Grain soils: VL - Very Loose; L - Loose; MD - Medium Dense; D - Dense; VD - Very Dense

LOGGED BY: JEM ▼ Standing groundwater level  
CHECKED BY: CSH ▽ GW while drilling



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Website: www.wiltonjoubert.co.nz

Generated with CORE-GS by Geroo - WJL - Hand Auger v2 - 17/12/2025 12:14:59 PM

# HAND AUGER : HA03

JOB NO.: 144131 SHEET: 1 OF 1

START DATE: 17/12/2025 NORTHING: GRID:

DIAMETER: 50mm EASTING:

SV DIAL: 1994 ELEVATION: Ground

FACTOR: 1.41 DATUM:

CLIENT: Charlie Billington  
PROJECT: 2-Lot Subdivision (1 Lot for Assessment)

SITE LOCATION: 309 Waipapa Road, Kerikeri

STRATIGRAPHY	SOIL DESCRIPTION	LEGEND	DEPTH (m)	WATER	SHEAR VANE				COMMENTS, SAMPLES, OTHER TESTS
					PEAK STRENGTH (kPa)	REMOULD STRENGTH (kPa)	SENSITIVITY	DCP - SCALA (Blows / 100mm)	
Topsoil	TOPSOIL, dark brown, dry.		0.0 - 0.2	Groundwater Not Encountered					
	NATURAL: SILT, trace clay, greyish brown, very stiff, dry, no plasticity.		0.2 - 0.4		141	11	13		
Kerikeri Volcanic Group	0.5m: Minor gravel and clasts, greyish brown with orangey brown mottles.	0.4 - 0.6							
	EOH: 0.60m - Too Hard To Auger (Basalt Rock Inferred)	0.6 - 2.0		UTP	-	-	20+		

**REMARKS**  
End of borehole @ 0.60m (Target Depth: 5.00m)

NZGS Definition of Relative Density for Coarse Grain soils: VL - Very Loose; L - Loose; MD - Medium Dense; D - Dense; VD - Very Dense

LOGGED BY: JEM  
CHECKED BY: CSH

Standing groundwater level  
 GW while drilling



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Phone: 09-945 4188  
Email: jobs@wjl.co.nz  
Website: www.wiltonjoubert.co.nz

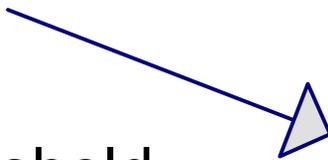
Consulting Engineers

Generated with CORE-GS by Gercoc - WJL - Hand Auger v2 - 17/12/2025 12:15:00 PM

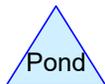
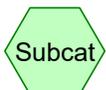
## ***Lot 2 - Permitted Threshold***



Permitted Threshold  
Coverage



Permitted Flows



**Routing Diagram for 144132**

Prepared by Wilton Joubert Limited, Printed 27/01/2026  
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**144132**

*Type IA 24-hr 1% AEP + 20% CCF Rainfall=316 mm*

Prepared by Wilton Joubert Limited

Printed 27/01/2026

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Page 2

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points  
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
Reach routing by Stor-Ind method - Pond routing by Stor-Ind method

**Subcatchment 24S: Permitted**

Runoff Area=5,440.0 m<sup>2</sup> 15.00% Impervious Runoff Depth>243 mm  
Tc=10.0 min CN=78 Runoff=94.91 L/s 1,322.1 m<sup>3</sup>

**Link 32L: Permitted Flows**

Inflow=94.91 L/s 1,322.1 m<sup>3</sup>  
Primary=94.91 L/s 1,322.1 m<sup>3</sup>

### Summary for Subcatchment 24S: Permitted Threshold Coverage

Runoff = 94.91 L/s @ 7.97 hrs, Volume= 1,322.1 m<sup>3</sup>, Depth> 243 mm

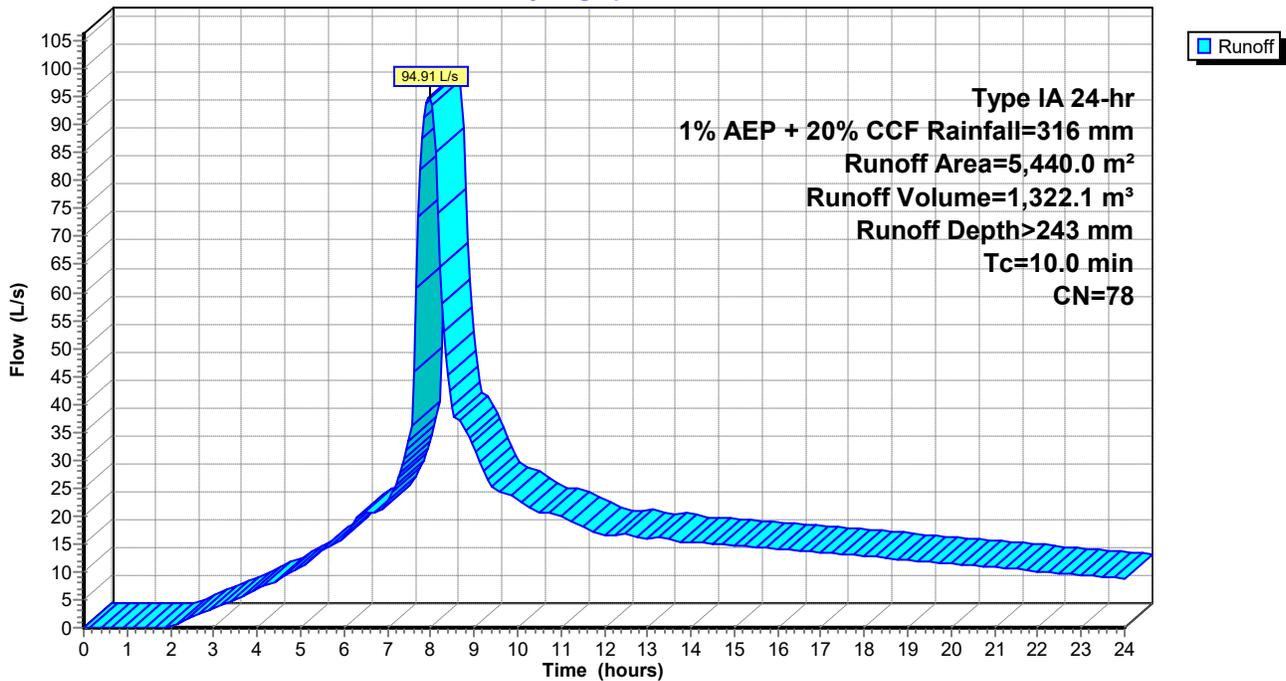
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
 Type IA 24-hr 1% AEP + 20% CCF Rainfall=316 mm

Area (m <sup>2</sup> )	CN	Description
4,624.0	74	>75% Grass cover, Good, HSG C
816.0	98	Roofs, HSG C
5,440.0	78	Weighted Average
4,624.0		85.00% Pervious Area
816.0		15.00% Impervious Area

Tc (min)	Length (meters)	Slope (m/m)	Velocity (m/sec)	Capacity (m <sup>3</sup> /s)	Description
10.0					Direct Entry,

### Subcatchment 24S: Permitted Threshold Coverage

Hydrograph



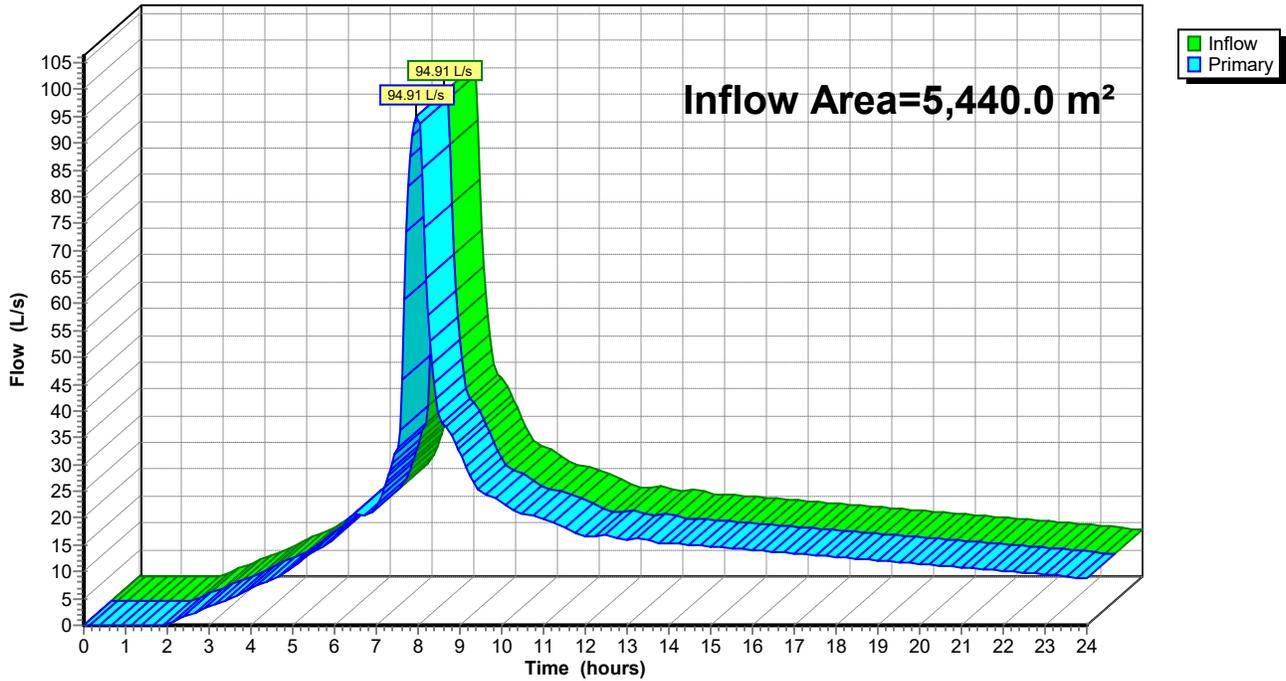
### Summary for Link 32L: Permitted Flows

Inflow Area = 5,440.0 m<sup>2</sup>, 15.00% Impervious, Inflow Depth > 243 mm for 1% AEP + 20% CCF event  
Inflow = 94.91 L/s @ 7.97 hrs, Volume= 1,322.1 m<sup>3</sup>  
Primary = 94.91 L/s @ 7.97 hrs, Volume= 1,322.1 m<sup>3</sup>, Atten= 0%, Lag= 0.0 min

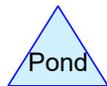
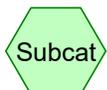
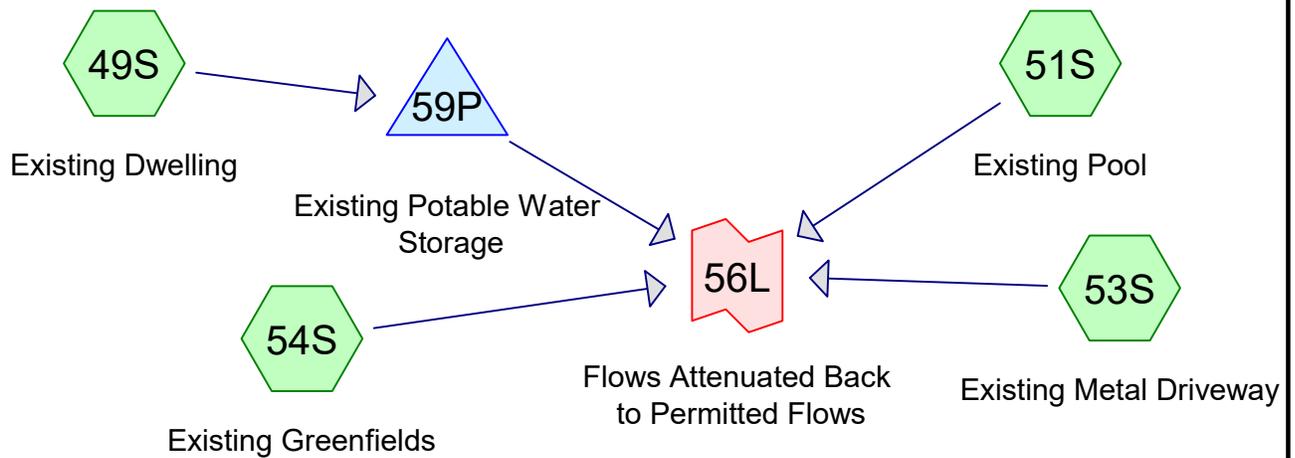
Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

### Link 32L: Permitted Flows

Hydrograph



### Lot 2 - Existing Impermeable Areas



#### Routing Diagram for 144132

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Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points  
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
 Reach routing by Stor-Ind method - Pond routing by Stor-Ind method

**Subcatchment 49S: Existing Dwelling** Runoff Area=470.0 m<sup>2</sup> 100.00% Impervious Runoff Depth>309 mm  
 Tc=10.0 min CN=98 Runoff=9.79 L/s 145.3 m<sup>3</sup>

**Subcatchment 51S: Existing Pool** Runoff Area=100.0 m<sup>2</sup> 100.00% Impervious Runoff Depth>309 mm  
 Tc=10.0 min CN=98 Runoff=2.08 L/s 30.9 m<sup>3</sup>

**Subcatchment 53S: Existing Metal** Runoff Area=357.0 m<sup>2</sup> 0.00% Impervious Runoff Depth>280 mm  
 Tc=10.0 min CN=89 Runoff=7.10 L/s 100.1 m<sup>3</sup>

**Subcatchment 54S: Existing** Runoff Area=4,513.0 m<sup>2</sup> 0.00% Impervious Runoff Depth>229 mm  
 Tc=10.0 min CN=74 Runoff=73.76 L/s 1,032.3 m<sup>3</sup>

**Pond 59P: Existing Potable Water Storage** Peak Elev=0.125 m Storage=2.7 m<sup>3</sup> Inflow=9.79 L/s 145.3 m<sup>3</sup>  
 Outflow=9.58 L/s 144.8 m<sup>3</sup>

**Link 56L: Flows Attenuated Back to Permitted Flows** Inflow=92.42 L/s 1,308.1 m<sup>3</sup>  
 Primary=92.42 L/s 1,308.1 m<sup>3</sup>

### Summary for Subcatchment 49S: Existing Dwelling

Runoff = 9.79 L/s @ 7.94 hrs, Volume= 145.3 m<sup>3</sup>, Depth> 309 mm

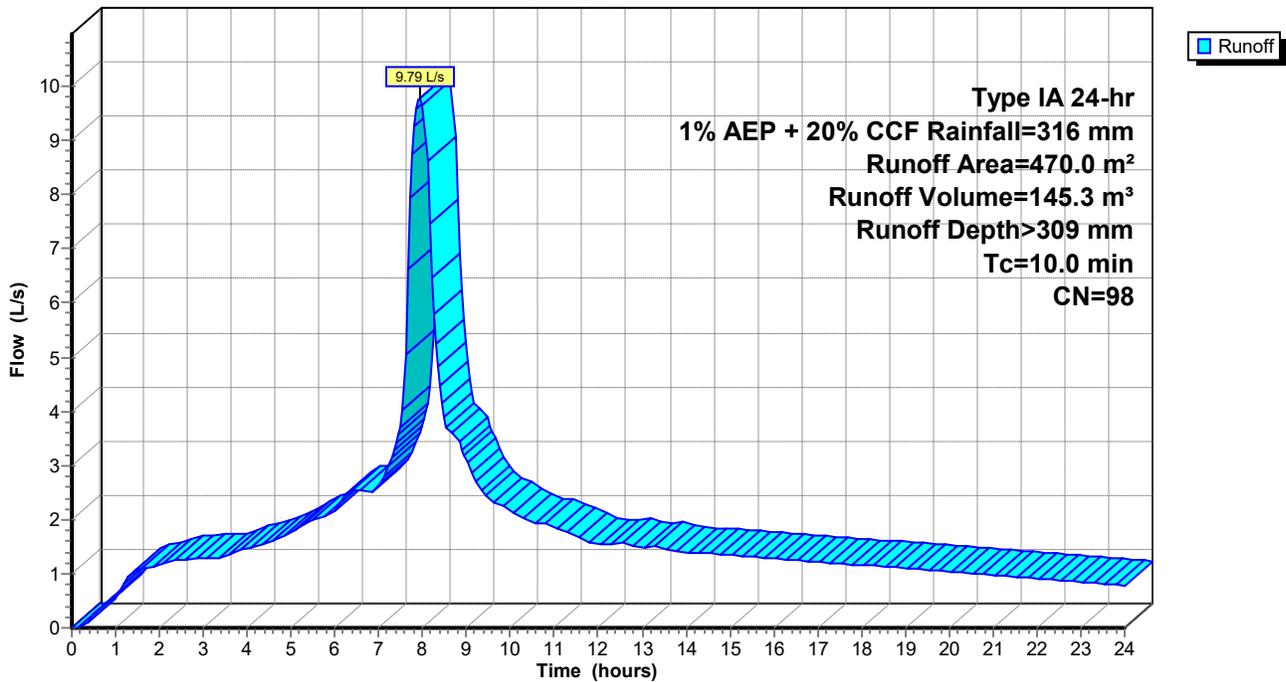
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
 Type IA 24-hr 1% AEP + 20% CCF Rainfall=316 mm

