

**SUBMISSION ON NOTIFIED PROPOSAL FOR
POLICY STATEMENT OR PLAN, CHANGE OR VARIATION**

Clause 6 of Schedule 1, Resource Management Act 1991

To Far North District Council (**FNDC** or **Council**)
5 Memorial Ave
Kaikohe 0405

Name of submitter: Kiwi Fresh Orange Company Limited

1. Kiwi Fresh Orange Company Limited (**KFO**) makes this submission on the Proposed Far North District Plan (**PDP**). This submission relates to the PDP in its entirety.
2. Please see **enclosed** with this submission:
 - (a) a Structure Plan for the Submission Area (**Structure Plan**);
 - (b) a Precinct Plan containing the provisions sought in respect of the Submission Area (**Precinct Plan**);
 - (c) a section 32 report evaluating the appropriateness of the objectives and provisions of the Precinct Plan and Structure Plan and the effects anticipated from implementation of those provisions (**Section 32 Report – Brownlie Land**);
 - (d) other specific submission points by KFO on the provisions of the PDP;
 - (e) 12 technical assessments relating to Kiwi Fresh's submission; and
 - (f) a Communications Summary Report.

About KFO

3. KFO is a family-owned company, owned by Chris and Stephen Brownlie, who through their various companies grow oranges and sell and distribute juices and smoothies throughout New Zealand and international markets.

Submission Area and land holdings

4. KFO's submission seeks live urban zoning of approximately 197 ha of land between Kerikeri and Waipapa townships (**Site** or **Submission Area**), including areas for General Residential, Mixed Use, and Natural Open Space.
5. The Submission Area is identified in **Appendix A**.
6. The Submission Area is adjacent to State Highway 10, which passes north-south along the western boundary of KFO's land to Waipapa, the Bay of Islands Golf Club located to the south, and the Kerikeri River along the northern boundary of the Submission Area.
7. **Appendix B** identifies the land and owners subject to the submission. The Submission Area is owned by KFO and two other companies that are owned and controlled by Chris and Stephen Brownlie.

The PDP

8. FNDC is preparing the PDP following its 10-yearly review of the district plan under s 79 of the RMA. Like the operative district plan, the PDP is intended to be in place for 10-years. The appropriateness of the objectives and provisions, and the effects “anticipated from the implementation”¹ of those provisions must therefore be considered over this 10-year horizon – the PDP must be forward looking.²
9. The PDP zones the Submission Area ‘Rural Production’. According to FNDC’s s 32 report, there is sufficient plan enabled development capacity in Kerikeri to meet expected demand in the short, medium and long term under both medium and high growth scenarios.³ Consequently, the PDP does not zone additional land (from the operative district plan) to a live urban zone and relies on infill development to provide housing and business land to meet expected urban development demands of the district.

Submission

10. KFO’s submission relates to:
 - (a) the Submission Area for which it is seeking a live urban zoning; and
 - (b) Without limiting the relief in 10(a), the provisions of the PDP generally- as attached in **Appendix C**.
11. In summary, KFO’s submission seeks:

In relation to the Submission Area

- (a) To enable urban development of the Submission Area by providing development capacity consistent with anticipated demand for housing and business land over the short, medium and long term, while:
 - (i) timing development with the provision of infrastructure (roads and three waters);
 - (ii) integrating with the existing environment, including the built environments of Kerikeri and Waipapa and natural environment by recognising and providing for Natural Open Space zones where supported by ecological values;
 - (iii) facilitating connectivity with existing transport infrastructure and integrating new modes of transport (walking connections, etc.);
 - (iv) managing the effects of potential natural hazards.
- (b) In support of the submission described in (a), KFO has prepared a Precinct Plan that contains the objectives, policies and rules that would apply to development of the site and provision of infrastructure. Alongside the Precinct Plan is a Structure Plan, which identifies how the Precinct Plan has been

S554.049

¹ RMA, section 32(1)(c).

² *Golf (2012) Ltd v Thames-Coromandel District Council* [2019] NZEnvC 112 at [125] to [133].

³ Section 32A Report at section 5.1.6.

developed and how the PDP provisions will apply spatially to the Submission Area.

In relation to the PDP generally

- (c) KFO supports in part the general objectives and policies of the PDP. Appendix C outlines where additional relief is sought to facilitate the development as proposed by the KFO submission. The relief sought includes, assessing Kerikeri-Waipapa as a Tier 3 Urban Environment under the National Policy Statement for Urban Development (**NPS-UD**), achieving consistency with the PDP and the NPS-HPL and various outcomes regarding the Objectives and Polices within the General Residential Zone, Mixed Urban Zone and the Natural Open Space Zone.

Reasons

General

12. The reasons supporting KFO's submission are explained in the Section 32 Report – Brownlie Land prepared by the Planning Collective. That report contains both the reasons for the submission and an evaluation of the submission under the statutory tests in section 32 of the RMA.
13. The Submission Area lies between the Kerikeri and Waipapa townships. Given anticipated growth in the area (see below), KFO considers the Submission Area the logical place for urban development that cannot be provided by infill development alone, while bridging a gap and integrating with the two urban areas of Kerikeri and Waipapa.
14. The proposal's mix of General Residential, Mixed Use and Natural Open Space is to accommodate the various needs of urban growth whilst recognising and avoiding development of significant ecological features of the landscape.
15. In support of its submission and the Section 32 Report – Brownlie Land, KFO has commissioned independent expert reports that:
 - (a) Provide an independent economic assessment of projected growth within Kerikeri-Waipapa and consider whether it is, or is intended to be, an urban environment under the NPS-UD.
 - (b) Consider infrastructure and servicing restraints on development of the Submission Area and assess the feasibility of solutions.
 - (c) Model flood risks and propose conceptual designs for flood management.
 - (d) Assess the existing traffic environment and anticipated changes to the receiving environment from development of the Submission Area and propose and consider roading design options.
 - (e) Assess the proposed structure plan and transport options against potential landscape considerations.
 - (f) Identify high-level ecological constraints that require management through planning controls, such as Natural Open Space zoning.

- (g) Identify soil types within the Submission Area for the purpose of engaging with the National Policy Statement for Highly Productive Land (**NPS-HPL**).
16. A Communications Summary Report explains the consultation undertaken with FNDC officers, Ngāti Rēhia, Waka Kotahi, and the wider community.

Demand and development capacity

17. Of particular importance is whether there is sufficient development capacity within Kerikeri-Waipapa to meet expected demand for housing. FNDC makes two important conclusions in this respect. First, that Kerikeri-Waipapa is not an urban environment and therefore subject to the NPS-UD. And secondly, in accordance with FNDC's general functions to ensure that there is sufficient development capacity under s 31(1)(aa) of the RMA, that the four Kerikeri-Waipapa SA2 areas can accommodate 100% of all projected growth in the medium term under both the medium and high growth scenarios.
18. KFO's proposal to apply live urban zoning to the Submission Area is based on independent expert analysis by Urban Economics, which concludes that:
- (a) the Council's projections underestimate projected growth;
 - (b) the Council's urban land supply projections overestimate the additional housing capacity that is likely to be created through infill development; and
 - (c) therefore, infill development will not ensure that there is sufficient development capacity for housing land to meet the demands of the Kerikeri-Waipapa area.
19. The Urban Economics report also identifies that Kerikeri-Waipapa will be an urban environment (i.e. part of a housing and labour market of at least 10,000 people) within the 10-year life of the PDP, based on both FNDC's and Urban Economics' projections for population growth. Given this will occur within the life of the PDP, the PDP must give effect to the NPS-UD and provide development capacity to meet demand over the short, medium and long term. The short-medium term is defined as up to 10 years. The PDP and the development capacity it enables should therefore be considered over this 10 year horizon.

Summary

20. In summary, KFO submits that the relief it seeks is necessary to:
- (a) promote sustainable management of resources, achieve the purpose of the RMA and to give effect to Part 2 and other provisions of the RMA;
 - (b) enable the social and economic well-being of the community in Kerikeri and Waipapa by providing housing supply to meet demand;
 - (c) sustain the potential of the natural and physical resources of the Submission Area while meeting the reasonably foreseeable needs of future generations;
 - (d) to give effect to the objectives and policies of the NPS-UD and the Regional Policy Statement for Northland; and

- (e) ensure that the provisions of the PDP are the most appropriate way to achieve the objectives of the PDP, which are in turn the most appropriate way to achieve the purpose of the RMA.

Decision sought

21. Kiwi Fresh seeks that the PDP is amended to:
- (a) include the Precinct Plan provisions in the PDP, which are to apply to the 'Brownlie Land Precinct' (or subsequent name for the Submission Area);
 - (b) apply the zones, overlays and precincts in the Structure Plan to the Submission Area;
 - (c) incorporate the relief sought to the other provisions of the PDP as outlined in Appendix C; and
 - (d) make any such consequential, alternative or further amendments necessary to the objectives, policies, rules, methods, maps, figures or other provisions of the PDP to give effect to the relief sought in this submission and the reasons given, including alternative zoning, overlay or precinct maps and provisions for the Submission Area as may be necessary or desirable.

S554.051

Procedural matters

22. KFO could not gain an advantage in trade competition through this submission.
23. KFO wishes to be heard in support of its submission. KFO does not wish to present a joint case at the hearing.
24. KFO wishes to have the option to present its submission by Microsoft Teams, in the event that one of its representatives or witnesses is unable to appear in person.

Structure of submission

25. This submission is comprised of the following documents:
- (a) Form 5 (this form);
 - (i) Appendix A – Submission Area;
 - (ii) Appendix B – Landholdings;
 - (iii) Appendix C – Submission on the provisions of the PDP;
 - (iv) Appendix D – Proposed Brownlie Land Precinct;
 - (b) Structure Plan;
 - (c) Section 32 analysis for Brownlie Land Proposal;
 - (d) Supporting expert reports:
 - (i) Geotechnical, prepared by LDE;
 - (ii) Survey, prepared by Terrain Surveying Limited;
 - (iii) Soils investigation, prepared by Hanmore Land Management;

- (iv) Preliminary Site Investigation, prepared by NZ Environmental;
 - (v) Archaeology, prepared by Origin Archaeology;
 - (vi) Ecology, prepared by Bioresearches;
 - (vii) Hydrology, prepared by E2 Environmental;
 - (viii) Economic Assessment, prepared by Urban Economics;
 - (ix) Infrastructure servicing, prepared by Infir;
 - (x) Infrastructure servicing peer review, prepared by GWE;
 - (xi) Landscape, prepared by Littoralis;
 - (xii) Transport, prepared by TEAM.
- (e) Communications record.

Signed for and on behalf of Kiwi Fresh Orange Company Limited by:



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Mike Doesburg

Solicitor for **Kiwi Fresh Orange Company Limited**

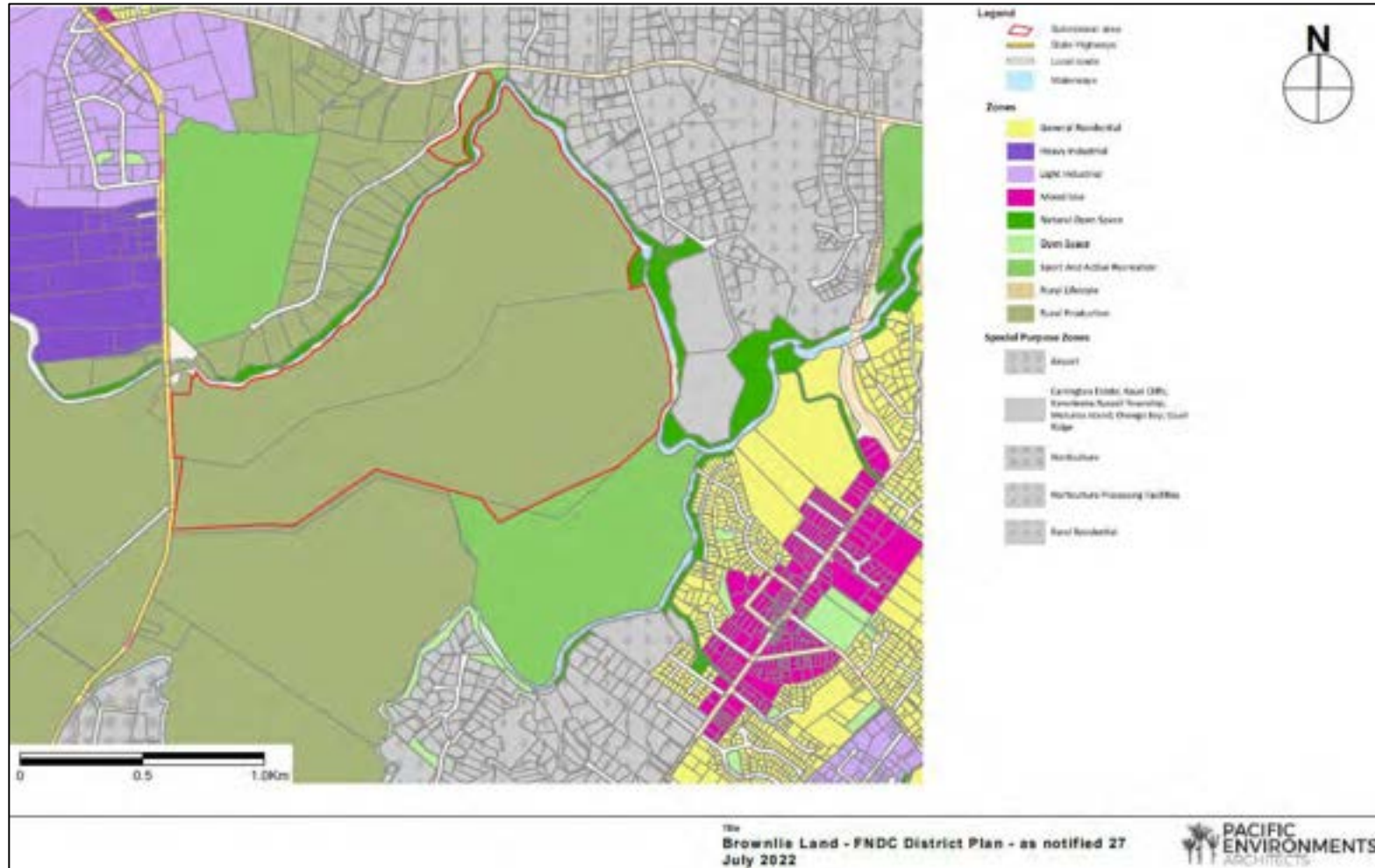
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Appendix A – Submission Area



Appendix B – land holdings subject to the submission

Land parcels and corresponding titles at 1828 and 1878 State Highway 10, Waipapa



Land parcels and corresponding titles at Golf View Road and State Highway 10, Waipapa

Map Reference	Title Reference	Site Address	Legal Description	Site area (ha)	Owners
A	137884	-	Lot 1 DP 333643	3.3845 ha	Cole James Investments Limited
B	NA46D/1149	1878 State Highway 10	Part Lot 2 DP 89875	92.7111 ha	Brownlie Brothers Limited
C	NA33B/689	1828 State Highway 10	Part Lot 2 DP 41113 and Lot 2 DP 76850	101.3451 ha	Kiwi Fresh Orange Company Limited
D	NA33B/689	-	Lot 2 DP 76850	7,241m ²	Kiwi Fresh Orange Company Limited
E	NA1126/159	-	Part Section 13 Block X Kerikeri Survey and Lot 6 DP 6704 and Part Lot 6 DP 6704	0.3480 ha and 670m ²	Kiwi Fresh Orange Company Limited

Appendix C – General submission on the PDP

Appendix C: General Submission on the Proposed Far North District Plan (PDP) on behalf of Kiwi Fresh Orange Company Limited.

Consistency of PDP with National Policy Statements

National Policy Statement for Urban Development

Issue

The National Policy Statement on Urban Development 2020 (“NPS-UD”) came into force on 20 August 2020 and replaced the National Policy Statement on Urban Development Capacity 2016. The NPS-UD classifies all local authorities within the country that have all, or part of, an urban environment in them as either Tier 1, Tier 2 or Tier 3, with Tier 1 referencing the largest local authorities in New Zealand that contain urban environments.

The section 32 documentation supporting the Proposed Far North District Plan states that Far North District Council does not consider that it has part or all of an urban environment in its territorial boundary and therefore the NPS-UD does not apply to the Far North. The NPS-UD defines “Urban Environment” as:

“means any area of land (regardless of size, and irrespective of local authority or statistical boundaries) that: is, or is intended to be, predominantly urban in character; and is, or is intended to be, part of a housing and labour market of at least 10,000 people.”

Section 3.2.2 of the Urban Environments chapter of the Council’s Section 32 Assessment states that based on the population forecasts under the low, medium, and high growth scenarios, the Council considers that none of its towns will reach the required threshold of 10,000 people to be considered an ‘urban environment’ as defined by the NPS-UD. The Council therefore concludes that the NPS-UD does not apply to the Far North District.

Submission

The Economic Assessment, prepared by Urban Economics and included with this submission concludes that Kerikeri has a population of 12,300 people as at 2021 (refer to Appendix 3 of the Economic Assessment). This differs from the Council figures because the Urban Economics assessment includes the rural residential areas to the north and south of Kerikeri that have an urban rather than a rural function. Therefore, Kerikeri **does** meet the definition of “Urban Environment” under the NPS-UD. Even leaving those rural residential areas to one side, Statistics NZ figures show an estimated population for Kerikeri of 10,040 as at 2024. Kerikeri is

clearly intended to be an urban environment in the immediate future – less than two years' time. This is within the ten-year life of the proposed District Plan therefore it is considered Kerikeri should be assessed as an **Urban Environment**.

The submission is that FNDC is classified as a Tier 3 local authority under the NPS- UD. A Tier 3 local authority is defined as *a local authority that has all or part of an urban environment within its region or district, but is not a Tier 1 or 2 local authority...*

The NPS-UD specifies a number of tasks that must be undertaken by Tier 1 and Tier 2 local authorities. At Section 1.5 (1) the NPS states *Tier 3 local authorities are strongly encouraged to do the things that tier 1 or 2 local authorities are obliged to do under Parts 2 and 3 of this National Policy Statement, adopting whatever modifications to the National Policy Statement are necessary or helpful to enable them to do so.*

Such tasks include preparing Future Development Strategies to inform preparation of the next long-term plan of each relevant local authority; and preparing a Housing and Business Development Capacity Assessment (**HBA**). An HBA has to analyse how planning decisions and provision of infrastructure affects the affordability and competitiveness of the local housing and business market. The analysis must also include how well the current and likely future demands for housing by Māori and different groups in the community (such as older people, renters, homeowners, low-income households, visitors and seasonal workers) are met, including demand for different types and forms of housing. The assessment also needs to include what is feasible and reasonably expected to be realised. The Urban Economics report includes commentary on these points in relation to Kerikeri.

Most importantly, the NPS-UD requires sufficient development capacity to be provided in the short, medium, **and** long terms. Short-medium term is defined as up to 10 years, so a plan should enable development capacity needed for the short to medium term.

Section 3.2 of the NPS-UD provides:

3.2 Sufficient development capacity for housing

- (1) *Every tier 1, 2, and 3 local authority must provide at least sufficient development capacity in its region or district to meet expected demand for housing:*
 - (a) *in existing and new urban areas; and*
 - (b) *for both standalone dwellings and attached dwellings; and*
 - (c) *in the short term, medium term, and long term.*
- (2) *In order to be sufficient to meet expected demand for housing, the development capacity must be:*
 - (a) *plan-enabled (see clause 3.4(1)); and*

- (b) *infrastructure-ready (see clause 3.4(3)); and*
- (c) *feasible and reasonably expected to be realised (see clause 3.26); and*
- (d) *for tier 1 and 2 local authorities only, meet the expected demand plus the appropriate competitiveness margin (see clause 3.22).*

Relief sought

S554.001

KFO seeks that FNDC reconsider its assessment against the NPS-UD and confirm that Kerikeri is an “urban environment” given the existing urban character, existing population and projected population in the medium term. Far North District Council therefore needs to be classified as a Tier 3 local authority.

The PDP should be amended to give effect to the NPS-UD, particularly to enable development that can provide for and contribute to a well-functioning urban environment for Kerikeri / Waipapa. Far North District Council is a Tier 3 territorial authority because it has all of an urban environment in its district. Kerikeri and Waipapa area is considered to be an urban environment now because it is predominantly urban in character and is or is intended to be part of a housing and labour market of at least 10,000 people.

National Policy Statement for Highly Productive Land (NPS-HPL)

Issue

The National Policy Statement on Highly Productive Land (NPS-HPL) was notified on 20 September 2022 and came into legal effect on 17th October 2022. The NPS-HPL is about ensuring the availability of New Zealand’s most versatile and highly productive soils for food and fibre production for now and for future generations.

The NPS-HPL provides 3-years for regional councils to map their highly productive land and then further time for the district councils to amend their plans. Policy 2 of the NPS states that the identification of HPL should be undertaken in an integrated way that considers the interactions with freshwater management and urban development.

Section 3.6 (4) of the NPS-HPL notes that Territorial Authorities that are not Tier 1 or Tier 2 may allow the rezoning of Highly Productive Land only if:

- (a) the urban zoning is required to provide sufficient development capacity to meet expected demand for housing or business land in the district; and*
- (b) there are no other reasonably practicable and feasible options for providing the required development capacity; and*

(c) the environmental, social, cultural and economic benefits of rezoning outweigh the environmental, social, cultural and economic costs associated with the loss of highly productive land for land-based primary production, taking into account both tangible and intangible values.

Section 3.6 (4) of the NPS-HPL notes that:

(5) Territorial authorities must take measures to ensure that the spatial extent of any urban zone covering highly productive land is the minimum necessary to provide the required development capacity while achieving a well-functioning urban environment

Submission

As noted throughout the KFO submission and the supporting documents regarding the Structure Plan, the FNDC's approach to the District Plan is to provide for growth through infill housing. However, as the Urban Economics assessment has shown, infill housing alone is not sufficient in terms of meeting the required capacity; or appropriate for providing affordable housing at scale or for more specialist residential development such as retirement village living. Green field development can better, and more efficiently, achieve the delivery of a greater variety of housing types and affordable housing options at scale.

In summary, while the soil types present on the KFO site are identified as highly productive using the Land Use Classification system, based on the high-level assessment, the NPS-HPL does provide an option for the rezoning of land to occur where there is sufficient demand for urban development- as is the case for Kerikeri and Waipapa.

In addition, site specific soil testing and assessment in relation to the broader criteria set out in the NPS-HPL is yet to be undertaken. This may refine the extent of Highly Productive Land on the site. In any event the land is strategically located adjacent to the main urban area in the Far North. This land is the most practicable and feasible for providing for the short, medium and long term growth projections for the Kerikeri – Waipapa area and for this reason alone the land should be secured to provide for and enable urban growth as provided for in the NPS-HPL.

Relief sought

That the FNDC zone the Site for urban development as requested in the submission. **S554.002**

Providing for Urban Growth

Urban Economics- Economic Assessment summary

Section 12 of the report prepared by Urban Economics (**Appendix 12 of the Brownlie Land Section 32 assessment**) prepared to support KFO's submission states that under the Urban Economics Medium population projections scenario, there is 5.4- 6.4 years of capacity provided for within the PFNDP, indicating that the short-term development capacity is met, but the medium- and long-term capacity is not. Under the Urban Economics assessment high population projections scenario, only 3.5 to 4.2 years of development capacity is provided for within the pFNDP. Overall, the pFNDP is inconsistent with Policy 2 of the NPS-UD as there is insufficient capacity provided to meet the growth demand.

FNDC Section 32- Urban Environment Report.

The three options that FNDC assessed within their Section 32 Assessment regarding providing for urban growth within the residential areas are outlined below:

***Option 1:** Retain the Residential, Coastal Residential and Russell Township zones. Retain the extent of the existing zoning including those areas not serviced or programmed to be serviced by adequate development infrastructure and retain the three sets of provisions that relate to the Residential, Coastal Residential and Russell Township zones.*

***Option 2:** Apply GRZ to areas zoned residential and coastal residential in the ODP. Rezone land in these zones that are not serviced or programmed to be serviced by adequate development infrastructure.*

***Option 3:** Apply GRZ to areas zoned residential and coastal residential in the ODP. Rezone land in these zones that are not serviced or programmed to be serviced by adequate development infrastructure. Adding a multi-unit development provision.¹*

While the KFO do not disagree with the Options outlined above, KFO would like to bring to the attention of Council that there is a Fourth Option, being similar to Option 3 above, but also including the strategic rezoning of some rural land in areas that are identified as being capable of servicing and where urban development would result in an efficient urban form and achieve a well-functioning urban environment as required under the NPS-UD.

Given that the Council are not confident on their assessment of capacity within their infrastructure network, limiting development to areas where there is currently infrastructure or planned infrastructure, limits the ability to provide for larger scale infrastructure upgrades and have significant funding contributions to these. Infill development typically occurs in an ad hoc manner and there are greater limitations to realising the capacity i.e. willingness of landowners and site restrictions.

¹ Section 32- Urban Environment Report.

Greenfield development, where there is a clear demand for additional housing and employment activities, provides an opportunity for funding contributions and planning of networks because of the economies of scale associated with development at scale.

Residential Growth within the pFNDP is provided solely through infill development and increasing the intensity of the development within the existing Residential zone and Rural Residential zone while allowing for residential activities within the Mixed-Use zone. This is a less efficient and more uncertain way to provide for growth. Infill development can be less feasible and occurs in a more ad hoc way and at lesser scale meaning that comprehensive outcomes in relation to infrastructure upgrades, new road, parks etc are more difficult to fund and deliver.

The option of re-zoning rural land to urban where it can be shown that servicing can be provided in the future has not been considered by the PDP. This is a fundamental flaw within the options assessment to provide for future urban growth over the 10-year life cycle of the pFNDP. It also discounts the ability to provide a clear planning direction for the medium and long term growth projection.

The Council assumption on infill development relies on the private landowner to provide for more housing within Kerikeri, as opposed to greenfields development which is a for efficient cost-effective way of providing for housing as noted in Section 11 of the Urban Economics Report.

Relying on rural residential areas to provide for future growth beyond the current foreseeable plan period is inefficient and likely to generate greater adverse environmental effects with respect to reverse sensitivity, the provision of infrastructure and urban amenities such as parks and cycleways. Because of the value of rural lifestyle land, it is likely to more costly to develop this land. Costly land development does not contribute to achieving an improvement in housing affordability.

Relief Sought

S554.003

KFO wish for FNDC to include a fourth option in their Section 32 Report to zone rural land to urban where it can be shown that servicing can be provided in the future. This is a fundamental flaw within the options assessment to provide for future urban growth over the 10-year life cycle of the pFNDP. The s32 report has inadequately considered all viable options and therefore the assessment is skewed in relation to determination of the most appropriate way to achieve the purpose of the Act.

General Comments regarding PDP Part 1- Interpretation Chapter/Definitions

Part 1 – Interpretation Chapter / Definitions				
Provision reference	Provision	Support / oppose	Reasons	Relief sought
<p>Highly Productive Land</p> <p>(not a definition in National Planning Standards 2019)</p>	<p>means land that is, or has the potential to be, highly productive for farming activities. It includes versatile soils and Land Use Capability Class 4 land and other Land Use Capability classes Land Use Capability, or has the potential to be, highly productive having regard to:</p> <ol style="list-style-type: none"> Soil type; Physical characteristics; Climate conditions; and Water availability. 	Oppose	<p>Following the notification of the PDP, the National Policy Statement on Highly Productive land (NPS-HPL) was released. The definition of Highly Productive Land should be consistent with the definitions of the NPS- HPL.</p> <p>The NPS-HPL defines highly productive land as:</p> <p><i>“means land that has been mapped in accordance with clause 3.4 and is included in an operative regional policy statement as required by clause 3.5 (but see clause 3.5(7) for what is treated as highly productive land before the maps are included in an operative regional policy statement and clause 3.5(6) for when land is rezoned and therefore ceases to be highly productive land)”</i></p> <p>Section 3.5(7) of the NPS-HPL includes LUC 1, 2 and 3, but not</p>	<p>Replace definition of Highly Productive Land with NPS-HPL definition.</p> <p style="text-align: right;">S554.004</p> <p>Remove LUC Class 4 land from definition.</p> <p>Amend the PDP to consistently refer to Highly Productive Land, rather than Productive Land or Versatile Land.</p> <p style="text-align: right;">S554.005</p>

Part 1 – Interpretation Chapter / Definitions				
Provision reference	Provision	Support / oppose	Reasons	Relief sought
			<p>LUC 4 soils. LUC 4 soils should not be referred to within the PFNDC as Highly Productive Land to ensure that there is consistency with how the NPS-HPL is applied.</p> <p>The terms “Highly Productive Land”, Productive Land (undefined) and Versatile Land are used interchangeably throughout the PDP and further consideration should be consideration to the use of the terms to achieve consistency in application.</p>	
<p>Versatile Land</p> <p>(not a definition in National Planning Standards 2019)</p>	<p>means soils that are Land Use Capability Classes 1c1, 2e1, 2w1, 2w2, 2s1, 3e1, 3e5, 3s1,3s2, 3s4</p>	<p>Oppose</p>	<p>While it is acknowledged that this definition is the same as the definition within the Northland Regional Plan, “Versatile Land” is not defined within the NPS-HPL and it raises confusion in the application of the NPS-HPL in the Far North. “Highly Productive Land” should be the only definition used within the PDP regarding soils to ensure the NPS-HPL can be applied consistently across the District.</p>	<p>Delete the definition.</p> <p>S554.006</p>

Part 1 – Interpretation Chapter / Definitions				
Provision reference	Provision	Support / oppose	Reasons	Relief sought
			The NPS-HPL directs regional councils to map highly productive land. It is therefore highly likely that references to 'versatile land' will be phased out in favour NPS-HPL defined terms	

General Comments regarding the Part 2- Subdivision

Part 1 – Interpretation Chapter / Definitions				
Provision reference	Provision	Support / oppose	Reasons	Relief sought
SUB-01	<p><u>Subdivision</u> results in the efficient use of <u>land</u>, which:</p> <ol style="list-style-type: none"> achieves the objectives of each relevant zone, overlays and district wide provisions; contributes to the local character and sense of place; avoids reverse sensitivity issues that would prevent or adversely affect activities already established on <u>land</u> from continuing to operate; avoids land use patterns which would prevent <u>land</u> from achieving the objectives and policies of the zone in which it is located; does not increase risk from <u>natural hazards</u> or risks are mitigated and existing risks reduced; and manages adverse <u>effects</u> on the <u>environment</u>. 	Support	KFO supports the objective as it promotes the efficient use of land	Retain objective as notified S554.007

Part 1 – Interpretation Chapter / Definitions				
Provision reference	Provision	Support / oppose	Reasons	Relief sought
SUB-O3	<p><u>Infrastructure</u> is planned to service the proposed <u>subdivision</u> and development where:</p> <p>a. there is existing <u>infrastructure</u> connection, <u>infrastructure</u> should be provided in an integrated, efficient, coordinated and future-proofed manner at the time of <u>subdivision</u>; and</p> <p>b. where no existing connection is available <u>infrastructure</u> should be planned and consideration be given to connections with the wider <u>infrastructure</u> network.</p>	Support	KFO supports the objective as it provides for an opportunity to develop land where there is no current reticulated system available, and an on-site solution is achievable.	Retain objective as notified S554.008
SUB- S3 SUB- S4 SUB- S5	Various	Support	KFO supports the objective as it provides for an opportunity to develop land where there is no current reticulated system available and an on-site solution is achievable.	Retain Standards as notified S554.009 S554.010 S554.011

General Comments regarding the PDP Part 3- General Residential Zone provisions

Part 3 – General Residential Zone provisions				
Provision reference	Provision	Support / oppose	Reasons	Relief sought
GRZ-O1	<p>The General Residential zone provides a variety of densities, housing types and lot sizes that respond to:</p> <ul style="list-style-type: none"> a) housing needs and demand; b) the adequacy and capacity of available or programmed development infrastructure; c) the amenity and character of the receiving residential environment; and d) historic heritage. 	Support	KFO supports the objective as it appropriately recognises the need for housing supply to meet demand.	<p>Retain the objective as notified.</p> <p style="text-align: right;">S554.012</p>
GRZ-O2	The General Residential zone consolidates urban residential development around available or programmed development infrastructure to improve the function and resilience of the receiving residential environment while reducing urban sprawl.	Support in part.	KFO disagree with the “ <i>while reducing urban sprawl</i> ” section of the Objective. This objective should be reworded to address the demand for housing, rather than reducing urban sprawl. It may also state that extensions to the Residential zone to provide for growth should be located with consideration to achieving a well-functioning and quality urban environment	<p>Amend Objective GRZ-O2 as follows:</p> <p style="text-align: right;">S554.013</p> <p>“The General Residential zone consolidates urban residential development around available or programmed development infrastructure <u>(including private infrastructure)</u> to improve the function and resilience of the receiving residential environment while reducing urban sprawl. <u>providing for urban growth in locations where the outcomes</u></p>

Part 3 – General Residential Zone provisions				
Provision reference	Provision	Support / oppose	Reasons	Relief sought
				<u>will achieve a quality well-functioning urban environment.</u>
GRZ-O3	Non-residential activities contribute to the well-being of the community while complementing the scale, character and amenity of the General Residential zone.	Support	KFO support Objective GRZ-O3 as it appropriately recognises the need to co-locate compatible activities.	Retain the objective as notified. S554.014
GRZ-O4	Land use and subdivision in the General Residential zone is supported where there is adequacy and capacity of available or programmed development infrastructure.	Support in part	Objective GRZ-O4 should recognise alternative means to addressing shortages in infrastructure capacity provided for by Council. There may be cases where private solutions can provide adequate capacity to support land use and subdivision in the General Residential Zone. There are also options for council to enter into Developer Agreements.	Amend Objective GRZ-O4 as follows: S554.015 Land use and subdivision in the General Residential zone is supported where there is adequacy and capacity of available or programmed development infrastructure, <u>or a private infrastructure solution.</u>
GRZ-O5	Land use and subdivision in the General Residential zone provides communities with functional and high amenity living environments.	Support	KFO supports Objective GRZ-O5 and its recognition of the importance of functional, high amenity environments.	Retain the objective as notified. S554.016
GRZ-O6	Residential communities are resilient to changes in climate and are responsive to changes in sustainable development techniques.	Support	KFO supports Objective GRZ-O6 as it recognises the importance of resilient communities.	Retain the objective as notified. S554.017

Part 3 – General Residential Zone provisions				
Provision reference	Provision	Support / oppose	Reasons	Relief sought
GRZ-P1	<p>Enable land use and subdivision in the General Residential zone where:</p> <ul style="list-style-type: none"> a) there is adequacy and capacity of available or programmed development infrastructure to support it; and b) it is consistent with the scale, character and amenity anticipated in the residential environment. 	Support in part	<p>Policy GRZ-P1, Policy GRZ-P2 and GRZ- P3 should also recognize alternative means to addressing shortages in infrastructure capacity provided for by Council. There may be cases where private solutions and Developer Agreements can facilitate or provide adequate capacity to support land use and subdivision in the General Residential Zone. In this case, connections to the reticulated network may be made to the boundary but are unable to be connected until such time as there is an upgrade of the Council wastewater or potable water system. During this time, an interim onsite solution may be able to adequately address the infrastructure shortfall.</p>	<p>Amend Policy GRZ-P1 as follows: S554.018</p> <p>Enable land use and subdivision in the General Residential zone where:</p> <ul style="list-style-type: none"> a) there is adequacy and capacity of available or programmed development infrastructure to support it; and b) it is consistent with the scale, character and amenity anticipated in the residential environment; <u>or</u> c) <u>a private infrastructure solution exists.</u>
GRZ-P2	<p>Require all subdivision in the General Residential zone to provide the following reticulated services to the boundary of each lot:</p> <ul style="list-style-type: none"> a) telecommunications: <ul style="list-style-type: none"> i. fibre where it is available; or ii. copper where fibre is not available; 	Support in part		<p>Amend Policy GRZ-P2 as follows: S554.019</p> <p>Require all subdivision in the General Residential zone to provide the following reticulated services to the boundary of each lot:</p> <ul style="list-style-type: none"> a) telecommunications:

Part 3 – General Residential Zone provisions				
Provision reference	Provision	Support / oppose	Reasons	Relief sought
	<ul style="list-style-type: none"> b) local electricity distribution network; c) wastewater; and d) potable water and stormwater where it is available. 			<ul style="list-style-type: none"> i. fibre where it is available; or ii. copper where fibre is not available; b) local electricity distribution network; c) wastewater; and d) potable water and stormwater where it is available.
GRZ-P3	Enable multi-unit developments within the General Residential zone, including terraced housing and apartments, where there is adequacy and capacity of available or programmed development infrastructure.	Support in part		Amend Policy GRZ-P3 as follows: S554.020 Enable multi-unit developments within the General Residential zone, including terraced housing and apartments, where there is adequacy and capacity of available or programmed development infrastructure, <u>or a private infrastructure solution.</u>
GRZ-P5	Provide for retirement villages where they: <ul style="list-style-type: none"> a) compliment the character and amenity values of the surrounding area; b) contribute to the diverse needs of the community; 	Support in part	KFO supports the intent of Policy GRZ- P5, but considers it should also recognize alternative means to addressing shortages in infrastructure capacity provided for by Council. There may be	Amend Policy GRZ-P5 as follows: S554.021 Provide for retirement villages where they:

Part 3 – General Residential Zone provisions				
Provision reference	Provision	Support / oppose	Reasons	Relief sought
	<p>c) do not adversely affect road safety or the efficiency of the transport network; and</p> <p>d) can be serviced by adequate development infrastructure.</p>		<p>cases where private solutions can provide adequate capacity to support land use and subdivision in the General Residential Zone, or Developer Agreements can be entered into.</p> <p>There are options for connections to the reticulated network may be made to the boundary but are unable to be connected until such time as there is an upgrade of the Council wastewater or potable water system. During this time, an interim onsite solution may be able to adequately address the infrastructure shortfall.</p> <p>The current General Residential Zone does not provide for adequate land within the zone to deliver a retirement village on scale. A retirement village typically needs 5- 10 ha of vacant land. By not extending the existing General Residential Zone, there is no provision within the pFNDP to establish a new</p>	<p>a) compliment the character and amenity values of the surrounding area;</p> <p>b) contribute to the diverse needs of the community;</p> <p>c) do not adversely affect road safety or the efficiency of the transport network; and</p> <p>d) can be serviced by adequate development infrastructure <u>or private infrastructure solutions.</u></p>

Part 3 – General Residential Zone provisions				
Provision reference	Provision	Support / oppose	Reasons	Relief sought
			retirement village for which analysis shows there is a demand.	
GRZ-P6	Encourage and support the use of on-site water storage to enable sustainable and efficient use of water resources.	Support	KFO supports Policy GRZ-P6 as appropriately recognising that on-site water storage may be required in some cases.	Retain the policy as notified. S554.022
GRZ-P7	Encourage energy efficient design and the use of small-scale renewable electricity generation in the construction of residential development.	Support	KFO supports Policy GRZ-P7 as it appropriately recognises that small-scale renewable energy generation can have benefits for residential development.	Retain the policy as notified. S554.023
GRZ-P8	<p>Manage land use and subdivision to address the effects of the activity requiring resource consent, including (but not limited to) consideration of the following matters where relevant to the application:</p> <ul style="list-style-type: none"> a) consistency with the scale, design, amenity and character of the residential environment; b) the location, scale and design of buildings or structures, potential for shadowing and visual dominance; c) for residential activities: <ul style="list-style-type: none"> i. provision for outdoor living space; ii. privacy for adjoining sites; iii. access to sunlight; d) for non-residential activities: 	Support	KFO supports Policy GRZ-P8 as it appropriately recognises the need to manage development, including managing various competing activities to ensure a well-functioning urban environment.	Retain the policy as notified. S554.024

Part 3 – General Residential Zone provisions				
Provision reference	Provision	Support / oppose	Reasons	Relief sought
	<ul style="list-style-type: none"> i. scale and compatibility with residential activities ii. hours of operation e) at zone interfaces, any setbacks, fencing, screening or landscaping required to address potential conflicts; f) the adequacy and capacity of available or programmed development infrastructure to accommodate the proposed activity, including: <ul style="list-style-type: none"> i. opportunities for low impact design principles ii. ability of the site to address stormwater and soakage; g) managing natural hazards; and h) any historical, spiritual, or cultural association held by tangata whenua, with regard to the matters set out in Policy TW-P6 			
New rules	-	Support	KFO are generally supportive of the proposed rules within the General Residential Zone. However, the rule framework does not provide for hotels/motels as an activity, suitable to be located within the General Residential Zone.	Include a new rule that provides for hotels/motels as a restricted discretionary activity in the GRZ, with matters of discretion that reflect the issues in Policy GRZ-P4. S554.025

Part 3 – General Residential Zone provisions				
Provision reference	Provision	Support / oppose	Reasons	Relief sought
			Hotels/motels as an activity would be consistent with proposed Policy GRZ-P4 as a non-residential activity that is of a residential scale and supports the social and economic wellbeing of the community. Therefore, as part of the relief sought, KFO ask that FNDC consider listing the establishment of a Hotel/Motel as a Restricted Discretionary Activity subject to the matters within Policy GRZ-P4.	

General Comments on the PDP regarding the Part 3- Mixed Use Zone provisions

Part 3 – Mixed Use Zone provisions				
Provision reference	Provision	Support / oppose	Reasons	Relief sought
MUZ- O1	The Mixed Use zone is the focal point for the District's commercial, community and civic activities, and provides for residential development where it complements and is not incompatible with these activities.	Support	KFO supports Objective MUZ-O1 as identifying that the Mixed Use Zone is the focal point for commercial, community and civic activities.	Retain the objective as notified. S554.026
MUZ- O2	Development in the Mixed Use zone is of a form, scale, density and design quality that	Support	KFO supports Objective MUZ-O2 as appropriately	Retain the objective as notified. S554.027

Part 3 – Mixed Use Zone provisions				
Provision reference	Provision	Support / oppose	Reasons	Relief sought
	contributes positively to the vibrancy, safety and amenity of the zone.		providing for development that contributes positively to the vibrancy, safety and amenity of the zone.	
MUZ- O3	Enable land use and subdivision in the Light Industrial zone where there is adequacy and capacity of available or programmed development infrastructure to support it.	Support in part	KFO supports the intent of Objective MUZ-O3, but seeks to clarify whether it should refer to the Mixed Use Zone, rather than the Light Industrial Zone. The Objective should also recognise that developer-led infrastructure solutions may be appropriate.	Amend Objective MUZ-O3 as follows: S554.028 Enable land use and subdivision in the Light Industrial <u>Mixed Use</u> zone where there is adequacy and capacity of available or programmed development infrastructure, <u>or a private infrastructure solution</u> , to support it.
MUZ- O4	The adverse environmental effects generated by activities within the zone are managed, in particular at zone boundaries.	Support	KFO supports Objective MUZ-O4 as recognising the need to manage adverse effects.	Retain the objective as notified. S554.029
MUZ- O5	Residential activity in the Mixed Use zone is located above commercial activities to ensure active street frontages, except where the interface is with the Open Space zone.	Support	KFO supports Objective MUZ-O5 and its recognition that residential activities may be appropriate above ground floor.	Retain the objective as notified. S554.030
MUZ-P1	Enable a range of commercial, community, civic and residential activities in the Mixed Use zone where:	Support in part	KFO supports Policy MUZ-P1 as appropriately enabling a range of activities, however, the Policy should recognise that developer-led	Amend Policy MUZ-P1 as follows: S554.031 Enable a range of commercial, community, civic and residential

Part 3 – Mixed Use Zone provisions				
Provision reference	Provision	Support / oppose	Reasons	Relief sought
	<ul style="list-style-type: none"> a) it supports the function, role, sense of place and amenity of the existing environment; and b) there is: <ul style="list-style-type: none"> i. existing infrastructure to support development and intensification, or ii. additional infrastructure capacity can be provided to service the development and intensification. 		infrastructure may be appropriate, particularly as an interim solution before Council infrastructure is delivered.	<p>activities in the Mixed Use zone where:</p> <ul style="list-style-type: none"> a) it supports the function, role, sense of place and amenity of the existing environment; and b) there is: <ul style="list-style-type: none"> i. existing infrastructure to support development and intensification, or ii. additional infrastructure capacity can be provided to service the development and intensification; <u>or</u> iii. <u>a private infrastructure solution.</u>
MUZ-P2	<p>Require all subdivision in the Mixed Use zone to provide the following reticulated services to the boundary of each lot:</p> <ul style="list-style-type: none"> a. telecommunications: <ul style="list-style-type: none"> i. fibre where it is available; ii. copper where fibre is not available; iii. copper where the area is identified for future fibre deployment. b. local electricity distribution network; and 	Support in part	KFO supports the intent of the policy, but considers that Policy MUZ-P2 should also recognise alternative means of addressing shortages in infrastructure capacity provided for by Council. There may be cases where private solutions can provide adequate capacity to support land use and subdivision in the Mixed Use Zone or Developer Agreements can be entered into to facilitate	<p>Amend Policy MUZ-P2 as follows:</p> <p style="text-align: center;">S554.032</p> <p>Require all subdivision in the Mixed Use zone to provide the following reticulated services to the boundary of each lot:</p> <ul style="list-style-type: none"> a. telecommunications: <ul style="list-style-type: none"> i. fibre where it is available; ii. copper where fibre is not available; iii. copper where the area is identified for

Part 3 – Mixed Use Zone provisions				
Provision reference	Provision	Support / oppose	Reasons	Relief sought
	c. wastewater, potable water supply and stormwater where it is available.		<p>extensions or upgrades to infrastructure.</p> <p>Connections to the reticulated network may be made to the boundary but are unable to be connected until such time as there is an upgrade of the Council wastewater or potable water system. During this time, an interim onsite solution may be able to adequately address the infrastructure shortfall.</p>	<p>future fibre deployment.</p> <p>b. local electricity distribution network; and</p> <p>c. wastewater, potable water supply and stormwater where it is available.</p>
MUZ- P3	<p>Require development in the Mixed Use zone to contribute positively to:</p> <p>a. high quality streetscapes;</p> <p>b. pedestrian amenity;</p> <p>c. safe movement of people of all ages and abilities;</p> <p>d. community well-being, health and safety; and</p> <p>e. traffic, parking and access needs.</p>	Support	KFO supports Policy MUZ-P3 and the contribution it will make to creating well function urban environments.	<p>Retain the policy as notified.</p> <p>S554.033</p>
MUZ-P4	Require development in the Mixed Use zone that is adjacent to Residential and Open Space zones to maintain the amenity	Support	KFO supports Policy MUZ-P4 as appropriately managing the interface between Mixed Use zoning and adjacent	<p>Retain the policy as notified.</p> <p>S554.034</p>

Part 3 – Mixed Use Zone provisions				
Provision reference	Provision	Support / oppose	Reasons	Relief sought
	<p>values of those areas, having specific regard to:</p> <ul style="list-style-type: none"> a. visual dominance; b. privacy; c. shadowing; d. ambient noise; and e. light spill. 		residential or open space zones.	
MUZ-P5	<p>Restrict activities that are likely to have an adverse effect on the function, role, sense of place and amenity of the Mixed Use zone, including:</p> <ul style="list-style-type: none"> a. residential activity, retirement facilities and visitor accommodation on the ground floor of buildings, except where a site adjoins an Open Space zone; b. light or heavy industrial activity; c. storage and warehousing; d. large format retail activity over 400 m²; and e. waste management activity. 	Support in part	<p>The PDP provides for residential development within the Mixed Use Zone. The policy should clarify that such activities are not restricted within the Mixed Use zone provided they are above ground floor level.</p> <p>Some light industrial activities are complementary to the Mixed Use zone such as a warehouse facility. These types of activities where the effects can be mitigated should not be restricted by the Mixed Use Zone.</p> <p>If Policy MUZ-P5 restricts large format retail over 400m² in size, this places</p>	<p>Amend Policy MUZ-P5 as follows:</p> <p style="text-align: center;">S554.035</p> <p>Restrict activities that are likely to have an adverse effect on the function, role, sense of place and amenity of the Mixed Use zone, including:</p> <ul style="list-style-type: none"> a. residential activity, retirement facilities and visitor accommodation <u>activities located</u> on the ground floor of buildings, except where a site adjoins an Open Space zone; b. light or heavy industrial activity <u>(excluding warehousing)</u>; c. storage and warehousing; d. large format retail activity over 400 m²; and

Part 3 – Mixed Use Zone provisions				
Provision reference	Provision	Support / oppose	Reasons	Relief sought
			undue restrictions on uses such as supermarkets which are suited to be located within the Mixed Use Zone. KFO seeks that the 400m ² restriction be reconsidered.	e. waste management activity.
MUZ- P6	Promote energy efficient design and the use of renewable electricity generation in the construction of mixed use development.	Support	KFO supports Policy MUZ-P6 as appropriately encouraging efficient design.	Retain the policy as notified. S554.036
MUZ-P7	Consider the following effects when assessing applications to establish residential, early childhood, retirement and education facilities: <ul style="list-style-type: none"> a. the level of ambient noise; b. reduced privacy; c. shadowing and visual domination; and d. light spill. 	Support	KFO supports Policy MUZ-P7 as recognising the need to manage the interface with sensitive activities establishing in the Mixed Use zone.	Retain the policy as notified. S554.037
MUZ-P8	Manage land use and subdivision to address the effects of the activity requiring resource consent, including (but not limited to) consideration of the following matters where relevant to the application: <ul style="list-style-type: none"> a. consistency with the scale, density, design, amenity and character of the mixed use environment; b. the location, scale and design of buildings or structures, outdoor 	Support	KFO supports Policy MUZ-P8 as it appropriately recognises the need to manage development, including managing various competing activities to ensure a well-functioning urban environment.	Retain the policy as notified. S554.038

Part 3 – Mixed Use Zone provisions				
Provision reference	Provision	Support / oppose	Reasons	Relief sought
	<p>storage areas, parking and internal roading;</p> <p>c. at zone interfaces:</p> <ul style="list-style-type: none"> i. any setbacks, fencing, screening or landscaping required to address potential conflicts; ii. any adverse effects on the character and amenity of adjacent zones; <p>d. the adequacy and capacity of available or programmed development infrastructure to accommodate the proposed activity; including:</p> <ul style="list-style-type: none"> i. opportunities for low impact design principles; ii. management of three waters infrastructure and trade waste; <p>e. managing natural hazards;</p> <p>f. the adequacy of roading infrastructure to service the proposed activity;</p> <p>g. any adverse effects on historic heritage and cultural values, natural features and landscapes or indigenous biodiversity, and</p>			

Part 3 – Mixed Use Zone provisions				
Provision reference	Provision	Support / oppose	Reasons	Relief sought
	h. any historical, spiritual, or cultural association held by tangata whenua, with regard to the matters set out in Policy TW-P6.			

General Comments on the PDP regarding the Part 3- Natural Open Space Zone provisions

Part 3 – Natural Open Space Zone provisions				
Provision reference	Provision	Support / oppose	Reasons	Relief sought
NO SZ-O1	The ecological, historic heritage, cultural and natural character values of the Natural Open Space zone are protected and enhanced for the benefit of current and future generations.	Support	KFO supports Objective NO SZ-O1 as providing an appropriate overall objective for the Natural Open Space zone.	Retain the objective as notified. S554.039
NO SZ-O2	Land use is of a scale and type that complements and is consistent with the conservation values of the Natural Open Space Zone.	Support	KFO supports Objective NO SZ-O2 as recognising the need to manage the scale and type of land use in the zone.	Retain the objective as notified. S554.040
NO SZ-O3	Natural open spaces where appropriate are accessible for the public for the use of leisure and customary activities.	Support	KFO supports the recognition in Objective NO SZ-O3 that the natural open spaces should be available for the public to use and appreciate.	Retain the objective as notified. S554.041
NO SZ-P1	Enable land use that conserves, protects and enhances the natural, ecological,	Support	KFO supports the guidance in Policy NO SZ-P1 on the land uses	Retain the policy as notified. S554.042

Part 3 – Natural Open Space Zone provisions				
Provision reference	Provision	Support / oppose	Reasons	Relief sought
	historic heritage, cultural and natural character values of the zone.		that are contemplated in the zone.	
NO SZ-P2	Provide for land use that supports leisure and customary activities that are complementary to, consistent with and protect the values of the zone.	Support	KFO supports the guidance in Policy NO SZ-P2 on the land uses that are contemplated in the zone.	Retain the policy as notified. S554.043
NO SZ-P3	Avoid land use and subdivision that is incompatible with the ecological, historic heritage, cultural and natural character values of the zone.	Support in part	While KFO generally supports the intention of the Policy, KFO seeks that a pathway is provided to enable works to support a subdivision or land use that are required within the Natural Open Space zone, such as water or wastewater infrastructure connections, pedestrian pathways and minor earthworks. Subject to those works being undertaken in a way that protects the Open Space values and does not adversely affect them.	Amend Policy NO SZ-P3 as follows” S554.044 Avoid land use and subdivision that is incompatible with the ecological, historic heritage, cultural and natural character values of the zone <u>where the effects of the land use or subdivision cannot be adequately mitigated or remedied.</u>
NO SZ-P4	Manage the effects of land use and subdivision to address the effects of the activity requiring resource consent, including (but not limited to) consideration of the following matters where relevant to the application:	Support	KFO supports Policy NO SZ-P4 as it appropriately recognises the need to manage development, including managing various competing activities to ensure a well-functioning urban environment.	Retain the policy as notified. S554.045

Part 3 – Natural Open Space Zone provisions				
Provision reference	Provision	Support / oppose	Reasons	Relief sought
	<ul style="list-style-type: none"> a) consistency with the scale, density, design and character of the environment and purpose of the zone; b) the location, scale and design of buildings or structures; c) the public benefit provided by the proposed activity; d) at zone interfaces: <ul style="list-style-type: none"> i. any setbacks, fencing, screening or landscaping required to address potential conflicts. ii. adverse effects on the character and amenity of adjacent zones; e) the extent to which the activity is consistent with any relevant adopted reserve management plan for the area; f) effects on public access and use; g) managing natural hazards; h) any adverse effects on areas with historic heritage and cultural values, natural features and landscapes, natural character or indigenous biodiversity values; and 			

Part 3 – Natural Open Space Zone provisions				
Provision reference	Provision	Support / oppose	Reasons	Relief sought
	i) any historical, spiritual, or cultural association held by tangata whenua, with regard to the matters set out in Policy TW-P6.			

Appendix D – Proposed Brownlie Land Precinct

PART 3 – AREA SPECIFIC MATTERS / PRECINCTS (MULTI-ZONE)

Chapter X BROWNLIE LAND (Name to be confirmed) Precinct

Overview

The Brownlie Land Precinct provides additional provisions to manage development on the land at 1828 and 1878 State Highway 10, Waipapa and Lot 1 DP 333643.

The Precinct has been developed to enable greenfields land to be zoned now to secure urban capacity for the growth of Kerikeri and Waipapa and to secure outcomes that will create a well-functioning and quality urban environment.

The Precinct enables the land to be zoned for urban purposes now, thus providing sufficient urban development capacity for Kerikeri and Waipapa as well as providing an appropriate level of certainty to secure investment in the required infrastructure upgrades and extensions that will be required to facilitate the demand for growth in this location.

The location of the Precinct provides a significant opportunity to provide for urban growth and achieve the affordability and variety of housing typology outcomes sought by the National Policy Statement – Urban Development 2020, whilst also providing for a high-quality and well-functioning urban environment.

Development of the Precinct needs to occur in stages to ensure there is appropriate infrastructure available at the various stages to service the development. An on-site wastewater solution is proposed to service the initial stages of development prior to connection to an extended reticulated network being available.

Regarding water supply, there is capacity in the existing reticulated water network to service the proposed development. An onsite solution will be needed to supplement the system during the periods when the water supply for Kerikeri and Waipapa experiences an algal bloom. Currently when this happens, the reticulated network is supplemented by a water take from the Kerikeri River. However, the River is at capacity, meaning another backup solution needs to be found for the site. It is likely that this solution could be an on-site bore/groundwater take.

The Precinct is required to manage flood hazard risk on the subject land, and potentially the wider area. The land within the Precinct is susceptible to the 1:100 AEP Flood hazard. Flood modelling has been undertaken and an indicative floodway shown through the site to manage the natural hazard risk. Securing the land for the floodway needs to occur prior to subdivision or works occurring in the Precinct.

Specific provisions are required to manage the amount retail floor space to ensure the area does not detrimentally compete with the existing Kerikeri town centre.

The zoning rules as per Part 3 of the proposed District Plan apply to the site. **S554.046**

The district wide rules as per Part 2 of the proposed District Plan apply to the site. **S554.047**

Objectives	
BL-O1	The Brownlie Land Precinct enables staged urban development of the land to integrate with the provision of infrastructure. S554.048
BL-O2	Infrastructure upgrades and extensions are facilitated and provided in an efficient way associated with the scale of urban development enabled.
BL-O3	To create a well-functioning, quality urban environment through: <ul style="list-style-type: none"> (a) Provision of non-vehicular access to Rainbow Falls – <i>Waianiwaniwa</i>, a connected pedestrian and cycle network through the site and transport connections to areas beyond the site. (b) Providing opportunity to improve resilience of the State Highway network through provision of alternative access routes. (c) Improve vehicle connectivity between Kerikeri and Waipapa. (d) Management of flood hazard risk by way of a floodway constructed to achieve a naturalised outcome. (e) Protect and enhance natural assets through the provision of Open Space areas, esplanade and other reserves or shared spaces. (f) Enabling urban development to meet demand for urban development capacity.

Policies	
BL-P1	Limit the scale of development enabled by onsite servicing and actively work to secure appropriate public reticulated infrastructure services to facilitate full urban development of the land.
BL-P2	Secure a defined floodway area over the land prior to, or as part of the first stage of any development activity, to ensure the flood hazard risk is managed.
BL-P3	Limit the extent of retail activity gross floor area to ensure the continued vitality of Kerikeri town centre.
BL-P4	Deliver and secure pedestrian and cycle connectivity through the development harnessing the amenity associated with the Kerikeri river and proposed naturalised floodway.
BL-P5	Provide open spaces to protect natural site features in the amphitheatre which includes native vegetation, stream, wetland, and waterfall areas.

Rules	
	<p>Notes:</p> <p>Part 2- District-Wide Matters of the District Plan apply to a proposed activity within the Precinct</p> <p>Part 3- Area Specific Matters apply to the Precinct in regard to the appropriately zoned land, being General Residential, Mixed Use and Open Space and Recreation Zones. The Precinct provisions apply in addition to those matters listed within Part 2 and 3 of the Proposed District Plan.</p> <p>Refer to the “how the plan works” chapter to determine the activity status of a proposed activity where resource consent is required under multiple rules.</p>

Rules	New buildings or structures	
Brownlie Land Precinct	<p>BL-R1 Activity status: Permitted</p> <p>Where:</p> <p>Prior to the occupation of a building or habitable structure, the floodway must be constructed and legally secured.</p>	<p>Activity status where compliance not achieved with BL-R1 Restricted Discretionary</p> <p>Matters of discretion are restricted to:</p> <ol style="list-style-type: none"> a. Management of flood hazard. b. Risk to proposed buildings associated with flooding. c. Risks to other persons or property associated with the proposal in relation to flood hazard.
BL-R2 Local neighbourhood centre in the General Residential Zone		
Brownlie Land Precinct	<p>Activity status: Restricted Discretionary</p> <p>Where:</p> <p>No more than 5 retail or commercial premises are provided to service the neighbourhood.</p> <p>The new building/s or structure/s complies with the standards:</p> <p>MUZ-S1 Maximum height MUZ-S2 Height in relation to boundary MUZ-S3 Setback (excluding from MHWS or wetland, lake and river margins) MUZ-S4 Setback from MHWS</p>	<p>Activity status where compliance not achieved with BL-R2 Discretionary</p>

	MUZ-S5 Pedestrian frontages MUZ-S6 Verandahs MUZ-S7 Outdoor storage MUZ-S8 Landscaping and screening on road boundaries MUZ-S9 Landscaping and screening for sites adjoining a site zoned residential, open space or rural residential MUZ-S10 Coverage	
BL- R3 Comprehensive Development Plan		
Brownlie Land Precinct	<p>Activity status: Restricted Discretionary</p> <p>Where:</p> <p>As part of the first resource consent application for any subdivision, use or development within the Precinct, a Comprehensive Development Plan shall be submitted for approval containing the following information:</p> <ol style="list-style-type: none"> 1. The layout, location and type of proposed lots,. 2. Road access points. 3. Internal roads, private access ways, pedestrian and cycle connections. 4. Detail of infrastructure servicing requirements, including staging triggers for delivery of development. 5. A comprehensive stormwater management plan. 6. Detail of proposed reserves including reserves to vest. 7. Detail of natural hazard mitigation measures including provision for legally securing the land required for flood hazard mitigation and detail and plans for the physical construction of the floodway. <p>Note this detail may be supplied and approved as a separate component to the CDP ahead of all other development activity.</p> <ol style="list-style-type: none"> 8. Detail of the location of a Neighbourhood Centre to provide retail premises to support the residential neighbourhood. <p>The Comprehensive Development Plan may be implemented in stages.</p>	<p>Activity status where compliance not achieved with BL-R3 Discretionary</p>

	<p>Matter of discretion are restricted to:</p> <ol style="list-style-type: none"> a. The suitability of infrastructure provision. b. Alignment of development staging with the provision of infrastructure. c. The management of stormwater to avoid, or otherwise mitigate the effects of stormwater on the environment. d. The extent to which pedestrian and cycle connections utilise and enhance access to Rainbow Falls – <i>Waianiwaniwa</i>, the Kerikeri river, the Sports Hub and the wider area. e. The suitability of reserves to vest in relation to location, connectedness, topography and access to services. f. The management of flood hazard to avoid flood hazard effects on urban development. g. The design of sites to achieve a quality, sustainable urban environment, including but not limited to solar access, multi modal transport connections, walkability, amenity and connection to nature. h. The appropriateness of scale and location of a neighbourhood centre. i. The appropriateness of activities and buildings proposed in the Mixed Use zone, and the layout of sites to provide a dual frontage to State Highway 10 and the internal road network. 	
BL- R4 Development not in accordance with the Comprehensive Development Plan approved as per BL-R3		
Brownlie Land Precinct	Activity Status: Discretionary	
BL- R5 Mixed Use Zone- Retail floor Space.		
Brownlie Land Precinct	<p>Activity Status: Permitted</p> <p>Where:</p> <p>The total retail floor space in the Mixed Use zone shall not exceed 7,500m² excluding a supermarket.</p> <p><i>Note: retail activities include Large Format Retail, repair centres and trade suppliers</i></p>	<p>Activity status where compliance not achieved with BL-R5</p> <p>Discretionary</p>



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Structure Plan: Brownlie Land – Kerikeri – Waipapa

Kiwi Fresh Orange Company Limited

21 October 2022

This Structure Plan has been prepared by The Planning Collective Limited and Pacific Environments Limited to inform the Submission to the Proposed Far North District Plan Review on behalf of Kiwi Fresh Orange Company Limited. The Structure Plan and related submission pertains to land at 1828 and 1878 State Highway 10, Waipapa, Waitotara Drive, Kerikeri and Lot 1 DP 333643, Lot 2 DP 76850, Part Section 13 Block X Kerikeri Survey and Lot 6 DP 6704 (TPC Reference: KFO-024-22).

This document has been prepared by:

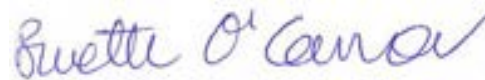


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Dated: 12 October 2022



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"The curves within the circle symbol of our logo are a depiction of the shape the Mahurangi River takes as it weaves its way through Warkworth. This was chosen to illustrate the whenua and landscape of the town that The Planning Collective works so closely with."

