Te Kaunihera o Te Hiku o te Ika
Far North District Council

Office Use Only
Application Number:

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 Schedule 4). 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**

2. Type of Consent being applied for

(more than one circle can be ticked):

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

5. Applicant Details

Name/s: Mr Jonathan Max Maoate and Mrs Tineke Maria Maoate

Email: [redacted]

Phone number:

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

6. Address for Correspondence

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

Name/s: Set Consulting Ltd

Email: [redacted]

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.***

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 above

Property Address/ Location:

_____

_____

_____

Postcode _____

8. Application Site Details

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

Name/s:

Site Address/ Location:

82 Cookson Road

Kawakawa

Postcode 0282

Legal Description: Lot 1 DP 159667 **Val Number:**

Certificate of title: NA96A/348

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.

Please contact the applicant before undertaking a site visit

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.

Subdivision to create an additional rural lifestyle allotment in the RPZ.

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** Enter BC ref # here (if known)
- ◯ **Regional Council Consent (ref # if known)** Ref # here (if known)
- ◯ **National Environmental Standard consent** Consent here (if known)
- ◯ **Other (please specify)** Specify 'other' here

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**
- ◯ **Changing the use of a piece of land**
- ◯ **Disturbing, removing or sampling soil**
- ◯ **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**

13. Draft Conditions:

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

If yes, do you agree to extend the processing timeframe pursuant to Section 37 of the Resource Management Act by 5 working days? ✔ **Yes** ◯ **No**

14. 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) Tineke Maria Maoate

Email: [redacted]

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.

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) Tineke Maria Maoate

Signature:
(signature of bill payer [redacted] NDATORY

Date 27/11/2024

15. 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

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. 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.

15. Important information continued...

Declaration

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

Name: (please write in full) Alister Hartstone

Signature: [redacted] **Date** 29-Nov-2024

A signature is not required if the application is made by electronic means

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.

Resource Consent Application

J and T Maoate

82 Cookson Road, Kawakawa

Resource Consent Application – J and T Maoate

Application Details

Applicant:	Jonathon and Tineke Maoate
Location:	82 Cookson Road, Kawakawa
Legal Description:	Lot 1 DP 159667
Proposal:	Subdivision to create an additional vacant allotment in the Rural Production Zone
Zoning and Resources:	Rural Production Zone
	No overlays identified
Application Status:	Restricted Discretionary Activity

Attachments

Attachment A	**Scheme Plan of subdivision**
Attachment B	**Certificate of Title**
Attachment C	**Site Feasibility Appraisal prepared by Gumboots Consulting Engineers Ltd**
Attachment D	**Operative District Plan maps**

Address for Service

Alister Hartstone BREP (Hons) MNZPI
Set Consulting Limited
Ph 0277555607
E-mail alister@setconsulting.co.nz

1.0 The Proposal

1.1 The proposal involves the subdivision of an existing 9.9380ha property located at 82 Cookson Road, Kawakawa to create an additional vacant allotment containing 2.4ha. A scheme plan illustrating the proposal is contained in Attachment A.

1.2 The existing dwelling, ancillary farm buildings, and stock yards will be contained in the balance Lot 2. Proposed Lot 1 is a vacant allotment that encompasses the flat land adjoining Cookson Road. That area of flat land is identified as an area of Class 3 soils on the NZLRI Landuse Capability 2021 maps and the proposal is intended to retain that area in one usuable parcel.

2.0 Site and Surrounding Environment

2.1 The subject site is located on the elevated portion of Cookson Road, approximately 5 kilometres from the intersection of State Highway 11 and Waikare Road east of Kawakawa. It currently contains a dwelling with a number of ancillary buildings with a formed loop access onto Cookson Road. The site is rural in nature and consists of a wide elevated plateau area used for grazing, with steeper land consisting of grazing and areas of exotic and native trees falling to the north and west with a small water course approximately 1 metre in width bisecting part of the property. A number of smaller rural lifestyle blocks are located in the vicinity along Cookson Road, with larger farm holdings location to the south and east.

Site Location (circled)

2.2 A copy of the certificate of title is contained in Attachment B. There are no instruments registered on the title that affect the proposal.

3.0 District Plan Rules

3.1 The subject site is zoned Rural Production Zone with no District-Wide overlays or resources identified.

3.2 The subdivision proposal requires consideration against the following rules:

Rule	Compliance	Status
13.7.1 Boundary Adjustments: All Zones Except The Recreational Activities And Conservation Zones	N/a	
13.7.2.1 Minimum Area For Vacant New Lots And New Lots Which Already Accommodate Structures	The application will meet the Restricted Discretionary Activity Status under Clause 3. where only two lots are proposed, the minimum lot size exceeds 4000m^2 and the balance lot exceeds 4ha, and the subject site existed as at 28 April 2000	Restricted Discretionary
13.7.2.2 Allotments Dimensions	Complies	Controlled
13.7.2.3 Amalgamation Of Land In A Rural Zone With Land In An Urban Or Coastal Zone	N/a	
13.7.2.4 Lots Divided By Zone Boundaries	N/a	
13.7.2.5 Sites Divided By An Outstanding Landscape, Outstanding Landscape Feature Or Outstanding Natural Feature	N/a	
13.7.2.6 Access, Utilities, Roads, Reserves	N/a	
13.7.2.7 Savings as to Previous Approvals	N/a	
13.7.2.8 Proximity To Top Energy Transmission Lines	N/a	
13.7.2.9 Proximity To The National Grid	N/a	
13.7.3.1 Property Access	Access to each lot will comply noting a new crossing will service proposed Lot 1	Controlled
13.7.3.2 Natural And Other Hazards	There are no identified natural hazards that affect the site, as detailed in the engineering report attached	Controlled
13.7.3.3 Water Supply	On-site potable water supply is achievable	Controlled

13.7.3.4 Stormwater Disposal	On-site stormwater management and disposal is achievable	Controlled
13.7.3.5 Sanitary Sewage Disposal	On-site effluent disposal is achievable	Controlled
13.7.3.6 Energy Supply	N/a – the site is not an urban zone	Controlled
13.7.3.7 Telecommunications	N/a – the site is not an urban zone	Controlled
13.7.3.8 Easements For Any Purpose	No easements are required	Controlled
13.7.3.9 Preservation Of Heritage Resources, Vegetation, Fauna And Landscape, And Land Set Aside For Conservation Purposes	The site is not assessed as containing significant values that require protection or preservation.	Controlled
13.7.3.10 Access To Reserves And Waterways	No access is existing or proposed	Controlled
13.7.3.11 Land Use Compatibility	N/a	
13.7.3.12 Proximity To Airports	N/a	

3.3 On the basis of the above assessment, the subdivision is assessed overall as a Restricted Discretionary activity under Rule 13.7.2.1. and is a controlled activity in all other respects.

NES Requirements

3.4 The National Environmental Standards for Assessing and Managing Contaminants in Soil to Protect Human Health 2012 (the 'NES') is considered relevant to the application insofar as subdivision is proposed. However, the subject land will remain as rural production land and is therefore exempt from the Regulation as per Section 8(c).

3.5 There are no other Regulations that are relevant to the proposal.

4. Statutory Considerations

4.1 The following assessment addresses those matters considered relevant under Section 95, Section 104, and the Fourth Schedule of the Act.

4.2 The criteria under Section 95A are addressed as follows:

- None of the criteria under Section 95A(3) are triggered by the proposal. For completeness, the applicant is not requesting public notification.
- The activity is not subject to a rule or national environmental standard that precludes public notification under Section 95A(5)(a).
- The subdivision is not precluded from public notification under Section 95A(5)(b)(i) or (iii).
- The activity is not subject to a rule or national environmental standard that requires public notification under Section 95A(8)(a).

- The assessment of effects provided further in this report concludes, for the purpose of Section 95D, that any adverse effects on the environment will be less than minor for the purpose of addressing Section 95A(8)(b).
- No special circumstances are considered to exist that warrant public notification as per Section 95A(9).

4.3 Therefore, the application does not require public notification.

4.4 For the purposes of Section 95B:
- There are no protected customary rights groups or affected customary marine title groups.
- The proposal does not fall under the criteria specified in Section 95B(6).
- The proposal does not involve a boundary activity or prescribed activity as specified in Section 95B(7).
- An assessment of affected persons under Section 95B(8) is provided further in this report, which concludes that no persons will be adversely affected by the proposal to a minor or more than extent in accordance with Section 95E.
- No special circumstances exist as set out in Section 95B(10).

4.5 Given the above, it is respectfully considered that the application should proceed on a non-notified basis.

5. Assessment of Effects

5.1 In considering an assessment of effects, Sections 95D(b) and 104(2) provides for consideration of the permitted baseline, stating that *'…a consent authority may disregard an adverse effect of the activity on the environment if a national environmental standard or the plan permits an activity with that effect.'*

5.2 There are three categories to the permitted baseline test, these being:
1) what lawfully exists on the site at present
2) activities (being non-fanciful activities) which could be conducted on the site as of right; i.e. without having to obtain resource consent
3) activities which could be carried out under a granted, but as yet unexercised, resource consent.

5.3 In this case, the existing environment consists of a single property containing a number of existing buildings and access.

5.4 There is no permitted subdivision activity in the District Plan, and no land use activity that would provide for additional residential dwellings on the site as a permitted activity, noting the residential intensity standard of 1 dwelling per 12ha in the RPZ. On this basis, no useful permitted baseline is identified that assists in the assessment of adverse effects.

5.5 There are no known consents that have been granted but have yet to be exercised that could have any effect on the permitted baseline or existing environment.

5.6 For the purposes of Section 95D, consideration of effects on persons who own/occupy land identified below as being adjacent to the subject site are disregarded:

- 52 Cookson Road (Lot 2 DP 195362)
- 54 Cookson Road (Lot 2 DP 159667)
- 102 Cookson Road (Lot 2 DP 99615)
- 324 Pakaru Road (Allotment 119 Parish of Ruapekapeka)

5.7 The following assessment of effects provided below addresses the matters that discretion is restricted to under Rule 13.8.1 Subdivision within the Rural Production Zone, where the application requires specific consideration under Clause 13.8.1(b).

- *effects on the natural character of the coastal environment for proposed lots which are in the coastal environment;*

The subject site is not located within the coastal environment.

- *effects of the subdivision under (b) and (c) above within 500m of land administered by the Department of Conservation upon the ability of the Department to manage and administer its land;*

There is no land located within 500 metres of the subject site that is administered by the Department of Conservation.

- *effects on areas of significant indigenous flora and significant habitats of indigenous fauna;*

The site is not identified as containing any significant indigenous flora or significant habitats of indigenous fauna. This is based on a review of the following information sources:

a) NRC online Biodiversity Wetlands maps – no wetlands identified on or near the site
b) Natural Areas of Whangaruru Ecological District – Protected Natural Areas Programme 2005, DoC, noting that closest identified area was Pakaru Road Forest (Q05/005) approximately 2 kilometres to the southeast of the site.
c) Bay of Islands Kiwi Distribution Map December 2018 – the subject site is not identified as either a High or Present Kiwi density.
d) Estimated Northland Brown Kiwi Distribution January 2020 – the subject site is not identified as either a High or Present Kiwi density.

- *the mitigation of fire hazards for health and safety of residents.*

The subdivision will create an additional building platform for future development, which is located further than 20 metres away from any vegetation that could be a potential fire risk.

5.8 In summary, the extent of adverse effects arising from the proposal are all suitably addressed by meeting the controlled activity standards for subdivision and assessment of the matters that discretion is restricted to. It is concluded that any adverse effects arising from the proposal will be less than minor.

5.9 For completeness, it is noted that matters that are not identified as falling within the matters of discretion include cultural effects, historic heritage, natural hazards, and protection of highly productive soils. Any effects associated with such matters must be disregarded in undertaking an assessment of effects of the proposal.

6. Affected persons

6.1 Section 95E requires consideration of affected persons. The following matters are relevant:

a) Section 95E(2)(a) directs that any effects associated with any permitted baseline may be disregarded. There is no relevant permitted baseline to consider in this case.
b) Section 95E(2)(b) specifies that where the application is restricted discretionary, any adverse effects on any person must be disregarded where the effect is not a matter for which a rule restricts discretion, In this case, the proposal is assessed as a restricted discretionary activity. None of the matters that discretion is restricted to provides for consideration of adverse effects on adjacent owners.
c) Section 95E(2)(c) requires regard to be had to every relevant statutory acknowledgment. There is no statutory acknowledgement that is relevant to this site.

6.2 On the basis of the above assessment and notably Section 95E(2)(b), there is no scope to consider adverse effects on adjacent owners as none of the matters that discretion is restricted to provide for assessment of any such effects.

7. Section 104 Assessment

Assessment of Effects

7.1 Section 104(1)(a) requires consideration of any actual and potential effects on the environment of allowing the activity. This has been carried out in the assessment above. The conclusion reached is that the effects of granting consent to the proposal are less than minor. No significant wider positive effects will arise from the grant of consent, apart from those that benefit the applicant. There is some minor benefit in having Lot 1 encompass the Class 3 soils identified as being on the site, while the balance lot contains the existing buildings and land that is considered less productive.

7.2 Overall, the effects are considered acceptable in the receiving environment.

7.3 Conditions of consent are offered based on the engineering report provided in Attachment C, including the location of the building site being fixed so as to avoid construction of residential buildings on the Class 3 soils. No other adverse effects that fall within the matters of discretion are anticipated to arise that require conditions to mitigate or avoid adverse effects.

7.4 Section 104C relating to restricted discretionary activities states that:
'When considering an application for a resource consent for a restricted discretionary activity, a consent authority must consider only those matters over which—
(a) a discretion is restricted in national environmental standards or other regulations:
(b) it has restricted the exercise of its discretion in its plan or proposed plan.'

This limitation means that an assessment under Section 104(1)(b) can only address those planning provisions that contain matters that fall within the matters that discretion has been restricted to under the District Plan. On this basis, there are no National Policy Statements or Regulations that require consideration, as the site is not coastal and there are no indigenous biodiversity values that require specific consideration. Notably, the National Policy Statement on Highly Productive Land is not a relevant consideration as the matters of discretion do not include reference to highly productive land. Despite this, the subdivision has been designed to accommodate the Class 3 soils on the site.

7.5 For similar reasons, the Regional Policy Statement for Northland does not contain relevant provisions that the application needs to be assessed against. No consent is required for the proposal under the Regional Plan for Northland Operative in Part 2022.

Operative Far North District Plan

7.6 Section 104(1)(b)(vi) requires consideration of the relevant objectives and policies contained in any Operative or proposed District Plan. Therefore, an assessment of the Operative Far North District Plan provisions is provided below.

7.7 The only relevant provisions of the Operative District Plan that require consideration in this case are the matters under Chapter 13 Subdivision.

7.8 The relevant objectives and policies in Chapter 13 – Subdivision direct generally that subdivision is appropriate and consistent with expectations for each zone, that any District-wide matters under Chapter 12 can be addressed, and that lots created by subdivision are suitable for the intended use and can be adequately serviced. As a restricted discretionary activity, the matters that discretion has been restricted to have been considered, and none of the matters are directly relevant to the site. The proposal complies with all of the controlled activity provisions associated with building, access, and services. On that basis, the proposal is considered to be consistent with Objectives 13.3.1 and 13.3.2 and Policies 13.4.1 and 13.4.2.

7.9 Overall, the subdivision proposal is considered to be consistent with the provisions of the Operative District Plan.

Proposed Far North District Plan

7.10 The provisions of the proposed Far North District Plan require consideration. Based on the notified version of the proposed Plan, the subject site is zoned Rural Production with two small areas identified as River Flood Hazard Zone (100 year ARI Event). The subdivision proposal would be assessed as a non-complying activity where it cannot meet the 40ha controlled activity rule or 8ha discretionary activity rule for lot sizes.

7.11 As a non-complying activity, it is considered that the proposal would be unlikely to be supported by the objectives and policies, notably Policies SUB-P3, SUB-P8, SUB-P9, and SUB-P11 which emphasise lot sizes being created which reflect the zone intentions and direct avoidance of rural lifestyle subdivision.

7.12 Having reviewed the extent of submissions made on the proposed District Plan, a substantial number have challenged the subdivision objectives, policies and rules, notably the proposed minimum lot sizes specified in Rule SUB-S1. As these provisions are being challenged and no substantive hearing or decision has been made on them, any weighting give to these provisions at this time must be minimal.

Other Matters

7.13 Section 104(1)(c) provides for consideration of any other matters that may be relevant to the subdivision activity. There are no known other matters considered to be relevant in assessing the subdivision consent application.

8. Part 2 Assessment

8.1 As per current case law[1], an assessment of matters under Part 2 is only required where there is invalidity, incomplete coverage or uncertainty in the planning provisions. The Operative and proposed Plans contain provisions that are relevant to the proposal, and there is no evidence to suggest the relevant provisions are invalid, incomplete or present uncertainty in making any decision. No assessment of the Part 2 provisions is therefore required.

9. Conclusion

9.1 The application lodged for T Maoate provides for subdivision of an existing 9.9380ha property located at 82 Cookson Road, Kawakawa to create an additional vacant allotment containing 2.4ha. The proposal requires consideration as a restricted discretionary activity.