Area (m <sup>2</sup> )	CN	Description
470.0	98	Roofs, HSG C
470.0		100.00% Impervious Area

Tc (min)	Length (meters)	Slope (m/m)	Velocity (m/sec)	Capacity (m <sup>3</sup> /s)	Description
10.0					Direct Entry,

### Subcatchment 49S: Existing Dwelling

Hydrograph



### Summary for Subcatchment 51S: Existing Pool

Runoff = 2.08 L/s @ 7.94 hrs, Volume= 30.9 m<sup>3</sup>, Depth> 309 mm

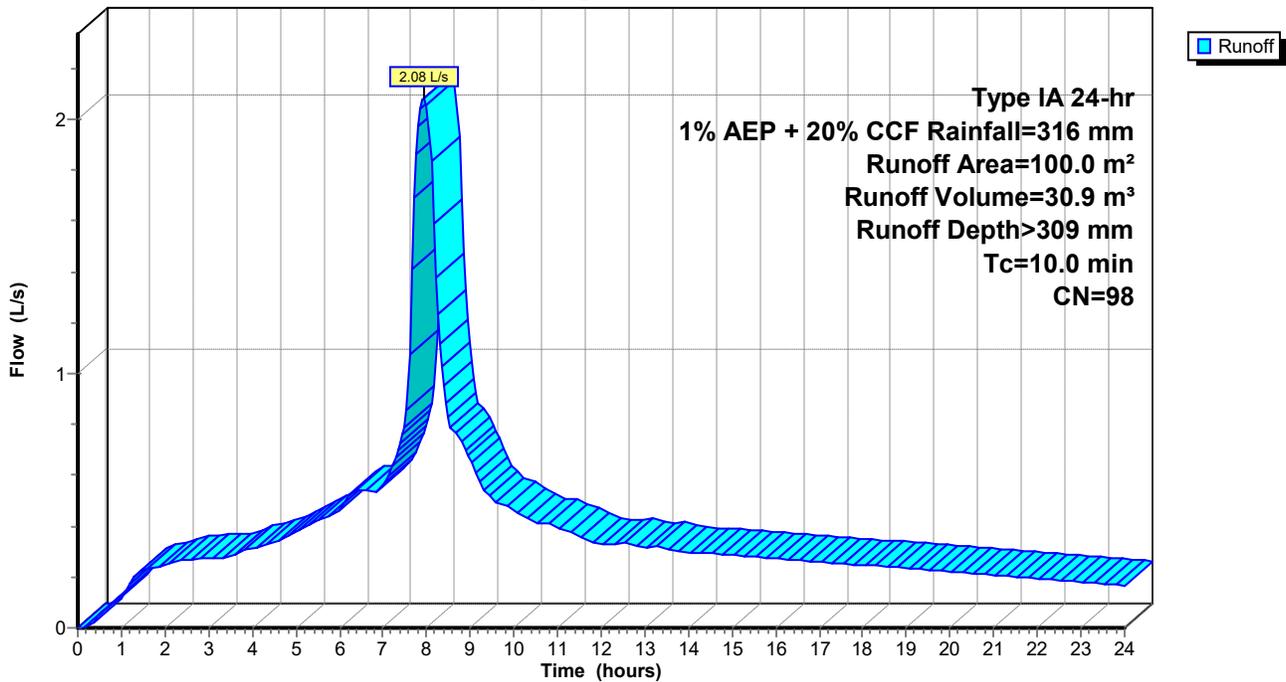
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
 Type IA 24-hr 1% AEP + 20% CCF Rainfall=316 mm

Area (m <sup>2</sup> )	CN	Description
100.0	98	Roofs, HSG C
100.0		100.00% Impervious Area

Tc (min)	Length (meters)	Slope (m/m)	Velocity (m/sec)	Capacity (m <sup>3</sup> /s)	Description
10.0					Direct Entry,

### Subcatchment 51S: Existing Pool

Hydrograph



### Summary for Subcatchment 53S: Existing Metal Driveway

Runoff = 7.10 L/s @ 7.95 hrs, Volume= 100.1 m<sup>3</sup>, Depth> 280 mm

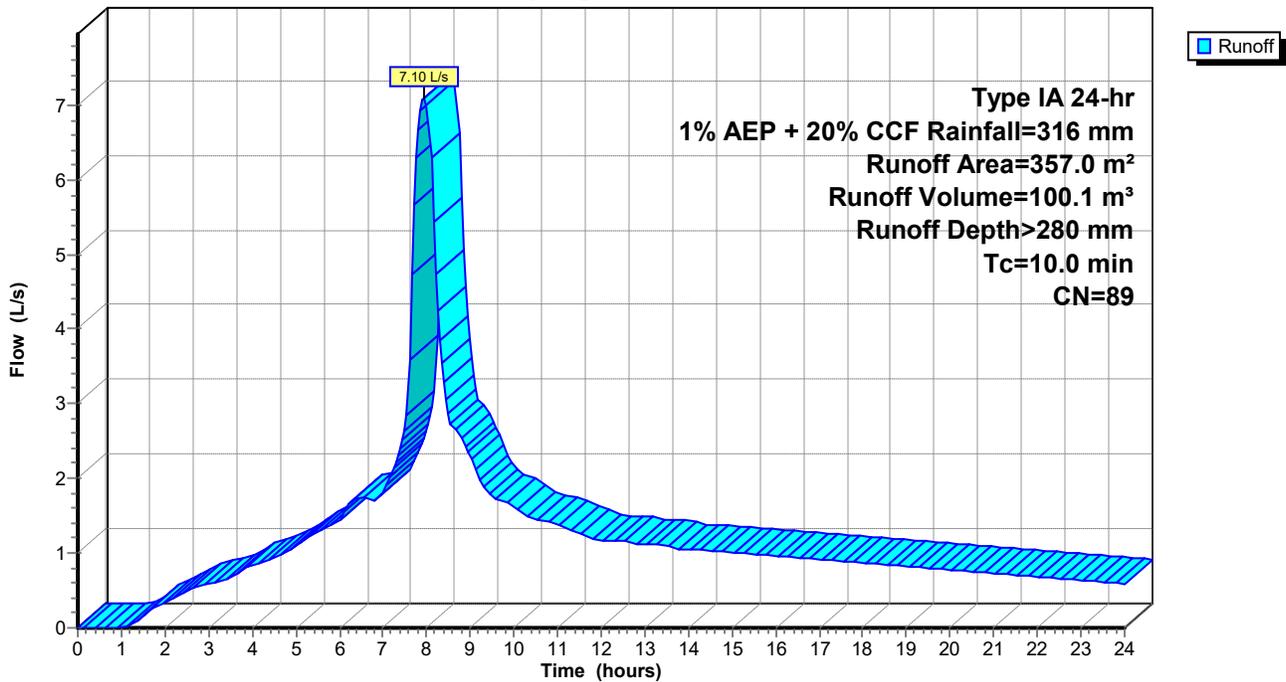
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
 Type IA 24-hr 1% AEP + 20% CCF Rainfall=316 mm

Area (m <sup>2</sup> )	CN	Description
357.0	89	Gravel roads, HSG C
357.0		100.00% Pervious Area

Tc (min)	Length (meters)	Slope (m/m)	Velocity (m/sec)	Capacity (m <sup>3</sup> /s)	Description
10.0					Direct Entry,

### Subcatchment 53S: Existing Metal Driveway

Hydrograph



### Summary for Subcatchment 54S: Existing Greenfields

Runoff = 73.76 L/s @ 7.98 hrs, Volume= 1,032.3 m<sup>3</sup>, Depth> 229 mm

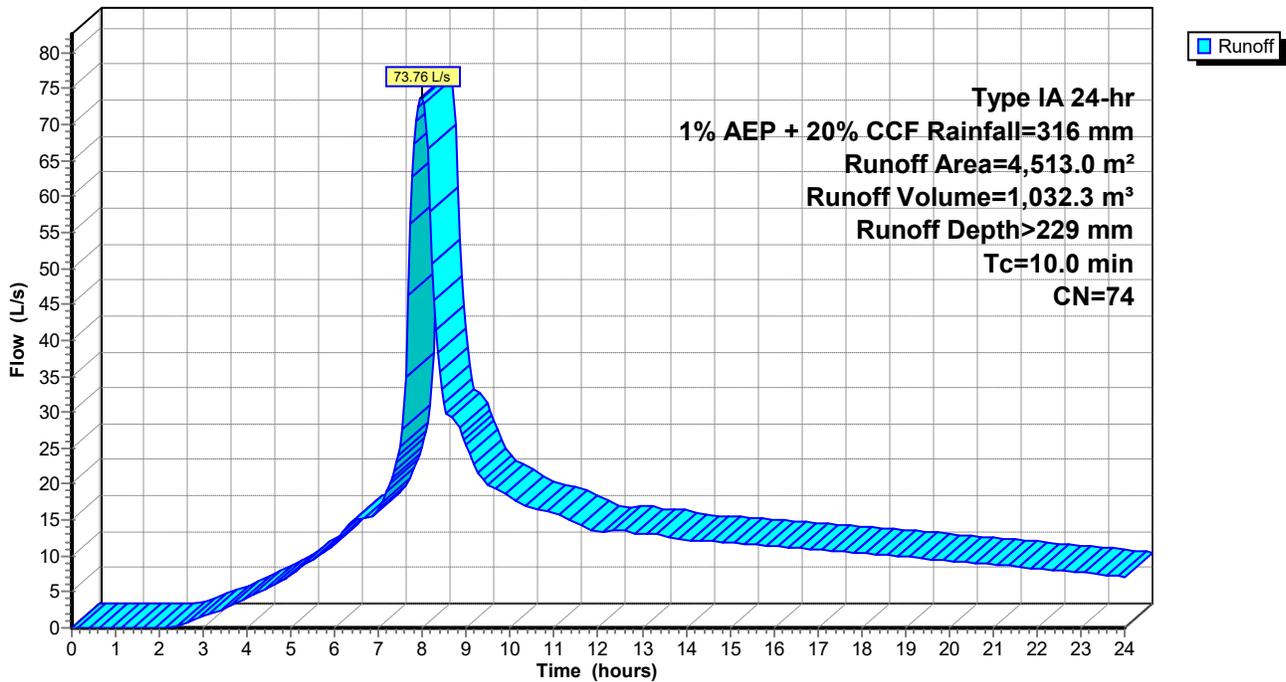
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
 Type IA 24-hr 1% AEP + 20% CCF Rainfall=316 mm

Area (m <sup>2</sup> )	CN	Description
4,513.0	74	>75% Grass cover, Good, HSG C
4,513.0		100.00% Pervious Area

Tc (min)	Length (meters)	Slope (m/m)	Velocity (m/sec)	Capacity (m <sup>3</sup> /s)	Description
10.0					Direct Entry,

### Subcatchment 54S: Existing Greenfields

Hydrograph



### Summary for Pond 59P: Existing Potable Water Storage

Inflow Area = 470.0 m<sup>2</sup>, 100.00% Impervious, Inflow Depth > 309 mm for 1% AEP + 20% CCF event  
 Inflow = 9.79 L/s @ 7.94 hrs, Volume= 145.3 m<sup>3</sup>  
 Outflow = 9.58 L/s @ 8.03 hrs, Volume= 144.8 m<sup>3</sup>, Atten= 2%, Lag= 5.3 min  
 Primary = 9.58 L/s @ 8.03 hrs, Volume= 144.8 m<sup>3</sup>

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs  
 Peak Elev= 0.125 m @ 8.03 hrs Surf.Area= 21.6 m<sup>2</sup> Storage= 2.7 m<sup>3</sup>

Plug-Flow detention time= 7.2 min calculated for 144.8 m<sup>3</sup> (100% of inflow)  
 Center-of-Mass det. time= 4.5 min ( 648.2 - 643.7 )

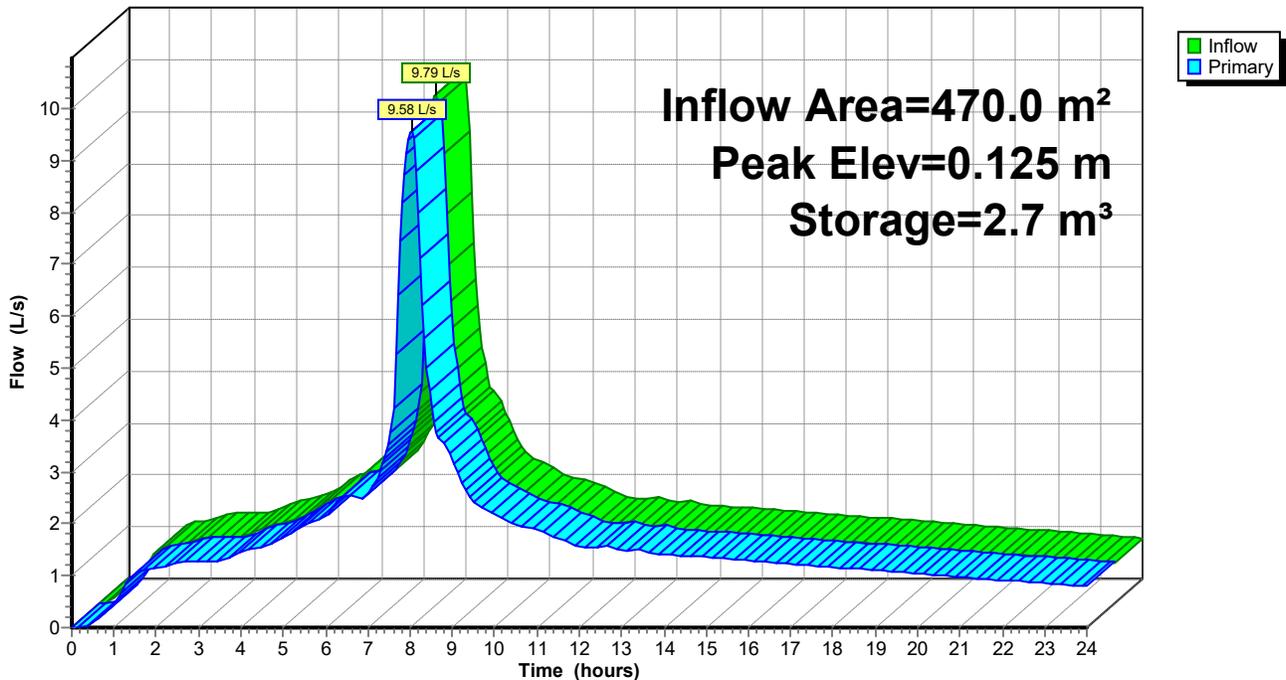
Volume	Invert	Avail.Storage	Storage Description
#1	0.000 m	38.9 m <sup>3</sup>	<b>1.80 mW x 12.00 mL x 1.80 mH Prismatic</b>