A hub of planning excellence

Table of Contents

Executive Summary	1
1. Introduction	7
2. Development of the Structure Plan	12
3. Vision and Objectives	13
4. Spatial Context	16
5. Strategic Context.....	30
6. Constraints and Opportunities.....	45
7. The Structure Plan	65
8. Implementation	74
9. Conclusion.....	75

Appendices

Appendix 1: Site Constraints and Opportunity

Appendix 2: Transport Options Plan

Appendix 3: Proposed Structure Plan

Appendix 4: Existing and Proposed Zoning of the Site, including Overlays and Precinct Area

Executive Summary

This Structure Plan provides the background and justification for The Brownlie Land Structure Plan proposed as part of Kiwi Fresh Orange Company Limited's submission on the Proposed District Plan. In particular, it draws upon detailed expert reports of various disciplines to inform a proposal to live urban zone The Brownlie Land Structure Plan area, providing housing and business development capacity while managing the effects of urban development, integrating with the existing built environment and protecting high-value natural environment.

The Vision

To create an exemplar high-quality urban environment, reflecting a strong pattern of natural elements, providing seamless connections to Waipapa and Kerikeri whilst contributing to the overall unique character and vitality of Kerikeri - the largest urban centre in the Far North District.

The land exhibits high quality natural features that can be protected and enhanced. The opportunity to manage flood hazards in the area provides further opportunity to strengthen natural environment elements and the land is strategically well placed to provide strong multi modal transportation connectivity.

Vision Statement

The Brownlie Land is strategically located between the townships of Kerikeri and Waipapa and will provide for a high-quality urban environment that has a seamless connection to both Kerikeri and Waipapa, while reinforcing the unique characteristics of Kerikeri and the wider region. Urban development can be achieved that will contribute positively to the existing town centre and urban areas of Kerikeri and Waipapa as both have different and distinctive character.

The vision statement is supported by key objectives relating to achieving a quality urban environment, enhanced natural environment, provision of business and mixed-use commercial land to support the residential land uses. Walkways and shared paths will connect the future land uses to Kerikeri and Waipapa as well as provide access to Rainbow Falls.

The Structure Plan Area

The proposed Structure Plan area encompasses approximately 197ha of land to the northwest of Kerikeri Township extending west to State Highway 10 and Waipapa. The land is currently zoned Rural Production under the Operative Far North District Plan. The boundary of the Structure Plan area is well defined by the Kerikeri River on its north, eastern and western boundaries, with the Bay of Islands Golf Course to the South and State Highway 10 to the Southwest. The Kerikeri River is a significant natural element that contributes to the character of Kerikeri and the surrounding area. The River extends east past the historic Stone Store (the oldest surviving stone building in New Zealand) discharging out to the Bay of Islands.

Kerikeri is the largest town in the Far North District located 85km north of Whangarei. The easiest and most direct route to Kerikeri is via State Highway 1, then onto State Highway 10 at Pakaraka. Kerikeri Road is located off State Highway 10. Kerikeri is well known for its temperate climate and its natural and cultural heritage values.

A full description of the context of the Site is outlined in Section 4 of this Report.

Key elements of the Structure Plan to be considered

Development of the Structure Plan has considered the constraints and opportunities of the subject land and the wider context including the urban areas of Kerikeri and Waipapa. A detailed process of issue identification; constraints and opportunities mapping has been undertaken to determine the best, most appropriate land uses, taking into account the following matters:

- The relationship to the existing urban areas of Kerikeri and Waipapa.
- The relationship of rural land and reverse sensitivity issues.
- Cultural values.
- Transportation considerations and connectivity with the wider area.
- Natural environment considerations- areas of native vegetation and wetlands, the location of the Kerikeri River and the location of Rainbow Falls.
- The presence and management of natural hazard risk – flooding.
- Topography and geotechnical characteristics.
- Infrastructure servicing- sequencing and capacity of existing networks.
- Open space, recreation, and community facilities.

- Compact urban form and efficiency.
- The expected population growth in the foreseeable future – with reference to the National Policy Statement – Urban Development short, medium and long-term; as well as for the provision of housing choice including affordable housing options.
- Economic factors- efficiency of development with respect to location, development costs and achieving a sustainable balance between the provision of housing and employment land, reflecting the different existing and likely future roles of Kerikeri and Waipapa.

The Structure Plan area is a natural extension of urban land between Kerikeri and Waipapa- providing an opportunity for efficient high quality urban development to meet the future growth of Kerikeri and Waipapa.

Natural Hazards: The Site and surrounding area of Waipapa are susceptible to the 1:100 AEP Flood hazard. The Structure Plan shows an indicative floodway that runs through the Site to manage the natural hazard flood risk on the subject land.

Wastewater: There is currently limited or no capacity in the existing wastewater system for new connections from land that is not currently zoned urban in the FNDC Proposed District Plan. Significant upgrades or a new wastewater treatment plant solution are required to service the proposed development. Integration with the FNDC timeframes for their planned infrastructure upgrades as detailed in the Long-Term Plan 2018-28 will be key to the success of the development. The new development will be designed to connect to a reticulated wastewater system and the delivery of development will be integrated with infrastructure development and the provision of the required capacity. At this point in time, any onsite discharge solution will be decommissioned, and the remainder of the land will be developed in a staged approach.

Water Supply: There is capacity in the existing reticulated water network to service the proposed development. An onsite solution will be needed to supplement the system during the periods when the water supply for Kerikeri and Waipapa experiences an algal bloom. Currently when this happens, the reticulated network is supplemented by a water take from the Kerikeri River. However, the River is at capacity, meaning another backup solution needs to be found for the Site. It is likely that this solution could be an on-site bore/groundwater take and an assessment is currently underway.

Stormwater: Stormwater detention, retention and treatment will be provided for onsite and the stormwater from the development will be treated via a series of green corridors prior to the discharge to the River or the wetland on Site.

Transport: A number of transport links are being explored to provide connections to Waipapa and Kerikeri. A future connection to this main highway is key to the success of the Structure Plan area. There is opportunity to create a new intersection with Puketotara Road. Four potential transport options are presented within the Structure Plan.

Urban Form: The urban form has been considered and developed to provide multiple connections and provide a range of land uses that will compliment and not compete with Kerikeri or Waipapa. Importantly the structure plan area provides an opportunity to accommodate population growth over the next decades in an efficient and connected way. The outcomes of the Structure Plan respond to the matters above, resulting in primarily residential zoning with a commercial area against SH10 to provide an appropriate urban relationship to Waipapa, adjoin the Highway with suitable urban activities that will create a suitably active frontage and mitigate noise, traffic and pedestrian safety associated with the Highway. By being residential focussed the area can contribute to accommodating the strong demand for housing identified in the region in an efficient way where residents can live in very close proximity to employment, commercial/retail and amenity areas.

Natural Environment and Heritage: The design of the proposed development will be guided by the location of the identified natural features and their protection and enhancement to the greatest extent practicable. These features will be incorporated into the development as part of the green corridor network and the pedestrian and cycling network. The overall aim of the Structure Plan is to protect and enhance the existing ecological areas on the Site. However, some of the natural features may need to be modified to provide for the infrastructure connections and local road network on the Site. This would be addressed in detail at the future development stage. Rainbow Falls are a significant natural feature and tourist attraction for Kerikeri. At the moment, access to the Falls is only available via the existing Kerikeri River Track. Through the proposed greenways identified in the Structure Plan, Rainbow Falls is highlighted as a natural asset for protection and enhancement, ensuring that the effects associated with the development of the Structure Plan do not adversely affect the Falls. The general public will have greater access to be able to view and enjoy the Falls from the Site.

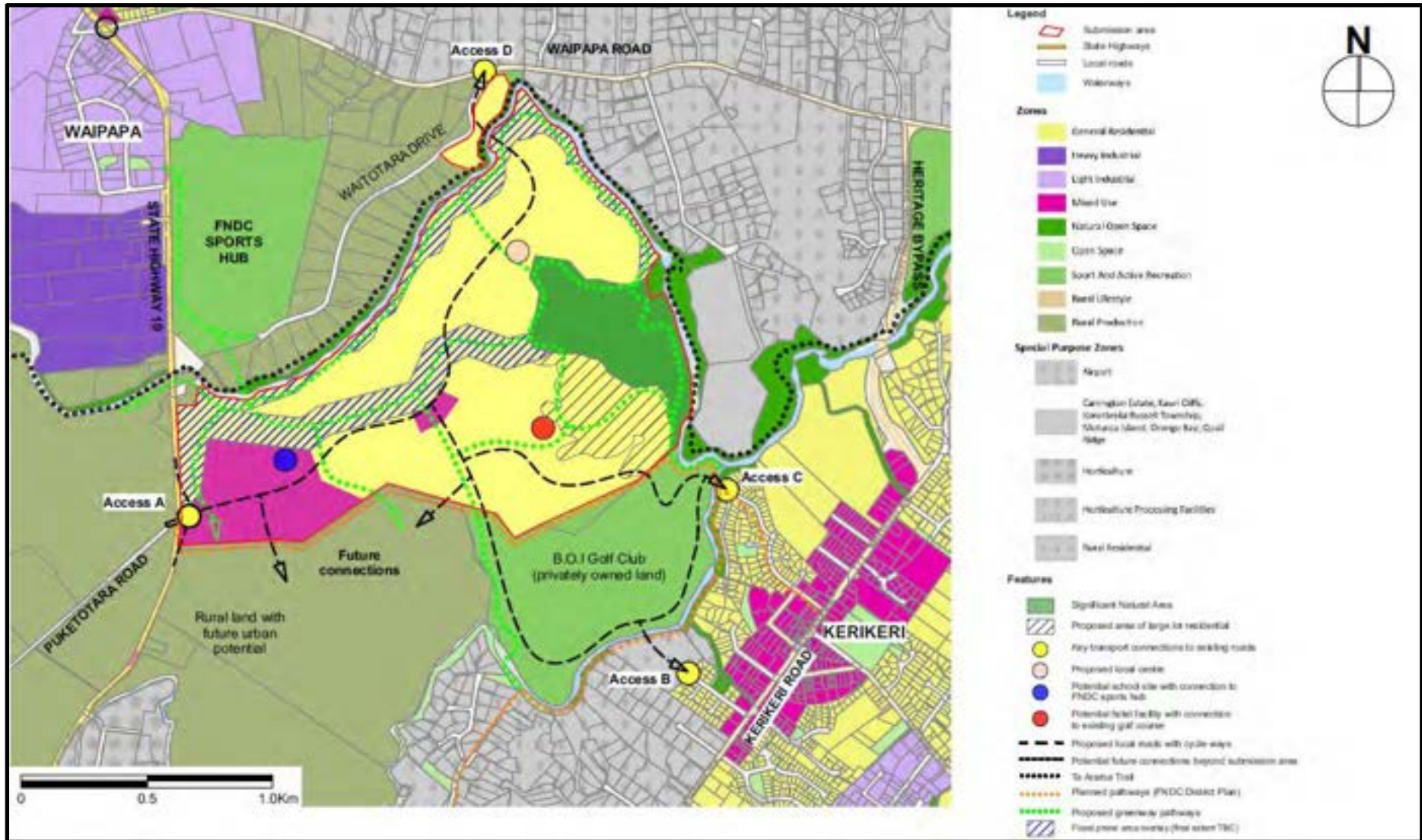
Open Space and Recreation: The southern side of Kerikeri River is currently not accessible to the public. An objective of the proposed development is to create a green corridor along the River edge to facilitate walking and cycling creating a high level of amenity for the residents of Kerikeri/Waipapa. The floodway shown within the Structure Plan presents an opportunity to create a green corridor through the Site for walking and cycling and general public enjoyment. The Site is in close locality to the Kerikeri Sports Hub off SH10. Pedestrian connections could be created from the proposed development to the Sports Hub.

Implementation and Staging

It is anticipated that the Structure Plan area will provide for approximately 1,500- 2,000 dwellings, providing a range of living options from a standalone house to town houses and low-rise apartments. The Structure Plan area will also contribute circa 54,500 m² of GFA commercial space (including a hotel development) to service Kerikeri and Waipapa. It is also anticipated that a primary school and retirement village may be located within the Structure Plan area.

Construction and development will occur in stages. Wastewater, water supply and transportation infrastructure availability will need to be delivered in integration with the delivery of development.

The Structure Plan



1. Introduction

This document provides the background and justification for the Structure Plan for The Brownlie Land (name to be confirmed). This report is written in conjunction with Pacific Environments Architects Limited as it incorporates the Neighbourhood Urban Design Statement.

The proposed Structure Plan for the Site has been developed following the review of detailed technical reports across a wide range of disciplines to inform the land use proposal. Consideration has also been given to development constraints for the Site with regards to infrastructure servicing.

The Kerikeri Waipapa Structure Plan 2007 is the most relevant structure plan to guide urban development in the area. It is understood that FNDC are currently reviewing this Structure Plan. The Kerikeri Waipapa Structure Plan 2007 anticipated that population growth between 2001 and 2026 would double from 7,830 in 2001 to 16,835 in 2026¹. The Structure Plan document also noted that the population is aging and that there continues to be demand for land for commercial, industrial and retail purposes around Waipapa and in the Kerikeri CBD.

Kerikeri is strategically located within the Far North Region, being the largest northern town, providing a range of services to support the rural and coastal areas of the North. Kerikeri is located in close proximity to the popular tourist destination of the Bay of Islands, including Paihia and Russell. Waipapa supports the Far North through the provision of a range of light and heavy industrial activities as well as residential development. Waipapa serves as a key service town for the Far North, supporting the surrounding businesses, as well as the rural and horticultural activities.

Travel times:

- Auckland to Kerikeri: 3 hours 30 minutes
- Whangarei to Kerikeri: 1 hour 10 minutes
- Paihia to Kerikeri: 23 minutes
- Kerikeri to Kaikohe: 25 minutes
- Kerikeri to Kaitaia: 1 hour 30 minutes
- Kerikeri to Waipapa: 10 minutes
- Kerikeri to Cape Reinga: 2 hours 30 minutes

¹ [Draft Kerikeri-Waipapa Structure Plan \(fndc.govt.nz\)](#) -Kerikeri Waipapa Structure Plan- September 2007.

The development of the proposed Structure Plan area will provide for the anticipated growth within the Kerikeri and Waipapa area. Urban Economics project that the rate of population growth in the Northland region will be approximately 5% share of national growth per annum over the next 10 years.²

For all the reasons outline above, Kerikeri is a desirable place to live, work and play. Housing affordability and supply is a known barrier for people moving to Kerikeri. The ability to successfully work from home has changed the way people work. The lifestyle that the Far North has to offer is also a key driver for retirees moving to the region.

1.1 The Structure Plan Area

The proposed Structure Plan area encompasses approximately 197ha of land to the west of Kerikeri Township, currently zoned Rural Production under the Operative Far North District Plan. The boundary of the Structure Plan area is well defined by the Kerikeri River on its north, eastern and western boundaries, with the Bay of Islands Golf Course to the South and State Highway 10 to the Southwest. The Structure Plan area is shown in Figure 1.

Kerikeri and Waipapa are also strategically located within the Far North Region, being the largest township in the Far North. The land area is strategically located adjacent to the Kerikeri River and State Highway 10 and the Bay of Islands Golf Club.

² Urban Economics report, Figure 9, page 15.

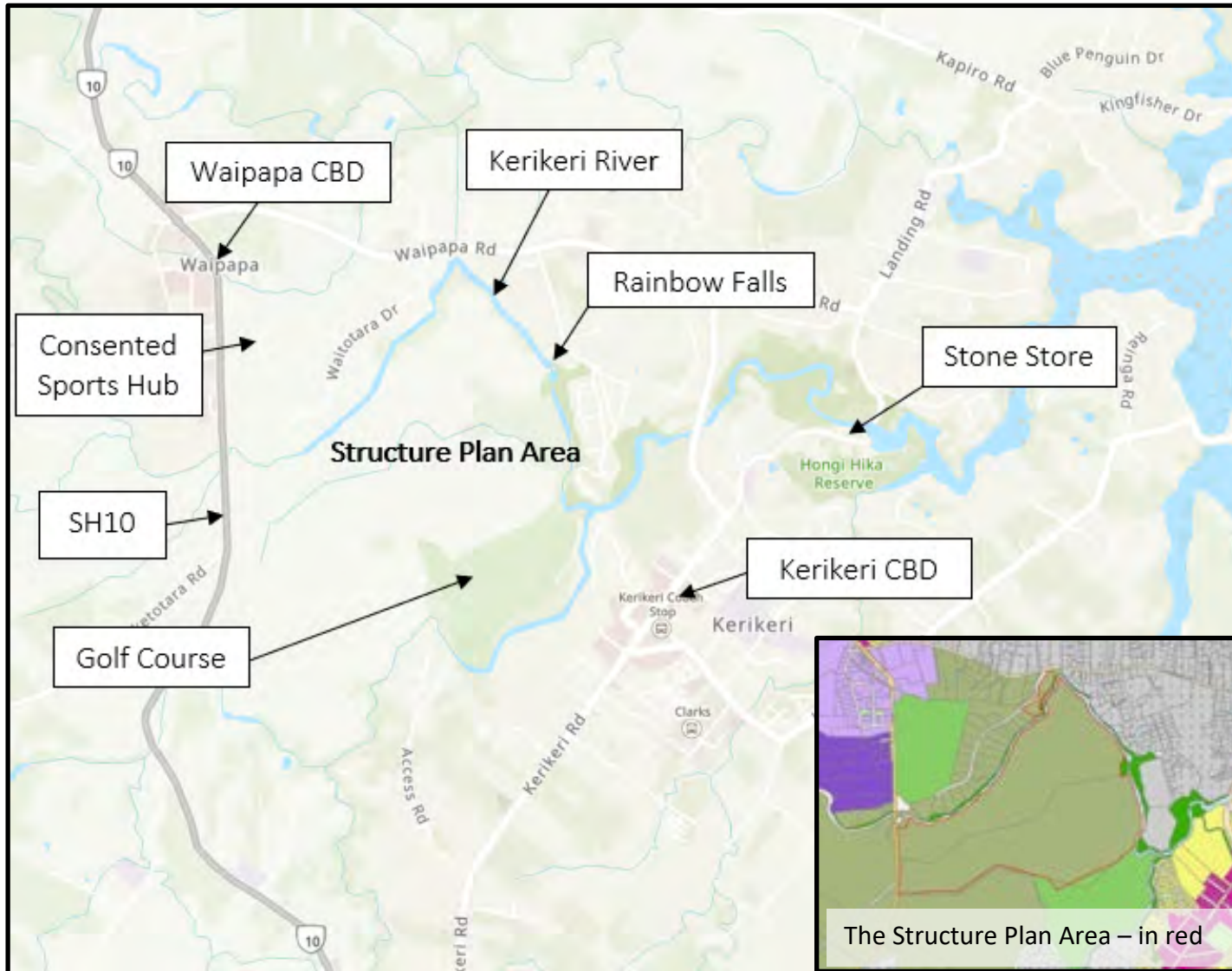


Figure 1: Local Features (Source: Google Maps, October 2022)

1.2 The Growth Challenge

As outlined in the Economic Assessment, prepared by Urban Economics to support the Structure Plan, Far North's annual population growth has increased from around 300 people per annum over the 2000-2012 period, to around 1,500 per annum over the 2012-2020. This represents a major step-change in the Far North's population growth and has now been occurring for ten years.

The Economic Assessment also notes that over the 2013-2021 period, the population for Kerikeri increased by around 310 per annum. Urban Economics population projections note that there is a projected increase of 500 (Medium Growth) to 760 (high growth) per annum over the 2023-2028 period. This rate of growth requires careful planning to ensure that quality environmental outcomes are achieved.

1.2.1 Housing demand

Urban Economics have undertaken an assessment of the Plan Enabled Development enabled by the Proposed District Plan within Kerikeri. Under both the medium and high growth scenarios, there is enough land within the General Residential Zone (and supported by infill housing) to meet the short-term development capacity requirements under the National Policy Statement for Urban Development (NPS-UD). However, Urban Economics note that the housing demand for the medium- and long-term population growth is not met by the current Proposed District Plan zoning.

Following the assessment provided by Urban Economics, it is clear that additional land is required to be zoned for General Residential Use within the Proposed District Plan to meet the demands associated with the projected population growth. The Proposed District Plan does not provide 10 years of housing supply as per the requirements of the NPS-UD and Section 31(1)(aa) of the Resource Management Act 1991. The current demand for housing cannot be met by infill housing alone, as per the current approach within the Proposed District Plan.

The Urban economics Assessment also notes that there is an anticipated demand for two additional retirement villages by 2032. These types of developments typically require between 5ha and 10ha of land. This type of housing option cannot be delivered through infill housing. Additional greenfield land needs to be allocated for providing for this type of land use.

1.2.2 Business demand

Kerikeri and Waipapa have their own distinct identities, which are important to retain. The Urban Economics report notes that there is demand for 5,870m² of convenience retail floor space as of 2022, with demand increasing to 7,500m² by 2032. With the increase in population, commercial land will be in demand to service the growing population.

In section 7 of the report, it is concluded that approximately 17.5 hectares net land area is required for commercial and employment related activities, which can be provided for within the Structure Plan.

1.3 What is a Structure Plan and what outcomes should the Structure Plan achieve?

Structure Planning is a tool for managing the effects and demands of a development or redevelopment of larger areas held in multiple ownership in an integrated holistic and orderly way. It is an effective means to achieve sustainable management of natural and physical resources, particularly in an urban context. Source: Quality Planning Website.

The Structure Plan should achieve a coordinated and holistic framework to guide the future development of a specified location i.e. the Structure Plan area; that will achieve the management of natural and physical resources and enable development to be undertaken in a way that avoids significant adverse effects on the environment.

As determined by the Economic Assessment, there is a demand for additional housing options and commercial land within Kerikeri and Waipapa. The ongoing vitality of Kerikeri and Waipapa depends on new business, more jobs and other population supporting activities, being able to establish in this area.

2. Development of the Structure Plan

The purpose of this Structure Plan was to examine the suitability of the land for urban development. The purpose of this exercise was to inform a Submission to the Proposed District Plan and determine whether there was a sound basis for seeking that some or all the land be zoned urban.

The Structure Plan for this area of land has been prepared following several years engagement with the community including input and consultation with Far North District Council, Ngāti Rēhia and various other community groups, including Vision Kerikeri, The Rotary Groups and the Bay of Islands Golf Club.

Detailed analysis of the technical reports, the outcomes of consultation and the GIS mapping constraints have been utilised to inform preparation of the Structure Plan. These technical reports inform the Structure Plan and are appended to the s32 Report.

The Structure Plan has been prepared taking into consideration all relevant statutory documents such as National policy Statements, National Environmental Standards, the regional Policy Statement for Northland and Regional Plans as well as statutory and non-statutory documents relevant to planning.

Economic analysis demonstrates there is demand for the more land to be zoned for urban purposes in the Kerikeri / Waipapa area. This includes residential and business land. Providing for this demand is in keeping with the National Policy Statement – Urban Development.

3. Vision and Objectives

3.1 Vision

To create an exemplar high-quality urban environment, reflecting a strong pattern of natural elements, providing seamless connections to Waipapa and Kerikeri whilst contributing to the overall unique character and vitality of Kerikeri - the largest urban centre in the Far North District.

The land exhibits high quality natural features that can be protected and enhanced. The opportunity to manage flood hazards in the area provides further opportunity to strengthen natural environment elements and the land is strategically well-placed to provide strong multi-modal transportation connectivity.

Vison Statement

The Brownlie Land is strategically located between the townships of Kerikeri and Waipapa and will provide for a high-quality urban environment that has a seamless connection to both Kerikeri and Waipapa, while reinforcing the unique characteristics of Kerikeri and the wider region. Urban development can be achieved that will contribute positively to the existing town centre and urban areas of Kerikeri and Waipapa as both have different and distinctive character.

The vision statement is supported by key objectives relating to achieving a quality urban environment, enhanced natural environment, provision of business and mixed-use commercial land to support the residential land uses. Walkways and shared paths will connect the future land uses to Kerikeri and Waipapa as well as provide access to Rainbow Falls.

3.2 Structure Plan Objectives and Guiding Principles

Objectives:

1. To provide for the growth demands of Kerikeri and Waipapa in a strategic manner that will achieve efficient, connected, high-quality, and sustainable urban outcomes.
2. Recognise the existing different urban roles of Kerikeri and Waipapa and support and integrate the development with those existing uses.

3. Reflect and incorporate Ngāti Rēhia values in the development of the land.
4. To integrate urban development with efficient infrastructure servicing (physically, spatially, and economically) and to align the expansion and extension of reticulated infrastructure with the FNDC levels of service and proposed infrastructure upgrades.
5. Ensure that the infrastructure provided to service future development is resilient and has sufficient capacity to respond to future growth demands.
6. Promote an urban character that reflects the unique characteristics of Kerikeri in terms of temperate climate, strong Māori and European heritage, proximity to the coastal environment, and presence of horticultural activities.
7. Reduce the creation of solid waste through sustainable design solutions and material choices during construction.
8. Promote energy use reduction through, sustainable urban form including the creation of walkable catchments, pedestrian, and cycle connections throughout the development and to the wider area.
9. Promote the use of solar energy to harness the benefits of the temperate climate.
10. Encourage sustainability in food production through the provision of community gardens, common allotments, use of appropriate spaces in proposed reserve areas, and provision of a range of site sizes.

Structure Plan Principles:

Transport:

1. Create opportunity for a strong east / west transportation link between Kerikeri and Waipapa.
2. Facilitate connectivity and integration of all modes of Transport.
3. Provide a single connection to SH10.
4. Optimise activation of the reserve areas and open space/natural open space zoned land to ensure that the River is always accessible.
5. Integrate shared spaces and pathways with the flood management spillway.
6. Ensure that new dwellings are designed to have passive surveillance over pedestrian paths and parks.
7. Provide opportunities to connect with nature through provision of pathways through wetland and riparian areas.
8. Provide walking and cycling connections to Rainbow Falls, and opportunity for connections to the existing trails within Kerikeri.

Flood Management:

1. Create a spillway for flood management that is designed as an asset for public open space in order to maximise recreation and amenity opportunities.
2. Manage the flooding constraints on the Site in a way that enables the efficient development of land.

3. Where possible, aim to mitigate flood risk for the wider Kerikeri and Waipapa communities.
4. Align flood mitigation outcomes with ecological and environmental outcomes.

Landscape and urban design:

1. Development is to provide a high level of living amenity that reflects and is respectful to the form and character of Kerikeri.
2. Achieve a compact and efficient urban form that responds to the physical characteristic and constraints of the Site.
3. Provide a mix of residential living opportunities supported by an appropriate extent and mix of non-residential activity such as commercial and retail activities.
4. Use the open space zones as a framework that ties the development together. The use of the open space and natural open space zone is to be multifaceted (i.e., stormwater, wildlife, transport connections, amenity).
5. Promote non-vehicular modes of transport.
6. Minimise barriers between public and private spaces.
7. Support higher density development in close proximity to amenity, transport connections and access to open space.

Economics:

1. Achieve flexibility in housing sizes and options to respond to demand and market changes.
2. Provide for a mix on non-residential activity to support the community.
3. Allow for the staging of the development, while ensuring that multiple stages can occur at the same time.
4. Provide for a mix of uses within the Site- residential, commercial, and social.
5. Provide local employment options and opportunities.
6. Provide for affordable housing options.

4. Spatial Context

The land within the Structure Plan area adjoins the Kerikeri River. Te Araroa Trail, which runs the length of New Zealand is located on the northern side of the River. Land to the Northeast is zoned Rural Residential. The land accessed from Waitotara Drive is zoned for rural production purposes, however, this land is currently being used for rural residential purposes. To the Southeast is the Bay of Islands Golf Course. The land within the Structure Plan area is currently zoned Rural Production and is being used for dairy farming.

The Site is located strategically between Kerikeri and Waipapa and presents a significant opportunity to integrate the development between the two towns in a compact and efficient manner. Kerikeri commercial area is characterised by typically fine-grained retail and supporting commercial activities. Waipapa urban area is typically characterised by industrial and large format retail activities.

The residential development in Kerikeri is older style development to the east of the Bay of Islands Golf Club land with newer development further east and to the south of the town centre. Beyond the urban fringe are rural residential living sites. Along Kerikeri Road there is a broad mix of land uses ranging from garden centres, boutique production and associated retail activities and a range of visitor accommodation options.

The land to the south of Kerikeri and to the North of Waipapa is proposed to be zoned for horticultural purposes. reflective of current and potential land use. The presence and identification of horticulture land limits where feasible urban growth can occur to provide for the growth needs of Kerikeri and Waipapa. Land on the fringes of Kerikeri and Waipapa is zoned and proposed to remain zoned for Rural Residential purposes.

Immediately to the north of the Site is a 46.77-hectare piece of land owned by Far North District Council that is being developed for a sports hub to cater for multiple sporting disciplines.

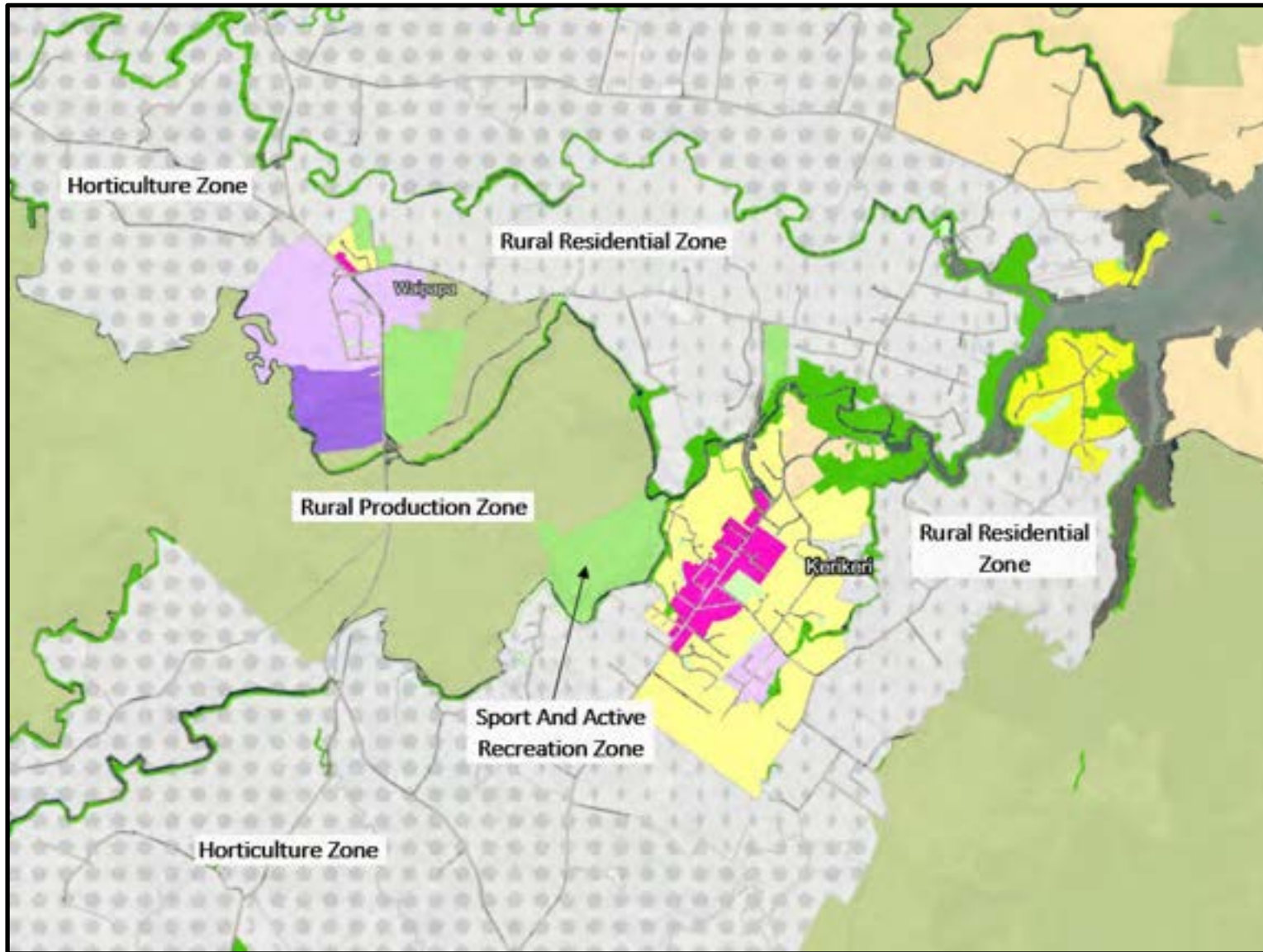


Figure 2: FNDC Proposed District Plan – Zoning map of Kerikeri and Waipapa

4.1 Description of the Site

The proposed Structure Plan area encompasses approximately 197ha of land to the northwest of Kerikeri Township extending west to State Highway 10 and Waipapa. The land is currently zoned Rural Production under the Operative Far North District Plan. The boundary of the Structure Plan area is well defined by the Kerikeri River on its north, eastern and western boundaries, with the Bay of Islands Golf Course to the South and State Highway 10 to the Southwest.

The Kerikeri River is a significant natural element that contributes to the character of Kerikeri and the surrounding area. The River extends east past the historic Stone Store (the oldest surviving stone building in New Zealand) discharging out to the Bay of Islands.

Kerikeri is the largest town in the Far North District located 85km north of Whangarei. The easiest and most direct route to Kerikeri is via State Highway 1, then onto State Highway 10 at Pakaraka. Kerikeri Road is located off State Highway 10. Kerikeri is well known for its temperate climate and its natural and cultural heritage values.

The land within the Structure Plan area is currently used for grazing of cattle and dairy farming. A small parcel of land parcel fronting Waitotara Drive and located adjacent to the Kerikeri River, is currently mown.

4.1.1 Geotechnical Context

The Structure Plan is supported by a Geotechnical Site Suitability Assessment provided by LDE dated June 17 2022. The Report concludes that the land is suitable for urban development based on the desk top analysis, Site walkover and initial geotechnical investigation.

Based on the investigation and appraisal of the site reported herein, the subject area has been assessed as suitable for residential development.

Based on our assessment of stability and other natural hazards, we consider that there are no significant geotechnical constraints. Specific foundation design will however be required to address the expansive soils identified across the site.

Adequate provision for access to the future developments is provided in the scheme plan and only minor earthworks will be required.

Further geotechnical investigations will be required to determine the location and design of the proposed spillway.

In addition, the following points can be made regarding the characteristics of the Site:

- Earthquake hazards and the risk of liquefaction is low
- The risk of tsunami inundation is negligible
- Land adjacent to the Kerikeri River may be susceptible to lateral spreading in an earthquake
- There is evidence of historic slope instability, but failures are minor
- Near surface soils are highly plastic and moderately to highly expansive

4.1.2 Hydrological Context

The Structure Plan is supported by a Hydrological Report, prepared by E2. The Report notes that Flood management is a significant constraint for the development of the Site.

The Site is bound by the Kerikeri River to the north, west and east of the Site. The River is generally 20 to 30m wide. Rainbow Falls is a waterfall within the Kerikeri River that has a drop height of approximately 25m. There are two on site waterfalls that have a drop of 15m and 20m and are fed by smaller waterways that run through the Site.

The Puketotara Stream flows into the Kerikeri River approximately 275m down stream of the southeast corner of the Site.

4.1.3 Ecological Context

The Structure Plan is supported by an Ecological Assessment, prepared by Bioresearches. The assessment noted that there are many different freshwater habitats on the Site including farm drains, ponds, streams, the Kerikeri / Waipেকakoura River, Puketotara Stream and natural wetlands. Figure 3 shows the location of the identified freshwater habitats by Bioresearches.

In summary, the report concluded that:

- the majority of the farmland is well maintained with a series of farm drainage channels located throughout the Site.
- The gully between the golf course and the farm has well established native vegetation and 'natural wetlands' and is therefore subject to the NES-F regulations regarding wetlands.
- The central flood path could provide some constraints with regards to potential streams in the pathway and the wetlands. Investigation of the status of the flood mitigation measures as 'specified infrastructure' is recommended.
- A 20m esplanade reserve will be required upon subdivision. This will protect most the existing riparian vegetation but there are several areas, particularly in the northern corner where this would need to be wider to include all of the established native riparian vegetation.

The Kerikeri River borders the Site to the north and provides significant amenity and recreational opportunities, including opportunities for ecological enhancement. Overall, Bioreserches concluded that there are few ecological constraints



*Figure 3: Freshwater habitats within the Kerikeri Plan Change Area
(Dark blue – rivers/streams; blue – ponds; light blue – assumed streams; green – natural wetlands; yellow – farm drains)*

4.1.4 Economic Context

Waipapa is a growing service centre for the Far North region, offering a range of light industrial, larger format retail stores, and commercial services to support the businesses within the Far North. Waipapa is strategically located on State Highway 10 and can be accessed from Kerikeri either by State Highway 10 or the Twin Coast Discovery Highway that connects to Waipapa Road. Kerikeri has historically been known for its horticultural activities and citrus orchards. Today, this type of land use still shapes the character of Kerikeri and the local economy.

The population of the Far North is growing. In 2021 the population of Far North District increased by 1,200 people. This reflects a trend exhibited since 2014, where prior to 2015 population growth in the district had typically been a 200 – 300 person increase per annum.

Urban Economics (“UE”) have prepared an economic assessment to determine the demand for additional urban land in this location and the range of urban land uses that may be appropriate from an economic perspective.

UE report that:

1. Executive Summary

New Zealand's population increased by 32,600 for the year ending March 2021 and by 63,000 for the year ending March 2022.

By comparison the Auckland population has declined by 1,300 people for the year ending March 2021 and by 4,500 for the year ending March 2022. This is the first decline Auckland has seen since 1861 and this exodus has led to the rise of the population in the regions.

Far North's annual population growth has increased from around 300 people per annum over the 2000-2012 period to around 1,500 per annum over the 2012-2020 period. This represents a major step-change in the Far North's population growth and has now been occurring for ten years.

There have been some notable demographic changes that have underpinned population growth in Kerikeri since 2014. This has been driven by an increase in empty nesters and retirees entering the town. This is likely because Kerikeri is a popular destination for Aucklanders looking to move into the Far North, given it is the largest town and offers a range of amenities (retail, community, recreation, etc).

Over the 2013-2021 period, the population for Kerikeri increased by around 310 per annum. Both Statistics NZ and Infometrics expect this growth to drop over the 2023-2028 period, to 160 and 220 respectively, a drop of 48% and 29%. By contrast, the UE Medium projections are for an increase to 500 people per annum over the 2023-2028 period, and the UE High projections are for an increase of 760 people per annum over the 2023-2028 period.

UE analysis concludes that there is 5.4-6.4 years capacity in terms of a Reasonably Expected to be Realised Market Scenario related to the Far North District Council's proposed approach in the Proposed District Plan of providing for the growth demand through infill housing in the existing urban area. This outcome indicates that the short-term development capacity requirements of the National Policy Statement – Urban Development (“NPS-UD”) can be met, but that the medium and long-term development capacity requirements are not met.

If development capacity demands are not met housing will become more unaffordable. More land is required for urban development around Kerikeri and Waipapa to fulfil the requirements of the NPS-UD.

Figure 30 in the Urban Economics assessment shows that between September 2020 and 2022 the greatest proportion of dwellings in Kerikeri sold in the \$700-\$800,00 price bracket. The next greatest proportions were in the \$800-\$900,000 bracket and then properties in the \$900-\$1,000,000 price bracket. The demand for new homes within the Far North and within Kerikeri in particular is not keeping up with supply, meaning housing unaffordability is increasing.

4.1.5 Landscape Context

A Landscape and Visual Assessment has been provided by Littoralis Landscape Architects to support the Structure Plan. It is noted that the Site has a predominantly gentle terrain and is visually contained.

In section D the analysis identifies the landscape opportunities and constraints that have informed the Structure Plan. These opportunities and constraints are summarised as follows:

- *A distinctive character and identity that infuses the wider context of the Site as a result of its soils, topography, catchment pattern and climate. This combination of geophysical qualities imbues Kerikeri with a rich history of growing food and, in the past century, a reputation for supporting subtropical plants for both fruit crop and amenity purposes. That established character can be distilled and expanded through future urban areas to give it further strength.*
- *Much of the Site is relatively featureless and virtually flat, so that large portion of the land is unconstrained within the scope of this assessment.*
- *Those parts which aren't almost flat occupy steep flanks dropping to riparian areas, where care for habitat values, associated visual amenity and providing for off-road access can offer heightened value to development on the "easy" part of the land and surrounding areas beyond the Site.*
- *Watercourses lining two edges of the Site as part of a clearly expressed catchment system that converges on the margin of the land. The combination of the Kerikeri River corridor and the Puketotara Stream, along with their indigenous riparian vegetation associations, create a frame to approximately 2/3 of the perimeter of the Site.*
- *A related network of existing Open Space – as outlined in the preceding section – that incorporates "destination" reserves as well as narrower access and waterside management strips.*
- *Frontage to SH10 and very close proximity to Kerikeri offers scope for unification of these currently separated urban hubs and residential areas.*
- *A significant flooding limitation across a large section of the land leads to a solution that opens considerable potential amenity and character opportunity through the development of a corridor to channel those floodwaters.*

The landscape related Structure Plan components include the riparian margins, the floodway and non-vehicular corridors that can provide strategic linkages to Kerikeri and Waipapa, including the Sports Hub.

The landscape assessment concludes:

Far North District Council's Kerikeri Sports Hub site is of a substantial area and strategically positioned relative to both Waipapa commercial area and the Site. Its development will shape the character of the area and the Structure Plan is poised to create a very constructive interface with that focus for the wider community.

The Site's spatial relationship with Kerikeri to one side and Waipapa to the other, combined with virtually flat topography, suggests that it is optimally positioned to accommodate future growth. This is particularly clear when the Site is compared with the characteristics of other parts of Kerikeri's margin, which typically carry much stronger rural character and higher landscape sensitivity.

4.1.6 Urban Design Context

The Submission Area is centrally located between Kerikeri and Waipapa. It connects directly with State Highway 10 and Waitotora Drive (giving direct and close access to Waipapa Road). To the South it borders the Bay of Islands Golf Club and a large pastoral land holding, both of which lie between it and the Kerikeri urban area. Significant natural features such as the Kerikeri River, waterfalls and tracts of native bush surround the northern and eastern edges of the Site with larger lot detached dwelling across the River.

Both Waipapa and Kerikeri are reasonably low-rise towns with distinctly different urban characteristics, Kerikeri being a multifaceted service town with a significant residential population, and Waipapa being of a commercial and light industrial nature in its centre with associated larger scale low rise buildings, and residential large lot holdings further out. Waipapa also contains a recently consented "Sports Hub" owned by Council.

Kerikeri is characterised by single detached dwellings on lots around 600-800m², and a highly activated fine grain commercial centre with most road frontages being between 8 and 25m. There is not a robust choice of housing typologies or densities at present in Kerikeri or the wider area including Waipapa.

There is potential for the Site to connect to the Kerikeri urban area through the surrounding land holdings to the south, this would allow the Site to consolidate Kerikeri as the urban centre for the entire area and enhance it.

While connections to Kerikeri would require bridging over the Puketotara River, the overall remaining topography ensures the potential for multimodal connections including pedestrian, cycle, and vehicle between Waipapa and Kerikeri, and from within the submission area to these two areas without having to rely on external perimeter roads such as SH10 and Waipapa Road.

The distinct urban context of the submission area begins to inform an urban direction for the Site, with opportunities to address the larger scale environment of Waipapa with a similar scale of development that can also act to consolidate the urban form of Waipapa by being a legible and high-quality gateway to it.

The balance of the Site can provide a continuation of the Kerikeri urban character and scale, with the introduction of more residential typological choice that can be incorporated as appropriate around local centres, high value landscape and visual amenity, and potential public transport corridors.

These areas reflecting the variety surrounding urban characters can be buffered by internal elements such as landscaped overland flowpaths and floodways.

4.1.7 Transport Context

A draft Integrated Transport Assessment (“ITA”) has been prepared by TEAM Traffic to inform the Structure Plan. The ITA is draft reflecting transport modelling being undertaken by Far North District Council that is not yet available. The intention is to review and finalise the ITA once that modelling is available and has been reviewed and tested by TEAM.

The draft ITA states that the Site has good vehicular accessibility to the surrounding road network which includes, and could potentially include:

- State Highway 10
- Waitotara Road
- Through neighbouring properties including the golf course to roads such as Golf View Road and Access Road.

A small part of the Site currently fronts Waitotara Road and access from this point could be provided into that part of the Site and also to the wider Site with the provision of a bridge across Kerikeri River.

Four key transport options have been investigated. All options have the same pedestrian and cycle connectivity options. TEAM comments that *A high-level appraisal of each option shows that the following strategically important regional transportation benefits are realised by all four options:*

- *Network resilience provided for SH10 can be realised for this section of the nation’s primary roading infrastructure.*
- *The provision of a comprehensive network of more direct active mode (walking and cycling) connections that will provide significantly better connections than presently exist between the Kerikeri urban area, the expanding Waipapa area and the Council’s Sports Hub.*
- *Development potential located centrally between the two recognised growth nodes of the region.*

The Site provides opportunity to provide an alternative access route connecting between State Highway 10 and Waitotara Drive to improve network resilience. The opportunity to construct a new intersection on State Highway 10 is facilitated by the proposal because the management of approach speeds and other design requirements are met require that northern and southern legs of the round-a-bout would need to be located on the subject Site.

Overall, it has been concluded that the development of the Site for urban purposes provides significant opportunity to integrate Kerikeri and Waipapa, provide resilience to the existing network and integrate active modes to the Sports Hub and potentially further afield to the Kerikeri River and Te Araroa tracks.

4.1.8 Soils and Land Management Context

The Structure Plan is supported by a high-level assessment of the soil types present by Hanmore Land Management. The report identifies that there is a mix of Land Use Classification 2, 3 and 4 soils present on the Site.

The Northland Regional Policy Statement defines highly versatile soils as follows:

Highly versatile soils are Land Use Capability Classes 1c1, 2e1, 2w1, 2w2, 2s1, 3e1, 3e5, 3s1,3s2, 3s4 - as mapped in the New Zealand Land Resource Inventory³.

Although the soils are identified as highly versatile a more thorough assessment of the soil quality present on Site can be undertaken to specifically identify soil types and qualities on a more Site-specific basis.

In September 2022 the Government released a National Policy Statement – Highly Productive Land (“NPS-HPL”). The NPS-HPL came into legal effect on 17th October 2022. The document seeks to protect highly productive land and recognise the finite characteristics of that land including its long-term values for land-based primary production. The NPS-HPL whilst restrictive, does provide pathways in specific and limited circumstances for highly productive land to be utilised for urban land use outcomes. In the context of those pathways the Site is considered suitable for urban land uses.

³ Northland Regional Policy Statement 2016 – updated June 2018, Chapter 5, 5.1 Regional Form, page 89

4.1.9 Topographical Characteristics

A review of the survey information for the Site has determined that the information available is satisfactory from a survey point of view. Overall, the Site is relatively flat and drops away towards the Kerikeri River. There are two waterfalls present on Site that will be integrated into the open space strategy and the greenways strategy for the Site. There is an area of rolling contour, commonly referred to as the Amphitheatre, which provides a transitional zone from the flat land, down towards the Kerikeri River.

As shown on the constraint's maps, the areas of land that are over 12% and 20% gradient have been mapped to assist with the proposed zoning of the land.

The land subject to the steep land has been included within the live zoning and the development constraint will be assessed at the time of subdivision.

4.1.10 Contaminated Soils Context

The Structure Plan is supported by Preliminary Site Investigation, prepared by NZ Environmental. The report concludes that the entire golf course is considered to be a HAIL Site (Hazardous activities and industries List). There is a small area of historic rubbish piles and stacks of untreated timber on the Site which may result in potential soil contamination. Further testing will be required at the time of applying for a resource consent to develop the land.

Overall, there are no significant contaminated land issues that would pose a risk to human health, which would prevent the development of this Site for residential and commercial purposes.

4.1.11 Archaeological and Cultural Context

An Archaeological Assessment, prepared by Origin Archaeology has been prepared to support the Structure Plan. The report notes that There is currently one archaeological/heritage site (P05/930) recorded within the subject property. The Site was originally recorded by Simon Best in 2003 as the remains of the 1909-1915 Puketi Forest to Waipapa Landing tram line which carried timber for the Kauri Timber Company. The Site is located c.250m north of the falls and comprises concrete strips evident on the bedrock with metal bars drilled into the rock. The clear remains of the 1910's tramline were identified at the eastern edge of the property. The most intact section should be preserved, protected and promoted as part of any future development.

The Bay of Islands and Kerikeri were a location of intensive Māori settlement before the arrival of Europeans and the location of some of the earliest contacts between Māori and Europeans. The first mission station and the earliest permanent European settlement in the country was established in 1814 on the Purerua Peninsula at Oihi, near Rangihoua pā. Even before this period, there had been several years of trading contact between Europeans and Māori in the Bay of Islands, which was known as the rest and provisioning centre of New Zealand for whaling and other ships. Rangihoua pā was the main settlement of Ngāti Rēhia in the early years of the 19th century⁴.

The assessment does not make any notes of potential sites of mana whenua significance. Consultation with Ngāti Rēhia is ongoing but to date no issues of concern have been raised. Ngāti Rēhia have confirmed that they will be able to provide a Cultural Impact Assessment prior to the hearings on the Proposed District Plan.

⁴ Origin Archaeology, Preliminary Archaeological Appraisal, April 2022

5. Strategic Context

5.1 Regional Policy Statement

The Regional Policy Statement (“RPS”) for Northland covers the management of natural and physical resources in the Northland Region, from Kaiwaka in the south, to Cape Reinga in the north, and out to the 12 nautical mile (22.2 km) limit.

The RPS provides the broad direction and framework for managing the region's natural and physical resources. It identifies significant resource management issues for the region and sets out how resources such as land, water, soil, minerals, plants, animals, and structures will be managed.

The RPS was made operative in 2016 in part and updated in 2018. Section 5 of the RPS addresses Regional Form and Infrastructure. Policy 5.1.1 is directly relevant. This Policy seeks to ensure that development occurs in the right place at the right time, enabling planned co-ordinated development that anticipates and addresses its cumulative effects. For plan changes and subdivision on land zoned primary production, the Policy requires that they do not materially reduce the potential for soil-based primary production on land with highly versatile soils unless the net public benefit exceeds the reduced potential for soil-based primary production (5.1.1. (f)). The Policy also seeks that development is located, designed, and built in a planned and co-ordinated manner that is integrated with development, funding, implementation, and operation of transport, energy, water, waste, and other infrastructure (5.1.1 (d)); and maintains or enhances a sense of place and character of the surrounding environment except where changes are anticipated by the approved regional or district council growth strategies and / or district or regional plan provisions (5.1.1 (g)).

Policy 5.1.1(a) noted that subdivision, use and development should be located, design and planned in a co-ordinated manner which is guided by the “*Regional Development and Design Guidelines*” in Appendix 2 of the RPS. These guidelines that be considered when developing the Structure Plan to ensure that in principle, the proposed development of the Site is consistent with Policy 5.1.1.

Other relevant sections of the RPS include Objective 3.5, which seeks that Northland’s natural and physical resources are sustainably managed in a way that is attractive for business and investment that will improve the economic wellbeing of Northland and its communities. The explanation to that objective confirms that Northland’s gross domestic product per capita is below the national average and the Northland economy has been hit hard by economic recession and climactic events (not to mention the impacts of COVID-19 and current escalation in the cost of living). To improve social and economic wellbeing, it is a goal

for Northland to attract and retain large and small-scale investment. Policy 6.1.1 implements Objective 3.5, by requiring that district plans only restrict activities if it is the most effective and efficient way of achieving resource management objectives, and that district plans otherwise enable subdivisions, use and development that complies with the RPS. Given the Urban Economics' conclusions regarding the net economic benefit of the rezoning sought, the Structure Plan would achieve this key objective of the RPS.

Other parties of the RPS respond to how adverse effects on the natural environment will be avoided, remedied or mitigated (for example, Policy 4.4.1 relating to maintaining and protecting significant ecological areas and habitats). As addressed further below, various technical assessments have supported the development of the Structure Plan, such that it appropriately manages its potential adverse effects on the environment.

The Structure Plan has been developed in accordance with the RPS provisions.

5.2 Kerikeri Waipapa Structure Plan 2007

The Kerikeri Waipapa Structure Plan 2007 (The 2007 Structure Plan) was prepared to provide an integrated and sustainable response to growth pressures within the region. The 2007 Structure Plan noted that growth was expected to double as shown in the area between 2001 and 2021- refer Figure 4 below.

The 2007 Structure Plan area covered the area shown in Figure 4 below.

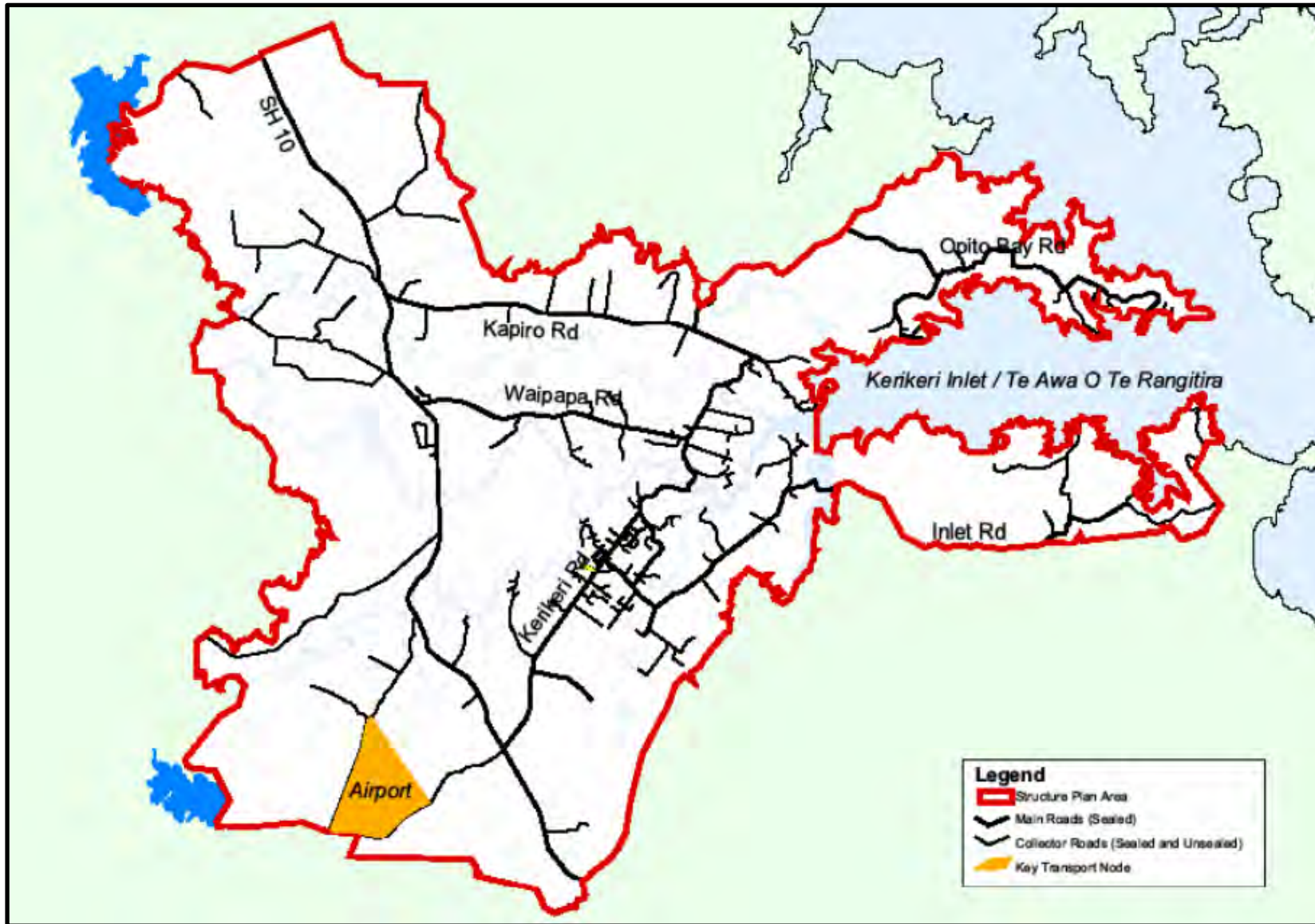


Figure 4: The 'Structure Plan Area' as defined by the 2007 Structure Plan for Kerikeri and Waipapa

The population projections that informed the 2007 Structure Plan are set out in Figure 5 below:

Household and Population Projections 2001 to 2026
(Extended from FNDC Activity Management Plans projections to 2021)

Households			Population		
2001	2021	2026	2001	2021	2026
3,351	6,424	7,205	7,830	14,975	16,835

[The projections in this table were checked against the 2006 Census data, and it was found that the actual population numbers for the Kerikeri-Waipapa area closely mirrored the projections shown.]

Figure 5: Population and Household projections used to guide the 2007 Structure Plan for Kerikeri and Waipapa

Map 1 within the 2007 Structure Plan identifies the constraints and opportunities. Overall, the Structure Plan area was identified as being suitable for a growth.

The Kerikeri Waipapa Structure Plan 2007 did not identify the Site as an area for urban development, given its rural zone. However, when reviewing the plans, the Site is located in the centre of Kerikeri and Waipapa, meaning that it is strategically located to accommodate future growth without sprawling to the outskirts of town or on land that has a horticultural zoning. Whilst the Site was not required for urban expansion in 2007 the reporting and analysis clearly indicate a strong and significant change in the growth demand since 2007.

An image from the Kerikeri Waipapa Structure Plan 2007 showing the urban and rural lifestyle areas is provided in Figure 6 below:

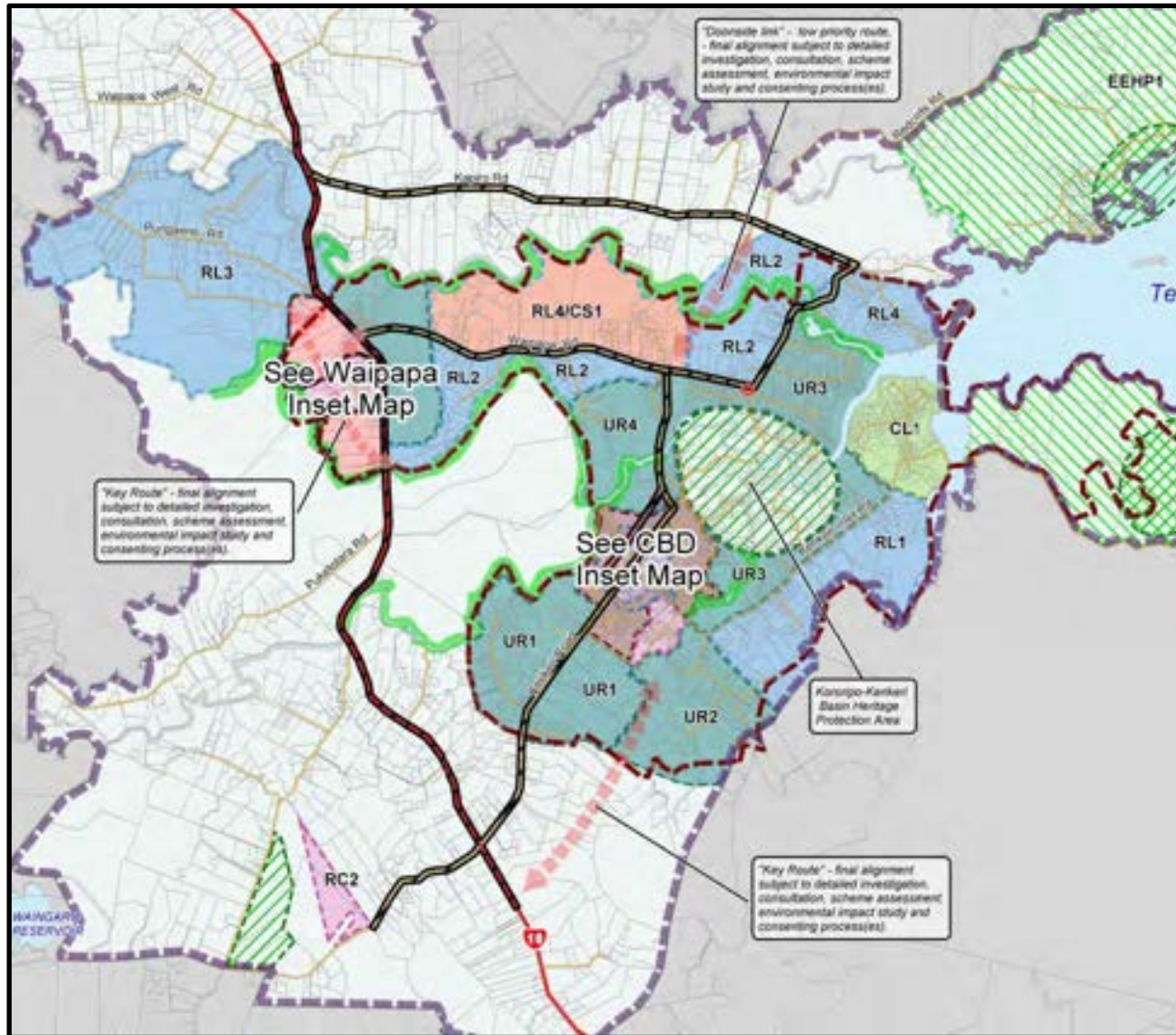


Figure 6: Kerikeri Waipapa Structure Plan 2007 – Areas identified for urban growth and key transport connections

Four Options were considered to provide for growth opportunities. “Option 4” was progressed into the FNDC Operative Plan which up zoned a number of areas to provide for future growth, rather than relying on the current zoning or leaving it up to the market to decide where growth is to occur. The subject Site was not included within the residential and rural lifestyle growth areas provided in the current District Plan. It appears that this decision was made due to the Site being located outside of the Utilities Service Area, meaning the Site was not above to be serviced with infrastructure at that time.

5.3 Long Term Plan 2021 - 2031

Long Term Plan 2021 - 2031 (“LTP”) is the Council’s key strategic planning document setting out what the Council plans to deliver over the next ten years and how it plans to pay for the planned deliverables.

The provisions of the LTP are addressed in the TEAM Traffic ITA in relation to funding for transport related matters.

A copy of the Capital Works Programme is appended to the Structure Plan. In summary funding is allocated for:

- A water main upgrade in Cobham Road, Kerikeri (2022/ 2023 \$72,100)
- An intake rising main upgrade for Kerikeri (2021/2022 \$700,000)
- Fire flow upgrades Waipapa Industrial area (2022/2023 \$74,010)
- Kerikeri water take consent (2021/ 2022 \$3,492)
- Upgrade main to the Heritage Bypass (2025/2026 \$9,688,320)
- Water source renewals Kerikeri (2021/2022 \$54,707)
- Water treatment plant upgrade Kerikeri (2024/2025 \$3,252,900 and 2025/2026 \$3,340,800)
- Wastewater network Stage 2 Kerikeri (2028/2029 \$3,388,582 2029/2030 \$13,947,204 and 2030/2031 \$17,904,057)
- Recycling station Kerikeri (2024/2025 \$2,168,600 and 2025/2026 \$1,113,600)
- Dog park Kerikeri 2021/ 2022 \$34,000 2022/2023 \$38,110)

Ongoing discussions with Council will ensure future development is integrated with the provision of infrastructure.

5.4 Parks and Reserves Management Policy – June 2022

FNDC currently do not have an open spaces strategy, meaning there is minimal dedicated funding for the maintenance of existing and proposed parks. The Parks and Reserves Policy⁵ adopted in June 2022 applies to all parks and reserves that are owned by Council, or where the administration, control or management of the park or reserve is vested in Council. Section 4 of the Policy Documents notes that:

1. *The Council will actively seek to acquire land that creates connectivity between public spaces and provides significant public benefit.*
2. *The Council will acquire or engage developers to vest land or funds to provide connectivity to and between parks, reserves, waterways, subdivisions, nature areas, neighbourhoods and communities to create better spaces and corridors for walking, cycling and passive recreation.*

The Structure Plan area includes a number of proposed parks and open spaces. On-going engagement with Council will be critical to securing the appropriate management regime for future parks.