9.2 The adverse effects of the subdivision proposal have been assessed as less than minor, where the assessment is limited to the matters that discretion is restricted to the District Plan. The provisions under the Operative Far North District Plan have been assessed and, more particularly, those provisions identified in Chapter 13 Subdivision. The proposal is considered to be consistent with those provisions.

9.3 An assessment of the objectives and policies of the proposed Far North District Plan has been undertaken. The proposal would not find support from the relevant objectives and policies and may be considered contrary to those policies that require avoidance of rural lifestyle subdivision. However, the proposed District Plan has not progressed through the Schedule 1 process to the point that any substantive weight can be applied to the relevant provisions.

9.4 On this basis, the subdivision proposal can be granted in accordance with Section 104 and 104C as a restricted discretionary activity. It is respectfully suggested that conditions of consent required pursuant to Section 108 and 220 for any approval may include:

- A ‘general accordance’ condition to ensure that the subdivision is carried out in accordance with the application as presented

[1] R J Davidson Family Trust v Marlborough DC [2017] NZHC 52

- Imposition of a consent notice specifying that development of lot 1 is required to comply with the engineering report provided in Attachment C.

Attachment A Scheme Plan of subdivision

NOTES

Comprised in RT NA96A/348
Local Authority - Far North District Council

This drawing has been prepared solely for the use intended by the client ststed on the plan, and must nt be used for any other purpose. BOI Survey Ltd accepts no responsibility for this plan, or any data contained on this plan, to be used for any other purpose

Rev.	Reason For Issue or Amendment	Date	Drawn	Checked	Surveyed
A	Scheme Plan 82 COOKSON ROAD KAWAKAWA	04/09/24	TW	DC	TW

BOI SURVEY

BOI SURVEY LTD
55B Shepherd Road
Kerikeri 0230

e: Tony@boisurvey.co.nz

PROPOSED SUBDIVISION OF LOT 1 DP 159667

CLIENT: MAOATE - 82 COOKSON ROAD KAWAKAWA

JOB NO: 5039			Scale: N.T.S
Level Datum: N/A	Origin: -		Co-ord System: NZGD 2000
Drawing Number: 5039-001	Revision: A		Sheet: 1 of 1

Attachment B Certificate of Title

RECORD OF TITLE
UNDER LAND TRANSFER ACT 2017
FREEHOLD

Search Copy

R.W. Muir
Registrar-General
of Land

Identifier	**NA96A/348**
Land Registration District	**North Auckland**
Date Issued	13 June 1994

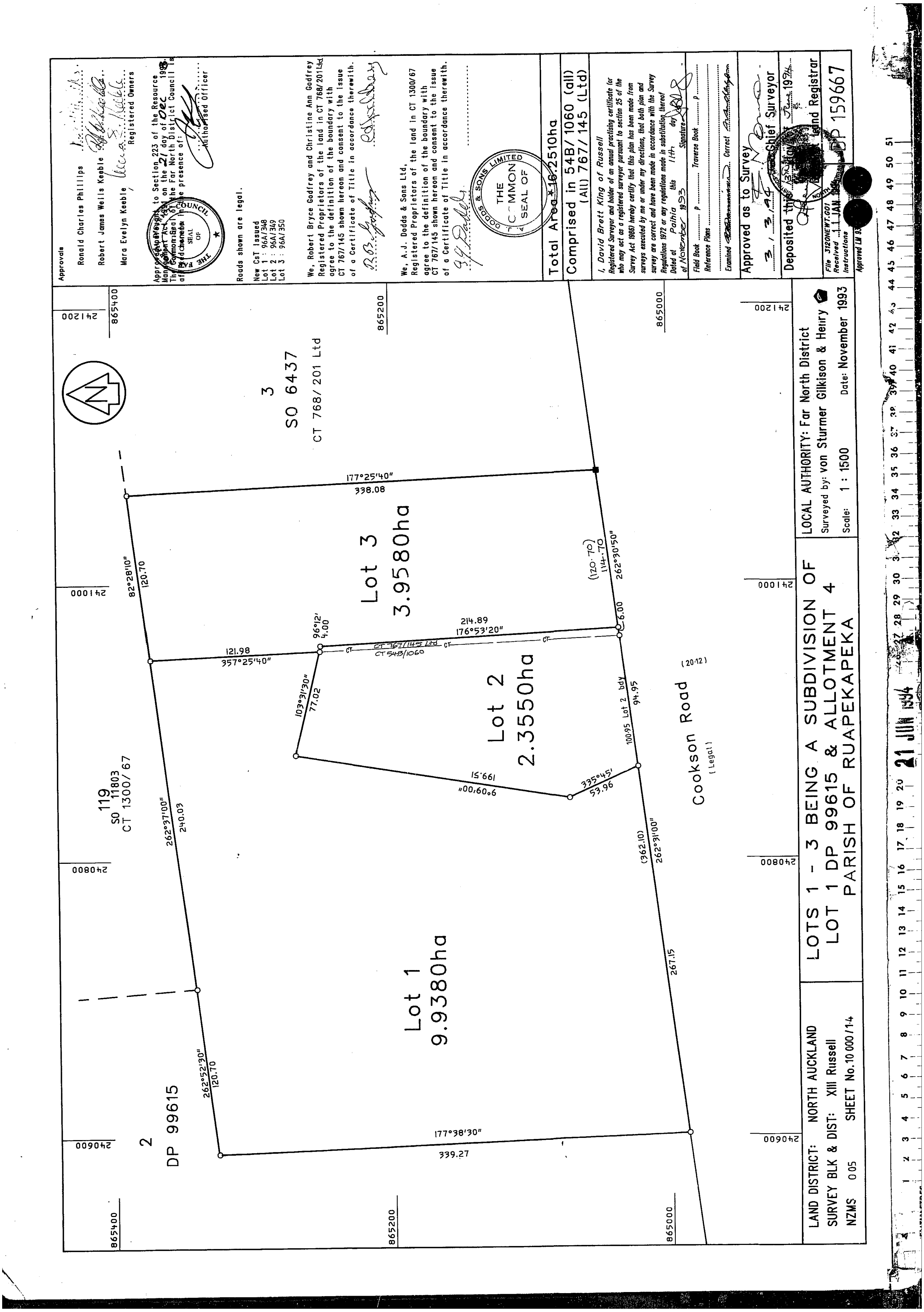
Prior References
NA54B/1060

Estate	Fee Simple
Area	9.9380 hectares more or less
Legal Description	Lot 1 Deposited Plan 159667
Registered Owners	

Ronald Charles Phillips

Interests

5434010.1 Mortgage to ASB Bank Limited - 13.12.2002 at 9:00 am


LOTS 1 - 3 BEING A SUBDIVISION OF
LOT 1 DP 99615 & ALLOTMENT 4
PARISH OF RUAPEKAPEKA
LAND DISTRICT: NORTH AUCKLAND
SURVEY BLK & DIST: XIII Russell
NZMS 005 SHEET No.10 000/14
LOCAL AUTHORITY: Far North District
Surveyed by: von Sturmer Gilkison & Henry
Scale: 1 : 1500
Date: November 1993
Lot 1 9.9380ha
Lot 2 2.3550ha
Lot 3 3.9580ha
Cookson Road (Legal)
3 SO 6437 CT 768/201 Ltd
119 SO 11803 CT 1300/67
2 DP 99615
Total Area 16.2510ha
Comprised in 54B/1060 (all) (All) 767/145 (Ltd)
DP 159667

Attachment C Site Feasibility Appraisal prepared by Gumboots Consulting Engineers Ltd

GUMBOOTS
CONSULTING ENGINEERS

Site Feasibility Appraisal

For Proposed Subdivision at

82 Cookson Rd, Kawakawa

For

Tineke and Jonathan Maoate

Supporting report for resource consent application to Far North District Council
Gumboots Consulting Engineers reference 1317

04th October 2024

◆0204486697 ◆office@gumbootsconsulting.co.nz ◆www.gumbootsconsultingengineers.co.nz
191 Onekura Road, Kerikeri, Northland 0295

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29. Assessment Criteria

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Appendix B – Exploratory Borehole Records
Appendix C - Photos

TABLES

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Revision History

Revision N°	Prepared By	Description	Date
A	Kelly Wright	Geotechnical, Stormwater/Wastewater Assessment	04/10/2024

Reviewed/Approved

On behalf of Gumboots Consulting Engineers Ltd by:

Akira Kepu

Senior Chartered Geotechnical-Civil Engineer

CMEngNZ, Board Member of EngNZ Northland Branch.

Member of NZGS, ISSMGE, SIG EGP & The Sustainability Society.

1. Executive Summary

The following summarises the findings, conclusions and recommendations detailed within this report. As appropriate, the report shall be read in its entirety to ensure full understanding of the following.

Critical Objectives	Considered
Proposed activity	Subdivision of Lot 1 DP 159667 to create two lots.
RMA	**No** geotechnical natural hazards were identified (as listed in the Act) that are considered an undue hindrance to subdivision or that cannot be reasonably addressed by typical engineering design and construction.
Proposed Lots 1 and 2	Lot 2 is considered fully developed and shall be sustained post subdivision stage. Lot 1 - critical site hereon, will be subject to residential development.
Access	Lot 2 is established off Cookson Road from the southern end of the property. Lot 1 will be formed at a later stage.
Vehicular crossing	Pertaining to proposed Lot 1 shall be formed in accordance with the FNDC engineering standards.
Vehicular entrance site distance and tracking curves	Comply with current FNDC engineering standards.
Fill	Not Encountered
Natural Soils	Very stiff residual soils of the Kerikeri Volcanics group
Unduly Weak, Sensitive, Or Compressible Soils	Not Encountered
Subsoil reactivity under normal moisture conditions	Slightly reactive - may become moderately reactive under circumstances where rapidly exposed to the elements.
Groundwater	Not encountered
Seismic Site Class	Site Class C - shallow soil site in accordance with NZS 1170.5:2004.
Slope Stability	Slopes steeper than 1V:4H are present. The identified building platform proposed (**Lot 1**) is considered sufficiently set back from the steeper slope within the northern aspect. It is judged to be suitable for

	future residential development from a land stability point of view. **No** signs of land mobility were encountered.
Allowable Building Area	Proposed for **Lot 1** is designated in the order of 900m^2. This area is inclusive of the primary and secondary effluent field.
Foundations	Based on current investigation data to limited depths, shallow foundations can be applicable for subsequent home development within proposed lot 1. Further discussion in this regard is presented in Section 15.3.
Onsite Wastewater Disposal	Proposed **Lot 1**; a typical three bedroom home is adopted. Five occupancies shall generate a total effluent of 725 L/d. Utilising a daily infiltration rate of 4mm/day gives a primary land application area of 181 + 100% reserve = 362m^2. Established **Lot 2**; comprises a conventional septic tank with a soakage trench as per the property records. It is understood to be fully operational as purposed and is contained wholly within the current boundaries.
Stormwater Management	For **Lot 1** shall assume 2 x 25m^3 water tanks for roof runoff neutrality. Such practice is considered sustainable [as evident within Lot 2] with minimal impact to the environment overall. **Lot 2** comprises two 25m^3 water tanks with gardens and designated drains complementing the driveway and the homestead.
Site-specific appraisal for Building Consent	Specific to **Lot 1** with regard to proposed development at such time; it shall include geotechnical, stormwater and wastewater management appraisal specific to the proposal at such time.
Construction Observation	Recommended for the crossover design and construction for proposed **Lot 1**.

In specific reference expressed within and in unity with the objectives of the Resource Management Act 1991.

There is, considered <u>less</u> than minor,

1. Significant risk from natural hazards, and;

2. Sufficient provisions had been made for legal and physical access to each allotment to be created by the subdivision.

The intended purpose for land on the subject property (legal description Lot 1 Deposited Plan 159667) can be sustained SUBJECT to;

- ALL future developments shall be carefully planned with respect to the existing natural environments within the respective lots. These natural land features shall be carefully incorporated/maintained within the overall occupational development as it shall provide long term sustainability in ALL aspects to the land and hosting environments.
- ALL recommendations highlighted (and not limited) herein shall be ADHERED to.
- ALL proposed Works exhaust good sound engineering practices and complemented by means of extensive and conscientiously executing field observations/positive action during and after construction.
- ALL proposed Works shall be conducted in accordance with FNDC Engineering Standards and Guidelines and related documents and in conjunction with NZS 4404, Land Development and Subdivision Engineering.

It shall be appreciated that the professional opinions and language expressed within the appraisal are solely from an engineering perspective.

Appropriately, the appraisal shall be read in its entirety to impart enlightenment in full context of the proposed concept and application to the existing property.

2. Introduction

This report has been prepared for Tineke and Jonathan Maoate in support of an application to the Far North District Council for Resource Consent to subdivide a 'rural production' property at 82 Cookson Road, Kawakawa [the 'site'] in accordance with the requirements of the Resource Management Act 1991.

Specifically, this appraisal addresses engineering elements with respect to natural hazards, wastewater and stormwater management and earthwork requirements to promote "CLIMATE RESILIENCE" of Land, safe building platforms with less than minor effects on the environment as a result of the proposed activities [outlined in Section 2.1 below] and regenerative and balancing outputs to the natural character of the ENVIRONMENT.

Where appropriate, it is in accordance with the recommendations of NZS 4404, Land Development and Subdivision Engineering and related documents.

2.1 Appraisal Philosophy

For the pre feasible undertaking is such that the subject land as it currently stands is at an Equilibrium State.

The pillar outputs anticipated to sustain the former with respect to the primary intended activity of Subdivision shall be;

1. Minimal Site Disturbance.
   That is, the careful choice of the allocated building site is such that site disturbance is limited within this area. These sites are also placed in a manner that such minor disturbances do not alter/interfere with the natural layout of the hosting environment as well as not be reversely influenced by it.

2. **L**ow **I**mpact **D**esign **A**pproach - Stormwater Management -
   The property is well equipped with natural water flow paths, vegetation, neighbouring/supporting native bush (mature and regenerative) and vegetation within these sensitive areas. Therefore, careful incorporation of these existing natural site features together with good engineering practices provides an alternative approach to site design and development from a stormwater management context.

3. Sustainable and Functional Land Resilience
   Planting of appropriate native plant/vegetation to effectuate functional land resilience against extreme weather patterns is a critical key action that shall be of high regard to subsequent residents. This approach shall be site specific and practical in aid of the occupiers i.e. *adaptive approach* mandate sustainable outputs in all aspects.

Consequently, the property contains well established natural stormwater features with a homogenous catchment [flow] characteristic. This will be sustained and readily complements the proposed subdivision in managing stormwater.

2.2 Appraisal Method

Adopted for this project based on the initial stage of the project and the most economically viable approach with respect to our Client comprises;

1. Desk Study
2. Field Study Observations

Our reconnaissance seeks account of the fundamental properties of the site, geology, geological landscape, current interactive materials-environment-outputs.

It also, generally summarises the feasible application of the concept [developments] in a practical manner as to sustain balancing effects with the underpinning conscious living choice in favour of functional resilience of Land, Environment and LIFE in all aspects.

2.3 Objective and Scope

The objective of this report is to assess the general suitability of the site for the proposed subdivision. Primarily, the general environmental characteristics of the property. The likely extent of the intended implementations and the capacity of the land sustainability within the respected boundaries. And finally, sustainable engineering[1] solutions that may be required to support such occupation thereafter. It includes;

- The review of pertinent rules and policies, geology maps etc
- Prelim site investigations and observations and evaluation of subsurface soil conditions

[1] *In all aspects.*

- Identifying geotechnical hazards within the locale
- Identifying potential future house site (Lot 1)
- Stormwater flows and management analysis
- Management of wastewater onsite
- Preliminary Feasibility Recommendations for occupational residential living and developments.
- Aerial Survey by DroneX

2.4 Limited Liability

This report has been prepared solely for the benefit of Tineke and Jonathan Maoate, in accordance with the brief given to us, the agreed scope and in general accordance with current standards, codes and best practice at the time of this writing. Therefore, they shall be deemed the exclusive owner on full and final payment of the invoice.

Information, assumptions, and recommendations contained within this report can only be used for the purposes with which it was intended. Gumboots Consulting Engineers accepts no liability or responsibility whatsoever for;

1. any use or reliance on the report by any party other than the owner or parties working for or on behalf of the owner, such as local authorities, and for purposes beyond those for which it was intended.
2. any omissions or errors that may befall from inaccurate information provided by the Client or from external sources.

Outcomes given in this report are based on visual methods and subsurface investigations at discrete locations designed to the constraints of the project scope to provide the best assessment of the environment and subsurface conditions.

Therefore, it must be appreciated that the nature and continuity of the subsurface materials between these locations are inferred and that actual conditions could vary from that described herein. We should be contacted immediately if the conditions are found to differ from those described in this report.

Accordingly, further investigations/observations shall then be undertaken as appropriate.

This report should be read and reproduced in its entirety including the limitations to understand the context of the opinions and recommendations given.

3. Site Details and Description

3.1 Site Identification

Site Location: 82 Cookson Road, Kawakawa

Legal Description: Lot 1 Deposited Plan 159667

Total Site Area: 9.9 Ha

3.2 District Plan Zoning

According to the Far North District Council (FNDC) District Plan the site is zoned as 'Rural Production'.