Device	Routing	Invert	Outlet Devices
#1	Primary	0.000 m	<b>90 mm Vert. Orifice/Grate X 2.00</b> C= 0.600

**Primary OutFlow** Max=9.55 L/s @ 8.03 hrs HW=0.125 m (Free Discharge)  
 ←1=Orifice/Grate (Orifice Controls 9.55 L/s @ 0.75 m/s)

### Pond 59P: Existing Potable Water Storage

Hydrograph



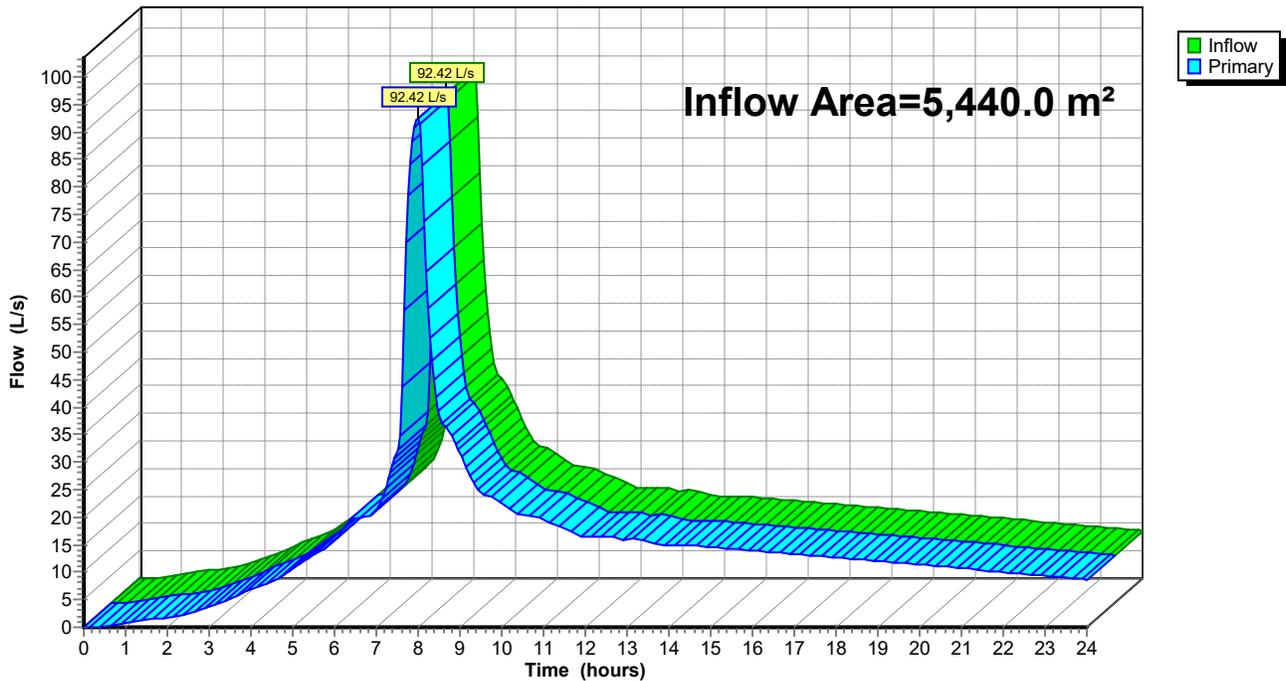
### Summary for Link 56L: Flows Attenuated Back to Permitted Flows

Inflow Area = 5,440.0 m<sup>2</sup>, 10.48% Impervious, Inflow Depth > 240 mm for 1% AEP + 20% CCF event  
Inflow = 92.42 L/s @ 7.98 hrs, Volume= 1,308.1 m<sup>3</sup>  
Primary = 92.42 L/s @ 7.98 hrs, Volume= 1,308.1 m<sup>3</sup>, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

### Link 56L: Flows Attenuated Back to Permitted Flows

Hydrograph



# Flood Level Report



**Parcel ID: 4895258**

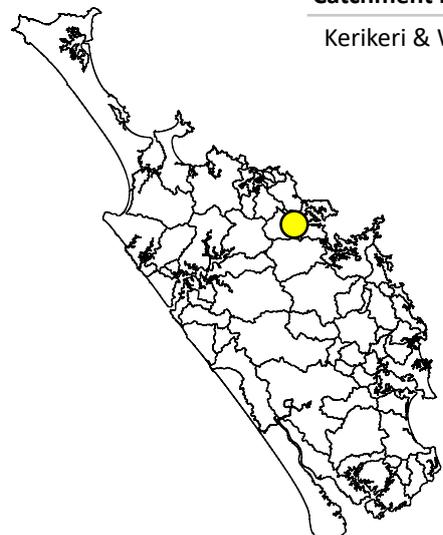
Title: NA101C/190

Appellation: Lot 1 DP 167286

Survey Area: 9,420 m<sup>2</sup>

**Catchment Name(s)**

Kerikeri & Waipapa





## Useful Flood Information Definitions

**Annual Exceedance Probability (AEP)** - The probability of a flood event of a given size occurring in any one year, usually expressed as a percentage annual chance.

**1% AEP** - A flood of this size or larger has a 1 in 100 chance or a 1% probability of occurring in any year.

**2% AEP** - A flood of this size or larger has a 1 in 50 chance or a 2% probability of occurring in any year.

**5% AEP** - A flood of this size or larger has a 1 in 20 chance or a 5% probability of occurring in any year.

**10% AEP** - A flood of this size or larger has a 1 in 10 chance or a 10% probability of occurring in any year.

**NZVD2016 - New Zealand Vertical Datum** - The reference level used in our flood models to define ground level.

**Flood Levels** - Flood levels are used from our modelled flood level rasters. The flood levels are calculated above NZVD 2016 Datum.

**Climate Change (CC)** - NZCPS (2010) requires that the identification of coastal hazards includes consideration of sea level rise over at least a 100-year planning period. Climate change impacts, such as increased rain intensity, have been included in the flood scenarios. You can read more about the Climate Change forecasts included in each flood model in the technical reports on the NRC website.

**Mean high water spring (MHWS)** - describes the highest level that spring tides reach, on average.

## Coastal Flood Hazard Zones (CFHZ)

Coastal flood hazard zones are derived using a range of data including tide gauge analysis, wind and wave data and models, and use empirical calculations to estimate extreme water levels around the coastline. The calculations include projected sea level rise scenarios based on the latest Ministry for the Environment guidance.

**CFHZ 0** Coastal Flood Hazard Zone 0 - area currently susceptible to coastal inundation (flooding by the sea) in a 1-in-100 year storm event

**CFHZ 1** Coastal Flood Hazard Zone 1 - an area susceptible to coastal inundation (flooding by the sea) in a 1-in-50 year storm event, taking into account a projected sea-level rise of 0.6m over the next 50 years

**CFHZ 2** Coastal Flood Hazard Zone 2 - an area susceptible to coastal inundation (flooding by the sea) in a 1-in-100 year storm event, taking into account a projected sea-level rise of 1.2m over the next 100 years

**CFHZ 3** Coastal Flood Hazard Zone 3 - an area susceptible to coastal inundation (flooding by the sea) in a 1-in-100 year storm event, taking into account a projected sea-level rise of 1.5m over the next 100 years (rapid sea level rise scenario)

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## REGIONWIDE and PRIORITY - RIVER FLOOD HAZARD ZONES (RFHZ)

River flood hazard zones are created to raise awareness of where flood hazard areas are identified, inform decision-making and to support the minimisation of the impacts of flooding in our region. The river flood hazard zones have been created using an assessment of best current available information, engaging national and international experts in the field, using national standards and guidelines and has been peer reviewed. This will provide a good indication of the areas at potential risk of flooding from a regional perspective. However, flood mapping is a complex process which involves some approximation of the natural features and processes associated with flooding.

**River Flood Hazard Zone 1** – 10% AEP flood extent: an area with a 10% chance of flooding annually

**River Flood Hazard Zone 2** – 2% AEP flood extent: an area with a 2% chance of flooding annually

**River Flood Hazard Zone 3** – 1% AEP flood extent: an area with a 1% chance of flooding annually with the inclusion of potential Climate Change (CC) impact



Maximum	Minimum
68.41 m	67.01 m

Max Min flood levels are for raster extent shown on the map

50 Year

m NZVD

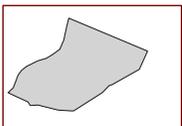
67.01 - 67.21
67.41 - 67.61
67.61 - 67.81
67.81 - 68.01
68.01 - 68.21
68.21 - 68.41
68.41 - 68.61

 Parcel

 Flood Level Point

Label	Level
1	67.58 m
2	0 m
3	0 m
4	67.02 m
5	0 m
6	67.45 m
7	68.18 m
8	0 m

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 DISCLAIMER:  
 The Northland Regional Council cannot guarantee that the information shown is accurate  
 and should not be reused in any manner without proper consultation with its owner.





Maximum	Minimum
68.56 m	67.42 m

Max Min flood levels are for raster extent shown on the map

### 100 Year + CC

m NZVD

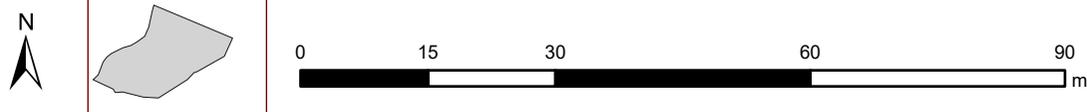
- 67.42 - 67.62
- 67.62 - 67.82
- 67.82 - 68.02
- 68.02 - 68.22
- 68.22 - 68.42
- 68.42 - 68.62

Parcel

● Flood Level Point

Label	Level
1	67.6 m
2	67.43 m
3	67.56 m
4	67.77 m
5	67.86 m
6	67.97 m
7	68.32 m
8	68.56 m

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Projection NZTM, Vertical Datum NZVD2016.  
DISCLAIMER:  
The Northland Regional Council cannot guarantee that the information shown is accurate and should not be reused in any manner without proper consultation with its owner.





# Disclaimers

Our modelling disclaimers are linked below:

<https://www.nrc.govt.nz/media/ko2dkgxn/coastal-hazard-maps-disclaimer-june-2017.pdf>

<https://www.nrc.govt.nz/media/cqnnw12y/flood-map-disclaimer-2021.pdf>

Our regionwide modelling reports are linked below:

<https://www.nrc.govt.nz/environment/river-flooding-and-coastal-hazards/river-flooding/river-flood-hazard-maps/regionwide-river-catchments-analysis-technical-reports>

## ARE YOU FLOOD READY?



01

### Know your risk

Check what potential flood risks and other hazards that may impact your property.

The Natural Hazards Portal is a great place to start. It's a 'one-stop-shop' of information related to natural hazards within our region:

[www.nrc.govt.nz/environment/natural-hazards-portal](http://www.nrc.govt.nz/environment/natural-hazards-portal)

The Environmental Data Hub provides river level and flow data, as well as warning levels, rainfall data, water quality, and more:

[www.nrc.govt.nz/environment/environmental-data/environmental-data-hub](http://www.nrc.govt.nz/environment/environmental-data/environmental-data-hub)

02

### Have a plan

Make sure you have an evacuation plan, emergency kit and important phone numbers ready. Check out: <https://getready.govt.nz/en/prepared/> for tips on how to get ready.

03

### Stay up to date

In a civil defence emergency situation, follow the updates on the Northland CDEM Group's Facebook page:

[www.facebook.com/civildefencenorthland](http://www.facebook.com/civildefencenorthland)

Or follow updates from the embedded feed on the regional council website: [www.nrc.govt.nz/civildefence](http://www.nrc.govt.nz/civildefence)

04

### In an emergency

Remember, if life is threatened dial 111 to contact emergency services.

## **Appendix 5**

Site Assessment Report (Geotech)

<b>SITE</b>	<b>309 Waipapa Road, Kerikeri</b>
<b>LEGAL DESCRIPTION</b>	<b>Lot 1 DP 167286</b>
<b>PROJECT</b>	<b>Proposed 2-Lot Subdivision (Proposed 1 Lot for Assessment)</b>
<b>CLIENT</b>	<b>Charlie Billington</b>
<b>REFERENCE NO.</b>	<b>144131</b>
<b>DOCUMENT</b>	<b>Site Assessment Report</b>
<b>STATUS/REVISION NO.</b>	<b>FINAL – Issued for Resource Consent</b>
<b>DATE OF ISSUE</b>	<b>19 January 2026</b>

Report Prepared For	Attention	Email
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## 1. EXECUTIVE SUMMARY

The following table is intended to be a concise summary which must be read in conjunction with the relevant report sections as referenced herein.

<b>Development Type:</b>	2-Lot subdivision (Proposed Lot 1 for assessment).
<b>Development Proposals Supplied:</b>	Yes – Subdivision Scheme Plan.
<b>NZS3604 Type Structure(s):</b>	Assumed to be.
<b>Earthworks Proposed:</b>	At this preliminary stage, we are not aware of any future earthwork proposals. Due to the near level to gently sloping nature of proposed Lot 1, only a minor strip and level earthworks operation will be required to create a level platform for any proposed concrete floor slab foundation.
<b>Geology Encountered:</b>	Kerikeri Volcanic Group.
<b>Surficial Topsoil Encountered:</b>	Yes – Surficial layers were encountered to depths ranging between 0.25m to 0.40m below present ground level.
<b>Overall Site Gradient in Proximity to Designated Building Platforms:</b>	Near level to gently inclined.
<b>Site Stability Risk:</b>	Low risk of instability at the site.
<b>Liquefaction Risk:</b>	Negligible risk of liquefaction susceptibility.
<b>Suitable Foundation Type(s):</b>	Shallow foundations will be suitable to support a future dwelling at proposed Lot 1 provided they are designed to accommodate vertical movement of soil associated with Soil Reactivity <b>Class M – Moderately Reactive</b> .
<b>Soil Bearing Capacity:</b>	Yes – Natural soils and Engineered Hardfill only. Geotechnical Ultimate Bearing Capacity = 300kPa.
<b>NZBC B1 Expansive Soil Classification:</b>	Class M – Moderately Expansive ( $\gamma_s = 44\text{mm}$ ).
<b>NZS1170.5:2004 Site Subsoil Classification:</b>	Class C – Shallow soil stratigraphy.
<b>Minimum Footing Embedment Depth:</b>	0.60m below finished ground levels and 0.30m into competent natural ground, whichever is deeper.
<b>Consent Application Report Suitable for:</b>	Resource Consent. Once development and foundation drawings for a future development at proposed Lot 1 have been finalised at the Building Consent stage, the drawings should be referred to us for review, to verify that the recommendations contained in this report have been incorporated into the design.

## 2. INTRODUCTION

### 2.1. SCOPE OF WORK

Wilton Joubert Limited (WJL) was engaged by **Charlie Billington** (the Client) to undertake a geotechnical assessment of the above site, where we understand, it is proposed to subdivide the existing property into two individual allotments.

The primary purpose of this report is to provide Geotechnical assessments along with preliminary design recommendations pertaining to future residential development within vacant proposed Lot 1. Proposed Lot 2 is excluded from our assessments and will contain the existing residential dwelling at the southwestern portion of the site.

It is our understanding that this report will be submitted to support a Resource Consent application for the proposed subdivision development.

### 2.2. SUPPLIED INFORMATION

At the time of preparing this report, we were supplied with a Subdivision Scheme Plan, dated 12 December 2025 (Ref: 10832), prepared by Thomson Survey, which depicts the proposed subdivision development.