5.5 National Policy Statement for Urban Development

The National Policy Statement on Urban Development 2020 (“NPS-UD”) came into force on 20 August 2020 and replaced the National Policy Statement on Urban Development Capacity 2016. The NPS-UD has assessed all the local authorities within the country and classified them as either Tier 1, Tier 2 or Tier 3, with Tier 1 referencing the largest local authorities in New Zealand. The FNDC is classified as a Tier 3 under the NPS- UD. A tier 3 local authority is defined as *a local authority that has all or part of an urban environment within its region or district, but is not a tier 1 or 2 local authority...*

The NPS-UD defines “**Urban Environment**” as:

“means any area of land (regardless of size, and irrespective of local authority or statistical boundaries) that: is, or is intended to be, predominantly urban in character; and is, or is intended to be, part of a housing and labour market of at least 10,000 people.”

⁵ [final-parks-and-reserves-policy-for-adoption.pdf \(fndc.govt.nz\)](https://www.fndc.govt.nz/final-parks-and-reserves-policy-for-adoption.pdf)

The Economic Assessment, prepared by Urban Economics notes that currently, Kerikeri has a population of 12,300 people as at 2021 (refer to Appendix 3 of the Economic Assessment). This differs from the Council figures because the Urban Economics assessment includes the rural residential areas to the north and south of Kerikeri that have an urban rather than a rural function. Therefore, Kerikeri does meet the definition of “Urban Environment” under the NPS-UD. The Council figures show an estimated population for Kerikeri of 10,040 as at 2024. This is within the life of the proposed District Plan therefore it is considered Kerikeri should be assessed as an Urban Environment.

The NPS-UD specifies a number of tasks that must be undertaken by Tier 1 and Tier 2 local authorities. At Section 1.5 (1) the NPS states that *Tier 3 local authorities are strongly encouraged to do the things that tier 1 or 2 local authorities are obliged to do under Parts 2 and 3 of this National Policy Statement, adopting whatever modifications to the National Policy Statement are necessary or helpful to enable them to do so.*

Such tasks include preparing Future Development Strategies to inform preparation of the next long-term plan of each relevant local authority; and preparing a Housing and Business Development Capacity Assessment (HBA). An HBA has to analyse how planning decisions and provision of infrastructure affects the affordability and competitiveness of the local housing market. The analysis must also include how well the current and likely future demands for housing by Māori and different groups in the community (such as older people, renters, homeowners, low-income households, visitors and seasonal workers) are met, including demand for different types and forms of housing. The assessment also needs to include what is feasible and reasonably expected to be realised. The assessment undertaken by Urban Economics includes these assessments in relation to Kerikeri.

Objective 1 seeks that New Zealand has well-functioning urban environments that enable all communities to provide for their social, economic and cultural wellbeing and for their health and safety, now and into the future.

Objective 2 states that planning decision need to improve housing affordability by supporting competitive land and development markets.

Objective 3 states that regional policy statements and district plans enable more people to live in, and more businesses and community services to be located in, areas of an urban environment in which one or more of the following apply:

- (a) the area is in or near a centre zone or other area with many employment opportunities*
- (b) the area is well-served by existing or planned public transport*
- (c) there is high demand for housing or for business land in the area, relative to other areas within the urban environment.*

Objective 4 states that New Zealand’s urban environments develop and change over time in response to diverse and changing needs of people, communities and future generations.

Objective 5 states that Planning decisions relating to urban environments, and Future Development Strategies take into account the principles of the Treaty of Waitangi (Te Tiriti o Waitangi).

Objective 6 states that Local authority decisions on urban development that affect urban environments are:

- a) integrated with infrastructure planning and funding decisions; and
- b) strategic over the medium term and long term; and
- c) responsive, particularly in relation to proposals that would supply significant development capacity.

Objective 8 seeks that New Zealand’s urban environments are resilient to the current and future effects of climate change. The Structure Plan aims to mitigate the natural hazard risk, taking into account climate change to manage the flood risk on the Site, ensuring that the Site is capable of being developed for urban purposes. The Structure Plan provides an opportunity to increase use of public and active modes of transport as urbanisation of the Structure Plan area upgrades roads to provide for walking and cycling infrastructure and generates more public transport demand from residents.

To assist in achieving the objectives **Policy 2** states that Tier 1, 2, and 3 local authorities, at all times, provide at least sufficient development capacity to meet expected demand for housing and business land over the short term, medium term and long term. Policy 1 states that planning decisions need to contribute to well-functioning urban environments, which are urban environments that as a minimum:

- (a) have or enable a variety of homes that:
 - (i) meet the needs, in terms of type, price, and location, of different households; and*
 - (ii) enable Māori to express their cultural traditions and norms; and**
- (b) have or enable a variety of sites that are suitable for different business sectors in terms of location and site size; and*
- (c) have good accessibility for all people between housing, jobs, community services, natural spaces, and open spaces, including by way of public or active transport; and*
- (d) support, and limit as much as possible adverse impacts on, the competitive operation of land and development markets; and*
- (e) support reductions in greenhouse gas emissions; and*
- (f) are resilient to the likely current and future effects of climate change.*

Policy 5 is directly relevant. This relates to tier 2 and 3 local authorities and states:

Regional policy statements and district plans applying to tier 2 and 3 urban environments enable heights and density of urban form commensurate with the greater of:

- (a) the level of accessibility by existing or planned active or public transport to a range of commercial activities and community services; or*
- (b) relative demand for housing and business use in that location.*

Policy 6 relates to making planning decisions that affect urban environments.

When making planning decisions that affect urban environments, decision-makers have particular regard to the following matters:

- (a) the planned urban built form anticipated by those RMA planning documents that have given effect to this National Policy Statement*
- (b) that the planned urban built form in those RMA planning documents may involve significant changes to an area, and those changes:³⁹
 - (i) may detract from amenity values appreciated by some people but improve amenity values appreciated by other people, communities, and future generations, including by providing increased and varied housing densities and types; and*
 - (ii) are not, of themselves, an adverse effect**
- (c) the benefits of urban development that are consistent with well-functioning urban environments (as described in Policy 1)*
- (d) any relevant contribution that will be made to meeting the requirements of this National Policy Statement to provide or realise development capacity*
- (e) the likely current and future effects of climate change.*

The overall Intent of the Structure Plan is to provide a range of housing at various price points, including the high demand \$700,000 price point, which gives effect to **Policy 1**. There is greater demand than anticipated by the Council and they have overestimated the number of houses that will actually be infill developed. The rezoning is therefore necessary to sufficient development capacity in the medium and long terms.

The NPS-UD requires sufficient development capacity to be provided in the short, medium and long terms. Short-medium term is defined as up to 10 years, so a plan should enable development capacity needed for the medium term.

Overall, the Structure Plan gives effect to the NPS-UD because it will enable development that can provide for and contribute to a well-functioning urban environment for Kerikeri / Waipapa.

5.6 National Policy Statement for Freshwater 2020 and the National Environmental Standard for Freshwater 2020

The National Policy Statement for Freshwater Management 2020 (NPS-FM) contains a number of requirements, including:

- *Managing freshwater in a way that ‘gives effect to Te Mana o te wai through involving tangata whenua, and prioritising the health and wellbeing of water bodies, then the essential needs of people, followed by other uses.*
- *Improve degraded water bodies.*
- *An expanded national objectives framework.*
- *Avoid any further loss or degradation of wetlands and streams.*
- *Identify and work towards target outcomes for fish abundance, diversity and passage and address in-stream barriers to fish passage over time.*
- *Set an aquatic life objective for fish and address in stream barriers for fish over time.*
- *Monitor and report annually on freshwater.*

The factors listed above have been considered with significant weight and in detail as part of the hydrology and infrastructure assessments as well as within the areas identified to be protected using the Natural Open Space Zone and Significant Natural Area overlay. Protecting and enhancing the Kerikeri River and associated natural assets is a key factor that needs to be considered when integrating the future land use patterns with the existing freshwater environment.

The National Environmental Standards for Freshwater (NES-FM) came into force on 3 September 2020.

Future land use activities will need to comply with the relevant standards under the NES-FM 2020 with respect to streams, wetlands and discharges to these environments, which will ensure that the effects of activities on water quality and water quantity appropriately managed in accordance with the NPS-FM.

5.7 National Policy Statement for Highly Productive Land

The National Policy Statement on Highly Productive Land (NPS-HL) was notified on 20 September 2022. The NPS- HL is about ensuring the availability of New Zealand’s most favourable soils for food and fibre production for now and for future generations. In regard to the development and proposed change of zoning

sought via the Structure Plan, Section 3.5 (7) (b) (ii) is relevant to this Site. The proposed Structure Plan and the associated supporting information provides supporting evidence that there is demand for future urban land and all of the Far North is subject to a Council initiated notified plan change. Through the Structure Plan, a rezoning is sought to change the land from rural production to urban.

The Site is not identified within the Horticultural Zone within the PFNDP which has stricter requirements on the use of productive soils.

The NPS-HPL provides 3-years for regional councils to map their highly productive land and then further time for the district councils to amend their plans. Policy 2 of the NPS states that the identification of HPL should be undertaken in an integrated way that considers the interactions with freshwater management and urban development.

Section 3.6 (4) of the NPS-HPL notes that Territorial Authorities that are not Tier 1 or Tier 2 may allow the rezoning of the land only if:

- (a) the urban zoning is required to provide sufficient development capacity to meet expected demand for housing or business land in the district; and*
- (b) there are no other reasonably practicable and feasible options for providing the required development capacity; and*
- (c) the environmental, social, cultural and economic benefits of rezoning outweigh the environmental, social, cultural and economic costs associated with the loss of highly productive land for land-based primary production, taking into account both tangible and intangible values.*

Section 3.6 (4) of the NPS-HPL notes that:

- (5) Territorial authorities must take measures to ensure that the spatial extent of any urban zone covering highly productive land is the minimum necessary to provide the required development capacity while achieving a well-functioning urban environment*

Regarding Section 3.6(4) the following assessment is made:

- the land is needed to provide sufficient development capacity to meet expected demand because growth will exceed supply, based on the Urban Economics report.
- infill development will not yield sufficient houses to provide sufficient development capacity.
- the alternative of not zoning could result in piecemeal rural-residential subdivision, as the infill development approach is not adequate to address the demand for housing in Kerikeri and Waipapa.

- while the Site does contain productive land, it is not in the highest category of soils and the land is strategically located between existing urban areas.

In summary, while the soil types present on Site, based on the high-level assessment are identified as highly productive, the NPS-HPL does provide an option for the rezoning of land to occur where there is sufficient demand- as is the case for Kerikeri and Waipapa.

5.8 National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health 2011.

The Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011 (NES Contaminated Soils) were gazetted on 13th October 2011 and took effect on 1st January 2012. Council is required by law to implement this NES in accordance with the Resource Management Act 1991 (RMA). The standards are applicable if the land in question is, or has been, or is more likely than not to have been used for a hazardous activity or industry and the applicant proposes to subdivide or change the use of the land, or disturb the soil, or remove or replace a fuel storage system.

As noted previously, there are areas on the Site where the risk of finding contaminants in soils are high. A Detailed Site investigation will be required at the time of development resource consent. The areas are discrete on Site and associated with the use of the land for farming purposes.

5.9 National Environmental Standard- Sources of Drinking Water 2008

Water supply to the Structure Plan area will be from the existing public water supply. A secondary on-site water supply will be required via a ground water take during periods when the Kerikeri Water supply is subject to Algal bloom. This on-site water supply will need to be treated to meet the Drinking Water Standards. The Structure Plan does not compromise the outcomes sought to be achieved by this NES.

It is noted that the Capital Works Programme has identified some water supply upgrading works for Kerikeri. Further discussion will ensure development is aligned with the planned provision of infrastructure.

5.10 National Environment Standards- Air Quality

There are no known air quality standard issues in the Structure Plan area.

5.11 Proposed Far North District Plan (pFNDP)

The pFNDP was notified on the 27th of July 2022 as part of the FNDC District Plan review. The PFNDP seeks to replace the current District Plan which was made operative on the 27th August 2009. The PFNDP controls the way land is used, developed, and subdivided as a requirement under the RMA 1991.

All the Land within the Structure Plan area is proposed to be zoned Rural Production. The Rural Production zone enables a range of rural activities including, but not limited to farming, quarrying and large buildings associated with rural activities.

The Structure Plan Area is subject to the following overlays:

- River Flood Hazard Zone (100 Year ARI Event)
- River Flood Hazard Zone (10 Year ARI Event)
- Designation: Reference NZTA2- to construct and operate, maintain, and improve a state highway, cycleway and or/shared path and associated infrastructure.

The Structure Plan Area does adjoin the Kerikeri River. The banks of the River are proposed to be zoned Natural Open Space. The Rainbow Falls are identified as an Outstanding Natural Feature.

Otherwise, there are no other overlays of relevance to the Site.

5.12 Ngāti Rēhia – Hapū Environmental Management Plan, Second Edition, 2014

Section 7 of the Plan sets out the Kaupapa or mission statement; Tikanga / values and Core Focus Area. The Mission Statement for Te Rūnanga o Ngāti Rēhia is *to develop a sustainable economic, social and cultural base for the continued growth of Hapū and Whanau.*

To strengthen-develop-promote

- *Te Reo*
- *Whakawhanaungatanga*

- *Tikanga*
- *Mahi-a Rehia*
- *Wananga*

In relation to the Structure Plan Ngāti Rēhia seek to be active participants in the sustainable development of their taonga.

Engagement on the proposal has occurred with Ngāti Rēhia and will be ongoing as the process continues. An objective of the Structure Plan is to embrace the Māori culture and history of the location and wider area and reflect Ngāti Rēhia values in the development of the land.

6. Constraints and Opportunities

This section provides a summary of the opportunities and constraints associated with the development of the Brownlie Land. The technical assessments provide for detailed assessments of the Structure Plan area.

The identified Site constraints and opportunities have been mapped in the two figures below, which are also attached in **Appendix 1**.

The following sections address the opportunities and constraints by topic.

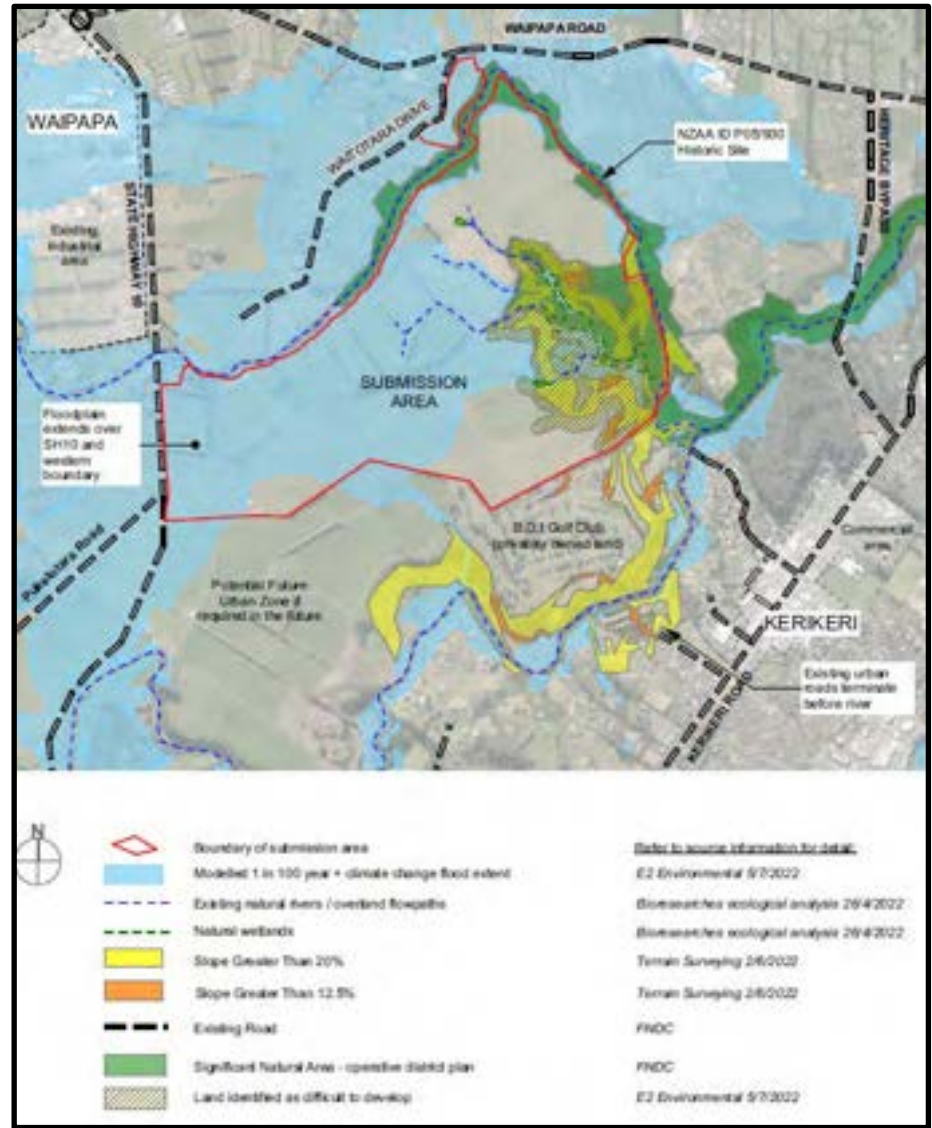


Figure 7: Identified Site Constraints (Prepared by Pacific Environments)

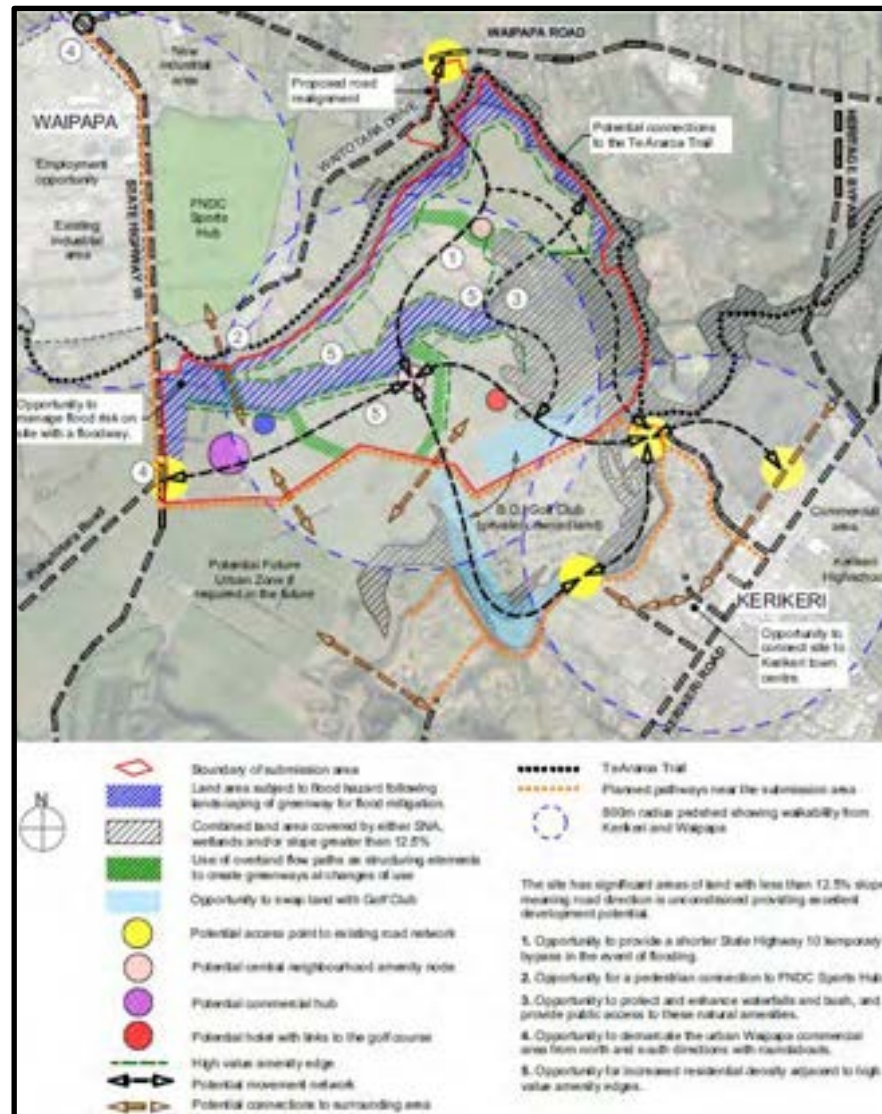


Figure 8: Identified development opportunities (Prepared by Pacific Environments)

6.1 Location

The Site is centrally located between Kerikeri and Waipapa providing the opportunity to connect these two areas. 800m radius pedestrian shed circles can be overlaid to demonstrate that a viable walking and cycle network can be incorporated, to achieve non-vehicular access to both townships from the area, and from Kerikeri to Waipapa.

This provides opportunities for a residential population to be within a walkable distance of the larger employment catchments of Waipapa and Kerikeri and the proposed and consented FNDC Sports Hub.

This has clear value opportunities for both the area catchment, and possibly also for educational facilities that can connect to it for sharing of sports grounds.

Significant natural features such as waterfalls and tracts of native bush surround the northern and eastern edges of the Site. The natural amenities can be accessed in new ways through this Site and create visually high value internal edges to it. Additionally external walking trails such as Te Araroa can directly connect to this area allowing national trail walkers to both enjoy commercial amenity and an internal walking network.

A large waterfall internal to the Site can be accessed along with a lower terraced area to provide recreational opportunity for both visitors to it, and future residents of the area.

6.2 Sustainability

The Structure Plan represents an opportunity to achieve sustainable urban development and create a model for development with Kerikeri and Waipapa that responds to the constraints of the Site, while incorporating features of the area to ensure that the character of the two distinctive town centres is retained.

Environmental sustainability will be achieved through the implementation of the urban design principles that secure quality urban spaces whilst respecting natural features within the environment and achieving enhanced water quality outcomes.

Economic sustainability will be achieved through providing a balance of living and employment land development opportunities. By co-locating employment and housing together, the reliance on the car is minimised and the overall diversification of land uses, supports an efficient use of the land.

Cultural sustainability will be achieved by opening up the southern bank of the River to the public, enabling residents to connect directly with the Awa. All wetland areas on the Site will be enhanced and protected where practicable and will be used to create an interesting and exciting walking and cycling connections through the Site.

Connectivity will be increased and enhanced within and outside of the Structure Plan area through a number of new transport connections and pedestrian and cycling walkways.

With respect to the built environment locations for higher intensity have been considered and will be located near the roading connections and the employment areas.

6.3 Land Tenure

The land within the Structure Plan is held in one tenure. To clarify, there are three landowners within the submission area are:

- Kiwi Fresh Orange Company Limited
- Brownlie Brothers Limited
- Cole James Investments Limited

All the above are companies owned jointly by Stephen and Chris Brownlie. This presents a significant opportunity to achieve comprehensive and integrated development across the Site and at a scale that will enable economic efficiencies to be achieved – *economies of scale*.

6.4 Transport

An Integrated Transport Assessment has been undertaken for the Structure Plan area and the proposed land uses and development that would be enabled by the Structure Plan. The existing transport environment of the Structure Plan is characterised by:

- State Highway 10 to the west.
- Waipapa Road to the north
- Limited public transport options, put opportunity to increase servicing.

State Highway 10 is currently a Limited Access Road and would require approval from Waka Kotahi to establish a new entry/exit point to the Site from State Highway 10. State Highway 10 is the main connection route between Kerikeri and Waipapa and is supported by the Heritage Bypass and Waipapa Road.

There are several road entry points into the Structure Plan area that will allow both pedestrian, cycle, and vehicle access. There is no legal road access to the land from the southern and western boundaries, however the Structure Plan provides opportunities to connect with this area in the future. Four potential roading options have been included within the Structure Plan.

The transport related opportunities and constraints are summarised as follows:

- Constraint that the access options to connect the Site to Kerikeri township are restricted due to privately owned land.
- The access options to the north and east are constrained by the Kerikeri River.
- Opportunity to provide a key access point to the Site from State Highway 10. This will enable key vehicle connectivity to the State Highway without having to pass through sensitive natural or urban environments.
- Opportunity to provide a key access route to Waipapa Road.
- Opportunities to create a direct access point to Kerikeri Township are constrained by the private land to the south of the Structure Plan Area and by the Kerikeri River.
- There are options to access the Kerikeri urban area through the surrounding land including the Golf Club. These are commented on in the Integrated Transport Assessment for technical compatibility. These options also include accessing the large undeveloped parcel to the southwest of the submission area should its development be contemplated in the future.
- Opportunity for access options through the golf club to be mitigated by a land swap with land in the area adjacent to the golf club of generally very good topography. Such an option could include the provision of developable land within the golf club along any access corridors for lifestyle type housing opening into the golf course.

- Opportunity to provide an alternative route from Kerikeri to Waipapa if State Highway 10 is flooded.
- Opportunity to integrate traffic calming measures into the local road design to ensure that the proposed new roading network does not create a short cut through the Site to access Kerikeri and Waipapa. The main thoroughfares should remain to be via State Highway 10 and Waipapa Road.
- Opportunity to use the roading connections as a demarcation of the change from rural to an urban environment.

6.5 Housing Demand

The Economic Assessment prepared by Urban Economics notes that over the 2013-2021 period, the population for Kerikeri increased by around 310 per annum. Urban Economics population projections note that there is a projected increase of 500 (Medium Growth) to 760 (high growth) per annum over the 2023-2028 period.

Urban Economics have undertaken an assessment of the Plan Enabled Development enabled by the Proposed District Plan within Kerikeri. The Assessment notes that there is capacity for another 3,450 dwellings within Kerikeri without the Multi Unit Rule- and for 5,560 dwellings with the Multi Uni Rule. Under the Urban Economics Medium Population projection scenario of 500 persons per year, there is an expected capacity of 5.4- 6.4 years of housing supply, indicating that in the short term, there is enough land (and supported by infill housing) to meet the short-term development capacity requirements under the National Policy Statement for Urban Development (NPS-UD). However, the housing demand for the medium- and long-term population growth is not met by the current Proposed District Plan zoning. Under the high-growth scenario, the Proposed District Plan only provides for 3.5 to 4.2 years of housing supply.

Following the assessment provided by Urban Economics, it is clear that additional land is required to be zoned for General Residential use within the Proposed District Plan to meet the demands associated with the projected population growth. As it stands, the Proposed District Plan does not provide 10 years of housing supply as per the requirements of the NPS-UD. The current demand for housing cannot be met by infill housing alone.

The Urban Economics assessment also notes that there is an anticipated demand for two additional retirement villages by 2032. These types of developments typically require between 5ha and 10ha of land. This type of housing option cannot be delivered through infill housing. Additional greenfield land needs to be allocated for providing for this type of land use.

6.6 Commercial Land Demand

The Urban Economics report assesses the need for business land in this locality. The assessment identifies that there is market demand for an estimated 5,870m² of convenience retail floor space at the present time (2022). Assessing the projected population growth associated with the Kerikeri Waipapa area which includes the Site, Kerikeri Rural Area, the Secondary Rural Area and the Urban areas it is estimated that 12,040m² of gross floor area for convenience retail floor space will be required.

A range of activities are considered in the Urban Economics report. Figure 37 of the Urban Economics Report provides an indicative floorspace composition for the Site. Figure 37 identifies 15.4 hectares of land for commercial / employment activities, 1.1 hectares of land for a Mixed Use Local Centre, 4,000m² for a Local Centre to support the residential population, and land for visitor accommodation for which there is an identified demand in this location. The total identified land area required is 25-hectares gross resulting in 17.5-hectares net land area of business activities. 15.4 hectares of land has been identified within the Structure Plan Area for business activities. The Urban Economics assessment states this is consistent with the level of demand identified.

6.7 Urban Design

The western edge of the Structure Plan Area is bordered by SH10, and this forms the southern entrance to Waipapa.

Waipapa is dominated by commercial activity and zoning along the highway, along with the proposed sports hub. This connection with SH10 gives an opportunity to provide a small continuation of compatible commercial develop against the highway and provide controls to ensure a high quality of building against the highway. This would give “gateway” to Waipapa from the south. Such an area would also be an ideal buffer to a residential area within the Site, from the highway.

The inevitably large scale of the sports area is also compatible with a commercial area adjacent to it.

Internal to the submission area, there is opportunity to provide a liveable residential environment where significant amenity is available to most within a 15-minute walk. Given the favourable topography of most of the Site a wide range of residential typologies can be accommodated without environmental restriction. A central point where main connections meet would provide a natural location for a neighbourhood service centre.

6.8 Open Space and Recreation

Kerikeri has a range of open spaces. Significant open spaces include the Kerikeri Heritage Area, the Kerikeri River Trail, part of which forms Te Araroa Trail, the Bay of Islands Golf Club and the recently consented Sports Hub, off State Highway 10, near Waipapa.

The Site itself presents a range of excellent opportunities to enhance access to open spaces, the Kerikeri River and Rainbow Falls. The Site also contains two significant waterfalls and a large wetland complex. A key project objective is to ensure that the public have the ability to access the Kerikeri River via the Site, which is currently held in private ownership.

Another significant recreational and open space opportunity is the proposed floodway which runs through the Site area. This area will be constrained in regard to the types of land uses that can occur in this area given the need for the floodway to be designed to convey water in a 1:100-year flood event. This presents an opportunity for several recreational opportunities to occur in this space. Cycleways, foot paths and street furniture are intended to be utilised to provide a key walking and cycling connection through the Site to Kerikeri and Waipapa. A Schematic illustration outlining what this area could look like is contained in the Landscape assessment and in Figure 9 below. Given that the floodway design requires a land area of circa 100m wide, there may be opportunities to integrate other uses such as sports fields into this space for use when the River is not in flood.

Another project objective is to have a local road running around the edge of the Kerikeri River, with at least a 20m esplanade reserve. This design will ensure that the River is seen and used, provides opportunities for pathways to access the River and ensures that the River is highlighted as a key feature and integrated into the development and fronts the street network.

There is opportunity to physically define and protect areas of identified heightened ecological value, and to extend those values through future restoration initiatives.



Figure 9: Schematic Illustration of the floodway (Source: Littoralis Landscape Architecture).

6.9 Stormwater Management and Management of Freshwater

Based on advice from the FNDC Infrastructure Team, stormwater treatment needs to be provided on Site. A Report by Infir has been prepared to support the Structure Plan. The assumptions in this report have been peer reviewed by GWE.

Hydrology for the wider catchment has been addressed by E2 Environmental. This work produced a formalised floodway option (Figure 6 dated 5 July 2022), which is the preferred option. It primarily consists of a 100m wide channel and minor reshaping of the existing landscape.

As noted by Infir, the Development of the Site will result in an increase in impermeable areas, and therefore increase stormwater runoff. Mitigation options for the development include:

Table 1- Stormwater Mitigation Options for the Site

Effect	Runoff rate	Runoff volume	Quality
Description of effect	Increased peak runoff rate	Increased runoff volume	Potential for contamination
Mitigation measure	Attenuation storage	Discharge runoff for a longer length of time	Treatment through a suite of industry standard measures including swales, rain gardens, filter strips and separators.
Result of mitigation	Reduce peak runoff rate to pre-development rate. This will avoid increased flood levels.	No change in flood levels, but water levels will stay at elevated levels for slightly longer lengths of time (measured in hours, not days)	Stormwater discharge compliant with Regional Council rules

In Infir Report notes that it is expected that stormwater attenuation and treatment devices will occupy 15% of the land area that will be developed. Land required for on-site stormwater discharges is excluded from this estimate because that land will be pervious and stormwater discharge considerations is part of the design parameters for on-site wastewater disposal.

Regarding opportunities and constraints:

- There is a constraint on the development that on-site stormwater mitigation needs to be provided, resulting in the loss of developable land.

- There is an opportunity to integrate the stormwater management devices into the development into the existing environment in a sustainable way utilising the floodway, roadside swales and other discrete management devices to mitigate stormwater effects.
- Opportunity to re-use grey water and stormwater run-off on residential sites through small collection tanks.

Regarding freshwater, there are a number of minor streams and farm drains that run through the Site. There are two large waterfalls and a significant wetland within the Site boundary. Kerikeri River runs along the northern, eastern, and western boundary of the Site and the Site has direct access to Rainbow Falls. The majority of the Structure Plan area has been historically farmed.

The Site presents a significant opportunity to protect and enhance these freshwater features, through appropriate zoning, the creation of an esplanade reserve at the subdivision stage along the Kerikeri River and the opportunity to create a pedestrian pathway through the wetland area to allow public access to view three large waterfalls within close proximity to the Kerikeri Township.

The Objectives of the Structure Plan have been shaped to ensure that the freshwater assets of the Site are protected and enhanced through the development of the Site.

6.10 Water and Wastewater Management

FNDC have advised that there is no capacity in the current wastewater system to service this development. FNDC is working on identifying suitable upgrades, or potentially a new plant at Waipapa. Engagement will need to be on going, hence the consideration of some onsite servicing to facilitate initial development.

In regard to water supply, there is capacity in the current water supply network, except in times where there is an algal bloom in the reservoir. The backup water supply from Puketotara stream is fully allocated. An on-site backup solution, likely through a bore will be needed to service the development. An engineering solution is available [in progress of development] that does not decrease flows within the Kerikeri River, providing backup water supply enabling development of the Site. An assessment into the availability of groundwater supply is underway and will be available prior to the pFNDC hearings commencing.

In terms of infrastructure capacity, the Structure Plan is based on 1,500 to 2,000 dwellings. This is indicative and is not an absolute. The actual number of dwellings will be addressed, taking into account demand and the infrastructure capacity, at the time of applying for resource consents.

FNDC has provided funding in their 10-year capital plan for a significant wastewater network and wastewater treatment plant upgrade, including the Waipapa area. Planning work for the upgrades is in an early stage and no definitive upgrade options have been released. FNDC officers have indicated that the existing network and treatment plant do not have spare capacity, and that upgrade options at the existing treatment plant at Okura Drive (located 5km from the Structure Plan area as the crow flies and 8.5km via Waipapa Road and Twin Coast Discovery Highway) are constrained by the topography.

A key project consideration is that the treated wastewater discharges must be to land and not into water to protect the Mauri of the Kerikeri River.

As noted in the Infir Report, the approach to servicing the Site must be twofold:

1. Integrate the wastewater system for the Structure Plan area into the reticulated system, following the implementation of the upgrades to the reticulated network as outlined within the FNDC 10-year Capital Plan for the Waipapa area.
2. Develop a standalone wastewater disposal system. This system will consist of a treatment plant, sludge processing facility and areas of land for disposal of treated wastewater. It is possible that land areas outside the structure plan area may become available for land disposal but for the purposes of this Structure Plan it has been assumed that the disposal areas will be inside the structure plan area. The standalone wastewater disposal system must be developed such that the following options are left open:
 - a. To redirect raw wastewater to a future wastewater treatment plant outside the structure plan area.
 - b. To redirect treated wastewater to a future disposal area outside the structure plan area.
 - c. A combination of the two options.

The Report by Infir notes that the estimated land requirements for an on-site wastewater treatment and disposal system consists of 2 hectares for a treatment plant and 30 hectares for on-site wastewater disposal system.

The Structure Plan Area presents both a constraint and an opportunity to deliver an onsite solution to wastewater treatment to deliver the first stages of development until such time as the reticulated system is upgraded to include additional capacity for the Site.

6.11 Natural Hazards

Flood modelling of the wider catchment undertaken by Northland Regional Council (NRC) has highlighted that the Site is subject to floodwaters which spill out from the Kerikeri River and flows across the Site. The existing flood hazard on Site therefore limits the land available for development in its current state. The Site is bounded on the northern and eastern boundaries by the Kerikeri River. The rezoning will facilitate the development of residential and commercial properties on this land. Flood modelling of the wider catchment undertaken by Northland Regional Council has highlighted that the Site is subject to significant floodwaters which spill out from the Kerikeri River and flows across the Site. The existing flood hazard on Site therefore limits the land available for development in its current state.

A key design principle for the development of the Structure Plan has been to firstly assess the flood risk on the Site and the surrounding area, then determine the developable areas of the land following mitigation of the flood hazard.

There is opportunity to mitigate the floodplain by using an engineered solution. This increases the developable land area significantly and provides the ability to create a central landscaped recreational area that can become a structuring urban element a future masterplan. An opportunity exists to provide a road bypass from SH10 to Waipapa Road in the event of flooding, which occasionally covers SH10.

A managed floodway across the Site is proposed, and shown in the Structure Plan, to efficiently convey floodwaters on Site while mitigating the impact on flood hazard outside of the Site. The alignment of this floodway generally follows the alignment of the existing overland flow path once it has collected floodwaters that spilled across SH10. Floodwaters which spill from the true right bank of the Kerikeri River to Brownlie land are proposed to be blocked off in favour of taking increased flows into Site from the spill over SH10. The design concept is for approximately the same flow rate to discharge from the floodway back into Kerikeri River. The managed floodway will typically have a total width of 120 m.

In regard to flood management, E2 have advised that:

- The Site is able to be at least partially developed.
- There are challenges and constraints which will need to be worked through to ensure there is appropriate access to the development.
- Regardless of future design, a significant proportion of the Site will always need to be dedicated to managing flood. This area can also be used as amenity to provide other benefits for the local community.

The floodway has initially been modelled at its conceptual design stage. The conceptual design has been developed with the following details:

- Total floodway width = 120 m
- Floodway base width = 92 m
- Side slopes = 1:5 (vertical: horizontal)
- Depth = 1.8 m, including 0.3 m of freeboard above the 1% AEP +CC flood level
- Longitudinal grade = 1 in 130
- Maintenance access width of 5 m either side of channel

The total area required for the conceptual floodway is approximately 20ha and has been shown on the Structure Plan. An additional 15.5ha of land is expected to be required for the flood hazard along the true right of the bank of the Kerikeri River, which is reflected in the proposed overlay plan.

This design is at the conceptual stage only and will require further detailed development through the Resource Consent Stage to ensure that the floodway is designed to the appropriate specifications.

The inclusion of a flood way creates a significant opportunity to create a development where the risk of flooding can suitably managed, presenting an opportunity to use the flood way as a public asset.

6.12 Ecology

A detailed assessment of the Significant Natural Area overlay that is contained within the Operative District Plan has not yet been undertaken to fact check the area that should be covered under this overlay.

This does present a constraint to the development of the Site. However, this assessment will be undertaken prior to the implementation of the Structure Plan to ensure that the ecological features of the Site are accurately mapped and appropriately managed.

6.13 Topography

As slope analysis shows, there are areas of land within the Site that exceed 12.5% and 20% gradient making it primarily developable for housing only and large lot residential subdivision and activities given the extensive earthworks that would be required to provide effective building platforms for business uses. Much of the land area over 20% gradient is located within the area of Significant Ecological Areas and where the wetland has been identified, meaning that this land is not developable. This land has been identified and mapped as “difficult to develop” by engineering specialists.

There is an opportunity to develop the steeper areas of land, which are not subject to Overlays based on advice from geotechnical engineers at the time of the subdivision consent. In this context, a General Residential Zone is considered to be appropriate.

6.14 Heritage and Archaeology

There is currently one archaeological/heritage site (P05/930) recorded within the subject property. The Site is located c.250m north of the falls and comprises concrete strips evident on the bedrock with metal bars drilled into the rock. The clear remains of the 1910’s tramline were identified at the eastern edge of the property.

There is a clear opportunity to protect the heritage site from inappropriate development as per the archaeologist recommendations. A more detailed assessment of the heritage asset and a possible preservation strategy will be developed during the resource consent stage of the development.

A constraint to the development is the lack of understanding regarding the location of potential sites of mana whenua significance. No known sites of mana whenua significance have been identified. Further engagement with Ngāti Rēhia will be required during the resource consenting stage of the development.

6.15 Cultural Values

The Structure Plan area contains natural heritage features such as the Kerikeri River and Rainbow Falls and areas of natural wetland. As noted above, no known sites of significance have been identified.

Engagement has been undertaken with Ngāti Rēhia and will be ongoing. It was determined that Ngāti Rēhia would be provided opportunity to provide a Cultural Impact Assessment on a specific development proposal, and on the structure plan should they wish to do so.

6.16 Social Impacts

Most community facilities are located in the central areas of Kerikeri, including the school facilities and community centres, the town library and healthcare facilities. Bay of Islands Hospital is located in Kawakawa. The next major hospital is located in Whangarei.

The proposed zoning in the Structure Plan provides for the opportunity for additional health care providers to establish within the Structure Plan Area within the Mixed-Use area. The population is aging and there is a growing demand for additional healthcare services and retirement living services. The nature of this green field development will provide larger land parcels to ensure that new social infrastructure will have sufficient space to establish new facilities.

The proposed zoning also provides the opportunity for a new school to establish with in the Structure Plan area and to provide strong connections to the Sports Hub within Waipapa.

6.17 Health

The urban environment is a key determinant of health and wellbeing. Decisions made in the Structure Plan process will fundamentally direct and frame the way people live, travel, play and work in this locality. It is important that health and welfare considerations are placed at the forefront of the structure planning process particularly when considering residential intensification.

Healthy places and communities require:

- Access to services and amenities for all persons – i.e., young, elderly, people with disabilities, families.
- Connectivity and public transport – There is an opportunity to extend the bus connections into the Structure Plan area as well as promote active transport options.

- Safety – Crime Prevention through Environmental Design Principles are a cornerstone that should be incorporated into the design and layout of the Structure Plan. Such principles drive design to provide passive surveillance of public spaces, provide appropriately lit and open spaces for movement and social spaces.
- Housing – there is an opportunity to provide a range of housing typologies within the Structure Plan area providing a range of choice and affordability, particularly in areas that are not suitable for business activities. All building will be quality and meet the required standards for insulation, heating and sound attenuation.
- Communities Facilities – The Structure Plan area can be served by existing community facilities, however, there would be opportunities to establish new public or private community facilities within land zoned for business activities.
- Public and open space – There is opportunity within the Structure Plan area to establish an open space network that provides a range of active and passive spaces and supports local amenity and physical health.
- Māori heritage and cultural identity.

6.18 Affordability

An adequate supply of a variety of dwelling types and sizes located near jobs and transport links is an important component of a functioning society and economy and provides a good quality of life for everyone.

The provision of a wide variety of housing types is expected in the structure plan area to meet the needs of people and communities, including:

- a. households on low to moderate incomes
- b. people with special housing requirements.

There is an immediate need for housing to rent and purchase at a variety of price points to meet the needs of Far North Population people, as most standalone dwellings in Kerikeri over the September 2020-2022 period sold for between \$600,000 and \$1,000,000, with many selling over the \$1,000,000 mark.

Under the Urban Economics medium growth projections, the proportion of households that can only afford dwellings up to \$600,000 increased to 31% in 2031 and 45% in 2051. This highlights the importance of increasing housing supply within the lower price bands, which will place downward pressure on the price of housing and make housing more accessible to lower income households.

The following initiatives have been identified as opportunities which could be explored to help deliver more housing choices:

- enable a range of dwelling types to be developed at scale within the greenfields Site.
- Provide smaller section sites to provide opportunities for first home buyers to enter the market.
- Explore options to provide for medium density townhouses.
- locate dwellings close to employment opportunities and transport connections
- encourage good quality dwellings which exceed environmental minimums and provide more comfortable homes for the Far North people.
- apply universal design principles to buildings to make them usable for people of all ages.

There is an opportunity to provide for affordable housing at scale through the proposed Structure Plan area, which will result in more affordable pricing and an increase in supply, more so than what can be delivered through infill housing.

6.19 Contamination

As noted previously, there is a small area of historic rubbish piles and stacks of untreated timber on the Site which may result in potential soil contamination. Further testing will be required at the time of applying for a resource consent to develop the land. Overall, there are no significant contaminated land issues that would pose a risk to human health, which would prevent the development of this Site for residential and commercial purposes.

6.20 Reverse Sensitivity and Rural Land Use

The Site interfaces with adjacent rural land and State Highway 10. These interfaces provide potential for reverse sensitivity effects to be created.

There is also rural residential living at Waitotara Drive. Development of the Structure Plan Area will potentially alter the perceived rural character of some properties in this location. However, development of the Structure Plan area will be separated from properties on Waitotara Drive by the Kerikeri River, the associated riparian area and land that will in future be vested as esplanade reserve. Consequently, there will be visual containment and a reasonable separation. The proposed new road connection will increase traffic and movement at the northern end of Waitotara Drive. This is considered acceptable in light of the character and level of activity on Waipapa Road. It is also noted that properties on the western side of Waitotara Drive back onto the proposed Sports Hub and character and the level of activity in this location will be changing over time.

The land to the south of the Site is used for rural purposes and it is likely this land use will continue for the foreseeable future. Suitable setbacks, landscaping and other treatments can be employed to ensure any urban development on the Site will not unduly limit or restrict the ongoing use of adjacent land for rural production purposes.

With respect to reverse sensitivity effects in relation to State Highway 10, this effect can be managed by locating business land at the western extent of the Site. This creates a suitable and appropriate buffer to the Highway, enables less sensitive activities to locate in this area, provides a complimentary land use to connect the Site with the existing urban area of Waipapa, facilitates creation of a strong activated urban frontage whilst providing safe vehicular access from the rear of sites; and also provides for appropriate integration of land uses with the Sports Hub.

6.21 Summary of constraints and opportunities

The Development constraints identified above will require mitigation to implement the development of the Site. The main factors of infrastructure provision and flood risk will need to be addressed in the early stages of the development of the Structure Plan to ensure that a successful development can be implemented.

There are multiple opportunities to develop this Site in such a way that achieved Sustainable Management⁶ outcomes, including consistency with Section 6, 7 and 8 as required by the Resource Management Act 1991.

⁶ As per Section 5- Purpose of the Resource Management Act 1991.

7. The Structure Plan

7.1 Methodology and Urban Design Principles

The Structure Plan Objectives and Guiding Principles are set out in Section 3.

The Proposed Structure Plan is shown in Figure 10 below.

The methodology for the development of the Structure Plan has been to identify all the constraints of the Site and understand how these constraints impact on the land available for development. Areas where development would be inappropriate or constrained have been identified with overlays (e.g Flood hazard). The land was assessed for opportunities in relation to identified resource management issues e.g. the growth and connectivity issues.

The outcome of the proposed Structure Plan is that the land is suitable for urban zoning and can provide Kerikeri and Waipapa with capacity to accommodate the expected growth over the medium- and long-term planning horizons. The analysis suggest that the majority of the land would be suitable for residential development and some land is required for commercial and employment related activities to support the objectives of sustainability. Following a detailed assessment of demand for commercial space, an appropriate area has been identified to meet the commercial development needs of the area, to supplement the existing commercial uses within Kerikeri and Waipapa. This also includes a smaller area to act as a neighbourhood centre, closer to the residential population.

Key Design Principles

- Multi modal local roading networks provided through the Site
- Pedestrian access to the Kerikeri River and into Kerikeri.
- Provide for equitable access to public open space.
- Key transport links to State Highway 10 and Waipapa Road.
- Creating legible entries to the Site.
- Providing the ability for higher densities of development to face the natural assets and high value amenity edges.
- Provide a mitigation option for managing the flood risk on the Site.

- Protect and enhance Rainbow Falls and the existing wetland and waterfalls on the Site.
- Provide well connected neighbourhoods within walking distance to key amenities.
- Opportunities for local employment.
- Opportunities for living choices.
- Create a commercial centre that fronts both the State Highway and the internal Road network.
- Create one strategic access point from State Highway 10.
- Distributing uses so they can be cost effectively developed on appropriate areas of the Site.
- Incorporating these natural features into the storm and water treatment design.
- Setting development levels from existing natural features and working with surrounding topography.
- Providing opportunities for large scale retirement villages or affordable housing blocks to be provided for within the Site.
- Providing the opportunity to develop a hotel within the Site.
- Providing for opportunities for the character of Kerikeri to be reflected in the overall design of the development.

The urban form needs to respond to the adjoining rural land, State Highway 10, the sports hub and the River. There are noise and other reverse sensitivity issues related to the Highway and reverse sensitivity related to the rural land. The outcomes of the Structure Plan respond to the matters above, resulting in primarily residential zoning with a commercial area against SH10 to provide an appropriate urban relationship to Waipapa, adjoin the Highway with suitable urban activities that will create a suitably active frontage and mitigate noise, traffic and pedestrian safety associated with the Highway.

The floodway is a significant feature that needs to be accommodated. The floodway is a constraint as well as an opportunity. The floodway is proposed to be managed as a comprehensive and connected greenway system connecting with the Te Araroa Trail and the existing FNDC walkways.

By being residential focussed the area can contribute to accommodating the strong demand for housing identified in the region in an efficient way where residents can live in very close proximity to employment, commercial/retail and amenity areas.

The urban form has been considered and developed to provide multiple connections and provide a range of land uses that will compliment and not compete with Kerikeri or Waipapa. Importantly the structure plan area provides an opportunity to accommodate population growth over the next decades in an efficient and connected way.

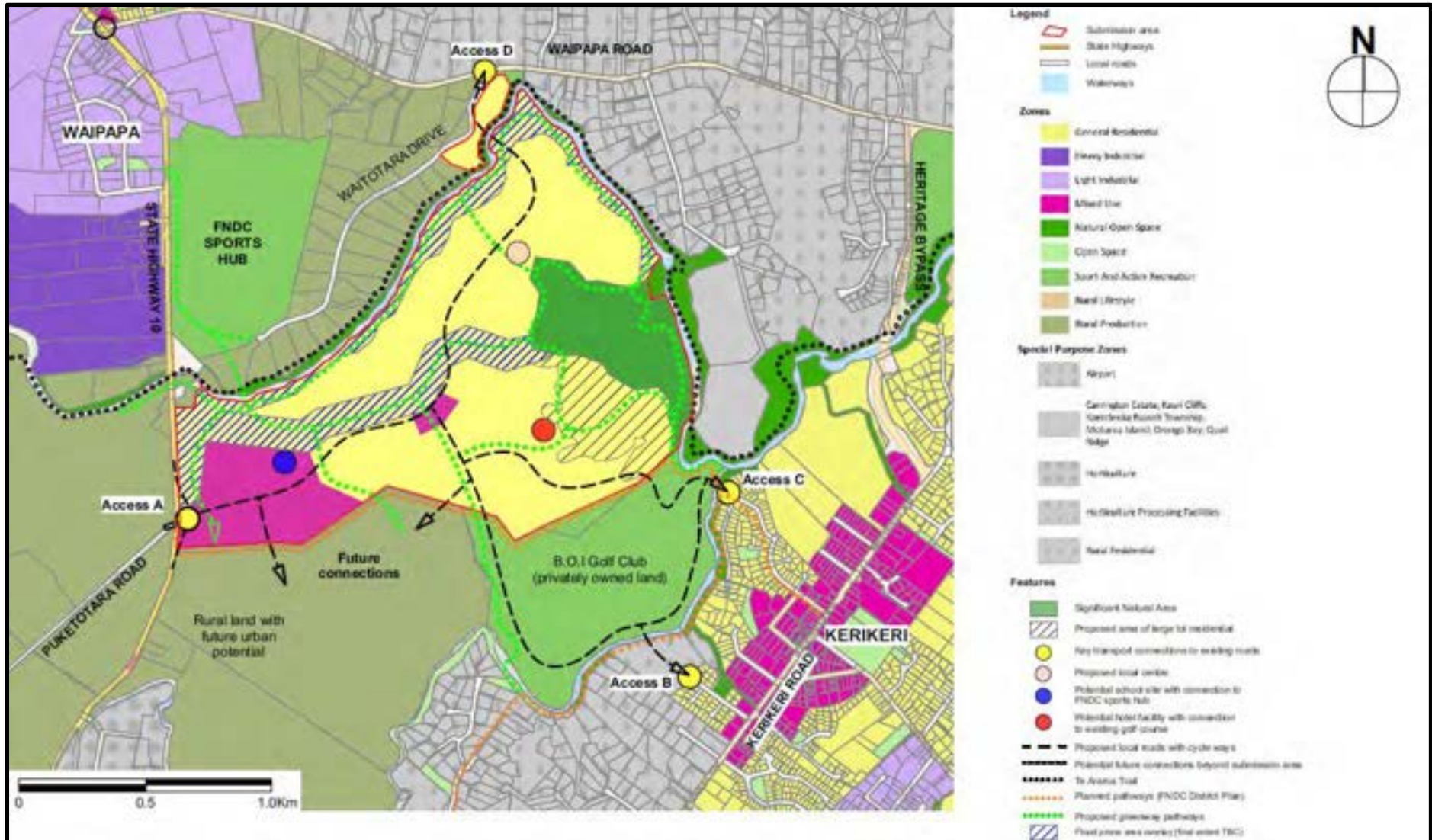


Figure 10: Proposed Structure Plan for Brownlie Land

7.2 Transport Connectivity Options

Four Transport options have been developed. Each of these options is outlined in **Appendix 2**. A preferred approach will be confirmed once the modelling has been completed. For completeness, all transport connectivity options have been included in the Structure Plan to ensure that a range of options can be appropriately considered. The technical evaluation of the movement options is covered by the Integrated Transport Assessment (ITA). All options have the same proposed movement network except for variances in the southern connections into the Kerikeri area. The option evaluation will address the Kerikeri access options only, with common features evaluated first.

It is also noted that all options include an extended road from Aranga Road to Heritage Bypass parallel to the Kerikeri main road. This is a recommendation from the traffic engineer to begin to address congestion issues by dispersal of traffic load and providing route options. It is understood some Council initiatives support this idea as well.

All options have a continual road from SH10 to Waipapa Road, with a separate road off an intersection to access the southern part of the Site. This is supported, as where the southern road extends into a Kerikeri access option, it will not intuitively encourage a direct connection from Kerikeri to Waipapa but promote priority from SH10 to Waipapa Road.

All options have a comprehensive walkable network, separate to the road network in some cases, and connect to Waipapa through the Sports hub paths largely incorporated in the consented sports hub design. A school site is also suggested that can make use of open space in the floodway mitigation area for grounds and connect directly with the sports hub to share amenities.

The floodplain area is shown with path and cycle way integrated, and significant roads run alongside or close to it ensuring maximum public access and enjoyment of what can be a high quality landscaped public space. “Greenways” access and connect other high value open spaces and features such as waterfalls and the lower terrace area.

A very small neighbourhood area is indicated between the proposed SH10-Waipapa Road and the large open space area. This will provide both a walkable amenity to future residents of that area, and an attractive gateway of a café or similar use to the open space. A tourist facility or hotel is shown in an area that can be compatible with access to the golf club.

Each of the four transport options are attached in **Appendix 2** and described in more detail below.

Transport Option 1

Option 1 has single road going through the western edge of the golf club into a proposed new connection at the end of Aranga Road into Kerikeri (access B) and then continuing to an existing connection (access C). This option gives good connection to the Kerikeri urban area from the submission Site and can be built at walkable grades. It also provides access options to the large undeveloped block to the southeast. A pedestrian connection continues through the eastern edge of the golf course to the submission Site. The Aranga Road connection can divert traffic to the north of the existing supermarket into the proposed connector road, meaning the existing residential environment can be left largely unaffected.

Transport Option 2

This option again has one access road into Kerikeri and while the direct connection to the urban centre. Access C into Golf View Road goes through an existing residential environment.

Transport Option 3

This option goes through Access E to an area that is logical for future urban development. It provides reasonable access to the Kerikeri urban centre avoids large scale residential disruption. It is understood the geographical constraints of this access point present more issues than for access points B and C. Nonetheless it provides a viable connection in terms of urban structure alone.

Transport Option 4

This option provides a road connection at access F, somewhat from the Kerikeri urban centre, with pedestrian and cycle access into the town centre through Access C. This has the benefit of keeping traffic away from potential residential areas in the submission Site. It would not however provide strong structural connectivity with Kerikeri in the same way a multimodal road would. A pedestrian and cycle access only has inherent Crime Prevention through Environmental Design (CPTED) disadvantages for users, by not being activated by further means including cars and public transport.

Conclusion

It is considered that all options would provide for movement to, from and through the Site that provides choice, has resilience, and gives a robust connection to both Kerikeri and Waipapa. The preferred options from an urban design perspective are having two multimodal connections into the existing Kerikeri town centre, so that transport load can be dispersed with better urban outcomes. Further refinement of the Transport Options and a preferred solution will be assessed on the completion of the Transport Modelling.

7.3 Infrastructure

Infrastructure for the proposed Structure Plan will need to be staged. The first stages of the development will need to rely on on-site wastewater and stormwater management, with the later stages connecting to the wastewater reticulated network following the upgrades planned in the FNDC Long Term Plan. Significant upgrades or a new wastewater treatment plant solution are required to service the proposed development. Integration with the FNDC timeframes for their planned infrastructure upgrades as detailed in the Long-Term Plan 2018-28 will be key to the success of the development.

To successfully manage the development of this land, a temporary on-site wastewater treatment solution could be provided to support the first stages of the development. The solution will include a discharge to land option, which considers the environmental constraints of the Site, including the locations of the wetlands and the Kerikeri River. Discharge to water solutions have been discounted. Any future solution will be developed with reference to relevant rules, legislation and in consultation with Ngāti Rēhia.

The new development will be designed to connect to a reticulated wastewater system and the delivery of development will be integrated with infrastructure development and the provision of the required capacity. At this point in time, any onsite discharge solution will be decommissioned, and the remainder of the land will be developed in a staged approach.

A secondary water supply system via a ground water take will need to be established on Site to service the development during times of low flow or algal bloom in the main water supply for Kerikeri.

All stormwater management measures will be on-site.

7.4 Natural Hazard Management

A conceptual design for a floodway has been proposed to manage the 1:100-year flood risk. The area required for the floodway forms the Flood Hazard Overlay for the Site. The development of the Site will form one of the first stages of the development to ensure that the natural hazard risk is managed prior to the construction of the development.

The Structure Plan shows an indicative floodway that runs through the Site to manage the natural hazard flood risk on the subject land. There is a smaller area of land to the north of the Structure plan that is still susceptible to the 1:100-year flood event. A key design principle for this area is to integrate public amenity spaces and other infrastructure such as shared paths to ensure that these areas can be utilised by the community when not needed to manage flood flows.

7.5 Natural Environment

Development of the Structure Plan responds to the natural environment features, opportunities and constraints discussed in the report above.

The Structure Plan proposes to maintain and enhance the existing freshwater habitats and vegetated areas within the Structure Plan area, both of which contribute to the ecological values of the area. Improvements to the existing vegetated area will be incorporated into future developments on the Site, including fencing off areas that are not currently and undertaking weed removal.

The design of the proposed development will be guided by the location of these natural features and their protection and enhancement to the greatest extent practicable. These features will be incorporated into the development as part of the green corridor network and the pedestrian and cycling network. The overall aim of the Structure Plan is to protect and enhance the existing ecological areas on the Site. However, some of the natural features may need to be modified to provide for the infrastructure connections and local road network on the Site. This would be addressed in detail at the future development stage.

The southern side of Kerikeri River is currently not accessible to the public. An objective of the proposed development is to create a green corridor along the River edge to facilitate walking and cycling creating a high level of amenity for the residents of Kerikeri/Waipapa. Rainbow Falls are a significant natural feature and tourist attraction for Kerikeri. At the moment, access to the Falls is only available via the existing Kerikeri River Track. Through the proposed greenways identified in the Structure Plan, Rainbow Falls is highlighted as a natural asset for protection and enhancement, ensuring that the effects associated with the development of the Structure Plan do not adversely affect the Falls. The general public will have greater access to be able to view and enjoy the Falls from the Site.

7.6 Land Use

Building on the constraints outlined in Section 6 of the report above, the preferred Structure Plan proposes a mix of residential and mixed-use land, with an area of natural Open Space over the existing Wetland Area. A neighbourhood centre is included where the key internal road network intersects. A local centre

is also shown on the opportunities map to service the northern end of the development. Once the location of the local centre is more certain, there is an opportunity to rezone this area to Mixed Use, which is better suited to the use of the land as a local centre.

Commercial Land

As noted in the pFNDP, the Mixed Use Zone provides:

“a framework in which commercial and residential activities can co-exist and it enables a range of compatible activities. The focus of the zone is to revitalise urban centres and support business owners, residents and visitors, while ensuring that associated effects are appropriately managed. The Mixed Use zone will contribute to the vibrancy, safety and prosperity of the District's urban centres and will be serviced by appropriate infrastructure.”

The Mixed-Use Zone could provide for opportunities for future employment for the local population and the future population. The Mixed-Use zone also provides an opportunity to interface with State Highway 10, having a dual frontage to the internal roading network and the State Highway. The intention for the Mixed Use zone is to build on the existing commercial and industrial uses within Kerikeri and Waipapa and to incorporate complementary uses that do not detract from the main centres of Kerikeri and Waipapa.

In terms of managing the interface between uses and adjoining zone boundaries, the following is noted:

- The proposed General Residential Land to the east will be separated from the Mixed Use zone via a natural overland flow path that will ensure that there are appropriate setbacks between each of the different zonings.
- The proposed General Residential Land to the north will be separated via the proposed floodway.
- The smaller neighbourhood centre in the middle of the Structure Plan Area will be set back from the General Residential Area by the local road network. The intention of this area is to provide for services that are complementary to the residential uses.
- The proposed new roundabout on State Highway 10 will provide a key demarcation for a transition from the rural zone to the urban zone. As identified on the opportunities map, there is the potential for the land to the south to be identified as Future Urban Zone.
- The boundary between the Mixed-Use Zone and the Rural Production Zone can be managed via planting and landscaping at the time of applying for resource consents.

Open space and recreation.

An open space and recreation strategy will be developed during the resource consenting stage to respond to opportunities identified to incorporate open spaces into the proposed development area. The Structure Plan indicates roads running alongside existing and enhanced areas of bush or waterways wherever possible. This creates a strong awareness of these areas and also allows them to be enjoyed by the public. Houses across the road from these open or natural spaces address the road and as such overlook these areas.

Where a demand is identified, flat and useable neighbourhood parks will be provided for in central locations that are accessible where higher density residential development is proposed, consistent with the Council's Open Space Provision Policy.

Summary

The proposed land use pattern contributes toward future housing needs and allows the retention of landscape features such as bush areas and waterways to be incorporated in the overall design and not used as saleable land as might be otherwise. The use of the General Residential Zone and the Mixed-Use Zone will provide for a wide range of houses choices and levels of affordability and complementary commercial uses, facilitating employment opportunities for the Far North.

8. Implementation

The proposed staging of the development is to be confirmed and will be guided by the implementation of the Proposed Precinct Rules. The construction of the flood way and one access point are likely to form part of the first stage of the development, prior to the commencement/occupation of the residential development. On-site wastewater treatment will also need to be considered for each Stage.

The Precinct Plan will contain a number of development triggers that will influence the Staging of the development. This level of detail is still to be confirmed.

Funding arrangements for the proposed infrastructure to facilitate the Structure Plan are still to be confirmed but will be largely developer lead.

9. Conclusion

The Structure Plan outcomes have identified that the Brownlie land is well situated to provide capacity for the urban growth of Kerikeri and Waipapa. The land is strategically located between the two townships, has few constraints to urban development and opens up several opportunities in relation to connectivity.

Through development of the Structure Plan a solution has been identified to enable development of the land while taking into account the natural features and flooding constraints, as well as highlighting the opportunities of the Site to provide a range of transportation connections including access to Rainbow Falls - *Waianiwaniwa*.

The land provides significant benefit in terms of being held in one ownership thereby offering significant opportunity to create a well-functioning, quality urban environment because land development can be planned and implemented comprehensively.

The Structure Plan outcomes indicate primarily residential zoning with a commercial area against SH10 and a small-scale neighbourhood centre to support residential development. The floodway is defined as an overlay and any future zoning will require a Precinct, or other Site-specific provisions to ensure the appropriate land is secured to manage flood hazards.

A comprehensive and connected greenway system is proposed that has potential to connect with Te Araroa Trail and the Kerikeri River walkway. Two road connection options are provided into Kerikeri giving benefits as previously outlined.

By being residential focussed the area can contribute to accommodating the strong demand for housing that has been identified in an efficient way where residents can live in close proximity to employment areas, and commercial/retail amenity.

The commercial area located against SH10 can provide a positively designed entrance to Waipapa providing a southern bookend to the urban part of Waipapa. Part of the Site will be required to facilitate construction of the new State Highway 10 connection that will provide access to the Site and opportunity for a strong east west connection between Waipapa and Kerikeri. This connection also provides opportunity to connect, via local roads to Waitotara Drive thus providing an alternative route, and network resilience, for situations where State Highway 10 floods.

