

Office Use Only	
Application Number:	

Pre-Lodgement Meeting

1.

	Private Bag 752, Memorial Ave
	Kaikohe 0440, New Zealand
	Freephone: 0800 920 029
	Phone: (09) 401 5200
	Fax: (09) 401 2137
	Email: ask.us@fndc.govt.nz
i	Website: www.fndc.govt.nz

APPLICATION FOR RESOURCE CONSENT OR FAST-TRACK RESOURCE CONSENT

(Or Associated Consent Pursuant to the Resource Management Act 1991 (RMA))
(If applying for a Resource Consent pursuant to Section 87AAC or 88 of the RMA, this form can be used to satisfy the requirements of Form 9)

Prior to, and during, completion of this application form, please refer to Resource Consent Guidance Notes and Schedule of Fees and Charges – both available on the Council's web page.

•		ee Consent representative to discuplied for (more than one circle	•••	to lodgement? Yes / No
O Land Use O Extension of time	0	Fast Track Land Use* Change of conditions (s.127)	⊘ Subdivision	O Discharge
_	` '	nmental Standard (e.g. Assess	J	(, , , , , , , , , , , , , , , , , , ,
O Other (please spe	ecify) land use consen	ts is restricted to consents with a co		
3. Would you li	ke to opt out	of the Fast Track Process?	Yes /	No
4. Applicant De Name/s:	stails: Stewart Gra	у		
Electronic Address for Service (E-mail):				
Phone Numbers: Postal Address: (or alternative method of service under section 352 of the Act)				
5. Address for details here). Name/s:		nce: Name and address for service (Tohu Consulting Limited)	e and correspondence (if	using an Agent write the
Naille/5.		(10 20		
Electronic Address for Service (E-mail):				
Phone Numbers:				
Postal Address: (or alternative method of service under section 352 of the Act)				

lame/	s:	Stewart Gray	
roper ocatio	ty Address/: on	18 State Highway 10 Awanui	
	ldress/	Site Details: rty Street Address of the proposed activity: 18 State Highway 10 Awanui	
egal [Description:	Lot 2 DP 86825Val Number:	
ertific	ate of Title:	NA44B/939	
		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 of	d)
there		s: or security system restricting access by Council staff? Yes / I	4 0.
there there lease	e a locked gate e a dog on the p provide details ker's details. Th	s: or security system restricting access by Council staff? Yes / I	4 0.
there there lease	e a locked gate e a dog on the provide details cer's details. The Please contained Please enter a la recognized so Notes, for further	s: or security system restricting access by Council staff? Yes / I property? Yes / I of any other entry restrictions that Council staff should be aware of, e.g. health and safety, is is important to avoid a wasted trip and having to re-arrange a second visit.	to to

9. Would you like to request Public Notification

requesting them.

10. Other Consent required/being applie ticked):	ed for under different legislation (more than one circle can be		
O Building Consent (BC ref # if known)	O Regional Council Consent (ref#ifknown)		
O National Environmental Standard conse	nt O Other (please specify)		
11. National Environmental Standard Human Health:	for Assessing and Managing Contaminants in Soil to Protect		
The site and proposal may be subject to the above NE	ES. In order to determine whether regard needs to be had to the NES please his NES is available on the Council's planning web pages):		
Is the piece of land currently being used or has it used for an activity or industry on the Hazardous List (HAIL)			
Is the proposed activity an activity covered by the any of the activities listed below, then you need to	, ·		
O Subdividing land	O Changing the use of a piece of land		
O Disturbing, removing or sampling soil	O Removing or replacing a fuel storage system		
12. Assessment of Environmental Effect	ts:		
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.			
Please attach your AEE to this application.			
13. 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 all names in full) Stewart Gray			
Email:			
Postal Address:			
Phone Numbers:			
for it to be lodged. Please note that if the instalment fee is	olication is payable at the time of lodgement and must accompany your application in order insufficient to cover the actual and reasonable costs of work undertaken to process the . Invoiced amounts are payable by the 20^{th} of the month following invoice date. You may tion requires notification.		
processing this application. Subject to my/our rights under stuture processing costs incurred by the Council. Without lir collection agencies) are necessary to recover unpaid procapplication is made on behalf of a trust (private or family), a	and that the Council may charge me/us for all costs actually and reasonably incurred in Sections 357B and 358 of the RMA, to object to any costs, I/we undertake to pay all and miting the Far North District Council's legal rights if any steps (including the use of debt cessing costs I/we agree to pay all costs of recovering those processing costs. If this is society (incorporated or unincorporated) or a company in signing this application I/we are sts and guaranteeing to pay all the above costs in my/our personal capacity.		

(please print)

(signature of bill payer – mandatory)

11/09/2024

Date:

Name: Stewart Gray

Signat

14. Important Information:

Note to applicant

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

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

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

Fast-track application

Under the fast-track resource consent process, notice of the decision must be given within 10 working days after the date the application was first lodged with the authority, unless the applicant opts out of that process at the time of lodgement. A fast-track application may cease to be a fast-track application under section 87AAC(2) of the RMA.

Privacy Information:

Once this application is lodged with the Council it becomes public information. Please advise Council if there is sensitive information in the proposal. The information you have provided on this form is required so that your application for consent pursuant to the Resource Management Act 1991 can be processed under that Act. The information will be stored on a public register and held by the Far North District Council. The details of your application may also be made available to the public on the Council's website, www.fndc.govt.nz. 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.

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

Name: Nina Pivac	(please print)		
Signat	(signature)	Date:	18 September 2024
(A signature is not required if the application is made by elec	tronic means)		

Checklist (please tick if information is provided)

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

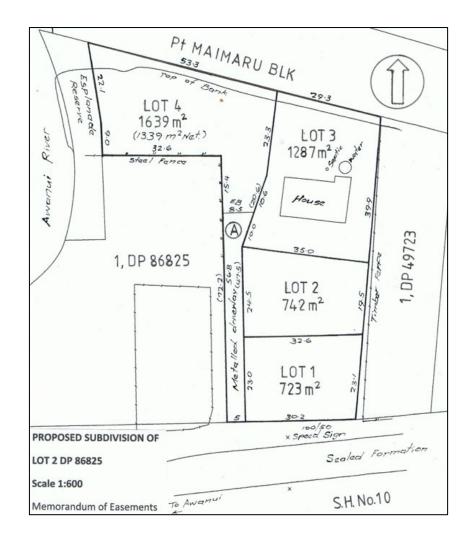
Please refer to Chapter 4 of the District Plan for details of the information that must be provided with an application. Please also refer to the RC Checklist available on the Council's website. This contains more helpful hints as to what information needs to be shown on plans.

Only one copy of an application is required, but please note for copying and scanning purposes, documentation should be:

UNBOUND

SINGLE SIDED

NO LARGER THAN A3 in SIZE



CONTROLLED SUBDIVISION APPLICATION

18 STATE HIGHWAY 10 (SH10), AWANUI LOT 2 DP 86825

ASSESSMENT OF ENVIRONMENTAL EFFECTS

PREPARED FOR:
STEWART DAVID GRAY

18 September 2024 REV A



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Appendix A – Scheme Plan

Appendix B – Certificate of Title

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1.0 THE APPLICANT AND PROPERTY DETAILS

То:	Far North District Council
Site address:	18 State Highway 10 Awanui
Applicant's name:	Stewart David Gray
Address for service:	Tohu Consulting Limited
	Attn: Nina Pivac
	50-64 Commerce Street
	Kaitaia 0410
Legal description:	Lot 2 DP 86825
Site area:	4391m ²
Site owner:	Stewart David Gray
Operative District Plan zoning:	Residential Zone
Operative District Plan	Partially flood susceptible
overlays/resource areas:	
Proposed District Plan zoning:	General Residential Zone
Proposed District Plan	River Flood Hazard – 100 Year ARI
overlays/resource areas:	River Flood Hazard – 10 Year ARI
	Treaty Settlement Area of Interest
	Designation (ref. NZTA2)
	Airport Protection Surfaces
Brief description of proposal:	A controlled subdivision to create three additional allotments in the
	Residential Zone, resulting in the following lot areas:
	• Lot $1 - 723m^2$
	• Lot $2 - 742m^2$
	 Lot 3 - 1287m² (contains existing dwelling)
	• Lot 4 – 1639m²
Summary of reasons for consent:	Overall, the proposal is a Controlled Activity

We attach an assessment of environmental effects that corresponds with the scale and significance of the effects that the proposed activity may have on the environment.