**Any revision of the supplied Subdivision Scheme Plan with Geotechnical implications should be referred to us for review.**

## 3. SITE DESCRIPTION

The proposed development will be created across the following property (the site), which is located off the southern side of Waipapa Road, accessed 1.3km east of the State Highway 10 intersection:

- 309 Waipapa Road, Kerikeri, legally described as Lot 1 DP 167286.

The site is shown on our appended Site Plan (Drawing No. 144131-G600) and in Figure 1 below.

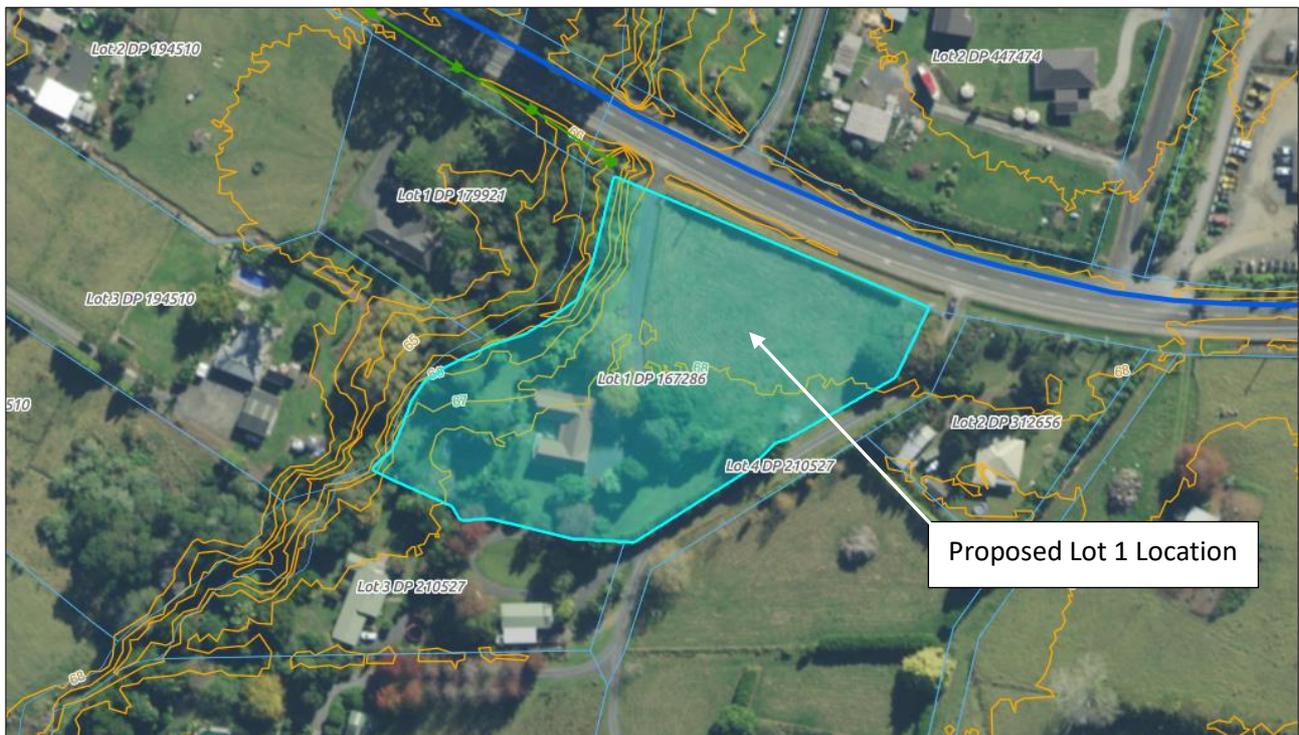


Figure 1: Aerial view with the subject property highlighted in cyan (from Far North District Council's online GIS database).

The surface area of the subject site is 9,420m<sup>2</sup> and is accessed at the northwestern boundary corner via a gravel driveway from Waipapa Road. The eastern boundary is bound by a shared, gravel right-of-way (ROW).

Built development on-site comprises an existing dwelling at the southwestern portion of the site. Vegetation comprises mainly pasture and lawn, with trees and small bush generally surrounding the dwelling.

Topographically speaking, the property lies within a broad, volcanic plateau and is near level to gently sloping, falling towards the Whiriwhiritoa Stream along the western boundary.

The Far North District Council (FNDC) on-line GIS Water Services Map indicates that a public stormwater catchpit lead and two culverts are located adjacent to the northwestern boundary corner. No public underground services are mapped as being present beneath the property.

**4. DEVELOPMENT PROPOSALS**

Based on our review of the supplied Subdivision Scheme Plan, we understand that it is proposed to subdivide the existing property into two individual allotments. Proposed Lot 1 will encompass an area of 3,880m<sup>2</sup> across the northeastern portion, whilst proposed Lot 2 will encompass an area of 5,440m<sup>2</sup> across the southeastern portion and will contain the existing residential dwelling.

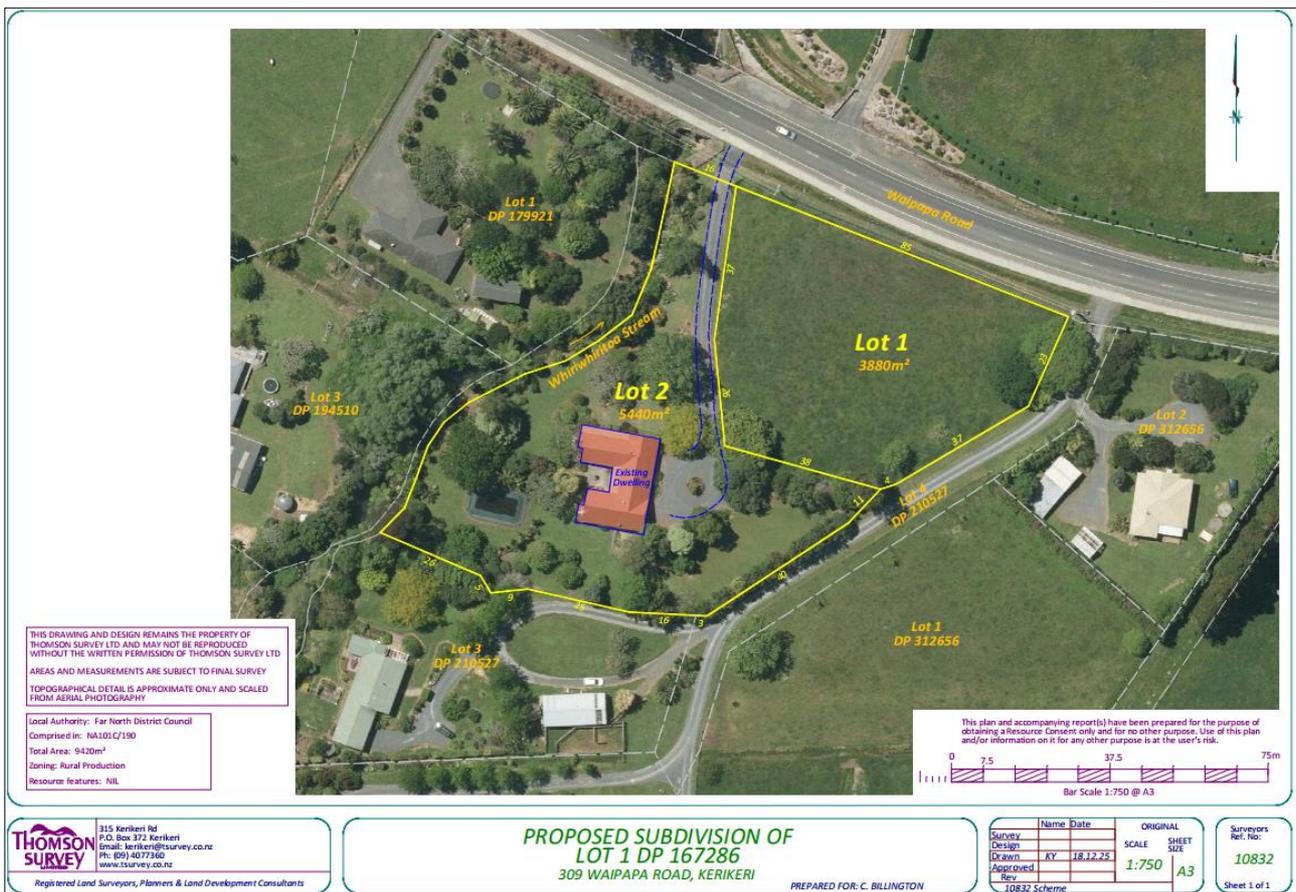


Figure 2: Subdivision Scheme Plan depicting the proposed subdivision development (from Thomson Survey Limited).

We have been engaged to provide Geotechnical assessments along with preliminary design recommendations pertaining to future residential development within a 30m x 30m (900m<sup>2</sup>) designated building platform (DBP) at proposed Lot 1. For the purposes of this report, we have assumed any future

development will comprise of a lightweight building, designed and constructed generally in keeping with the requirements of NZS3604:2011.

At this preliminary stage, we are not aware of any future earthwork proposals. Due to the level to gently sloping nature of proposed Lot 1, only minor earthworks will be required to create a level platform for any proposed concrete floor slab foundation.



*Figure 3: Site photograph looking north-westerly towards proposed Lot 1.*

As a result, the principal objectives were to investigate and assess the suitability of foundation options for the site subsoils, not only primarily in terms of bearing capacity, but also for differential foundation movement.

## 5. DESKTOP STUDY

### 5.1. PUBLISHED GEOLOGY

Local geology across the property and the wider surrounding land is noted on the GNS Science New Zealand Geology Web Map, Scale 1:250,000, as; Kerikeri Volcanic Group Late Miocene Basalt of Kaikohe – Bay of Islands Volcanic Field.

These deposits are approximately 9.7 to 1.8 million years in age and described as; “*Basalt lava, volcanic plugs and minor tuff*” (Ref: GNS Science Website).



Figure 4: Screenshot from the New Zealand Geology Web Map hosted by GNS Science.

## 5.2. NORTHLAND REGIONAL COUNCIL FLOOD HAZARD ZONES

The Northland Regional Council (NRC) online GIS Natural Hazards Map indicates that the northern, western and southern boundaries are largely within either 10-year, 50-year and 100-year (including climate change) River Flood Hazard Zones.

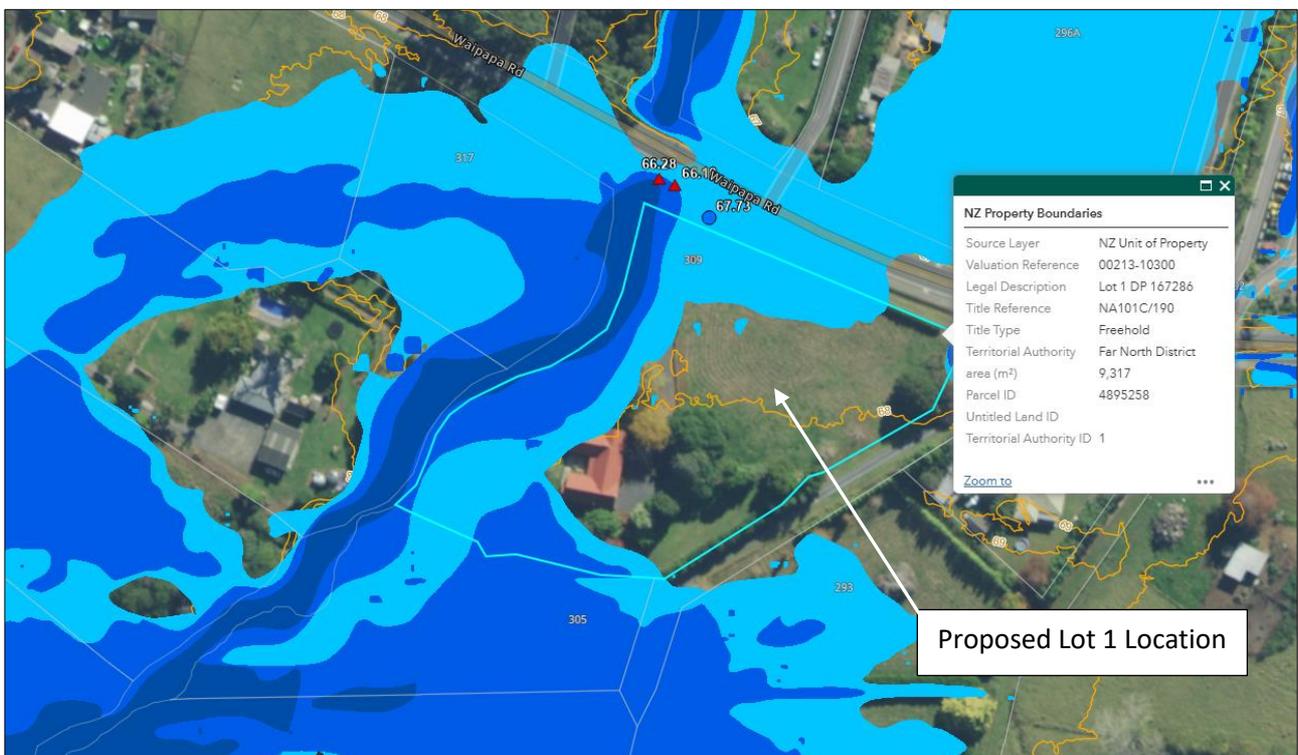


Figure 5: Aerial view with the subject property highlighted in cyan (from NRC's online GIS database).

We understand that our consultancy has been engaged to provide a separate Flood Assessment which will accompany the Resource Consent application. The assessment will provide minimum finished ground and floor level requirements.

## 6. GEOTECHNICAL INVESTIGATION

Our fieldwork, as depicted on our appended Site Plan, was undertaken on 17 December 2025 and involved:

- Drilling 3 (no.) 50mm diameter hand auger boreholes (HA01 to HA03 inclusive) to refusal depths ranging between 0.60m and 1.3m below present ground level (bpgl), and
- Dynamic Cone Penetrometer (DCP-Scala) tests were undertaken from the base of each borehole to refusal depths ranging between 0.70m and 1.4m bpgl.

## 7. GEOTECHNICAL FINDINGS

The soil sample arisings from the boreholes were logged generally in accordance with the “*Field Description of Soil and Rock*”, New Zealand Geotechnical Society (NZGS), December 2005.

The following is a summary of the ground conditions encountered in our investigations. Please refer to the appended logs for greater detail.

### 7.1. TOPSOIL

Surficial topsoil was encountered in all three boreholes to depths ranging between 0.25m to 0.30m bpgl.

### 7.2. NATURAL GROUND

The underlying natural deposits encountered were consistent with our expectations of Kerikeri Volcanic Group deposits, generally comprising non-plastic, very stiff SILT and gravelly SILT, generally with trace of clay, overlying inferred basalt rock which immediately induced termination. In HA01, an isolated layer of stiff SILT deposits was encountered between depths of 0.25m and 0.80m bpgl.

Measured in-situ BS1377 adjusted peak Vane Shear Strengths ranged between 70kPa and greater than 197kPa, the latter being where soil strength was in excess of the shear vane capacity, or the vane was unable to penetrate the soil (UTP).

DCP-Scala testing below the base of each borehole immediately refused on greater than 20 blows per 100mm penetration, indicating a very dense stratum.

The ratio of peak to remoulded vane shear strength values measured within the boreholes were noticeably variable, ranging between 4.1 and 21, indicating the underlying subgrade fluctuates between ‘Sensitive and Quick.’ The results are likely influenced by the current dryness of the subsoils due to the summer period.

Sensitive soil sites require to protect the subgrade from rain, wind, etc., and to avoid (or minimise) construction traffic and vibrating plants.

### 7.3. GROUNDWATER

Groundwater was only encountered in HA01 at a depth of 1.2m bpgl on the day of our investigation. The groundwater level was overlying the less permeable, inferred basalt rock layer. It should be noted that approximately 5mm of rainfall fell on the late afternoon and nighttime period before the day of our investigation.