Locating business zoning to the west fronting State Highway 10 provides opportunity to manage reverse sensitivity effects with the State Highway and also create dual frontage to business premises to create a strong urban edge and facilitate safe access for vehicles and pedestrians to the business area from within the Site. Locating Business land in this location supports the character of Waipapa and creates greater opportunity for connection and integration with the Sports Hub.

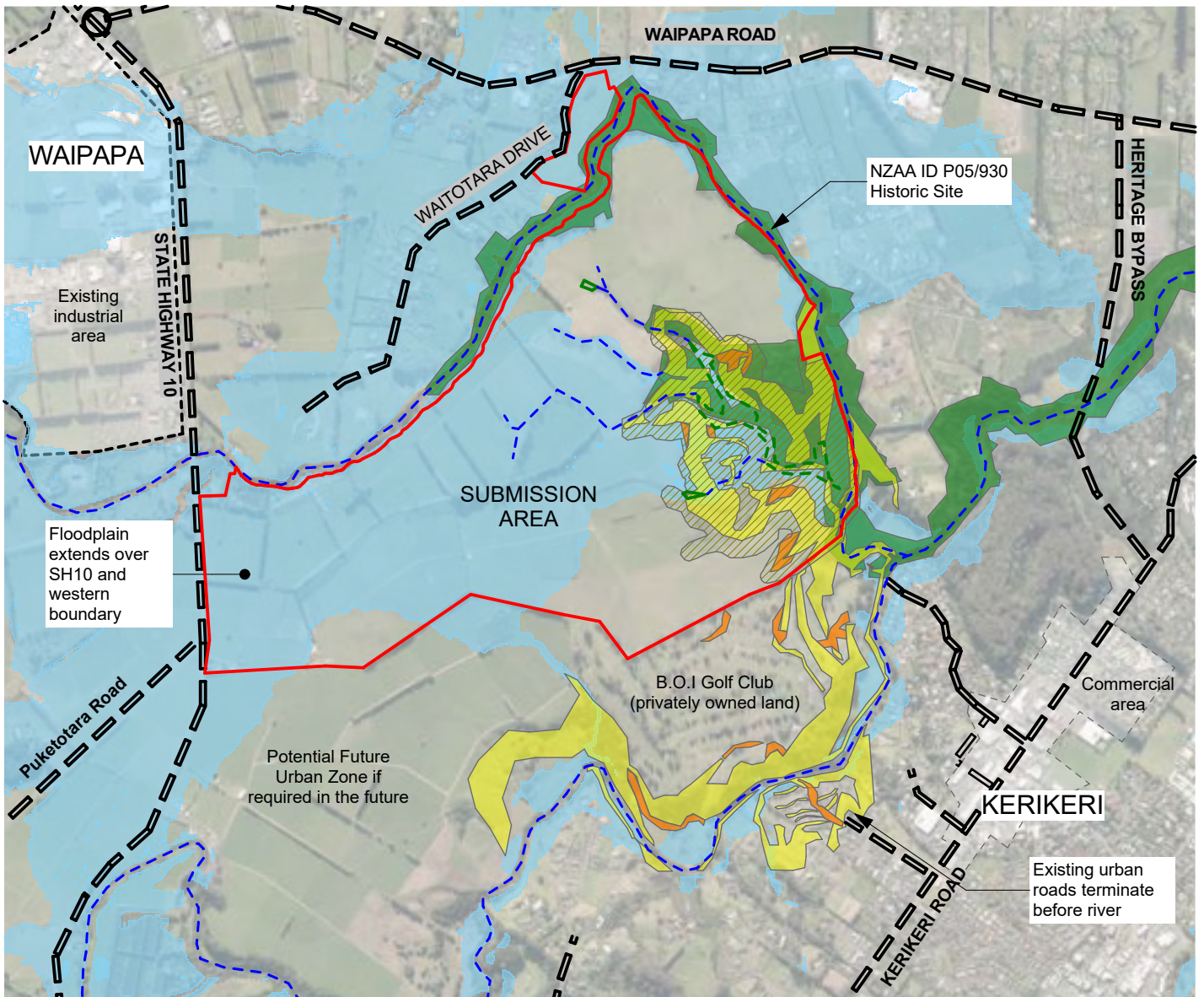
The commercial area also allows for social infrastructure that may be required to service the anticipated population of the residential area. The land would enable social infrastructure such as schools and medical centres to be located efficiently.


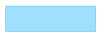







Development of the Structure Plan Area will complement and not compete with the existing townships of Kerikeri or Waipapa. It will provide land for a balanced and complimentary range of land uses, and most importantly will provide land capacity required for growth in an efficient manner and will facilitate a range of outcomes that will directly contribute to creating a high quality and well-functioning urban environment.

Supported by various technical assessments, the rezoning of the land will provide capacity for additional housing supply for the Kerikeri and Waipapa area. The location of the Site and its characteristics will facilitate creation of a well-functioning urban environment - compact and well-connected neighbourhoods and appropriately designed commercial centres. The rezoning will create multiple opportunities for provision of a range of housing typologies and encourage more affordable housing by increasing land capacity and creating a less constrained housing market.

Appendix 1:

Site Constraints and Opportunity Plans



-  Boundary of submission area
-  Modelled 1 in 100 year + climate change flood extent
-  Existing natural rivers / overland flowpaths
-  Natural wetlands
-  Slope Greater Than 20%
-  Slope Greater Than 12.5%
-  Existing Road
-  Significant Natural Area - operative district plan
-  Land identified as difficult to develop

Refer to source information for detail:

E2 Environmental 5/7/2022

Bioresearches ecological analysis 26/4/2022

Bioresearches ecological analysis 26/4/2022

Terrain Surveying 2/6/2022

Terrain Surveying 2/6/2022

FNDC

FNDC

E2 Environmental 5/7/2022

Brownlie Land - Site Constraints



Submission on FNDC District Plan

1828 & 1878 State Highway 10, Waipapa

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22030

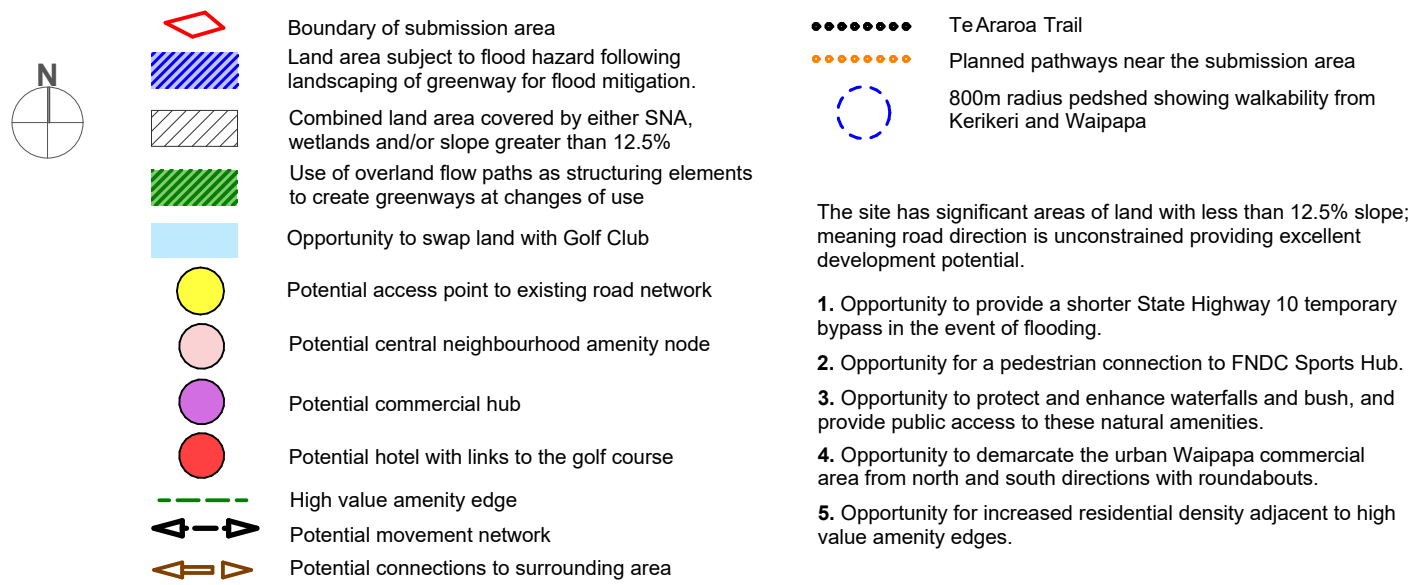
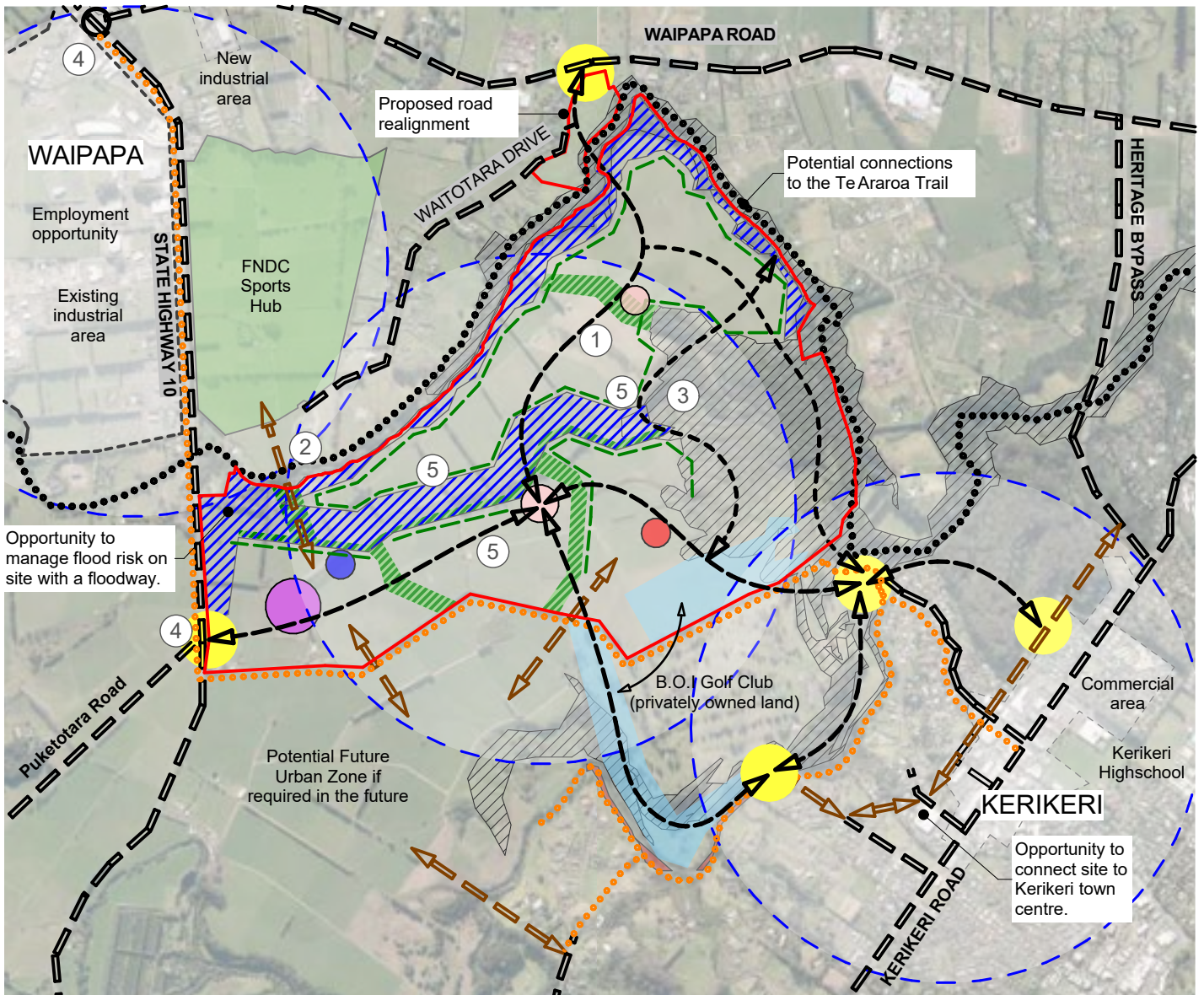
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The site has significant areas of land with less than 12.5% slope; meaning road direction is unconstrained providing excellent development potential.

1. Opportunity to provide a shorter State Highway 10 temporary bypass in the event of flooding.
2. Opportunity for a pedestrian connection to FNDC Sports Hub.
3. Opportunity to protect and enhance waterfalls and bush, and provide public access to these natural amenities.
4. Opportunity to demarcate the urban Waipapa commercial area from north and south directions with roundabouts.
5. Opportunity for increased residential density adjacent to high value amenity edges.

Brownlie Land - Site Opportunities



Submission on FNDC District Plan

1828 & 1878 State Highway 10, Waipapa

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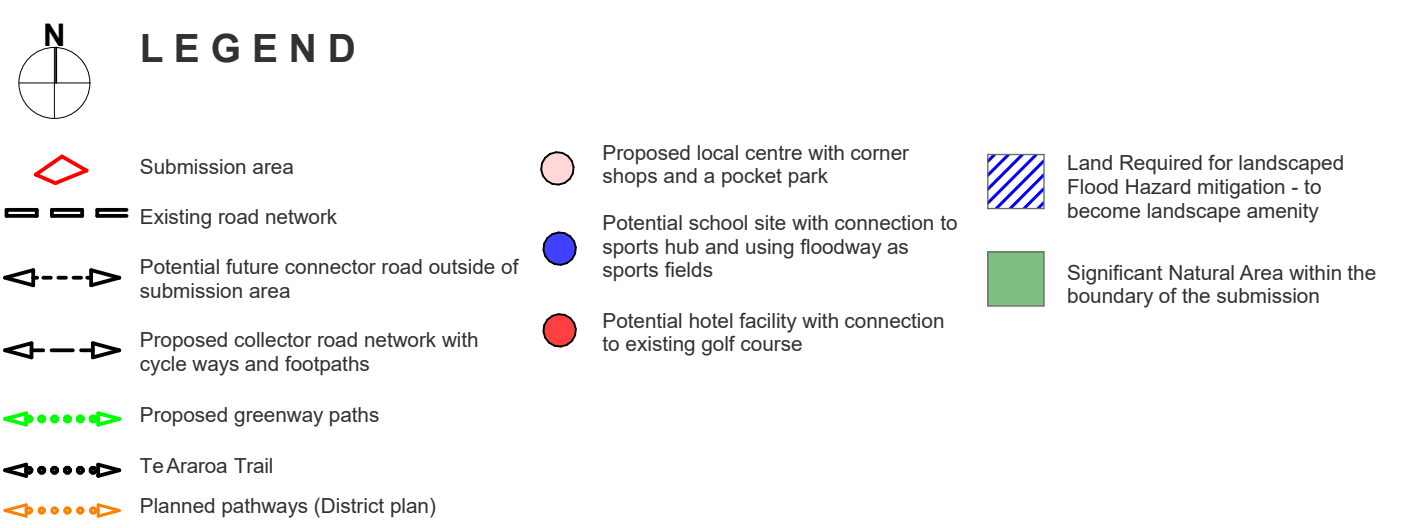
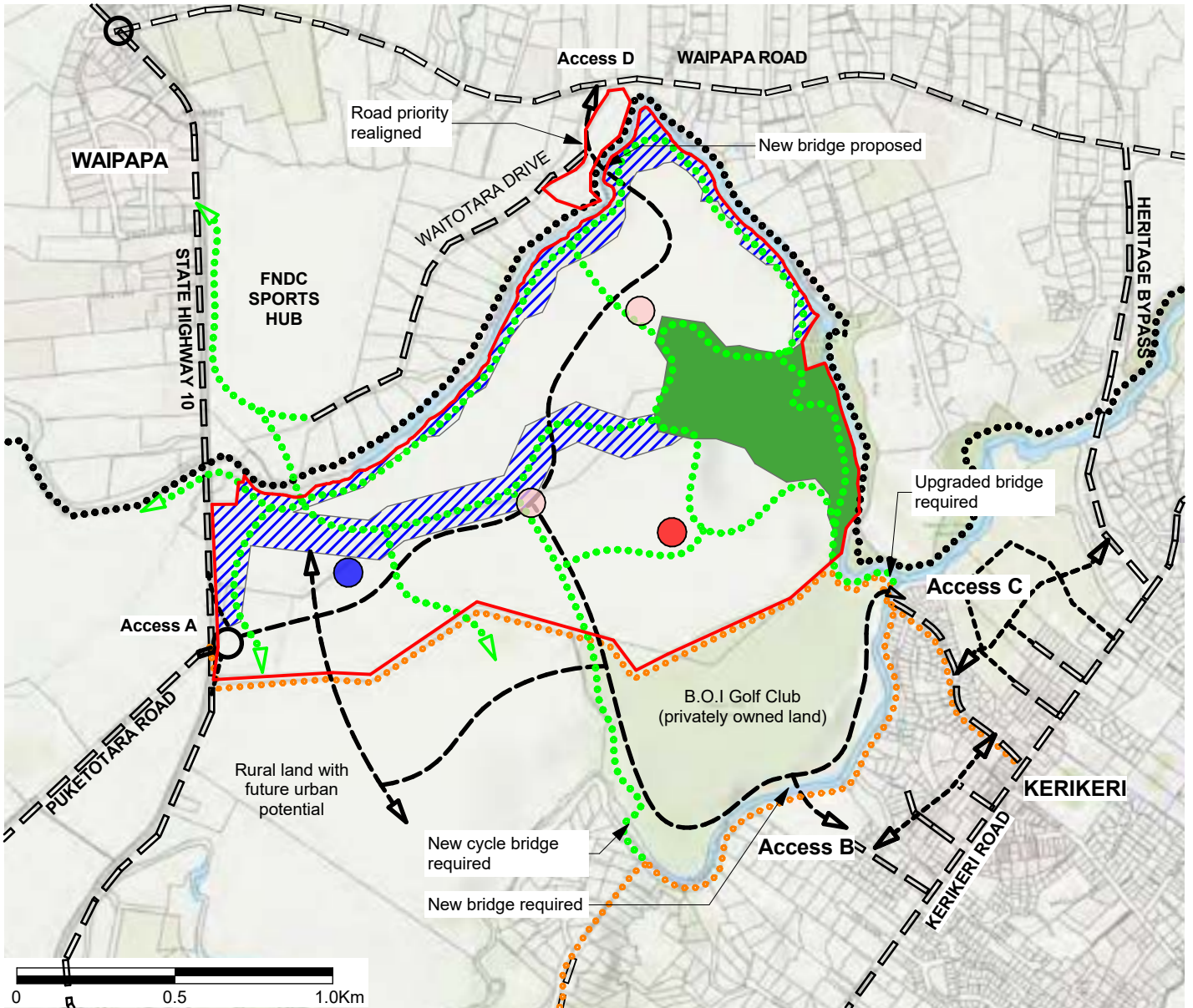
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Appendix 2:

Transport Options Plans



Brownlie Land - Local Transport Network: Option 1 and Greenways Plan



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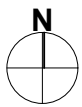
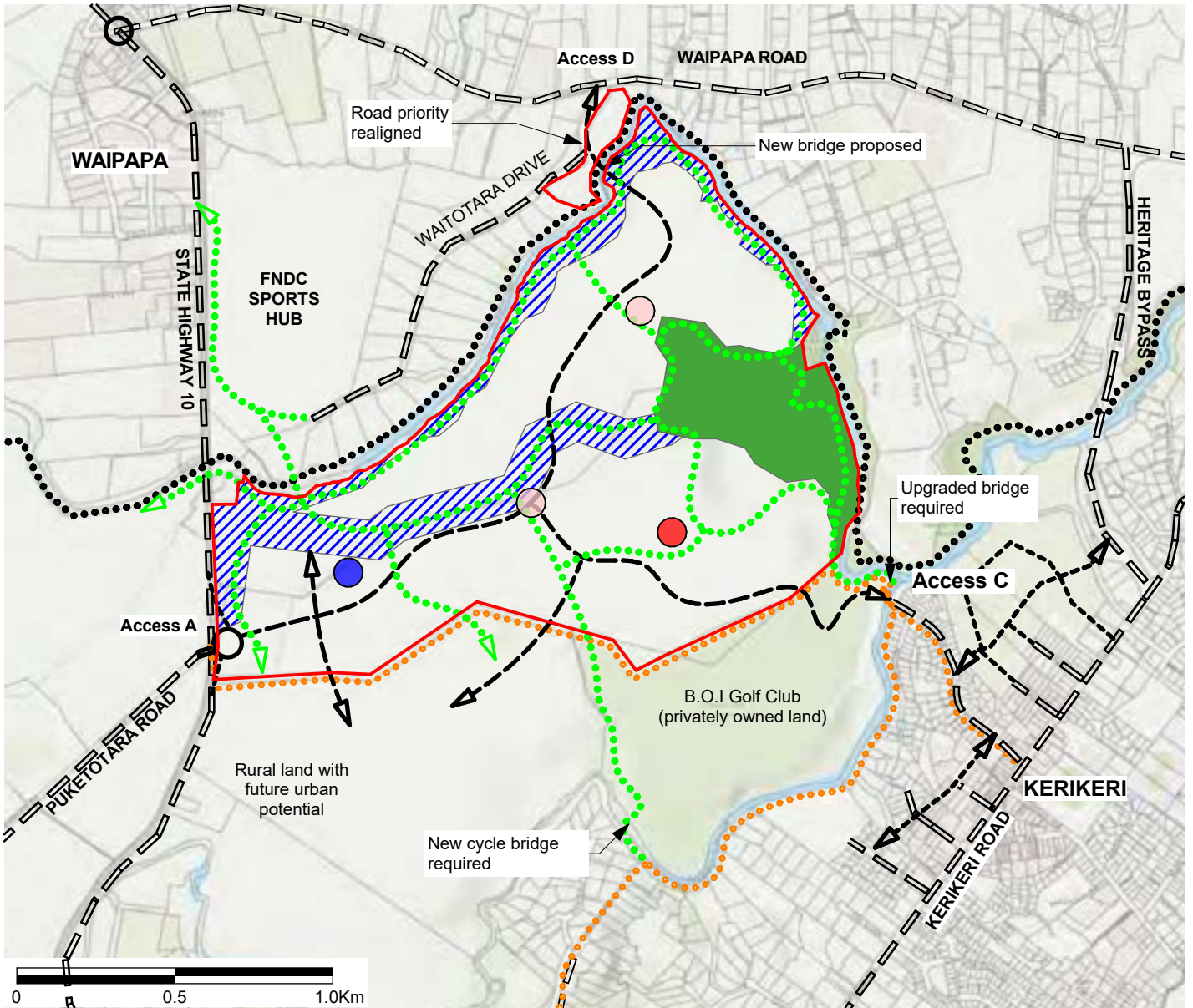
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


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LEGEND

-  Submission area
-  Existing road network
-  Potential future connector road outside of submission area
-  Proposed collector road network with cycle ways and footpaths
-  Proposed greenway paths
-  Te Araroa Trail
-  Planned pathways (District plan)
-  Proposed local centre with corner shops and a pocket park
-  Potential school site with connection to sports hub and using floodway as sports fields
-  Potential hotel facility with connection to existing golf course
-  Land Required for landscaped Flood Hazard mitigation - to become landscape amenity
-  Significant Natural Area within the boundary of the submission

Brownlie Land - Local Transport Network: Option 2 and Greenways Plan



Submission on FNDC District Plan

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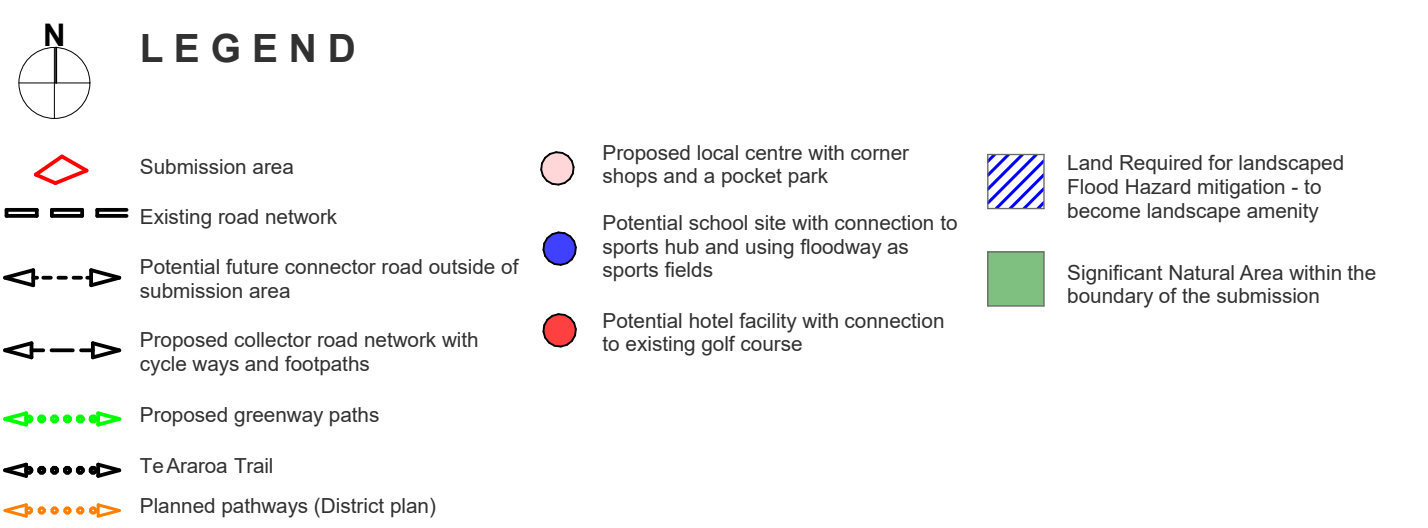
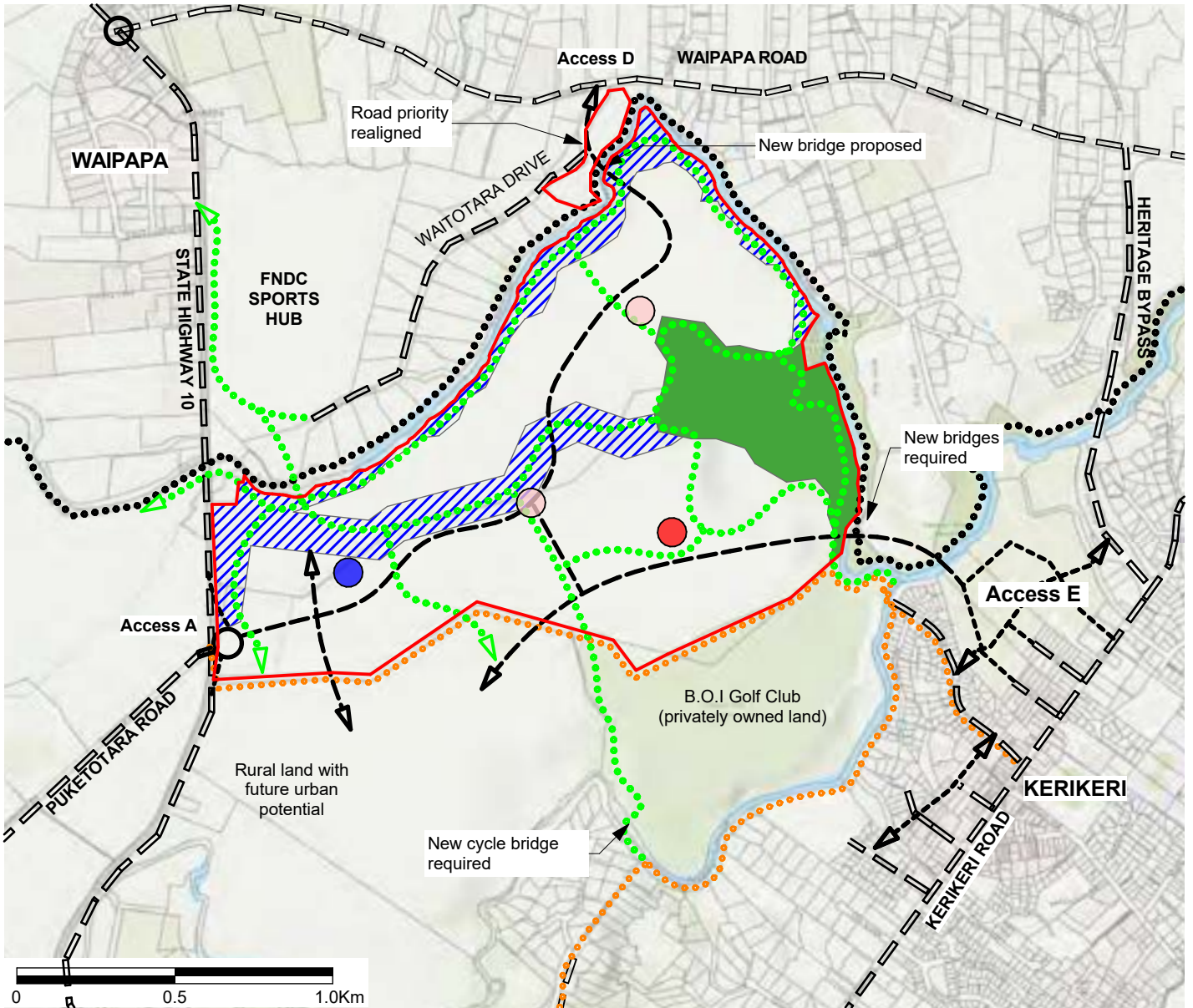
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Brownlie Land - Local Transport Network: Option 3 and Greenways Plan



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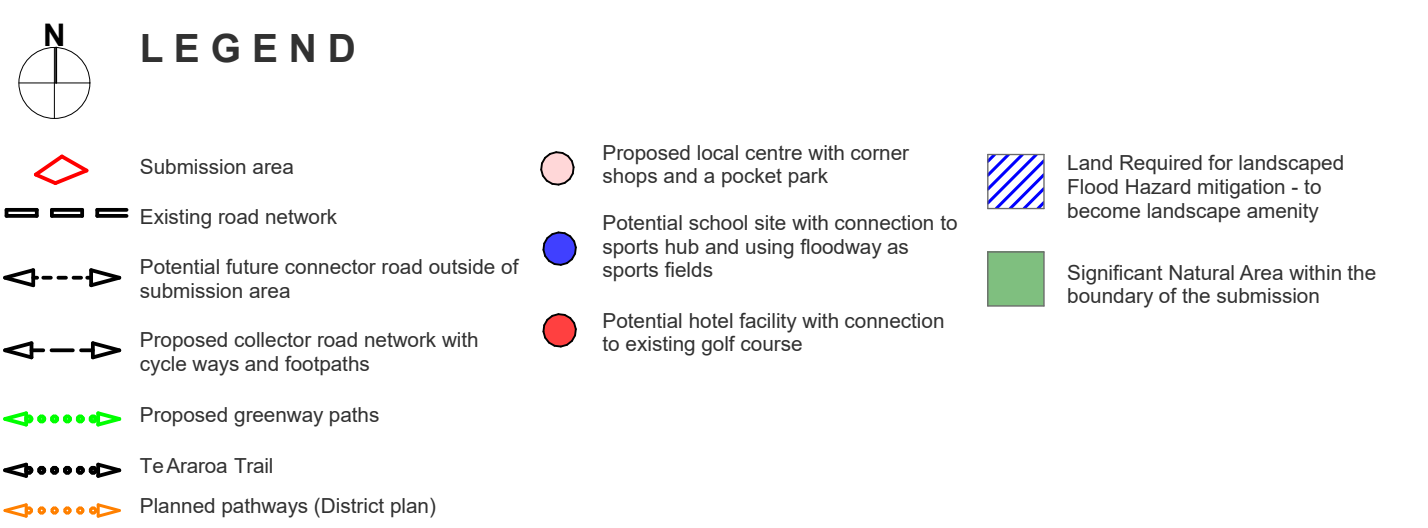
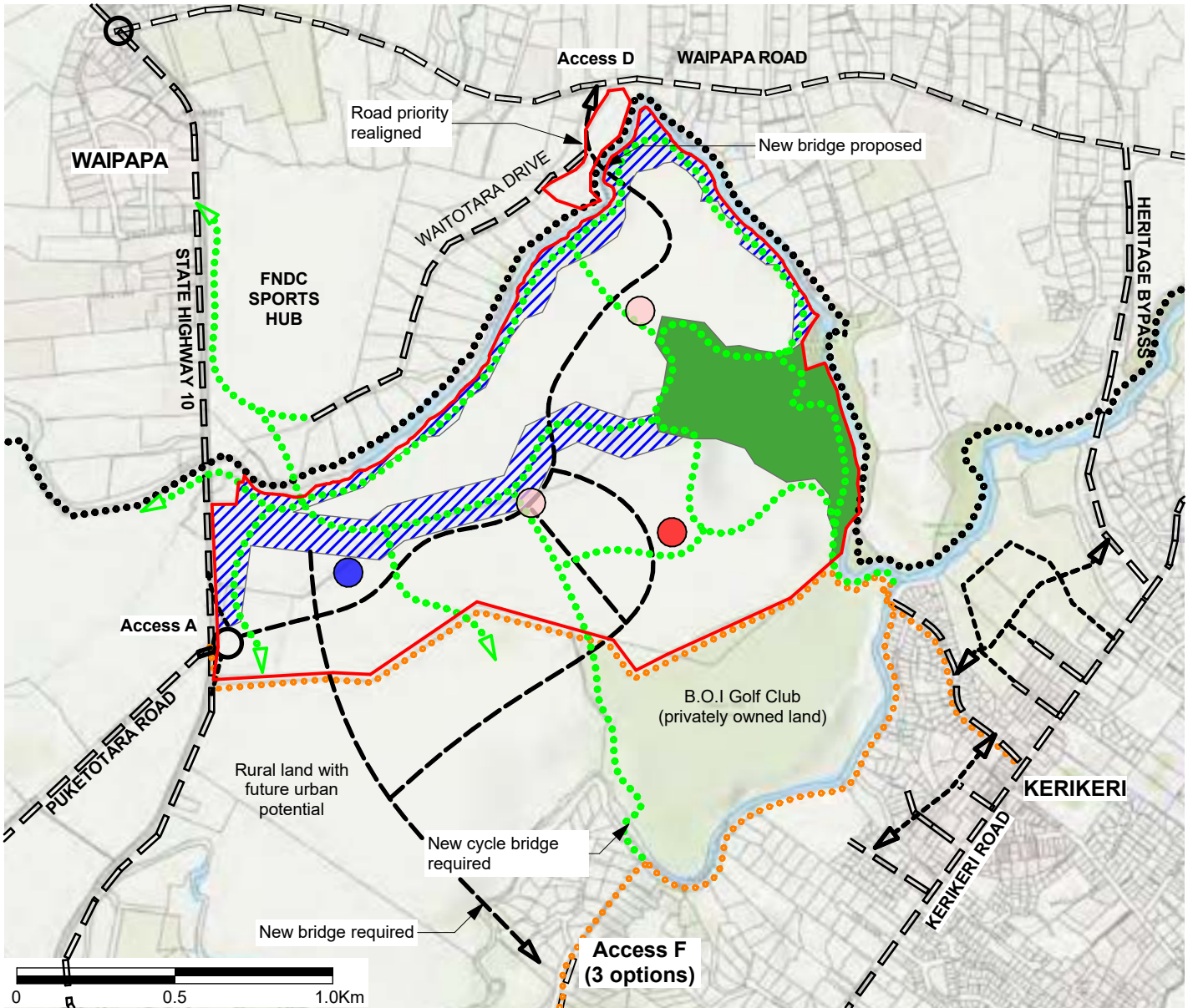
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Brownlie Land - Local Transport Network: Option 4 and Greenways Plan



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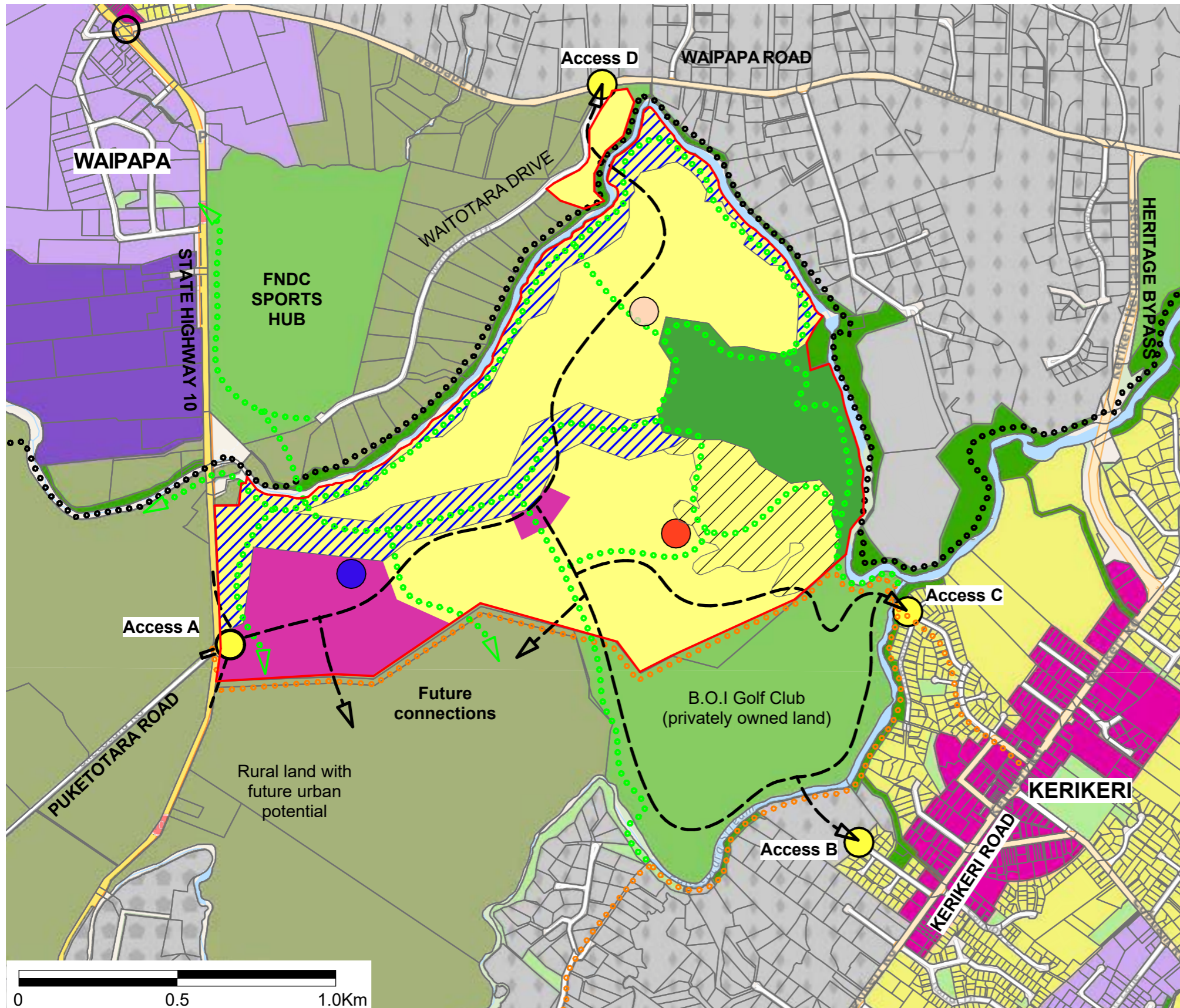
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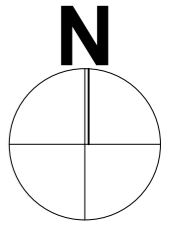
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Appendix 3:

Proposed Structure Plan



- Legend**
- Submission area
 - State Highways
 - Local roads
 - Waterways
- Zones**
- General Residential
 - Heavy Industrial
 - Light Industrial
 - Mixed Use
 - Natural Open Space
 - Open Space
 - Sport And Active Recreation
 - Rural Lifestyle
 - Rural Production
- Special Purpose Zones**
- Airport
 - Carrington Estate; Kauri Cliffs; Kororāreka Russell Township; Moturoa Island; Orongo Bay; Quail Ridge
 - Horticulture
 - Horticulture Processing Facilities
 - Rural Residential
- Features**
- Significant Natural Area
 - Proposed area of large lot residential
 - Key transport connections to existing roads
 - Proposed local centre
 - Potential school site with connection to FNDc sports hub
 - Potential hotel facility with connection to existing golf course
 - Proposed local roads with cycle ways
 - Potential future connections beyond submission area
 - Te Araroa Trail
 - Planned pathways (FNDc District Plan)
 - Proposed greenway pathways
 - Flood prone area overlay (final extent TBC)



Map notations (including zone boundaries, greenways etc) are indicative only and will be refined through later (more detailed) processes such as Plan Changes or Notices of Requirement.

Title
Brownlie Land - Proposed Structure Plan: Land Use



Submission on FNDc District Plan

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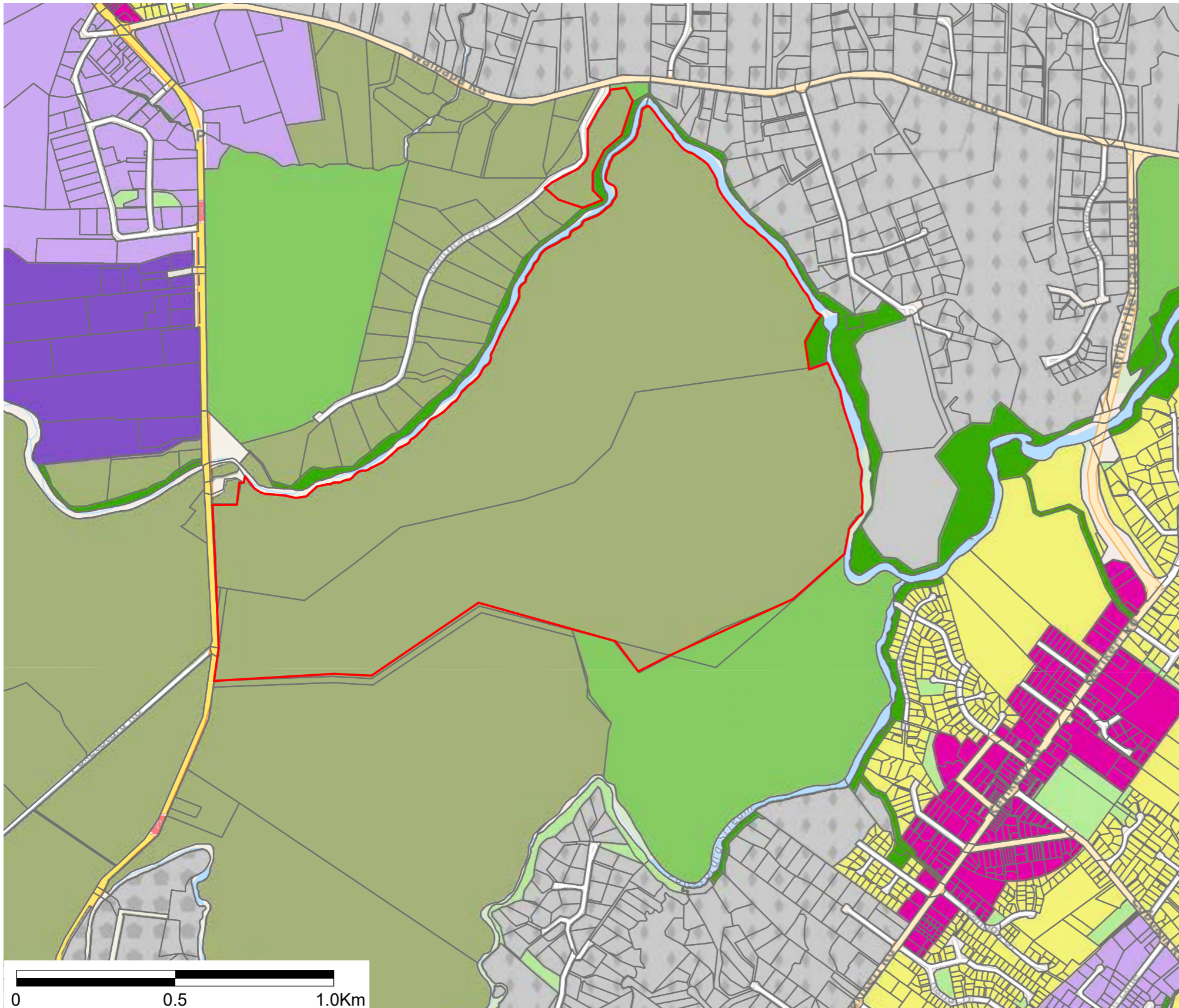
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Kiwi Fresh Orange Company Ltd

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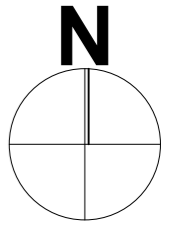
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Appendix 4:

Existing and Proposed Zoning of the Site, including proposed overlays and Precinct Area.



- Legend**
- Submission area
 - State Highways
 - Local roads
 - Waterways
- Zones**
- General Residential
 - Heavy Industrial
 - Light Industrial
 - Mixed Use
 - Natural Open Space
 - Open Space
 - Sport And Active Recreation
 - Rural Lifestyle
 - Rural Production
- Special Purpose Zones**
- Airport
 - Carrington Estate; Kauri Cliffs; Kororāreka Russell Township; Moturoa Island; Orongo Bay; Quail Ridge
 - Horticulture
 - Horticulture Processing Facilities
 - Rural Residential



Title
Brownlie Land - FNDC District Plan - as notified 27 July 2022

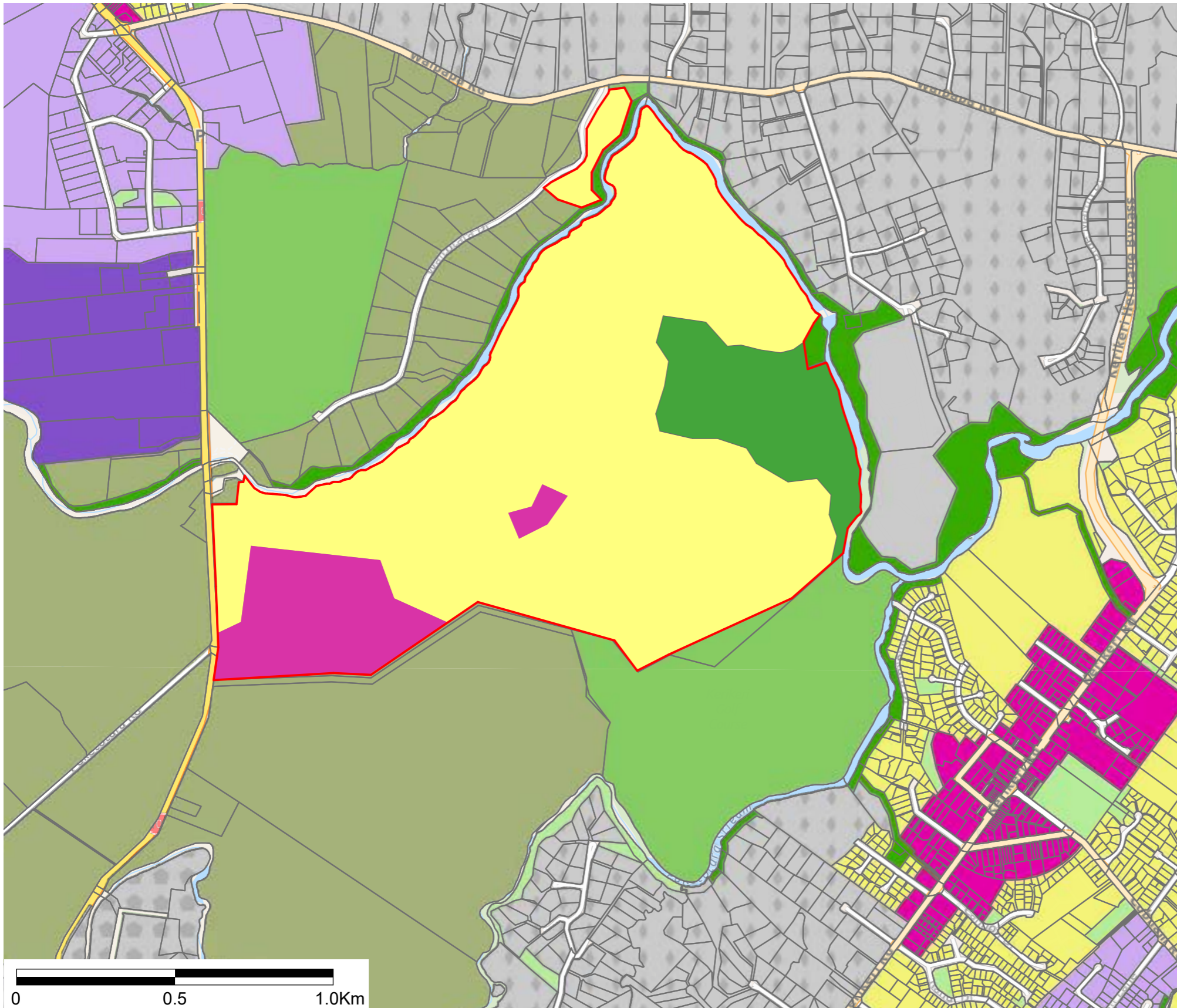
Submission on FNDC District Plan
 1828 & 1878 State Highway 10, Waipapa

Date: 21/10/2022 Scale: As shown Client: Kiwi Fresh Orange Company Ltd

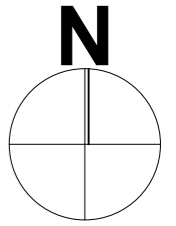


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 sheet no. A008 revision 05



- Legend**
- Submission area
 - State Highways
 - Local roads
 - Waterways
- Zones**
- General Residential
 - Heavy Industrial
 - Light Industrial
 - Mixed Use
 - Natural Open Space
 - Open Space
 - Sport And Active Recreation
 - Rural Lifestyle
 - Rural Production
- Special Purpose Zones**
- Airport
 - Carrington Estate; Kauri Cliffs; Kororāreka Russell Township; Moturoa Island; Orongo Bay; Quail Ridge
 - Horticulture
 - Horticulture Processing Facilities
 - Rural Residential



Title
Brownlie Land - Proposed Zoning Plan: Zones



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Date
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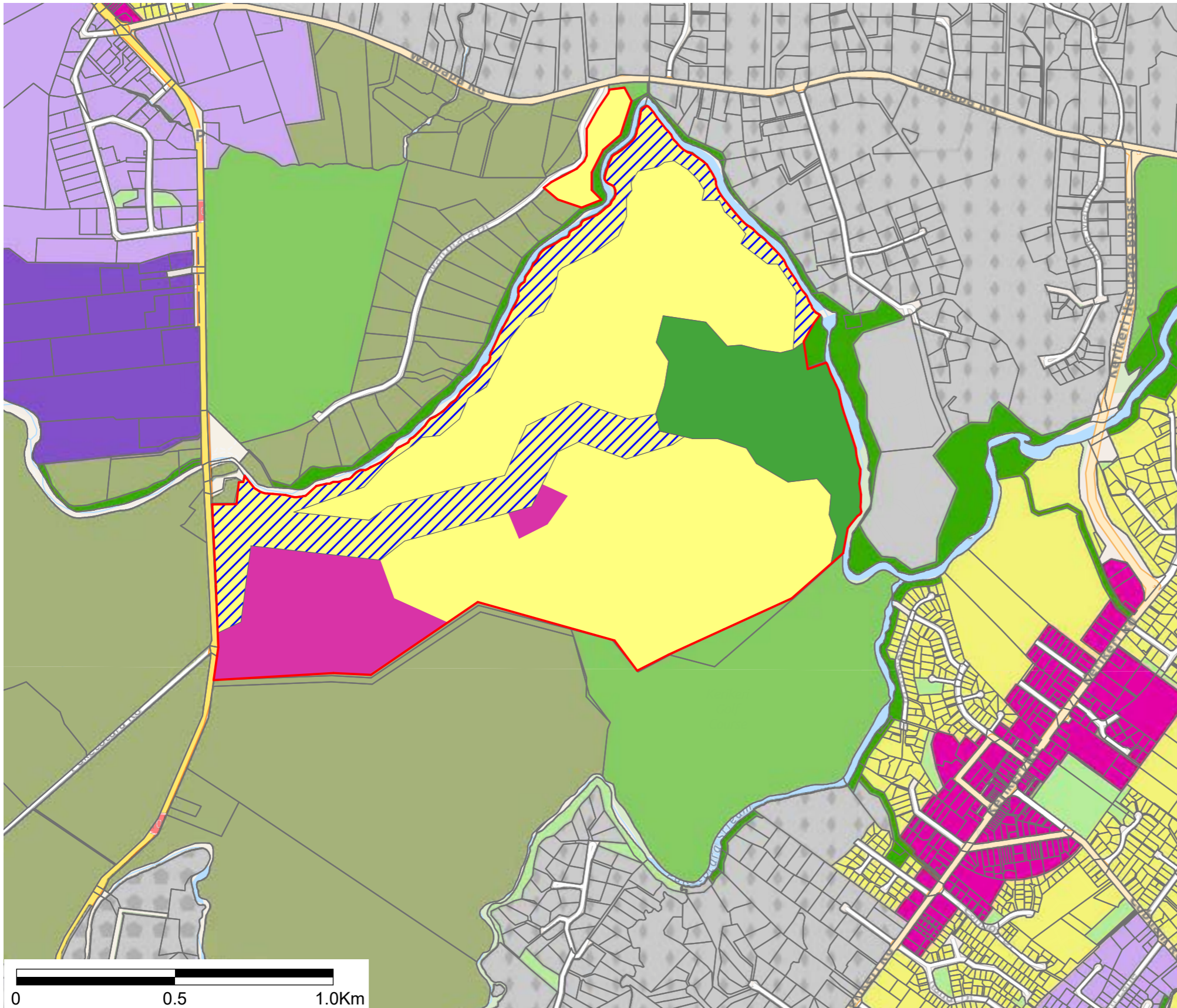
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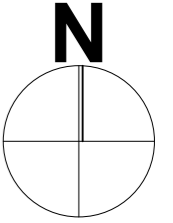
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- Legend**
- Submission area
 - State Highways
 - Local roads
 - Waterways
- Zones**
- General Residential
 - Heavy Industrial
 - Light Industrial
 - Mixed Use
 - Natural Open Space
 - Open Space
 - Sport And Active Recreation
 - Rural Lifestyle
 - Rural Production
- Special Purpose Zones**
- Airport
 - Carrington Estate; Kauri Cliffs; Kororāreka Russell Township; Moturoa Island; Orongo Bay; Quail Ridge
 - Horticulture
 - Horticulture Processing Facilities
 - Rural Residential
- Overlays**
- Flood prone area overlay (final extent TBC)



Title
Brownlie Land - Proposed Zoning Plan: Overlays



Submission on FNDC District Plan
 1828 & 1878 State Highway 10, Waipapa

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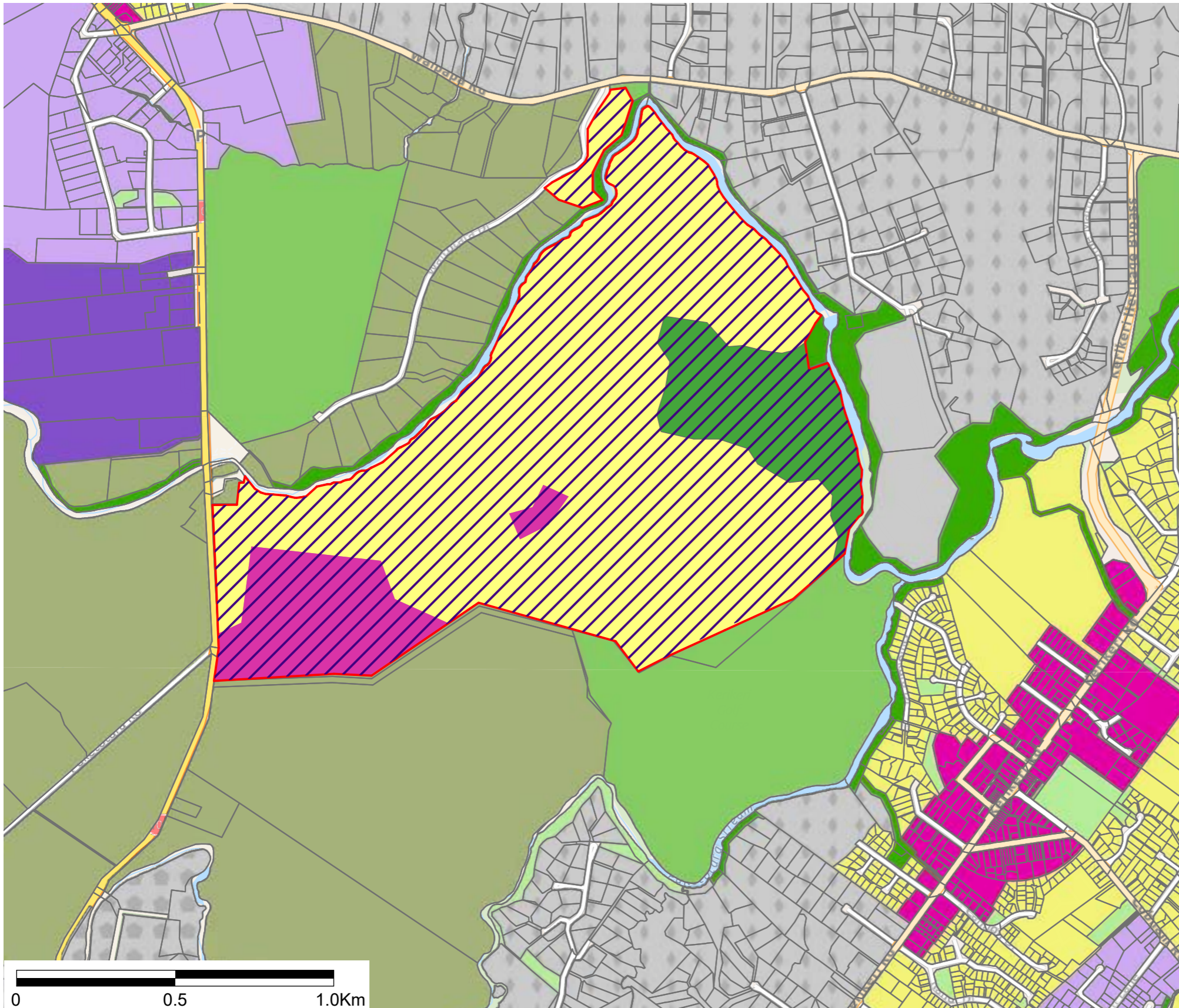
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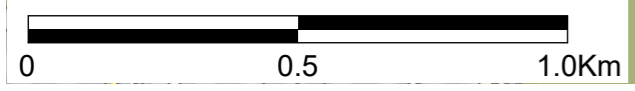
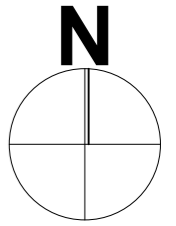
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revision
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- Legend**
- Submission area
 - State Highways
 - Local roads
 - Waterways
- Zones**
- General Residential
 - Heavy Industrial
 - Light Industrial
 - Mixed Use
 - Natural Open Space
 - Open Space
 - Sport And Active Recreation
 - Rural Lifestyle
 - Rural Production
- Special Purpose Zones**
- Airport
 - Carrington Estate; Kauri Cliffs; Kororāreka Russell Township; Moturoa Island; Orongo Bay; Quail Ridge
 - Horticulture
 - Horticulture Processing Facilities
 - Rural Residential
- Precincts**
- Brownlie Land Precinct



Title
Brownlie Land - Proposed Zoning Plan: Precincts



Submission on FNDC District Plan
1828 & 1878 State Highway 10, Waipapa

P.O. Box 8807 Symonds St, Auckland, NZ
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Date: 21/10/2022 Scale: As shown Client: Kiwi Fresh Orange Company Ltd

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End of Report

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Section 32 Report: Brownlie Land

Assessing options for and the appropriateness of land for urban development.

Applicant Name: Kiwi Fresh Orange Company Limited

Date: 21 October 2022

This Section 32 Report has been prepared by The Planning Collective Limited and forms part of the Submission on the Far North Proposed District Plan on behalf of Kiwi Fresh Orange Company Limited relating to land at 1828 and 1878 State Highway 10, Waipapa and Lot 1 DP 333643 and Lot 2 DP 76850. (TPC Reference: KFO-024-22).



This report has been prepared by:

Claire Booth
Senior Planner
The Planning Collective Limited

Dated: 18/10/2022



This report has been peer reviewed by:

Burnette O'Connor
Director / Planner
The Planning Collective Limited

Dated: 18 October 2022

"The curves within the circle symbol of our logo are a depiction of the shape the Mahurangi River takes as it weaves its way through Warkworth. This was chosen to illustrate the whenua and landscape of the town that The Planning Collective works so closely with."

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Table of Contents

1. Submitter Details.....	1
2. Executive Summary.....	2
3. Introduction	4
4. Description of the Proposal.....	6
5. Section 32 Analysis.....	9
6. Statutory and Policy Context.....	25
7. Assessment of Environmental Effects	35
8. Conclusion.....	36

Appendices

- A. Strategic Directions (Proposed Far North District Plan)
- B. Assessment of Environmental Effects

1. Submitter Details

Applicant	:	Kiwi Fresh Orange Company Limited
Site Address	:	1828 and 1878 State Highway 10, Waipapa (including Lot 1 DP 333643 and Lot 2 DP 76850)
Legal Description	:	Part Lot 2 DP 41113, Part Lot 2 DP 89875, Lot 1 DP 333643 and Lot 2 DP 76850
Area of Site	:	197ha
Operative Zoning <i>Far North District Plan</i>	:	<u><i>Proposed Far North District Plan</i></u> <i>Rural Production</i>
Zoning Requested	:	<u><i>Proposed Zoning</i></u> <i>-General Residential</i> <i>- Mixed Use</i> <i>- Natural Open Space.</i>

Contact Details

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2. Executive Summary

This is an evaluation report prepared under section 32 of the Resource Management Act 1991 (**RMA**). It is intended to examine and assess the proposal in the Structure Plan and The Precinct, and the relief sought by the Kiwi Fresh Orange Company Limited's submission on the Proposed District Plan (**Proposal**).

In summary, the objectives of the Proposal are the most appropriate way to achieve the purpose of the Act, because:

- The Proposal will result in an efficient use of land, providing for a cohesive and comprehensive solution to meet the housing and commercial needs of Kerikeri and Waipapa's growing population.
- The natural features identified within the Proposal are protected through appropriate zoning.
- Accessibility to the Kerikeri River is increased and amenity values are enhanced.
- Ad hoc infill development and further subdivision of Rural Lifestyle blocks is reduced.
- Affordable housing can be provided.
- Development can be staged to ensure appropriate provision of infrastructure services.

The provisions of the Proposal are the most appropriate way to the achieve the objectives, because:

- The Proposal responds to the projected demand for more residential and commercial land in Kerikeri and Waipapa which the proposed Far North District Plan does not provide for. The Proposal provides development capacity for housing and business, while ensuring the business use is compatible with the surrounding residential use and is both an efficient and effective use of the land.
- The Proposal would result in an efficient use of the land for residential purposes, subject to the management of the traffic connections and the management of the flood hazard on site.
- The site can be adequacy serviced via on site mechanisms in the short term and a connection to the reticulated system in the long term. This is consistent with objectives that seek to ensure urban development is provided alongside infrastructure needed to serve the development.
- Affordable housing can be provided at scale.
- The Proposal enables a flexible development opportunity, including retirement villages and greenfield affordable housing development, which require land holdings. These types of development cannot be achieved through infill housing.
- The Proposal protects and enhances the natural features of the site, including providing public access to Kerikeri River, where no access is currently available.

A comparative analysis of other options was carried out in the preparation of this report. These alternatives are less appropriate than the Proposal's provisions because they do not provide the housing and business development capacity required to service growth or do not enable compatible residential and commercial uses. They therefore do not unlock the benefits of the Proposal or have greater costs in terms of the environmental effects. The other options would result in further increases in sprawl and the inability to provide for affordable housing due to the infrastructure costs.