3.3 Proposed Activity

A proposed scheme plan was presented to Gumboots Consulting Engineers at the time of writing, prepared by BOI Survey and is reproduced within Appendix A. It is understood the Client proposes to subdivide the site to create two new lots as outlined in Table 1.0 below.

Amendments to the referenced scheme plan may require an update to the recommendations of this report which are based on conservative, typical residential development concepts.

Table 1.0 - Summary of Proposed Scheme

Proposed Lot	Area (ha)	Intended end use
1	2.4	Residential
2	7.5	Residential - Existing dwelling within

3.4 Site Description

The site is located to the western end of Cookson Road and is legally described as Lot 1 DP 159667. Topographically, the site is formed of a level area which moderately slopes north and west to a lower lying, well vegetated gully and supporting waterways.

For proposed lot 1, the entirety of the new proposed building envelope is currently pasture. An existing residential dwelling with associated outbuildings is included within the boundaries of proposed lot 2. The existing residential development is accessed from Cookson Road at the southern boundary with a single driveway trending north to the existing structures; this access will not be altered for proposed lot 2.

Reference: Proposed subdivision of Lot 1 DP 159667 supplied by *BOI Survey*, dated 04/09/24, Ref# 5039

Figure 1 - Scheme Plan (adapted from Proposed subdivision of Lot 1 DP 159667 supplied by *BOI Survey*, dated 04/09/24, Ref# 5039)**.**

The property is bounded by prominent hills and valleys within the northern aspect constituting the geologically rich landscape as a result of the naturally shifting pacific plates which have yielded young and luscious plains of the far north portion of the ever youthful Aotearoa.

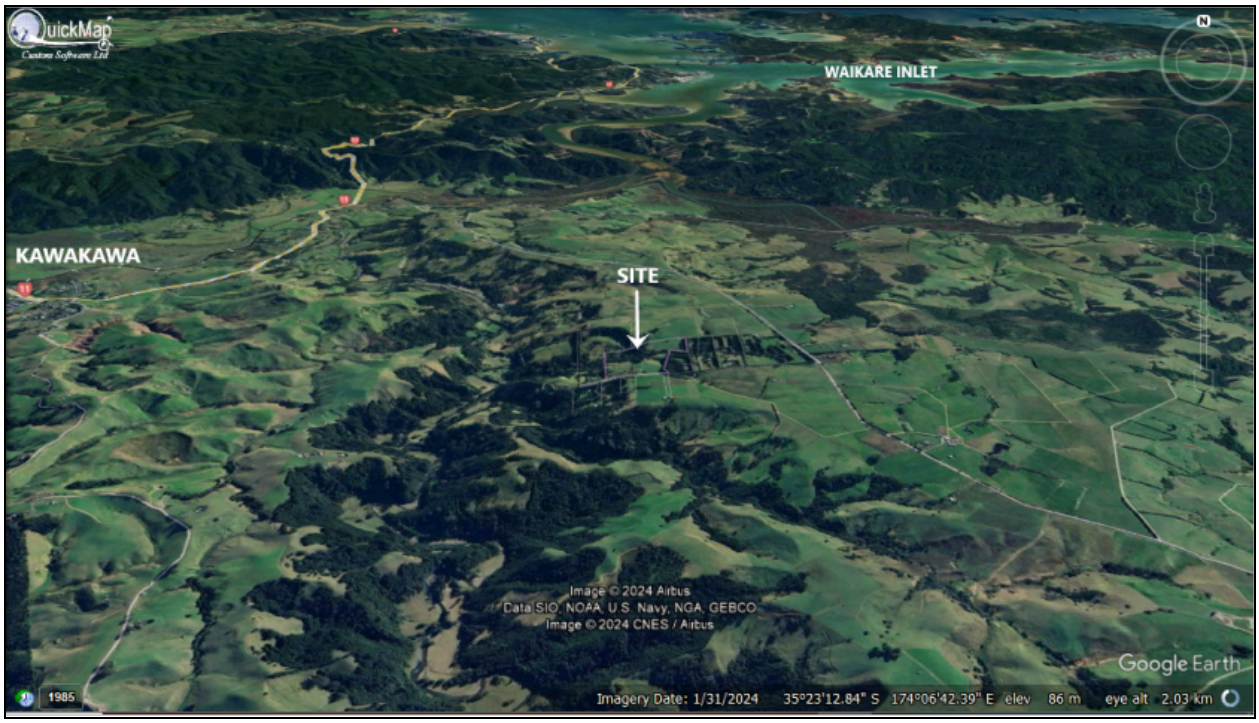


Figure 2 - Site Features Map (maps adapted from Quick Map Enterprises and Google Earth Maps)**.**

Based on the proposed subdivision scheme plan provided to us and our site walkover and observations, it can be concluded that the proposed activity will impose minimal disturbance to the greater natural land setting and existing environment.

3.5 Allowable Building Areas

A total developable area of 900m^2 has been identified for proposed Lot 1.

This area is indicative to serve the purpose of site feasibility illustration and subject to the specific purpose of future residential development activities thereafter.

4. Access

Site access is formed off Cookson Road.

4.1 Crossover and Driveways

The existing crossover onto the property is fit for purpose and shall be retained to continue to service the existing residence within proposed Lot 2. The proposed crossover serving Lot 1 will be formed in a later stage. This can be formed on acceptable gradients in accordance with FNDC Rule 15.1.6.1.2.

4.2 Parking and Manoeuvring

Parking and associated manoeuvring can be accommodated within the proposed lot 1.

4.3 Far North District Engineering Standards

The proposed access has been assessed for compliance with the Far North District Rules 15.1.6C 'Access' as follows:

Table 1.1 - Far North District Plan Rule 15.1.6.1.2 VEHICLE ACCESS

Rule	Applicability
15.1.6C.1.1 PRIVATE ACCESSWAY IN ALL ZONES (a) The construction of private accessway, in addition to the specifics also covered within this rule, is to be undertaken in accordance with Appendix 3B-1 in Part 4 of this Plan. (b) Minimum access widths and maximum centreline gradients, are set out in the Appendix 3B-1 table except that the grade shall be: All urban zones; excluding the Commercial and Industrial Zones: No steeper than 1:8 adjacent to the road boundary for at least 5m Commercial and Industrial Zones: No steeper than 1:20 adjacent to the road boundary for a length of at least 6m. (c) A private accessway may serve a maximum of 8 household equivalents. (d) Where a subdivision serves 9 or more sites, access shall be by public road. (e) Access shall not be permitted: (i) onto a State Highway or a Limited Access Road; (ii) onto an arterial or collector road within 90m of its intersection with an arterial road or a collector road; (iii) onto an arterial or collector road within 30m of its intersection with a local road; (iv) onto a local road within 30m of its intersection with an arterial or collector road; (v) onto Kerikeri Road (both sides of the road along the portion between Maraenui Drive and Cannon Drive). This rule does not apply to sites with lawfully established access points (as at 6 September 2001) onto Kerikeri Road. [Notes on Limited Access Roads omitted]	(b) Carriageway widths to comply with Appendix 3B-1 (c) Complies (d) N/A (e) N/A
15.1.6C.1.2 PRIVATE ACCESSWAYS IN URBAN ZONES (a) Private accessways in all urban zones, excluding the Commercial and Industrial Zones, shall comply with the following:	N/A property is zoned Rural Production.

Where: (i) The private accessway serves no more than four residential units; and (ii) Visibility is not restricted; and (iii) The access is less than 60m long; or 60m long or longer and passing bays are provided at intervals not exceeding 60m.	The private accessway from the road boundary to any parking or loading space shall be: • not less than 3m wide; and • a minimum overhead clearance of 4m.
Where any one of (i) through (iii) above are not complied with.	The private accessway shall be 5m wide.

Note 1: The entrance standards from the road shall comply with the entrance standards detailed in Rules 15.1.6C.1.4 and 15.1.6C.1.5, as applicable.

(b) Private accessways in the Commercial and Industrial Zones shall comply with the following:

(i) One-way operation, excluding service stations. Note: A one-way operation is a 3m wide private accessway that provides entry to the site at one point and exit from the site at a different point.	The private accessway from the road to any parking or loading space shall: • not less than 3m or more than 4m in width; and • have a minimum overhead clearance of 4.2m.
(ii) Two-way operation, excluding service stations. Note: A two-way operation is a 6m wide private accessway that provides entry and exit from the site at the same point.	The private accessway from the road to any parking or loading space shall: • not be less than 6m or more than 7m in width; and • have a minimum overhead clearance of 4.2m

(b) N/A

(iii) Service stations	The private accessway from the road to any parking or loading space shall: • have a maximum width for one-way and two-way operations of 9m; and • have a minimum overhead clearance of 4.2m.

(c) All private accessways in all urban zones which serve two or more activities are to be sealed or concreted.

(c) N/A

15.1.6C.1.3 PASSING BAYS ON PRIVATE ACCESSWAYS IN ALL ZONES

(a) Where required, passing bays on private accessways are to be at least 15m long and provide a minimum usable access width of 5.5m.

(b) Passing bays are required:

(i) in rural and coastal zones at spacings not exceeding 100m;

(ii) on all blind corners in all zones at locations where the horizontal and vertical alignment of the private accessway restricts the visibility.

(c) All accesses serving 2 or more sites shall provide passing bays and vehicle queuing space at the vehicle crossing to the legal road.

(i) N/A

(ii) No blind corners within the proposed or existing accessway.

(iii) N/A - Each accessway will serve one property.

15.1.6C.1.4 ACCESS OVER FOOTPATHS

The following restrictions shall apply to vehicle access over footpaths:

(a) no more than two crossings per site; and

(b) the maximum width of a crossing shall be:

All activities; except service stations	6m
Service stations or supermarkets	9m

Note: Consideration should be given to the location of crossings and the potential for signage to ensure pedestrian safety.

N/A - no footpath present

15.1.6C.1.5 VEHICLE CROSSING STANDARDS IN RURAL AND COASTAL ZONES (a) Private access off roads in the rural and coastal zones the vehicle crossing is to be constructed in accordance with Council's "Engineering Standards and Guidelines" (June 2004 – Revised 2009). (b) Where the access is off a sealed road, the vehicle crossing plus splays shall be surfaced with permanent impermeable surfacing for at least the first 5m from the road carriageway or up to the road boundary, whichever is the lesser. (c) Where the vehicle crossing serves two or more properties the private accessway is to be 6m wide and is to extend for a minimum distance of 6m from the edge of the carriageway. Note 1: Refer to Appendix 3G for a visual representation of what a vehicle crossing is and how it works in relation to a private access.	(a) Vehicle crossing to be constructed in accordance with Council's "Engineering Standards and Guidelines". (b) Cookson Rd is not sealed. (c) Vehicle crossing to serve one property each.
15.1.6C.1.6 VEHICLE CROSSING STANDARDS IN URBAN ZONES (a) Private access off streets in the urban zones the vehicle crossing is to be constructed in accordance with Council's "Engineering Standards and Guidelines" (June 2004 – Revised 2009). (b) Where the vehicle crossing serves two or more properties the vehicle crossing is to be widened to provide a double width vehicle crossing. Note 1: Refer to Appendix 3G for a visual representation of what a vehicle crossing is and how it works in relation to a private access.	(a) N/A - Property within the Rural Production zone. (b) N/A - Each vehicle crossing will serve one property each.
15.1.6C.1.7 GENERAL ACCESS STANDARDS (a) Provision shall be made such that there is no need for vehicles to reverse off a site except where there are less than 4 parking spaces gaining access from a local road. (b) All bends and corners on the private accessway are to be constructed to allow for the passage of a Heavy Rigid Vehicle. (c) Any access where legal width exceeds formation requirements shall have surplus areas (where legal width is wider than the formation) grassed. (d) Runoff from impermeable surfaces shall, wherever practicable, be directed to grass swales and/or shall be managed in such a way as will reduce the volume and rate of stormwater runoff and contaminant loads.	(a) N/A (b) N/A (c) N/A (d) Runoff generally above ground as sheetflow, directed into the existing primary flow paths onsite.
15.1.6C.1.8 FRONTAGE TO EXISTING ROADS (a) Where any proposed subdivision has frontage to a road or roads that do not meet the legal road width standards specified by the Council in its "Engineering Standards and Guidelines" (June 2004 – Revised 2009), road widening shall be vested in the name of the Council. (b) Where any proposed subdivision has frontage to a road or roads that are not constructed to the standards specified by the Council in its "Engineering Standards and Guidelines" (June 2004 – Revised 2009), then the applicant shall complete the required improvements. (c) Where a site has more than one road frontage or frontage to a service lane or right-of-way (ROW) in addition to a road frontage, access to the site shall be in a place that:	(a) N/A (b) N/A (c) N/A

(i) facilitates passing traffic, entering and exiting traffic, pedestrian traffic and the intended use of the site; (ii) is from the road or service lane or ROW that carries the lesser volume of traffic. (d) Where any proposed subdivision has frontage to a road on which the carriageway encroaches, or is close to the subject lot or lots, the encroachment or land shall vest in Council such that either the minimum berm width between the kerb or road edge and the boundary is 2m or the boundary is at least 6m from the centreline of the road whichever is the greater.	(d) N/A
15.1.6C.1.9 NEW ROADS All new public roads shall be laid out, constructed and vested in accordance with the standards set out in the Council's "Engineering Standards and Guidelines" (June 2004 – Revised 2009). Note: Refer also to the Designation and Utility Services rules within Chapter 17.	N/A
15.1.6C.1.10 SERVICE LANES, CYCLE AND PEDESTRIAN ACCESSWAYS (a) Service lanes, cycle and pedestrian accessways shall be laid out and vested in accordance with the standards set out in the Council's "Engineering Standards and Guidelines" (June 2004 – Revised 2009). (b) All access reserved for pedestrians only shall be a footpath, formed and concreted (or an alternative surface) to Councils satisfaction.	N/A
15.1.6C.1.11 ROAD DESIGNATIONS Where any frontage to an existing road is shown on the Zone Maps as being subject to designation for road acquisition and widening purposes, provision shall be made to enable the Requiring Authority to acquire such land, by separately defining the parcels of land. Where the Requiring Authority is not in a position to acquire such parcels immediately, they shall be held in conjunction with adjoining land, with consent notices registered in accordance with Rule 13.6.7.	N/A

5. Cultural Landscape

In this instance points to the direct anthropogenic effects upon the natural landscape over a time period. A desk study of historic aerial photos were reviewed in light of this undertaking.

5.1 Land Use

Predominantly, the subject land use is rural production within the adjoining properties as the primary activity.

5.2 Infrastructures

Far North District Council (FNDC) GIS mapping indicates that no existing 3waters (wastewater, stormwater and potable water) infrastructure is present within Cookson Road. This report has been prepared with the goal of the subdivision being self-sufficient for the purpose of wastewater and stormwater management.

5.3 Population and Settlement

The cross section below attempts to show the human occupation and spread of settlement within a 5.70km run [left to right] relative to the property. The wider farmland estates feature widely within the surrounding area and in this instance can be viewed as the primary land use in the locale.

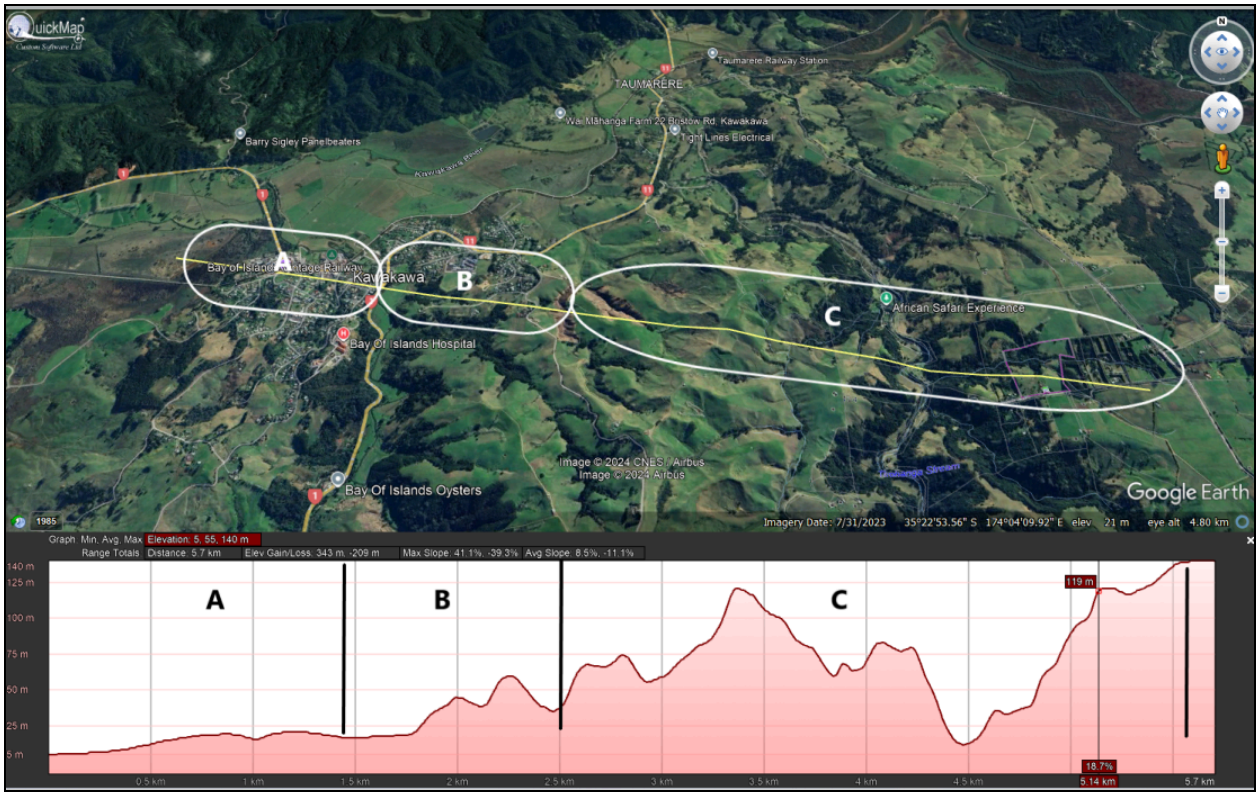


Figure 3 - Settlement Cross Section Map (maps adapted from Quick Map Enterprises and Google Earth Maps)**.**

Table below presents further details with respect to the annotations within the former.