AUTHOR

Nina Pivac

Miar

Director | BAppSC | PGDipPlan | Assoc. NZPI

Date: 18 September 2024



2.0 PROPOSAL

The applicant, Stewart Gray, proposes to undertake a controlled subdivision in the Residential Zone. The proposed subdivision will result in the following lot areas:

- Lot 1 723m²
- Lot 2 742m²
- Lot 3 1287m² (contains existing dwelling)
- Lot 4 1639m²

Overall, the proposal is a Controlled Activity under the Operative District Plan.

A Site Suitability Report has been prepared in support of this application, see Appendix C.

The following Assessment of Environmental Effects (AEE) has been prepared in accordance with the requirements of Section 88 of and Schedule 4 of the Resource Management Act 1991 (the Act) and is intended to provide the information necessary for a full understanding of the activity for which consent is sought and any actual or potential effects the proposal may have on the environment.

3.0 SITE CONTEXT

The subject site is situated at 18 State Highway 10, Awanui and is legally described as Lot 2 DP 86825 (NA44B/939). The site has a current land area of 4391m². A copy of the relevant Certificate of Title (CT) is attached as **Appendix B**. There are no relevant encumbrances registered on the title.



Figure 1: Map showing subject site and surrounds (Premise)



The subject site is zoned Residential under the ODP, and is mapped as partially flood susceptible by NRC.

Under the PDP, the site is zoned General Residential and is subject to following overlays:

- River Flood Hazard 100 Year ARI
- River Flood Hazard 10 Year ARI
- Treaty Settlement Area of Interest
- Designation (ref. NZTA2)
- Airport Protection Surfaces

In terms of existing built development, proposed Lot 3 contains an existing dwelling as per previous Council approvals, namely BP23502, BP23385 and BC-2013-1302.

Access to the site is currently gained via an existing vehicle crossing off SH10. The proposed ROW will be upgraded to Council's Engineering Standards. Written approval has been provided by NZTA as per **Appendix D.**

The subject site is located central to the Awanui Township and the immediate surrounding environment is largely characterised by commercial and residential activities. Adjacent properties are similarly zoned Residential.

Council reticulated services including sewer are available to the site, as confirmed by Council's IAM Department (see **Appendix E**).

NZAA has not mapped any archaeological sites in the area.

The site does not contain any areas of significant indigenous vegetation or fauna.



Figure 2: View of the subject site from SH10 (Google Streetview)



4.0 DISTRICT PLAN RULES ASSESSMENT

SUBDIVISION:

Industrial Zone	Relevant Standards	Compliance
Rule 13.7.2.1(vii) Subdivision in the Industrial Zone (minimum lot sizes)	Controlled: 3000m2 (unsewered) and 500m2 (sewered)	With a minimum lot size of 723m², the proposed subdivision is able to meet the controlled activity standards. Controlled

LANDUSE:

An assessment of all relevant landuse provisions has been undertaken where they relate to the existing dwelling within proposed Lot 3:

Residential Zone	Relevant Standards	Compliance
7.6.5.1.1 RELOCATED BUILDINGS	Not applicable	Not applicable
7.6.5.1.2 RESIDENTIAL INTENSITY	Sewered: one unit per 600m ² Unsewered: 3000m ²	Each lot will have a minimum of 600m ² net site area
		Permitted
7.6.5.1.3 SCALE OF ACTIVITIES	Not applicable	Not applicable. Only residential activities proposed.
7.6.5.1.4 BUILDING HEIGHT	Maximum building height of 8m	The existing dwelling is less than 8m in height.
		Permitted
7.6.5.1.5 SUNLIGHT	2m + 45 degree recession plane	All existing built development will remain compliant with this recession plane.
		Permitted
7.6.5.1.6 STORMWATER MANAGEMENT	Maximum impermeable surface area of 50%	Existing impermeable surfaces within proposed Lot 3 equates to approximately 310m² (24%) which falls well below the permitted threshold.
		Permitted
7.6.5.1.7 SET BACK FROM BOUNDARIES	No setback required for a maximum total length of 10m along any one boundary, otherwise 1.2m setback	All existing built development will remain compliant with all setback requirements.
	required.	Planting along the road boundary will be provided.



Residential Zone	Relevant Standards	Compliance
	No less than 50% of a 2m wide strip along the road boundary shall be landscpaed .	Permitted
7.6.5.1.8 SCREENING FOR NEIGHBOURS - NON- RESIDENTIAL ACTIVITIES	Not applicable	Not applicable
7.6.5.1.9 OUTDOOR ACTIVITIES	Not applicable	Not applicable
7.6.5.1.10 VISUAL AMENITY	Not applicable	Not applicable
7.6.5.1.11 TRANSPORTATION	Two onsite parking spaces and adequate manoeuvring area to be provided per unit ROW to be constructed to Council's Engineering Standards, to the approval of NZTA	Each lot will have ample parking and manoeuvring area. NZTA have provided their written approval, see Appendix D. Permitted
7.6.5.1.12 SITE INTENSITY - NON-RESIDENTIAL ACTIVITIES	Not applicable	Not applicable
7.6.5.1.13 HOURS OF OPERATION - NON- RESIDENTIAL ACTIVITIES	Not applicable	Not applicable
7.6.5.1.14 KEEPING OF ANIMALS	Not applicable	Not applicable
7.6.5.1.15 NOISE	Not applicable	Not applicable
7.6.5.1.16 HELICOPTER LANDING AREA	Not applicable	Not applicable
7.6.5.1.17 BUILDING COVERAGE	Maximum building coverage of 45%	Existing building coverage within proposed Lot 3 equates to approximately 215m² (16.71%) which falls well within the permitted threshold. Permitted

Overall, the proposal requires resource consent as a **Controlled Activity** under the Far North District Plan.



5.0 ASSESSMENT OF ENVIRONMENTAL EFFECTS

Table 2 – Rule 13.7.3 Controlled (subdivision) activities: other matters to be taken into account

Criteria	Comment
13.7.3.1 Property Access	Access to the site is currently gained via an existing vehicle crossing off SH10. A ROW easement will be created to serve Lots 1 to 4, and will be constructed in accordance with Council's Engineering Standards. NZTA have provided their written approval (see Appendix D), and have stated that "they support that the access is upgraded to FNDC's Engineering Standards, to be confirmed by Council as to which standards."
13.7.3.2 Natural and Other Hazards	The subject site is shown to be susceptible to river flood hazards 10 year, and 100 year flood extents as mapped by NRC. The Site Suitability Report attached as Appendix C provides a comprehensive assessment of the relevant natural hazards. Overall, the report concludes that natural hazards will not be exacerbated by the proposed development subject to the implementation of a number of mitigation measures which include:
	 All dwellings (including foundations) within the subdivision to be specifically engineer designed by a CPEng experienced in geotechnical engineering; The stability of the building area, and the land appurtenant to the building area, within Lots 3 and 4 is to be assessed by a CPEng experienced in geotechnical engineering once building platforms are identified (noting that, in regard to Lot 3 which already contains a lawfully established dwelling, this requirement should only apply to new development.); All dwellings, except the existing dwelling within Lot 3, to have finished floor levels (FFL) oat 3.5m OTP; Existing vegetation to be maintained where possible.
13.7.3.3 Water Supply	Connections to Council's reticulated water supply is not available to this site. Water supply will be achieved by way of roofwater collection.
13.7.3.4 Stormwater Disposal	Specific stormwater management for each lot will be designed in accordance with Council's Engineering Standards at the time of building consent. The Site Suitability Report states that:



Criteria	Comment
	"Given the position of the site within the catchment and inter-tidal oxbow adjacent to the site, attenuation of stormwater generated from the site is not recommended.
	It is recommended that all concentrated stormwater discharges from house sites can be piped to the existing drainage channels to prevent water soaking into the ground. Disposal of stormwater that relies on soakage should not be permitted.
	It is recommended that a stormwater drain is constructed along the eastern boundary of the site o.e. within proposed Lots 1-3, with water to be discharged into the drainage channel at the northeastern cornder of the site."
13.7.3.5 Sanitary Sewage	The subject site is in an AoB for sewer. Connections are available as
Disposal	per IAMs correspondence attached as Appendix E.
13.7.3.6 Energy Supply	Top Energy has been contacted in regard to the proposed development. No response has been received as yet. This will be emailed through once received.
13.7.3.7 Telecommunications	Wireless telecommunication connnections are available to the site.
13.7.3.8 Easements for any purpose	As per the scheme plan, all necessary easements will be provided.
13.7.3.9 Preservation of heritage resources, vegetation, fauna and landscape and land set aside for conservation purposes.	Not applicable. The site does not contain any such features.
13.7.3.10 Access to reserves and	Public access to reserves and waterways will not be affected by the
waterways	proposal. An Esplanade Reserve already exists between the subject site and Awanui River.
13.7.3.11 Land use compatibility	Surrounding properties are similarly zoned Residential.
	The proposal is not considered to set a precedent in terms of lot sizes as the surrounding area is largely characterised by residential development.
	Due to the existing pattern of development in the area, it is not considered that there are any adverse cumulative effects. The proposal will not result in degradation of the character of the surrounding residential environment.
13.7.3.12 Proximity to airports	Not applicable
	I .



6.0 STATUTORY CONSIDERATIONS

NES CONTAMINATED SOILS (NESCS)

All applications that involve subdivision, or an activity that changes the use of a piece of land, or earthworks are subject to the provisions of the NESCS. The regulation sets out the requirements for considering the potential for soil contamination, based on the HAIL (Hazardous Activities and Industries List) and the risk that this may pose to human health as a result of the proposed land use.

Based on a search of Council records and historic aerial images, along with discussions with the applicants who have owned the property for generations, there is no evidence to suggest that a HAIL activity has been undertaken on the subject site. Therefore, no further assessment is required under the NES Contaminated Soils.

NES FRESHWATER (NESFW)

A review of aerial images, including NRC's wetland maps, reveal no evidence to suggest that there are any wet areas that may be subject to the NES Freshwater provisions. Therefore, no further assessment is required under the NES Freshwater.

NATIONAL POLICY STATEMENT FOR HIGHLY PRODUCTIVE LAND (NPSHPL)

As the site is zoned Industrial, the NPSHPL is not applicable in this instance.

NATIONAL POLICY STATEMENT FOR INDIGENOUS BIODIVERSITY (NPS-IB)

As discussed earlier in the report, the subject site does not contain any significant areas of indigenous vegetation or habitats of indigenous fauna. The NPS-IB is therefore not relevant to this application.

NEW ZEALAND COASTAL POLICY STATEMENT

The New Zealand Coastal Policy Statement is not relevant to this application.

OPERATIVE FAR NORTH DISTRICT PLAN

Relevant ODP objectives and policies are those contained within the subdivision, transportation, Urban Environment and Residential Zone chapters. As a controlled activity, the proposed activity is considered to be consistent with all relevant objectives and policies of the Far North District Plan.

PROPOSED FAR NORTH DISTRICT PLAN

As of Monday 4 September 2023, the further submission period on the PDP has closed. However, Council are yet to make a decision on submissions made and publicly notify this decision. Therefore, the application shall only 'have regard to' the relevant objectives and policies in the PDP.



Relevant objectives and policies in the PDP are contained within the Subdivision and General Residential Zone Chapters. Based on the AEE, it is considered that the proposal is largely consistent with the anticipated outcome of the relevant objectives and policies, particularly the following:

- SUB-01
- SUB-P1
- SUB-P3
- SUB-P8
- SUB-P11
- GRZ-01 to GRZ-06
- GRZ-P1 to GRZ-P8

7.0 NOTIFICATION

S95A of the RMA determines circumstances when public or limited notification of an application may be appropriate. Section 95A sets out a series of steps for determining public notification. These include:

- Step 1 Mandatory public notification in certain circumstances. In respect of this
 application, the applicant is not seeking public notification, nor is it subject to a
 mandatory notification requirement.
- Step 2 Public notification precluded in certain circumstances. The proposal is a controlled activity. Public notification is therefore precluded.

Section 95b sets out a series of steps for determining limited notification. These include:

- Step 1 certain affected groups and affected persons must be notified. These include
 affected customary rights groups or marine title groups (of which there are none relating
 to this application). Affected groups and persons may also include owners of adjacent
 land subject to statutory acknowledgement if that person is affected in accordance with
 s95E. There are no groups or affected persons that must be notified with this application.
- Step 2 limited notification precluded in certain circumstances. These include any rule or national environmental standard that precludes limited notification, or the activity is solely for a controlled activity or a prescribed activity. The proposed boundary adjustment is a controlled activity. Limited notification is therefore precluded.

In respect of this application, an assessment of effects on the environment has concluded that in all potential effects it can be concluded that adverse effects are less than minor.

Section 95C relates to the public notification after a request for further information which does not apply to this application.



Section 95D provides the basis for determining notification under Section 95A(8)(b) if adverse effects are likely to be more than minor. This assessment concludes that potential adverse effects arising from this proposal would not be more than minor.

8.0 OVERALL CONCLUSION

This application seeks resource consent to undertake a controlled subdivision in the Residential Zone.

Based on the assessment of effects above, it is concluded that any potential adverse effects on the existing environment would be no more than minor and can be managed in terms of appropriate conditions of consent.

NZTA have provided written approval.

It is therefore concluded that the proposal satisfies all matters the consent authority is required to assess, and that the application for resource consent can be granted on a non-notified basis.

Prior to the issue of any decision for this consent, it is requested that all draft conditions are forwarded to the agent for review and comment.

AUTHOR

Nina Pivac

Director | BAppSC | PGDipPlan | Assoc. NZPI

Date: 18 September 2024

Appendices:

Appendix A - Scheme Plan

Appendix B – Certificate of Title

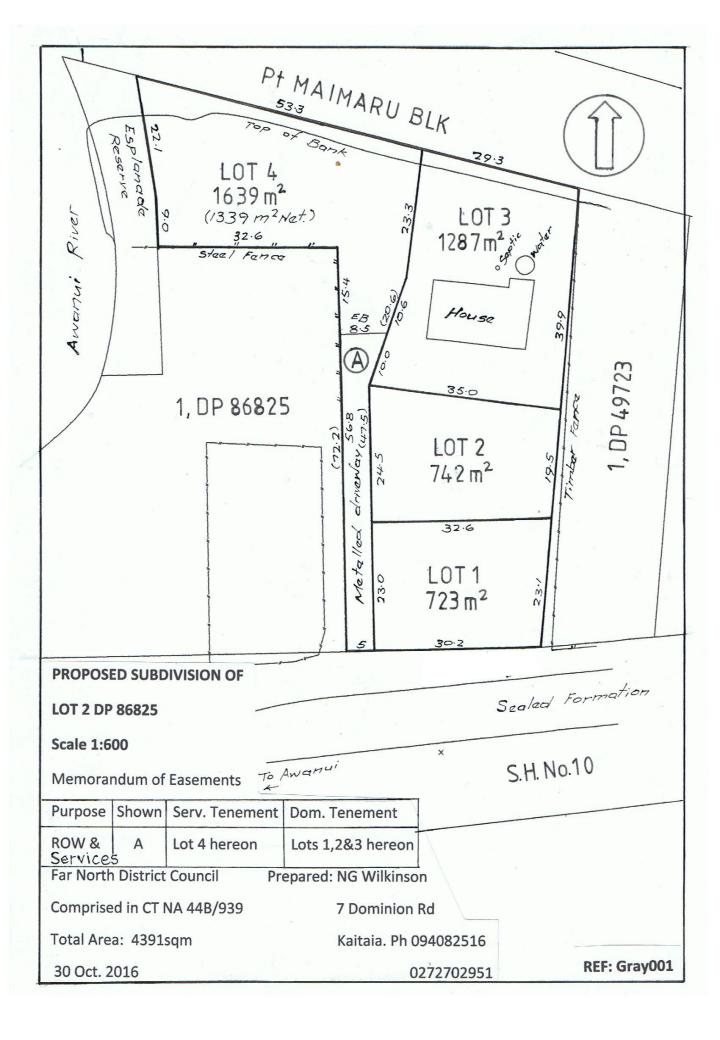
Appendix C – Site Suitability Report

Appendix D – NZTA Approval

Appendix E - IAMs Correspondence



Appendix A – Scheme Plan



Appendix B – Certificate of Title



RECORD OF TITLE UNDER LAND TRANSFER ACT 2017 FREEHOLD



Guaranteed Search Copy issued under Section 60 of the Land Transfer Act 2017

R.W. Muir Registrar-General of Land

Identifier NA44B/939

Land Registration District North Auckland

Date Issued 26 January 1979

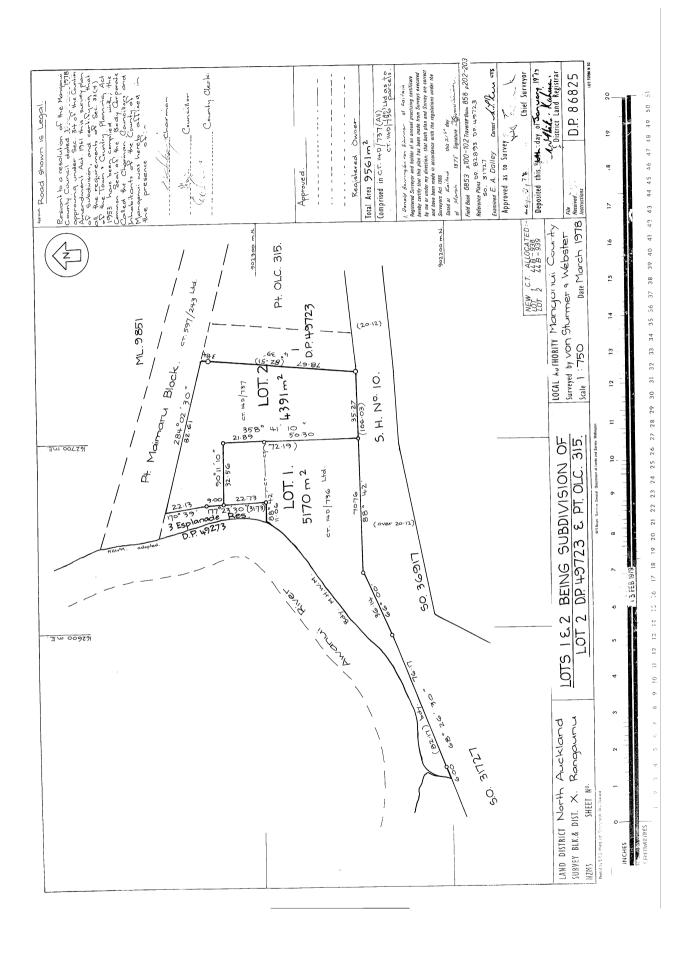
Prior References NA14D/737

Estate Fee Simple

Area 4391 square metres more or less
Legal Description Lot 2 Deposited Plan 86825

Registered Owners Stewart David Gray

Interests



Appendix C – Site Suitability Report

Appendix D – NZTA Approval

From: Ash Peti
To: Nina Pivac

Subject: Subdivision enquiry - 18 State Highway 10, Awanui - Application-2024-1058 CRM:0490000038

Date: Tuesday, 27 August 2024 2:46:51 pm

Attachments: image.png

5307. Approval letter (1).pdf

Kia ora Nina

Thank you for engaging with NZTA for preliminary comments to your client's query regarding their property at the above address.

They may have told you that they have previously engaged with us for comments, the earliest correspondence I can see on file is from 2016 which we provided them with conditional approval for, see attached.

Having discussed this with our network team yesterday, they have confirmed that we would support that the access is upgraded to Far North District Council's engineering standards, to be confirmed by Council as to which standards (as opposed to our standards as originally sought). As we don't yet have a copy of a proposed scheme plan (assuming that it may have changed since 2016), we would also seek to apply for apply reverse sensitivity conditions (by way of a consent notice) regarding noise, which would apply to any of the proposed lots in or partly within 100m of the state highway.

Please note that the comments above are preliminary as requested and subject to being confirmed via formal approval. Please come back to me if you have any questions and/or seek to progress with wanting NZTA's formal approval to a subdivision of this property.

Kind regards,

Ashleigh Peti (she/her)

Intermediate Planner, Poutiaki Taiao (Environmental Planning)

System Design | Transport Services

Email: ash.peti@nzta.govt.nz
Phone: +64 7 987 2711

NZ Transport Agency Waka Kotahi

Tauranga Office, Level 3, Harrington House, 32 Harington Street PO Box 13055, Tauranga Central, Tauranga 3141, New Zealand



www.nzta.govt.nz

Morena,

Our client is exploring the feasibility of subdividing their property at 18 State Highway 10, Awanui (Lot 2 DP 86825). He wishes to split the property into a total of 3-4 residential lots, depending on NZTA requirements. Access will be gained to each lots via one ROW off SH10.

Please can you provide preliminary comments and advise whether NZTA have any concerns.

Feel free to give me a call on 0210614725 if you have any questions.

Figure 1: Subject site



Ngā Mihi,



Nina Pivac Director | BAppSc | PGDip Planning | Assoc NZPI Mobile 021 061 4725 Email nina@tohuconsulting.nz Web www.tohuconsulting.nz

This message, together with any attachments, may contain information that is classified and/or subject to legal privilege. Any classification markings must be adhered to. If you are not the intended recipient, you must not peruse, disclose, disseminate, copy or use the message in any way. If you have received this message in error, please notify us immediately by return email and then destroy the original message. This communication may be accessed or retained by Waka Kotahi NZ Transport Agency for information assurance purposes.

Appendix E – IAMs Correspondence

To: Subject: stewart.gray@gmail.con FW: RFS 4209717 Monday, 15 July 2024 12:31:07 pm Date: Attachments: image010.jpg image011.png image011.png image013.png image014.png nage014.png nage015.png nage016.ipg nage018.png nage019.png nage001.png Hi Stuart, Please see below FYI. Kind regards Didi Paraone Senior RMA Support Officer - Resource Consents Administration P 6494070412 | didi.paraone@fndc.govt.nz Te Kaunihera o Te Hiku o te Ika | Far North District Council Pokapū Kōrero 24-hāora | 24-hour Contact Centre 0800 920 029 ? ? ? ? From: Sujeet Tikaram < Sujeet. Tikaram@fndc.govt.nz> Sent: Monday, July 15, 2024 12:27 PM **To:** Didi Paraone < didi.paraone@fndc.govt.nz> Subject: RE: RFS 4209717 Hi Didi, Please see snip below. 18 SH10 Awanui is within the sewer area of benefit, so depending on the number of connections, additional low pressure connections to the Council system can be allowed in principle. Cheers Sujeet Tikaram Development Engineer - Infrastructure Strategy M 027 566 1191 | P 6494015376 | Sujeet.Tikaram@fndc.govt.nz An alliance between Far North District Council and Ventia Pokapū Kōrero 24-hāora | 24-hour Contact Centre 0800 920 029 ???? ? From: Stewart Gray < stewart.gray@gmail.com> **Sent:** Monday, July 15, 2024 11:23 AM

Didi Paraone

From:

Subject: Re: RFS 4209717

CAUTION: This email originated from outside Far North District Council.