## 7.4. SUMMARY TABLE

The following table summarises our inferred stratigraphic profiling:

**Table 1: Stratigraphic Summary Table**

Investigation Hole ID	Termination Depth (m)	Depth to Base of Surficial Topsoil (m)	Vane Shear Strength Range within Natural Ground (kPa)	DCP-Scala Blow Count Range Per 100mm Penetration Below Borehole Base	DCP-Scala Refusal (20+ Blows) Depth Below Borehole Base (m)	Standing Groundwater Depth (m)
HA01	1.3 <sup>(1)</sup>	0.25	70 - UTP	20+	1.4	1.2
HA02	0.80 <sup>(1)</sup>	0.25	197+ / UTP	20+	0.90	NE
HA03	0.60 <sup>(1)</sup>	0.30	141 - UTP	20+	0.70	NE

Table Note: (1) Too hard to hand auger (basalt rock inferred), NE Not encountered

## 7.5. EXPANSIVE SOILS

Naturally occurring, seasonal moisture variations are a strong characteristic of most Upper North Island soils, typically resulting in plastic soil masses swelling during winter months and then shrinking during summer months. Such volumetric changes in foundation soils (broadly termed 'Expansive Soils') vary according to clay mineralogy and geology and are a significant risk to buildings.

In this instance, in the absence of laboratory testing, but instead adopting the visual-tactile method as per AS2870, considering the non-plastic nature of the underlying silt and gravelly silt deposits that generally only contained trace clay, we have adopted a conservative primary classification estimate of the soils underlying the site as follows:

- NZBC B1 Expansive Soil Class M
- Upper Limit of Characteristic surface movement ( $y_s$ ) 44mm

Effects of expansive soils for the construction type proposed here, will require mitigation by way of specific engineering design (SED) deepened strip, pad and bored footings, or a reinforced, stiffened raft slab foundation system. Foundation design recommendations are given in the appropriate Conclusion and Recommendation sections below.

## 8. GEOTECHNICAL ASSESSMENTS

As appropriate to the site conditions, we have carried out the following geotechnical analyses:

- Qualitative slope stability, and
- Liquefaction susceptibility.

### 8.1. QUALITATIVE SLOPE STABILITY

Due to the near level to gently sloping nature of proposed Lot 1, land instability is not considered to be a constraint or risk to the proposed development.

## 8.2. LIQUEFACTION SUSCEPTIBILITY

Liquefaction is the loss of effective strength of a cohesionless soil (typically sand) due to pore-water pressures generated during a seismic event (earthquake). The partial or complete loss of effective strength of loose, saturated soils can result in vertical settlement and/or horizontal movement (lateral spreading) of the ground.

A commonly accepted definition is: "Areas susceptible to liquefaction generally correspond with geologically young deposits (less than 10,000 years) located in relatively flat areas close to active or abandoned waterways, in coastal or estuarine areas, and/or areas of uncompacted or poorly compacted fill." None of these characteristics apply to this site.

We have carried out liquefaction susceptibility assessments in order to identify the risk of ground damage during a seismic event, based on the following items:

- The FNDC online GIS Hazard Map categorises the site as an 'Undetermined' Liquefaction Vulnerability area,
- Stiff to hard soils and basalt rock of the Waipapa Group encountered during our investigations,
- DCP-Scala penetrometer testing below the base of each borehole immediately indicating very dense stratum,
- Groundwater was only encountered in HA01 at a depth of 1.2m bpgl on the day of our investigation. The groundwater level was overlying the less permeable, inferred basalt rock layer,
- The site is situated in a broad, elevated volcanic plateau, set no less than approximately RL67m New Zealand Vertical Datum (NZVD), with good water-shedding characteristics down to the Whiriwhiritoa Stream along the western boundary,
- There are no known active faults traversing through or close to the site, and
- Soils and rock of the Kerikeri Volcanic Group underlie the site (geological age +1.8My).

## 8.3. LIQUEFACTION ASSESSMENT CONCLUSION

Based on our susceptibility assessment, we conclude that the soils at the site have a negligible risk of liquefaction susceptibility, and therefore liquefaction induced ground damage is consequently unlikely.

## 9. CONCLUSIONS AND RECOMMENDATIONS

Based on our observations, site survey, record research, borehole investigation and in-situ testing as described herein, we consider on reasonable grounds that this report can be submitted to the Territorial Authority in support of a Resource Consent application for subdividing the subject site, substantiating that in terms of section 106 of the Resource Management Act and its current amendments, either:

- a) No land in respect of which the consent is sought, nor any structure on that land, is, nor is likely to be subject to material damage by erosion, falling debris, subsidence, or slippage from any source, or
- b) No subsequent use that is likely to be made of the land is likely to accelerate, worsen, or result in material damage to that land, other land, or structure, by erosion, falling debris, subsidence, or slippage from any source.

Therefore, we are satisfied that the DBP at proposed Lot 1 should be generally suitable for future residential construction in terms of NZS3604:2011, provided that the recommendations given in this report are adhered to during design and construction.

## 9.1 FOUNDATION DESIGN

Shallow foundations, such as a reinforced, stiffened raft slab foundation system, slab-on-grade with deepened perimeter strip footings, or timber subfloor suspended on bored timber piles/poles, will be suitable to support a future dwelling at proposed Lot 1 provided they are designed to accommodate vertical movement of soil associated with Soil Reactivity **Class M – Moderately Reactive**.

### 9.1.1. SHALLOW FOUNDATION BEARING CAPACITY

The following bearing capacity values are considered to be appropriate for the design of shallow foundations, subject to founding directly within competent natural ground and/or engineered hardfill, for which careful geo-professional inspections of the subgrade should be undertaken to check that underlying ground conditions are in keeping with our expectations:

*Table 2: Bearing Capacity Values*

Parameters	Kerikeri Volcanic Group Soils
Geotechnical Ultimate Bearing Capacity	300 kPa
ULS Dependable Bearing Capacity ( $\Phi=0.5$ )	150 kPa

When finalising the development proposals, it should be checked that all foundations lie outside 45° envelopes rising from 0.50m below the invert of service trenches, unless such foundation details are found by SED to be satisfactory. Deeper foundation embedment or piles may be required for any surcharging foundations.

### 9.1.2. SHALLOW FOUNDATIONS ON EXPANSIVE SOILS

As described earlier in this report, we have estimated the classification of the site subsoils as follows:

- NZBC B1 Expansive Soil Class M
- Upper Limit of Characteristic surface movement ( $y_s$ ) 44mm

Given that the soils are not considered to lie within the definition of “Good Ground” in accordance with NZS3604:2011, the design of shallow foundations is no longer covered by NZS3604:2011. Care must be taken to mitigate against the potential seasonal shrinkage and swelling effects of expansive foundation soils on both superstructures and floors. We therefore recommend SED should be undertaken by a qualified engineer for the design of all proposed foundations.

All strip, pad and bored footings should be embedded a minimum of 0.60m below finished ground levels and 0.30m into competent natural ground, whichever is deeper.

## 9.2 NZS1170.5:2004 SITE SUBSOIL CLASSIFICATION

We consider proposed Lot 1 to be underlain with a Class C – Shallow Soil stratigraphy.

## 9.3 SITE EARTHWORKS

At this preliminary stage, we are not aware of any future earthwork proposals. Due to the level to gently sloping nature of proposed Lot 1, only a minor strip and level earthworks operation will be required to create a level platform for any proposed concrete floor slab foundation.

All earthworks should be undertaken in accordance with the following standards:

- NZS4431:2022 “Code of Practice for Earth Fill Residential Development”,
- Section 2 “Earthworks & Geotechnical Requirements” of NZS4404:2010 “Land Development and Subdivision Infrastructure”, and
- The FNDC Engineering Standards (Version 0.6, dated May 2023).

#### 9.4 SITE CLEARANCE & PREPARATION

The competency of the exposed subgrade underlying any proposed concrete floor slab foundation and at the invert of all strip, pad and bored footings should be confirmed by a Geo-Professional. In this regard, we recommend the stripping of all vegetation, topsoil and any non-engineered fill deposits beneath any proposed concrete floor slab foundation, prior to requesting Geo-Professional inspection(s) of the stripped ground to confirm that the underlying natural subgrade conditions are in keeping with the expectations of this report. Without such inspections being undertaken, a Chartered Professional Geotechnical Engineer is unable to issue a Producer Statement - PS4 – Design Review which could result in the failure to meet Building Consent requirements as set by Council as conditions of consent.

#### 9.5 SUBGRADE PROTECTION

The subgrade beneath and proposed concrete floor slab foundation should not be exposed for any prolonged period but should be covered with a 100mm thick layer of granular fill, such as GAP40 basecourse, as soon as possible.

Likewise, all strip, pad and bored footing inverts should be poured as soon as possible once inspected by a Geo-Professional or covered with a protective layer of site concrete.

If subgrade degradation occurs by:

- Excessive drying out resulting in desiccation shrinkage cracking, it will be necessary to either re-hydrate the subgrade or undercut the degraded material and replace with compacted hardfill, or
- Excessive subgrade softening after a period of wet weather resulting in weakened soils, it will be necessary to undercut the degraded material and replace with compacted hardfill.

#### 9.6 HARDFILL COMPACTION

Engineered, compacted hardfill should be utilised for all levelling fills beneath any proposed concrete floor slab foundation. The compaction of the hardfill should be undertaken using either a heavy plate compactor or a steel wheeled roller with low frequency dynamic compaction. Hardfill layers should not exceed 0.15m at a time, and where the total depths exceed 0.60m, there is likely to be a Building Consent condition for observation/testing of the hardfill by a Geo-Professional. We recommend achieving the following compacted target values, with equivalence testing using either a Clegg Impact Hammer or DCP-Scala.

**Table 3: Compaction Criteria (for granular fill only)**

Foundation Support Type	CBR	Equivalent Clegg Impact Value (CIV)	Equivalent DCP-Scala Penetrometer Blows
<b>Foundation Footings &amp; Beams</b> (Over a depth of no less than twice the foundation width)	≥ 10%	Minimum 20 Average 25	≥5 blows/100mm (NZS3604)
<b>Floor Slabs</b>	≥ 7%	Minimum 18 Average 20	≥3.5 blows/100mm (NZS3604)

## 9.7 GENERAL SITE WORKS

We stress that all work should be undertaken in a careful and safe manner so that Health and Safety is not compromised, and that suitable Erosion and Sediment control measures should be put in place. Any stockpiles placed should be done so in an appropriate manner so that land stability and/or adjacent structures are not compromised.

Furthermore:

- All works must be undertaken in accordance with the Health and Safety at Work Act 2015
- Any open excavations should be fenced off or covered, and/or access restricted as appropriate.
- The location of all services should be verified at the site prior to the commencement of construction.
- The Contractor is responsible at all times for ensuring that all necessary precautions are taken to protect all aspects of the works, as well as adjacent properties, buildings and services.
- Should the contractor require any site-specific assistance with safe construction methodologies, please contact WJL for further assistance.

## 9.8 LONG-TERM FOUNDATION CARE & MAINTENANCE

The recommendations given above to mitigate the risk of expansive soils do not necessarily remove the risk of external influences affecting the moisture in the subgrade supporting the foundations.

All owners should also be aware of the detrimental effects that significant trees can have on building foundation soils, viz:

- Their presence can induce differential consolidation settlements beneath foundations through localised soil water deprivation, or conversely, and
- Foundation construction too soon after their removal can result in soil swelling and raising foundations as the soil rehydrates.

To this end, care should be taken to avoid:

- Having significant trees positioned where their roots could migrate beneath the house foundations, and
- Constructing foundations on soils that have been differentially excessively desiccated by nearby trees, whether still existing, or recently removed.

We recommend that homeowners make themselves familiar with the appended Homeowners' Guide published by CSIRO, with particular emphasis on maintenance of drains, water pipes, gutters, and downpipes.

#### **10. STORMWATER & SURFACE WATER CONTROL**

Uncontrolled stormwater flows from new development areas must not be allowed to run onto or over site slopes, or to saturate the ground, so as to adversely affect foundation conditions.

All stormwater runoff from any new roof and paved areas should be collected in sealed pipes and be discharged to a Council approved stormwater system.

Under no circumstances should concentrated overflows from any source discharge into or onto the ground in an uncontrolled fashion, especially the downslope flank below the building site.

#### **11. ON-SITE WASTEWATER DISPOSAL**

No reticulated sanitary sewer is available for the site; therefore, an on-site wastewater treatment and disposal systems will be required to service future developments.

We recommend that all designs for future on-site wastewater systems should be carried out by an Engineer experienced in on-site wastewater disposal.

#### **12. UNDERGROUND SERVICES**

The FNDC on-line GIS Water Services Map indicates that a public stormwater catchpit lead and two culverts are located adjacent to the northwestern boundary corner. No public underground services are mapped as being present beneath the property. Other underground services, public or private, mapped, or unmapped, of any type could be also present.

**A thorough service-search should be carried out prior to commencement of any excavations to locate the exact locations of the underground services.**

#### **13. DRAWING REVIEW**

Once development and foundation drawings for the proposed development have been finalised at the Building Consent stage, the drawings should be referred to us for review to verify that the recommendations contained in this report have been incorporated into the design.

#### **14. FUTURE CONSTRUCTION MONITORING**

The foregoing statements are Professional Opinion, based on a limited collection of information, some of which is factual, and some of which is inferred. Because soils are not a homogeneous, manufactured building component, there always exists a level of risk that inferences about soil conditions across the greater site, which have been drawn from isolated "pinprick" locations, may be subject to localized variations. Generally, any investigation is deemed less complete until the applicability of its inferences and the Professional Opinions arising out of those are checked and confirmed during the construction phase, to an appropriate level.

It is increasingly common for the Building Consent Authorities (BCA) to require a Producer Statement – Construction (PS4) which is an important document. The purpose of the PS4 is to confirm the Engineers' Professional Opinion to the BCA that specific elements of construction, such as the verification of design assumptions and soil parameters (NZBC clause B1/VM4 2.0.8), are in accordance with the approved Building Consent and its related documents, which should include the subject Geotechnical Report. Where site works will involve the placement of fill, the PS4 should reference NZBC clause B1/VM1 10.1.

For WJL to issue a PS4 to meet the above clauses of the NZBC, we will need to carry out the site inspections in accordance with the Building Consent and Council requirements. We require at least 48 hours' notice for site inspections.

Site inspections should be undertaken by a Chartered Professional Geotechnical Engineer or their Agent who is familiar with both this site and the contents of this Geotechnical Report.

Prior to works commencement, the above Engineer should be contacted to confirm the construction methodologies, inspection, and testing frequency.

The primary purpose of the site inspections is to check that the conditions encountered are consistent with those expected from the investigations and adopted for the design as discussed herein. If anomalies or uncertainties are identified, then further Professional advice should be sought from the Geo-Professional, which will allow the timely provision of solutions and recommendations should any engineering problems arise.

Upon satisfactory completion of the above work aspects, WJL would then be in a position to issue the PS4 as required by Council.

At this time, the following Geotechnical Site Inspections and Testing should include, but are not limited to:

- Subgrade stripping (concrete floor slab foundations),
- Hardfill compaction testing (concrete floor slab foundations), and
- Pre-pour strip, pad and bored footing excavations.

## 15. LIMITATIONS

We anticipate that this report is to be submitted to Council in support of a Resource Consent application.

This report has been commissioned solely for the benefit of our Client, **Charlie Billington**, in relation to the project as described herein, and to the limits of our engagement, with the exception that the local Territorial Authority may rely on it to the extent of its appropriateness, conditions and limitations, when issuing the subject consent. Any variations from the development proposals as described herein as forming the basis of our appraisal should be referred to us for further evaluation. Copyright of Intellectual Property remains with WJL, and this report may NOT be used by any other entity, or for any other proposals, without our written consent. Therefore, no liability is accepted by this firm or any of its directors, servants, or agents, in respect of any other geotechnical aspects of this site, nor for its use by any other person or entity, and any other person or entity who relies upon any information contained herein does so entirely at their own risk. Where other parties may wish to rely on it, whether for the same or different proposals, this permission may be extended, subject to our satisfactory review of their interpretation of the report.