Table 1.2 - Processes and Settlement Cluster

	A B	C
Processes	Dominant Residential [Proposed Subdivision] CBD	Farming [Rural] Settlement

Centre			**Periphery**
Patterns	Higher density residential living	Low density rural living. Predominantly farm land.	

6. Geomorphology

The most extensive lava field in the far north covers a 500km^2 area which extends from the south of Kaikohe to Takou Bay. Steep bluffs characterise the edge of the plateaus. The property is mapped within the smaller lava fields are present around Whangarei City, at Puhipuhi, and between Ruapekapeka and Kawakawa.

Geological maps show the local volcanic plateau is underlain by *Greywacke* sandstone [and *marine shales*] that is thick sequenced-interbedded and is thought to have derived from the *erosion* of rapidly rising fold mountains and is itself deformed in the later stages of the orogeny.

The greatest volume of lava is preserved in a series of overlapping flows, some with intervening soil horizons that form an extensive, eroded basalt surface north of Kaikohe. Some of the oldest rocks of the Kaikohe-Bay of Islands field form small intrusive plugs or isolated ridge-top remnants, mainly in the northwest.

The overlying plateau in this case constitutes remnants of the older eroded flows [*Pvb*]

These *erosion resistant* igneous rocks form the high standing and typically steep sided massifs include the former and Ahipara, Warawara and Waima Ranges.

It is considered that land instability within these highly competent units generally arise from strong *igneous rocks* overlying weakly to moderately indurated sedimentary rocks. Such failures are common in bluffs bounding lava flows that cap hills of Northland Allochthon or other soft sedimentary rocks

Most volcanic rocks are hard to very hard and have high strengths in their unaltered and unweathered state. They are commonly fractured or jointed, with columnar jointing developed in some rocks.

It shall be noted that trigger mechanisms are independent of the natural formation of the geological features in context of the adverse behaviour where noted/encountered within these units.

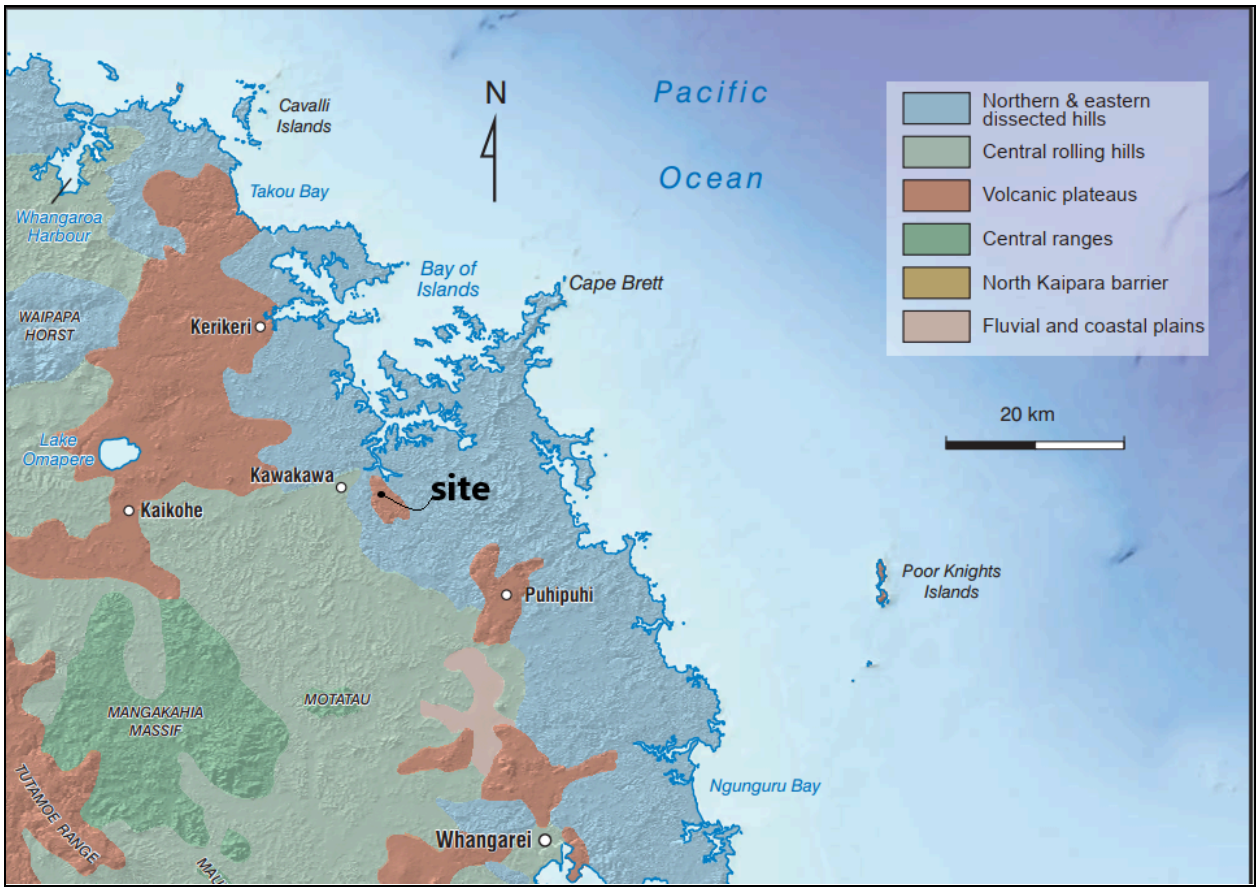


Figure 4 - Geomorphological features (adapted from Geology of the Whangarei Area. Institute of Geological & Nuclear Sciences; 1: 250,000 geological map 2. Lower Hutt, New Zealand.)**.**

The physical landscape in situ can be envisioned that it was once [young age] all connected i.e. the lower plains as fringing moderate declines to that of the overarching headlands at present. However, [storm] water can be accredited as the primary agent [amongst other influencing forces] in shaping the land over time and to date.

7. Geology

The geological information on hand indicates that the site is underlain by Kerikeri Volcanic (Pvb); basalt lava, volcanic plugs and minor tuff.

The geology map below is presented on a regional scale and careful consideration shall be of high regard in relative application of referencing and professional judgements expressed in context to specific sites.

Reference:
Geology of the Whangarei Area. Institute of Geological & Nuclear Sciences; 1: 250,000 geological map 2. Lower Hutt, New Zealand.

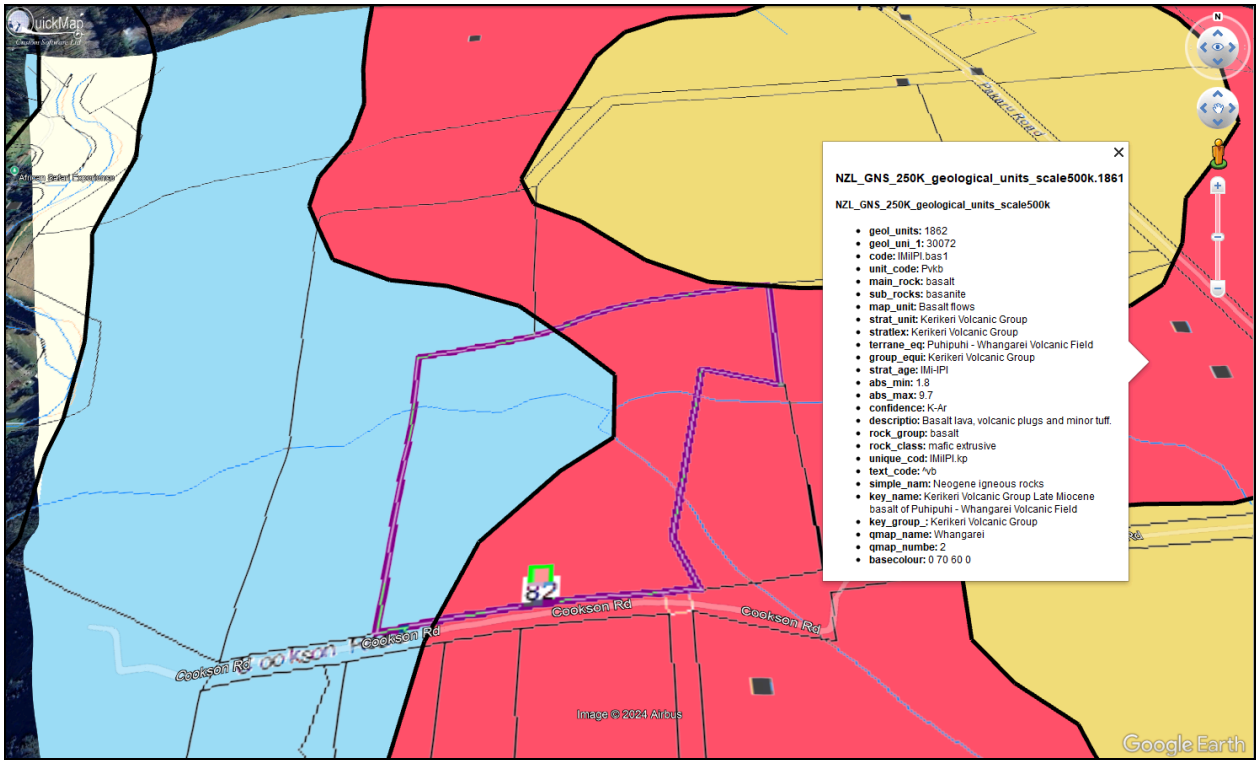


Figure 5 - Geology Units Map - site in purple outline (maps adapted from Quick Map Enterprises and Google Earth Maps)**.**

8. Lithology

The underlain lithology is Basalt ($F6_2$) i.e. dark grey to black, locally red flows and cones of very fine to medium grained crystalline flows and remnant cones intruded by minor more coarsely basaltic plugs and dikes . Widely fractured; hard to very hard. Weathered to reddish brown friable clay to depths of 30m with many rounded corestones.

Reference:
Geology of the Whangarei Area. Institute of Geological & Nuclear Sciences; 1: 250,000 geological map 2. Lower Hutt, New Zealand.

NZMS Sheet 290 Q04/05, 1:100,000 scale map, Edition 1, 1981: "*Bay of Islands"* (Rocks).

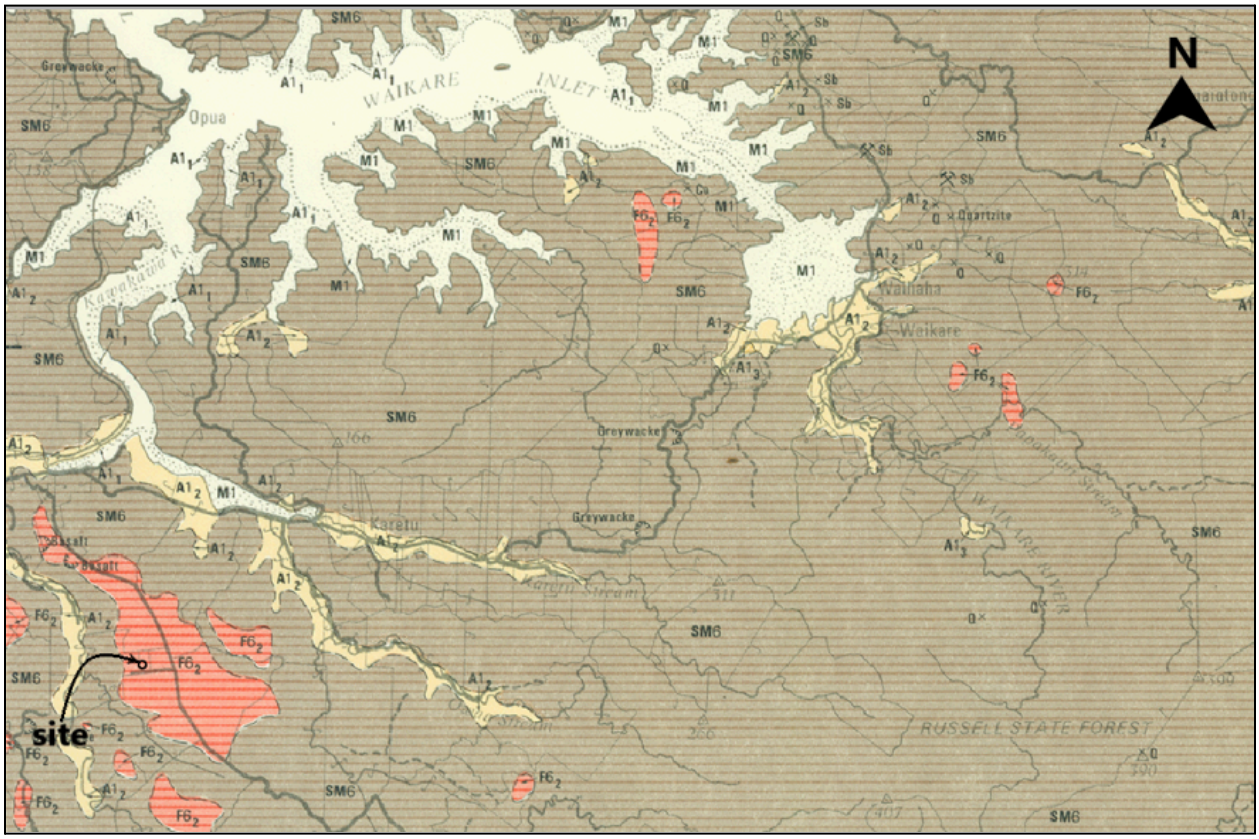


Figure 6 - Lithology Map - (NZMS Sheet 290 Q 04/05, 1:100,000 scale map, Edition 1, 1981: "*Bay of Islands"* (Rocks)**.**

9. Subsoils

LandCare Research indicates the soils encountered here as Albic Ultic (UE) which have a well structured clay enriched subsoil. Pale coloured horizon just beneath the topsoil. They cover 3% of New Zealand and are most common in the far north, Wellington, Marlborough and Nelson regions.

9.1 Ultic [U]

They occur in clay or sandy clay material derived by strong alteration of quartz-rich rocks over long periods of time. These soils have dispersible surface horizons prone to erosion and are susceptible to damage[2] by livestock treading.

Soils are strongly acidic with a small content of weatherable minerals. Kaolin and Vermiculite are the dominant minerals. The soils are *slow to imperfectly drained*.

More reference can be noted that these soils are of the Rolling and Hilly Land comprising Otaha Clay [OD] + Okaihau gravelly friable clay [OK] - imperfectly drained.

[2]*Synonymous with shallow depths [≤ 0.30m]. As evident of the ground observed onsite.*

All in all it can be concluded that the soils encountered here greatly reflect the historical effects of local conditions.

Reference
Manaaki Whenua LandCare Research: New Zealand Soil Classification (NZSC) - Soil Order.

New Zealand Land Inventory - NZMS Sheet 290 Q 04/05, 1:100,000 scale map, Edition 1, 1980: "*Bay of Islands*" (Soils).

10. Environmental Setting

Published environmental data relating to the site has been reviewed. A summary of relevant information is provided below.

10.1 Hydrology and Flooding

A summary of available information pertaining to hydrology and hydrogeology is presented in the table below. An examination of Far North District Council (FNDC) and Northland Regional Council (NRC) online GIS databases is included.

Table 1.3 – Surface Water Features & Flooding

Source	Presence/Location	Comments
Groundwater sources including springs/wells (within 500 m)	Mapped boreholes; 1. ≅425 m east 2. ≅660 m northeast	1. Depth of borehole = 38.5m Static Water Level = -23m 2. Depth of borehole = 29m Static Water Level = -9m
Surface Water Features (Ponds, Lakes etc)	Unnamed streams (tributaries to Tirohanga Stream) within the property.	The proposed residential area is sufficiently setback/elevated from these water features.
Watercourses (within 500 m)	Tirohanga Stream	Feature along the western locality. Flowing northward, it merges with the Kawakawa River and then disperses into Karetu River which constitutes the wider southern area of the Waikare Inlet.
Flood Risk Status	None recorded	The NRC and FNDC GIS databases indicate that the site is not included within the area that has been modelled for flood hazard events. The high relief of the property dictates less than minor risk to flooding.
Flood Susceptibility	Negligible	Flood susceptible land is mapped according to the presence of alluvial, fluvial deposited soils indicating historic inundation by flood waters. From available geological mapping it is considered superficial soils are not present within the site boundaries.