This report considers the benefits and costs of the environmental, economic, social, and cultural effects anticipated from implementation of the Proposal's provisions. In particular, it concludes:

- That demand for additional housing business development capacity will be met.
- Additional transport connectivity through the site (both for private vehicles and active transport uses) is provided.
- The Proposal will adequately manage the flood hazard risk present on the Site prior to development occurring through the Precinct.
- Development can be suitably serviced on-site until such time as there is capacity within the reticulated network.
- The Proposal opens up Kerikeri River to the public, which has significant amenity benefits.
- The Proposal protects the wetland features and vegetation around Rainbow Falls, through the use of the Natural Open Space Zone.
- The Proposal could result in 2,348 FTE potential jobs from the construction of approximately 1,830 dwellings and 653 FTE potential jobs from the construction of a commercial and employment centre.
- The Proposal will meet the identified demand for an additional 11ha of business and Commercial land identified in the FNDC Section 32 reports, as well as the additional 4ha demand identified in the Economic Assessment.
- Provide for uses that complement both Kerikeri and Waipapa Townships.

Therefore, the Proposal is the most effective and efficient option to achieve the objectives of the PDP and the Proposal.

A Section 32 report must consider the risk of acting or not acting if there is uncertain or insufficient information about the subject matter of the provisions. There is sufficient information to assess the effects anticipated from implementation of the Proposal's provisions. The effects of urban development are well understood, and the Proposal is supported by technical expert reports which identify the need for further urban development capacity and provide solutions to overcome site constraints.

3. Introduction

Kiwi Fresh Orange Company Limited (**KFO**) is a submitter on the Proposed District Plan seeking to rezone 197ha of land in Kerikeri-Waipapa to a mix of General Residential, Mixed Urban and Natural Open Space (**Site or Submission Area**).

The content of KFO's submission is provided in the following reports:

- the Structure Plan – which provides the background and justification for the proposal to rezone the Submission Area. It also identifies the various zones, precincts and overlays to be applied to the land; and
- the Precinct – which contains the proposed provisions applying to the zones, precincts and overlays in the Structure Plan.

(We refer to these documents and submission and relief sought therein as the **Proposal**)

In formulating its Proposal, KFO commissioned technical expert reports to understand whether there was demand for rezoning and to assess the sites feasibility – in terms of constraints and environmental effects – for development.

In this section 32 evaluation report (**Evaluation Report**), we examine and assess the Proposal and the expert reports in accordance with section 32 of the RMA.

In preparing the Evaluation Report we have:

- Reviewed the Proposed District Plan (**PDP**).
- Reviewed the s32 Analysis and supporting documents provided in support of the PDP.
- Reviewed the Proposal and technical reports for the Site in light of the Proposed District Plan.
- Considered relevant higher order policy, including:
 - The Regional Policy Statement for Northland (**RPS**);
 - The National Policy Statement for Freshwater Management (**NPS-FM**);
 - The National Policy Statement on Urban Development (**NPS-UD**);
 - The National Policy Statement on Highly Productive Soil (**NPS-HPL**).

Site location and Description

We adopt the Structure Plan's assessment of the Site location and description and note, in summary:

- The Site is proposed to be zoned Rural Production under the PDP. It is currently used for rural production purposes.
- The Site is located on SH 10 between Kerikeri and Waipapa. The land to the south of Kerikeri and to the North of Waipapa is zoned for horticultural purposes which seeks to protect the land for horticultural uses.
- The Site adjoins Kerikeri River to the Northeast and Northwest. To the east is the Quail Ridge Country Park retirement village. To the Southeast is the Bay of Islands Golf Course. To the southwest and to the south is existing Rural Production Land. A network of roads exists

around the Site, including State Highway 10, Waipapa Road, Kerikeri Road and the Heritage Highway.

- The Site is relatively flat and drops away towards the Kerikeri River. There are two waterfalls present on site that have a drop of 15m and 20m. They are fed by smaller waterways that run through the Site. These waterfalls are located in the central / eastern portion of the land within an area of rolling contour, commonly referred to as the *Amphitheatre*. This area provides a transitional zone from the flat land, down towards the Kerikeri River and exhibits natural features worthy of protection.
- Rainbow Falls – *Waianiwaniwa* is a significant waterfall / natural feature within the Kerikeri River. The Falls have a drop height of approximately 25m.
- There are a number of streams and overland flow paths that traverse the Site. A large portion of the Site is also subject to the 1:100-year AEP flood event.
- Access to the Site is currently gained via SH10, which is a key connection route between Kerikeri and Waipapa.

4. Description of the Proposal

4.1 The Proposal – underlying zones, precinct and overlay

In support of its submission, the Proposal seeks to apply to the Submission Area existing PDP zones with additional an overlay and precinct. The Proposal’s proposed zoning, precinct, and overlay are explained in detailed below.

Proposed Zoning:

The proposed zoning seeks the following approximate zone areas:

- General Residential- 152ha (gross)
- Mixed Use – 22ha (gross)
- Natural Open Space- 23ha (gross)

The proposed zoning framework is outlined in Figure 1 below:

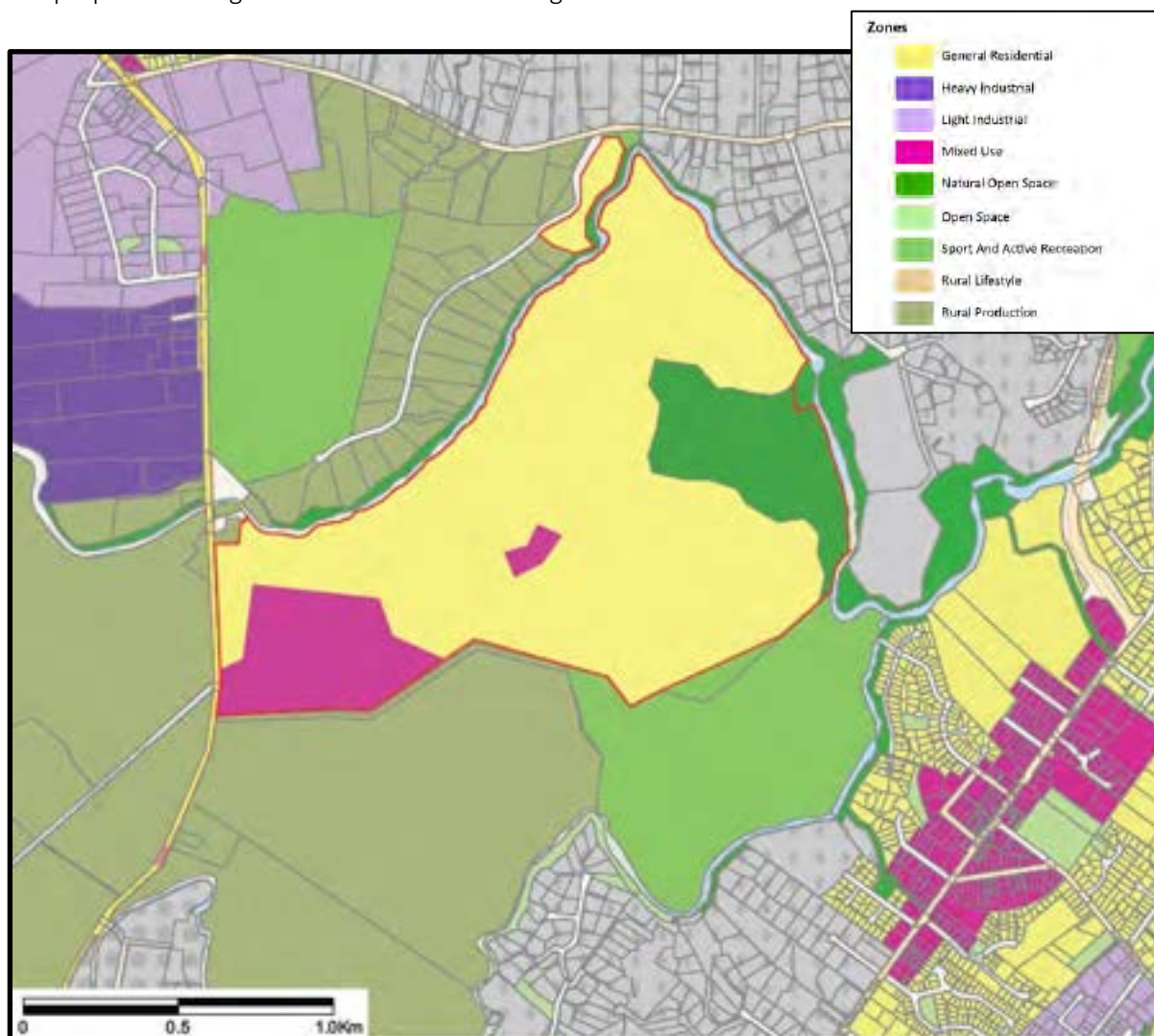


Figure 1: Submission area highlighted by red outline. Proposed re-zoning shown within the submission area.

Proposed Precinct Provisions and Rules:

The Structure Plan identifies the need for specific place-based provisions that address the following:

- The management of the flood hazard.
- Management of the delivery of infrastructure, specifically in relation to onsite wastewater services and staging connections to the reticulated network.
- Provision of potable water supply to service the development.
- Provision of an intersection with State Highway 10.
- Floor space cap for business activities.

Therefore, it proposes a precinct in addition to the underlying zoning.

For the purpose of the Proposal, the Precinct is named “**The Brownlie Land Precinct**”. However, a Hui is proposed to be held with Ngāti Rēhia to agree on a more appropriate name for the area. We adopt the current name for this Evaluation Report.

The proposed precinct framework is outlined in Figure 2 below:

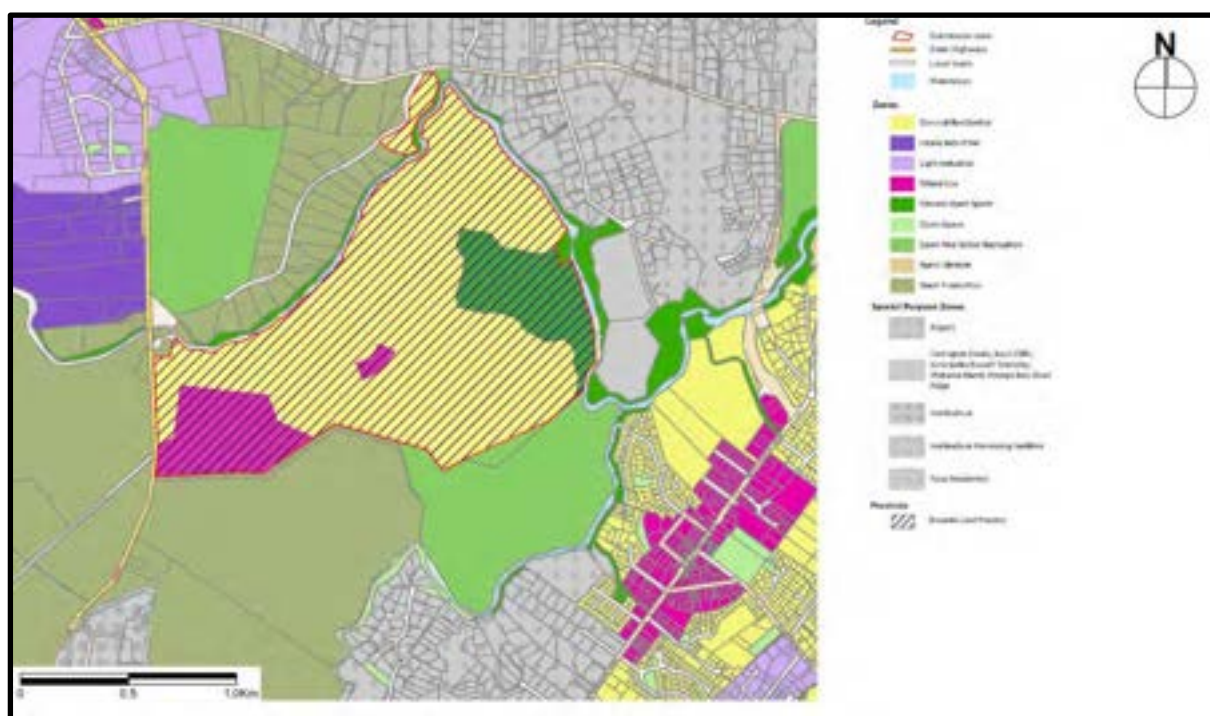


Figure 2: Proposed Precinct Plan- covering the entire Brownlie Land Structure Plan Site.

Proposed Overlay:

Flood modelling by Northland Regional Council identifies the Site is subject to a flood hazard, as is surrounding land. In support of the Proposal, KFO commissioned assessments to determine the maximum area of land on the Site needed and the feasibility of engineered solutions to manage the flood hazard.

The Proposal proposes a floodway to convey floodwaters and mitigate the impact of flood hazard outside the site. The alignment of this floodway generally follows the alignment of the existing overland flow path once it has collected floodwaters that spilled across SH10. The proposed floodway is defined spatially using an Overlay.

The Overlay relates to rules in the proposed Precinct that will require the land area for flood hazard management to be defined and secured alongside the first development consent on the land and ahead of any building.

The proposed overlay framework is outlined in Figure 3 below:

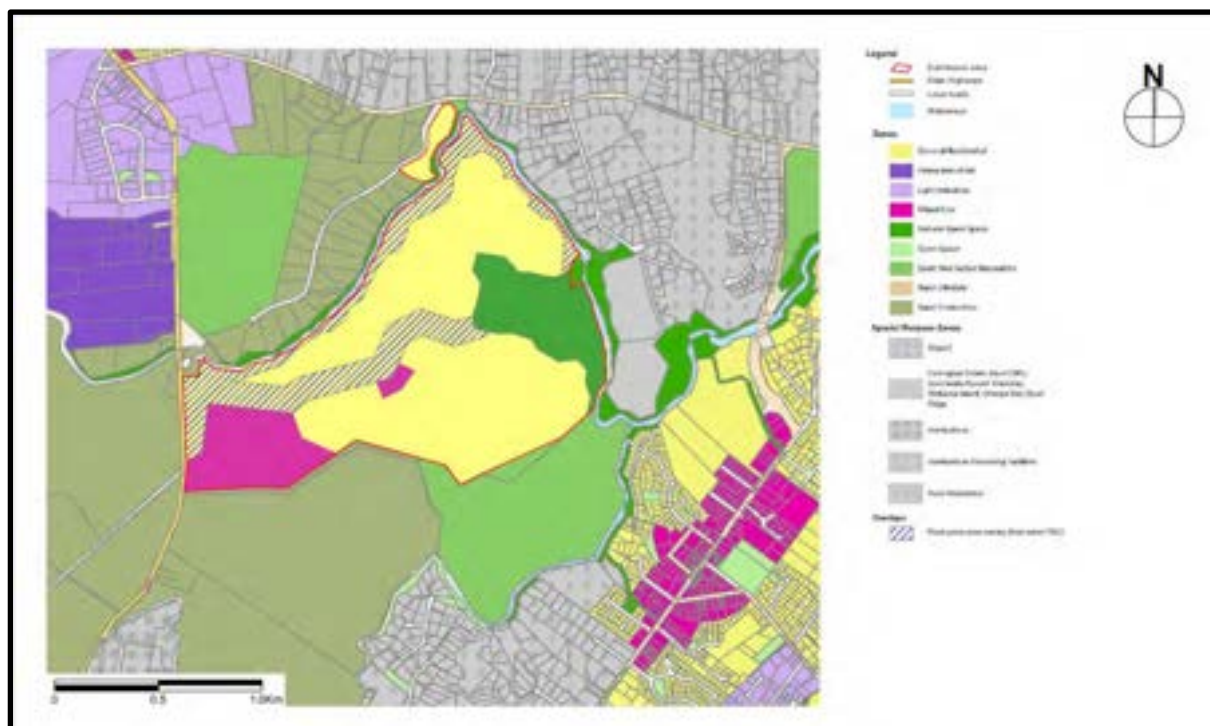


Figure 3: Proposed Flood Hazard Management Overlay.

4.2 Summary of the changes proposed to the Proposed District Plan

The PDP currently zones the Site Rural Production. The Site is also subject to a Natural Hazards and Risks Overlay. In summary, as per the maps and descriptions above, the Proposal seeks:

- to change the zone from Rural Production to a combination of General Residential, Mixed Use and Natural Open Space;
- to add a Precinct with associated tailored provisions; and
- remove the River Flood Hazard Zone Overlay (100 Year ARI Event) and apply the overlay in Figure 4, based on the site-specific flood hazard assessment prepared in support of the Proposal. **S554.050**

4.3 Consultation and engagement

A number of meetings have taken place with FNDC, Ngāti Rēhia, local community groups, including the Kerikeri and Waipapa Rotary Clubs and Vision Kerikeri and Bay of Islands Golf Club, to discuss the proposed re-zoning of this Site. A summary of the consultation that has occurred to date and the general feedback is outlined in the Communications Summary Report, prepared by the Planning Collective.

5. Section 32 Analysis

Section 32 sets out the requirements for preparing and publishing evaluation reports. The overall purpose of section 32 in that context is to ensure that any provisions proposed through a plan change are evidence based, clear and certain, and the best means to achieve the purpose of the RMA.

This section of the Evaluation Report assesses the Proposal in accordance with section 32.

5.1 Appropriateness of the Proposal to achieve the purpose of the Act

Section 32(1)(a) of the RMA requires that the evaluation report: *'examine the extent to which the objectives of the proposal being evaluated are the most appropriate way to achieve the purpose of this Act'*.

5.1.1 Objectives of the proposed re-zoning

The objectives that will apply to the Proposal are those in the underlying zones (General Residential, Mixed Use and Natural Open Space) and site-specific objectives to apply through a precinct and overlay. Below, we consider the general objectives of the Proposal, which have informed the objectives in the Precinct Plan (if site specific objectives were required in addition to the base zone).

In summary, these objectives seek to:

Structure Plan overall objectives:

- To provide for the growth demands of Kerikeri and Waipapa in a strategic manner that will achieve efficient, connected, high-quality, and sustainable urban outcomes.
- Recognise the existing different urban roles of Kerikeri and Waipapa and support and integrate the development with those existing uses.
- Reflect and incorporate Ngāti Rēhia values in the development of the land.
- To integrate urban development with efficient infrastructure servicing (physically, spatially, and economically) and to align the expansion and extension of reticulated infrastructure with the FNDC levels of service and proposed infrastructure upgrades.
- Ensure that the infrastructure provided to service future development is resilient and has sufficient capacity to respond to future growth demands.
- Promote an urban character that reflects the unique characteristics of Kerikeri in terms of temperate climate, strong Māori and European heritage, proximity to the coastal environment, and presence of horticultural activities.
- Reduce the creation of solid waste through sustainable design solutions and material choices during construction.
- Promote energy use reduction through, sustainable urban form including the creation of walkable catchments, pedestrian, and cycle connections throughout the development and to the wider area.
- Promote the use of solar energy to harness the benefits of the temperate climate.

- Encourage sustainability in food production through the provision of community gardens, common allotments, use of appropriate spaces in proposed reserve areas, and provision of a range of site sizes.

Within the General Residential zone:

- Enable a range of housing types at a range of densities and in a manner that is in keeping with the planned urban built character of the zone and characteristics of the Site.
- Development is in keeping with the amenity values or character values of the area.
- Provide for a variety of housing options in accordance with the capacity of the infrastructure on the Site.
- Provide for new communities with functional and high amenity living environments.
- The urban environment is resilient to climate change
- Enable and provide for multi-unit developments and terraced housing where there is adequate infrastructure capacity.
- Provide for a certain amount of non- residential activities to support the social and economic wellbeing of the residential area.
- Encourage development within the site to provide strong connections to the Kerikeri River.

Within the Mixed-Use Zone

- Provide for a range of land uses that complement the existing Town Centres of Waipapa and Kerikeri.
- Development in the Mixed Use zone is of a form, scale, density and design quality that contributes positively to the vibrancy, safety and amenity of the zone.
- Reverse sensitivity issues between the Mixed Use Zone and the General Residential Zone are managed through active street frontages or greenways to provide a buffer between the zones.
- A range of commercial, civic, community and residential uses (above ground floor level) are provided for within the Zone.
- All development is supported by adequate infrastructure.

Within the Natural Open Space Zone

- The ecological, historic heritage, cultural and natural character values of the Natural Open Space zone are protected and enhanced for the benefit of current and future generations.
- Public access is provided for, for leisure and customary activities.
- Ensure that natural hazards are managed through this site, including the integration with the floodway.

Within the District Wide provisions

- Strategic Direction: The management of urban growth integrating existing and future infrastructure, providing sufficient land, or opportunity to meet growth demands for housing and business.
- A Commitment to engagement in partnership with tangata whenua.
- Urban Growth and infrastructure are resilient and adaptable to the effects of natural hazards and climate change.

- Adequate development infrastructure in place or planned to meet the anticipated demands for housing and business activities.
- The natural character of wetland, lake and river margins are managed to ensure their long-term preservation and protection for future generations. The proposed land use enhances the natural assets of the Site.
- Land use and subdivision is consistent with and does not compromise the characteristics and qualities of the natural character of wetland, lake and river margins.
- Rainbow Falls is managed to ensure the long-term protection for current and future generations.
- The subdivision of the Site results in an efficient use of land, in accordance with the Zone provisions, manages the effects of natural hazards, protects the ecological values of the site and positively contributes to the local character and sense of place.

Through the precinct plan

- Infrastructure is adequately provided for in a staged approach.
- On-site infrastructure solutions are capable of being accommodated for on the Site.
- Natural hazards are managed and mitigated to provide for a resilient urban environment
- Larger scale retail is provided for in the Mixed-Use Zone.
- No more than 7,500m² of retail flood space is provided for within the Precinct Area.

5.1.2 Assessment of the Objectives against Part 2 of the RMA

Purpose of the RMA

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

Proposed District Plan – Strategic Direction

The PDP sets out its overarching direction for the district plan. Its ‘Strategic Direction’ reflects those factors which are considered key to achieving the overall vision for the pattern and integration of land use within the Far North District. The appropriateness of the Proposal’s objectives are assessed against these directions.

We refer to **Appendix A** which contains the Strategic Directions.

Analysis against the PDP’s Strategic Direction

Urban form and development

Objectives SD-UFD-01 to SD-UFD-04 set out the overarching direction for the District’s urban form and development and aim to improve efficiency and affordability for communities, seek to contribute to the vibrancy and viability of town centres and solidify investment Council makes into development

infrastructure. SD-UFD-03 in particular seeks to ensure “Adequate development infrastructure in place or planned to meet the anticipated demands for housing and business activities.”

The objectives of the Proposal are consistent with objectives SD-UFD-01 to SD-UFD-04, which in turn achieve the purpose of the RMA. An objective of the Proposal is to provide additional housing and business development capacity based on growth projections and demand identified in the Economics Assessment. It seeks to provide affordable housing in an area where affordable housing is in high demand – the Economics Assessment projects that many households will not be able to afford housing above \$600,000. The Proposal is prepared so as to enable urban development that is resilient to the impact of flooding.

Natural environment

The natural environment Strategic direction objectives in SD-EP-01 to SD-EP-06 seek to actively manage ecosystems to protect, maintain and increase biodiversity for future generations and protect significant indigenous vegetation and significant habitats of indigenous fauna.

The objectives of the Proposal are consistent with SD-EP-01 to SD-EP-06, which in turn achieve the purpose of the RMA. The natural resources of the site, including in particular, Kerikeri River and Rainbow Falls and the adjacent wetlands will be maintained and enhanced, with public access to ensure that the resources are sustained for the current and future generations. The existing provisions within the PDP and the Proposed Precinct Plan that will apply to the Site will ensure that development avoids, remedies, or mitigates adverse effects on the environment.

Rural Environment

The rural environment Strategic direction objectives in SD-RE-01 to SD-RE-02 seek to enable the efficient operation of primary production and protect highly productive land from inappropriate development to ensure its production potential for generations to come.

As is discussed in section 6.3, the Site contains highly productive soils / highly versatile soils under the RPS (Policy 5.1.1(f)) and NPS-HPL. While the PDP silent as to what constitutes ‘inappropriate development’ the NPS-HPL and RPS are prescriptive. Under the NPS-HPL, the rezoning of highly productive land is only permitted if it is required to provide sufficient development capacity, there are no other reasonably and practicable and feasible options for providing the development capacity, and the environment effects and economic benefits of rezoning outweigh the environment effects of economic costs of losing the highly productive land.

This issue is also considered in detail elsewhere in this report and, in brief, we consider that the test in the NPS-HPL is met. Consequently, the rezoning would therefore not be inconsistent with SD-RE-01 to SD-RE-02 and the RPS. The summary of the points supporting this conclusion are:

- The Economics Assessment has identified that there is unsatisfied demand for development capacity.
- The Council’s section 35 assessment has identified through an analysis of resource consents by zone and type that growth may not be occurring where the operative plan anticipated and there is inadequate supply of urban zoned land.

- The PDP has identified important areas for horticultural production, which does not include the Site. Rezoning the Site to meet demand for housing capacity will reduce the risk of future fragmentation of valuable horticultural land.
- Alternatives, such as infill development or piecemeal rural residential development (identified as occurring the Council's section 35 assessment) will not meet the demand for development capacity and could lead to the loss of higher productive soils servicing horticulture – a more important primary product of the Far North.

Analysis of the proposal objectives against Part 2

Section 6(a) - the preservation of the natural character of the coastal environment (including the coastal marine area), wetlands, and lakes and rivers and their margins, and the protection of them from inappropriate subdivision, use, and development:

The Site contains a number of areas of high amenity areas, including the Kerikeri River which borders the site, Rainbow Falls – *Waianiwaniwa* (which is identified as an Outstanding Natural Feature in the PDP), and a significant internal wetland system which also contains two natural waterfall features.

The proposed zoning and identification of non-developable areas will protect the environmental values and qualities of these areas as well as enhancing them through the provision of public access. The natural features have been appropriately zoned to ensure their protection from inappropriate use, subdivision, and development.

Section 6(b) - the protection of outstanding natural features and landscapes from inappropriate subdivision, use, and development:

There are no identified outstanding natural features on the site under the PDP. Adjacent to the site is the Rainbow Falls which is identified as an Outstanding Natural Feature within the PDP (reference 66). The Proposal aims to protect and enhance this outstanding natural feature as well as provide public access to the Kerikeri River.

Section 6(c) – the protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna:

There are areas of significant indigenous vegetation within the Site. These areas are identified in the technical report prepared by Bioreserches and are intended to be protected from inappropriate development. Additionally, the identified wetland areas will be protected within the proposed Natural Open Space zoned area. The proposed flood Overlay also extends to this area. The Kerikeri River will also be protected by an esplanade reserve at the time of subdivision, ensuring that habitat is protected from inappropriate development.

The objectives are therefore consistent with the Bioreserches recommendations to protect significant areas and section 6(c).

Section 6(d) - the maintenance and enhancement of public access to and along the coastal marine area, lakes, and rivers:

The Proposal seeks to enhance access to the Kerikeri River by providing public access to the true left of the river, which is currently restricted by private ownership. An esplanade reserve will protect the river edge at the time of subdivision.

The objectives which seek to enable this access are therefore consistent with section 6(d).

Section 6(e) and (g) - the relationship of Maori and their culture and traditions with their ancestral lands, water, sites, waahi tapu, and other taonga; and the protection of protected customary rights

KFO has engaged with Ngāti Rēhia throughout the preparation of the submission. While there are no known sites of cultural significance in this area identified to date, consultation and related discussions have traversed the potential benefits to Ngāti Rēhia in terms of involvement in the development of the land and related land uses that will be facilitated.

The Proposal does not result in the loss of customary rights.

Objectives seeking to reflect and incorporate Ngāti Rēhia values in the development of the land are consistent with section 6(e) and (g).

Section 6(f) – the protection of historic heritage from inappropriate subdivision, use, and development:

Objectives seeking to protect and enhance the historical heritage of the Natural Open Space Zone are consistent with section 6(f). A preliminary Site investigation has been undertaken by Origin archaeology. The remains of a 1910s tramline (recorded as P05/930) were identified along the eastern edge of the site. This tramline has been utilised as a farm track. No other archaeological sites were identified as a result of the primary field inspection. It is recommended that this feature be retained once the re-zoning is achieved.

Section 6(h) - the management of significant risks from natural hazards:

While a 1:100-year flood hazard presents a risk, the technical reports demonstrate there is an engineering solution to the management of the natural hazard through the Site, ensuring it is resilient to the effects of climate change and is suitable for urban development.

The flood protection measures are encouraged by objectives seeking the urban environment be resilient to climate change and ensuring that infrastructure is resilient of capacity to respond to future growth demands. The objectives are therefore consistent with section 6(h).

Section 7 – other matters

Section 7 of the RMA identifies a number of “other matters” to be given particular regard by Council. Specific matters from section 7 that are relevant to the Plan Change include:

(a) kaitiakitanga:

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

- (c) the maintenance and enhancement of amenity values:*
- (d) intrinsic values of ecosystems:*
- (f) maintenance and enhancement of the quality of the environment:*
- (g) any finite characteristics of natural and physical resources:*
- (i) the effects of climate change:*

Assessing the objectives of the Proposal, the proposed re-zoning will enable the efficient use and development of natural resources including finite resources by providing for a spatially appropriate area for projected future growth to be accommodated while not resulting the further fragmentation of rural lifestyle living blocks or the loss of land suitable for horticultural uses.

The matters in Sections 7(c), (d), and (f) are fundamental principles to be incorporated into the Site's development. The inclusion of the Natural Open Space zone in areas identified as significant natural areas is consistent with both section 6(c) and sections 7(c), (d) and (f).

The effects of climate change under section 7(i) are mitigated through the proposed precinct Provisions and the requirement to mitigate the natural hazard flood risk prior to the occupation of buildings on Site.

In regard to the finite characteristics of the natural and physical resources on the Site in section 7(g), we adopt the analysis under the 'Rural Environment' heading above.

Section 8 – Te Tiriti o Waitangi

Section 8 requires Council to take into account the principles of the Treaty of Waitangi. It is considered that this proposal will not offend against the principles of the Treaty of Waitangi, based on our consultation with Ngāti Rēhia.

Ngāti Rēhia are the relevant hapū for this area. The Hapū Management Plan acknowledges overlapping interests with other Ngāpuhi hapū.

It is understood that Far North District Council has intended to take the principles of Te Tiriti o Waitangi into account in preparing the Proposed District Plan. This combined with the engagement with Ngāti Rēhia to date, that will be ongoing, that the principles have been taken into account.

Conclusion

Based on the analysis above, and elsewhere in this Evaluation Report, we consider the Proposal's objectives are the most appropriate way to achieve the purpose of the Act.

5.2 Appropriateness of the provisions to achieve the objectives

Section 32(1)(b) requires: *An evaluation report required under this Act must—*

- (b) examine whether the provisions in the proposal are the most appropriate way to achieve the objectives by—*
 - (i) identifying other reasonably practicable options for achieving the objectives; and*

- (ii) assessing the efficiency and effectiveness of the provisions in achieving the objectives; and*
- (iii) summarising the reasons for deciding on the provisions; and*
- (c) contain a level of detail that corresponds to the scale and significance of the environmental, economic, social, and cultural effects that are anticipated from the implementation of the proposal.*

When assessing the efficiency and effectiveness of the provisions in achieving the objectives, section 32(2) of the RMA requires that the assessment:

- (a) identify and assess the benefits and costs of the environmental, economic, social, and cultural effects that are anticipated from the implementation of the provisions, including the opportunities for—*
 - (i) economic growth that are anticipated to be provided or reduced; and*
 - (ii) employment that are anticipated to be provided or reduced; and*
- (b) if practicable, quantify the benefits and costs referred to in paragraph (a); and*
- (c) assess the risk of acting or not acting if there is uncertain or insufficient information about the subject matter of the provisions.*

This step requires an identification and assessment of reasonable alternative options and associated provisions (policies, rules and standards) for achieving the objectives in accordance with the requirements of section 32 (costs, benefits, efficiency and effectiveness).

In examining whether the provisions of the Proposal are the most appropriate way to achieve the objectives, we have considered the objectives of the underlying zone proposed in the PDP and the site-specific precinct objectives. These are referred to collectively as the 'objectives' in the options analysis.

Consideration has been given to the following other reasonably practicable options:

- Option 1: Do nothing (retain Rural Production Zoning)
- Option 2: Zone the land a mix of Residential and Industrial Zoned Land
- Option 3: Zone the land a mix of Residential and Mixed Use Zoned Land
- Option 4: Zone the land Rural Lifestyle or Rural Residential zone.
- Option 5: within each of Options 2 and 3, there is an option to zone the wetland vegetation areas of the Site as Open Space Zone, rather than the Natural Open Space Zone used in Options 2 and 3.

A table with the detailed options analysis, which assesses the efficiency and effectiveness and the benefits and costs of the environmental, economic, social, and cultural effects anticipated from the implementation of the options is provided below.

Options Analysis

Benefits	Costs
Option 1: Do Nothing (retain Rural Production Zone)	
<p>Would retain the rural production activities on the site, with the land valued at \$9,680,000 (Urban Economics).</p> <p>No loss of rural production land and highly productive soils.</p>	<p>The ability to use the land for urban development would be lost, meaning that growth for residential development and retirement villages would need to occur elsewhere in Kerikeri and Waipapa, which could result in additional urban sprawl and inefficient use of land.</p> <p>The Kerikeri Riverbanks will remain in private land ownership along the true right. Restricting connectivity and access to the Awa.</p> <p>As demonstrated through the technical assessments, affordable housing will not be able to be provided at scale to service the growing Kerikeri/Waipapa populations.</p> <p>Retaining the zoning will result in a loss of 2,348 FTE potential jobs from the construction of approximately 1,830 dwellings and the loss of 653 FTE potential jobs from the construction of a commercial and employment centre.</p>
Efficiency and Effectiveness	
<p>Option 1 is not an efficient or effective option for achieving the objectives.</p> <p>In particular, it does not enable the development capacity required to meet the business and housing demand. The Economic Assessment demonstrates that infill development will not provide the required capacity in the medium and short term. Doing nothing will therefore not “provide for the growth demands of Kerikeri and Waipapa in a strategic manner that will achieve efficient, connected, high-quality, and sustainable urban outcomes.”</p> <p>Page 5 of the Efficiency and Effectiveness of the Far North District Plan- April 2020, prepared under Section 35 of the RMA to support the PDP, outlines that throughout the 2013-2018 period, a significant amount of resource consent applications were located in the rural environment, and in particular the Rural Production zone. In summary, the report notes that the increase in resource consents may be due to the following reasons:</p> <ul style="list-style-type: none"> • Growth may not be occurring where the plan anticipated; • Supply issues with wastewater in the Kerikeri urban area may be restraining development; and • May indicate there is an inadequate supply of urban zoned land. 	

Benefits	Costs
<p>The report concludes noting that the PDP needs to ensure that there is an adequate supply of land for urban uses. The Do-Nothing option does not secure additional supply in the most appropriate location for growth in Kerikeri and Waipapa.</p> <p>Because the infill development will not provide the required development capacity, development may creep into rural land (as demonstrated by the section 35 report). This will result in an inefficient use of land due to the potential for urban sprawl and impact on highly productive soils. It may also be suboptimal from an infrastructure servicing perspective. It will not, therefore:</p> <ul style="list-style-type: none"> • integrate with efficient infrastructure servicing and the expansion of reticulated infrastructure; • ensure that the infrastructure provided to service future development is resilient and has sufficient capacity to respond to future growth demands; • provide for new communities with functional and high amenity living environments; and • recognise the existing different urban roles of Kerikeri and Waipapa and support and integrate the development with those existing uses. 	

Benefits	Costs
<p>Option 2- Zone the land a mix of General Residential, Natural Open Space and Industrial Zoned Land</p> <p>This option entails rezoning the Site a mix of General Residential, Natural Open Space, and a mix of heavy and light industrial uses. This option is considered as an alternative because the Section 32 Report – Urban Environment (sections 4.3.1 and 7.1) identifies there is demand for some light industrial activities (11ha) in Kerikeri and Waipapa.</p>	
<p>Direct access from SH10</p> <p>Meets the demand for additional residential land.</p> <p>Provides additional transport connectivity through the site (both for private vehicles and active transport uses)</p> <p>Opens up Kerikeri River to the public, which has significant amenity benefits</p> <p>Protects the wetland features and vegetation around Rainbow Falls.</p> <p>Retaining the zoning will result in 2,348 FTE potential jobs from the construction of approximately 1,830 dwellings.</p>	<p>Potential Oversupply of industrial land.</p> <p>Proposed land uses competing with the industrial activities within Waipapa.</p> <p>Reverse sensitivity issues associated with locating light and heavy industrial land next to residential land. The definition of Industrial Activities “<i>means an activity that manufactures, fabricates, processes, packages, distributes, repairs, stores, or disposes of materials (including raw, processed, or partly processed materials) or goods. It includes any ancillary activity to the industrial activity.</i>”</p> <p>Sprawl of industrial land uses along SH10.</p> <p>Additional infrastructure requirements including trade waste disposal.</p>

Benefits	Costs
	Loss of the rural production activities on the site, with the land valued at \$9,680,000 (Urban Economics)
Efficiency and Effectiveness	
<p>Option 2 is an efficient and effective option for achieving the objectives in some respects. However, the industrial use of the land is not compatible with the predominant purpose of zoning the land General Residential, reducing the appropriateness of this option.</p> <p>In terms of the General Residential Zone, the Economic Assessment establishes development capacity for housing in Kerikeri-Waipapa. The proposed rezoning would result in an efficient use of the land for residential purposes, subject to the management of the traffic connections and the management of the flood hazard on site. Having some greenfields land available for development will ensure that the demand can be met for providing affordable housing and retirement villages, which cannot be achieved through infill housing alone. This meets the objectives that seek to provide for growth demands of Kerikeri and Waipapa.</p> <p>The use of the land near SH10 for industrial purposes would not be an efficient use of land as industrial land should be clustered closer to the industrial centre of Waipapa, where there is already a clear land use pattern. Having additional heavy and light industrial activities on the Site would result in a fragmentation of industrial land and potentially resulting in issues of reverse sensitivity on the edges of the zone where the zoning pattern moves to residential. The demand for the additional 11ha of Industrial land can be provided for within Waipapa for the next 10 years. Having additional Industrial zoned land would be surplus to meeting the demand requirements. It would be inconsistent with the objectives that seek to ensure development is in keeping with the amenity values or character values of the area.</p>	

Benefits	Costs
Option 3- Zone the land a mix of General Residential, Natural Open Space and Mixed Use Land	
<p>Option 3 is the Proposal contained in the Structure Plan and Precinct Plan. It seeks to zone the site a mix of General Residential, Natural Open Space and Mixed Use Land.</p> <p>This option is considered because the Section 32 Report – Urban Environment (sections 4.3.1 and 7.2) identifies there is demand for some commercial activities (9-14ha) in Kerikeri and Waipapa.</p>	
<p>Meets the demand for additional residential land.</p> <p>Provides additional transport connectivity through the site (both for private vehicles and active transport uses)</p> <p>Opens up Kerikeri River to the public, which has significant amenity benefits</p>	<p>Loss of the rural production activities on the site, with the land valued at \$9,680,000 (Urban Economics).</p>

Benefits	Costs
<p>Protects the wetland features and vegetation around Rainbow Falls.</p> <p>Retaining the zoning will result in 2,348 FTE potential jobs from the construction of approximately 1,830 dwellings and 653 FTE potential jobs from the construction of a commercial and employment centre.</p> <p>Will meet the identified demand for an additional 11ha of business and Commercial land identified in the FNDC Section 32 reports, as well as the additional 4ha demand as demonstrated by the Economic Assessment, provided by Urban Economics.</p> <p>The Mixed-Use zone will have direct access from SH10.</p> <p>Provide for uses that complement both Kerikeri and Waipapa Townships</p>	
Efficiency and Effectiveness	
<p>Option 3 the most efficient and effective option for achieving the objectives. It provides development capacity for housing and business, while ensuring the business use is compatible with the surrounding residential use.</p> <p>In terms of the General Residential Zone, the Economic Assessment establishes development capacity for housing in Kerikeri-Waipapa. The proposed rezoning would result in an efficient use of the land for residential purposes, subject to the management of the traffic connections and the management of the flood hazard on site. Having some greenfields land available for development will ensure that the demand can be met for providing affordable housing and retirement villages, which cannot be achieved through infill housing alone. This meets the objectives that seek to provide for growth demands of Kerikeri and Waipapa.</p> <p>As noted in the PDP Mixed Use Zone Chapter, <i>“The Mixed Use zone provides a framework in which commercial and residential activities can co-exist and it enables a range of compatible activities. The focus of the zone is to revitalise urban centres and support business owners, residents and visitors, while ensuring that associated effects are appropriately managed. The Mixed Use zone will contribute to the vibrancy, safety and prosperity of the District’s urban centres and will be serviced by appropriate infrastructure.”</i></p> <p>The use of the land near SH10 for “Mixed Use purposes” would be an efficient use of land and would meet the demand identified by the Section 32 Reports that support the PDP. The Commercial land would have direct access from SH10 via a roundabout and would offer a greenfields development for</p>	

Benefits	Costs
<p>commercial uses that do not compete with the boutique offering within Kerikeri. There is also the option to integrate residential development above the commercial uses through the proposed Mixed-Use provisions.</p> <p>As demonstrated through the technical supporting documents, the site can be adequacy serviced via on site mechanisms in the short term and a connection to the reticulated system in the long term. This is consistent with objectives that seek to ensure urban development is provided alongside infrastructure needed to serve the development.</p> <p>The proposed re-zoning under Option 3 would create an additional 9,303 FTE jobs over a 30-year lifetime, which is a considerable economic benefit to the region.</p>	

Benefits	Costs
<p>Option 4- Rezone the land to either Rural lifestyle or Rural Residential</p>	
<p>All sites could be self-serviced in terms of the three waters infrastructure.</p>	<p>The ability to use the land for urban development would be lost, meaning that growth for residential development and retirement villages would need to occur elsewhere in Kerikeri and Waipapa, which could result in additional urban sprawl and inefficient use of land.</p> <p>Affordable housing will not be able to be provided at scale to service the growing Kerikeri/Waipapa populations.</p> <p>Rural Lifestyle and Rural Residential land would result in an unproductive use of the land, resulting in increased low density urban sprawl between Kerikeri and Waipapa.</p> <p>Highly productive soils would be lost to inefficient uses.</p> <p>Additional transportation infrastructure would still be required to service the site, resulting in a higher cost per site</p> <p>The identified demand for housing and commercial land would not be met by developing the Site into Larger Lots.</p>

Benefits	Costs
Efficiency and Effectiveness	
<p>Option 4 is not an efficient or effective option for achieving the objectives of the Structure Plan.</p> <p>In particular, it does not enable the development capacity required to meet the business and housing demand. The Economic Assessment demonstrates that infill development will not provide the required capacity in the medium and short term. Creating larger lifestyle/residential living lots on the site will therefore not “provide for the growth demands of Kerikeri and Waipapa in a strategic manner that will achieve efficient, connected, high-quality, and sustainable urban outcomes.”</p> <p>Applying the Rural Residential/ Rural Lifestyle zoning to the Site will not:</p> <ul style="list-style-type: none"> • Provide sufficient land to meet the residential and commercial demand for the lifetime of the PDP. • Provide development at a scale to invest in the significant infrastructure required to develop the land (i.e., the floodway and the transport links). • provide for new communities with functional and high amenity living environments. • Provide for affordable housing options for the Kerikeri-Waipapa Population. 	

Benefits	Costs
Option 5- Use of the Natural Open Space Zone within Options 2 and 3	
<p>Within each of Options 2 and 3, there is an alternative option to zone the wetland vegetation areas of the Site as Open Space Zone, rather than the Natural Open Space Zone used in Options 2 and 3.</p>	
<p>Will adequately protect the natural freshwater and vegetation assets from inappropriate development.</p> <p>Allows for some recreational tracks to be established as a permitted activity, subject to the requirements of the National Environmental Standard on Freshwater.</p>	<p>Potential to be more restrictive than the Open Space zone for the establishment of infrastructure connections.</p> <p>Recreational facilities not provided for by the Natural Open Space Zone.</p> <p>Reduces productive land area available for housing.</p>
Efficiency and Effectiveness	
<p>The proposed rezoning of the land for to Natural Open Space is the most efficient use of the land as it protects the wetland area from inappropriate development and enables the land to be used for the enjoyment of the public.</p> <p>While both zones are very similar in terms of permitted activities, the Natural Open Space Zone is slightly more restrictive that the Open Space Zone and is consistent with the intended of the use of the land. The provisions of the Natural Open Space Zone were more in keeping with objectives seeking to protect ecological, historic heritage, cultural and natural character values and ensure access is provided to those zones for leisure and customary activities. As such, the Natural Open Space zone included in Options 2 and 3 is the preferred zone for the protection and management of freshwater features and significant vegetation on the Site.</p>	

5.3 Conclusion of the provisions and the preferred option

Based on the Assessment above, Option 3- Zone the land a mix of General Residential, Natural Open Space and Mixed-Use Land is the preferred option for the Brownlie Land Structure Plan as this is the most appropriate way to achieve the objectives of the Proposal and PDP, without significant costs.

Natural Open Space zone is more appropriate for the protection of the freshwater habitat on the site, compared to the Open Space Zone.

Use of a Precinct

Under the National Planning Standards 2019, the use of a precinct is appropriate where the underlying zone provisions are still applicable and relevant, with the precinct introducing a collection of new provisions.

In regard to the Brownlie Land, there are gaps within the current zone objectives, policies and rules to ensure that the development of this Site is undertaken in a comprehensive and integrated way. For example, there are key infrastructure milestones that need to be achieved prior to development occurring on the Site, including the mitigation of the flood hazard and construction of the floodway, key transport connections and the provision of on-site servicing until such time as there is capacity within the reticulated network. The report prepared by Urban Economics also recommends that the retail floorspace is capped to 7,500m² within the Site. These additional mitigation measures are best suited to support Option 3 through the development of a precinct.

Under the National Planning Standards 2019, a Precinct is defined as:

“A precinct spatially identifies and manages an area where additional place-based provisions apply to modify or refine aspects of the policy approach or outcomes anticipated in the underlying zone(s)”

As per Section 4 of the National Planning Standards the Precinct provisions will be incorporated as a separate Chapter in the Plan because the Precinct applies over more than one Zone i.e., General Residential, Mixed Use and the Natural Open Space zone.

One of the tests for this assessment is whether this is the most appropriate outcome or whether a Special Purpose zone, or development area is warranted. The tests for a Special Purpose zone are set out in the National Planning Standards. Section 8 states:

1. *A district plan, and a combined plan with a district plan component (for areas landward of mean high water springs), must only contain the zones listed in table 13 consistent with the description of those zones, except for:*
 - a. *a special purpose zone when direction 3 is followed, or*
 - b. *in the case of a combined plan that includes a regional plan and district plan, a zone that is both seaward and landward of mean high water springs.*
2.

3. *An additional special purpose zone must only be created when the proposed land use activities or anticipated outcomes of the additional zone meet all of the following criteria:*
 - a. *are significant to the district, region or country*
 - b. *are impractical to be managed through another zone*
 - c. *are impractical to be managed through a combination of spatial layers.*

A development area is defined as:

Development areas	A development area spatially identifies and manages areas where plans such as concept plans, structure plans, outline development plans, master plans or growth area plans apply to determine future land use or development. When the associated development is complete, the development areas spatial layer is generally removed from the plan either through a trigger in the development area provisions or at a later plan change.	Development area chapters
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It is considered that use of a Precinct and an Overlay, in conjunction with the zones proposed in the Plan is the best and most appropriate way to achieve the outcomes. Development areas appear to be more appropriate for bespoke areas of development with greater variation from the zone provisions.

As such, the use of a Development Area for the Brownlie Land has not been pursued as Development areas appear to be more appropriate for bespoke areas of development with greater variation from the zone provisions.

In summary, the use of a precinct in addition to the proposing zoning chapters and district wide matters will ensure that the development of the Site is undertaken in a sustainable manner, consistent with the purpose of the Resource Management Act 1991.

6. Statutory and Policy Context

Section 74 of the RMA sets out the matters to be considered by a territorial authority in preparing or changing its district plan, including under s74(1)(ea) a national policy statement, a New Zealand coastal policy statement, and a national planning standard.

Additionally, under section 75(3) a district plan must give effect to:

- (a) any national policy statement; and*
- (b) any New Zealand coastal policy statement; and*
- (ba) a national planning standard; and*
- (c) any regional policy statement.*

Because the Proposal proposes changes to the PDP that are consequential under the higher order policy, we have considered the statutory and policy context of the Proposal (in addition to the section 32 analysis above).

6.1 National Policy Statement for Freshwater Management 2020 and Resource Management (National Environmental Standard) for Freshwater Regulations 2020

The National Policy Statement for Freshwater Management (NPSFM) is a Government Policy that gives local authorities direction on how to manage freshwater resources. The National Environmental Standard for Freshwater (NES:FW) sits under this Policy Statement. Under the NES:FW resource consents are required to discharge any stormwater or wastewater or sediment laden water within 100m of a wetland and earthworks within 10m wetland. There are also rules regarding the construction of culverts. The reclamation of wetlands is a prohibited activity meaning that a resource consent cannot be applied for.

Any consents required to support the development of the Structure Plan will be applied for at the time resource consents are applied for. The NES:FW and NPSFM will be addressed at this time.

6.2 National Policy Statement on Urban Development Capacity

The NPS-UD contains objectives and policies that local authorities must give effect to in their resource management decisions. The NPS-UD requires councils to plan well for growth and ensure a well-functioning urban environment for all people, communities, and future generations. The objectives and high-level policies of the NPS-UD 2020 apply to all councils that have all or part of an urban environment within their district or region.

Based on the Economics Assessment, Far North District Council is a Tier 3 territorial authority because it has an urban environment in its district. Specifically, the Economic Assessment identifies that Kerikeri-

Waipapa had a population of 12,300 in 2021 (refer to Economic Assessment). However, under the Council's projections, Kerikeri-Waipapa is not an urban environment.

Nevertheless, regardless of whether Kerikeri-Waipapa is an urban environment presently, under both Urban Economics' and the Council's projections Kerikeri will exceed a population of 10,000 within the life of the PDP. The Council projects that Kerikeri will reach a population of 10,000 by 2027¹ and Urban Economics projects will have the population of Kerikeri reaching 10,000 by 2024.

Given this will occur within the life of the PDP, the PDP must give effect to the NPS-UD and provide development capacity to meet demand over the short, medium and long term. The short-medium term is defined as up to 10 years. The PDP and the development capacity it enables should therefore be considered over this 10-year horizon.

There is also a general obligation under s31(1)(aa) for territorial authorities the establishment, implementation, and review of objectives, policies, and methods to ensure that there is sufficient development capacity in respect of housing and business land to meet the expected demands of the district:

Because Kerikeri-Waipapa meets the definition of 'urban environment', and Kerikeri alone will become an urban environment within the life of the PDP, the PDP must give effect to the NPS-UD

Well-functioning Urban Environments

Under Policy 1 planning decisions must contribute to **well-functioning urban environments**. Policy 1 defines this as follows:

- (a) have or enable a variety of homes that:
 - (i) meet the needs, in terms of type, price, and location, of different households; and*
 - (ii) enable Māori to express their cultural traditions and norms; and**
- (b) have or enable a variety of sites that are suitable for different business sectors in terms of location and site size; and*
- (c) have good accessibility for all people between housing, jobs, community services, natural spaces, and open spaces, including by way of public or active transport; and*
- (d) support, and limit as much as possible adverse impacts on, the competitive operation of land and development markets; and*
- (e) support reductions in greenhouse gas emissions; and*
- (f) are resilient to the likely current and future effects of climate change.*

The components of a well-functioning urban environment Proposal will support include:

- Enabling a variety of housing choices within the General Residential Zone as supported by the proposed zone rules;

¹ [appendix-7e_kerikeri-summary_amc_2022.pdf \(fndc.govt.nz\)](#)

- Providing larger areas of residential zoned land to support the delivery of affordable housing and activities such as retirement villages which require larger land holdings.
- Increasing public access to Kerikeri River.
- Providing for growth of complementary commercial uses within the Mixed-Use zone that also minimise potential for reverse sensitivity effects with respect to State Highway 10 and adjacent rural land.
- Promoting good accessibility across the site, connecting the Site to Kerikeri and Waipapa and providing resilience in the network for times when State Highway 10 floods.
- Providing good transport connections between home and employment thereby minimising carbon footprint and greenhouse gas emissions.
- Being resilient to climate change and managing the natural hazard risks throughout the Site, prior to the development of the land.
- Integrating with amenities including a planned sports field.

Development Capacity

Policy 2 of the NPS-UD requires: *“Tier 1, 2, and 3 local authorities, at all times, provide at least sufficient development capacity to meet expected demand for housing and for business land over the short term, medium term, and long term.”*

The Economics Assessment states that under the medium population projections scenario, there is 5.4-6.4 years of development capacity provided for within the PDP. This shows that short-term development capacity is met but the medium- and long-term capacity is not. If the Economics Assessment high population projections scenario are taken, only 3.5 to 4.2 years of development capacity is provided for within the PDP. Consequently, the PDP is not consistent with Policy 2 because it does not provide ‘sufficient’ development capacity to meet expected demand for housing and for business land over medium term and long term.

The PDP assumes that housing capacity will be supplied by infilling the existing residential zone. The Economics Assessment notes the potential risks with infill and greenfield development. While there are benefits to infill development from the efficient utilisation of existing infrastructure and improving building stock, there are many benefits to greenfield development that align with the objectives of the PDP and NPS-UD, including Policy 2.

We note that greenfields developments provide economies of scale that allow housing to be produced efficiently. The development can be master planned which enables onsite amenities, access to services, and integrated design that supports higher density forms of housing.

Infill development can be less feasible and occurs in a more ad hoc way and at lesser scale meaning that comprehensive outcomes in relation to infrastructure upgrades, new road, parks etc are more difficult to fund and deliver.

The Council assumption relies on the private landowner to provide for more housing within Kerikeri, as opposed to greenfields development which is a for efficient cost-effective way of providing for housing as noted in Section 11 of the Urban Economics Report.

Also relying on rural residential areas to provide for future growth beyond the current foreseeable plan period is inefficient and likely to generate greater adverse environmental effects with respect to reverse sensitivity, the provision of infrastructure and urban amenities such as parks and cycleways. Because of the value of rural lifestyle land, it is likely to be more costly to develop this land. Costly land development does not contribute to achieving an improvement in housing affordability.

Planned built form and amenity values

Objective 4 requires that *“New Zealand’s urban environments, including their amenity values, develop and change over time in response to the diverse and changing needs of people, communities, and future generations.”* Policy 6 of the NPS-UD acknowledges that there may be changes to the planned built form of an area to give effect to the NPS-UD and that those changes, may detract from the existing amenity values, but are not, of themselves an adverse effect. The benefits of a well-functioning urban environment need to be considered when assessing the effects of urban development.

The proposed zoning of the Site will result in a change of character of this area and may detract from some of the amenity values currently enjoyed by the population of Kerikeri and Waipapa. However, the proposed re-zoning of the land will enable amenity to be provided for on Site through a different lens. The additional amenity values will include access to the Kerikeri River which is currently restricted, more vibrant residential and commercial areas, greater connectivity between Kerikeri and Waipapa, including the promotion of active transport options. The above changes in amenity values are acknowledged, encouraged and supported by Policy 6 of the NPS-UD.

Infrastructure Planning

Objective 6 of the NPS-UD outlines that decisions on urban development that affect urban environments are integrated with infrastructure delivery, are strategic over the medium term and long term and are responsive to proposals that would supply significant development capacity.

Policy 8 of the NPS-UD notes that: *“Local authority decisions affecting urban environments are responsive to plan changes that would add significantly to development capacity and contribute to well-functioning urban environments, even if the development capacity is:*

- a. unanticipated by RMA planning documents; or*
- b. out-of-sequence with planned land release.”*

The Economic Assessment says there is sufficient demand for additional residential zoned land over the next 10-years to justify live zoning the entirety of the Site. There is a clear intent for the type of development needed for Kerikeri and Waipapa in the immediately foreseeable future. This approach provides KFO the certainty that the land can be developed for residential and commercial purposes. This level of certainty is required to facilitate the significant investment in infrastructure required.

The analysis demonstrates that zoning all or part of the land Future Urban would not create as optimal an outcome as live zoning. This is because of the uncertainty, time and costs associated with applying an urban zoning to Future Urban zone land and also the high likelihood that there would be insufficient capacity provided now that would increase costs as demand would be higher than capacity.

Climate Change

Objective 8 of the NPS-UD notes that New Zealand's urban environments are supportive of reductions in greenhouse gas emissions; and are resilient to the current and future effects of climate change.

The Proposal is developed to mitigate the risks of flooding and natural hazards, providing resilience to the current and future effects of climate change. The Structure Plan has been designed to encourage active transport options through a range of proposed greenways.

The location of the Site is strategically located between Kerikeri and Waipapa, two areas of employment. The redevelopment of this site will aim to reduce the total number of vehicle miles travelled within the immediate area and provide options for people who work in Kerikeri and Waipapa, but live elsewhere, to move to the area where they are employed.

6.3 National Policy Statement on Highly Productive Soils

The NPS- HPL is about ensuring the availability of New Zealand's most favourable soils for food and fibre production for now and for future generations.

Section 3.5(7) provides that until highly productive land is mapped, territorial authorities must apply the NPS-HPL as if references to highly productive land were references to land which at the date of commencement:

- is zoned general rural or rural production and is LUC 1, 2, or 3 land;
- but is not identified for future urban development or subject to a Council initiated, or an adopted, notified plan change to rezone it from general rural or rural production to urban or rural lifestyle.

The Site contains class 2 and 3 soils. The NPS-HPL therefore applies and its effect on the rezoning proposed must be considered.

Section 3.6 (4) of the NPS-HPL says that territorial authorities that are not Tier 1 or Tier 2 (i.e., FNDC) may allow the rezoning of the land only if:

- (a) the urban zoning is required to provide sufficient development capacity to meet expected demand for housing or business land in the district; and*
- (b) there are no other reasonably practicable and feasible options for providing the required development capacity; and*
- (c) the environmental, social, cultural and economic benefits of rezoning outweigh the environmental, social, cultural and economic costs associated with the loss of highly productive land for land-based primary production, taking into account both tangible and intangible values.*

Further, section 3.6 (4) notes that:

(5) Territorial authorities must take measures to ensure that the spatial extent of any urban zone covering highly productive land is the minimum necessary to provide the required development capacity while achieving a well-functioning urban environment

Analysis

The Site is not within the Special Purpose Horticultural Zone within the PDP which has stricter requirements on the use and protection of productive soils and larger size land holdings for horticultural activities.

As noted, and highlighted throughout this Report, the FNDC's approach to the District Plan is to provide for growth through infill housing. However, as the Urban Economic assessment has shown, infill housing is not appropriate for providing affordable housing at scale or for more specialist residential development such as retirement village living. Green field development can better achieve the delivery of more housing types and affordable housing options at scale.

In summary, while the soil types present on site (based on the high-level assessment) are identified as highly productive, the NPS-HPL provides an option for the rezoning of land to occur where there is sufficient demand - as is the case for Kerikeri and Waipapa.

For the following reasons, it is considered that section 3.6(4) of the NPS-HPL applies, and the Site is the minimum land necessary to provide the required development capacity while achieving a well-functioning urban environment:

- The PDP must give effect to the NPS-UD and provide development capacity for housing and business in the short, medium and long term. As demonstrated in the Economics Assessment, there will be demand for additional housing capacity under the medium and long terms (under both medium and high growth projections). Importantly, because there will be demand in the medium term (meaning up to ten years), the PDP (which has a 10-year review period) must enable housing rather than deferring to subsequent plans.
- The Economics Assessment finds that the Council's assessment underestimates projected growth and the overestimates additional housing capacity likely to be created through infill development – i.e., the Council projections overestimate supply and underestimate demand. Therefore, the PDP does not provide sufficient development capacity to meet the housing demands of the Kerikeri-Waipapa area. This meets limb (a) of section 3.6(4).
- The Economics Assessment identifies the limits of infill development and the benefits of greenfields development. Specifically, there is risk that infill development will not supply the houses needed meet the demand. We also note that the majority of the demand for housing is in the lower price brackets (\$600,000 - \$700,000) and there is risk that infill housing will not provide substantial housing within those brackets. According to the Economics Assessment the efficiencies gained from greenfields development enables the creation of affordable housing. This indicates that infill development alone is not a reasonably practicable or feasible option for providing development capacity, which meets limb (b) in section 3.6(4).

- Alternative options will encourage rural residential development. This is contemplated by the Council, whose section 35 analysis identifies from a consent analysis that the high proportion of Rural Production Zone consents “could be a result of growth not occurring where the plan anticipated”, that infrastructure issues in the Kerikeri urban area may be constraining development, and “indicate [there is] an inadequate supply of urban zoned land.” Rural residential development has negative impacts on potentially higher quality soils. Given the Economics Assessment’s projections, the land supply must be provided somewhere. For the reasons explained in the Economics Assessment concerning the merits of greenfields development, there are significant economic and environment benefits of allowing structure planned development over piecemeal rural residential development. This supports the economic and environmental benefits to overcome limbs (b) and (c) of section 3.6(4).
- Finally, the Site is the minimum area needed to meet achieve a well-functioning urban environment and provide sufficient development capacity. The land will yield the lots needed to service housing and business demand projected (while ensuring there is land available for flood mitigation, ecological enhancement and infrastructure servicing).

6.3.1 National Environmental Standard for assessing and managing contaminants in soils to protect human health (NESCS)

The NESCS applies to certain activities, such as subdivision, undertaken on a ‘piece of land’ that contains an activity that is listed on the Hazardous Industries and Activities List.

A preliminary site investigation has been undertaken and does identify some areas of likely contamination. The development of these areas on the site will need to be addressed and remediated if required prior as part of the land use consenting requirements.

6.3.2 Regional Planning Documents

Northland Regional Policy Statement (RPS)

The RPS covers the management of natural and physical resources across the Northland Region. The provisions within the RPS give guidance at a higher planning level in terms of the significant regional issues.

The proposed Structure Plan is consistent with the Objectives and Policies of the RPS. The urban development of the Site is not expected to generate reserves sensitivity effects as a result of the loss of farmland. The location of the Site is strategically important to both Kerikeri and Waipapa.

Proposed Regional Plan for Northland

Section 75(4)(b) of the RMA states that any district plan must not be inconsistent with a regional plan for any matter stated in s30(1) of the RMA. Section 74(2)(a) of the RMA states that when preparing or changing a district plan, a territorial authority shall have regard to any proposed regional plan of its

region in regard to any matter of regional significance or for which the regional council has primary responsibility under Part 4 of the RMA.

The latest Appeals Version of the Proposed Regional Plan for Northland was released in August 2022. The Proposal is not inconsistent with the Proposed Regional Plan for Northland and has been designed to respond to Regional Plan provisions, including Objective F.1.10 regarding the management of Natural Hazards.

Iwi and Hapū Environmental Management Plans

Section 74(2A) of the RMA requires Council to take into account any relevant planning document recognised by an iwi authority and lodged with the territorial authority, to the extent that its content has a bearing on the resource management issues of the district.

There are 14 iwi planning documents lodged with the Council.

The Ngāti Rēhia Hapū Environmental Management Plan - Third Edition (2018) (HEMP) has been the key document referred to for the development of the Structure Plan. Consultation has been on-going with Ngāti Rēhia over the past 12 months. The Kaupapa of the HEMP is to develop a sustainable economic, social and cultural base for the continued growth of Hapū and Whanau. As per the on-going discussions with Ngāti Rēhia, the Structure Plan will provide additional housing choices for members of the whanau and hapū. Opportunities are currently being investigated regarding the establishment of a hotel or tourism venue on the site to support employment and training opportunities for Ngāti Rēhia. The proposed zoning of the site will enable provision of public access to the Kerikeri River and Rainbow Falls which is currently held in private ownership, the local community, whanau and hapū will be able to reconnect with the Awa.

6.4 National Planning Standards

Section 75(3)(ba) of the RMA requires that district plans give effect to the Planning Standards. The Planning Standards were gazetted in April 2019 and their purpose is to assist in achieving the purpose of the RMA and improve consistency in the structure, format and content of RMA plans. The National Planning Standards provide mandatory direction that any district plan must only contain zones listed within Table 13 of the National Planning Standards documentation and the use of each zone must manage the use, development and protection of natural and physical resources within it, in accordance with Part II of the RMA.