To: Didi Paraone < didi.paraone@fndc.govt.nz >

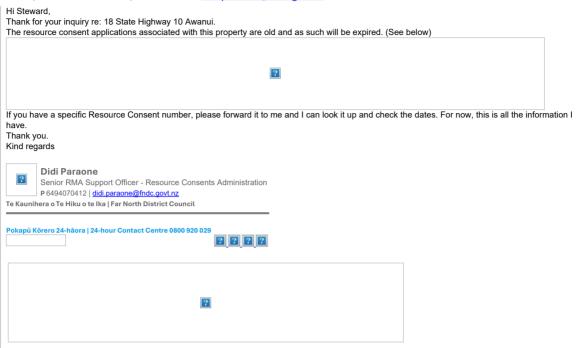
Thanks Didi,

I did a little more digging around and apparently it didn't get to the point where it was submitted to fndc yet.

I started speaking to a planner about this development and they mentioned some of the recent applications for connections to the sewage system in Awanui were being denied. Are you able to provide any guidance around this? Ie is there capacity currently. Kind regards,

Stewart

On Wed, 26 Jun 2024 at 11:16, Didi Paraone didi.paraone@fndc.govt.nz wrote:



 $\frac{Q_1^2dD}{gD^3dx} = \frac{v^2}{gD}$ Dave Gray

$$+ s_1 = \frac{{v_2}^2}{2g} + D_2 + .$$

18 STATE HIGHWAY 10, LOT 2 DP86825, AWANUI

 $s_1 - s$

 $\left(D_1 + \frac{v_1}{2g}\right)$

SITE SUITABILITY REPORT

Vision Project Ref: 12778 2/12/2016

Report Information Summary

Job no.	12778
Report Author	Dan Simmonds
Report Reviewer	Ben Perry
Version No.	1
Status	RC APPLICATION
Date	2/12/2016

Version No.	Date	Description
1	2/12/2016	Issued for RC Application



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APPENDICES

Appendix A - NG Wilkinson subdivision layout plan

Appendix B – Flooding Assessment – NRC

Appendix C – Extracts from Hazard Maps



1 INTRODUCTION

Vision Consulting Engineers Limited (VISION) was commissioned by Dave Gray to provide a site suitability report to accompany a resource consent application to the Far North District Council (FNDC) for the residential subdivision of Lot 2 DP86825, 18 State Highway 10, Awanui. It is proposed to subdivide the land into 4 residential lots, refer to attached proposed subdivision plan produced by NG Wilkinson (dated 30 October 2016) in Appendix A.

2 SCOPE OF WORK

The scope of work for the site suitability report is to assess stormwater, wastewater, vehicle access, earthworks, natural hazards and water supply (including fire fighting) for the proposed development as defined on the proposed subdivision plan in Appendix A.

The site suitability report is based on published and unpublished information about the site, including:

- Information obtained from FNDC and Northland Regional Council (NRC) maps (hazards, services, etc.),
- NRC flooding hazard assessment,
- Published geology and soil information,
- Historic aerial photography.

The assessment also included a site visit to verify the information obtained during the desktop study and to map relevant site features.

3 INDUSTRY GUIDANCE

This report has been prepared in accordance with the requirements of the Far North District Council Engineering Standards & Guidelines 2004 - Revised March 2009 and with reference to the District Plan; Section 106 of the Resource Management Act (RMA) and NZS4404:2010.



4 SITE DESCRIPTION

4.1 Existing Site & Walkover Observations

The proposed subdivision is located in the township of Awanui, at Lot 2 DP86825, State Highway 10. The site is approximately 4,391 m² and it is estimated to be between 2 to 3 m One Tree Point Datum (OTPD). The majority of the site is covered in grass and a row of mature trees is present along the northern border. The site is bounded by State Highway 10 to the south, and residential properties to the north, east and west. A house and a driveway are currently present at the site.

Two waterways are located directly to the west (ox-bow of the Awanui River) and north (a wide drainage channel) of the site. The watercourses join Awanui River approximately 200 m to the northeast of the site. The Awanui River discharges into the Rangaunu Harbour 3.5 km to the north of the property.

At the northern boundary of the site, the land slopes steeply down into the drainage channel. Signs of shallow instability were observed on these steep banks in the form of tension cracks and over steepened slopes. To the west of the site, timber poles with timber pole lagging form a berth for boats. Signs of erosion behind the wall was observed at some locations where material behind the wall has been eroded away.

General site location maps are presented in Figure 1 below.

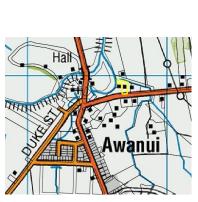




Figure 1 – Site Location Plan (site boundary indicative only).



4.2 Proposed Development

The proposed subdivision plan included in Appendix A presents the subdivision of Lot 2 DP86825 which involves subdividing the site into 4 new lots, Lots 1 to 4, with all lots proposed to be residential lots. The lots range in size from 723 to 1,639m².

A metalled shared right of way providing access to all 4 lots is proposed to be located along the western boundary of the property.

4.3 Geology and soils

The 1:250,000 geological map of Kaitaia¹ indicates that the site is underlain by unconsolidated to poorly consolidated sand, peat, mud and shell deposits of estuarine, lacustrine, swamp, alluvial and colluvial origin belonging to the Karioitahi Group. Soils are mapped on the Land Use Capability Classification of the Northland Region maps² as gley soils of the Kaipara suite: Kaitaia clay loam, described as imperfectly to poorly-drained.

4.4 District Plan Zoning

The site is zoned Residential with respect to the Far North District Council District Plan.

4.5 Council hazard mapping

The Northland Regional Council (NRC) and Far North District Council (FNDC) hazard layers have been reviewed. According to the NRC and FNDC hazard layers the site <u>is</u> located in an area susceptible to:

- Inland Flooding (inundation):
 - NRC modelling shows the site mainly susceptible to the 100-year recurrence flooding event and a small area of the proposed Lot 4 to be susceptible to 1 in 10-year flooding.
 - FNDC catchment modelling shows the site as susceptible to flooding during both the 1 in 10 and 1 in 100-year flood events. The modelled flood zone extends along the northern boundary of the site.

² Harmsworth, G. R. 1996. Land Use Capability Classification of the Northland Region. A report to accompany the second edition (1:50 000) NZLRI worksheets. Landcare Research Science Series 9. Lincoln, Manaaki Whenua Press. 269 p.



Page 6

¹ Edbrooke, S.W.; Brook, F.J. (compilers) 2009: Geology of the Whangarei area. Institute of Geological & Nuclear Sciences 1:250,000 geological map 2. 1 sheet +68 p. Lower Hutt, New Zealand. GNS Science.

- Coastal Flooding (inundation): Tonkin & Taylor Coastal Flood Mapping (2016) produced for the NRC for land potentially vulnerable to coastal storm surge show the site outside of the 2065 planning horizon (draft CFHZ1) but within the 2115 planning horizon (draft CFHZ2 2115).
- Tsunami: NRC maps indicate that the site is located within the tsunami evacuation zone (yellow)
- Special soils NRC maps indicate that the site is underlain by gley soils (flood susceptible land)

The flooding, tsunami and special soils hazards identified as affecting the property are further addressed in Section 6 below.