The natural landscape, and outstanding land features presented in this natural state environment shall be regenerated/maintained [continuously] with respect to the ongoing Overall Proposal Outcome (OPO)[3]*.

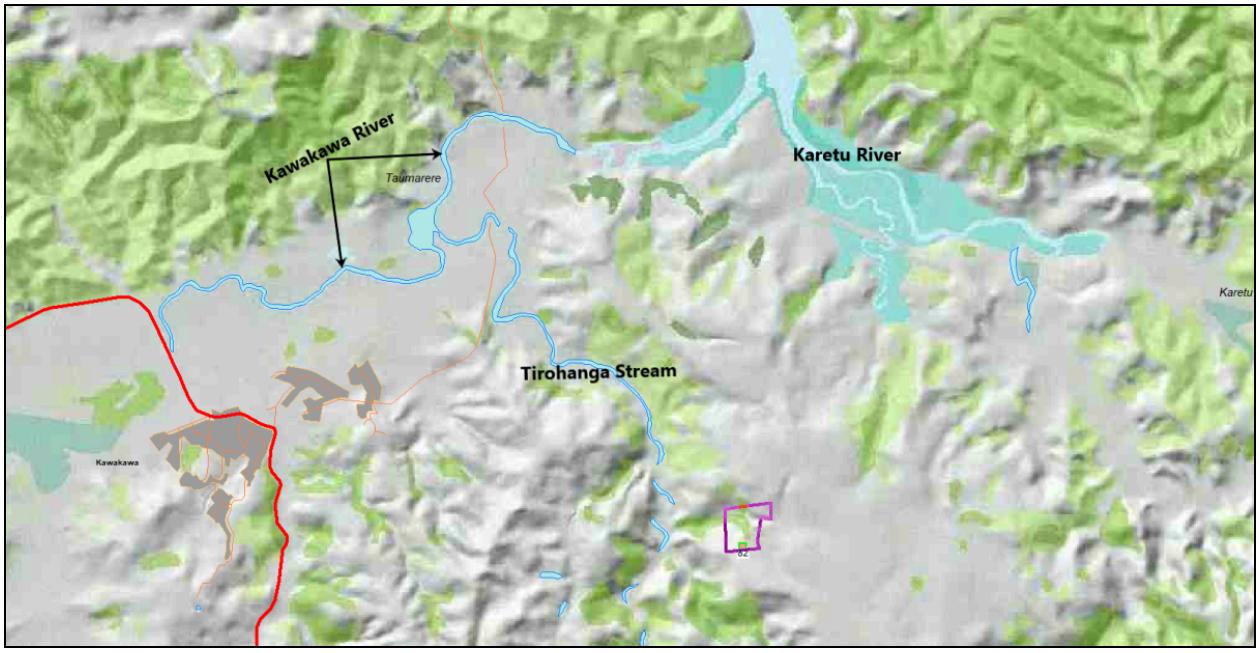


Figure 7 - Supporting Water Bodies Location Plan (maps adapted from NRC Natural Hazards Map)**.**

10.2 Natural Hazards

10.2.1 Regulatory Framework

Under Section 2 of the Resource management Act 1991, natural hazard means any atmospheric or earth or water related occurrence (including earthquake, tsunami, erosion, volcanic and geothermal activity, landslip, subsidence, sedimentation, wind, drought, fire, or flooding) the action of which adversely affects or may adversely affect human life, property, or other aspects of the environment.

10.2.2 River Flood Hazard

Upon review of the Northland Regional Council Hazards maps, it indicates the subject property as not being within a flood extent area. As depicted in Figure 8 below.

[3] *OPO - Balancing Sustainability of Life in all aspects.*

Figure 8 - Natural Hazards Map (maps adapted from NRC Natural Hazards Map)**.**

Natural hazards listed in Section 71(3) of the Building Act 2004 include: erosion, falling debris, subsidence, inundation or slippage.

Susceptibility assessment of the subject property to these potential hazards were judged as;

Table 1.4 – Natural Hazard

Potential Hazards Assessed	
Erosion (including coastal erosion, bank erosion, and sheet erosion)	No*
Falling debris (including soil, rock, snow, and ice)	No*
Subsidence (vertical settlement)	No*
Inundation (including flooding, overland flow, storm surge, tidal effects, and ponding)	No
Slippage	No*

**not encountered/observed during the site walkover.*

11. Preliminary Field Investigations

Our fieldwork for this report was carried out on 5th September 2024 and consisted of:

- 2 Hand Augured boreholes down to shallow refusal depths of 0.80 and 0.50 metres.
- Vane shear tests were undertaken at 0.30m increments to full drilled depths.
- Visual observation of the site, adjoining lower lying land with respect to land fretting features.

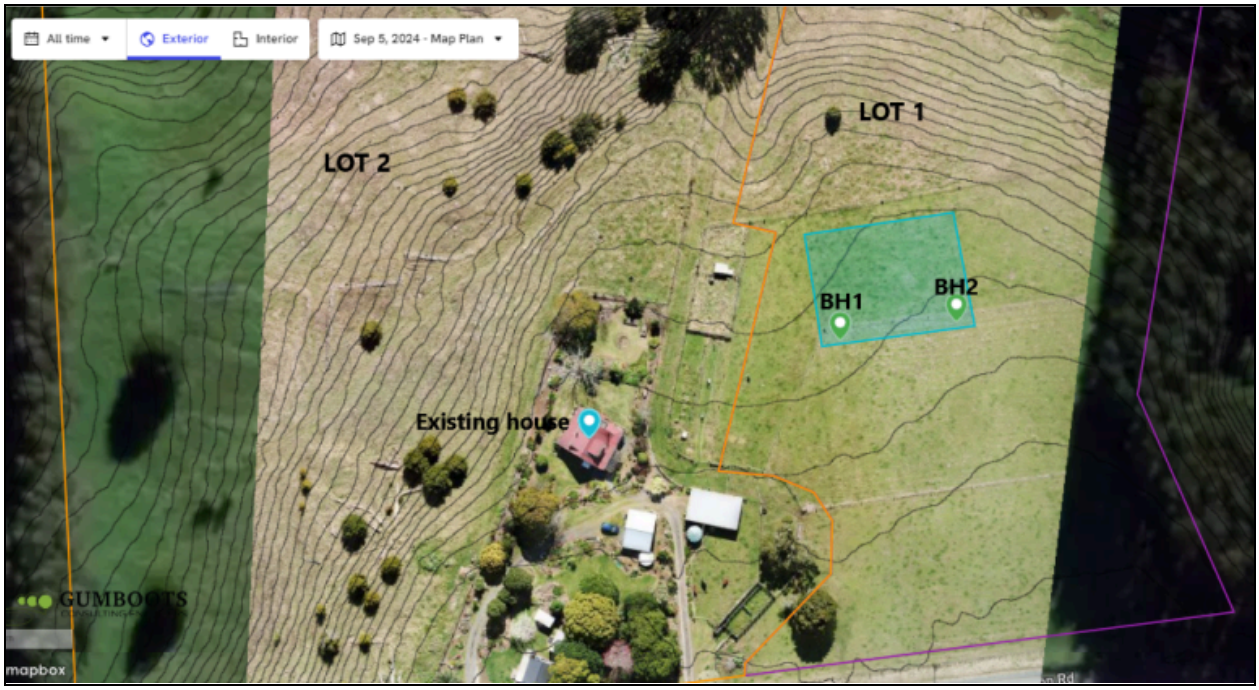
The test locations are shown on the borehole location plan below. Results of all in-situ soil tests together with detailed descriptions of the soils encountered during drilling can be found in Appendix 2.

Figure 9 - Borehole Location Plan (maps adapted from Scheme Plan and DroneX Aerial Survey)**.**

The nominated development site is gentle sloping and restricted within this space. Land was noted to be generally stable; as **no signs** of *mobile ground* and *tension cracks* were encountered during this time.

The dominant occupation of established/regenerative native vegetation/trees within the surrounding gullies readily provides a critical equalizer to the collective land sustainability.

Global land instability in this case is considered ***low***.



No saturated or boggy ground was encountered within the nominated build area during the site visit. The depths of strata and groundwater [where encountered] on the logs are recorded from ground level.

12. Summary of Bored Ground Conditions

12.1 Topsoil

Observed as silty clay and dark brown with minor rootlets (approximately) 0.20 - 0.30 metres thick.

12.2 B Horizon

The natural (cohesive) subsoils encountered generally comprise very stiff, yellowish brown and highly plastic. At shallow refusal depths ≤ 0.80 metres, soils showed grey speckles with pockets of fine to medium subrounded gravels. As depicted in Figure 10.

Figure 10 - Natural Soils - (adapted from DroneX survey).

12.3 Filled Ground

Was not encountered. However, given that it is an active grazing estate, it is reasonable to expect filled ground as standard expectation of resultant anthropogenic activities associated therein.

12.4 Groundwater Conditions

The groundwater table was not encountered within the drilled boreholes. Potential moisture fluctuation within the shallow upper layer of the soil mantle can be expected during drier and wetter periods of the year.

Complete saturation is considered less likely due to the prominent relief of the land as well as the low permeability of the upper subsurface mantle as encountered.

The geological features which highly influence infiltration are highly varied over an outcrop and likely so from one to another. Therefore, a uniform distribution and infiltration of rain is highly *unlikely* and the consequent rise in water-table will be greater in some places than others.

Accordingly, the favourable relief and supporting service infrastructures dictates that full saturation of the subsoil mass within and close vicinity of the building platforms can be considered *low.*
Inevitably, the majority shall sheetflow north away from the effective sites.

All in all, the heavy presence of bush cover within the supporting flanks dictates an equilibrate mechanism for overland flows and steady state moisture conditions within the mantle.

12.5 Primary Flow Paths [PFP]

Stormwater currently drains as a sheet flow in a northerly direction, to a well vegetated gully. The heavy presence of native bush and vegetation will stop sediments and slow water flows at peak storm events.

Water will eventually flow westwards through the natural flow paths, merging with Tirohanga Stream. As depicted (aqua arrows) in Figure 11 below.

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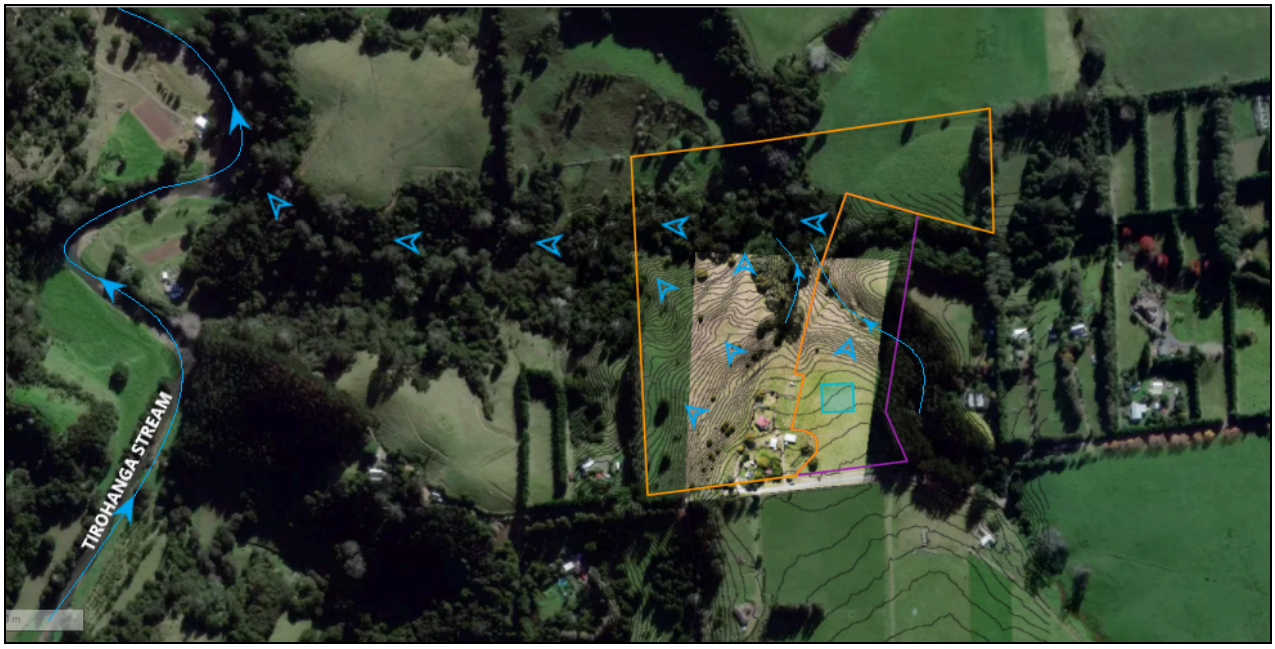


Figure 11 - Surface Flow Path (map adapted from DroneX Aerial Map)**.**

13. Discussion on Subground Conditions

Our preliminary field test results indicate an average soil strength of approximately ≥ 100kPa.

13.1 Corrected Vane Shear Readings

Corrected vane shear readings recorded within the bored test holes were in the order of ≥ 199 kPa.

It shall be appreciated that field data used were deduced from limited test positions and may vary from that described. As a consequence, ground characteristic anomalies can potentially be encountered i.e. big corestones were observed protruding out onto the surface within the steeper bank to the north of the periphery land.

Field results are indicative of *'good ground'* [bearing capacity] for shallow foundations in accordance with Building Code for Standard Foundations - NZS 3604:2011[4].

13.2 Subsoil Properties

The tabulated data below is based on our experience and laboratory testing undertaken of similar soils previously.

[4]*Section 3.13.*

Table 1.5 – Residual Soil Workability Data

Soil Description	Proctor Compaction		Permeability @ Proctor Maximum compaction [mm/hr]
	Maximum dry density [T/m^3]	Optimum moisture content [%]	
Silty CLAY	1.79 ± 0.02	12.7 ± 0.3	0.01 ± 0.007

The above data shall be used as a guide only. In the case where the subsoils onsite is intended for fill material then samples from the site shall undergo laboratory testing prior earthwork commencing.

14. Discussion on Subsoil Classification

14.1 Expansive Soils

Plastic soils found collectively throughout this region are thought to have an expansive nature and tendency to shrink under certain conditions. This phenomenon is common with these soils (where encountered) throughout the Northland region, particularly when these soils are subject to seasonal volume changes caused by wetting and drying.

Technically, expansive soils are defined in NZS 3604 as those soils having a liquid limit of more than 50% and a linear shrinkage of more than 15%.

The site can be designated as Class S [M]. That is, soils may undergo shrinking under certain conditions like lack of surface cover equals rapid exposure to drying from the [elements] sun. The site can be deemed ***non expansive*** based on the residual minerals within the in-situ soil encountered.

It shall be appreciated that the weathering nature of the mapped geologies, lithologies and hosting environment dictates that resultant minerals constitute minor reactive minerals with respect to non rapid influences from varied moisture conditions.

Reference:

Manaaki Whenua LandCare Research: New Zealand Soil Classification (NZSC)

A.S. 2870, “Residential Slab and Footings - Construction”.

NZS 3604, “Timber Framed Buildings”

Geology of the Whangarei Area. Institute of Geological & Nuclear Sciences; 1: 250,000 geological map 1.

NZMS Sheet 290 Q 04/05, 1:100,000 scale map, Edition 1, 1980: “*Bay of Islands”* (Soils).

15. Geotechnical Appraisal

15.1 Site Background

The property is currently established with an existing residential dwelling and associated outbuildings/sheds. The existing residential development is accessed from Cookson Road at the southern boundary with a single driveway trending north to the existing structures.

15.2 Nominated House Site - Lot 1

Comprise gentle slopes [3^0] descending northward toward the lower lying pastureland that is bisected by a northwest trending stream. The developable area nominated had been placed to allow a sufficient setback from the moderately steep bank [north].

Refer to the Annotations Report - Appendix A 1317/01

15.3 Foundations

House plans and construction of the future dwelling in Lot 1 has not been finalised. It is understood from our Client; a suspended floor on timber piles is the preferred system. Minor earthworks will be required to create a level platform; all excess topsoil not retained onsite shall be taken off site.

For concrete [raft] slab on grade foundation. It is recommended that steps in section 15.4 following are adopted. However, a minimum thickness of 200mm of GAP20 shall be adopted as base course. The slab foundation design can adopt B1/VM1 acceptable solutions or may undergo SED.

Residual soils ≥ 0.3 m below the current ground level were shown to have adequate bearing capacity i.e. minimum ultimate bearing capacity in the order of ≥ 300 kPa. A strength reduction factor [Øs] of 0.5 shall be applied for the design bearing strength.

15.4 Subgrade Preparation and Protection

At this point in time, it is expected within the hardstanding and driveway only. The work shall comprise;

1. Stripping off of all topsoil and other deleterious material and stockpiling it away from the work area.
2. Engineer to observe the final subgrade on natural ground and proof roll.
3. Roll out a geo mat prior metal placement.
4. GAP 40 covering layer max 125mm thick spread evenly across the stripped area to provide cover from the elements.