The Structure Plans and Precinct Plans are prepared consistently with the zones proposed in the PDP, which are consistent with the Planning Standards.

6.5 Other legislation and Policy Documents

Integrated Transport Strategy September 2020:

A Programme Business Case has been prepared in conjunction with the Integrated Transport Strategy to consider the case for investment to support communities and business in the Far North by providing a safer, more resilient and reliable transport system.

The Strategy identifies three key problems through six strategic responses. The Strategy states that by doing these things the Far North will benefit from:

- A better, safer transport system with more transport choice.
- Improved resilience of key roads in far North.
- Community transport needs will be met.

The proposal provides opportunity to improve resilience for State Highway 10 when that floods by providing alternative connections between Kerikeri and Waipapa.

The proposal also increases transport choice.

Kerikeri Waipapa Structure Plan- 2007:

The original Kerikeri - Waipapa Structure Plan 2007 (KKWSP) set a high-level direction or vision for the integrated and sustainable development of the Kerikeri-Waipapa. This document predates the current operative district plan and is not considered relevant to guide future decision making on the Proposed District Plan because of the significant growth and related changes that have occurred, particularly since 2015.

Council is currently undertaking work to replace the KKWSP with a spatial strategy, which will look at options for accommodating growth over the longer term.

Far North 2100:

Far North 2100 is an aspirational strategy looking at how the Far North might look in 80 years' time, based on Council's vision 'He Whenua Rangatira – a district of sustainable prosperity and wellbeing'.

The document was adopted by Council on 4 November 2021. The proposal supports and is in keeping with the objectives – the *Where we are Going* because:

- The proposal will assist in creating economic prosperity for the district. This is evidenced in the Urban Economics report which sets out the contributions to GDP and provision of employment opportunity.
- The ethic of stewardship – to protect, enhance and restore, including environmental prosperity.
- A strong sustainable growing economy.
- Communities of care resulting in cultural and social prosperity.
- The proposal enables a comprehensive development that will contribute to strong place making within the submission area and also contributing positively to Kerikeri and Waipapa. A

place making approach to urban planning is identified as an aim to ensure that the wellbeing of the people is considered first when it comes to planning towns and places.

- There has been initial and ongoing engagement with Ngāti Rēhia and discussions include how there can be collaboration and partnership with Ngāti Rēhia as the land is developed.
- The proposal represents an active response to climate change.
- The proposal represents quality outcomes in terms of connecting people, businesses and places.
- The natural environment features of the site will be protected for current and future generations.

Long Term Plan 2021- 2031:

Long Term Plan 2021 - 2031 (“LTP”) is the Council’s key strategic planning document setting out what the Council plans to deliver over the next ten years and how it plans to pay for the planned deliverables.

A copy of the Capital Works Programme is appended to the Structure Plan. In summary funding is allocated for:

- A water main upgrade in Cobham Road, Kerikeri (2022/ 2023 \$72,100)
- An intake rising main upgrade for Kerikeri (2021/2022 \$700,000)
- Fire flow upgrades Waipapa Industrial area (2022/2023 \$74,010)
- Kerikeri water take consent (2021/ 2022 \$3,492)
- Upgrade main to the Heritage Bypass (2025/2026 \$9,688,320)
- Water source renewals Kerikeri (2021/2022 \$54,707)
- Water treatment plant upgrade Kerikeri (2024/2025 \$3,252,900 and 2025/2026 \$3,340,800)
- Wastewater network Stage 2 Kerikeri (2028/2029 \$3,388,582 2029/2030 \$13,947,204 and 2030/2031 \$17,904,057)
- Recycling station Kerikeri (2024/2025 \$2,168,600 and 2025/2026 \$1,113,600)
- Dog park Kerikeri 2021/ 2022 \$34,000 2022/2023 \$38,110)

Ongoing discussions with Council will ensure future development is integrated with the provision of infrastructure. If zoning is in place this will provide certainty for the developer to enter into a Development Agreement with Council to determine the contributions and works required to facilitate development of the land. This can be worked out in relation to the staging of development and the Council works programme and funding. This will ensure infrastructure upgrades and extensions are provided efficiently for the benefit of the wider community as well as the Site.

7. Assessment of Environmental Effects

The environmental effects of the Proposal are considered in detail in the Structure Plan and technical reports. To support this Evaluation Report, refer to the Assessment of Environmental Effects, prepared by the Planning Collective, which is attached in **Appendix B**. The Assessment of Effects has informed our analysis of the objectives and proposal under section 32 above.

8. Conclusion

This report has been prepared in support of Kiwi Fresh Orange Company Limited Submission to rezone circa 197ha of land at 1828 and 1878 State Highway 10 from Rural Production to Urban. The request for the re-zoning of the land is made via a submission on the Far North District Council's Proposed District Plan.

Based on the Assessment of environmental effects and the specialist assessments, it is concluded that the proposed re-zoning of the land will have positive effects on the environment through providing for land to meet the needs of the growing Kerikeri/ Waipapa population over the 10-year lifetime of the District Plan, for both residential and commercial needs. Other potential effects are managed through the general District Wide Standards of the PDP as well as via the proposed Precinct provisions that apply to the Site.

This includes an analysis with respect to the extent to which the objectives of the Structure Plan area are the most appropriate to achieve the purpose of the RMA and an examination of whether the provisions of the re-zoning are the most appropriate way to achieve the objectives.

For the above reasons, it is considered that the proposed re-zoning of the Site accords with the sustainable management principles outlined in Part 2 of the RMA and should be accepted and approved through the Proposed District Plan process.

Attachment A:

Strategic Directions (Proposed Far North District Plan)

APPENDIX A – STRATEGIC DIRECTIONS (PROPOSED FAR NORTH DISTRICT PLAN)

Cultural prosperity

Objectives	
SD-CP-01	Te Tiriti o Waitangi partnerships support iwi and hapū to deliver on the social, economic, environmental and cultural wellbeing outcomes for tangata whenua .
SD-CP-02	Te ao māori, tikanga māori and tangata whenua as kaitiaki, embedded in and integral to decision making.
SD-CP-03	The District's diverse cultures and communities are celebrated and cultural heritage recognised.
SD-CP-04	The District's historic heritage is identified and managed to ensure its long-term protection for current and future generations.
SD-CP-05	A district wide approach to the impacts of climate change and natural hazards , which includes a te ao māori decision making framework, developed with iwi and hapū .

Social prosperity

Objectives	
SD-SP-01	Community wellbeing is heightened by a sense of place.
SD-SP-02	Development of initiatives that will support the wellbeing of Tangata Whenua in partnership with iwi and hapū .
SD-SP-03	Encourage opportunities for fulfilment of the community's cultural, social, environmental, and economic wellbeing.
SD-CP-04	Promotion of communities and places that will meet the needs for not only the present population but future generations which are adaptive to climate change.

Economic prosperity

Objectives	
SD-EP-01	A high-earning diverse local economy which is sustainable and resilient to economic downturns, with the District's Māori economy making a significant contribution.
SD-EP-02	Existing industries and enterprises are supported and continue to prosper under volatile and changing economic conditions.
SD-EP-03	Development and retention of highly motivated, educated and skilled people in the District.

SD-EP-04	People, businesses and places are connected digitally and through integrated transport networks.
SD-EP-05	A district economy that is responsive, resilient and adaptive to the financial costs of a changing climate.

Urban form and development

Objectives	
SD-UFD-01	The wellbeing of people who live in and visit towns in the Far North is considered first when it comes to planning places and spaces.
SD-UFD-02	Urban growth and development consolidated around existing reticulated networks within town centres, supporting a more compact urban form, affordability and providing for a mix of housing typologies.
SD-UFD-03	Adequate development infrastructure in place or planned to meet the anticipated demands for housing and business activities.
SD-UFD-04	Urban growth and development is resilient and adaptive to the impacts from natural hazards or climate change.

Rural environment

Objectives	
SD-RE-01	Primary production activities are able to operate efficiently and effectively and the contribution they make to the economic and social well-being and prosperity of the district is recognised.
SD-RE-02	Protection of highly productive land from inappropriate development to ensure its production potential for generations to come.

Environmental prosperity

Objectives	
SD-EP-01	A culture of stewardship in the community that increases the District's biodiversity and environmental sustainability.
SD-EP-02	Collaborative relationships with iwi and hapū in order to support tangata whenua to carry out their obligation and responsibility as kaitiaki.
SD-EP-03	Active management of ecosystems to protect, maintain and increase indigenous biodiversity for future generations.

SD-EP-04	Land use practices reverse climate change by enabling carbon storage and reducing carbon emissions.
SD-EP-05	The natural character of the coastal environment and outstanding natural features and landscapes are managed to ensure their long-term protection for future generations.
SD-EP-06	Areas of significant indigenous vegetation and significant habitats of indigenous fauna and protected for current and future generations.

Attachment B:

Assessment of Environmental Effects

Assessment of Environment Effects

This Assessment of Environmental Effects has been prepared to support the Kiwi Fresh Orange Company's (KFO's) Submission on the proposed Far North District Plan.

The Assessment of Effects supports the Section 32 Report, prepared by the Planning Collective Ltd to re-zone the land at 1828 and 1878 State Highway 10, Waipapa (herein referred to as **the Site**) as per the zoning proposed within the Structure Plan (herein referred to as the **Proposal**).

This assessment details the actual and potential effects that the Proposal may have on the environment. This assessment is based on analysis and reporting undertaken by the various experts and detailed in the technical reports.

This assessment also provides commentary and analysis on the various reports prepared by FNDC to support the PDP Section 32 assessment.

Contents Table

1. Population Growth and Demand:	Page 1
2. Proposed Land Uses – General Residential:	Page 7
3. Proposed Land Uses – Commercial / Mixed Use:	Page 8
4. Effects on Highly Versatile Soils and Highly Productive Land:	Page 10
5. Natural Hazard Effects:	Page 13
6. Landscape Effects:	Page 14
7. Water and Wastewater Servicing:	Page 17:
8. Stormwater Management:	Page 18
9. Cultural Effects:	Page 19
10. Housing Affordability:	Page 19
11. Transport Effects:	Page 20
12. Social Effects:	Page 22
13. Site Suitability:	Page 23
14. Summary of Effects:	Page 23

1. Population Growth and Demand

Summary of the Council's Section 32 Evaluation Report

As noted in the Section 32 Evaluation Report prepared by FNDC, section 5.1.1, the population of the Far North District is currently approximately 71,000¹. The PDP is based on population projections provided by Infometrics (May 2022) who forecast the population to increase at a rate of approximately

¹ Based on Stats NZ subregional estimate on June 2020.

0.5% per annum between now and 2049, resulting in a total population of 83,200 people². The Infometrics Report also notes that the population of the Far North is projected to lag behind both the rates for Northland and New Zealand and that the population of retirees is expected to increase.

Regarding the housing supply, Section 32 Evaluation Report, section 5.1.5 notes that the Kerikeri Township has been *constantly high in terms of new dwellings and additions, contributing to between 46 and 64 new dwellings per annum*. In accordance with Section 31 of the RMA, the Council has a statutory requirement to implement and review objectives, policies, and methods to ensure that there is sufficient development capacity in respect of housing land to meet the expected demands of the district in the short, medium, and long term. Appendix 7e to the Section 32 Overview Report provides a *summary Evaluation of S31: Plan Enabled Housing-supply Kerikeri Summary*. In summary, the FNDC notes that the report demonstrates there is sufficient capacity within the study area to meet the expected demand for housing in the short medium and long term under both the medium and high growth scenario's using the General Residential Zone, Mixed-Use Zone and the Rural Residential Zone. The reports and analysis provided by Infometrics sets the basis for the zoning and the rules within the PDP.

Summary of Infometrics report, May 2022

The FNDC commissioned Infometrics to produce projections of population, households, and dwellings to support a range of planning activities at a district and sub-district level. The objective of the assessment was to provide for:

“Provision of accurate, long-term, sub-district projections for FNDC to inform a range of critical functions, such as planning for demand for housing and business land, water infrastructure demand modelling, the development of the 2024-2034 long-term plan, infrastructure investment decisions and managing future growth³.”

In summary, the Infometrics Report provides the following key statistics:

- **Economy (for the Far North District)**
 - Employment has grown in recent years, averaging 2.8% between 2014 and 2020.
 - Employment growth for the remainder of the 2020's is forecast to average 1.3% reaching a level of 29,232 FTE in 2030.
 - Employment will peak in 2039, then ease slightly thereafter.
- **Population**
 - Far North District's annual population growth fluctuated between 0% and 1% through the 2000s, lagging behind Northland and New Zealand overall.
 - Far North's growth picked up in the 2010s, closely tracking Northland and New Zealand with growth between 2% and 3% in the mid-2010s
 - Far North's growth eased to a still-strong 1.8% in 2021 as international net migration dried up amid COVID-19 border restrictions.

² As noted in the report prepared by Infometrics, titled Far North District Population Projections, May 2022

³ Infometrics- Far North District Population Projections- May 2022: Page 5.

- Under the medium scenario, Far North population growth is projected to remain above 1% for 2022 and 2023, as the border reopening and 2021 Migrant Visa is expected to sustain strongly positive international net migration.
- From 2024 onwards, population growth in Far North is projected to slow down compared to Northland and New Zealand, but remain well above the Far North's growth in the 2000's. Over the longer term, population growth in the Far North is projected to lag Northland and New Zealand. This reflects underlying economic shifts, as service-based industries expand and primary industries decline, which lends to stronger growth in larger centres.
- From 2024 onwards, Far North's population growth is projected to diverge more widely across the three scenarios. Under the medium scenario, population growth is set to average 0.7% per annum over the 2024-2034 period, tapering until growth turns slightly negative in 2050.⁴
- Under the high scenario, population growth is projected to stay positive for the entire projection period, averaging 1.0% per annum for the 2024-2034 period, and siting above 0.5% until 2048.
- **Households**
 - The average household size in the Far North is projected to ebb and flow within the 2.6 to 2.7 persons per household range in the medium scenario.
 - Under the medium scenario, household growth is projected to be moderate to an average of 0.7% per annum over the 2024-2034 period. Thereafter, household growth is projected to ease slightly before turning weakly negative from 2048 onwards.
 - The high growth scenario mirrors this pattern at a higher level, averaging 1.0% per annum growth over the 2024-2034 period before easing, although remaining positive for the entire projection period.
 - Under the low scenario, household growth averages 0.4% over the 2024-2034 period, then turns negative in 2039 and remains negative for the remainder of the projection period⁵.
- **Dwellings**
 - The number of dwellings in the Far North is projected to grow from 30,200 in 2018 to 35,800 in 2034, before peaking at 36,600 in 2046, easing thereafter to reach 35,800 in 2073.
- **Sub-district Projections – Kerikeri – Waipapa**
 - Projections were based on known developments, availability of residential land, water and waste capacity and the likelihood of development.
 - Kerikeri and Waipapa are expected to continue to accommodate the lion's share of population growth in the Far North over the next 50 years, growing from 19% in 2021 to 25% in 2073.
 - Growth is expected to be concentrated in the urban areas, which reflects the recent wastewater treatment plant upgrade which will enable residential development at higher density than has occurred in the past two decades. The expanded Horticultural zones surrounding Kerikeri will further constrain peri-urban development⁶

⁴ Infometrics- Far North District Population Projections- May 2022: Page 12.

⁵ Infometrics- Far North District Population Projections- May 2022: Page 18

⁶ Infometrics- Far North District Population Projections- May 2022: Page 25

The Infometrics Report provides population, household and dwelling projections based on a medium growth scenario. These numbers are summarised in the table below:

Table 4- Data from Infometrics Report. May 2022, regarding medium growth projections for Kerikeri-Waipapa.

SA2 Area- Kerikeri Waipapa		Projected annual change		
Medium Growth	Estimate 2021	2021-2034	2034-2053	2053-2073
Population Projections	13,621	1,048	158	104
Household projections	5,543	85	22	24
Dwellings projection	5,740	85	22	24

Table 5- Population Projections for Kerikeri of the Infometrics Report notes that between 201 and 3034, the population of Kerikeri is expected to grow by 1,048 persons annually. As noted in Table 4 above, the projected annual change for dwellings over this time is 85. This equates to 12.3 persons per new dwelling. The number of dwellings Infometrics projects in relation to the population growth is unrealistic, grossly underestimated and will not provide for affordable housing options. Based on the Infometrics numbers, there will be a significant shortage in the supply of housing over the next 10 years.

Section 32 Report- Overview- Appendix 7e Summary of Evaluation of S31. Plan Enabled Housing-supply Kerikeri Summary (Herein referred to as Plan Enabled Housing Supply: Kerikeri Report)

The purpose of the report herein referred to as the ‘Plan Enabled Housing Supply: Kerikeri Report’, was to better understand Kerikeri, its population and growth. This is so appropriate decisions could be made in terms of the District Plan review to ensure that provision is made for zoning, infrastructure, and strategic growth in the region. The report has been prepared by FNDC to address Section 31 of the Resource Management Act 1991 (RMA). Section 31 of the RMA places a statutory requirement on Councils to establish, implement or review objectives policies and methods to ensure that there is sufficient development capacity in respect of housing and business land to meet the expected Demand in the district for the short, medium, and long term.

The Report is based on using high growth numbers in Statistical Area 2 geographies. The Report excludes land zoned Rural Production, Rural Lifestyle or Horticulture Special Purpose Zone from the demand statistics. The report focusses growth on existing residential land though infill development or by further subdividing the rural residential lots into even smaller sites, without recognising the demand for larger lot rural lifestyle development or the demand for small scale rural production/horticultural type activities.

The Plan Enabled Housing Supply: Kerikeri Report includes a relatively high-level infill/new lot subdivision type analysis and does not consider the costs and revenues of development of this small-scale nature. It also does not consider any land banking or consideration of other site constraints (covenants, bush, wetlands, amenity impacts, layout of existing sites, etc.). The report assumes that the sites that are capable of being subdivided, will be subdivided, and provide for infill development. The



report does note that 40% of the land area within the proposed option three (the preferred option) has been removed from the consideration to accommodate roading and reserves limitations. No land has been removed to accommodate for wetlands, freshwater streams, areas of steep topography, access limitations, private covenants and / or natural hazards.

The Plan Enabled Housing Supply: Kerikeri Report notes that according to Statistics NZ, the average household size is 2.4 persons in the Kerikeri Area. While the Infometrics report notes that the household size is between 2.6 and 2.7 persons per household on average for the Far North Region.

The Plan Enabled Housing Supply: Kerikeri Report concludes noting that the SA2⁷ area can accommodate 100% of the projected growth for Kerikeri under both the medium and high growth scenarios with approximately 100% to 60% headroom respectively where only the General Residential Zone, the Rural Residential Zone and the Mixed- Use Zone without utilising the multi-unit development rules.⁸ This assumption and assessment assumes that there is no demand for larger rural lifestyle living and that all demand for the next 10-30 years will be for infill/multi- unit development. While this assumption does provide an additional choice for the future residents of Kerikeri through smaller, more compact urban living, it ignores the demand for larger lifestyle living which is a key driver for people to move to Kerikeri.

Information provided by Urban Economics

The Economics Assessment prepared by Urban Economics to support the KFO submission (**Economics Assessment**) identifies Kerikeri as an “urban environment’ because it is intended to be predominantly urban in character with a population of well over 10,000 over the medium term. FNDC states Kerikeri will reach a population of 10,000 by 2027⁹ and Urban Environments projects Kerikeri population reaching 10,000 by 2024.

The Economics Assessment states the approach taken by Infometrics to determine the population and household growth within Kerikeri is unconventional as it relies on historical employment levels to project the future population growth. This is not necessarily the case for population growth as it ignores factors like growth in retirement living in locations that are popular for empty nesters no longer working or coming to Kerikeri/Waipapa for jobs. The Far North has 39% of population growth as empty nesters and retirees, compared to 45% for Kerikeri. This is a major growth sector in the region that is not accounted for in the Infometrics reporting.

The Economics Assessment also provides an assessment of the housing demand in Auckland and the general trend for population decline, noting that it may be up to 10 years before Auckland can offer affordable housing options, meaning that the regions and places like Kerikeri and the Far North will become more popular and more affordable housing locations over the next 7-10 years. This will result in more demand for housing options in the Far North and Kerikeri. Urban Economics note that as a conservative approach, land use policy should assume that the rate of growth experienced over the past 7-10 years is likely to continue over the next 10 years.

⁷ An SA2 area is a statistical area that aims to reflect communities that interact together, socially and economically. There are 4 SA2 areas – Kerikeri Central, Kerikeri South, Riverview and Waipapa.

⁸ Section 32 Overview Report- Appendix 7: Plan Enabled Housing Supply: Kerikeri Report- Page 13

⁹ appendix-7e_kerikeri-summary_amc_2022.pdf (fndc.govt.nz)

Section 6 of the Economics Assessment assesses the Housing Development Capacity within the PDP. Based on the medium growth projections by Urban Economics, there is a shortage of between 1,050-1,220 units relative to demand over the 2021- 2031 period within the PDP. This result is in contrast to both Infometrics and Statistics NZ which conclude that there is a surplus of units over the 2021-2031 period. Under the Economics Assessment, the proposed approach to the PDP does not provide for any new land for residential development. This limits the type of development that can be achieved within Kerikeri. Infill housing does not provide enough land to meet the demand for housing and will negatively impact on housing affordability. Nor does the approach of relying on infill housing provide for the size of land holding necessary for the development of retirement villages, which typically require a land area between 5 and 10 ha. The Economics Assessment notes that there is demand for at least two new retirement villages within Kerikeri by 2032. This type of development is not currently facilitated through the zoning within the PDP.

The Plan Enabled Housing Supply: Kerikeri Report notes that the PDP prevents further fragmentation of rural land and highly productive/versatile soils. The Report does not consider the costs providing infill housing or the impacts of this option on the average housing price and the cost of development. Costs of infill housing include social costs related to provision of a lesser quality urban environment – less provision of parks, community facilities and pedestrian and cycle connections to support growth.

The PDP needs to encourage infill housing while recognising that additional greenfield land is required to meet the demand for housing. The benefits of greenfield housing in terms of economies of scale, cohesive master planning and the provision for affordable housing options is detailed within the Economics Assessment- Section 11.

According to the Economic Assessment, there are flaws in the data and information prepared to support the development of the PDP that need to be addressed and rectified. The current PDP does not provide enough zoned land to meet the needs of the projected population growth over the next 10 years. The proposed re-zoning of the Site will provide the additional housing supply over the next 10 years. Based on a medium growth scenario, the Brownlie Land can provide an additional 1,830 dwellings, to meet the short fall of 1,050- 1,220 dwellings, while providing for additional supply within Kerikeri/Waipapa to meet the needs of the projected population growth in a high growth scenario.

2. Proposed Land Uses – General Residential

Section 4.3.1 of the Section 32 Report- Urban Environment, prepared by FNDC, notes that in response to the issues raised through consultation, land is not zoned General Residential Zone unless it has adequate development infrastructure in place, or is programmed for delivery in the Long-Term Plan or 30-year Infrastructure Strategy (Page 16). This report also notes that:

“The General Residential zone enables increased density, making existing networks more efficient and affordable. Further, the work undertaken to understand population growth in relation to latent residential development capacity in the General Residential, Mixed Use and Rural Residential zone demonstrates that there is sufficient land zoned in the district. No

additional land has been zoned General Residential due to the shortfall of information around Council's wastewater and potable water schemes.¹⁰

As noted within this same report, the Councils infrastructure department is currently undertaking work to better understand its assets so it will be in a position to better ensure the delivery of urban services. In the PDP the General Urban zone has not been extended anywhere in the district. Growth within the PDP is therefore provided solely through infill development, increasing the intensity of the development within the existing Residential zone, and enabling residential activities in the Mixed-Use zone.

Section 4.3.1 also outlines that:

“The option of introducing a medium density Residential zone has been considered. Given the shortfall of asset information, development contributions and that it can be demonstrated that sufficient land for housing can be provided through the zoning proposed in the PDP, it is considered prudent to retain one residential zoning. It is noted that a multi-unit residential unit provision has been introduced in the PDP to provide for a mix of housing typologies and assist with affordability.¹¹”

Section 5.2 of the Section 32 Report- Urban Environments provides an outline of the main changes to the overall management approach for land uses within the region. One of the changes includes a shift in how urban areas are understood, noting that the approach taken has been to limit the expansion of urban land to areas that are serviced by adequate infrastructure or have been identified in the long-term plan or 30-year Infrastructure Strategy to receive these services. To address a change in density provisions, a mix of housing typologies are provided for within the General Rural Zone and within the Mixed-Use zone.

The Economics Assessment has undertaken an assessment of the development capacity enabled by the Proposed District Plan within Kerikeri. The Assessment notes that there is capacity for another 3,450 dwellings within Kerikeri without the Multi Unit Rule- and for 5,560 dwellings with the Multi Uni Rule. Under the Economics Assessment's 'Medium Population projection' scenario of 500 persons per year, there is an expected capacity of 5.4- 6.4 years of housing supply, indicating that in the short term, there is enough land (and supported by infill housing) to meet the short-term development capacity requirements under NPS-UD. However, the housing demand for the medium- and long-term population growth is not met by the current Proposed District Plan zoning. Under the high-growth scenario, the Proposed District Plan only provides for 3.5 to 4.2 years of housing supply.

Adopting the Economics Assessment, it is clear that additional land is required to be zoned for General Residential use within the Proposed District Plan to meet the demands associated with the projected population growth. As it stands, the PDP does not provide 10 years (defined as the short-medium term under the NPS-UD) of housing supply as per the requirements of the NPS-UD. The current demand for housing cannot be met by infill housing alone, as per the current approach within the Proposed District Plan.

¹⁰ Section 4.3.1 of the Section 32 Report- Urban Environment, prepared by FNDC

¹¹ Section 4.3.1 of the Section 32 Report- Urban Environment, prepared by FNDC

The Economics Assessment also notes that there is an anticipated demand for two additional retirement villages by 2032. These types of developments typically require between 5ha and 10ha of land. This type of housing option cannot be delivered through infill housing. Additional greenfield land needs to be allocated for providing for this type of land use.

In contrary to the Section 32 assessment provided by FNDC, the report prepared by Urban Economics clearly demonstrates that growth in the Kerikeri/ Waipapa Area is coming and the supply of land for housing as currently portrayed in the PDP is not sufficient to provide for the next 10 years of growth.

As explained and outlined in the later sections of this report, the Brownlie land is capable of being serviced via a variety of new infrastructure provisions. Details of how the Site will be serviced should the re-zoning be successful, will be provided at the resource consenting stage.

3. Proposed Land Uses – Commercial / Mixed Use

Section 4.3 of the FNDC “Section 32 Report- Urban development” sets out land needed for each activity type within the PDP within the next 10-year period. For completeness, this table is copied below in Figure 6. The Section 32 Report does note that Waipapa is not clearly represented in this table as the industrial zone has no wastewater connections and further zoned land is included within the PDP to meet the industrial demands of Kerikeri.

Additional Commercial Land Needed throughout the District			
Area	Short term (5 years) (ha)	Medium term (10 years) (ha)	Long term (20 years) (ha)
Kerikeri/Waipapa	9	14	14
Kaikohe	1.3	1.51	2.16
Kaitaia	7	7	9
Kawakawa/Moerewa	7	7	9
Paihia/Haruru/Opua	4	5	6

Note: Figures are cumulative rather than compounding.

Additional Industrial Land Needed throughout the District			
Area	Short term (5 years) (ha)	Medium term (10 years) (ha)	Long term (20 years) (ha)
Kerikeri/Waipapa	11	11	11
Kaikohe	0	0	0
Kaitaia	0	0	0
Kawakawa/Moerewa	21	21	23

*Figure 1: Summary of 10 year forecast of industrial and commercial land
(Source Section 32 Report- Urban environment, Section 7.2)*

Section 4.3.1 of the Section 32 Report- Urban Environment provides a discussion on Business land in response to the comments raised through the consultation. The report notes that:



“In 2015 and 2017 studies were undertaken by BERL to develop a better understanding of the trends that determine industrial land needs, current and future commercial land uses, understand the amount of business land that is required over the next 10, 20 and 30 years, and the factors that influence industry decisions on where they locate. Further, a land demand tool was developed to project the estimated commercial and industrial land demand up to the year 2045.¹²”

The report also notes that the BERL evaluation¹³ and forecast was updated in 2019 to use base data from 2019 rather than 2014. However, this data is still using a baseline that is five years outdated from what actually occurred in reality.

The BERL report noted that an additional 11ha of Industrial and 11ha of Commercial land is needed for Kerikeri every 10 years over the next 30 years. Further land around Waipapa has been zoned Industrial to meet this demand for Kerikeri. The PDP principally supports growth in urban environments where Council controlled infrastructure already exists. The PDP approach has been to generally allocate the industrial land on the western side of State Highway 10 in Waipapa. The Section 32 Report – Urban Environment does not elaborate on where the additional 11ha of commercial land is to be located, although it is anticipated that commercial activities will be located within the Mixed-Use Zone.

The PDP proposes to extend the Kerikeri Town Centre commercial zoning. The Operative Plan zones the town centre business area Commercial. The proposed plan uses Mixed Use zoning and seeks to extend the Mixed Use zone further north east along Kerikeri Road and also on the Kerikeri Road and over the retirement village land (Kerikeri Retirement Village Limited) as well as over other established residential areas extending south to the Domain on Cobham Road. It does extend the zoning over circa 1.2ha of vacant land on the corner of Kerikeri Road and the Heritage bypass. Comparative Operative and Proposed Plan zoning maps are shown below:

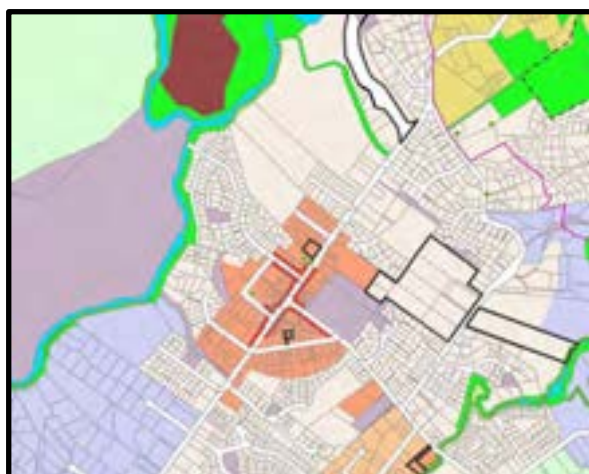


Figure 2 Operative FNDP Zone Map



Figure 3: Proposed FNDP Zone Map

¹² Section 4.3.1 of the Section 32 Report- Urban Environment, prepared by FNDC

¹³ *Potential future demand for commercial land – Far North District (2017)*, BERL – Making Sense of the Numbers

The location of the Mixed Use zone extension will not facilitate or enable expansion of business activities to support an increasing population. The sites that the zone has been extended over appear to be already developed or being developed.

The proposed Structure Plan can accommodate the additional demand of 11ha of commercial land for Kerikeri. The Structure Plan provides for circa 23.5ha (gross area), 15.4ha (net area)¹⁴ of Mixed-Use land that can complement both Kerikeri and Waipapa, while provide additional services to the residential land within the Site to meet the demand from the increase in population. The types of services anticipated include medical facilities, large format retail, a supermarket and potentially social services such as education.

As noted within the Economics Assessment, there is a total of 7,500m² of convenience retail is anticipated within the submission area. A centre of this size would not adversely compete with the town centres of Kerikeri and Waipapa as its primary function would be to access day-to-day goods and services. However, the Economics Assessment recommends that through the proposed precinct, a retail floorspace cap of 7,500m² is included for the submission area that applies to specialty retail stores, with a discretionary status for providing for additional retail floor space. The purpose of this rule would be to ensure that any adverse effects of a larger centre on the existing town centre are evaluated within the future.

In summary, the Brownlie land can provide for the 11ha of additional commercial land as identified within Section 4.3.1 of the Section 32 Report- Urban Development, in a way that does not compromise or compete with the existing town centres of Kerikeri and Waipapa.

4. Effects on Highly Versatile Soils / Highly Productive Land

The Rural Environment- Section 32 Report, prepared by FNDC in May 2022, provides an evaluation of the provisions in the Rural Production, Rural Lifestyle, Rural Residential and Horticultural Zones of the PDP. The general approach that the PDP has taken in its drafting is to protect the rural environment for its primary production and rural amenity values. In the Executive Summary, the Report notes that:

“given the scale of the rural environment and the wide variety of activities that seek to locate there, it is important to direct the location of activities to the most appropriate parts of the rural environment to ensure the best use of the Districts most productive land and to avoid effects from incompatible uses locating in close proximity.”

The Report notes that the method that the PDP proposes to achieve this is to use five different rural zones, directing most of the urban development to the Settlement zone.

The Site is zoned Rural Production in the PDP. This zone as has a 40ha minimum lot size as a Controlled activity and 8ha minimum lot size as a Discretionary activity¹⁵. The proposed policy framework within the PDP *protects highly productive land from sterilisation (i.e. residential development) and enables it*

¹⁴ Taking into account land required for roading and servicing.

¹⁵ Refer to Standard SUB-S1 in the pFNDC. This assumes an environmental benefit subdivision is not pursued.

to be used for more productive uses (refer to Proposed Objective RPROZ-O3). **Highly Productive Land** is defined under the PDP as:

means land that is, or has the potential to be, highly productive for farming activities. It includes versatile soils and Land Use Capability Class 4 land and other Land Use Capability classes Land Use Capability, or has the potential to be, highly productive having regard to:

- a. Soil type;
- b. Physical characteristics;
- c. Climate conditions; and
- d. Water availability.

Highly Productive land is not defined within the National Planning Standards.¹⁶

The PDP also defines **Versatile Soils** as:

means land classified as Land Use Capability 1c1, 2e1, 2w1, 2w2, 2s1, 3e1, 3e5, 3s1,3s2 and 3s4.

There is a significant amount of confusion within the PDP as to when the Definition of Highly Versatile Soils is used, vs Highly Productive Soils. In the Rural Production Zone, “Versatile Soils” is only referred to in relation to RPROZ-R15 regarding plantation forestry. In the Subdivision Chapter, “Versatile Soils” are only referred to in relation to SUB-P8, avoiding rural lifestyle subdivision in the rural zone and SUB-R6 Environmental Benefit Subdivision. All other references are to “Highly Productive Soils.”

Northland Regional Council have identified highly versatile soils within their Regional Policy Statement. This work was undertaken in response to the draft National Policy Statement for Highly Productive Land.¹⁷

Following the notification of the PDP, the Ministry for the Environment released the new National Policy Statement for Highly Productive Land (NPS-HPL) on 20 September 2022, and it came into legal effect on 17th October 2022. “Highly Productive Land” in the NPS-HPL means:

“land that has been mapped in accordance with clause 3.4 and is included in an operative regional policy statement as required by clause 3.5 (but see clause 3.5(7) for what is treated as highly productive land before the maps are included in an operative regional policy statement and clause 3.5(6) for when land is rezoned and therefore ceases to be highly productive land).”¹⁸

Section 3.4 of the NPS-HPL notes that that every regional council must map as highly productive land, map any land that is either in the general rural zone or the rural production zone or is predominantly Land Use Class 1,2 or 3. Land Use Class 4 is excluded. The PDP will need to be updated to be consistent with this definition.

¹⁶ national-planning-standards-november-2019-updated-2022.pdf (environment.govt.nz)

¹⁷ The RPS defines Highly versatile soils are Land Use Capability Classes 1c1, 2e1, 2w1, 2w2, 2s1, 3e1, 3e5, 3s1,3s2, 3s4 - as mapped in the New Zealand Land Resource Inventory. Page 89 of the RPS.

¹⁸ National Policy Statement For Highly Productive Land 2022 (environment.govt.nz)

The Northland Regional Policy Statement classifies the following soils as highly versatile and defines them as LUC units: 1c 1, 2e 1, 2w 1, 2w 2, 2s 1, 3e 1, 3e 5, 3s 1 and 3s 2.

The Site contains a variety of Land Use Class 2 and 3 soils and can be classed as Highly Productive Land.

The NPS-HPL provides 3-years for regional councils to map their highly productive land and then further time for the district councils to amend their plans. Policy 2 of the NPS states that the identification of HPL should be undertaken in an integrated way that considers the interactions with freshwater management and urban development.

Section 3.6 (4) of the NPS-HPL notes that Territorial Authorities that are not Tier 1 or Tier 2 may allow the rezoning of the land only if:

(a) the urban zoning is required to provide sufficient development capacity to meet expected demand for housing or business land in the district; and

(b) there are no other reasonably practicable and feasible options for providing the required development capacity; and

(c) the environmental, social, cultural and economic benefits of rezoning outweigh the environmental, social, cultural and economic costs associated with the loss of highly productive land for land-based primary production, taking into account both tangible and intangible values.

Section 3.6 (4) of the NPS-HPL notes that:

(5) Territorial authorities must take measures to ensure that the spatial extent of any urban zone covering highly productive land is the minimum necessary to provide the required development capacity while achieving a well-functioning urban environment

The FNDC's approach to the District Plan is to provide for growth through infill housing. However, as the Urban Economics assessment has shown, infill housing is not appropriate for providing affordable housing at scale or for more specialist residential development such as retirement village living. Green field development can better achieve the delivery of more housing types and affordable housing options at scale. The Urban economics assessment contains a detailed economic assessment comparing the price of greenfield development to infill development.

When assessing other locations within Kerikeri and Waipapa, including the Rural Residential zone, it is concluded that there are no other practical or feasible solutions for providing additional development capacity to meet the demand in Kerikeri and Waipapa without resulting in additional fragmentation of smaller sites scattered around Kerikeri and Waipapa, resulting in an inefficient use of productive land.

With regard to Section 3.6(4)(a) it is concluded in the Urban Economics Assessment that there is insufficient development capacity within Kerikeri-Waipapa to meet the demand in general, with particular reference to affordable housing and retirement living options.

With regard to Section 3.6(4)(b), the Urban Economics assessment provides an assessment of the Rural Residential and Rural Lifestyle properties. It is concluded that there are no other reasonably practical



and feasible options for additional development capacity in Kerikeri-Waipapa that meets the demand. The further subdivision of Rural Lifestyle lots will result in an inefficient use of land and more pressure on the existing infrastructure as a result of ad hoc subdivision.

With regard to 3.6(4)(c), the submission Site is considered to have economic and social benefits relating to meeting the housing needs of Kerikeri and Waipapa that significantly exceed the loss of the productive land. The Urban Economics Report notes that the land is currently worth \$9,680,000. The value added per annum of the displacement of land suitable for agricultural is approximately \$0.1 million with a present value of \$2.1 million over a 30-year period. This is a relatively small cost in comparison to the rezoning of the land which is anticipated to result in a net present value of \$503.6 million and an additional 9,303 FTE jobs over the 30-year period. This is a considerable economic benefit.

In conclusion, the proposed re-zoning of the Site is consistent with the Policy Framework within the NPS-HPL and is suitable for urban development given the projected demand and the need to achieve a “well-functioning urban environment” through comprehensive development. /

5. Natural Hazard Effects

Flood modelling of the wider catchment undertaken by Northland Regional Council (NRC) has highlighted that the Site is subject to floodwaters which spill out from the Kerikeri River and flows across the Site. The existing flood hazard on Site therefore limits the land available for development in its current state.

The Site is bounded on the northern and eastern boundaries by the Kerikeri River. The rezoning will facilitate the development of residential and commercial properties on this land. Flood modelling of the wider catchment undertaken by NRC has highlighted that the Site is subject to significant floodwaters which spill out from the Kerikeri River and flows across the Site. The existing flood hazard on site therefore limits the land available for development in its current state.

A managed floodway across the Site is proposed, and shown in the Structure Plan, to efficiently convey floodwaters on Site while mitigating the impact on flood hazard outside of the Site. The alignment of this floodway generally follows the alignment of the existing overland flow path once it has collected floodwaters that spilled across SH10. Floodwaters which spill from the true right bank of the Kerikeri River to Brownlie land are proposed to be blocked off in favour of taking increased flows into Site from the spill over SH10. The design concept is for approximately the same flow rate to discharge from the floodway back into Kerikeri River. The managed floodway will typically have a total width of 120 m.

The Assessment of Effects is supported by a Flood Scheme Investigation Report, prepared by E2. In regard to flood management, E2 have advised that:

- The Site is able to be at least partially developed.
- There are challenges and constraints which will need to be worked through to ensure there is appropriate access to the development.

- Regardless of future design, a significant proportion of the Site will always need to be dedicated to managing flood. This area can also be used as amenity to provide other benefits for the local community.

The floodway has initially been modelled at its conceptual design stage. The conceptual design has been developed with the following details:

- Total floodway width = 120 m
- Floodway base width = 92 m
- Side slopes = 1:5 (vertical: horizontal)
- Depth = 1.8 m, including 0.3 m of freeboard above the 1% AEP +CC flood level
- Longitudinal grade = 1 in 130
- Maintenance access width of 5 m either side of channel

The total area required for the conceptual floodway is approximately 20ha and has been shown on the Structure Plan. An additional 15.5ha of land is expected to be required for the flood hazard along the true right of the bank of the Kerikeri River, which is reflected in the proposed overlay plan.

This design is at the conceptual stage only and will require further detailed development through the Resource Consent Stage to ensure that the floodway is designed to the appropriate specifications.

The inclusion of a flood way creates a significant opportunity to create a development where the risk of flooding can suitably managed, presenting an opportunity to use the flood way as a public asset. The location of the floodway has been included within the Overlay plan for the Site and its timing for construction, being at the time of the first development consent for the land to ensure the required land area is secured for the floodway and not otherwise compromised.

6. Landscape Effects

A Landscape, Rural Amenity and Natural Character Assessment, by Littoralis Landscape Architecture has been prepared to support the proposed Structure Plan (**Landscape Report**).

The Report says:

“the land use that would result from the proposed rezoning is a substantial shift from the Site’s current, predominantly pastoral, purpose to some form of relatively intensive urbanisation. Much of the Site has limited landscape sensitivity and amenity values. It is largely a simple, grazing farm with only very subtle topographic variety and a spartan frame of exotic shelterbelts that contribute little to landscape identity. Departing from this prevailing character are the northern and eastern margins of the Site. The Kerikeri River corridor margin has elevated landscape sensitivity and value, as does the bowl-like depression that extends into the Site below Wai Aniwaniwa /Rainbow Falls, with its containing landform, dramatic small waterfall, wetland and significant potential for restoration.

The Structure Plan presented in relation to the proposed rezoning is informed by the Site’s close relationship with existing developed areas (albeit dissected by watercourses), the limitation and

opportunity imposed by an identified area of flood susceptibility and natural riparian corridors, relatedness to existing and future transportation corridors, and a range of other factors that influence where best to cater for required urban growth.¹⁹

The Landscape Report provides a comprehensive assessment of the location of the Site and its characteristics.

Landscaping opportunities along the riparian Margins

The Landscape Report notes that at an ecological level, there is considerable potential to conserve the valuable indigenous pattern that exists and to enhance that habitat through ongoing management and restoration. Comprehensive planning also provides a cue for comprehensive, legal protection of these areas that are currently largely without any form of formal conservation. Incorporating appropriate walking and, possibly cycling, routes allow the amenity of these special areas to be appreciated by a wider community. Paths also enable weed and pest management to occur more efficiently.

Landscaping opportunities within the proposed Flood Way

As outlined in E2 Environmental Engineering Consultant's reporting referenced earlier. Their recommendation is for a shallow, +/- 100m wide overland flow corridor to be created through the midst of the Site to take the overflow of a 1 in 100-year event. The Landscape Report notes that at one level, such a substantial infrastructural element can be seen as dividing and fragmenting future urban form. Through another lens, the flood corridor can be viewed as an opportunity to introduce open space amenity through the core of the future neighbourhood and to act as a unifying spine of reserve which can then be linked out to adjacent areas. It is the latter perspective that the Structure Plan has chosen to adopt.

Figure 7 is a schematic illustration of how this floodway could be developed to provide a multi-faceted resource that is primarily focussed upon providing amenity and lifestyle quality to surrounding urban areas. It just happens that it will, very rarely, fill the role of carrying surplus river flow.

¹⁹ Landscape, Rural Amenity and Natural Character Assessment prepared by Littoralis Landscape Architecture, - Section 1.



Figure 4: Artist impression of the proposed floodway within the Brownlie Structure Plan.

Landscaping opportunities through Active Transport

The Structure Plan shows a high-level green corridor network throughout the Site, connecting the future development to Kerikeri and Waipapa, integrating the Te Araroa Trail and highlighting the Kerikeri River and the existing waterfalls on the Site. The Landscape assessment notes that by creating a readily accessed, highly attractive and functional system that draws people to enjoy it, there is the opportunity to promote a first imperative to walk, cycle, or scooter to a local destination, rather than resort to a car. In this way, each household, school, and commercial area is efficiently linked to Kerikeri centre and Waipapa Sports Hub/commercial area, and within the Structure Plan area itself.

Visual, landscape and natural character effects

The Landscape Report contains a comprehensive assessment of the level of effects on the visual, landscape and natural character of the Site and environs as a result of the re-zoning of the land. It should be referred to for a full and comprehensive understanding of the effects on the environment. In summary, the report concludes that:

“The Site’s spatial relationship with Kerikeri to one side and Waipapa to the other, combined with virtually flat topography, suggests that it is optimally positioned to accommodate future growth. This is particularly clear when the Site is compared with the characteristics of other parts of Kerikeri’s margin, which typically carry much stronger rural character and higher landscape sensitivity.

The Structure Plan provides a strong framework for further resolution through future master-planning by conserving key features, tying in with off road networks, and providing a central

open space spine catering for overland flood flow and providing for “arms” of multi-use stormwater management/open space to reach out into the core of residential areas nearby. It also forms the core for a comprehensive system of off-road paths.

The Structure Plan responds to landform and natural patterns whilst also addressing the range of other spatial relationship, movement, economic and topographic drivers that need to be accommodated. Conserving riparian corridors and related vegetation patterns has been an anchoring requirement of the Structure Plan from its outset and informs a series of identified cross-connections to draw those natural themes into the body of the Site.

Whilst any urban land use applied over the Site will unavoidably bring with it a significant shift in character and resultant adverse visual and landscape effects, the Structure Plan is considered to avoid and minimise fundamental impacts, whilst providing for a locally relevant character to be woven through a new land use scenario.

Overall, the effects on the environment in terms of changes to natural character, visual effects and landscape effects, while noted as a change, are considered to be less than minor and can be enhanced through mitigation measures described above such as the integration of walking and cycling networks and improving the overall relationship between the Site and Kerikeri River.

7. Water and Wastewater Infrastructure and Servicing

FNDC have advised that there is no capacity in the current wastewater system to service this development. FNDC is working on identifying suitable upgrades, or potentially a new plant at Waipapa. Engagement will need to be on going, hence the consideration of some onsite servicing to facilitate initial stages of development.

In regard to water supply, there is capacity in the current water supply network, except in times where there is an algal bloom in the reservoir. The backup water supply from Puketotara stream is fully allocated. A private water supply is therefore required. It is the intention for Kerikeri Irrigation Company (KIC) to supply the site with raw water from their northern dam for treatment onsite. Following treatment, it is intended that the water will be stored prior to supply within the proposed development via a conventional reticulation system. To provide a backup source of raw water, a groundwater source, with all relevant consents, will be developed to provide up to 30% of the supply volume via 2 bores that can produce 3 litres/second.

No groundwater assessment has been prepared to accompany the Section 32 Report; however, this assessment can be provided prior to the hearings on the PDP. This does present a constraint to the development potential of the Site, but one that can be worked around with an appropriate engineering solution, that does not result in a decrease in flows within the Kerikeri River. The fact the development can only proceed in stages also provides opportunities for resolving infrastructure constraints over time.

In terms of infrastructure capacity, the Structure Plan is based on 1,500 to 2,000 dwellings. This is indicative and is not an absolute. The actual number of dwellings will be addressed, taking into account demand and the infrastructure capacity, at the time of applying for resource consents.

Northland Regional Council has provided funding in their 10-year capital plan for a significant wastewater network and wastewater treatment plant upgrade, including the Waipapa area. Planning work for the upgrades is in an early stage and no definitive upgrade options have been released. FNDC officers have indicated that the existing network and treatment plant do not have spare capacity, and that upgrade options at the existing treatment plant at Okura Drive (located 5km from the Structure Plan area as the crow flies and 8.5km via Waipapa Road and Twin Coast Discovery Highway) are constrained by the topography.

A key project consideration is that the treated wastewater discharges must be to land and not into water to protect the Mauri of the Kerikeri River.

As noted in the report prepared by Infir titled 1828 and 1878, Waipapa Servicing Report, and supported by the peer review of this report undertaken by GWE to support the submission, the approach to servicing the site must be twofold:

1. Integrate the wastewater system for the Structure Plan area into the reticulated system, following the implementation of the upgrades to the reticulated network as outlined within the FNDC 10-year Capital Plan for the Waipapa area.
2. Develop a standalone wastewater disposal system. This system will consist of a treatment plant, sludge processing facility and areas of land for disposal of treated wastewater. It is possible that land areas outside the structure plan area may become available for land disposal but for the purposes of this memorandum it has been assumed that the disposal areas will be inside the structure plan area. The standalone wastewater disposal system must be developed such that the following options are left open:
 - a. To redirect raw wastewater to a future wastewater treatment plant outside the structure plan area,
 - b. To redirect treated wastewater to a future disposal area outside the structure plan area.
 - c. A combination of the two options.

The Report by Infir notes that the estimated land requirements for an on-site wastewater treatment and disposal system consists of 2 hectares for a treatment plant and 30 hectares for on-site wastewater disposal system. In regard to the reserve area, the Infir report suggests that in order to provide design margin it is recommended to provide reserve disposal area of 50% of the estimated area that will be required. The need for the reserve disposal area should be assessed at the defined trigger point to determine whether it is actually required. If the estimated area functions well, the reserve area could be utilised to support more development. The requirement for on-site disposal will cease when a wider Council wastewater system becomes available.

The Structure Plan Area presents both a constraint and an opportunity to deliver an onsite solution to wastewater treatment to deliver the first stages of development until such time as the reticulated

system is upgraded to include additional capacity for the Site. The delivery of the infrastructure required to service the development will be included within the proposed Precinct Chapter.

8. Stormwater Management

Based on advice from the FNDC Infrastructure Team, stormwater treatment needs to be provided on Site. As noted above, a Report by Infir, titled 1828 and 1878, Waipapa Servicing Report has been prepared to support the Structure Plan. The assumptions in this report have been peer reviewed by GWE. Both these reports form part of the submission documents.

As noted by Infir, the Development of the Site will result in an increase in impermeable areas, and therefore increase stormwater runoff. Mitigation options for the development include:

Table 5 – Stormwater Mitigation Options for the Site.

Effect	Runoff rate	Runoff volume	Quality
Description of effect	Increased peak runoff rate	Increased runoff volume	Potential for contamination
Mitigation measure	Attenuation storage	Discharge runoff for a longer length of time	Treatment through a suite of industry standard measures including swales, rain gardens, filter strips and separators.
Result of mitigation	Reduce peak runoff rate to pre-development rate. This will avoid increased flood levels.	No change in flood levels, but water levels will stay at elevated levels for slightly longer lengths of time (measured in hours, not days)	Stormwater discharge compliant with Regional Council rules

The Infir Report notes that it is expected that stormwater attenuation and treatment devices will occupy 15% of the land area that will be developed to ensure that stormwater remains at pre-development levels post the completion of the development. Land required for on-site stormwater discharges is excluded from this estimate because that land will be pervious and stormwater discharge considerations is part of the design parameters for on-site wastewater disposal.

In summary, the management of the increase in Stormwater can be provided for on the Site and will be subject to obtaining the various consents from Northland Regional Council. The location of the management structures will be decided during the detailed design phase.

9. Cultural Effects

Section 4.3 of the Section 32 Report- Urban Environment prepared by FNDC provides a summary of the feedback received from Ngāti Rēhia during the consultation process. A high-level summary of their key issues, as identified within the report referred to above is outlined below:

- Affordable housing: Provide a mix of housing typologies, densities and housing types and sizes in the General Residential Zone.



- Locating more industry within Waipapa where there is limited infrastructure and flood risks. Health of the two awa need to be prioritized
- Provision of adequate infrastructure (roading and stormwater) in the Industrial Zone and the Mixed Use Zone
- Consideration of the iwi/hapū management plans.
- Consistency with setbacks from waterbodies
- Concern with the need for all commercial activities to obtain a resource consent
- Need to have strong reference to the consideration of cultural values and sites of significance within the policy framework.

The issues raised above are consistent with the issues raised at the various meetings with Ngāti Rēhia regarding the Structure Plan area. Housing Affordability and the provision for opportunities for Ngāti Rēhia to upskill and train their hapū have been key issues raised.

10. Housing Affordability

The approach that the PDP is taking to addressing housing affordability is via infill urban development, increasing the densities and providing for a mix of housing typologies within the General Residential Zone. Section 5.3.3 of the Section 32 Report- Urban Environment notes that by the PDP implementing the provisions listed above, it is “*potentially increasing supply of housing and assisting with Housing Affordability.*”

Objective **SD-UFO-02** of the PDP notes that:

Urban growth and development consolidated around existing reticulated networks within town centres, supporting a more compact urban form, affordability and providing for a mix of housing typologies.

The Economic Assessment outlines the economic benefits of infill housing vs greenfield housing. The report notes that both infill and greenfield housing provide for economic efficiency and that the PDP should be designed to enable both types of development to occur, rather than restricting urban growth to infill only. By not enabling greenfields development, the ability to provide for affordable housing at scale and for more specific residential development such as retirement villages is significantly limited. The Economics Assessment should be referred to for a more detailed assessment of the costs and benefits between greenfield and infill development.

In summary, the Brownlie Land provides for an efficient use of land, supporting the needs of the population through the supply of greenfields land to deliver affordable housing options, retirement village offerings and the development of a new hotel within the Site. Each of these elements, along with the commercial land use has the ability to be master planned to ensure that the most efficient and effective use of the land is achieved in a way that meets the demands of the current and future populations of Kerikeri and Waipapa.

As noted in the Economic Assessment approximately 21% of households in Kerikeri and Waipapa are only able to afford dwellings up to \$600,000 based on their annual household income. Under the Economics Assessments’ medium growth projections, this number increases to 30% by 2031. This

highlights the importance of increasing housing supply within the lower price bands, to make housing more accessible to those on a lower income. Urban Economics note that between September 2020 and 2022, the majority of standalone dwellings sold for between \$600,000 and \$1,000,000. Increasing housing supply within the lower price range can be more efficiently achieved through the development on greenfields land, given the economies of scale and the ability to master plan, rather than rely on ad hoc infill housing opportunities.

11. Transport Effects

A Draft Integrated Transport Assessment, prepared by Team Traffic has been provided to support the Structure Plan (herein referred to as the Draft Integrated Transport Assessment).

The submission would allow the subject Site to be rezoned and then developed in a manner consistent with the chosen Structure Plan to provide an integrated transport outcome that achieves:

- Connectivity between Kerikeri and Waipapa,
- Significant outdoor space,
- A comprehensive network of connections for walking and cycling,
- A connection to/from the proposed shared path that features in the design of the Sports Hub
- Network resilience in the event that significant flooding inundates and forces the closure of SH10.

Four different options have been assessed to provide connectivity to the Site from Kerikeri and Waipapa. In essence, each of these options has the same connections and roading alignment between SH10 and Waitotara Road, as well as the same pedestrian and cycleway connections through the property.

Specifically, the Draft Integrated Transport Assessment notes that:

- All options have the same pedestrian and cyclist connectivity from the submission area around the periphery of the golf course to Golf View Road.
- Option 1 has a roading connection around the western perimeter of the golf course and then two roading connections to the Kerikeri area via Golf View Road (Access C) and Aranga Road (Access B).
- Option 2 has a roading connection on the eastern perimeter of the golf course and then a single roading connection to the Kerikeri area via Golf View Road (Access C).
- Option 3 has a roading connection that avoids the golf course and then connects into King Street-a Road well to the west of the Kerikeri CBD (Access E).
- Option 4 has no roading connection to the Kerikeri urban area for vehicles, and instead relies on the pedestrian and cycle connections common to all options.

A high-level appraisal of each option shows that the following strategically important regional transportation benefits are realised by all four options:

- Network resilience provided for SH10 can be realised for this critical section of the nation's primary roading infrastructure.

- The provision of a comprehensive network of more direct active mode (walking and cycling) connections that will provide significantly better connections that presently exist between the Kerikeri urban area, the expanding Waipapa area and the Council's Sports Hub.
- Development potential located centrally between the two recognised growth nodes of the region.

The Draft Integrated Transport Assessment outlines the expected traffic generation and distribution. This report should be referred to for a detailed analysis of the transport effects generated from the proposed Structure Plan. The modelling for each of the four different transport options is yet to be complete. Once completed, a holistic view of the proposed transport options and their effects on the existing road network can be assessed and regard can be given to the anticipated wider effects on the environment.

Two things that are more certain is the need for a new intersection, via a roundabout to access the Site from SH10 and a new access from Waitotara Road to Waipapa Road to facilitate the proposed development of the Structure Plan area. The Draft Integrated Transport Assessment provides a high-level concept design for the proposed roundabout and commentary regarding how a new access from Waitotara Road could be developed.

Regarding Active Transport connections, the submission and Structure Plans for the Site will allow for the construction of a comprehensive and connected network of on-road and off-road paths for active modes. The proposed greenways as identified on the Structure Plan will provide more direct connections for walking and cycling between the, the expanding Kerikeri and Waipapa areas, as well as to the Council's Sports Hub. Walking tracks around the Kerikeri River and the wetland complex on the Site are promoted and encouraged and will have a wider benefit of linking into Te Araroa Trail.

Regarding public transport, future bus connections can be provided for within the Site and integrated within the wider public transport network. At the time of concept and detailed design, consideration will also need to be provided for the adequacy of the road widths and the possible locations for bus stops along the primary roading corridors to ensure that these can be provided without the need to carry out retrospective physical works.

On the basis of the Draft Integrated Transport Assessment, there are many options to service the Structure Plan area. The preferred option will become clear once the modelling has been completed. There are clear benefits and opportunities to provide and encourage active transport modes within the proposed Structure Plan and to integrate other elements of the Site, such as the wetland area and the floodway into the public space framework.

Overall, based on modelling and an engineering solution, the increase in traffic generated from the proposed Structure Plan area is expected to have a less than minor impact on the existing network, subject to the outcomes of the modelling which is being completed. Through the Draft Integrated Transport Assessment, it has been established that there are significant advantages to the local and regional area in having the proposed details due to the:

- Integration of the currently separated and distinct growth areas of Waipapa and Kerikeri for active modes.

- Integration of active modes of the Council’s Sports Hub to Kerikeri.
- Network resilience provided to SH10 by a key part of the internal primary roading network when SH10 is closed due to flooding.

Although four access options have been identified in the Structure Plan and some stand out as being preferable to others, it is considered sensible and appropriate for their detailed consideration to be done as part of Council’s transportation modelling work currently being done for its spatial planning and assessment of growth. Further refinement of each option and a preferred option will be determined prior to the Hearing of the FNDC PDP once the transport modelling is complete. A Final Integrated Transport Assessment will be provided at this time.

12. Social Effects

Most community facilities are located in the central areas of Kerikeri, including the school facilities and community centres, the town library and healthcare facilities. Bay of Islands Hospital is located in Kawakawa. The next major hospital is located in Whangarei.

The proposed zoning in the Structure Plan provides for the opportunity for additional health care providers to establish within the Structure Plan Area within the Mixed-Use area. The population is aging and there is a growing demand for additional healthcare services and retirement living services. The nature of this green field development will provide larger land parcels to ensure that new social infrastructure will have sufficient space to establish new facilities.

The proposed zoning also provides the opportunity for a new school to establish with in the Structure Plan area and to provide strong connections to the Sports Hub within Waipapa.

13. Site Suitability

As outlined in the attached Geotechnical Assessment, prepared by LDE and the Ecological Assessment, prepared by Bioresearches which form part of the submission documents, the Site has been assessed to be suitable for urban development. The Site is flat, and the main ecological features are confined to the main wetland complex.

14. Summary of Effects

The actual and potential effects of the Proposal have been considered above, based on extensive reporting and analysis undertaken by a wide range of technical experts. On the basis of this analysis, it is considered that the Site is suitable for urban development.

The proposed mix of uses will result in positive effects on the environment in terms of the social and economic well-being of the community, and the development can be serviced by existing infrastructure with appropriate onsite provision provided where noted above. The concept design for the floodway shows that there is a feasible solution to managing the risk and effects associated with flooding on the Site. Where infrastructure constraints have been identified, the proposed precinct will ensure that the

appropriate infrastructure to service the site is provided for in integration with the delivery of urban development.

Following the completion of the transport modelling, a preferred servicing and access options can be confirmed and discussed with Council prior to and at the hearing for the PDP.

End of Report

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**THE PLANNING
COLLECTIVE**







Kiwi Fresh Orange Company Limited

**GEOTECHNICAL SUITABILITY REPORT FOR
DISTRICT PLAN REVIEW**

Kerikeri Land Development Plan Review

DOCUMENT CONTROL

Version	Date	Issued For / Comments
1	15/06/22	Issued for Information. Revised subject area boundaries in reporting and maps
0	23/05/22	Issued for Information
		Choose an item.

Version	Issued For	Prepared By	Reviewed & Authorised By
1	Issued for Information	 Jack Mackay-Neal Engineering Geologist BSc, PMEG	 Gareth Harding Chartered Professional Engineer (Geotech/Civil) CPEng, IntPE(NZ), BE, BSc, CMEngNZ

EXECUTIVE SUMMARY

Based on the investigation and appraisal of the site reported herein, the subject area has been assessed as suitable for residential development.

Based on our assessment of stability and other natural hazards, we consider that there are no significant geotechnical constraints. Specific foundation design will however be required to address the expansive soils identified across the site.

Adequate provision for access to the future developments is provided in the scheme plan and only minor earthworks will be required.

CONTENTS

1	INTRODUCTION	1
2	SITE DESCRIPTION	1
3	DESKTOP STUDY	2
3.1	Site Characteristics	3
4	PROPOSED WORKS	4
5	DESKTOP STUDY	5
6	SITE INVESTIGATION	7
6.1	Investigation	7
7	GEOLOGY	7
7.1	General.....	7
7.1.1	Alluvium.....	7
7.1.2	Kerikeri Volcanics Group.....	7
7.2	Geomorphology	8
7.3	Groundwater.....	8
8	NATURAL HAZARDS AND GROUND DEFORMATION POTENTIAL.....	9
8.1	Definition and Legislation	9
8.2	Seismic Subsoil Category	9
8.3	Seismic Hazard.....	9
8.3.1	Earthquake Shaking.....	9
8.4	Liquefaction Assessment	10
8.5	Vertical Settlement from Liquefaction	11
8.6	Slope Instability.....	11
8.7	Compressible Ground and Consolidation Settlement.....	14
8.7.1	Settlement Analysis.....	15
8.8	Ground Shrinkage and Swelling Potential.....	16
8.9	Conclusions.....	16
9	DEVELOPMENT RECOMMENDATIONS	17
10	SPILLWAY DESIGN	17
11	LIMITATIONS	17
	APPENDIX A: GEOTECHNICAL INVESTIGATION PLAN	
	APPENDIX B: GEOTECHNICAL INVESTIGATION DATA	
	APPENDIX C: GEOLOGIC MAPPING AND CROSS SECTIONS	
	APPENDIX D: LIQUEFACTION ANALYSES	
	APPENDIX E: SETTLEMENT ANALYSES	

1 INTRODUCTION

This report supersedes version 0 of the report, dated 23/05/22 and differs from the previous report by changing the subject area. The changes to the subject area include the removal of a neighbouring lot only, which is reflected in the reporting and appendices. Our recommendations remain unchanged from the previous report.

LDE Ltd has been engaged by Kiwi Fresh Orange Company to undertake a geotechnical suitability assessment for a District Plan Review at the area northwest of the township of Kerikeri. (Figure 1). The subject area encompasses the lots tabulated in Table 1, with the spatial extent shown in Figure 1.