According to the NRC and FNDC hazard layers the site the site is <u>not</u> located in an area susceptible to:

- Landslide
- Erosion
- Coastal Hazards

5 GROUND CONDITIONS

5.1 Subsurface Conditions

No ground investigations have been carried out at the site as part of this report.

As described in the Geology section above, the site is expected to be underlined by alluvial sediments and clay soils.

5.2 Groundwater

Groundwater levels were not measured as part of this report. Groundwater level is expected to be less than 1 m bgl (inferred).

Standing water was identified in two small depressions (0.3 m in width) midway along the southern boundary of proposed lot 4. The source of the water is unknown, it is possible that it represents a locally perched water table or more impermeable underlying soils. It had rained within 24 hours of undertaking the site visit making it difficult to assess the source of the surface water.

6 NATURAL HAZARDS

With regard to the natural hazards included in RMA Section 106, the following sections are considered relevant to this subdivision:

6.1 Erosion and avulsion

The review of historic aerial photography indicates that the course of the nearby watercourses has remained relatively unchanged since 1951. At some point since 1951, the Awanui River was straightened, so that water no longer flows through the oxbow adjacent to the site. The bank of the oxbow has been modified through the construction of a retaining wall along the esplanade reserve near proposed Lot 4. Given the flat terrain and straightening works, the water velocities in the oxbow are mainly related to tidal fluctuations and inland surface water draining into the oxbow. Therefore



channel regression is considered to be minimal and the risk to the proposed development of avulsion associated with the river changing course is low.

The site is mapped as having a low erosion potential.

It is recommended that existing vegetation is maintained wherever possible.

6.2 Falling debris

There are no sources of falling debris at the site.

6.3 Subsidence

The site is underlain by unconsolidated alluvium and colluvium sediments.

It is recommended that all dwellings within the subdivision have specific ground investigation and engineered foundations. Due to this requirement, the risk associated with subsidence (vertical settlement) is considered to be low.

6.4 Slippage

Given the flat topography at the site, the risk of slippage on Lots 1 and 2 is considered to be low.

Due to the presence shallow slippage on the steeply sloping ground adjacent to the drainage channel, the northern portions of Lots 3 and 4 are considered to be at risk to slippage in the form of slope regression.

<u>It is therefore recommended that</u> the stability of the building area and the land appurtenant to the building area at Lots 3 and 4 is assessed by a chartered professional engineer experienced in geotechnical engineering once building platforms are identified.

6.5 Inundation

As discussed in Section 4.5 above, the site is mapped as being subject to inland and coastal flooding. A more detailed flood assessment was requested from the NRC and the results are provided in Appendix B. The NRC have advised that the 2116 planning horizon has an inundation water surface elevation of 3.0m One Tree Point (m OTP) resulting from a combination of sea level rise, storm surge,



and wave run-up. The extent of this is prediction is worth noting, the 2116 planning horizon indicates that much of the area will be inundated, refer to Figure 2.

The FNDC Engineering standards require that 'All habitable buildings shall be set above the 100 year return period'.

It is therefore recommended that all dwellings have their Finished Floor Levels at 3.5m OTP.

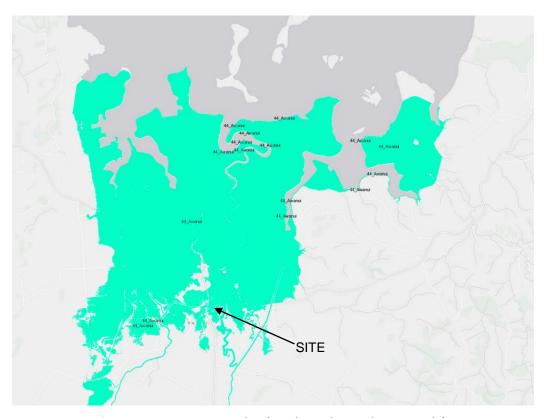


Figure 2 – Site Location Plan (site boundary indicative only).

6.6 Special soils

The site is mapped as containing gley soils. These soils are described as soils that have been affected by water logging. If soils have been affected by inundation by seawater, there is a potential for these soils to contain sulphide minerals. Such soils are referred to as Acid Sulphate Soils as they have the potential to produce acidity on oxidation. This acidity, if produced, is considered a hazard as it may cause damage to buried infrastructure and the surrounding environment.

The site is anticipated to be below 5m OTP and earthworks at the site are expected to be less than $100 \, \text{m}^3$. Should earthworks exceed this threshold, we recommend that the works be undertaken



following the planning policy document published by Whangarei District Council. <u>It is recommended</u> <u>that</u> all steel and concrete structures meet Australian Standard 2159 - 2009 for chemical durability.

6.7 Tsunami

The northern part of the property (proposed Lots 3 and 4) are mapped as being within the yellow Tsunami Evacuation Zone. Assessment of Tsunami inundation is beyond the scope of this investigation.

6.8 Subsequent use

Proposed changes to the land include the development of residential dwellings and associated infrastructure. Such development is considered unlikely to adversely affect or worsen the site's susceptibility to material damage during the 50 year planning horizon. If sea level predictions and NRC modelling are correct, the site is anticipated to be inundated during a storm surge event during the 100 year planning horizon. If this were to occur, it would likely result in, material damage at the site.

In summary, the land proposed to be developed is considered to be <u>unlikely to be subject to material</u> <u>damage by erosion</u>, <u>falling debris</u>, <u>subsidence</u>, <u>or slippage</u> from any source if the engineering recommendations within this report are adopted. The land is considered <u>unlikely to be subject to material damage by inundation</u> from any source up to 2065. It is considered possible that the land will <u>be subject to material damage by inundation</u> from coastal inundation sources beyond 2065.

7 LAND STABILITY

No assessment of the stability of the land was carried out as part of this report.

Given the flat topography at the site, the risk of slippage on Lots 1 and 2 is considered to be low. Due to the presence of steeply sloping ground toward the water course, the northern portions of Lots 3 and 4 are considered to be at risk to slippage in the form of slope regression.

It is therefore recommended that the stability of the building area and the land appurtenant to the building area at Lots 3 and 4 is assessed by a chartered professional engineer experienced in geotechnical engineering once building platforms are identified.

8 SITE EARTHWORKS

Earthworks will be required in portions of the site to form the ROW and driveways. At this stage, the volume of earthworks is not able to be provided.



8.1 Site fills

<u>It is recommended</u> that fill slopes are constructed at a maximum batter slope of 1V:2.5H to a maximum height of 1.0m. All fill slopes greater than 0.6m in height are to be engineer designed by a chartered professional engineer experienced in geotechnical engineering.

8.2 Site Cuts

<u>It is recommended that</u> cut slopes are constructed at a maximum slope angle of 1V:3H to a maximum height of 1.0m. All cut slopes greater than 1.0m in height are to be engineer designed by a chartered professional engineer experienced in geotechnical engineering.

8.3 Infrastructure

It is not anticipated that there will be any geotechnical constraints associated with trenching for the buried infrastructure.

Groundwater is expected to be shallow and is likely fluctuates due to tidal influence. Perched water is anticipated during winter and following severe storm events. Sumps and submersible pumps are likely to be required to remove water from the base of excavations following periods of intensive rain events.

It is recommended that <u>earthworks and infrastructure assess the recommendations given in the Special soils section of this report.</u>

9 FOUNDATIONS

The site is considered to be suitable for building light timber framed houses generally in accordance with NZS3604, however foundations are to be specifically engineered designed. Foundations are likely to be timber piled foundations. Where dwellings are to be located adjacent to sloping ground steeper than 1V:3H leading edge piles or palisade walls may be required.