Stripping shall extend one meter outside of the effective work perimeter.

All in all, no signs of land instability were observed during our time onsite.

16. Geological Appraisal of Land Stability and Natural Hazards

16.1 General Account

Of the property seeks within reason the sustainability of the land and geological aspects with respect to any standing or notable natural hazards that may undermine its standing integrity. As well, minimal ground impact from human living activities and the natural elements. All in all, cumulative equilibrium coexistence.

16.2 Geological Fault Lines/Surface Ruptures

Reviewed geological maps show NO fault lines through or nearby the general property. Seismic activity within the region is generally low. It was noted during our site walkover that minor [historic] shallow scarps were not encountered within the wider areas.

Moreover, no signs of active deep seated instability or relics were encountered.

Recent movement as a direct result of fault line activity within close vicinity to the subject were not observed. All in all, we consider that any risk pertaining to fault line/surface ruptures to be low at this site.

16.3 Slope Instability

No evidence of hummocky or tension cracks were encountered upon the landform at present.

This generally proves fundamental stability of the land. In this case, confidence impresses a positive assurance that;

- The natural subsoils bored were in a very stiff state.
- Full saturation is highly unlikely due to the favourable topography of the land and easy draining subsoil characteristics.
- The resident home and land infrastructures, established some decades previous, showed no evidence of damage due to land movement.
- Chemical weathering of the soils accelerates cementation varying within the shallow mantle which restricts deep infiltration from surface water.
- More competent basalt [corestones] and residual soils underlying the property.
- Established natives occupying the bounding steep grade [north] readily sustains ***land resilience*** in this case.

Consequently, we consider that a **low** risk of slope instability can be sustained within the nominated developable area. The impact of slope movement shall likely not impact the proposed project nor is the proposed development likely to effect slope instability at this stage. However, subject/not limited to adhering to the recommendations provided herein. All future land developments within the subsequent Lot shall undergo rigorous planning and feasibility of application assessment in specific context to the effective site and proposal.

16.4 Influence of Topography

Has a significant and consistent effect on the weathering process and consequently on the type of minerals formed. Hilly countries [like the exhibit] soils i.e. more granular constituents; are well drained and seepage flows have a strong downward element.

As understood, this brings forth the formation of ***low activity*** clay minerals i.e. kaolinite[5] specifically. Soils comprising these minerals generally have *good engineering properties*.

16.5 Reactive Subsurface Soils

Based on the underlying geology mapped, it is considered that the residual soils encountered on site may become *moderately* reactive if/where they are rapidly exposed [open cuts/scraping] to the elements.

Where undisturbed, the soils are considered *slightly* reactive based on our experience of the area.

16.6 Flooding

The effective sites are well elevated and therefore risk of flooding is low.

Reference;
Manaaki Whenua LandCare Research: New Zealand Soil Classification (NZSC) - Soil Order.

Geology of the Whangarei Area. Institute of Geological & Nuclear Sciences; 1: 250,000 geological map 2. Lower Hutt, New Zealand.

17. Engineering Recommendations

Our assessments of the natural hazards and geomorphology relative to the site indicates that associated risks to LIFE and Property in this instance can be considered *low*. Provided that recommendations herein/not limited to are adopted in application of residential implementations.

17.1 Building Platform

Enabling work is considered minimal based on the current proposed lot size and established homes adjoining the property. The following sections present preliminary engineering guidance to effective planning action for such undertaking.

17.2 Restricted Building Line

Is indicated within the cross-section which shall allow sufficient setback from the moderately steep bank constituting the wider terrain within proposed Lot 1 [north]. There is ample flat land for the subsequent building without encroaching to the crest as indicated.

[5] *formed by the alteration of ALKALI FELDSPAR and other aluminium bearing minerals.*

17.3 Filling near Slopes

Shall not be undertaken, specifically within the designated Restricted Build area.

17.4 Fills

Shall not be undertaken unless prior SED and appraisal of the proposal development and site is completed and approved by Far North District Council at such time. All work shall comply with NZS 4404, NZS 4402 and NZS 4431 as appropriate.

17.5 Site Landscaping and Contouring

Shall stay true to the natural fall of the land at present. Critically, foundation ground shall adopt final grades away from building foundations to convey surface water runoff away from this area.

17.6 Access Road

All works that may be required shall be conducted in accordance with the FNDC Engineering Standards and related documents/codes.

Base metal shall be placed on cleared ground i.e. stripped topsoil and deleterious material down to natural clays.

The existing access way is well established and therefore requires minimal/no further work in service to this purpose.

17.7 FIll Monitoring Compaction tests

All monitoring shall be carried out by a suitably qualified engineer familiar with this report/site.

Table 1.6 – Compaction Test Schedule

Field Compaction Tests	Non Cohesive Material	Cohesive Fill Material
In-situ density	Minimum average of 98% of MDD as determined by heavy compaction test.	Minimum average of 95% of MDD as determined by standard compaction test.
Clegg Hammer	Hardfill minimum average CIV = 25. Minimum single value 20	n/a
Air voids	n/a	Max single value ≤ 12% average 5 consecutive tests ≤ 10%

17.8 Stormwater Runoff

From resident implementations i.e. roofs, concrete driveways shall be contained and dissipated into the complementing natural flow path systems readily serving the collective estate and surrounding areas.

All in all, ill effects are considered less than minor here.

17.9 Ground Bearing Benchmark

Founding ground where subject to future building development shall sustain a minimum ultimate bearing strength capacity of 300 kPa [vertical loads only]. Foundations shall be embedded adequately to account for the expansive nature of the soils where encountered.

A conservative angle of shearing resistance Φ' of 30^0 and cohesion c' of 5 kPa can be assumed at shallow founding depths based on a characteristic corrected undrained shear strength of ≥ 199 kPa can be assumed within the natural Silty CLAY layer.

17.10 Liquefaction Potential

In light of a detailed liquefaction potential assessment was outside the scope of this undertaking. However, the general rating of seismic activity within the Far North is *low.*

Potentially liquefiable materials are identified by;

- Cohesive [fines] content i.e. highly cohesive aggregates are less susceptible to liquefaction
- Plasticity Index
- Groundwater levels
- Thickness of potentially liquefiable soils
- Amplitude, frequency content and duration of shaking expected during seismic events.

All in all, it can be concluded that the proposed building platforms are low-negligible during [IF] a seismic event up to 0.11 g PGA as anticipated for Northland inside NZS 1170 and within tolerable settlement limits set by the NZBC.

18. Conclusion

The effective land is in a *stable state*.

The primary objective for subsequent development following, shall seek to sustain the land in this context during and after the establishment of occupational assets.

All development works intended specifically for the proposed lots, shall NOT be undertaken prior to a site specific geotechnical appraisal being carried out with due regard to the development and present site conditions.

Consequently, good sound engineering practices through means of extensive and conscientiously executing field observations during and after construction is prudent here.

19. Stormwater Management

19.1 General Suitability

The subdivision will maintain less intensive human activity whilst upholding the natural settings of the land. Currently, the site drainage is by general surface runoff following the natural topography of the site, the collective subdivision is well equipped with established primary flow paths.

These natural features are populated with established adequate outfalls and vegetation and readily provide an established low impact and sustainable stormwater management approach in this instance.

Any adverse effects as a result of future residential dwellings to be erected within the nominated areas of these proposed lots are considered less than minor.

Accordingly, the proposed moderately minor lots shall be considered under general site and future development feasibility with primary regard to the FNDC Plan - 13.7.3.4 Stormwater Disposal.

It is recommended that a site specific analysis of post development against pre development [equilibrate state currently] conditions for the proposed lots are accounted for at building consent stage when an intended purpose of a proposed development plan is decided upon.

However, the PFPs shall be well incorporated within the stormwater management system in balancing service of the collective subdivision and future occupational activities anticipated from the proposed lots.

19.2 Stormwater Management Principles

On-site stormwater management is to be carried out in accordance with Clause E1 of the building code compliance documents. The performance requirements are as follows;

- That a primary system capable of disposal of surface water resulting from a storm having a 10 % (1 in 10 year) probability of occurring annually, shall be constructed.
- That all stormwater reticulation and disposal systems are constructed to convey surface water to an appropriate outfall using gravity flow, and in a manner which avoids the likelihood of blockages, leakage, penetration by roots, or the entry of groundwater where pipes or lined channels are used and avoids the likelihood of damage from superimposed loads or normal ground movements.
- For piped systems, accessible inspection chambers are provided at all changes of grade, direction and pipe size.
- That the reticulation and disposal system is designed and constructed for a function design life of 50 years.
- That damage to the environment both during and after the development construction phase is minimised or avoided.

- That a system is provided which can be economically maintained.

19.3 Impermeable Surfaces

Impermeable surfaces are defined by FNDC as;

> *(a) decks (including decks less than 1 m in height above the ground) excluding open slatted decks where there are gaps between the boards;*
>
> *(b) pools, but does not include pools designed to operate as a detention pond;*
>
> *(c) any surfaced area used for parking, maneuvering, access or loading of motor vehicles, including areas covered with aggregate;*
>
> *(d) areas that are paved with concrete, asphalt, open jointed slabs, bricks, gobi or materials with similar properties to those listed;*
>
> *(e) roof coverage area on plan;*
>
> *But excludes:*
>
> *i. Water storage tanks occupying up to a maximum cumulative area of 20 m^2; and*
>
> *ii. Paths and paving less than 1 m wide, provided they are separated from other Impermeable Surfaces by a minimum of 1 m.*

20. Land Resilience

Subsequent development intended for future occupation shall derive from the viewpoint of low impact development and extensive consideration of anticipated future activities in favour of land functional resilience.

In this case, the significant flora occupation within the subject site and neighbouring properties readily sustains and shall enforce land resilience.

20.1 Water Sensitive Land (WSL)

The hydrological cycle [HC] stipulates the likely movement of water through the environment i.e. rainfall, infiltrating to groundwater, flowing towards streams, evaporating to cloud systems and so on. As it moves through the environment, water interacts with the environment.

Figure 12 below depicts the interactive state of the stormwater cycle through the green environment proposed for the primary flow paths and critical areas within the united property.

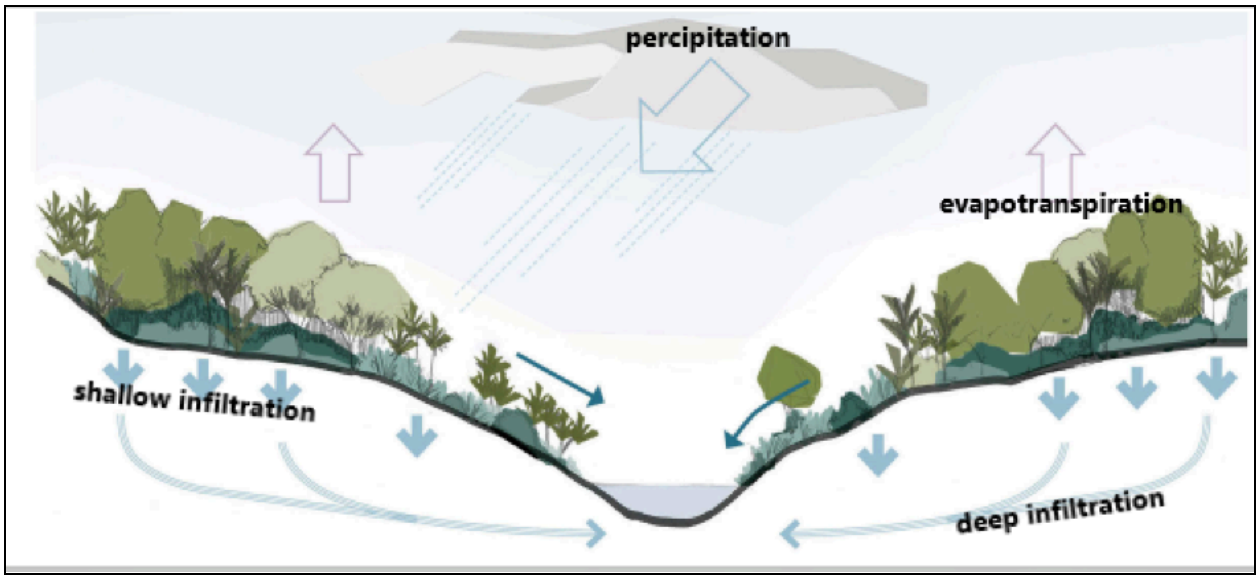


Figure 12 - HC Plan - (illustrative cross sectional adaptation of the RPP).

Trees intercept rainfall, soil and humus layer attenuate stormwater runoff and infiltrate it into the ground and terrestrial and aquatic vegetation captures and transpires water back to the atmosphere. As depicted in Figure 12 above.

Added Value of WSD to;

20.2 Regional Infrastructure

Enhances protection of contact recreation in our rivers and harbours. Likewise, water quality through low impact stormwater treatment practices.

Reference: Water Sensitive Design for Stormwater - Guideline Document 004, March 2015.

20.3 Positive Effects

The cumulative impact of the existing flora occupation driven from a WSL approach, has a significant effect on the health of freshwater and marine receiving environments. It also enhances a riparian buffer zone which acts as biological filters between catchment and receiving environments.

At large, stormwater runoff is slowed down and filtered with direct uptake and transformation of contaminants by plants.

The natural landscape, and primary flow path [PFP] features presented in this natural state environment shall be regenerated with respect to the ongoing Overall Proposal Outcome (OPO)[6]. The homogenous hydraulic morphology in this instance dictates a LIDA approach.

[6] *OPO - Regenerative effects to the Environment and Sustainable living in All aspects.*

The Scheme Plan provides an adequate subdivision of the proposed lots and allowable land spaces which in effect can sustain an envisioned intimate living. It is recommended that due care is exhausted in;

- **P**lanning and creating of future developments thereafter with great regard to minimal impact to the natural environment.
- **C**onsciously choosing sustainable practices and applications that can utilise natural energy.
- **C**ontinuous maintenance and regenerative planting within sensitive areas to sustain a direct passive equilibrium to LIFE in all aspects.

The intent to regenerate native vegetation within the proposed Lot boundaries shall constitute a natural equilibrium to the flow of energy and materials into and out of the environmental system.

The intent of occupational living shall apply the Minimal Impact of daily LIFE in all aspects.

21. Regulatory Framework

21.1 Far North District Plan

The site is zoned Rural Production. The relevant stormwater management/impermeable surface rules are as follows:

Permitted stormwater management activities;

> **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%.

The intent of the application is to comply with NRC permitted activity rules Section 21: *Rules for Stormwater Discharges* and to satisfy FNDC criteria for a permitted activity consent application.

The proposed subdivision provides for, but does not include residential development. It is anticipated that houses when they are built will be of a similar scale to the existing residential development on other residential land in the area.

Proposed **Lot 2** comprises the established home, with impermeable surfaces covering 0.7% of the total site area. The percentage of impermeable surfaces on Lot 2 will increase [although negligible] because the lot size will be reduced.

That is, the existing total impermeables over the proposed total Lot 2 area of 7.5ha. All roof runoff in this lot are collected in two 25m^3 water tanks with the overflow dispersed well away from the buildings.

Typical impermeable surfaces on **Lot 1** [adopted from Lot 2] when developed are estimated as follows:

Table 1.7 – Typical On Development - lot Impermeable Surfaces

Impermeable Surface	Lot 2	Lot 1
Driveway/Parking	300	300
Roof	150	150
Sheds (Combined)	232	90
Total Impermeable (m^2)	685	540
Lot Area	7.5ha	2.4ha
Percentage Impermeable	0.9%	2.5%

Future developments on Lot 1 are not expected to exceed the permitted activity rule unless larger scale developments are proposed and the total impermeable surfaces exceed the **15%** *impermeable allowance*.

21.2 Regional Water and Soil Plan for Northland

Rule 21.1.1 provides for the discharge of stormwater where the stormwater collection system is connected to, or part of, a stormwater system for which a resource consent exists. The proposed subdivision will not connect to a consented stormwater system, so Rule 21.01.01 does not apply.

Rule 21.1.2 provides, as a permitted activity, for:
'The diversion and discharge of stormwater, not otherwise permitted by Rule 21.01.01, by way of an open constructed stormwater collection system or piped stormwater collection system into water or onto or into land where it may enter water is a permitted activity, provided the following conditions are complied with:

(a) For new subdivision and development, the best practicable option for on-site stormwater disposal shall be identified and incorporated into the stormwater management design to avoid or minimise changes to stormwater flows after development for the 1 in 5 year return period storm event.

(b) Where the diversion and/or discharge drains a hazardous substance storage area: ...

(c) Where the diversion and/or discharge drains an industrial or trade premise: …

(d) The stormwater collection system is designed to cater for stormwater flows resulting from not less than a 1 in 5 year return period storm event and a stabilised overland flow path is provided for to allow flows up to and including a 1 in 50 year storm event in excess of the capacity of the primary collection system.

(e) For discharges to water, the discharge does not:

(i) Increase the natural temperature of the receiving water by more than 3° Celsius at or beyond a 20 metre radius from the discharge point.

(ii) Cause the pH of the receiving water to fall outside of the range 6.5 to 9 at or beyond a 20 metre radius of the discharge point.