Although this report may be submitted to a local authority in connection with an application for a consent, permission, approval, or pursuant to any other requirement of law, this disclaimer shall still apply and require all other parties to use due diligence where necessary and does not remove the necessity for the normal inspection of site conditions and the design of foundations as would be made under all normal circumstances.

Thank you for the opportunity to provide our service on this project, and if we can be of further assistance, please do not hesitate to contact us.

Yours faithfully,

**WILTON JOUBERT LIMITED**

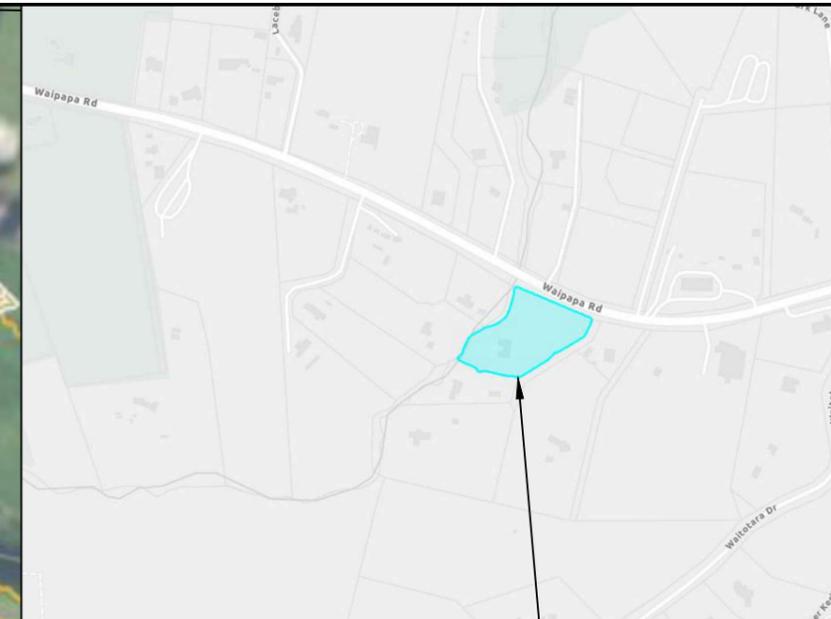
**Appendices:**

WJL Site Plan (1 sheet)

Hand Auger Borehole Records (3 sheets)

*'Foundation Maintenance and Footing Performance'* homeowner's guide, published by CSIRO (4 sheets)

WJL's Construction Monitoring Information (1 sheet)



**SITE LOCATION**

IMAGE SOURCE:  
FAR NORTH DISTRICT COUNCIL LOCALMAPS

30M X 30M (900M<sup>2</sup>) DESIGNATED BUILDING PLATFORM

INDICATIVE PROPOSED LOT BOUNDARY

PROPOSED LOT 1

PROPOSED LOT 2

SYMBOL KEY	
	HA HAND AUGER LOCATIONS

- GENERAL NOTES**
1. SITE PLAN IS ONLY INDICATIVE FOR CONCEPT DESIGN. NO MEASUREMENTS MAY BE TAKEN FROM DRAWING.
  2. BACKGROUND INFORMATION, CONTOURS & LOCAL SERVICES PROVIDED BY THE CLIENT & EXTRACTED FROM LOCAL COUNCIL GIS.
  3. ALL DIMENSION AND LEVELS TO BE CHECKED ON SITE PRIOR TO THE COMMENCEMENT OF CONSTRUCTION. ANY DISCREPANCIES TO BE REPORTED TO THE ENGINEER.
  4. ALL WORK TO BE DONE IN ACCORDANCE WITH THE RELEVANT STANDARDS AND MUST BE UNDERTAKEN IN ACCORDANCE WITH THE HEALTH AND SAFETY AT WORK ACT 2015.



**WILTON JOUBERT**  
Consulting Engineers

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ISSUE / REVISION			
No.	DATE	BY	DESCRIPTION
A	DEC 2025	A.B	ISSUED WITH GEOTECHNICAL REPORT

DESIGNED BY:  
DRAWN BY:  
CHECKED BY:  
SURVEYED BY:

A.B

**SERVICES NOTE**  
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**GEOTECHNICAL**

DESIGN / DRAWING SUBJECT TO ENGINEERS APPROVAL

DRAWING TITLE:  
**SITE PLAN**

PROJECT DESCRIPTION:  
**PROPOSED SUBDIVISION**

PROJECT TITLE:  
**LOT 1 DP 167286  
309 WAIPAPA ROAD  
WAIPAPA  
NORTHLAND**

ORIGINAL DRAWING SIZE: <b>A3</b>	OFFICE: <b>WHANGAREI</b>
DRAWING SCALE: <b>1:750</b>	CO-ORDINATE SYSTEM: <b>NOT COORDINATED</b>
DRAWING NUMBER: <b>144131-G600</b>	ISSUE: <b>A</b>
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# HAND AUGER : HA01

JOB NO.: 144131 SHEET: 1 OF 1

START DATE: 17/12/2025 NORTHING: GRID:

DIAMETER: 50mm EASTING:

SV DIAL: 1994 ELEVATION: Ground

FACTOR: 1.41 DATUM:

CLIENT: Charlie Billington  
PROJECT: 2-Lot Subdivision (1 Lot for Assessment)

SITE LOCATION: 309 Waipapa Road, Kerikeri

STRATIGRAPHY	SOIL DESCRIPTION	LEGEND	DEPTH (m)	WATER	SHEAR VANE				COMMENTS, SAMPLES, OTHER TESTS
					PEAK STRENGTH (kPa)	REMOULD STRENGTH (kPa)	SENSITIVITY	DCP - SCALA (Blows / 100mm)	
Topsail	TOPSOIL, dark brown, dry.		0.0 - 0.2						
	NATURAL: SILT, trace clay, greyish brown, stiff, dry, no plasticity.		0.2 - 0.4						
Kerikeri Volcanic Group	0.6m: Trace rootlets.	0.4 - 0.6			70	17	4.1		
	0.8m: Very stiff, moist.	0.6 - 0.8			169	8	21		
	1.0m: Minor clasts and gravels, wet.	0.8 - 1.0							
	1.2m: Minor clay, wet to saturated.	1.0 - 1.2	▽		UTP	-	-		
EOH: 1.30m - Too Hard To Auger (Basalt Rock Inferred)			1.2 - 1.3		UTP	-	-	20+	

**REMARKS**

End of borehole @ 1.30m (Target Depth: 5.00m)  
Groundwater encountered @ 1.20m during drilling.

NZGS Definition of Relative Density for Coarse Grain soils: VL - Very Loose; L - Loose; MD - Medium Dense; D - Dense; VD - Very Dense

LOGGED BY: JEM

▽ Standing groundwater level

CHECKED BY: CSH

▽ GW while drilling



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Phone: 09-945 4188  
Email: jobs@wjl.co.nz  
Website: www.wiltonjoubert.co.nz

# HAND AUGER : HA02

JOB NO.: 144131 SHEET: 1 OF 1

START DATE: 17/12/2025 NORTHING: GRID:

DIAMETER: 50mm EASTING:

SV DIAL: 1994 ELEVATION: Ground

FACTOR: 1.41 DATUM:

CLIENT: Charlie Billington  
PROJECT: 2-Lot Subdivision (1 Lot for Assessment)

SITE LOCATION: 309 Waipapa Road, Kerikeri

STRATIGRAPHY	SOIL DESCRIPTION	LEGEND	DEPTH (m)	WATER	SHEAR VANE				COMMENTS, SAMPLES, OTHER TESTS	
					PEAK STRENGTH (kPa)	REMOULD STRENGTH (kPa)	SENSITIVITY	DCP - SCALA (Blows / 100mm)		
Topsoil	TOPSOIL, dark brown, dry.		0.0 - 0.2	Groundwater Not Encountered						
Kerikeri Volcanic Group	NATURAL: SILT, trace clay, greyish brown, very stiff, dry, no plasticity.		0.2 - 0.4			197+	-	-		
	Gravelly SILT, minor clasts, orangey brown, very stiff, dry, no plasticity.		0.4 - 0.8							
	EOH: 0.80m - Too Hard To Auger (Basalt Rock Inferred)		0.8 - 1.0			UTP	-	-	20+	
			1.0 - 1.2							
			1.2 - 1.4							
			1.4 - 1.6							
			1.6 - 1.8							
			1.8 - 2.0							

**REMARKS**  
End of borehole @ 0.80m (Target Depth: 5.00m)

NZGS Definition of Relative Density for Coarse Grain soils: VL - Very Loose; L - Loose; MD - Medium Dense; D - Dense; VD - Very Dense

LOGGED BY: JEM ▼ Standing groundwater level  
CHECKED BY: CSH ▽ GW while drilling



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# HAND AUGER : HA03

JOB NO.: 144131 SHEET: 1 OF 1

START DATE: 17/12/2025 NORTHING: GRID:

DIAMETER: 50mm EASTING:

SV DIAL: 1994 ELEVATION: Ground

FACTOR: 1.41 DATUM:

CLIENT: Charlie Billington  
PROJECT: 2-Lot Subdivision (1 Lot for Assessment)

SITE LOCATION: 309 Waipapa Road, Kerikeri

STRATIGRAPHY	SOIL DESCRIPTION	LEGEND	DEPTH (m)	WATER	SHEAR VANE				COMMENTS, SAMPLES, OTHER TESTS
					PEAK STRENGTH (kPa)	REMOULD STRENGTH (kPa)	SENSITIVITY	DCP - SCALA (Blows / 100mm)	
Topsoil	TOPSOIL, dark brown, dry.		0.0 - 0.2	Groundwater Not Encountered					
	NATURAL: SILT, trace clay, greyish brown, very stiff, dry, no plasticity.		0.2 - 0.4		141	11	13		
Kerikeri Volcanic Group	0.5m: Minor gravel and clasts, greyish brown with orangey brown mottles.	0.4 - 0.6							
	EOH: 0.60m - Too Hard To Auger (Basalt Rock Inferred)	0.6 - 2.0	UTP	-	-	20+			

**REMARKS**  
End of borehole @ 0.60m (Target Depth: 5.00m)

NZGS Definition of Relative Density for Coarse Grain soils: VL - Very Loose; L - Loose; MD - Medium Dense; D - Dense; VD - Very Dense

LOGGED BY: JEM ▼ Standing groundwater level  
CHECKED BY: CSH ▽ GW while drilling



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# FOUNDATION MAINTENANCE AND FOOTING PERFORMANCE

## Preventing soil-related building movement

**This Building Technology Resource is designed as a homeowner's guide on the causes of soil-related building movement, and suggested methods to prevent resultant cracking.**

Buildings can and often do move. This movement can be up, down, lateral or rotational. The fundamental cause of movement in buildings can usually be related to one or more problems in the foundation soil. It is important for the home owner to identify the soil type in order to ascertain the measures that should be put in place in order to ensure that problems in the foundation soil can be prevented, thus protecting against building movement. Generally soil classification is provided by a geotechnical report.

### SOIL TYPES

The types of soils usually present under the topsoil in land zoned for residential buildings can be split into two approximate groups – granular and clay. Quite often, foundation soil is a mixture of both types. The general problems associated with soils having granular content are usually caused by erosion. Clay soils are subject to saturation and swell/shrink problems.

As most buildings suffering movement problems are founded on clay soils, there is an emphasis on classification of soils according to the amount of swell and shrinkage they experience with variations of water content. Table 1 below is a reproduction of Table 2.1 from Australian Standard AS 2870-2011, Residential slabs and footings.

### CAUSES OF MOVEMENT

#### SETTLEMENT DUE TO CONSTRUCTION

There are two types of settlement that occur as a result of construction:

- ▶ Immediate settlement occurs when a building is first placed on its foundation soil, as a result of compaction of the soil under the weight of the structure. The cohesive quality of clay soil mitigates against this, but granular (particularly sandy) soil is susceptible.
- ▶ Consolidation settlement is a feature of clay soil and may take place because of the expulsion of moisture from the soil or because of the soil's lack of resistance to local compressive or shear stresses. This will usually take place during the first few months after construction but has been known to take many years in exceptional cases.

These problems may be the province of the builder and should be taken into consideration as part of the preparation of the site for construction.

#### EROSION

All soils are prone to erosion, but sandy soil is particularly susceptible to being washed away. Even clay with a sand component of say 10% or more can suffer from erosion.

#### SATURATION

This is particularly a problem in clay soils. Saturation creates a bog-like suspension of the soil that causes it to lose virtually all of its bearing capacity. To a lesser degree, sand is affected by saturation because saturated sand may undergo a reduction in volume,

particularly imported sand fill for bedding and blinding layers. However, this usually occurs as immediate settlement and should normally be the province of the builder.

#### SEASONAL SWELLING AND SHRINKAGE OF SOIL

All clays react to the presence of water by slowly absorbing it, making the soil increase in volume (see table below, from AS 2870). The degree of increase varies considerably between different clays, as does the degree of decrease during the subsequent drying out caused by fair weather periods. Because of the low absorption and expulsion rate, this phenomenon will not usually be noticeable unless there are prolonged rainy or dry periods, usually of weeks or months, depending on the land and soil characteristics.

The swelling of soil creates an upward force on the footings of the building, and shrinkage creates subsidence that takes away the support needed by the footing to retain equilibrium.

#### SHEAR FAILURE

This phenomenon occurs when the foundation soil does not have sufficient strength to support the weight of the footing. There are two major post-construction causes:

- ▶ Significant load increase.
- ▶ Reduction of lateral support of the soil under the footing due to erosion or excavation.

In clay soil, shear failure can be caused by saturation of the soil adjacent to or under the footing.

#### TREE ROOT GROWTH

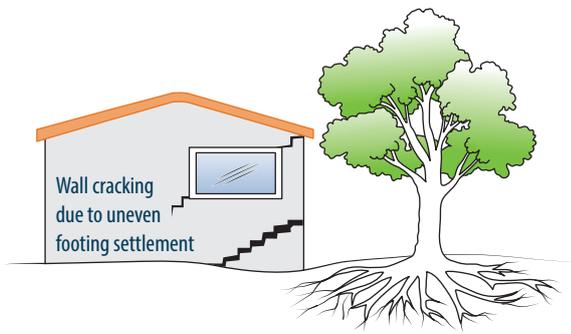
Trees and shrubs that are allowed to grow in the vicinity of footings can cause foundation soil movement in two ways:

- ▶ Roots that grow under footings may increase in cross-sectional size, exerting upward pressure on footings.

**TABLE 1. GENERAL DEFINITIONS OF SITE CLASSES.**

Class	Foundation
A	Most sand and rock sites with little or no ground movement from moisture changes
S	Slightly reactive clay sites, which may experience only slight ground movement from moisture changes
M	Moderately reactive clay or silt sites, which may experience moderate ground movement from moisture changes
H1	Highly reactive clay sites, which may experience high ground movement from moisture changes
H2	Highly reactive clay sites, which may experience very high ground movement from moisture changes
E	Extremely reactive sites, which may experience extreme ground movement from moisture changes

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**FIGURE 1** Trees can cause shrinkage and damage.

- ▶ Roots in the vicinity of footings will absorb much of the moisture in the foundation soil, causing shrinkage or subsidence.

## UNEVENNESS OF MOVEMENT

The types of ground movement described above usually occur unevenly throughout the building's foundation soil. Settlement due to construction tends to be uneven because of:

- ▶ Differing compaction of foundation soil prior to construction.
- ▶ Differing moisture content of foundation soil prior to construction.