<u>It is recommended that</u> all dwelling foundations are specifically engineer designed by a chartered professional engineer experienced in geotechnical engineering.

10 VEHICLE ACCESS

Access to all proposed new lots of the subdivision will be via a metalled Right of Way (ROW) directly from State Highway 10.



It is recommended that the existing access is to be upgraded to a 7.5m wide easement, with a carriageway width of 3.0m in accordance with Appendix 3B of FNDC District Plan.

The permitted traffic intensity factor (TIF) for a residential site in accordance with Section 7.6.5.1.11 of the district plan is 20 daily movements. The TIF for this site determined in accordance to Appendix 3A in Part 4 of the district plan is 10 movements per unit and is therefore 40 daily movements.

The restricted discretionary activity TIF for a residential site in accordance with Section 7.6.5.2.6 the district plan is 40 daily movements, for which this site complies. The following assessment is provided in regard to the application assessment criteria in Section 7.6.5.2.6 of the district plan:

- a) The extra vehicle movements are expected to be limited to between 7 to 9am and 4 to 6pm.
- b) The vehicle movements are to take place in close proximity to the neighbouring property at 10 and 26 State Highway 10, Awanui.
- c) State Highway 10 adjacent to the site has the following dimensions:
- Carriageway width 9.8 to 9.9m (seal to seal)
- Lane width 3.5 to 3.6m (centre line to outer line, total 7.1m line to line)
 It is therefore assessed that the existing SH10 adjacent to the property has sufficient capacity in accordance with Ausroads Part 5: Intersections at Grade, Table 4.1.
- d) There are currently no footpaths in the vicinity of the property.
- e) The minimum sight distances have been assessed to be at least 230m (to east) and 275m to the west, these are adequate in terms of section 3.3.7 of the FNDC Engineering Standards.
- f) The existing volume of traffic on SH10 in the vicinity of the property is 2897 AADT, 2015 as reported by NZTA for reference station 79 (east of Lake Ohia Bridge, midway between Inland Road and Pekerau Road).
- g) No existing congestion or safety problems are known to exist on SH10 in the vicinity of the property
- h) An existing access is located at the proposed access for the subdivision. It is therefore assessed that the effects on local neighbourhoods are assessed to be minimal.
- i) The effects on through traffic on State Highway 10 are assessed to met council's "Engineering Standards and Guidelines" (2004) have been met.



It is recommended that vehicle access to the site is approved as a restricted discretionary activity. In accordance with Section 15.1.6.1.2 of the district plan, authorisation from the New Zealand Transport Agency is to be sought as part of the subdivision.

11 STORMWATER MANAGEMENT

Stormwater management at the site is to be designed in accordance with FNDC District Plan Rules regarding impermeable surfaces and stormwater attenuation. The site is zoned Residential and the permitted activities for impermeable surfaces defined within the District Plan states that the maximum proportion of the gross site area covered by buildings and other impermeable surfaces shall be 50%. At this stage it is not known if the impermeable surfaces at the site will not exceed the permitted criteria.

Given the position of the site within the catchment and inter tidal oxbow adjacent to the site, attenuation of the stormwater generated from the site is not recommended.

<u>It is recommended that</u> all concentrated stormwater discharges from house sites be piped to the existing drainage channels to prevent water soaking into the ground. Disposal of stormwater that relies on soakage should not be permitted.

From the site walkover it was observed that there is potential for ponding along the eastern property boundary. It is recommended that a stormwater drain is constructed along the eastern boundary of the site, i.e. within the proposed Lots 1-3. The water is to be discharged into the drainage channel at the north-eastern corner of the site.

It is recommended that proposed Lot 4 be re-contoured to prevent or drain the area along its southern boundary which ponds water. Alternatively subsoil drains could be installed to remove water from this area.

12 WASTEWATER DISPOSAL

The proposed subdivision lies within the area of benefit for the Awanui wastewater scheme. Permission to connect the future residential properties to the reticulation system has been granted by the FNDC (F. Foy - pers. comm.).



The existing house (located within the proposed Lot 3) is connected to the pressurised wastewater system. A review of the FNDC maps indicates that the wastewater pipeline crosses diagonally across the proposed Lots 1 and 2 as shown in Figure 2 below. The exact location of this minor rising main is unknown.

It is therefore recommended that the minor rising main be located and re-laid within the proposed ROW along with the new rising mains.

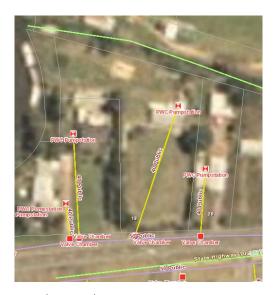


Figure 2 FNDC map showing the existing wastewater connection at the site.

13 WATER SUPPLY

13.1 Potable Water Supply

Water supply will be from water collected from building roofs and stored in water tanks.

13.2 Fire Fighting

FNDC Engineering standards require that a water supply is provided that is adequate for fire fighting purposes. As discussed above water supply for the development will be via stored rainwater. For a single family home without a sprinkler system, the New Zealand Fire Service Fire Fighting Water Supplies code of practise SNZ PAS 4509:2008 recommends a minimum water storage capacity of 45m³ within 90m of the dwelling for fire fighting purposes where water supply is from a non-reticulated system.



<u>It is recommended that provision of water storage to meet the requirement of the rural fire service for fire fighting purposes be required for each dwelling.</u>

14 TELECOMMUNICATIONS AND POWER

Telecommunication and power services are expected to access each proposed dwelling via the ROW proposed as part of the subdivision.

15 NATIONAL ENVIRONMENTAL STANDARD

National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health Regulations 2011 (NES; MfE, 2011a) came into effect in January 2012. The standard provides regulations to ensure that land affected by contaminants in soil is appropriately identified and assessment prior to development and if necessary remediated or the contaminants are contained to make the land safe for human use.

The Hazardous Activities and Industries List (HAIL) identify activities and industries that are considered likely to cause land contamination resulting from hazardous substance use, storage or disposal. The intention of the HAIL is to identify land where hazardous substances could cause or may have caused land contamination.

VISION has not been engaged to assess the site in terms of the NES.



16 SUMMARY OF RECOMMENDATIONS

A summary of the recommendations given in this report follows:

- All dwellings within the subdivision have specific ground investigation and engineered foundations.
- All dwelling foundations are to be specifically engineer designed by a chartered professional engineer experienced in geotechnical engineering.
- The stability of the building area and the land appurtenant to the building area at Lots 3 and 4 is assessed by a chartered professional engineer experienced in geotechnical engineering once building platforms are identified.
- All dwellings have their Finished Floor Levels at 3.5m OTP
- Existing vegetation is maintained wherever possible
- Fill slopes are constructed at a maximum batter slope of 1V:2.5H and cut slopes are
 constructed at maximum slope angle of 1V:3H to a maximum height of 1.0m. All fill batters
 great than 0.6m or cut slopes greater than 1.0m in height are to be engineer designed by a
 chartered professional engineer experienced in geotechnical engineering.
- All steel and concrete structures meet Australian Standard 2159 2009 for chemical durability
- The existing access is to be upgraded to a 7.5m wide easement, with a carriageway width of
 3.0m in accordance with Appendix 3B of FNDC District Plan
- That vehicle access to the site is approved as a restricted discretionary activity. In accordance
 with Section 15.1.6.1.2 of the district plan, authorisation from the New Zealand Transport
 Agency is to be sought as part of the subdivision.
- Given the position of the site within the catchment and inter tidal oxbow adjacent to the site, attenuation of the stormwater generated from the site is not recommended
- All concentrated stormwater discharges from house sites be piped to the existing drainage channels to prevent water soaking into the ground. Disposal of stormwater that relies on soakage should not be permitted
- A stormwater drain is constructed along the eastern boundary of the site, i.e. within the proposed Lots 1-3. The water is to be discharged into the drainage channel at the northeastern corner of the site.
- Lot 4 be re-contoured to prevent or drain the area along its southern boundary which ponds water. Alternatively subsoil drains could be installed to remove water from this area.
- The minor rising main be located and re-laid within the proposed ROW along with the new rising mains



 Water storage to meet the minimum requirement for fire fighting purposes in accordance with SNZ PAS 4509:2008 is required for each dwelling.