(iii) Cause the production of any conspicuous oil or grease films, scums or foams, or floatable or suspended materials in the receiving water at or beyond a 20 metre radius of the discharge point.
(iv) cause any emission of objectionable odour in the receiving water at or beyond a 20 metre radius of the discharge point.
(v) contain more than:

- *20 g/m3 of total petroleum hydrocarbons*
- *10 mg/m3 of total copper*
- *10 mg/m3 of total lead*
- *100 mg/m3 of total zinc*
- *100 g/m3 of suspended solids.*

(f) The discharge does not cause scour or erosion of the beds or banks of the receiving water body.

(g) For diversion and/or discharges onto or into land, stormwater quality control measures or treatment systems such as silt, oil and grease traps are incorporated to minimise the level of contaminants prior to final disposal.

(h) The stormwater management or treatment systems, and any associated works or equipment shall be operated and maintained in an effective operating condition.

(i) The diversion and/or discharge does not cause flooding of adjacent properties

Future development of both Lots can comply with Rule 22.01.02.

21.3 Proposed Regional Plan for Northland

The Northland Regional Council is reviewing its Regional Plans and a Proposed Regional Plan for Northland was notified in October 2023.

Proposed Rule C6.4.2 provides for the diversion and discharge of stormwater from outside a public stormwater network provided (amongst other conditions);

2) the diversion and discharge does not cause or increase flooding of land outside the area serviced by the stormwater network up to the 10 percent annual exceedance probability or flooding of buildings outside the area serviced by the network up to the one percent annual exceedance probability, and ...

Drainage from the site is via sheet flow north and into the natural watercourses. There are no buildings or land at risk of increased flooding from stormwater discharges from the Site.

All in all, we consider that future development of Lot 1 can comply with Rule C6.4.2 with low impact stormwater management systems.

21.4 Stormwater Management

Stormwater runoff from future roof areas on Lot 1 [inclusive Lot 2] will be collected in water tanks for domestic water supply and runoff neutrality. The overflow from the water tanks shall be discharged in a dispersive manner well away from buildings. Ground scour of land can then be considered nulled.

Similarly, stormwater from future driveway and parking / manoeuvering areas on all Lots shall be channelled toward the valleys or along the natural PFPs within the respective allotments.

21.5 Conclusion

It is considered that NO change in the existing stormwater flow paths i.e. primary flow paths shall result from the subdivision.

- Primarily, the prominent flow paths and supporting water features shall be incorporated and progressively maintained continuously to generate a sustainable equilibrium to the environment and LIFE.
- Water tanks shall be used to collect roof water runoff and serve to provide potable water.
- Roof tank overflow, together with yard and driveway runoff, shall where possible be directed to the existing flow paths through a dispersive device.

It is recommended that careful consideration/planning is exhausted with regard to Minimal Impact Footprint (MIF) of future developments hereon. As appropriate, site specific stormwater runoff effects and management applications shall be considered at such time where a development is proposed with plans depicting roof areas and other impermeable surfaces as well as the extent of the development earthworks are known for each specific Lot.

Particular reference/review shall be undertaken of this appraisal in conjunction with conducting the former. This shall provide further background information specific to the sites and existing environment conditions relative to this point in time.

All in all, the property and existing natural landscapes can sustain the proposal subject to careful planning and balancing effects of imposed activities and hosting environments. Therefore, a Low Impact Design Approach (LIDA) for stormwater management shall be the cornerstone philosophy for this development proposal.

As a consequence, sustainable effects to the environment and LIFE can be fulfilled.

22. Assessment Criteria

Stormwater management has been assessed against the Assessment Criteria in Section 13.10.4:

Table 1.8 - Far North District Plan Section 13.10.4 Assessment Criteria

Criterion	Comment
(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.	The proposed stormwater management complies with Regional Water and Soil Plan permitted activity rules.
(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).	The proposed stormwater management complies with Council's *"Engineering Standards"* (May 2023).
(c) Whether the application complies with the Far North District Council Strategic Plan -Drainage.	The proposed stormwater management complies with Far North District Council Strategic Plan - Drainage rules.
(d) The degree to which Low Impact Design principles have been used to reduce site impermeability and to retain natural permeable areas.	Natural PFPs that are present on site shall be utilised. The subdivision poses minor changes to the current lands with reduced site impermeability. Therefore, natural permeable areas are retained.
(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.	Run-off from the roof can be dispersed to the present natural flow paths.
(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.	Stormwater control practices have been designed in accordance with the TP10 publication. The existing features, as aforementioned, readily provide mitigation.
(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.	The outstanding natural water features and supporting table drains shall be readily incorporated for stormwater management in service of the collective subdivision.
(h) Whether there is sufficient capacity available in the Council's outfall stormwater system to cater for increased run-off from the proposed allotments.	Proposed lots are not connected to the Council's stormwater system. Increased runoff from the subdivision are less than minor.
(i) Where an existing outfall is not capable of accepting increased run-off, the adequacy of proposals and solutions for disposing of run-off.	Analysis of post-development flows to pre-development levels at building consent stage. The overall proposal scheme is adequate.
(j) The necessity to provide on-site retention basins to contain surface run-off where the capacity of the	The existing natural stormwater features cater for this. The subdivision will not increase 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.	rate of discharge, however the incorporation of a low impact approach i.e. water tanks and established flora occupation will slow discharge rates during peak stormwater flows.
(k) Any adverse effects of the proposed subdivision on drainage to, or from, adjoining properties and mitigation measures proposed to control any adverse effects.	None.
(l) In accordance with sustainable management practices, the importance of disposing of stormwater by way of gravity pipelines. However, where topography dictates that this is not possible, the adequacy of proposed pumping stations put forward as a satisfactory alternative.	N/A
(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.	Natural flow paths will be maintained.
(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.	Stormwater will be managed within each Lot.
(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.	N/A
(p) For any stormwater outfall pipeline through a reserve, the prior consent of the Council, and the need for an appropriate easement.	N/A
(q) The need for and extent of any financial contributions to achieve the above matters.	N/A
(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.	N/A

23. On-site Effluent Disposal

23.1 Summary of Regulatory Issues

Proposed Regional Plan for Northland (RPN) and Far North District Plan

The discharge of sewage effluent onto land is controlled by and should comply with the permitted activity rules C.6.1.3 of the Proposed Regional Plan for Northland (RPN), including;

- The volume of wastewater discharged does not exceed two cubic metres per day.
- The slope of the disposal area is not to exceed 25 degrees.
- Special provisions apply to disposal area slopes greater than 10 degrees.

The effluent disposal systems will need to be sited to avoid surface runoff and natural seepage from adjacent land, or protected by using interception drains. The disposal areas may need to be mounded above the surrounding land to ensure that the lowest point in the field complies with the Proposed Regional Plan for Northland and Far North District Plan (FNDP) rules:

- Not less than 1.2 m above the winter groundwater table for primary treated effluent and;
- Not less than 0.6 m above the winter groundwater table for secondary treated effluent.

The disposal field also needs to have minimum separation distances from watercourses and boundaries as follows (RPN Rule C6.1.3):

- Not less than 5 m from an identified stormwater flow path (including a formed road with kerb and channel, and water-table drain) that is down-slope of the disposal area.
- Not less than 20 m from any surface water for primary treated effluent.
- Not less than 15 m from any surface water for secondary treated effluent.
- Not less than 20 m from any existing groundwater bore located on any other property.
- Not less than 1.5 m from a boundary.

The Proposed Regional Plan for Northland defines ‘‘Surface Water’’ as: All water, flowing or not, above the ground. It includes water in a continuously or intermittently flowing river, an artificial watercourse, an overland flow path, and a lake and or wetland; water impounded by a structure such as a dam; and water that inundates land during flood events. It does not include water in any form while in a pipe, tank or cistern.

Surface water, as defined in NZS1547:2012, refers to: any fresh water or geothermal water in a river, lake, stream, or wetland that may be permanently or intermittently flowing. Surface water also includes water in the coastal marine area and water in man-made drains, channels, and dams unless these are purposed to specifically divert surface water away from the land application area. Surface water excludes any water in a pipe or tank.

Northland Regional Council (NRC) has concluded that, to be a permitted activity, secondary treated wastewater is to achieve a 15m setback from the 20 year ARI flood event. This is derived from Auckland Council (AC) Technical Publication (TP) 58, where it is recommended that secondary treated effluent is disposed of to ground outside of the 20 year ARI, with a further factor of safety applied being NRC's surface water setback requirement.

The following analysis ensures that the proposed on-site wastewater disposal to service the development complies with both the operative and proposed wastewater discharge rules.

24. Existing System

Servicing the existing dwelling **Lot 2** is understood to be fully operational as purposed and is contained wholly within the current boundaries. It comprises a conventional septic tank with a soakage trench as per the property records.

For proposed **Lot 1**; a typical three bedroom home is adopted. Five occupancies shall generate a total effluent of 725 L/d. Utilising a daily infiltration rate of 4mm/day gives a primary land application area of 181 + 100% reserve = 362m^2.

All in all, due to the uncertainty of the future development size in Lot 1 in this regard; The allocated area can cater for up to five bedrooms

The existing house within proposed Lot 2 will not change at post subdivision stage and therefore **Lot 1** shall constitute the feasibility hereon.

25. Design Population and System Flow Volumes

25.1 Design Occupancy Rating

It has been assumed for the purpose of this site feasibility appraisal that a three bedroom residential dwelling is adopted. In reference to TP58 Section 6.3.1, it is recommended that the design occupancy of five people is therefore adopted.

25.2 Source of Water Supply

Water is to be sourced from the onsite water supply. Flow reduction fittings may be used, but this cannot be assumed in assessing potential wastewater flows.

25.3 Design Flow Volumes

It is assumed that the house is to be fitted with standard water fixtures. Note: standard water fixtures are defined in TP58 as "*Household with 11/5.5 or 6/3 flush toilet(s) and standard fixtures, low water use*

dishwasher and NO garbage grinder". Water supply is from roof water. The associated wastewater flow allowance is 145 litres/person/day.

Total daily wastewater generation of the proposed development is calculated as follows;

$$\begin{aligned} Design\ wastewater\ generation\ rate &= Design\ occupancy\ number \times per\ capita\ design\ flow \\ &= 5\ persons\ \times 145\ litres/person/day \\ &= 725\ litres/day \end{aligned}$$

A design flow of 725 litres per day shall be adopted for the purpose of this report.

26. Design for Land Application System

26.1 Dripper Line Irrigation

There is sufficient land area available for land application of effluent disposal via a dripline system (plus 100% reserve area) within proposed Lot 1 of the subdivision of Lot 1 DP 159667.

The use of trickle irrigation disposal is sustainable for the very long term. It provides less footprint on the environment and an efficient system for distributing effluent;

- Over a much wider area;
- At an application rate low enough to be sustained by evapotranspiration without reliance on soakage, and;
- Without unduly disturbing the visual effect of the proposed land disposal area and landscaped gardens;
- Hydration for the gardens over the summer months.

26.2 Land Application System Location

The maximum slope angle for drip irrigation land disposal systems according to TP58 guidelines is 25˚. The slopes within the recommended effluent field area average 3°.

The effluent disposal system will need to be sited to avoid surface runoff and natural seepage from higher ground, or protected by using interception drains. In addition, citing restrictions listed in this report will need to be adhered to, to ensure a suitable setback from the identified overland flow paths, boundaries and buildings.

26.3 Land Application System Sizing and Design

The soils across the site were found to be TP58 category 5 or AS/NZS1547 category 4. For these soils we consider that surface or subsurface dripper lines are suitable. Dripper lines require secondary treated effluent to operate effectively. TP58 recommended a design irrigation rate for this soil of 4 mm/d.

The total length of the trickle irrigation system required (UniBioline or similar) is calculated as follows;

$$Area\ of\ dripper\ irrigation\ field = \frac{Total\ daily\ wastewater\ generation}{Design\ irrigation\ rate}$$

$$= \frac{725\ litres/day}{4\ mm/day}$$

$$= 181\ m^2$$

Ample area for proposed locations has been allowed for within the allot dimensions (Refer Annotation Report, Appendix A 1317/01) however subject to a site specific appraisal at time of future residential development.

Surface dripper lines are to be covered with 150 mm topsoil or mulch and planted using evapotranspiration plants. Access to the disposal area should be minimised by effective bordering with either vegetation or fencing.

The disposal field will be pressurised by a conventional system of using a pump. A filter is to be installed to prevent clogging of emitters. Flush/non-return valves shall be installed on all dripper lines.

26.4 Land Application System Reserve Area and Sizing

In accordance with FNDC requirements, there is space available for a 100% reserve effluent disposal area. The reserve field is required to cope with wastewater in the event of a system failure, or from underestimation of daily wastewater production.

26.5 Surface Cover of Nominated Land Application Area

Dripper lines shall be most suitable in this case considering the system versatility of application to land and minimal impact and footprint.

26.6 Loading Method

The existing system is complemented with a pump chamber for treated effluent and is controlled by float switches/alarms which would operate the pumps on demand and alert the owners should system failure occur. No other means of control is necessary.

26.7 Factors for Safety

The major factor of safety is in treatment plant capacity. The standard treatment plants have at least 50 % spare capacity, in relation to the load from a normal 3-bedroom house. Safety factors exist for disposal by the presence of 100% reserve area.

27. Design for Treatment System

27.1 Parameters affecting choice of Treatment

- Certainty for long term sustainability;
- Minimal environmental effect.

27.2 Treatment Plant Design Sizing

The naming of a proprietary secondary treatment plant will be decided by the new owner at the building consent stage, when the position and scale of the building are known. Treatment plants must meet the requirements of AS/NZS 1546.3:2008.

The system is to meet the quality output of AS/NZS 1546.3:2008, producing effluent of less than 20 g/m^3 of 5-day biochemical oxygen demand (BOD_5) and no greater than 30 g/m^3 total suspended solids (TSS), capable of consistently treating 1,087 litres/day.

The treatment plant is to be installed to the manufacturer's specification and a commissioning certificate is to be provided as is standard practice. A maintenance agreement is also to be entered into as part of the Code Compliance application.

27.3 Siting Requirements

Restrictions on siting of secondary treatment plants are:

- Invert level at inlet not less than 0.5 m below floor level;
- Greater than 3.0 m from any house;
- Greater than 1.5 m from any boundary;
- Easily accessible for routine maintenance.

27.4 Summary of Design Issues

The treatment system should be located to allow for ease of drainage from wastewater fixtures and remain accessible for servicing and maintenance.

28. FNDC On-site Effluent Disposal Policy 2008

28.1 Likelihood of Failure/ Accidental Discharge

The likelihood of a discharge from a household secondary treatment plant is less than minor. The pipe work to and within the plant when correctly installed is robust with sealed connections and buried below ground reducing the risk of accidental damage. Only the puncture of a distribution pipe would allow treated effluent to escape in a concentrated manner.

28.2 Consequence of Failure/ Accidental Discharge

In the unlikely event of some form of failure/accidental discharge, the material would have to travel in excess of 15 m over ground to reach any surface water (adopting the NRC minimum requirement of 15 m from surface water). Most, if not all, of the accidental discharge is likely to be lost to soakage over this distance and the failure should quickly become apparent.

28.3 Vegetation Planting

Trickle irrigation disposal systems rely on evapotranspiration from sub-surface irrigated lawns or covered surface irrigated landscape planting. Where new planting is required, this must be in place prior for the evapotranspiration process to begin functioning.

28.4 Conclusion

As appropriate, a site specific onsite wastewater management system appraisal, effects and management applications shall be considered at such time where a development is proposed with a floor plan and the extent of the development earthworks are known for Lot 1.

Subsequently, it is recommended that particular reference/review is undertaken of this appraisal in conjunction with conducting the former. This shall provide further background information specific to the sites and existing environment conditions relative to this point in time.

29. Assessment Criteria

Wastewater management has been assessed against the Assessment Criteria in Section 13.10.5:

Table 1.9 - Far North District Plan Section 13.10.5 Assessment Criteria

Criterion	Comment
(a) Whether the capacity, availability, and accessibility of the reticulated system is adequate to serve the proposed subdivision.	N/A.
(b) Whether the application includes the installation of all new reticulation, and 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)	N/A.
(c) Whether the existing sanitary sewage disposal system, to which the outfall will be connected, has sufficient capacity to service the subdivision.	Onsite wastewater management system shall be utilised here.
(d) Whether a reticulated system with a gravity outfall is provided, and where it is impracticable to do so, whether it is feasible to provide alternative individual pump connections (with private rising mains), or new pumping stations, complete pressure, or vacuum systems. Note: Council consent to install private rising mains within legal roads will be required, under the Local Government Act.	N/A.
(e) Where a reticulated system is not available, or a connection is impractical, whether a suitable sewage treatment or other disposal systems is provided in accordance with regional rules or a discharge system in accordance with regional rules or a discharge permit issued by the Northland Regional Council.	Site specific (alternative) onsite wastewater management system is proposed.
(f) Where a reticulated system is not immediately available but is likely to be in the near future, whether a temporary system is appropriate. Note: Consent notices may be registered against Certificates of Title pursuant to Rule 13.6.7 requiring individual allotments to connect with the system when it does become available	N/A.
(g) Whether provision has been made by the applicant for monitoring mechanisms to ensure contaminants are not discharged into the environment from a suitable sewage treatment or other disposal system, together with any consent notices to ensure compliance.	As addressed at the building consent stage.