Figure 1: Location of the District Plan Review area relative to Waipapa and Kerikeri. Imagery from Google Earth.

This report presents the results of the desktop study and geotechnical investigation for the District Plan Review area northwest of Kerikeri. The purpose of the report is to confirm if the area within the subject area is suitable for future development and provide support of an application to the Far North District Council for the District Plan Review.

2 SITE DESCRIPTION

The Kerikeri River forms the northern and eastern boundaries of the subject area, with State Highway 10 forming the western subject area boundary. The southern subject area boundary is comprised of the boundary with the

Bay of Islands Golf Club and the legal boundaries of Lot 1 DP 109735 and Pt Lot 2 DP 63499. A small portion of land on the northern side of the Kerikeri River at the northernmost extreme of the subject area is also included in the subject area. The legal titles and corresponding lot sizes included in the subject area are shown in Table 1 below.

Table 1: Lots included in the subject area

Property Description	Property Area (ha)
Part Lot 2 DP 41113	100.7833
Lot 2 DP 76850	7245m ²
Part Lot 2 DP 89875	92.789
Lot 1 DP 333643	3.389

Presently the land is used as an active farm with minor grassed land. A limited number of dwellings and associated farm improvements are found within the subject area. Small tracts of undeveloped native bush are also present in the east of the subject area.

3 DESKTOP STUDY

A review of historical and recent aerial imagery has been undertaken, with images sourced from Retrolens¹ and Google Earth. The land has predominantly been used for agricultural purposes since 1953. The steep bush region in the east of the subject area was cleared in 1981. Extensive erosion and sediment runoff scars are visible in the cleared area from this date (Figure 2). Low-lying scrub has progressively recolonised the formerly cleared area, with the drainage channels still readily apparent. This process appears to have occurred gradually between 2000 and the present and would be expected to continue if left undisturbed.

¹ Retrolens – Historical Imagery Resource. <https://retrolens.co.nz/map/>. Imagery licensed by LINZ CC-BY 3.0.

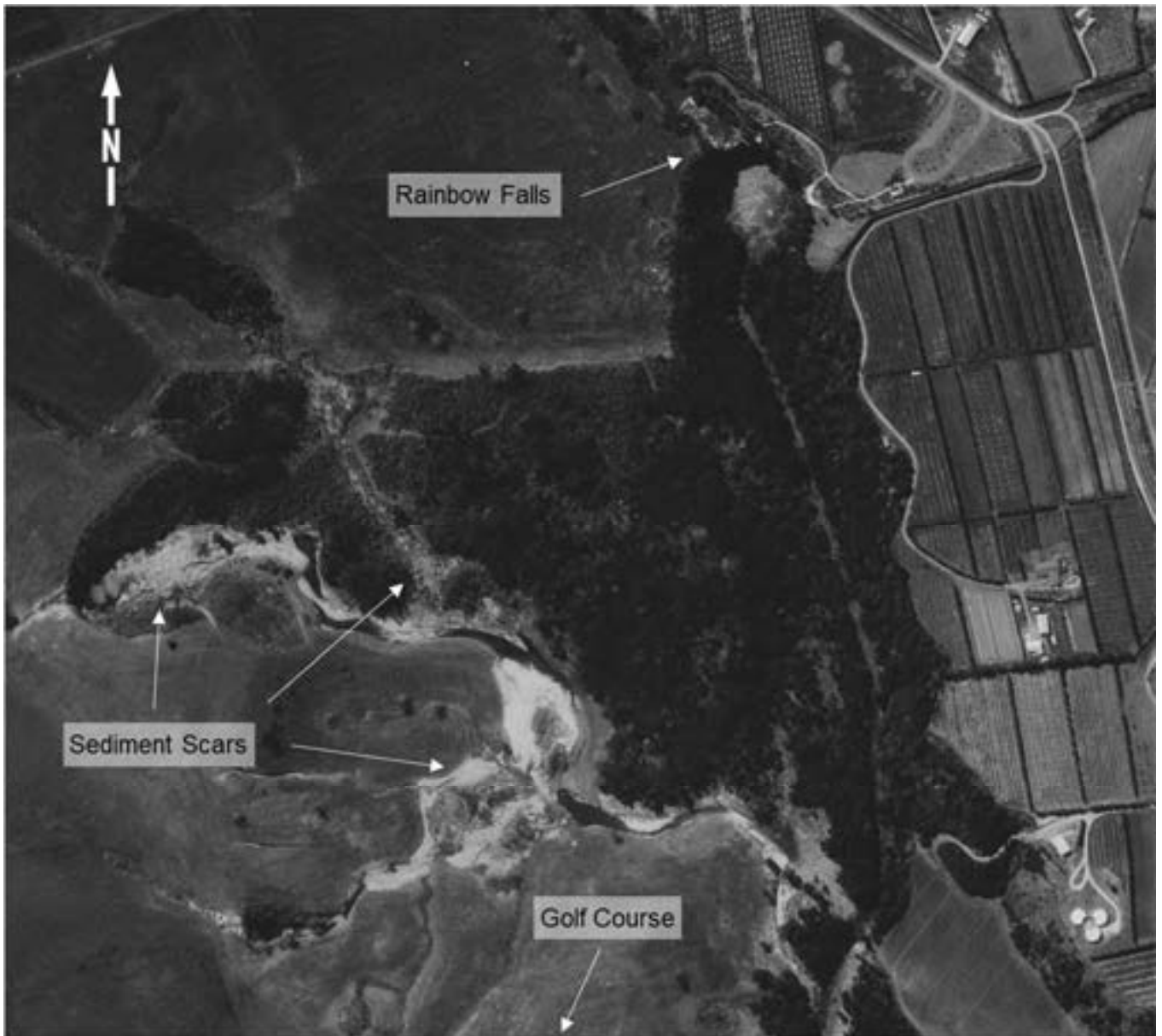


Figure 2: 1981 Retrolens imagery depicting surficial slope failure and sediment movement.

3.1 Site Characteristics

The site is generally flat, consisting of gentle rolling hills, bound by the Kerikeri River and on the north and eastern sides of the subject area. Minor streams and drains are found on the flat ground in the subject area which tend to drain towards a steep region in the east of the site (Figure 3). This steep region serves as the drainage for much of the site, capturing the majority of the overland flow paths and farm drains. The interface between flat land and the catchment is steep, forming waterfalls where drainage channels have intercepted the boundary between flat and steep land in two places. Slopes of between 25° and 60° characterise the boundary of this steep area which flattens away from its edges.



Figure 3: Location of the steep region within the subject area. Imagery from Google Earth.

4 PROPOSED WORKS

The proposed works for the District Plan review subject area will form numerous residential lots, commercial and medical facilities, and a large hotel. Included in the proposed works is the construction of a spillway, shortcutting the Kerikeri River and Rainbow Falls to provide flood mitigation. The spillway is intended to drain into the steep region at the east of the subject area, with energy dissipation achieved through a large waterfall in the east of the subject area.

5 DESKTOP STUDY

A review of relevant NRC² and FNDC³ GIS hazard maps has been undertaken to assess the presence of hazards at the site. Presently the site is mapped as highly susceptible to flooding, with a natural overland flood path shortcutting the Kerikeri River (Figure 3). It is understood a future Kerikeri River spillway is proposed within this zone which should limit the flood potential for the site. The land north of the Kerikeri River is mapped as within the 10-year flood zone, however this is likely to change following the development of the spillway. The site is not mapped as susceptible to any other hazards by any other territorial authority. Underlying the entire subject area are the Kerikeri and Puketotara Aquifers. One water bore is mapped on the site by the NRC but is without data for the depth to the water table.

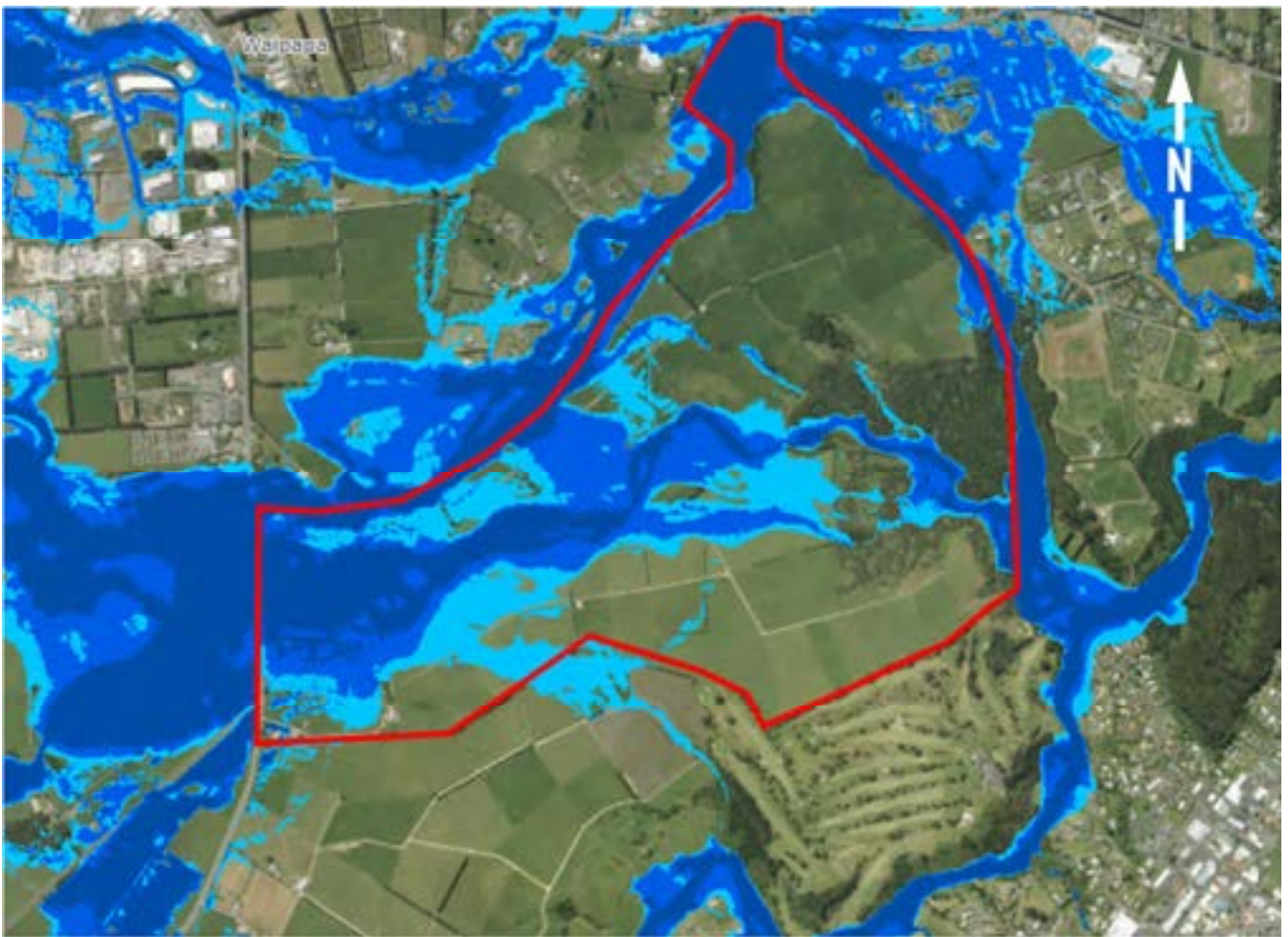


Figure 4: Flood susceptibility of the subject area as mapped by the NRCs Priority Catchment mapping.

² <https://localmaps.nrc.govt.nz/LocalMapsGallery/>

³ <https://gismaps.wdc.govt.nz/GISMapsGallery/>

The 1:250,000 geological map of the region⁴ shows the site as being underlain by both the Kerikeri Volcanics and Alluvium (Figure 5). The Kerikeri Volcanics is described by GNS as “Basalt lava, volcanic plugs and minor tuff”, with alluvium described as “Partly consolidated mud, sand, gravel and peat or lignite of alluvial, colluvial, lacustrine, swamp and estuarine origins”.

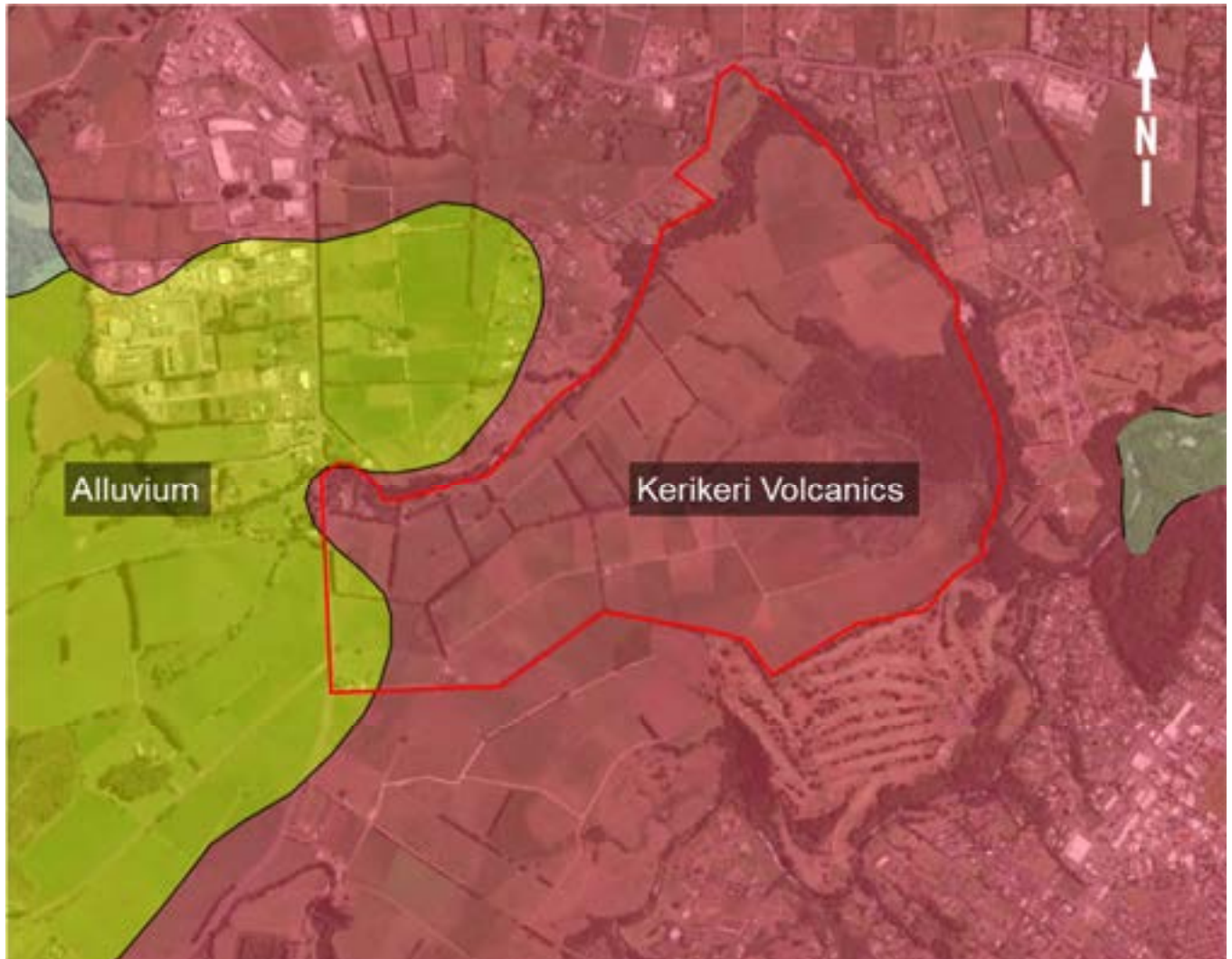


Figure 5: GNS mapped geology on the site.

Previous geotechnical testing data acquired by LDE for the site includes a suite of hand auger and Scala penetrometer testing performed by the NRC. This testing was performed in the region outlined for the proposed spillway on the Kerikeri River. A soil profile of between 1.5m to 4m thickness was encountered before encountering basalt.

⁴ Edbrooke, S.W.; Brook, F.J. (compilers) 2009: Geology of the Whangarei area: scale 1:250 000. Lower Hutt: GNS Science. Institute of Geological & Nuclear Sciences 1:250,000 geological map 2. 68 p. + 1 folded map

6 SITE INVESTIGATION

6.1 Investigation

Our investigation included intrusive geotechnical data collection and a site walkover identifying and mapping geomorphic features found within the subject area. 17 Cone Penetrometer tests (CPTs) and three 50mm hand auger boreholes were performed to identify and qualify the soil profile across the site and assess the depth to basalt. The locations of the subsurface investigations are presented in the Geotechnical Investigation Plan in Appendix A. Logs of the intrusive testing are presented in Appendix B. A geologic and geomorphic map of the subject area are shown in Appendix C. The testing was performed in early April, during a period of normal climatic conditions, with soil moisture content at the average levels for this time of year.

7 GEOLOGY

7.1 General

The geological boundaries according to the published NZGS 1:250,000 Maps⁵ and a revised interpretation based on a site walkover and subsurface information are presented in Appendix C. The following descriptions are for each unit encountered within the subject area.

7.1.1 Alluvium

Described by the GNS Geology Map as “Partly consolidated mud, sand, gravel and peat or lignite of alluvial, colluvial, lacustrine, swamp and estuarine origins.”. Alluvium was encountered during our investigations within 10 CPTs and HA01 and HA03. In HA01 this material was a sequence of silty clays and clayey silts. Saturated sediments beneath the water table were found to contain minor organics, representative of a former swamp. Soils behaving as organics were also identified in multiple CPTs across the site, increasingly shallow towards the west of the site. This material appears considerably more widespread than what is mapped by GNS. Undrained shear strength measured by a calibrated shear vane in HA01 was between 70kPa and 100kPa between 0.4m and 1.8m depth. Below 2m no shear vane readings were able to be recorded due to the saturated nature of the material. An undrained shear strength of 109kPa was recorded at the base of this unit at 3.0m depth but could not be described due to the material washing out from the hand auger.

7.1.2 Kerikeri Volcanics Group

The GNS Geology Map describe this lithologic group as “Basalt lava, volcanic plugs and minor tuff”. Basaltic lava flows were the predominant lithology belonging to this group, with curvilinear columnar jointed basalt flows outcropping along the length of the Kerikeri River within the subject area and on steep slopes within the east of

⁵ Edbrooke, S.W.; Brook, F.J. (compilers) 2009: Geology of the Whangarei area: scale 1:250 000. Lower Hutt: GNS Science. Institute of Geological & Nuclear Sciences 1:250,000 geological map 2. 68 p. + 1 folded map

the site. Residual soils belonging to this formation are ubiquitous across the site which generally consist of highly plastic silty clays. Basaltic boulders are found both on the surface of the flat areas in the east of the site and within the nearby steep slopes. No other volcanic lithologies were encountered during the fieldwork. Bedrock was found at an average depth of 4m to 5m across the site, with a maximum depth to bedrock identified as 9.48m in CPT06 and a minimum depth of 3.36m in CPT10. Undrained shear strengths measured with a calibrated shear vane were typically greater than 150kPa, with a minimum measured value of 123kPa in HA02 at 2.0m depth. Generally, with depth the cone and sleeve resistance in the CPTs decreased, likely representative of the groundwater flow occurring above the basalt contact.

7.2 Geomorphology

An overview of the geomorphology of the study site is presented on the Geomorphic Map (Appendix C) and has been divided into two regions based on the general geomorphology of the site. The geomorphological assessment consisted of a site walkover and analysis of aerial photography by an Engineering Geologist which took place in April 2022.

Region A:

Region A consists of flat or gently inclined land formed by the residual soil weathering process or deposition of alluvium. Within the zone the dominant geomorphic features are overland flowpaths and ephemeral ponds. Much of this zone is flat and without geomorphic features, having been overwritten by farm activity.

Region B:

Region B consists of the entire steep catchment area at the eastern edge of the site. Incised drainage channels are characteristic of this area. Evidence of slope instability was sparse across this area, with only one headscarp identified across the site. Terracettes are present on a limited selection of the slopes. Sheer rock walls are found in two locations at the site, each containing a waterfall. The slopes demarcating the boundary between zones A and B tend to flatten with distance from the waterfall, reaching an average angle of 25°.

7.3 Groundwater

The entire subject area is mapped as overlying both the Puketotara and Kerikeri Aquifers. Our hand auger and CPT investigations identified groundwater at a shallow depth across the site, ranging between 1.0m and 3.0m depth. A number of CPT holes were unable to be dipped for groundwater due to hole collapse. Generally, the groundwater was identified progressively shallow towards the west of the site. A map detailing the depth to groundwater is shown in Appendix C. A mix of anthropogenic and natural surface drains dewater the site and are present across the entire site, each draining to the steep region in the east of the site.

8 NATURAL HAZARDS AND GROUND DEFORMATION POTENTIAL

8.1 Definition and Legislation

This section summarises our assessment of the natural hazards within the property as broadly required by Section 106 of the Resource Management Act (1991 and subsequent amendments) and including geotechnical hazards given Section 71(3) of the Building Act (2004). This includes erosion, inundation, subsidence, and slippage.

This section also includes our assessment of ground beneath the building site which is outside the definition of “Good Ground” as defined by NZS3604 (2011) “Timber Framed Buildings”.

8.2 Seismic Subsoil Category

Based on our subsurface data we consider that the site is primarily a Class C shallow soil site as defined by NZS 1170.5 (2004) “Structural Design Actions: Part 5: Earthquake actions – New Zealand”. Limited amounts of the subject area may classify as a Class B rock site as defined by NZS 1170.5 (2004) “Structural Design Actions: Part 5: Earthquake actions – New Zealand”. This is for sites underlain by materials having a compressive strength between 1MPa and 50MPa with no more than 3m depth of highly weathered or completely weathered rock or soil with a compressive strength less than 1MPa at the surface.

Localised regions of Class B rock sites may be found around the crest of the steep catchment region, however the extent of this must be confirmed at the building consent phase.

8.3 Seismic Hazard

The GNS NZ Geology Webmap and Active Faults Database⁶ does not show any active faults within upwards of 100km proximity of the subject area. There does not appear to be any surface expressions that would indicate the presence of an active fault line beneath, or in close proximity to the subject site. We therefore consider the hazard posed by surface fault rupture to be extremely low. Potential ground deformation associate with earthquake shaking is anticipated to be low to negligible.

Due to the inland and elevated site location we consider the risk of tsunami inundation to be negligible.

8.3.1 Earthquake Shaking

The site is in a region of low seismicity, Accordingly the potential deformations associated with earthquake shaking are expected to be low to negligible. However, due to the presence of low strength saturated silts and clays containing variable amounts of organic content as identified in the hand auger investigations a preliminary liquefaction analysis was undertaken.

⁶ GNS Active Fault Database. <https://data.gns.cri.nz/af/>

The Ministry of Business Innovation & Environment released a guideline for Earthquake Geotechnical Engineering Practice with a series of modules. In Module 1, titled “Overview of the guidelines” (dated November 2021, Rev 1) provides recommended peak ground acceleration (a_{max}) and Earthquake Magnitude (M_w) for sites of all Seismic Subsoil Categories as defined by NZS 1170.5 (2004) “Structural Design Actions: Part 5: Earthquake actions – New Zealand”. Values were selected based on the recommended values for Northland, for both an Ultimate Limit State (ULS) 500-year event and Serviceability Limit State (SLS) 25-year event for an Importance Level 2 (IL2) structure. These parameters are shown below in Table 2 and were used for the liquefaction analysis of the site.

Table 2: Liquefaction analysis parameters used for both testing cases

	Serviceability Limit State	Ultimate Limit State
$a_{max}(g)$	0.03	0.19
M_w	5.8	6.5

8.4 Liquefaction Assessment

Liquefaction is the term used to describe the severe strength loss which can occur when saturated loose to medium dense sands and low plasticity silts are subject to seismic shaking.

In addition to strength loss, liquefaction may also result in the expulsion of sand, silt and water at the surface, post seismic settlement, and lateral movement towards areas of lower elevation such as rivers or streams, referred to as lateral spreading. Differences in the amount of liquefaction due to variations in the ground can result in differential surface settlement. In addition, significant building settlement can occur due to the severe loss of strength and subsequent bearing capacity failure of the ground.

The site is underlain by variable amounts of Pleistocene Alluvial deposits which contain varying degrees of silts, clays, organics and sands of variable density and thickness below the water table which may be prone to liquefaction.

We have assessed the liquefaction potential of soils on site using the “simplified procedure” as summarised by Idriss & Boulanger (2014) method. Liquefaction-induced free-field vertical volumetric strains were estimated for the SLS and ULS design seismic events using the method of Zhang et al. (2002). Default assessment values were utilised within the CLiq software during the liquefaction analyses. These include, but are not limited to, assuming the existing ground is level, utilising an I_c cut-off of 2.6, applying clean sand and overburden corrections, automatic calculations for soil unit weights and applying automatic corrections to the input data at soil transition layers.

8.5 Vertical Settlement from Liquefaction

Figure 6 indicates that the free field settlement is not expected to occur at SLS loadings. For a ULS event, expected settlements vary between 0mm to 29mm. The greatest settlements from liquefaction occur within the regions where alluvium is present. Based on this analysis the Kerikeri Volcanics residual soils are not anticipated to be highly susceptible to liquefaction. Specific settlement values are presented in Appendix D.

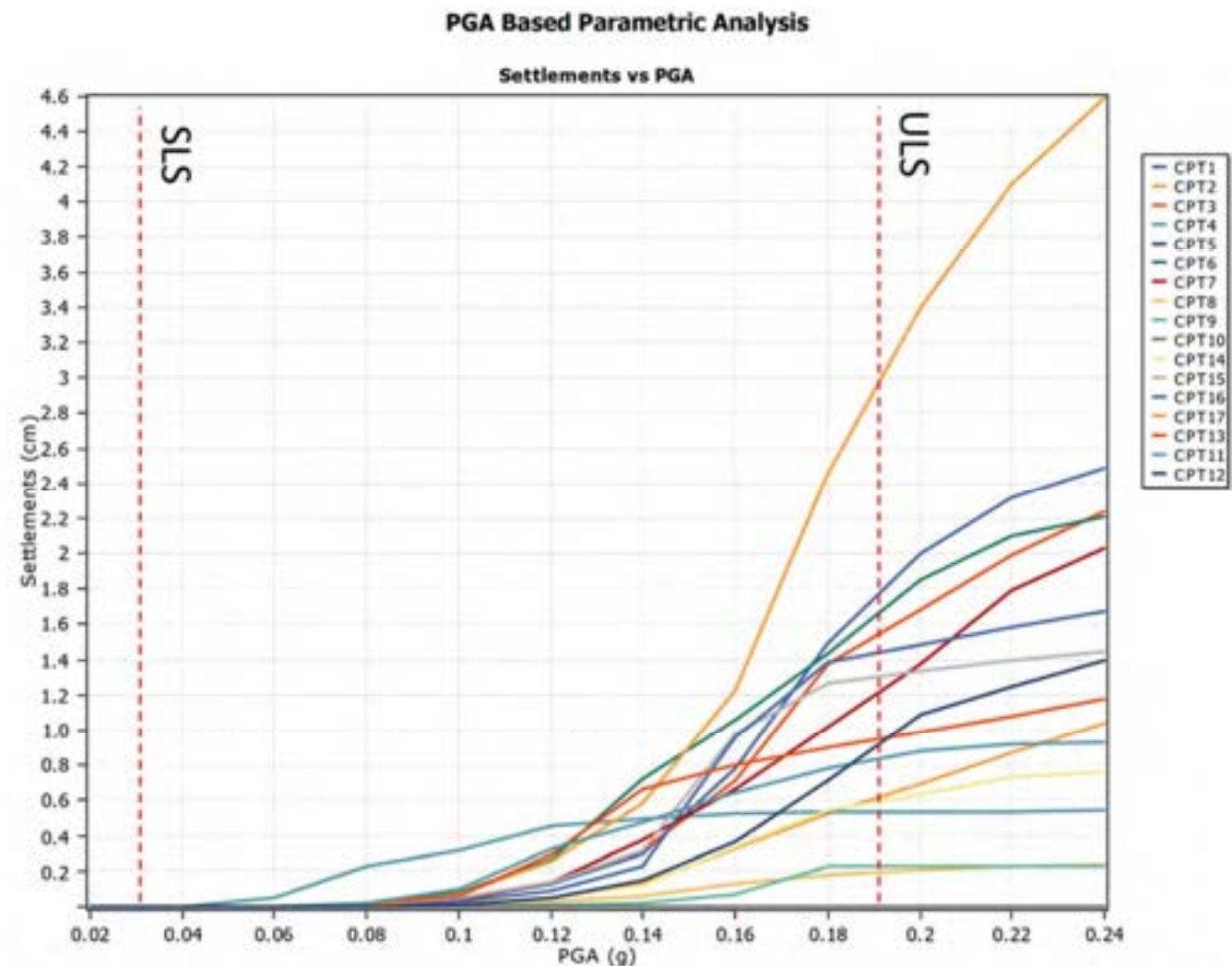


Figure 6: Predicted settlement at each CPT location across a continuous PGA range.

8.6 Slope Instability

Geotechnical regions have been formed to classify the susceptibility of the subject area to slope failure. These follow the geomorphic regions in Section 7.2 which may be used to qualify the slope instability hazard at the site.

Region A

Region A is characterised by flat or gently inclined land without significant relief variation (Figure 7). This region has been assessed as stable based on the flat topography and lack of evidence for slope failures.



Figure 7: Characteristic flat ground of Region A. A minor ephemeral stream channel is shown centre right, with a basaltic boulder centre left.

Region B

Region B represents both the steep margins of the Kerikeri River as well as the steep area in the east of the subject area. Large deep-seated slope instability is not expected to occur within this region, however surficial movement of soil may occur. Steep cliffs are present within this region, forming on the interface between Regions A and B where overland flow paths intersect the boundary (Figure 8). Regression of these steep cliffs is considered unlikely given the presence of high strength basalt through the entire cliff exposure. Minor talus with a diameter of less than 1m was present at the base of the cliffs indicating prolonged stability.



Figure 8: Columnar jointed basalt forming vertical exposures and waterfalls along the interface between Regions A and B.

The non-vertical slopes along the interface of Regions A and B appear stable and do not show evidence of previous deep-seated major failure (Figure 9). Terracettes are found on many of these slopes, indicative of surface creep and the presence of expansive soils. These slopes are typically 25° and consist of boulder-containing residual soil. Without specific numerical slope stability analysis, a setback of 15m should be maintained from any slope of 1V:2H for future developments. This setback may be revised in the future with specific testing and numerical slope stability analysis if desired.



Figure 9: Typical slopes along the interface between Regions A and B. Terracettes are visible along these slopes where vegetation permits.

8.7 Compressible Ground and Consolidation Settlement

CPTs completed across the subject area identified some soft potentially compressible soils across the entire tested site. These compressible soils were also apparent in hand auger testing where regions of limited soil recovery were found, in addition to organics. The hand auger testing was performed near CPT locations to corroborate the upper lithologies and their soil parameters.

A preliminary, simplified 1-dimensional consolidation analysis was undertaken for each of the CPTs performed across the subject area. The software CPeT-IT Version 3 was used to determine the method of analysis which calculates the magnitude of two settlement components: primary (consolidation) and secondary (creep) settlement. The primary settlement determines the settlement which occurs through consolidation, while secondary settlement can be interpreted as an approximation of creep settlement. The calculated creep settlements show the amount of settlement expected over a 6-month period and over a 50-year period (600 months) as per the New Zealand Building Code B1/VM4 Appendix B.

The software determines the relationship between soil stiffness and cone tip resistance (q_c), which then calculates an estimate of static settlement per test location. The input parameters for each test were based on average house parameters for the foundation lengths and widths, rectangular foundation system, where we determine the L/B (length/breadth) ratio, apply a footing pressure which is conservatively assumed by the geotechnical engineer for the purpose of this analysis, and a depth depending on the results of the soil investigation and foundation design parameters.

We have considered that an applied footing pressure of 10kPa over a square foundation width and length of 12m representative of a typical load exerted by a residential dwelling. Where a large amount of settlement was modelled within the near surface soils an embedment depth for foundations of 200mm was used. This represents the removal of topsoil which occurs during the normal construction procedure.

The settlement derived by 'consolidation' (primary settlement) is largely influenced by settlement derived by the magnitude of the static load applied to the soil and the greater the load, the more settlement through consolidation occurs. The time for the completion of the consolidation settlement to occur is dependent on the speed at which water can freely flow from the soil. It can be assumed that consolidation is generally complete when the overall predicted settlement has been 90% completed. The settlement derived by 'creep' is settlement which occurs under the weight of the soil and is independent of static loading, therefore will continue to settle through the process of material decay, and it is hard to predict what is to be expected beyond a 50-year period which is used for the threshold for the design life of the proposed structures as per the NZ Building Code. The total overall predicted settlement includes both the primary and secondary components. The settlement analysis outputs are presented in Appendix E.

8.7.1 Settlement Analysis

Settlement occurs variably across the soil profile for each is likely representative of the bedded nature of the alluvial material encountered on the site. The Kerikeri Volcanic soils are typically less prone to settlement than alluvial soils at this location. All instances where settlement exceeds 25mm the underlying soils are anticipated to be alluvium. Where the calculated total settlement is below 25mm the average settlement from a standard dwelling load is 7.6mm, allowable under the NZ Building Code.

The regions within the subject area proximal to both CPT06 and CPT10 and north of the Kerikeri River are prone to settlement and will require additional engineering to make suitable for construction. The results of the analysis outside of these areas identified that the soils did not exceed the differential settlement tolerance of 25mm over a 6m horizontal distance as per the NZ Building Code so no further detailed analysis is considered necessary.

Table 3: Estimated settlement for a standard dwelling load for each CPT.

CPT #	CPT Depth (m bgl)	Footing Pressure (kPa)	Total Primary Settlement (mm)	Total Secondary Settlement (mm)	Total Calculated Settlement (mm)
CPT-01	5.05	10	1	0.5	8
CPT-02	6.02	10	2	2	4
CPT-03	7.04	10	2	2	4
CPT-04	4.17	10	7	4	11
CPT-05	2.05	10	0.5	0	0.5
CPT-06	9.48	10	25	65	90
CPT-07	6.73	10	9	6	16
CPT-08	4.67	10	9	6	16
CPT-09	4.63	10	4	3	7
CPT-10	3.36	10	42	33	75
CPT-11	4.55	10	3	1	4
CPT-12	5.62	10	9	6	15
CPT-13	5.06	10	2	1	3
CPT-14	3.95	10	1	1	2
CPT-15	4.98	10	11	19	30
CPT-16	4.47	10	20	22	42
CPT-17	7.51	10	50	90	140

8.8 Ground Shrinkage and Swelling Potential

Plastic soils can be subject to shrinkage and swelling due to soil moisture content variations which can result in apparent heaving and settlement of buildings, particularly between seasons. The magnitude of movement is a function of the reactivity of the clay minerals and the amount of clay as a fraction near surface soils. These factors are in turn associated with geological origin and the degree and nature of in-situ weathering.

The near surface soils at the site were found to be highly plastic and predominantly clay. Based on our experience and past laboratory testing in similar geological conditions, we expect that the soils are moderately to highly expansive. The sites are therefore outside the definition of 'Good Ground' as defined in NZS3604 (2011).

Without further site-specific laboratory testing to classify the soils, we recommended that Class H (highly reactive) is assumed.

8.9 Conclusions

From our assessment of the natural hazard and ground deformation risks presented to the proposed development we consider that the site is suitable for development, provided that the recommendations given in Section 9 are adhered to.

9 DEVELOPMENT RECOMMENDATIONS

Without further site-specific laboratory testing to classify the soils, we recommended that design of concrete slab foundations assume Class H1 (highly reactive) in accordance with AS2870 (2011).

Standard NZS3604 (2011) piled foundations are expected to be suitable, however the piles will need to be deepened to 900mm below cleared ground level to account for the highly expansive soils at the site.

While reticulated wastewater is expected to be installed, we consider the soil across the site to be classified as a category 4 'light clay' in accordance with AS/NZS1547 (2012) for onsite effluent disposal.

10 SPILLWAY DESIGN

It is understood that the spillway is intended to utilise the high hydraulic head potential provided by the waterfall found within the undeveloped bush region at the east of the subject area. The escarpment forming the waterfall consists solely of Kerikeri Volcanics columnar jointed basalt (Figure 8). This waterfall is geologically analogous to the nearby Rainbow Falls, which represents a similar geological exposure. Headscarp retreat is considered highly unlikely during periods of high flow given the thickness and strength of the basalt at the waterfall. A limited amount of talus was present at the base of the waterfall. It is probable that during the passage of floodwater over this waterfall loose sediment impounded below the waterfall will be mobilised and enter the Kerikeri River. The magnitude and effects of this process are beyond the scope of this assessment.

Basalt outcrops at the base of the stream feeding the waterfall and continues to outcrop for approximately 150m upstream. It is anticipated that the depth to basalt gradually increases in a northwest direction along the spillway axis but will generally be under 5m. If the desired spillway depths extend below the depth of the soil profile strong unweathered basalt will be encountered. This material may be unsuited to machine excavation and may require blasting to remove.

11 LIMITATIONS

This report has been prepared exclusively for Kiwi Fresh Orange Company Limited with respect to the particular brief given to us. Information, opinions, and recommendations contained in it cannot be used for any other purpose or by any other entity without our review and written consent. LDE Ltd accepts no liability or responsibility whatsoever for or in respect of any use or reliance upon this report by any third party.

This report was prepared in general accordance with current standards, codes and practice at the time of this report. These may be subject to change.

Opinions given in this report are based on visual methods, and subsurface investigations at discrete locations. 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 that described in this report.

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

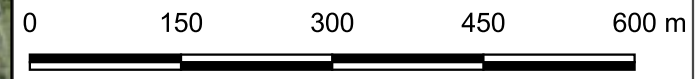
APPENDIX A

GEOTECHNICAL INVESTIGATION PLAN



LEGEND

- Boundary
- Major - 5m
- Geotechnical Testing
 - + Hand auger borehole
 - ▽ CPT



SCALE A3: 1:7500

- NOTES
1. Aerial basemap and property boundaries sourced from LINZ Data Service (CC-BY 4.0).
 2. Topographic contours derived from NRC LiDAR DEM (2018-2019 survey).
 3. Investigation locations shown approximately only.

CLIENT
Kiwi Fresh Orange Company Ltd

PROJECT
Kerikeri Land Development Plan Review

DRAWING TITLE
Interpreted Geologic Map



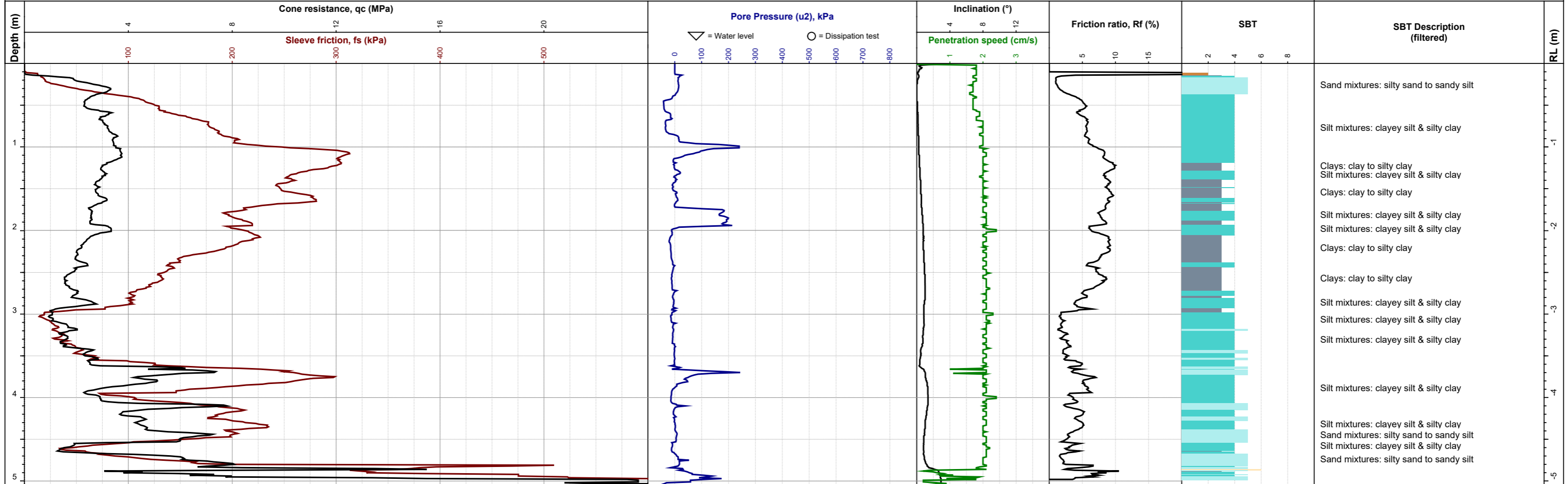
PROJECT REF 21568	DRAWING REF G01	REVISION B
DATE 15/06/2022	PREPARED BY JMN	CHECKED BY GH
FILE PATH M-FILES\LDE - Project\Base Data v3.1.ggz		

APPENDIX B

GEOTECHNICAL INVESTIGATION DATA

Cone Penetration Test (CPTu) Log

Test ID: **CPT-01**



EOH: 5.05m

Client: LDE Land Development & Engineering

Project: Geotechnical Investigation

Location: Kerikeri Land Development Plan Review

Remarks:
Collapse of hole at 3.81m prevented measurement of ground water.
Test according to ISO 22476-1:12

Termination Reason:
High cone resistance

Northing: 6101982mN
Easting: 1685533mE
System: NZTM
Elevation: Ground
Located By: Pagani GPS
Location:

Operator: JC
Rig: Pagani TG63-150
Cone ID: MKs651
Type: Comp. piezo cone
Cone Area: 10 cm²
Sleeve Area: 150 cm²
Area Ratio: 0.78

Soil Behaviour Type - Robertson 1986

0	Undefined	5	Sand mixtures: silty sand to sandy silt
1	Sensitive fine-grained	6	Sands: clean sands to silty sands
2	Clay - organic soil	7	Dense sand to gravelly sand
3	Clays: clay to silty clay	8	Stiff sand to clayey sand
4	Silt mixtures: clayey silt & silty clay	9	Stiff fine-grained

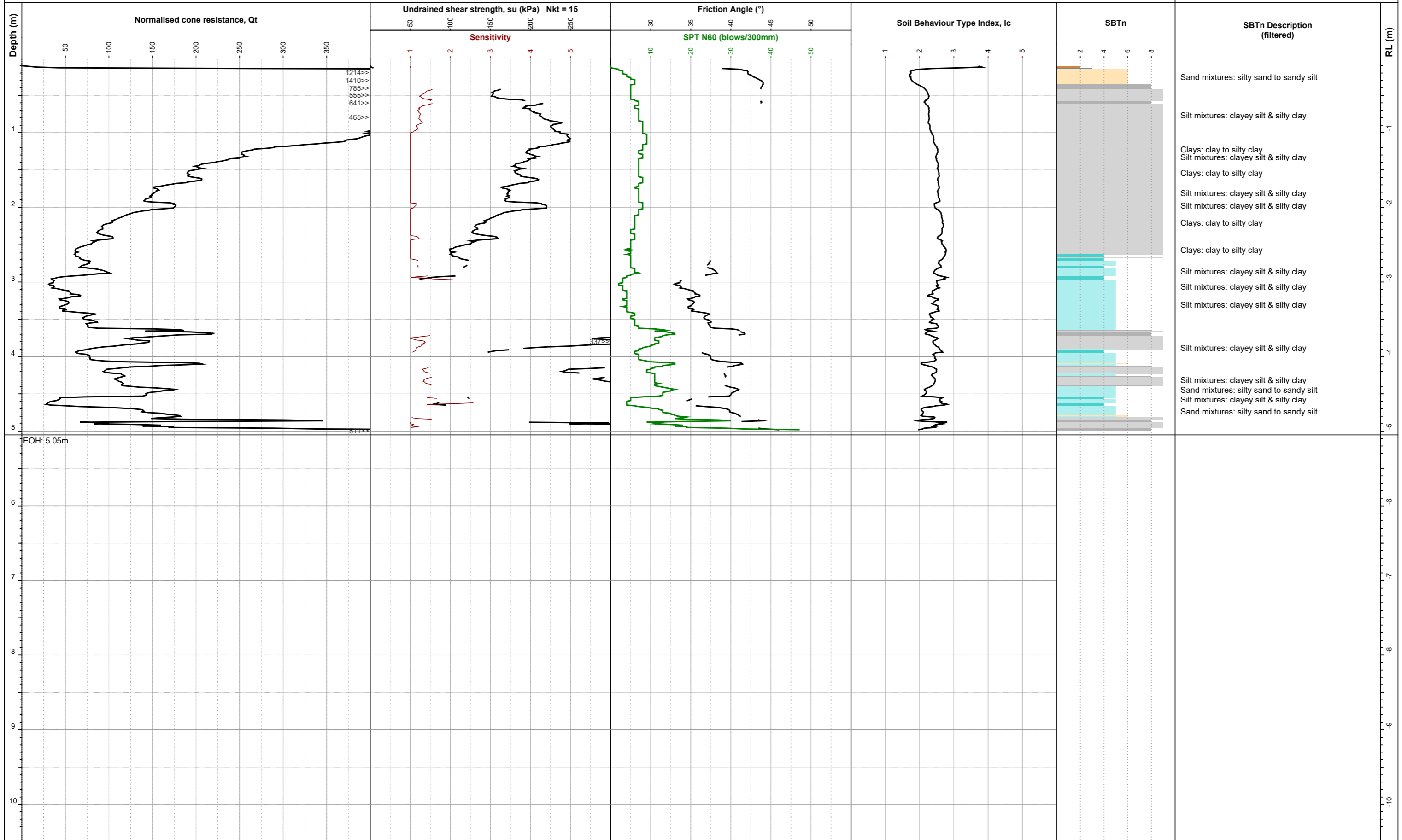
Test ID:
CPT-01

Project ID: 21568
Depth: 5.05m
Sheet: 1 of 1
Date: 06/04/2022



Cone Penetration Test (CPTu) Parameter Log

Test ID: **CPT-01**



Client: LDE Land Development & Engineering
Project: Geotechnical Investigation
Location: Kerikeri Land Development Plan Review

Remarks:
 Collapse of hole at 3.81m prevented measurement of ground water.
 Test according to ISO 22476-1:12
Termination Reason:
 High cone resistance

Northing: 6101982mN
Easting: 1685533mE
System: NZTM
Elevation: Ground
Located By: Pagani GPS
Location:

Operator: JC
Rig: Pagani TG63-150
Cone ID: MKs651
Type: Comp. piezo cone
Cone Area: 10 cm²
Sleeve Area: 150 cm²
Area Ratio: 0.78

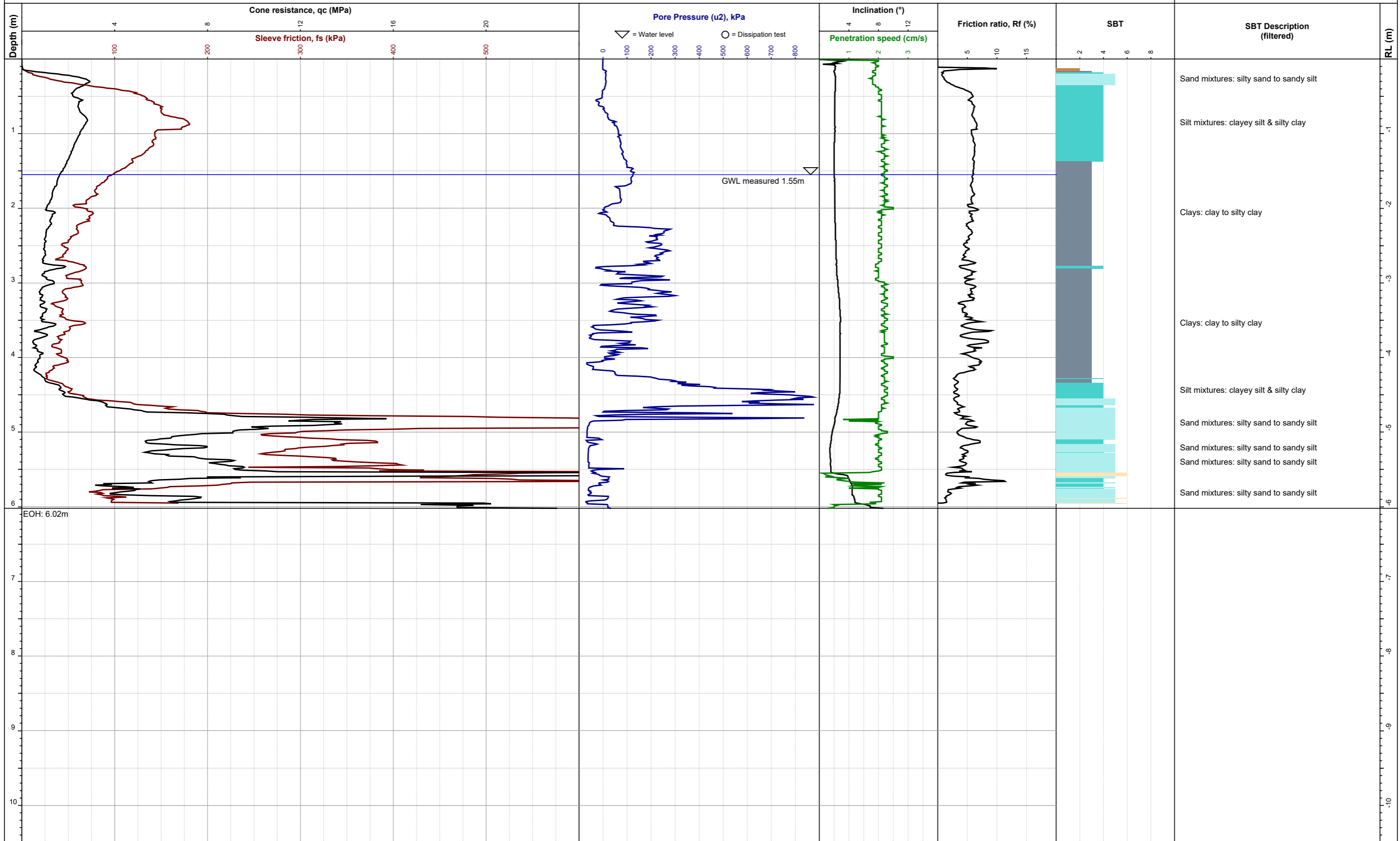
Soil Behaviour Type - Robertson 1986

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1	Sensitive fine-grained	6	Sands: clean sands to silty sands
2	Clay - organic soil	7	Dense sand to gravelly sand
3	Clays: clay to silty clay	8	Stiff sand to clayey sand
4	Silt mixtures: clayey silt & silty clay	9	Stiff fine-grained

Test ID: **CPT-01**
Project ID: 21568
Depth: 5.05m
Sheet: 1 of 1
Date: 06/04/2022

Cone Penetration Test (CPTu) Log

Test ID: **CPT-02**



Client: LDE Land Development & Engineering
Project: Geotechnical Investigation
Location: Kerikeri Land Development Plan Review

Remarks:
 Ground water level located at 1.55m
 Test according to ISO 22476-1:12

Termination Reason:
 High cone resistance

Northing: 6101934mN
Easting: 1685236mE
System: NZTM
Elevation: Ground
Located By: Pagani GPS
Location:

Operator: JC
Rig: Pagani TG63-150
Cone ID: MKs651
Type: Comp. piezo cone
Cone Area: 10 cm²
Sleeve Area: 150 cm²
Area Ratio: 0.78

Soil Behaviour Type - Robertson 1986

0	Undefined	5	Sand mixtures: silty sand to sandy silt
1	Sensitive fine-grained	6	Sands: clean sands to silty sands
2	Clay - organic soil	7	Dense sand to gravelly sand
3	Clays: clay to silty clay	8	Stiff sand to clayey sand
4	Silt mixtures: clayey silt & silty clay	9	Stiff fine-grained

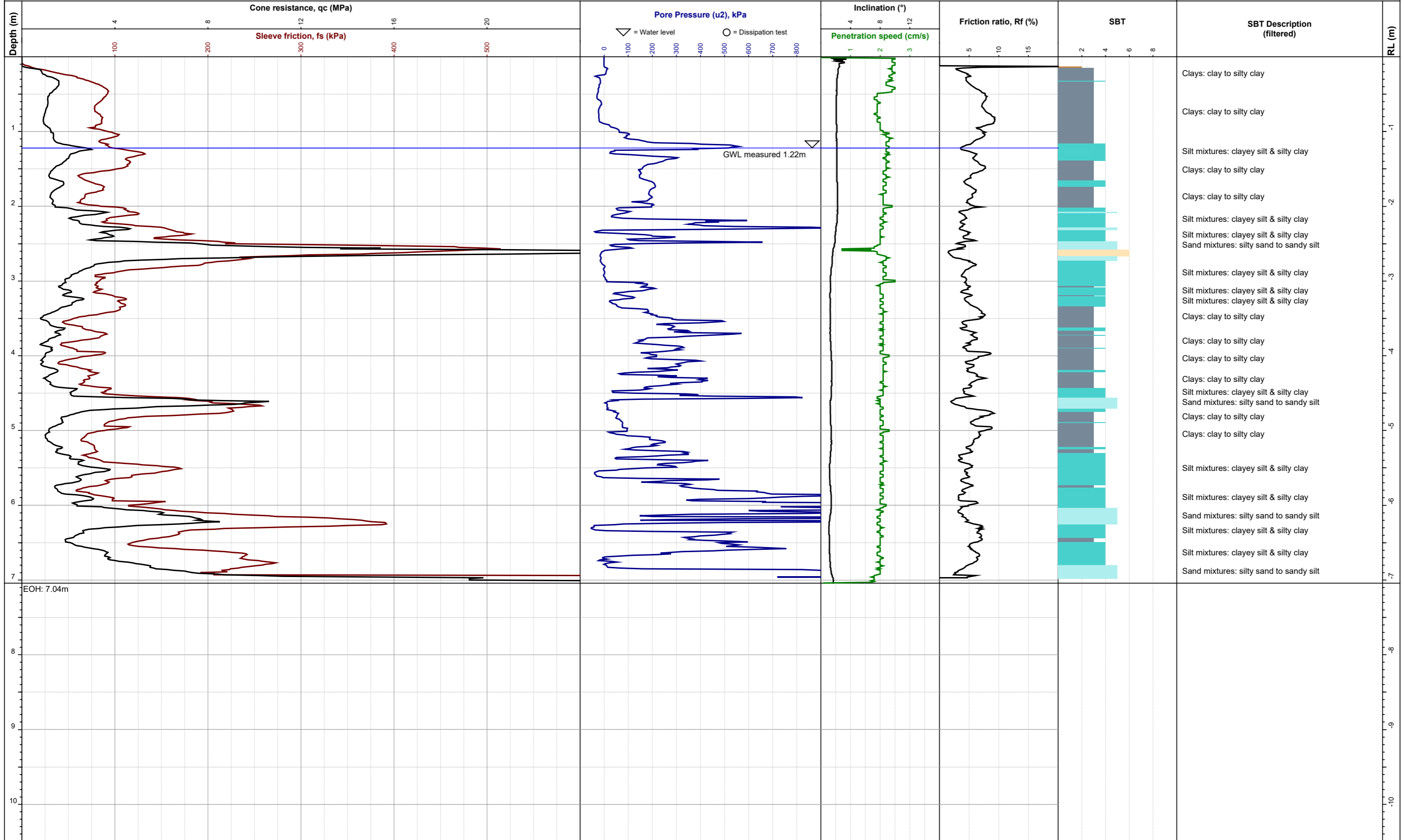
Test ID: **CPT-02**

Project ID: 21568
Depth: 6.02m
Sheet: 1 of 1
Date: 06/04/2022



Cone Penetration Test (CPTu) Log

Test ID: **CPT-03**



Client: LDE Land Development & Engineering
Project: Geotechnical Investigation
Location: Kerikeri Land Development Plan Review

Remarks:
 Ground water level located at 1.22m
 Test according to ISO 22476-1:12

Termination Reason:
 High cone resistance

Northing: 6101938mN
Easting: 1685123mE
System: NZTM
Elevation: Ground
Located By: Pagani GPS
Location:

Operator: JC
Rig: Pagani TG63-150
Cone ID: MKs651
Type: Comp. piezo cone
Cone Area: 10 cm²
Sleeve Area: 150 cm²
Area Ratio: 0.78

Soil Behaviour Type - Robertson 1986

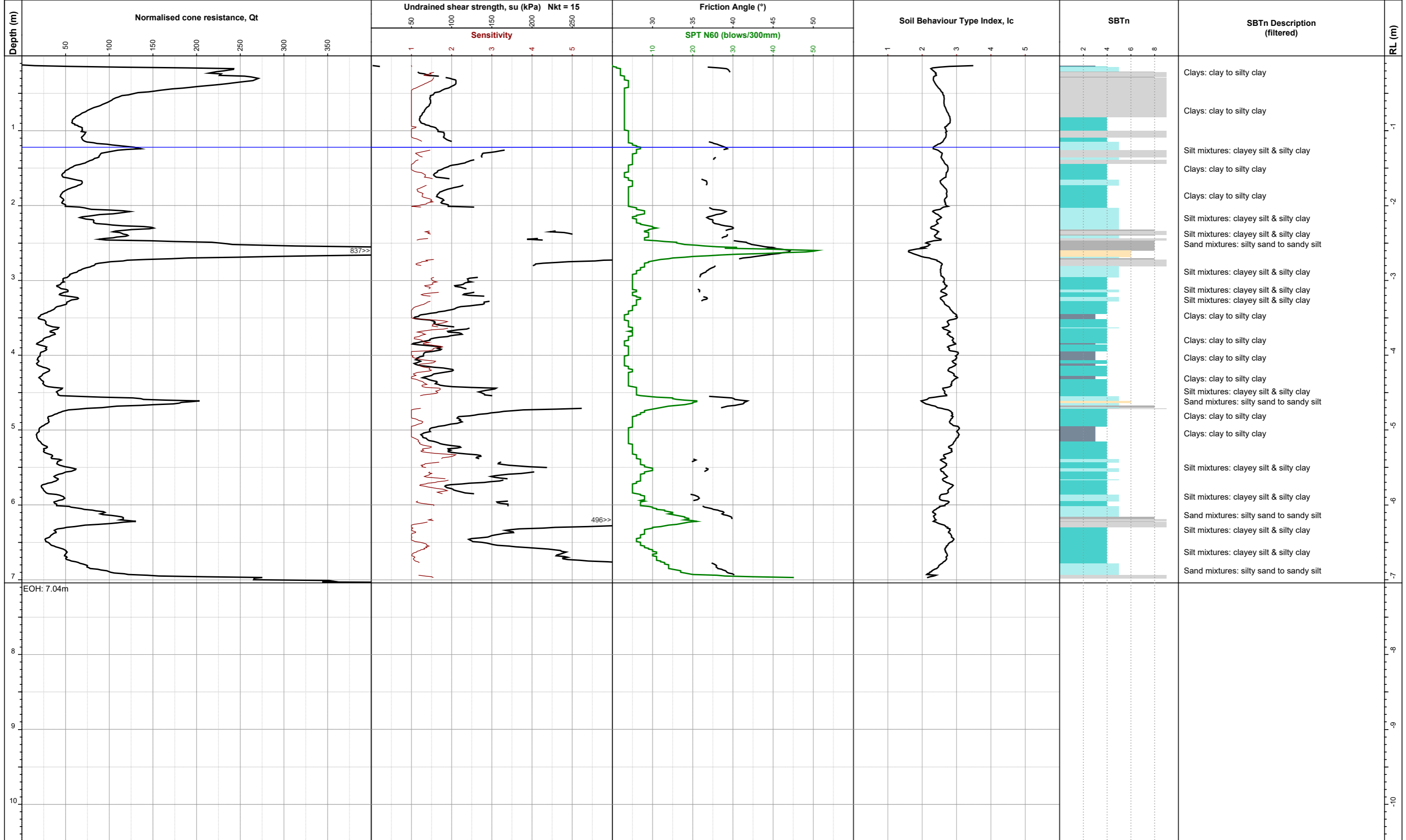
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2	Clay - organic soil	7	Dense sand to gravelly sand
3	Clays: clay to silty clay	8	Stiff sand to clayey sand
4	Silt mixtures: clayey silt & silty clay	9	Stiff fine-grained

Test ID: **CPT-03**

Project ID: 21568
Depth: 7.04m
Sheet: 1 of 1
Date: 06/04/2022

Cone Penetration Test (CPTu) Parameter Log

Test ID: **CPT-03**



Client: LDE Land Development & Engineering
Project: Geotechnical Investigation
Location: Kerikeri Land Development Plan Review

Remarks:
 Ground water level located at 1.22m
 Test according to ISO 22476-1:12

Termination Reason:
 High cone resistance

Northing: 6101938mN
Easting: 1685123mE
System: NZTM
Elevation: Ground
Located By: Pagani GPS
Location:

Operator: JC
Rig: Pagani TG63-150
Cone ID: MKs651
Type: Comp. piezo cone
Cone Area: 10 cm²
Sleeve Area: 150 cm²
Area Ratio: 0.78

Soil Behaviour Type - Robertson 1986

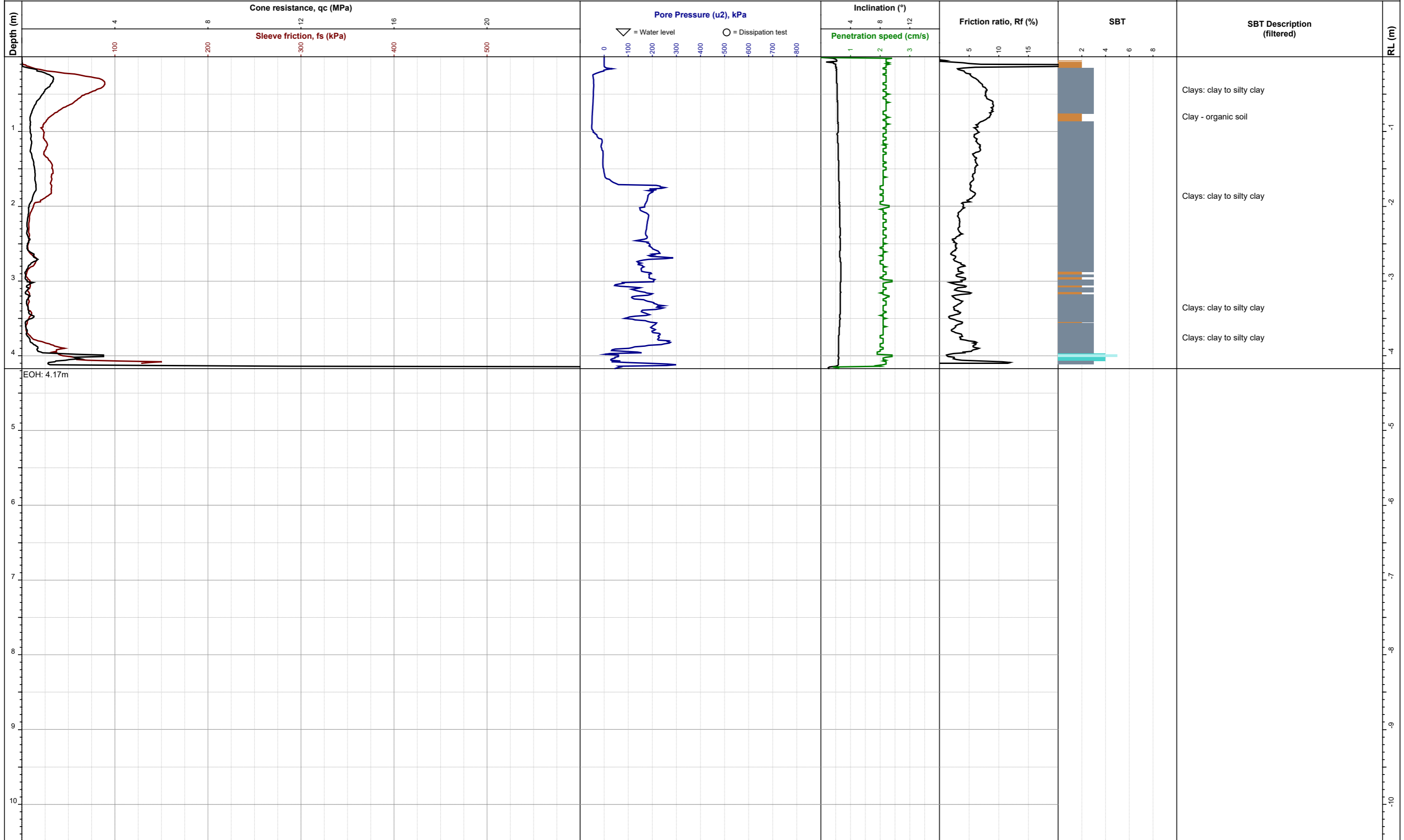
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2	Clay - organic soil	7	Dense sand to gravelly sand
3	Clays: clay to silty clay	8	Stiff sand to clayey sand
4	Silt mixtures: clayey silt & silty clay	9	Stiff fine-grained