17 CONCLUSIONS

Provided the recommendations given in this report are adhered to, the subject site is considered to be suitable for the proposed subdivision depicted on the attached NG Wilkinson Subdivision plan. On completion of the subdivision development and the formation of building platform, each dwelling and the land appurtenant to the dwellings are unlikely to be subject to material damage by erosion, subsidence, slippage, or inundation from any source. Furthermore, the development of the house sites is not likely to accelerate, worsen, or result in material damage to that land, other land, or structure by erosion, subsidence, slippage, or inundation from any source.

18 LIMITATIONS

This report has been prepared solely for the use of our client, Dave Gray, and their professional advisers and the Far North District Council in relation to the specific project described herein.

Information, opinions and recommendations contained in this report cannot be used for any other purpose or by any other entity without our review and written consent. Vision Consulting Engineers Ltd accepts no liability or responsibility whatsoever for or in respect of any use or reliance upon this report by any third party.

Opinions given in this report are based on a review of previous reports prepared by others. The nature and continuity of the subsurface materials are inferred and it must be appreciated that actual conditions could vary from that described herein.



If you have any queries or you require any further clarification on any aspects of this report, please contact the undersigned.

For and on behalf of Vision Consulting Engineers Limited

Prepared by

Prepared by & reviewed by

Dan Simmonds BEng (Civil)

Senior Geotechnical Engineer

Ben Perry MIPENZ CPEng

Managing Director

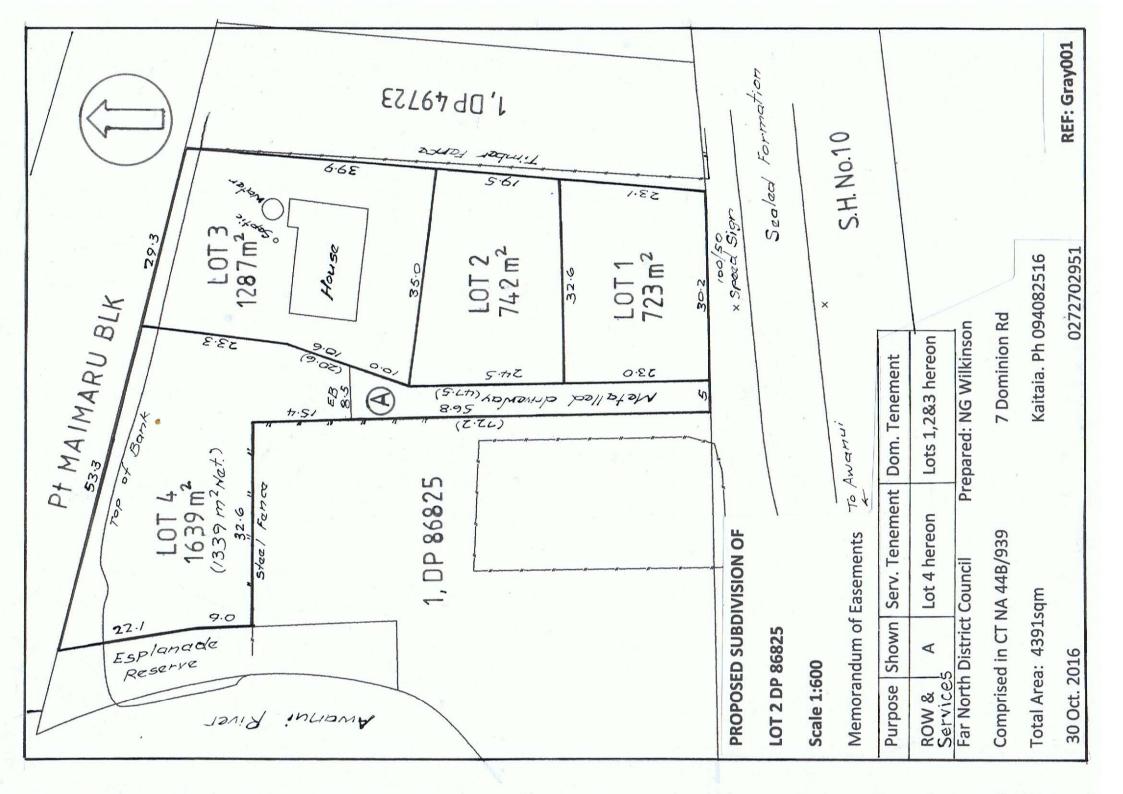
Appendix A – NG Wilkinson Proposed Subdivision Plan.

Appendix B - Flooding Assessment - NRC

Appendix C – Extracts from Hazard Maps

Appendix A NG Wilkinson Subdivision Plan





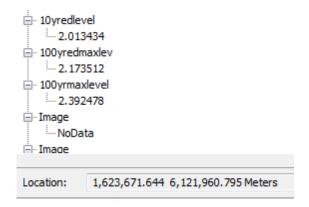
Appendix B Flooding assessment - NRC



Two types of flood risk have been assessed for this site:

River flooding associated with storm rainfall

The Awanui flood model results are pasted below.



The 100yr ARI max flood level of 2.39m RL (Unahi datum) listed above is climate change adjusted.

Converted to OTP datum, it is 2.21m OTP

Climate change adjustments are approx. 17% increase in storm rainfall depth and sea level rise of 0.5m applied to model tidal boundary.

NRC have not included depth and velocity data from the river flood model as the primary source of flood risk is coastal storm surge as below.

ii) Coastal storm surge

Coastal storm surge levels in mOTP are listed in the table below.

					Current 1% AEP (m OTP)			2065 2% AEP (m OTP)			2115 1% AEP (m OTP)		
					Storm			Storm			Storm		
No.	Name	Туре	Cell	MHWS	tide	CFHZ0	CRHZ0	tide	CFHZ1	CRHZ1	tide	CFHZ2	CRHZ2
	Awanui												
44	estuary	Estuary		1.08	1.76	2.0		2.1	2.3		2.8	3.0	

iii) Surveyed flood levels

Following the Feb 2007 flood, the following flood level was surveyed 45m downstream of the SH1 bridge at Awanui Township

Locatio	n: 1,623,453.360 6,122,006.470 Meters				
Field	Value				
OID	33				
X	1623453.36				
Y	6122006.47				
Z	1.94				
Shape	Point				

This flood level of 1.94m is in terms of Unahi datum.



iv) Site land elevation

LIDAR – land elevation at site is between 2m to 3m Unahi Datum. Subtract 0.186m to convert levels to OTP datum.

Please note that the LIDAR for Awanui was surveyed in 2003. It's the oldest LIDAR dataset we have. LIDAR heights are typically 0.2m – 0.3m higher than surveyed spot heights, but in this area there appears to be somewhat better vertical accuracy.



Appendix C



NRC Flood Map



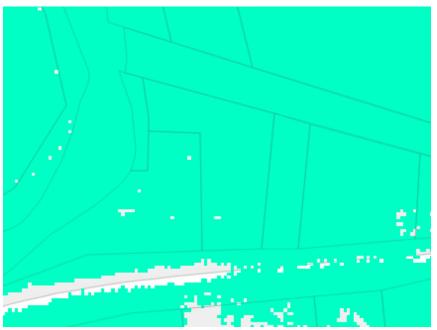
FNDC Flood Map - Existing development:



FNDC Flood Map - Maximum possible development:



NRC Maps – Coastal Inundation:



NRC Maps - Yellow zone (tsunami evacuation zone)