(h) Whether there is a need for, and the extent of, any development contributions to achieve the above matters	N/A.
(i) Whether there is a need for a local purpose reserve to be set aside and vested in the Council as a site for any public sewage utility for sanitary disposal purposes required to be provided.	N/A.
(j) Whether the subdivision represents the best practical option in respect of the provision that is made for the disposal of sewage and wastewater.	The proposal of an alternative wastewater management system in accordance with TP58 is considered adequate and appropriate in support of the proposed subdivision.

Appendix A – Drawings

Drawing No.	Title	Scale
1317/01	Annotation Report	NTS
1317/02	Elevation Map	NTS
1317/03	*BOI Survey* Proposed Subdivision Plan	NTS
1317/04	Digital Elevation Model (DEM): LiDAR 1m	NTS

NTS – Not to Scale

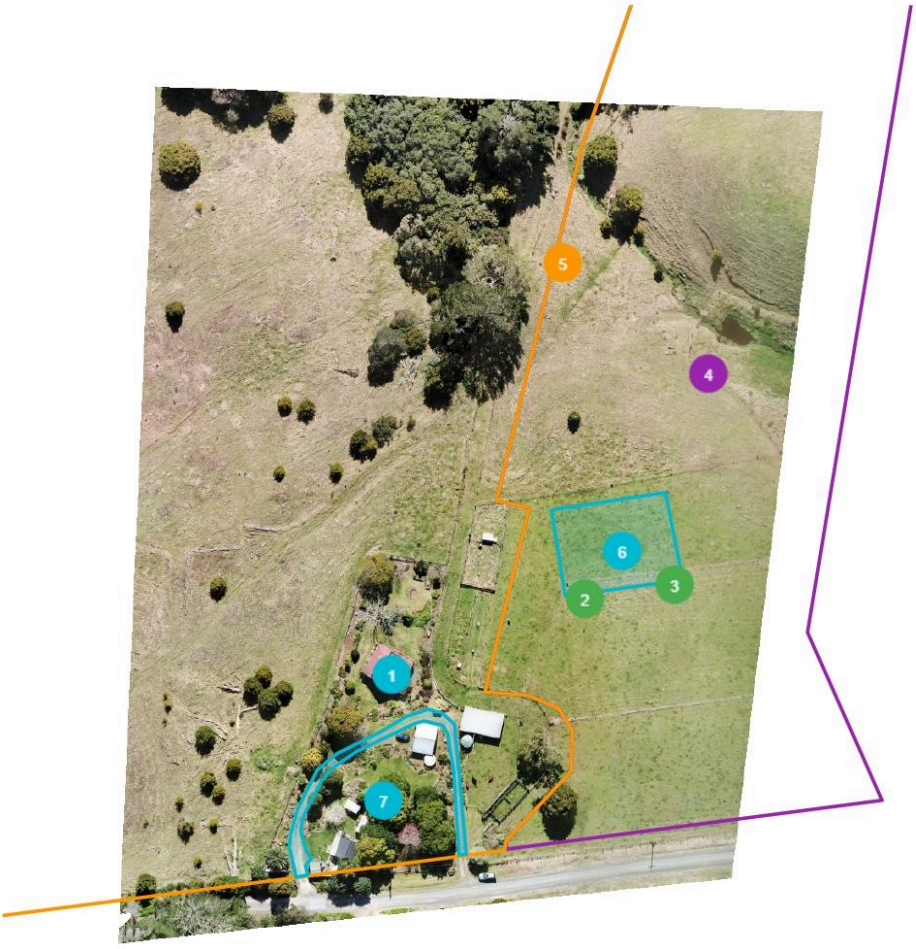
1317/01 - Annotation Report;

Gumboots Consulting Engineers Ltd

Cookson Road Annotation Report

Created on October 23, 2024

Captured on September 5, 2024



Point

NZGD2000 / Mount Eden 2000 (metre)

Label	Title	Elevation	Lat, Long	Northing, Easting
1	Existing House - Lot 2	131.53 m	-35.3886125, 174.1119880	965243.96 m, 340752.15 m
2	BH1	124.00 m	-35.3884126, 174.1126175	965266.52 m, 340809.20 m
3	BH2	124.82 m	-35.3883750, 174.1129092	965270.86 m, 340835.67 m

Distance

Label	Title	Length	Horizontal	Vertical	Slope	Surface
4	Lot 1	773.59 m	772.14 m	0 m	-1.67°, 2.91%	349.63 m
5	Lot 2	1.47 km	1.47 km	0 m	-0.59°, 1.03%	409.54 m

Area

Label	Title	Horizontal Length	Horizontal Width	Area	Surface Area
6	Developable Area	--	--	900.51 m2	903.59 m2
7	Existing Driveway	--	--	300.26 m2	435.30 m2

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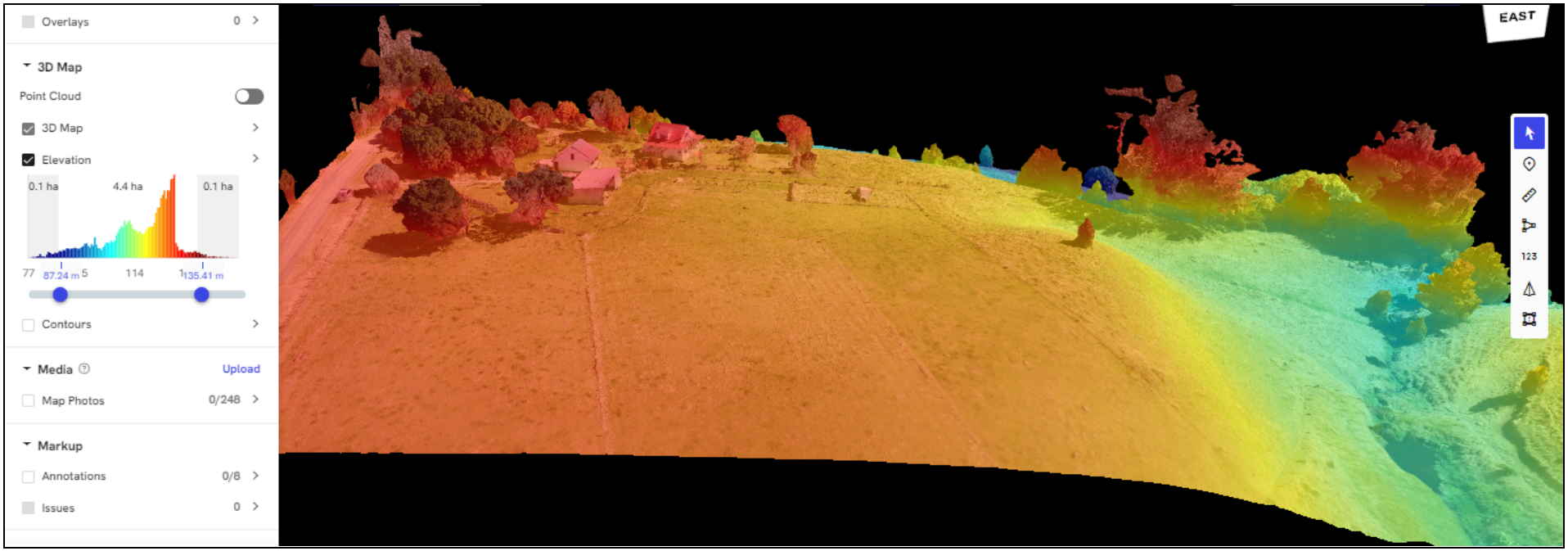
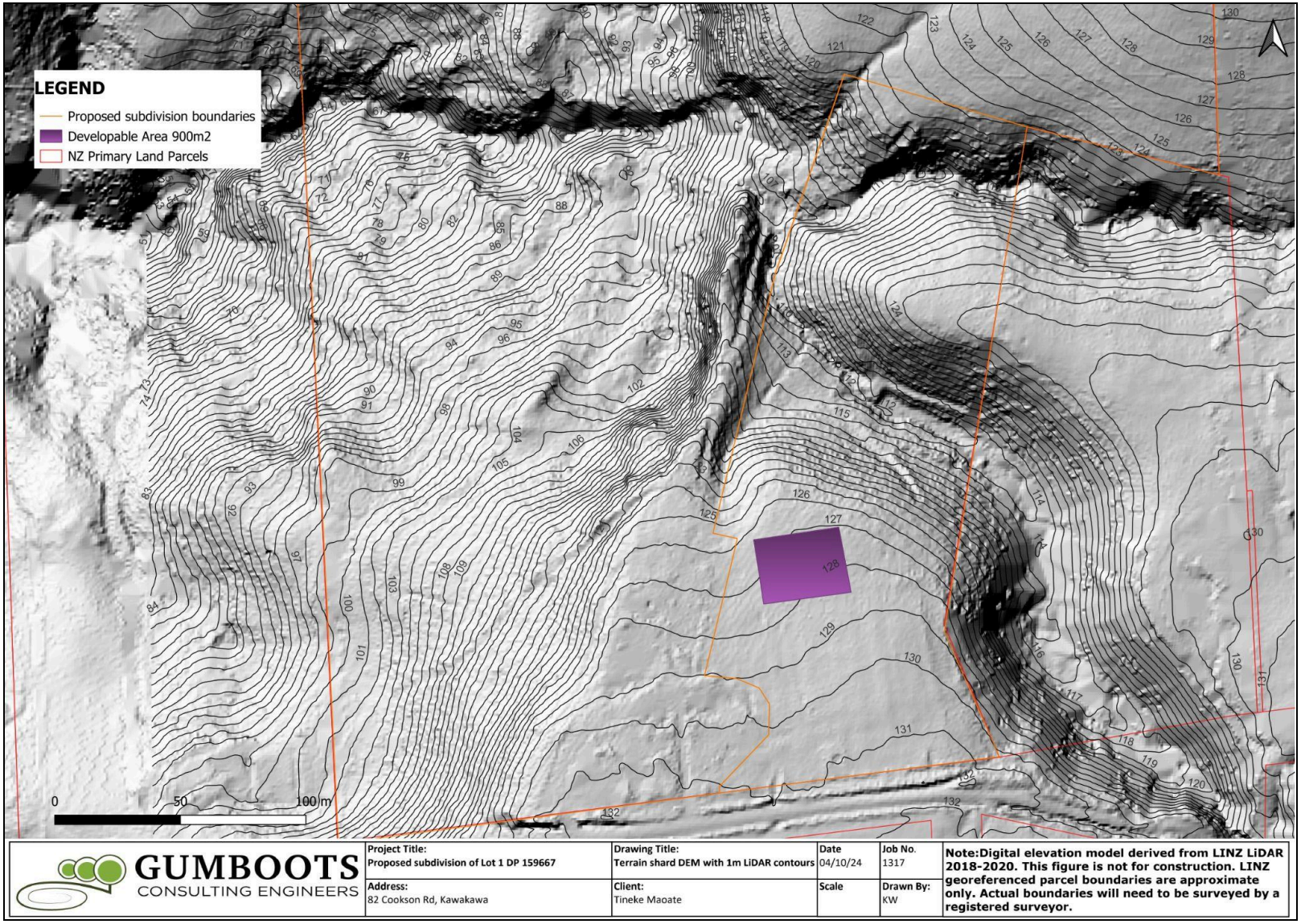
1317/02 - Elevation Map



1317/03 - *BOI Survey* Proposed Subdivision Plan;

1317/04 - Digital Elevation Model (DEM): LiDAR 1m



GUMBOOTS CONSULTING ENGINEERS	Project Title: Proposed subdivision of Lot 1 DP 159667	Drawing Title: Terrain shard DEM with 1m LiDAR contours	Date 04/10/24	Job No. 1317	Note:Digital elevation model derived from LINZ LiDAR 2018-2020. This figure is not for construction. LINZ georeferenced parcel boundaries are approximate only. Actual boundaries will need to be surveyed by a registered surveyor.
	Address: 82 Cookson Rd, Kawakawa	Client: Tineke Maoate	Scale	Drawn By: KW	

Appendix B – Exploratory Borehole Records

191 Onekura Rd
Kerikeri
Bay of Islands
New Zealand

GUMBOOTS
CONSULTING ENGINEERS

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022 187 9451
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BOREHOLE LOG No. 1 Hole Location: Refer to Site Plan **JOB No. 13 17**

CLIENT:	T&J maoate	SITE:	82 Cookson Rd, Kawakawa.		
Date Started:	5/09/2024	DRILLING METHOD:	Hand Auger	LOGGED BY:	AK
Date Completed:	5/09/2024	HOLE DIAMETER (mm)	50mm	CHECKED BY:	KW

Soil Description (Based on NZGS Logging Guidelines 2005)	Depth (m)	Graphic Log	Geology	Water Level	Sensitivity	Corrected Shear Vane Strength (kPa)	Dynamic Cone Penetrometer (blows/100mm drop)
TOPSOIL, clayey silt, grey and damp with rootlets.							
Silty CLAY, yellowish brown, very stiff, damp and high plasticy.						194	
damp,pockets of fine -medium subrounded gravels	0.5						
light brown, very stiff, dmp and high plasticity						194	
EOBH 0.80m, UTP.	1.0		Waipapa Group (TJw).	NO Groundwater Encountered.			
	1.5						
	2.0						
	2.5						
	3.0						
	3.5						
	4.0						
	4.5						
	5.0						

LEGEND

TOPSOIL CLAY SILT SAND GRAVEL FILL

Corrected shear vane reading	
Remoulded shear vane reading	
Scala Penetrometer	

UTP - Unable to Penetrate
DCP- Dynamic Cone Penetrometer
EOBH - End of Borehole
EODCP - End of DCP

Notes - Inferred refusal on corestones. As observed at the surface and half buried onsite.

Average Scala Blows	0.0
Average Soil Sensitivity	0.0

191 Onekura Rd
Kerikeri
Bay of Islands
New Zealand

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BOREHOLE LOG No. 2

Hole Location: Refer to Site Plan

JOB No. 13 17

CLIENT:	T&J maoate	SITE:	82 Cookson Rd, Kawakawa.		
Date Started:	5/09/2024	DRILLING METHOD:	Hand Auger	LOGGED BY:	AK
Date Completed:	5/09/2024	HOLE DIAMETER (mm)	50mm	CHECKED BY:	KW

Soil Description (Based on NZGS Logging Guidelines 2005)	Depth (m)	Graphic Log	Geology	Water Level	Sensitivity	Corrected Shear Vane Strength (kPa)	Dynamic Cone Penetrometer (blows/100mm drop)
TOPSOIL, clayey silt, grey and damp with rootlets.							
Silty CLAY, yellowish brown, very stiff, moist and high plasticy.	0.5		Waipapa Group (TJw).	NO Groundwater Encountered.		194	
EOBH 0.50m, UTP.	1.0					194	
	1.5						
	2.0						
	2.5						
	3.0						
	3.5						
	4.0						
	4.5						
	5.0						

LEGEND

TOPSOIL CLAY SILT SAND GRAVEL FILL

Corrected shear vane reading	
Remoulded shear vane reading	
Scala Penetrometer	

UTP - Unable to Penetrate
DCP- Dynamic Cone Penetrometer
EOBH - End of Borehole
EODCP - End of DCP

Notes - Inferred refusal on corestones. As observed at the surface and half buried onsite.

Average Scala Blows	0.0
Average Soil Sensitivity	0.0

Appendix C - Photos;

Photos 1-2 - Entrance off Cookson Road.

Photos 3-6 - Existing home and shed - proposed Lot 2

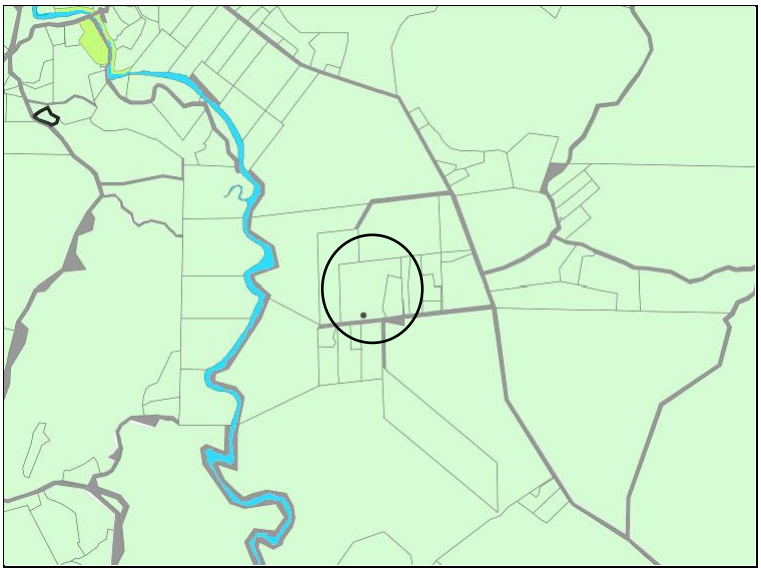
Photo 7 - Proposed Lot 1; south facing

Photos 8-16 - Proposed Lot 1; panning west to east

Photos 17-19 - Rocky outcrop observed onsite

Attachment D District Plan maps

Operative District Plan Map



Proposed District Plan Map