Movement due to non-construction causes is usually more uneven still. Erosion can undermine a footing that traverses the flow or can create the conditions for shear failure by eroding soil adjacent to a footing that runs in the same direction as the flow.

Saturation of clay foundation soil may occur where subfloor walls create a dam that makes water pond. It can also occur wherever there is a source of water near footings in clay soil. This leads to a severe reduction in the strength of the soil which may create local shear failure.

Seasonal swelling and shrinkage of clay soil affects the perimeter of the building first, then gradually spreads to the interior through absorption. The swelling process will usually begin at the uphill extreme of the building, or on the weather side where the land is flat. Shrinkage usually begins on the side of the building where the sun's heat is greatest.

## EFFECTS OF UNEVEN SOIL MOVEMENT ON STRUCTURES

### EROSION AND SATURATION

Erosion removes the support from under footings, tending to create subsidence of the part of the structure under which it occurs. Brickwork walls will resist the stress created by this removal of support by bridging the gap or cantilevering until the bricks or the mortar bedding fail. Older masonry has little resistance. Evidence of failure varies according to circumstances and symptoms may include:

- ▶ Step cracking in the mortar beds in the body of the wall or above/below openings such as doors or windows.
- ▶ Vertical cracking in the bricks (usually but not necessarily in line with the vertical beds or perpend).

Isolated piers affected by erosion or saturation of foundations will eventually lose contact with the bearers they support and may tilt or fall over. The floors that have lost this support will become bouncy, sometimes rattling ornaments etc.

### SEASONAL SWELLING/SHRINKAGE IN CLAY

Swelling foundation soil due to rainy periods first lifts the most exposed extremities of the footing system, then the remainder of the perimeter footings while gradually permeating inside the building footprint to lift internal footings. This swelling first tends to create a dish effect, because the external footings are pushed higher than the internal ones.

The first noticeable symptom may be that the floor appears slightly dished. This is often accompanied by some doors binding on the floor or the door head, together with some cracking of cornice mitres. In buildings with timber flooring supported by bearers

and joists, the floor can be bouncy. Externally there may be visible dishing of the hip or ridge lines.

As the moisture absorption process completes its journey to the innermost areas of the building, the internal footings will rise. If the spread of moisture is roughly even, it may be that the symptoms will temporarily disappear, but it is more likely that swelling will be uneven, creating a difference rather than a disappearance in symptoms. In buildings with timber flooring supported by bearers and joists, the isolated piers will rise more easily than the strip footings or piers under walls, creating noticeable doming of flooring.

As the weather pattern changes and the soil begins to dry out, the external footings will be first affected, beginning with the locations where the sun's effect is strongest. This has the effect of lowering the external footings. The doming is accentuated, and cracking reduces or disappears where it occurred because of dishing, but other cracks open up. The roof lines may become convex.

Doming and dishing are also affected by weather in other ways. In areas where warm, wet summers and cooler dry winters prevail, water migration tends to be toward the interior and doming will be accentuated, whereas where summers are dry, and winters are cold and wet, migration tends to be toward the exterior and the underlying propensity is toward dishing.

### MOVEMENT CAUSED BY TREE ROOTS

In general, growing roots will exert an upward pressure on footings, whereas soil subject to drying because of tree or shrub roots will tend to remove support from under footings by inducing shrinkage.

### COMPLICATIONS CAUSED BY THE STRUCTURE ITSELF

Most forces that the soil causes to be exerted on structures are vertical – i.e. either up or down. However, because these forces are seldom spread evenly around the footings, and because the building resists uneven movement because of its rigidity, forces are exerted from one part of the building to another. The net result of all these forces is usually rotational. This resultant force often complicates the diagnosis because the visible symptoms do not simply reflect the original cause. A common symptom is binding of doors on the vertical member of the frame.

### EFFECTS ON FULL MASONRY STRUCTURES

Brickwork will resist cracking where it can. It will attempt to span areas that lose support because of subsided foundations or raised points. It is therefore usual to see cracking at weak points, such as openings for windows or doors.

In the event of construction settlement, cracking will usually remain unchanged after the process of settlement has ceased.

With local shear or erosion, cracking will usually continue to develop until the original cause has been remedied, or until the subsidence has completely neutralised the affected portion of footing and the structure has stabilised on other footings that remain effective.

In the case of swell/shrink effects, the brickwork will in some cases return to its original position after completion of a cycle, however it is more likely that the rotational effect will not be exactly reversed, and it is also usual that brickwork will settle in its new position and will resist the forces trying to return it to its original position. This means that in a case where swelling takes place after construction and cracking occurs, the cracking is likely to at least partly remain after the shrink segment of the cycle is complete. Thus, each time the cycle is repeated, the likelihood is that the cracking will become wider until the sections of brickwork become virtually independent.

With repeated cycles, once the cracking is established, if there is no other complication, it is normal for the incidence of cracking to stabilise, as the building has the articulation it needs to cope with the problem. This is by no means always the case, however, and monitoring of cracks in walls and floors should always be treated seriously.

Upheaval caused by growth of tree roots under footings is not a simple vertical shear stress. There is a tendency for the root to also

exert lateral forces that attempt to separate sections of brickwork after initial cracking has occurred.

The normal structural arrangement is that the inner leaf of brickwork in the external walls and at least some of the internal walls (depending on the roof type) comprise the load-bearing structure on which any upper floors, ceilings and the roof are supported. In these cases, it is internally visible cracking that should be the main focus of attention, however there are a few examples of dwellings whose external leaf of masonry plays some supporting role, so this should be checked if there is any doubt. In any case, externally visible cracking is important as a guide to stresses on the structure generally, and it should also be remembered that the external walls must be capable of supporting themselves.

### EFFECTS ON FRAMED STRUCTURES

Timber or steel framed buildings are less likely to exhibit cracking due to swell/shrink than masonry buildings because of their flexibility. Also, the doming/dishing effects tend to be lower because of the lighter weight of walls. The main risks to framed buildings are encountered because of the isolated pier footings used under walls. Where erosion or saturation causes a footing to fall away, this can double the span which a wall must bridge. This additional stress can create cracking in wall linings, particularly where there is a weak point in the structure caused by a door or window opening. It is, however, unlikely that framed structures will be so stressed as to suffer serious damage without first exhibiting some or all of the above symptoms for a considerable period. The same warning period should apply in the case of upheaval. It should be noted, however, that where framed buildings are supported by strip footings there is only one leaf of brickwork and therefore the externally visible walls are the supporting structure for the building. In this case, the subfloor masonry walls can be expected to behave as full brickwork walls.

### EFFECTS ON BRICK VENEER STRUCTURES

Because the load-bearing structure of a brick veneer building is the frame that makes up the interior leaf of the external walls plus perhaps the internal walls, depending on the type of roof, the building can be expected to behave as a framed structure, except that the external masonry will behave in a similar way to the external leaf of a full masonry structure.

### WATER SERVICE AND DRAINAGE

Where a water service pipe, a sewer or stormwater drainage pipe is in the vicinity of a building, a water leak can cause erosion, swelling or saturation of susceptible soil. Even a minuscule leak can be enough to saturate a clay foundation. A leaking tap near a building can have the same effect. In addition, trenches containing pipes can become watercourses even though backfilled, particularly where broken rubble is used as fill. Water that runs along these trenches can be responsible for serious erosion, interstrata seepage into subfloor areas and saturation.

Pipe leakage and trench water flows also encourage tree and shrub roots to the source of water, complicating and exacerbating the problem. Poor roof plumbing can result in large volumes of rainwater being concentrated in a small area of soil:

- ▶ Incorrect falls in roof guttering may result in overflows, as may gutters blocked with leaves etc.
- ▶ Corroded guttering or downpipes can spill water to ground.
- ▶ Downpipes not positively connected to a proper stormwater collection system will direct a concentration of water to soil that is directly adjacent to footings, sometimes causing large-scale problems such as erosion, saturation and migration of water under the building.

### SERIOUSNESS OF CRACKING

In general, most cracking found in masonry walls is a cosmetic nuisance only and can be kept in repair or even ignored. Table 2 below is a reproduction of Table C1 of AS 2870-2011.

AS 2870-2011 also publishes figures relating to cracking in concrete floors, however because wall cracking will usually reach the critical point significantly earlier than cracking in slabs, this table is not reproduced here.

## PREVENTION AND CURE

### PLUMBING

Where building movement is caused by water service, roof plumbing, sewer or stormwater failure, the remedy is to repair the problem. It is prudent, however, to consider also rerouting pipes away from the building where possible and relocating taps to positions where any leakage will not direct water to the building vicinity. Even where gully traps are present, there is sometimes sufficient spill to create erosion or saturation, particularly in modern installations using smaller diameter PVC fixtures. Indeed, some gully traps are not situated directly under the taps that are installed to charge them, with the result that water from the tap may enter the backfilled trench that houses the sewer piping. If the trench has been poorly backfilled, the water will either pond or flow along the bottom of the trench. As these trenches usually run alongside the footings and can be at a similar depth, it is not hard to see how any water that is thus directed into a trench can easily affect the foundation's ability to support footings or even gain entry to the subfloor area.

### GROUND DRAINAGE

In all soils there is the capacity for water to travel on the surface and below it. Surface water flows can be established by inspection during and after heavy or prolonged rain. If necessary, a grated drain system connected to the stormwater collection system is usually an easy solution.

It is, however, sometimes necessary when attempting to prevent water migration that testing be carried out to establish watertable height and subsoil water flows. This subject may be regarded as an area for an expert consultant.

### PROTECTION OF THE BUILDING PERIMETER

It is essential to remember that the soil that affects footings extends well beyond the actual building line. Watering of garden plants, shrubs and trees causes some of the most serious water problems.

For this reason, particularly where problems exist or are likely to occur, it is recommended that an apron of paving be installed around as much of the building perimeter as necessary. This paving should extend outwards a minimum of 900 mm (more in highly reactive soil) and should have a minimum fall away from the building of 1:60. The finished paving should be no less than 100 mm below brick vent bases.

It is prudent to relocate drainage pipes away from this paving, if possible, to avoid complications from future leakage. If this is not practical, earthenware pipes should be replaced by PVC and backfilling should be of the same soil type as the surrounding soil and compacted to the same density.

Except in areas where freezing of water is an issue, it is wise to remove taps in the building area and relocate them well away from the building – preferably not uphill.

It may be desirable to install a grated drain at the outside edge of the paving on the uphill side of the building. If subsoil drainage is needed this can be installed under the surface drain.

### CONDENSATION

In buildings with a subfloor void, such as where bearers and joists support flooring, insufficient ventilation creates ideal conditions for condensation, particularly where there is little clearance between the floor and the ground. Condensation adds to the moisture already present in the subfloor and significantly slows the process of drying out. Installation of an adequate subfloor ventilation system, either natural or mechanical, is desirable.

**TABLE 2. CLASSIFICATION OF DAMAGE WITH REFERENCE TO WALLS.**

Description of typical damage and required repair	Approximate crack width limit	Damage category
Hairline cracks	<0.1 mm	0 – Negligible
Fine cracks which do not need repair	<1 mm	1 – Very Slight
Cracks noticeable but easily filled. Doors and windows stick slightly.	<5 mm	2 – Slight
Cracks can be repaired and possibly a small amount of wall will need to be replaced. Doors and windows stick. Service pipes can fracture. Weathertightness often impaired.	5–15 mm (or a number of cracks 3 mm or more in one group)	3 – Moderate
Extensive repair work involving breaking-out and replacing sections of walls, especially over doors and windows. Window and door frames distort. Walls lean or bulge noticeably, some loss of bearing in beams. Service pipes disrupted.	15–25 mm but also depends on number of cracks	4 – Severe

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Warning: Although this Building Technology Resource deals with cracking in buildings, it should be said that subfloor moisture can result in the development of other problems, notably:

- ▶ Water that is transmitted into masonry, metal or timber building elements causes damage and/or decay to those elements.
- ▶ High subfloor humidity and moisture content create an ideal environment for various pests, including termites and spiders, and mould.
- ▶ Where high moisture levels are transmitted to the flooring and walls, an increase in the dust mite count can ensue within the living areas. Dust mites, as well as dampness in general, can be a health hazard to inhabitants, particularly those who are abnormally susceptible to respiratory ailments.

**THE GARDEN**

The ideal vegetation layout is to have lawn or plants that require only light watering immediately adjacent to the drainage or paving edge, then more demanding plants, shrubs and trees spread out in that order.

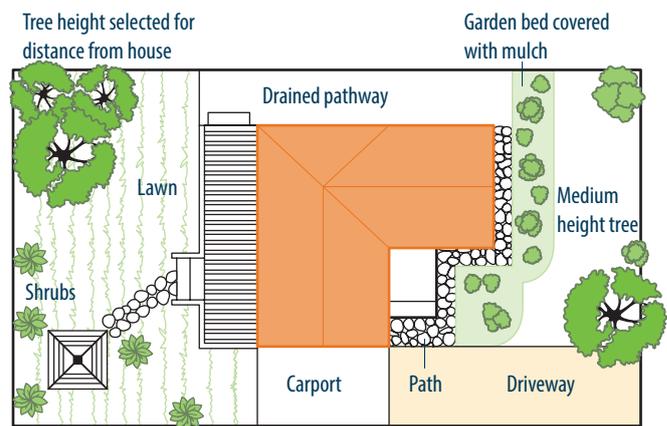
Overwatering due to misuse of automatic watering systems is a common cause of saturation and water migration under footings. If it is necessary to use these systems, it is important to remove garden beds to a completely safe distance from buildings.

**EXISTING TREES**

Existing trees may cause problems with the upheaval of footings by their roots, or shrinkage from soil drying. If the offending roots are subsidiary and their removal will not significantly damage the tree, they should be severed and a concrete or metal barrier placed vertically in the soil to prevent future root growth in the direction of the building. Soil drying is a more complex issue and professional advice may be required before considering the removal or relocation of the tree.

**INFORMATION ON TREES, PLANTS AND SHRUBS**

State departments overseeing agriculture can give information regarding root patterns, volume of water needed and safe distance from buildings of most species. Botanic gardens are also sources of information.



**FIGURE 2** Gardens for a reactive site.

**EXCAVATION**

Excavation around footings must be properly engineered. Soil supporting footings can only be safely excavated at an angle that allows the soil under the footing to remain stable. This angle is called the angle of repose (or friction) and varies significantly between soil types and conditions. Removal of soil within the angle of repose will cause subsidence.

**REMEDICATION**

Where erosion has occurred that has washed away soil adjacent to footings, soil of the same classification should be introduced and compacted to the same density. Where footings have been undermined, augmentation or other specialist work may be required. Remediation of footings and foundations is generally the realm of a specialist consultant.

Where isolated footings rise and fall because of swell/shrink effect, the home owner may be tempted to alleviate floor bounce by filling the gap that has appeared between the bearer and the pier with blocking. The danger here is that when the next swell segment of the cycle occurs, the extra blocking will push the floor up into an accentuated dome and may also cause local shear failure in the soil. If it is necessary to use blocking, it should be by a pair of fine wedges and monitoring should be carried out fortnightly.

# Construction Monitoring Services

## Northland, Auckland-Waikato, Canterbury, Southern Lakes

### Need a PS4?

- Please read the conditions of your Building Consent to determine which section of the works Council wants an engineer to sign off on.
- Book an inspection with Wilton Joubert Ltd or with a suitable qualified engineer.
- Have the Consent documents on site at the time of the inspection
- Be sure to verify both the grounding conditions (soil parameters) as well as the structural elements of works in question
- If in doubt what to get inspected please clarify with Council.

Producer Statements 4 - Construction Review Documents (PS4's) relates to Building Consents (BC) only, not Resource Consents (RC), unless there is an element of the RC which requires a BC, e.g. a retaining wall needed to develop a subdivision.

In soils, RC's are usually verified with a "Statement of Professional Opinion as to Suitability for Building Development", or variations on that title.

## CONSTRUCTION MONITORING SERVICES

Construction monitoring refers to the physical inspection of selective components of the design or works as required by Council and as specified in the Consented documents. It is up to the Consent holder to read the special conditions set out by Council and arrange for the required inspections to be done. No PS4 can be issued without the physical inspection of works and sighting of Consented plans either by the design engineer, his representative, or another qualified engineer. (download PDF with more info via our website)

It is also important to note that, more often than not, there are two physical components that needs verification:

1. Geotechnical or grounding Conditions –referring to the strength or bearing capacity of the soil
2. Structural Components – verify that works are done as per design and in accordance with the consented plans.

To complicate matters there can be multiple engineers that might be engaged on the same site:

- Civil Engineer – To do storm water and wastewater designs
- Geotechnical Engineer – to do a Geotech report and specificity soil parameters as required
- Structural Engineer – to design structural components such as retaining walls, raft floors, beams and so on.

In cases where engineers from different companies are appointed it is important to make sure all the required boxes are ticked as not to complicate matters when it comes to the issuing of all the relevant PS4's.

Note: sites in the Auckland area might requires multiple PS4's for the same component (e.g. a raft floor requires a Geotechnical Engineer to verify the bearing capacity of the platform and a Structural engineer needs to verify the structural components are according to the design.

Not to mention a Council inspection is also required on the same floor to verify position, plumbing and so on.

### In Summary:

- Read the conditions as laid out in the Consent documents to which elements of the design requires a PS4's from the design engineer.
- Have Consented plans on site during inspection time
- Book inspections ahead of time (a minimum of 48 hours in advanced)
- Ensure both grounding conditions as well as structural components are inspected. In some cases, this might mean two separate inspections if different engineers are involved.
- If you have any further questions, feel free to contact us at any time during business hours.



**Construction Monitoring Enquiries**

Email: [jobs@wjl.co.nz](mailto:jobs@wjl.co.nz)

or scan QR code to visit our website

## **Appendix 6**

### Soil and Resource Report



# Soil and Resource Report for 309 Waipapa Road, Kerikeri.

**Prepared By: Ian Hanmore**

**Prepared For: Charlie Billington**

1<sup>st</sup> September 2025

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### **Disclaimer:**

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## 1.0 INTRODUCTION

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This report has been prepared at the request of the client to assess the Land Use Capability (LUC) classifications at a proposed subdivision site at 309 Waipapa Road, Kerikeri. The New Zealand Resource Inventory (NZLRI) maps have classified the site as LUC class 3. As such, it could potentially fall under the National Policy Statement for Highly Productive Land (NPS-HPL).

The purpose of the report is to map the site and identify any HPL as defined by the NPS-HPL. To achieve this a site visit was carried out to map the soils and land use capability units on this area and assess them in relation to the NPS-HPL.

This report presents the description of each of the soil types identified on the property as well as descriptions of each of the LUC units mapped. This information is then used to determine and quantify any highly productive land present. This information is accompanied by a map showing LUC, soil and soil classifications maps along with the relevant LUC unit and soil profile descriptions.

## 2.0 MAPPING METHOD

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A site visit was carried out on the 22nd of August 2025 to evaluate and describe the soil types and the LUC units present. The property was mapped at a scale of 1:2,500.

LUC mapping was carried out in accordance with the methods described in the 3rd Edition of the Land Use Capability Survey Handbook (Lynn et al 2009). This process involves making a land resource inventory (LRI) of the property in which soil types, soil parent materials, land slopes, erosion type and severity and land cover are recorded. Whenever any of these land features changes a new unit is made.

Specific field work activities include digging and describing soil profiles on each landform with supporting holes dug or profiles observed on bank/drain cuttings to establishing soil boundaries, measuring slopes with a clinometer, and gathering any other data that may be of assistance in assessing the suitability of the land for primary production such as erosion, susceptibility of the land to flooding, winter wetness and/or cold, high temperatures, exposure to salt winds, aspect, and accessibility. This information is then used to determine the specific LUC units, as described in the Land Use Capability Classifications of the Northland Region (Harmsworth, 1996) for the area. At times when mapping at a scale finer than Harmsworth (1996) of 1:50,000, new LUC units are recorded and are noted with an \* in the LUC description table.

### 3.0 SITE DESCRIPTION

The property is located at 309 Waipapa Road and covers 0.9ha with the proposed subdivision site (referred to as the site) covering 0.4ha at north of the property bordering Waipapa Road. The site is flat with gleyed alluvial soil formed from mainly basaltic rocks. Soil drainage across the site is generally poor with gleying within 200mm of the soil surface and winter water tables as 450mm in places. The site forms a small paddock in front of the residential dwelling at the property. At the time of the site visit no animals were present at the site with pasture being mowed rather than grazed.

### 3.1 Soil Profiles and Descriptions

The soil identified at the site is described in the table below.

Soil Profile	Soil Profile Description
	<p><b>Soil Name:</b> Waipapa clay (YF)</p> <p><b>Soil classification:</b> Gleyed soils from the Waipapa suite.</p> <p><b>Parent material:</b> Terrace alluvium mainly from basaltic rocks.</p> <p><b>Soil description:</b></p> <p>0-190mm: Friable, strongly developed, 1-4mm nut, slightly sticky, slightly plastic, very dark grey (10yr 3/1) clay loam</p> <p>190-460mm: Friable, strongly developed, 1-2mm nut, sticky, plastic, grey (2.5y 5/1) gritty clay. Few stones present.</p> <p>460-800mm: Deforms under pressure breaks to 10-20mm blocks, sticky, plastic, grey to greyish brown (10yr 5/1 – 5/2), coarse sandy clay with 10% strong brown (7.5yr 5/8) mottling.</p> <p><b>Overall drainage:</b> Poorly drained</p>

### 3.2 Land Use Capability Descriptions

LUC classifications categorize land into eight classes according to its long-term capability to sustain one or more productive uses.

- Classes 1-4 have arable potential with limitations to this land use moving from class one being the most versatile, multi-use land with minimal physical limitations for arable use and increasing to severe limitations under class four land. These classes are also suitable to viticulture, berry production, pastoralism, tree crops and production forestry.
- Classes 5-7 are suitable for pastoral farming and production forestry.
- Class 8 land has no productive use and is rather managed for catchment protection and conservation purposes.

The LUC units mapped on the proposed site are presented in the table below. An LUC map showing the distribution of the mapped units is contained in Section 8.

Resource information	Luc unit	Total area (ha)	Parent material	Dominant soil type	Slope (degree)	Land Cover	Erosion degree & severity		Landuse suitability	Stock carrying capacity (su/ha)
							Actual	Potential		Forestry site index (FSI)
<p><b>3w 2</b> Poorly drained flat areas within floodplains, valley plains on low terraces with gley, fertile soils developed on sedimentary and volcanic alluvium</p>		0.4	Fine alluvium	Gley soils on estuarine clays, sands, and alluvium	0-3°	Pasture	Nil	Slight streambank and deposition	Horticulture Vegetables Intensive Grazing Forestry	Average: 17 Top: 20 Potential:24 FSI: 18-21  <b>Revised</b> Average: 15 Top: 20 Potential:22

*Land use capability unit descriptions are taken from the author's field work, and the Land use capability classification of the Northland region (Harmsworth, 1996).*

*Revised stock carry capacities are taken from a review of Harmsworth (1996) stock carry capacities by Bob Cathcart in 2017*

## 4.0 SOIL CLASSIFICATION

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### 4.1 Highly Productive Land

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The NPS-HPL came into effect on 17<sup>th</sup> October 2022 and was updated in August 2024 with the amendments taking effect from 14<sup>th</sup> September 2024. This policy seeks to protect highly productive land for use in land-based primary production, both now and for future generations. The policy statement defines highly productive land as land that has been mapped in accordance with clause 3.4 of the NPS-HPL and is included in an operative regional policy statement as required by clause 3.5. There is an interim regime for identifying highly productive land prior to a regional policy statement containing maps of highly productive land in the region is operative. Under clause 3.5(7) of the NPS-HPL, highly productive land in the interim period includes land that is: (i) zoned general rural or rural production; and (ii) LUC 1, 2, or 3 land; but is not: (i) identified for future urban development; or (ii) subject to a Council initiated, or an adopted, notified plan change to rezone it from general rural or rural production to urban or rural lifestyle.

The following definition of LUC 1, 2, or 3 land is taken from section 1.3, page 4 of the NPS-HPL:

*LUC 1, 2, or 3 land means land identified as Land Use Capability Class 1, 2, or 3, as mapped by the New Zealand Land Resource Inventory or by any more detailed mapping that uses the Land Use Capability classification.*

A recent Environment Court ruling (Blue Glass Limited vs Dunedin City Council) concluded that during the interim period the mapping by the NZLRI is the means by which LUC classes 1-3 are defined and more detailed mapping carried out since the NPS-HPL came into effect cannot be used to redefine those classifications.

### 4.2 Site Classifications

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The table below shows the LUC area breakdown for the proposed site as well as the percentage of highly productive land.

LUC Unit	Area (ha)	HPL Classification	% of total Area
3w 2	0.4	HPL	100
<b>Total area</b>	<b>0.4</b>		
<b>Area HPL</b>	<b>0.4</b>	<b>Total % HPL</b>	<b>100</b>
<b>Total area non-HPL</b>	<b>0.0</b>	<b>Total % non-HPL</b>	<b>0</b>

### 4.3 NZLRI Mapping

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The NZLRI is based on an LUC assessment of the whole of New Zealand and has been carried out at a scale of 1:50,000. It is intended for regional use and planning and is not meant to be used at a farm scale. The 3rd Edition of The Land Use Capability Survey Handbook (Lynn et al 2009) cautions against enlarging LUC data beyond the scale at which it was gathered as it can produce unreliable and misleading results and at time results that are nonsense.

At a scale of 1:50,000, on average one mapping observation is made every 25ha but could be a little as one every 100ha (Hewitt and Lilburne 2003, Grealish 2019). As such, it is likely that no data has been gathered from the proposed site. For the purpose of this report, with a site covering 0.4ha the appropriate scale of mapping is less than 1:5,000 or more than four observations per hectare (Lynn et al 2009). This survey included seven soil profile observations over the 0.4ha site.

Using the NZLRI for site specific information is outside of its intended purpose and outside of its parameters of reliability. At best it can only provide an indication of the possible LUC units present. The correct process for mapping soil types and LUC at a site of this size is to carry out a site survey at the correct scale by a suitably qualified person as has been done for this report. The results of this survey are shown below in Figure 1



Figure 1. The proposed subdivision site is shown highlighted in yellow with the LUC, soil and HPL classifications labelled.

## 5.0 SITE ASSESSMENT

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Due to the coarseness of the NZLRI mapping farm scale changes in physical features such as soil types, soil drainage and site development are not identified. The detailed survey carried out for this report has identified the changes in these physical features at the site.

### 5.1 Highly Productive Land

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An assessment of the site has been made based on the definition of HPL under the NPS-HPL and confirms the HPL classification based on the NZLRI mapping. However, detailed mapping of the site has identified soil drainage issues that significantly impact the productive use of the site.

### 5.2 Productivity Assessment

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The site is small (0.4ha) with poorly drained, gleyed alluvial clay soil. The site forms a slight depression which further adds to the poor drainage of the site. The 3w 2 LUC classification for the site lists, horticulture, vegetables, intensive grazing and forestry as potential land uses.

Due to its small size and location it is unsuitable for forestry and at best could only support a few sheep as a grazing enterprise. The site has limited horticulture potential due to the poor drainage, small size and proximity to the public road, residence at the site and neighbours. High value crops such as kiwifruit or avocados cannot be grown at the site due to the poorly drained soils.

It would be possible to grow an annual crop such as maize or vegetables at the site but due to the proximity of neighbours it is possible that reverse sensitivity issues would occur. To prevent that, setbacks from the boundaries and potential shelter belts would be required which would further reduce the productive area of the already small site.

The proposed subdivision is in keeping with the neighbouring sites as it is surrounded by similar sized residential holdings on three sides, none of which are used in a productive capacity. These have been highlighted in red in Figure 2 on the following page.

Given the limitations to the productive use of the site it is unlikely that it will ever be used beyond a home vegetable garden or orchard or to possibly graze a horse or a few sheep.



Figure 2. The proposed site shown in yellow with the small, unproductive legal titles surrounding it highlighted in red.

## 6.0 EXEMPTION FOR HPL SUBJECT TO LONG-TERM CONSTRAINTS

Due to the Blue Glass Limited vs Dunedin City Council environment court ruling discussed in Section 4.1 of this report the site must be considered as HPL. Under Clause 3.10 of the NPS-HPL allowance is made for the subdivision of HPL due to the permanent or long-term constraints on the productive use of the land. The pathway for this exemption is appropriate for this site and is considered below.

### NPS-HPL 3.10.1(a)

*Are there permanent or long-term constraints on the land that mean the use of the highly productive land for land-based primary production is not able to be economically viable for at least 30 years?*

- Yes. The poorly drained soils and low-lying nature of the site restrict any potential highly productive uses.
- The small size of the site and its proximity to the public road and neighbouring residences would likely generate reverse sensitivity issues and require setbacks and shelterbelts further restricting its productive use.

NPS-HPL 3.10.1(b) (i)

*Does the development avoid any significant loss (either individually or cumulatively) of productive capacity of highly productive land in the district?*

- Yes. The site cannot support highly productive uses due to the poor drainage and clay texture soils. As it is a very small site it would not be a significant loss to the district.

NPS-HPL 3.10.1(b) (ii)

*Does the development avoid the fragmentation of large and geographically cohesive areas of highly productive land?*

- Yes. The site itself is already isolated due to past subdivision and Waipapa Road. As such, it will not result in the fragmentation of any HPL.

NPS-HPL 3.10.1(b) (iii)

*Does the development avoid if possible, or otherwise mitigates, any potential reverse sensitivity effects on surrounding land-based primary production from the subdivision, use, or development?*

- Yes. The proposed development is surrounded by residential dwellings and would be more in keeping with the land use of its surroundings than if it were used in primary production.

NPS-HPL 3.10.1(c)

*Do the environmental, social, cultural and economic benefits of the subdivision, use, or development outweigh the long-term environmental, social, cultural and economic costs associated with the loss of highly productive land for land-based primary production, taking into account both tangible and intangible values?*

- The proposal involves only a small area of land that is most suited to grazing a few sheep or a possible home garden or orchard. It will have a negligible impact on the loss of HPL for land based primary production.
- NPS-HPL 3.10.2  
In order to satisfy subclause 3.10.(2) and (3) it must be demonstrated that the permanent or long-term constraints on economic viability cannot be addressed through any reasonably

practicable options, that would retain the productive capacity of the highly productive land, by evaluating options such as:

- (a) alternate forms of land-based primary production – due to the soil type at the site and its other limitations the land use options are limited to grazing and a home garden or orchard.
- (b) improved land-management strategies – The wetness of the site and proximity to neighbours cannot be altered through improved land management strategies.
- (c) alternative production strategies – as pointed out in point a above there are limited production opportunities at the site.
- (d) water efficiency or storage methods – Lack of water is not a limiting factor to production at the site.
- (e) reallocation or transfer of water and nutrient allocations – this is not applicable to the site.
- (f) boundary adjustments (including amalgamations) – boundary adjustments are not an option in this instance.
- (g) lease arrangements – The site is much too small to support a viable primary production enterprise. Leasing additional land is not an applicable option in this case.

## 7.0 CONCLUSIONS

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- The proposed subdivision site has poorly drained soil not suited to highly productive uses.
- The site is very small and in close proximity to neighbouring residences and a public road which put permanent constraints on its productive use.
- The proposed site is surrounded by residential properties with no primary productive uses and of a similar size. As such, it is in keeping with the surrounding land use.
- The proposal meets the requirements for an exemption from the provisions of the NPS-HPL under clause 3.10.

## 8.0 REFERENCES

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