Test ID: **CPT-03**

Project ID: 21568
Depth: 7.04m
Sheet: 1 of 1
Date: 06/04/2022

Cone Penetration Test (CPTu) Log

Test ID: **CPT-04**



Client: LDE Land Development & Engineering
Project: Geotechnical Investigation
Location: Kerikeri Land Development Plan Review

Remarks:
 Ground water level located at surface
 Test according to ISO 22476-1:12

Termination Reason:
 High cone resistance

Northing: 6102162mN
Easting: 1684996mE
System: NZTM
Elevation: Ground
Located By: Pagani GPS
Location:

Operator: JC
Rig: Pagani TG63-150
Cone ID: MKs651
Type: Comp. piezo cone
Cone Area: 10 cm²
Sleeve Area: 150 cm²
Area Ratio: 0.78

Soil Behaviour Type - Robertson 1986

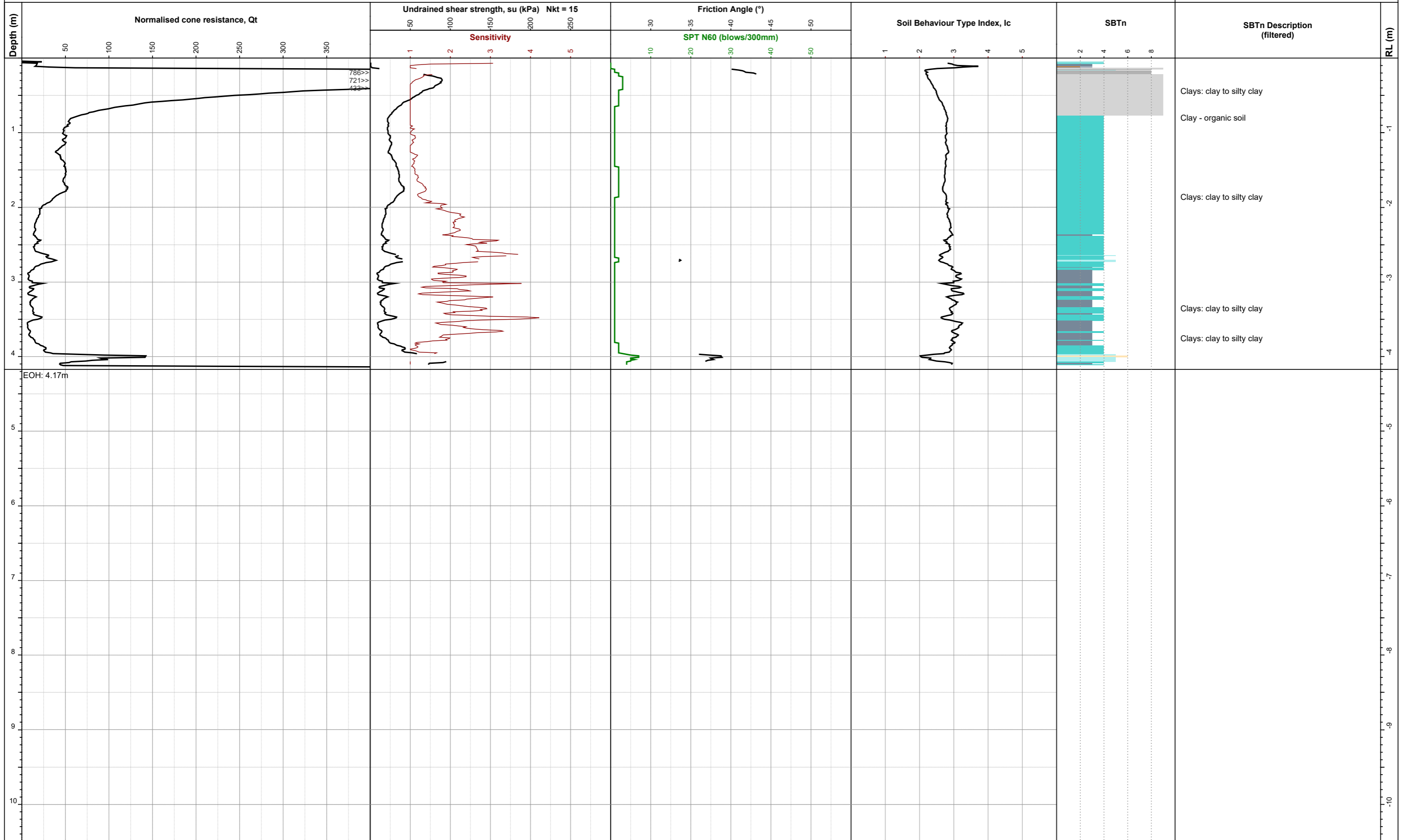
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2	Clay - organic soil	7	Dense sand to gravelly sand
3	Clays: clay to silty clay	8	Stiff sand to clayey sand
4	Silt mixtures: clayey silt & silty clay	9	Stiff fine-grained

Test ID: **CPT-04**

Project ID: 21568
Depth: 4.17m
Sheet: 1 of 1
Date: 06/04/2022

Cone Penetration Test (CPTu) Parameter Log

Test ID: **CPT-04**



Client: LDE Land Development & Engineering
Project: Geotechnical Investigation
Location: Kerikeri Land Development Plan Review

Remarks:
 Ground water level located at surface
 Test according to ISO 22476-1:12

Termination Reason:
 High cone resistance

Northing: 6102162mN
Easting: 1684996mE
System: NZTM
Elevation: Ground
Located By: Pagani GPS
Location:

Operator: JC
Rig: Pagani TG63-150
Cone ID: MKs651
Type: Comp. piezo cone
Cone Area: 10 cm²
Sleeve Area: 150 cm²
Area Ratio: 0.78

Soil Behaviour Type - Robertson 1986

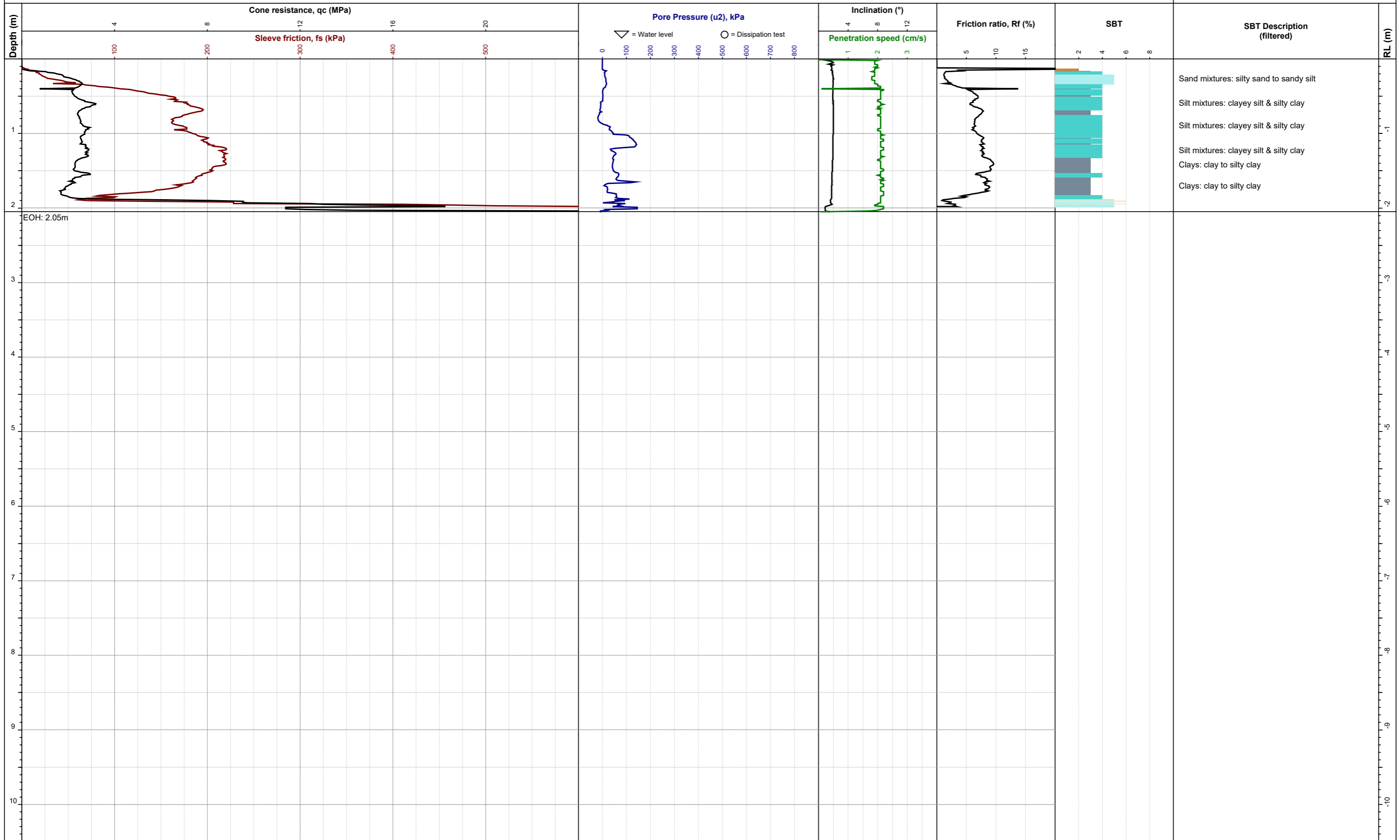
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2	Clay - organic soil	7	Dense sand to gravelly sand
3	Clays: clay to silty clay	8	Stiff sand to clayey sand
4	Silt mixtures: clayey silt & silty clay	9	Stiff fine-grained

Test ID: **CPT-04**

Project ID: 21568
Depth: 4.17m
Sheet: 1 of 1
Date: 06/04/2022

Cone Penetration Test (CPTu) Log

Test ID: **CPT-05**



Client: LDE Land Development & Engineering
Project: Geotechnical Investigation
Location: Kerikeri Land Development Plan Review

Remarks:
 Collapse of hole at 1.89m prevented measurement of ground water.
 Test according to ISO 22476-1:12
Termination Reason:
 High cone resistance

Northing: 6102327mN
Easting: 1685267mE
System: NZTM
Elevation: Ground
Located By: Pagani GPS
Location:

Operator: JC
Rig: Pagani TG63-150
Cone ID: MKs651
Type: Comp. piezo cone
Cone Area: 10 cm²
Sleeve Area: 150 cm²
Area Ratio: 0.78

Soil Behaviour Type - Robertson 1986

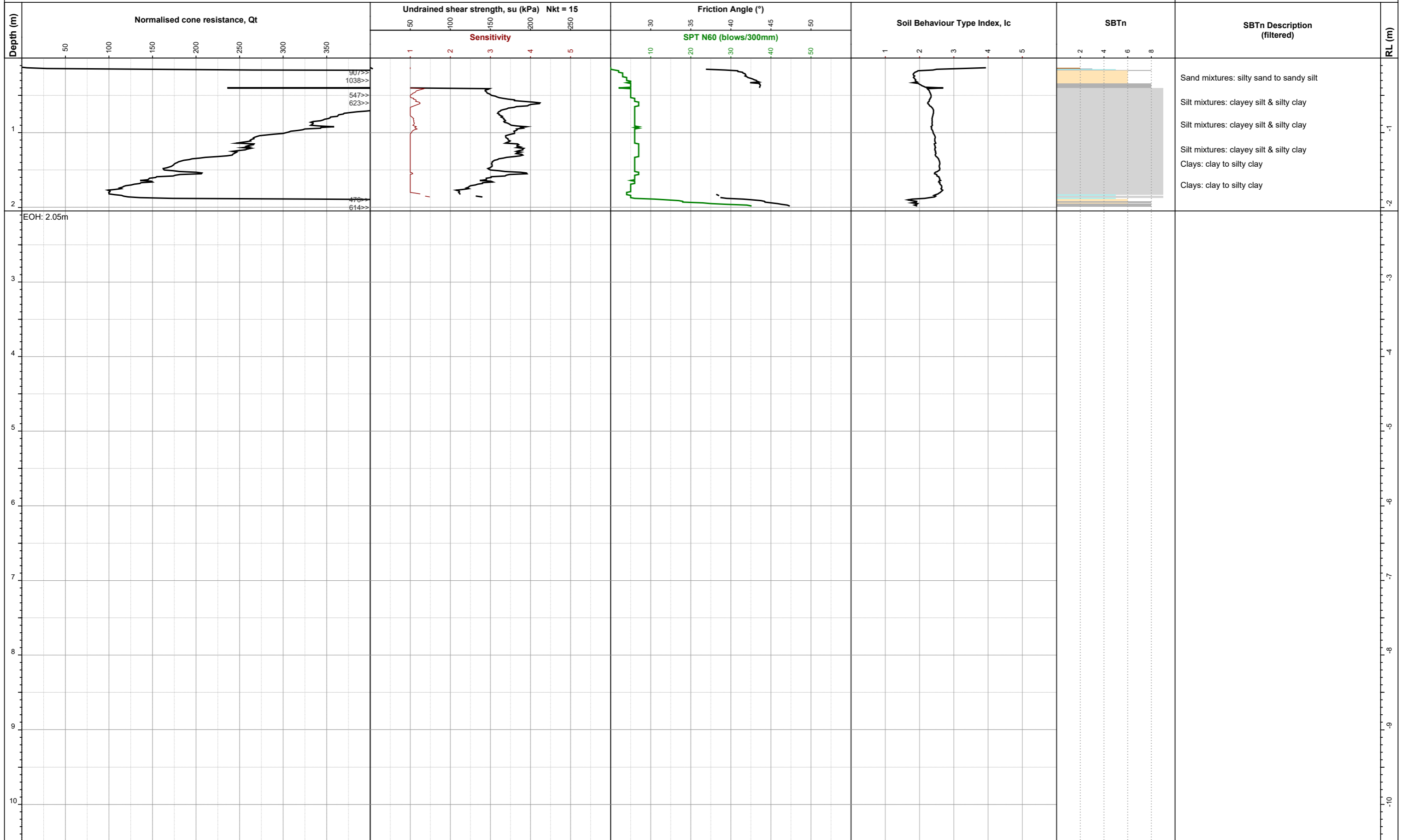
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2	Clay - organic soil	7	Dense sand to gravelly sand
3	Clays: clay to silty clay	8	Stiff sand to clayey sand
4	Silt mixtures: clayey silt & silty clay	9	Stiff fine-grained

Test ID: **CPT-05**
Project ID: 21568
Depth: 2.05m
Sheet: 1 of 1
Date: 06/04/2022



Cone Penetration Test (CPTu) Parameter Log

Test ID: **CPT-05**



Client: LDE Land Development & Engineering
Project: Geotechnical Investigation
Location: Kerikeri Land Development Plan Review

Remarks:
Collapse of hole at 1.89m prevented measurement of ground water.
Test according to ISO 22476-1:12

Termination Reason:
High cone resistance

Northing: 6102327mN
Easting: 1685267mE
System: NZTM
Elevation: Ground
Located By: Pagani GPS
Location:

Operator: JC
Rig: Pagani TG63-150
Cone ID: MKs651
Type: Comp. piezo cone
Cone Area: 10 cm²
Sleeve Area: 150 cm²
Area Ratio: 0.78

Soil Behaviour Type - Robertson 1986

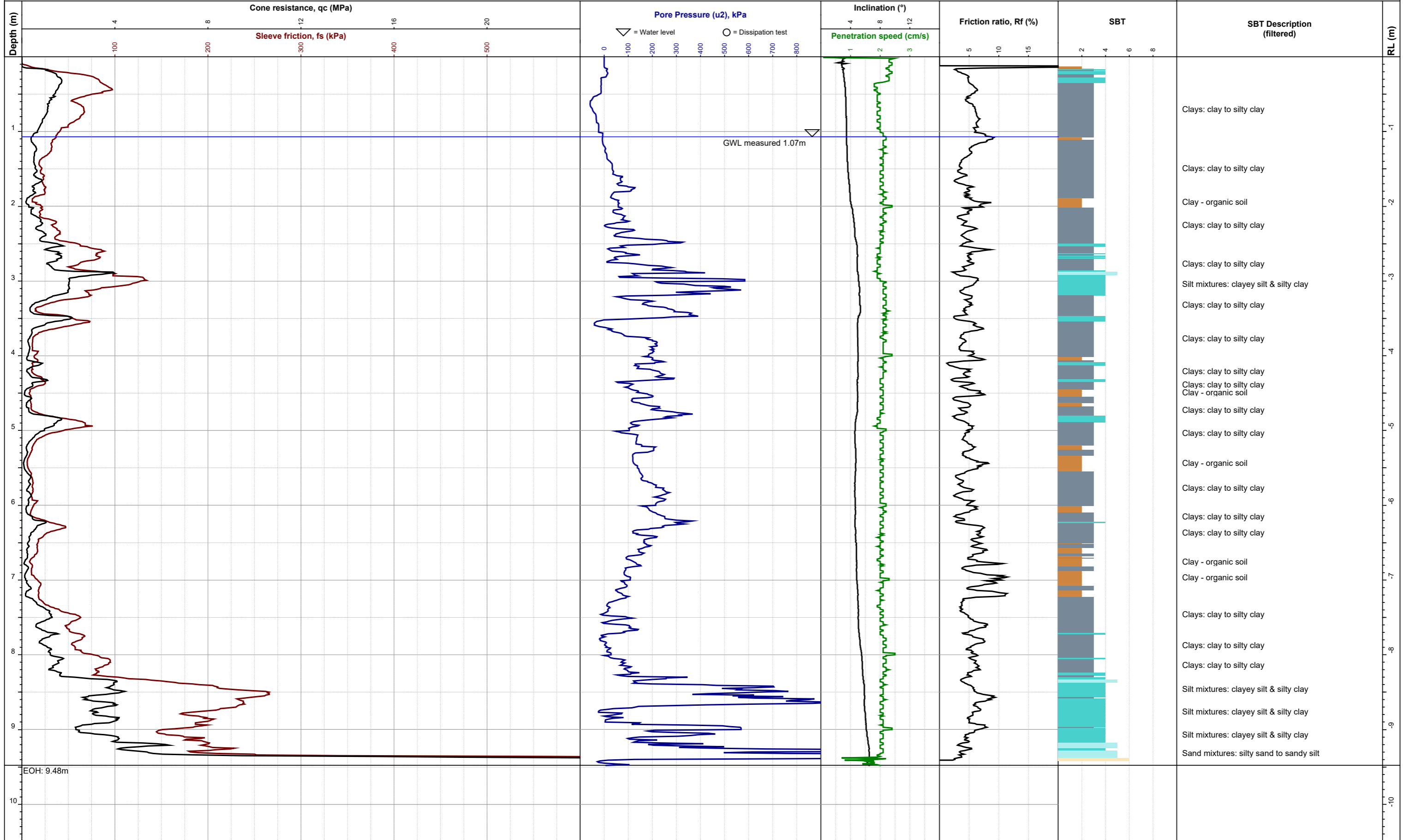
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2	Clay - organic soil	7	Dense sand to gravelly sand
3	Clays: clay to silty clay	8	Stiff sand to clayey sand
4	Silt mixtures: clayey silt & silty clay	9	Stiff fine-grained

Test ID: **CPT-05**

Project ID: 21568
Depth: 2.05m
Sheet: 1 of 1
Date: 06/04/2022

Cone Penetration Test (CPTu) Log

Test ID: **CPT-06**



Client: LDE Land Development & Engineering
Project: Geotechnical Investigation
Location: Kerikeri Land Development Plan Review

Remarks:
 Ground water level located at 1.07m
 Test according to ISO 22476-1:12

Termination Reason:
 High cone resistance

Northing: 6102020mN
Easting: 1684838mE
System: NZTM
Elevation: Ground
Located By: Pagani GPS
Location:

Operator: JC
Rig: Pagani TG63-150
Cone ID: MKs651
Type: Comp. piezo cone
Cone Area: 10 cm²
Sleeve Area: 150 cm²
Area Ratio: 0.78

Soil Behaviour Type - Robertson 1986

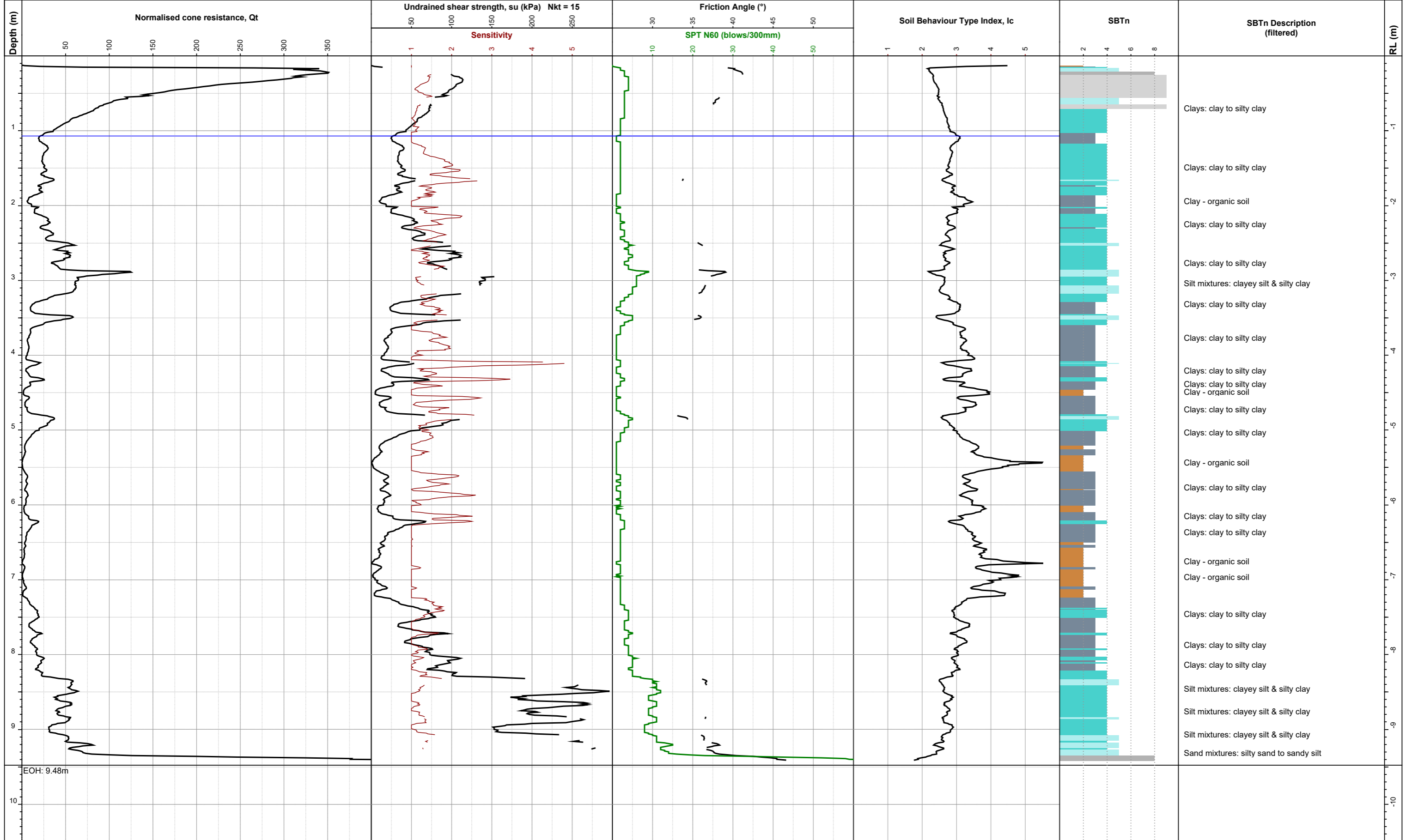
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2	Clay - organic soil	7	Dense sand to gravelly sand
3	Clays: clay to silty clay	8	Stiff sand to clayey sand
4	Silt mixtures: clayey silt & silty clay	9	Stiff fine-grained

Test ID: **CPT-06**

Project ID: 21568
Depth: 9.48m
Sheet: 1 of 1
Date: 07/04/2022

Cone Penetration Test (CPTu) Parameter Log

Test ID: **CPT-06**



EOH: 9.48m



Client: LDE Land Development & Engineering
Project: Geotechnical Investigation
Location: Kerikeri Land Development Plan Review

Remarks:
 Ground water level located at 1.07m
 Test according to ISO 22476-1:12
Termination Reason:
 High cone resistance

Northing: 6102020mN
Easting: 1684838mE
System: NZTM
Elevation: Ground
Located By: Pagani GPS
Location:

Operator: JC
Rig: Pagani TG63-150
Cone ID: MKs651
Type: Comp. piezo cone
Cone Area: 10 cm²
Sleeve Area: 150 cm²
Area Ratio: 0.78

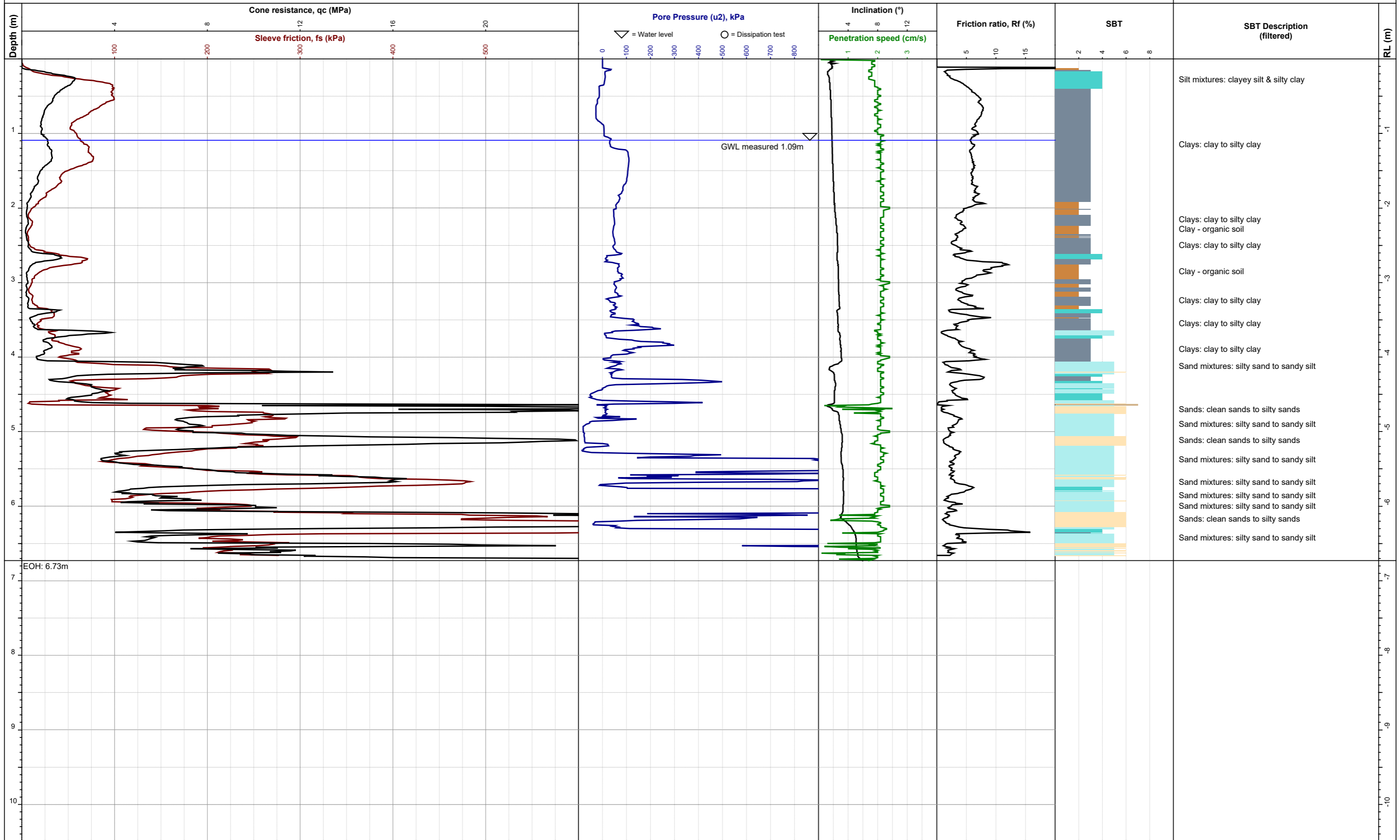
Soil Behaviour Type - Robertson 1986

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2	Clay - organic soil	7	Dense sand to gravelly sand
3	Clays: clay to silty clay	8	Stiff sand to clayey sand
4	Silt mixtures: clayey silt & silty clay	9	Stiff fine-grained

Test ID: **CPT-06**
Project ID: 21568
Depth: 9.48m
Sheet: 1 of 1
Date: 07/04/2022

Cone Penetration Test (CPTu) Log

Test ID: **CPT-07**



Client: LDE Land Development & Engineering
Project: Geotechnical Investigation
Location: Kerikeri Land Development Plan Review

Remarks:
 Ground water level located at 1.09m
 Test according to ISO 22476-1:12

Termination Reason:
 High cone resistance

Northing: 6101987mN
Easting: 1684645mE
System: NZTM
Elevation: Ground
Located By: Pagani GPS
Location:

Operator: JC
Rig: Pagani TG63-150
Cone ID: MKs651
Type: Comp. piezo cone
Cone Area: 10 cm²
Sleeve Area: 150 cm²
Area Ratio: 0.78

Soil Behaviour Type - Robertson 1986

0	Undefined	5	Sand mixtures: silty sand to sandy silt
1	Sensitive fine-grained	6	Sands: clean sands to silty sands
2	Clay - organic soil	7	Dense sand to gravelly sand
3	Clays: clay to silty clay	8	Stiff sand to clayey sand
4	Silt mixtures: clayey silt & silty clay	9	Stiff fine-grained

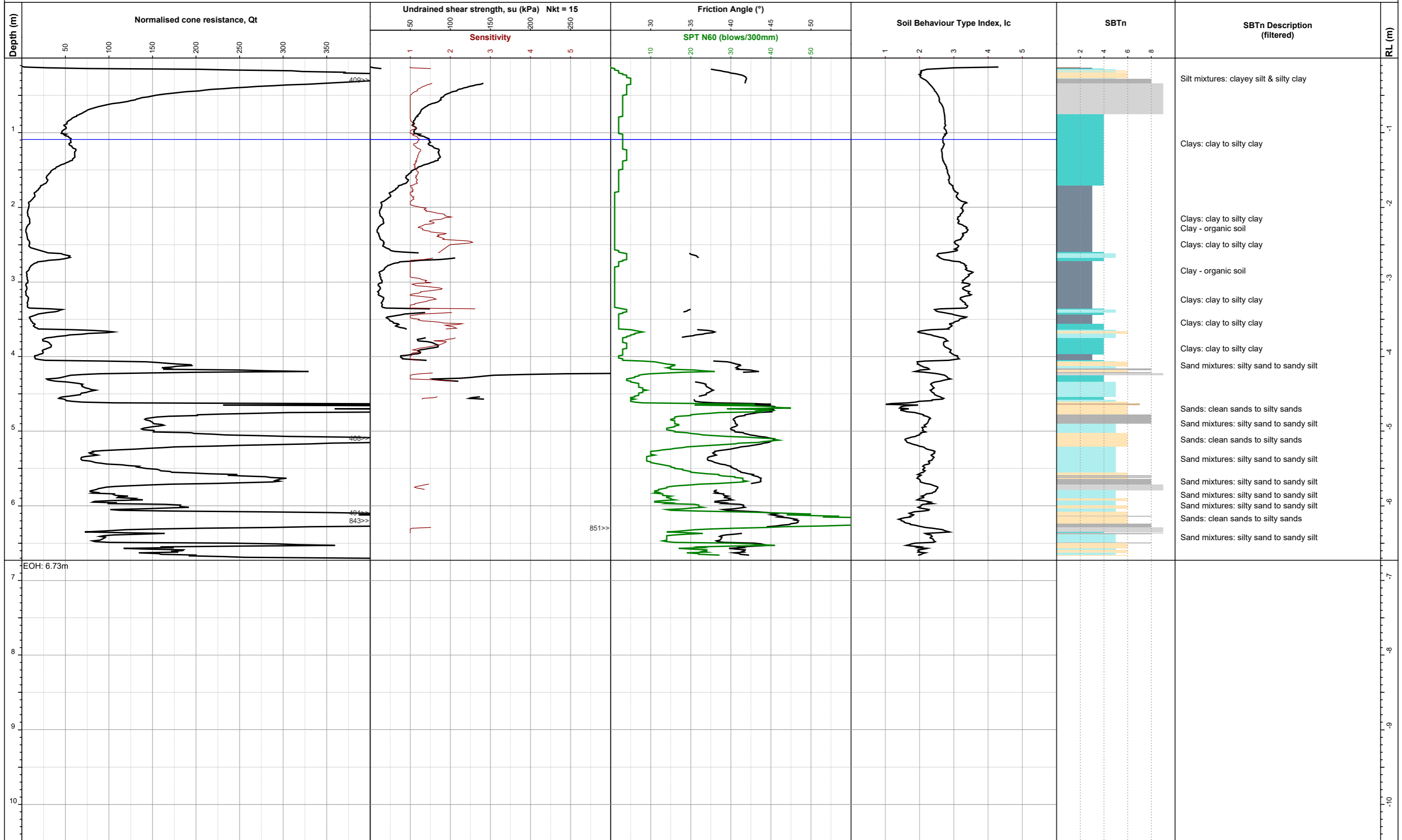
Test ID: **CPT-07**

Project ID: 21568
Depth: 6.73m
Sheet: 1 of 1
Date: 07/04/2022



Cone Penetration Test (CPTu) Parameter Log

Test ID: **CPT-07**



Client: LDE Land Development & Engineering
Project: Geotechnical Investigation
Location: Kerikeri Land Development Plan Review

Remarks:
 Ground water level located at 1.09m
 Test according to ISO 22476-1:12

Termination Reason:
 High cone resistance

Northing: 6101987mN
Easting: 1684645mE
System: NZTM
Elevation: Ground
Located By: Pagani GPS
Location:

Operator: JC
Rig: Pagani TG63-150
Cone ID: MKs651
Type: Comp. piezo cone
Cone Area: 10 cm²
Sleeve Area: 150 cm²
Area Ratio: 0.78

Soil Behaviour Type - Robertson 1986

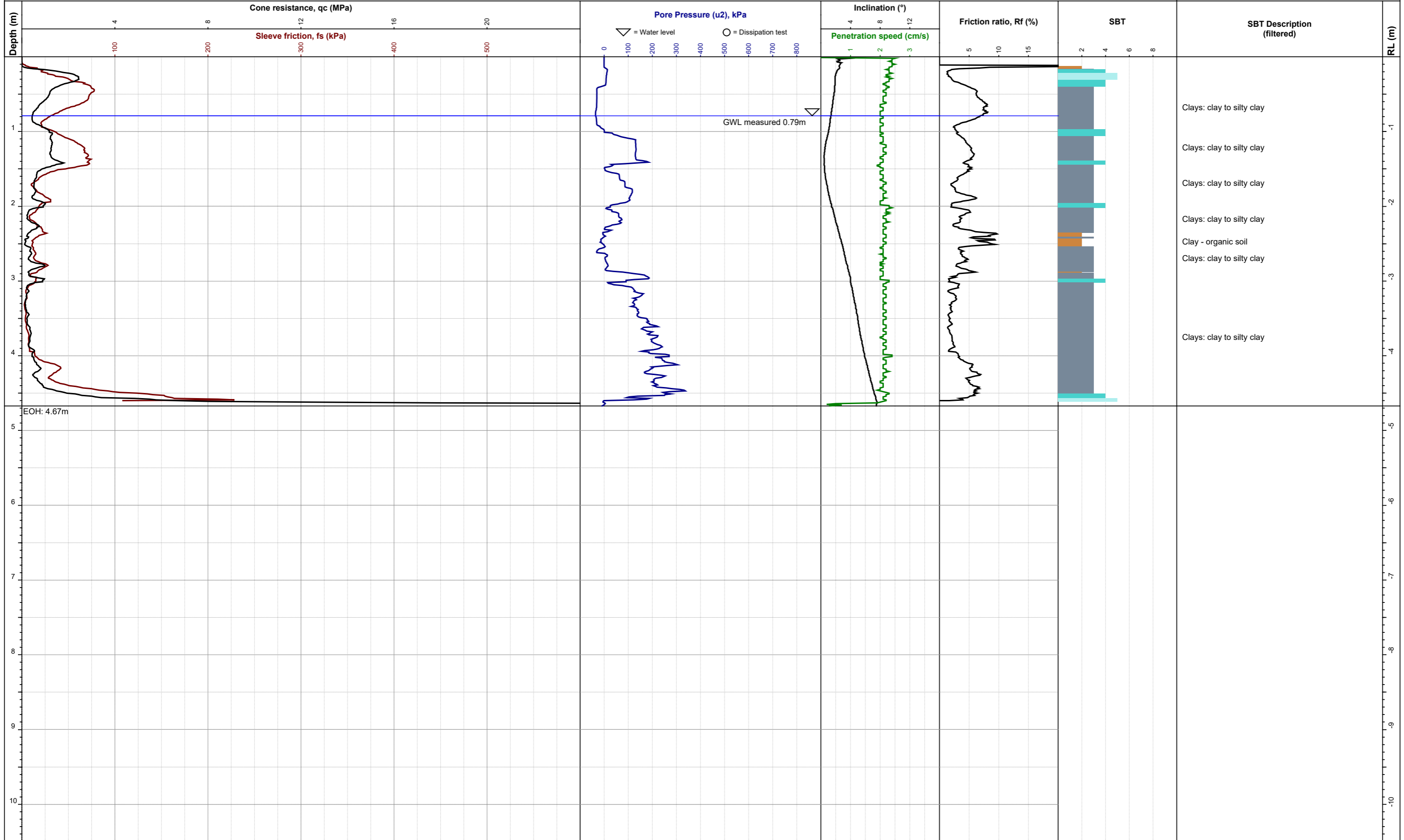
0	Undefined	5	Sand mixtures: silty sand to sandy silt
1	Sensitive fine-grained	6	Sands: clean sands to silty sands
2	Clay - organic soil	7	Dense sand to gravelly sand
3	Clays: clay to silty clay	8	Stiff sand to clayey sand
4	Silt mixtures: clayey silt & silty clay	9	Stiff fine-grained

Test ID: **CPT-07**

Project ID: 21568
Depth: 6.73m
Sheet: 1 of 1
Date: 07/04/2022

Cone Penetration Test (CPTu) Log

Test ID: **CPT-08**



Client: LDE Land Development & Engineering
Project: Geotechnical Investigation
Location: Kerikeri Land Development Plan Review

Remarks:
 Ground water level located at 0.79m
 Test according to ISO 22476-1:12

Termination Reason:
 High cone resistance

Northing: 6101910mN
Easting: 1684345mE
System: NZTM
Elevation: Ground
Located By: Pagani GPS
Location:

Operator: JC
Rig: Pagani TG63-150
Cone ID: MKs651
Type: Comp. piezo cone
Cone Area: 10 cm²
Sleeve Area: 150 cm²
Area Ratio: 0.78

Soil Behaviour Type - Robertson 1986

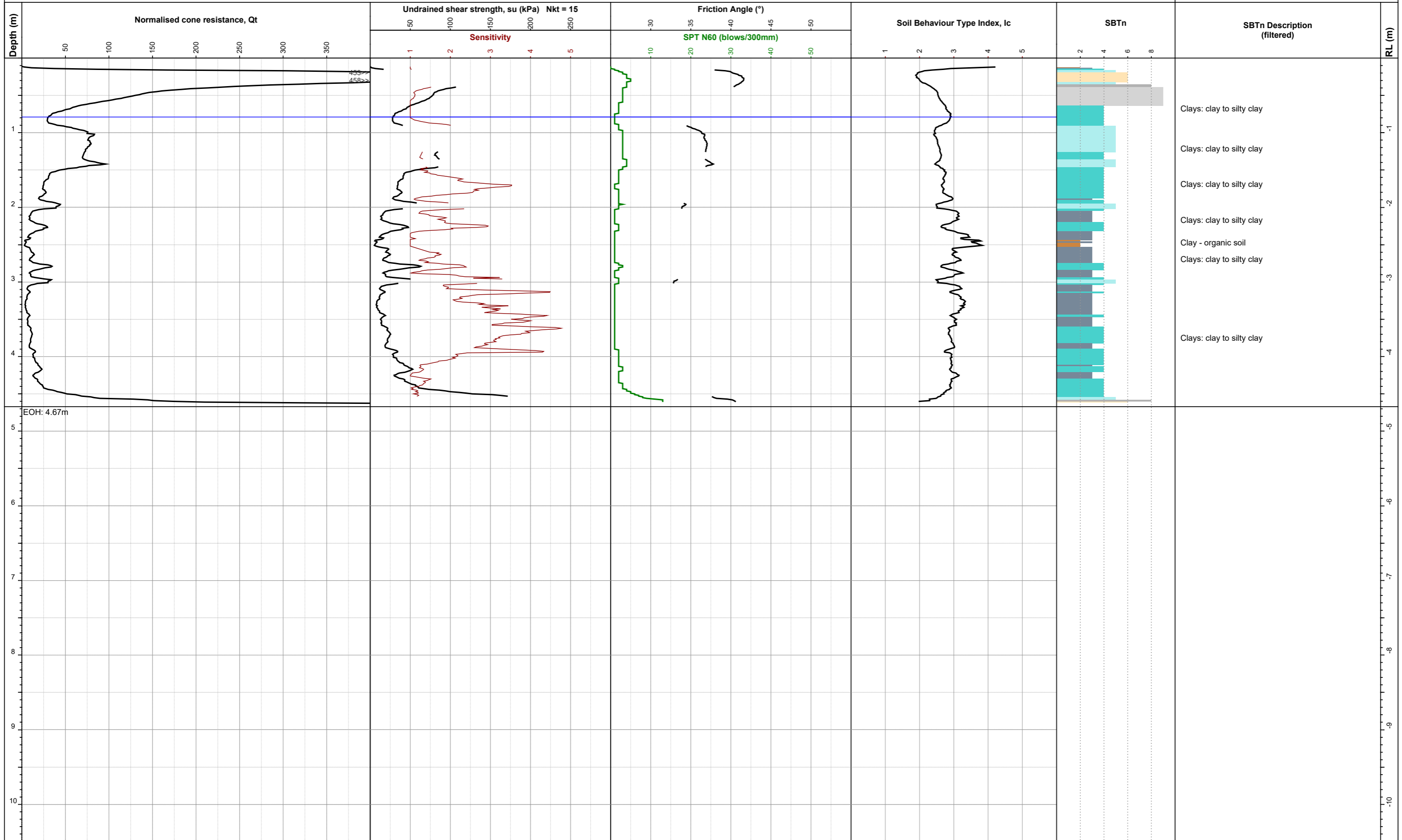
0	Undefined	5	Sand mixtures: silty sand to sandy silt
1	Sensitive fine-grained	6	Sands: clean sands to silty sands
2	Clay - organic soil	7	Dense sand to gravelly sand
3	Clays: clay to silty clay	8	Stiff sand to clayey sand
4	Silt mixtures: clayey silt & silty clay	9	Stiff fine-grained

Test ID: **CPT-08**

Project ID: 21568
Depth: 4.67m
Sheet: 1 of 1
Date: 07/04/2022

Cone Penetration Test (CPTu) Parameter Log

Test ID: **CPT-08**



Client: LDE Land Development & Engineering
Project: Geotechnical Investigation
Location: Kerikeri Land Development Plan Review

Remarks:
 Ground water level located at 0.79m
 Test according to ISO 22476-1:12

Termination Reason:
 High cone resistance

Northing: 6101910mN
Easting: 1684345mE
System: NZTM
Elevation: Ground
Located By: Pagani GPS
Location:

Operator: JC
Rig: Pagani TG63-150
Cone ID: MKs651
Type: Comp. piezo cone
Cone Area: 10 cm²
Sleeve Area: 150 cm²
Area Ratio: 0.78

Soil Behaviour Type - Robertson 1986

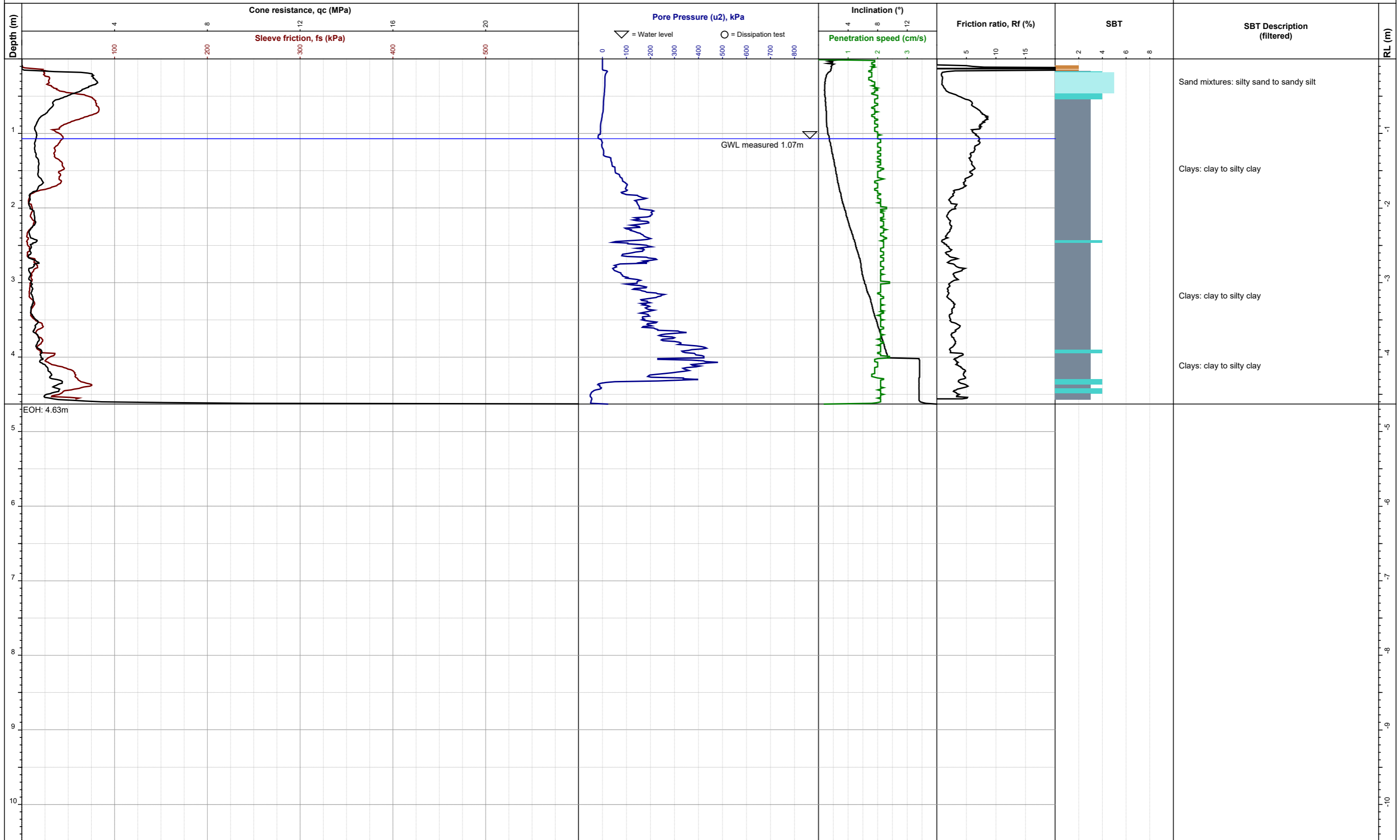
0	Undefined	5	Sand mixtures: silty sand to sandy silt
1	Sensitive fine-grained	6	Sands: clean sands to silty sands
2	Clay - organic soil	7	Dense sand to gravelly sand
3	Clays: clay to silty clay	8	Stiff sand to clayey sand
4	Silt mixtures: clayey silt & silty clay	9	Stiff fine-grained

Test ID: **CPT-08**

Project ID: 21568
Depth: 4.67m
Sheet: 1 of 1
Date: 07/04/2022

Cone Penetration Test (CPTu) Log

Test ID: **CPT-09**



Client: LDE Land Development & Engineering
Project: Geotechnical Investigation
Location: Kerikeri Land Development Plan Review

Remarks: Ground water level located at 1.07m
 Test according to ISO 22476-1:12

Termination Reason: High cone resistance

Northing: 6101793mN
Easting: 1684161mE
System: NZTM
Elevation: Ground
Located By: Pagani GPS
Location:

Operator: JC
Rig: Pagani TG63-150
Cone ID: MKs651
Type: Comp. piezo cone
Cone Area: 10 cm²
Sleeve Area: 150 cm²
Area Ratio: 0.78

Soil Behaviour Type - Robertson 1986

0	Undefined	5	Sand mixtures: silty sand to sandy silt
1	Sensitive fine-grained	6	Sands: clean sands to silty sands
2	Clay - organic soil	7	Dense sand to gravelly sand
3	Clays: clay to silty clay	8	Stiff sand to clayey sand
4	Silt mixtures: clayey silt & silty clay	9	Stiff fine-grained

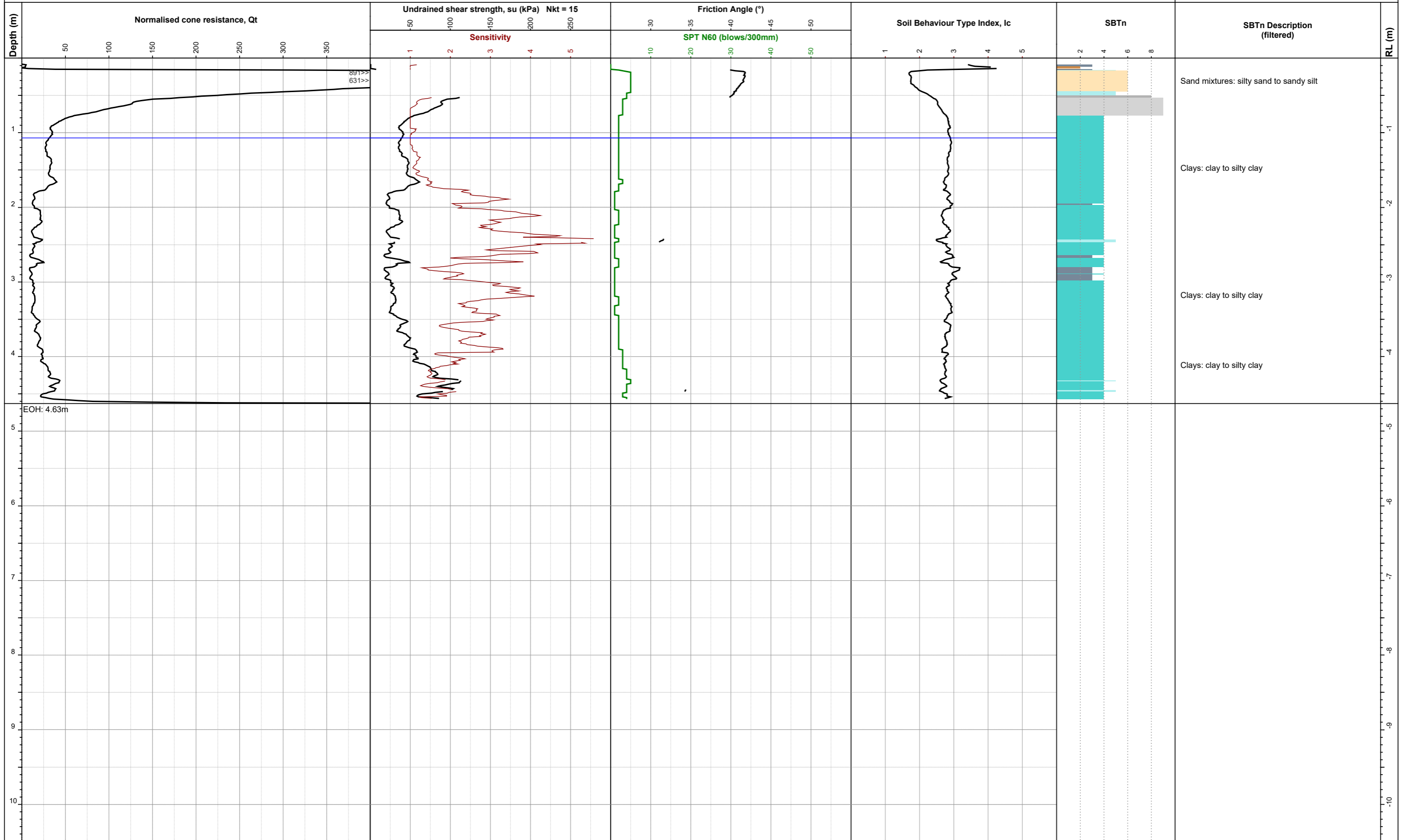
Test ID: **CPT-09**

Project ID: 21568
Depth: 4.63m
Sheet: 1 of 1
Date: 07/04/2022



Cone Penetration Test (CPTu) Parameter Log

Test ID: **CPT-09**



Client: LDE Land Development & Engineering
Project: Geotechnical Investigation
Location: Kerikeri Land Development Plan Review

Remarks:
 Ground water level located at 1.07m
 Test according to ISO 22476-1:12

Termination Reason:
 High cone resistance

Northing: 6101793mN
Easting: 1684161mE
System: NZTM
Elevation: Ground
Located By: Pagani GPS
Location:

Operator: JC
Rig: Pagani TG63-150
Cone ID: MKs651
Type: Comp. piezo cone
Cone Area: 10 cm²
Sleeve Area: 150 cm²
Area Ratio: 0.78

Soil Behaviour Type - Robertson 1986

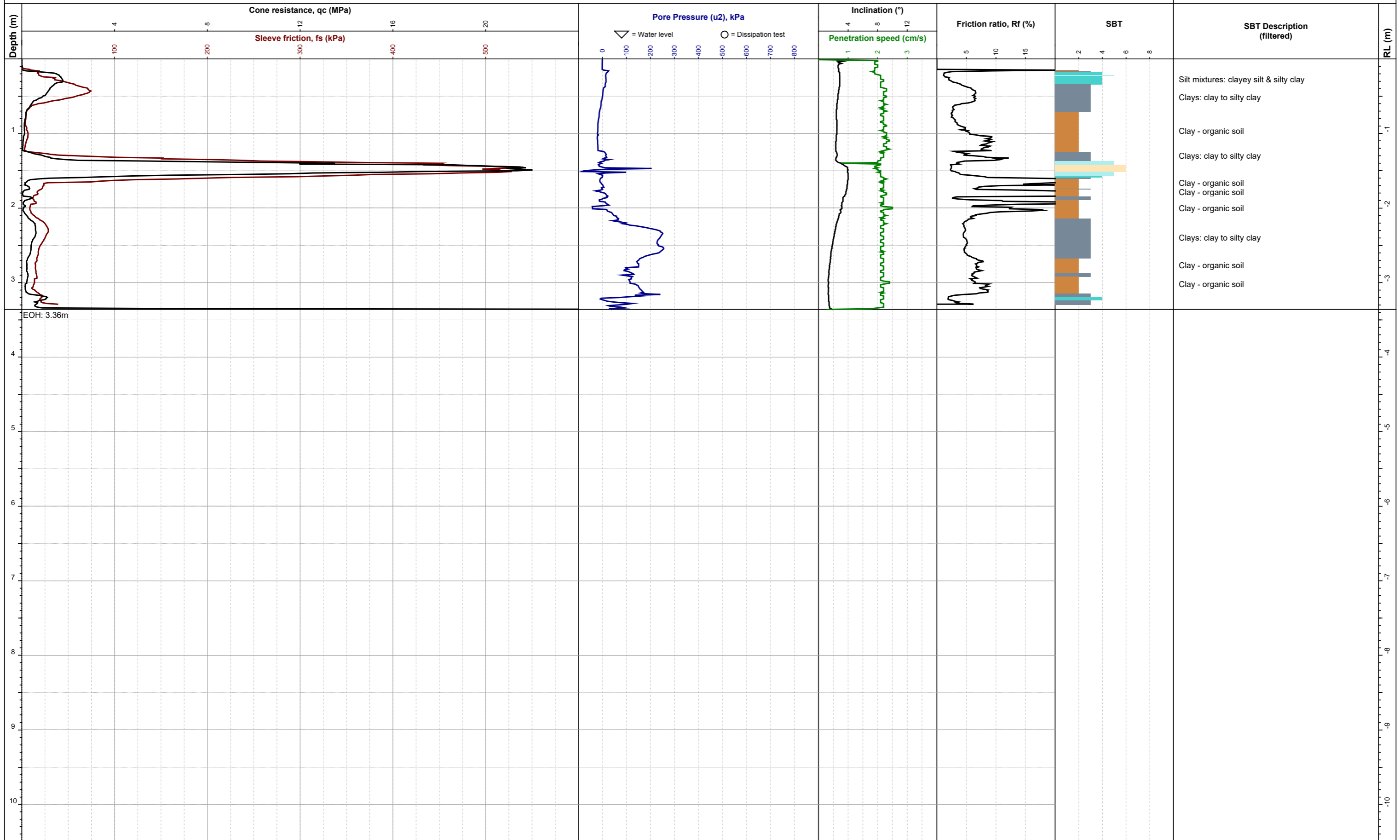
0	Undefined	5	Sand mixtures: silty sand to sandy silt
1	Sensitive fine-grained	6	Sands: clean sands to silty sands
2	Clay - organic soil	7	Dense sand to gravelly sand
3	Clays: clay to silty clay	8	Stiff sand to clayey sand
4	Silt mixtures: clayey silt & silty clay	9	Stiff fine-grained

Test ID: **CPT-09**

Project ID: 21568
Depth: 4.63m
Sheet: 1 of 1
Date: 07/04/2022

Cone Penetration Test (CPTu) Log

Test ID: **CPT-10**



Client: LDE Land Development & Engineering
Project: Geotechnical Investigation
Location: Kerikeri Land Development Plan Review

Remarks:
 Collapse of hole at surface prevented measurement of ground water.
 Test according to ISO 22476-1:12
Termination Reason:
 High cone resistance

Northing: 6101643mN
Easting: 1684013mE
System: NZTM
Elevation: Ground
Located By: Pagani GPS
Location:

Operator: JC
Rig: Pagani TG63-150
Cone ID: MKs651
Type: Comp. piezo cone
Cone Area: 10 cm²
Sleeve Area: 150 cm²
Area Ratio: 0.78

Soil Behaviour Type - Robertson 1986

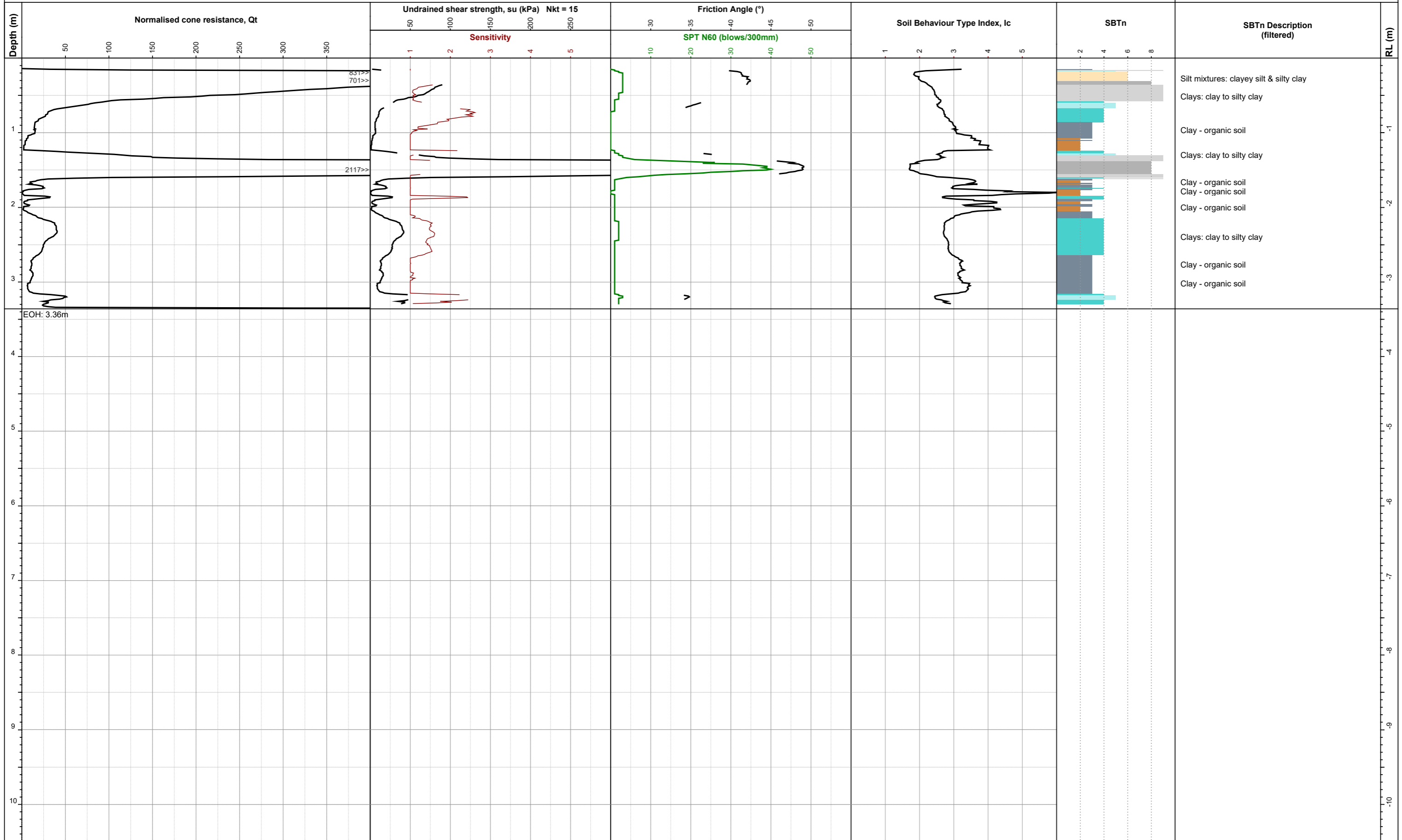
0	Undefined	5	Sand mixtures: silty sand to sandy silt
1	Sensitive fine-grained	6	Sands: clean sands to silty sands
2	Clay - organic soil	7	Dense sand to gravelly sand
3	Clays: clay to silty clay	8	Stiff sand to clayey sand
4	Silt mixtures: clayey silt & silty clay	9	Stiff fine-grained

Test ID: **CPT-10**
Project ID: 21568
Depth: 3.36m
Sheet: 1 of 1
Date: 07/04/2022



Cone Penetration Test (CPTu) Parameter Log

Test ID: **CPT-10**



Client: LDE Land Development & Engineering
Project: Geotechnical Investigation
Location: Kerikeri Land Development Plan Review

Remarks:
 Collapse of hole at surface prevented measurement of ground water.
 Test according to ISO 22476-1:12
Termination Reason:
 High cone resistance

Northing: 6101643mN
Easting: 1684013mE
System: NZTM
Elevation: Ground
Located By: Pagani GPS
Location:

Operator: JC
Rig: Pagani TG63-150
Cone ID: MKs651
Type: Comp. piezo cone
Cone Area: 10 cm²
Sleeve Area: 150 cm²
Area Ratio: 0.78

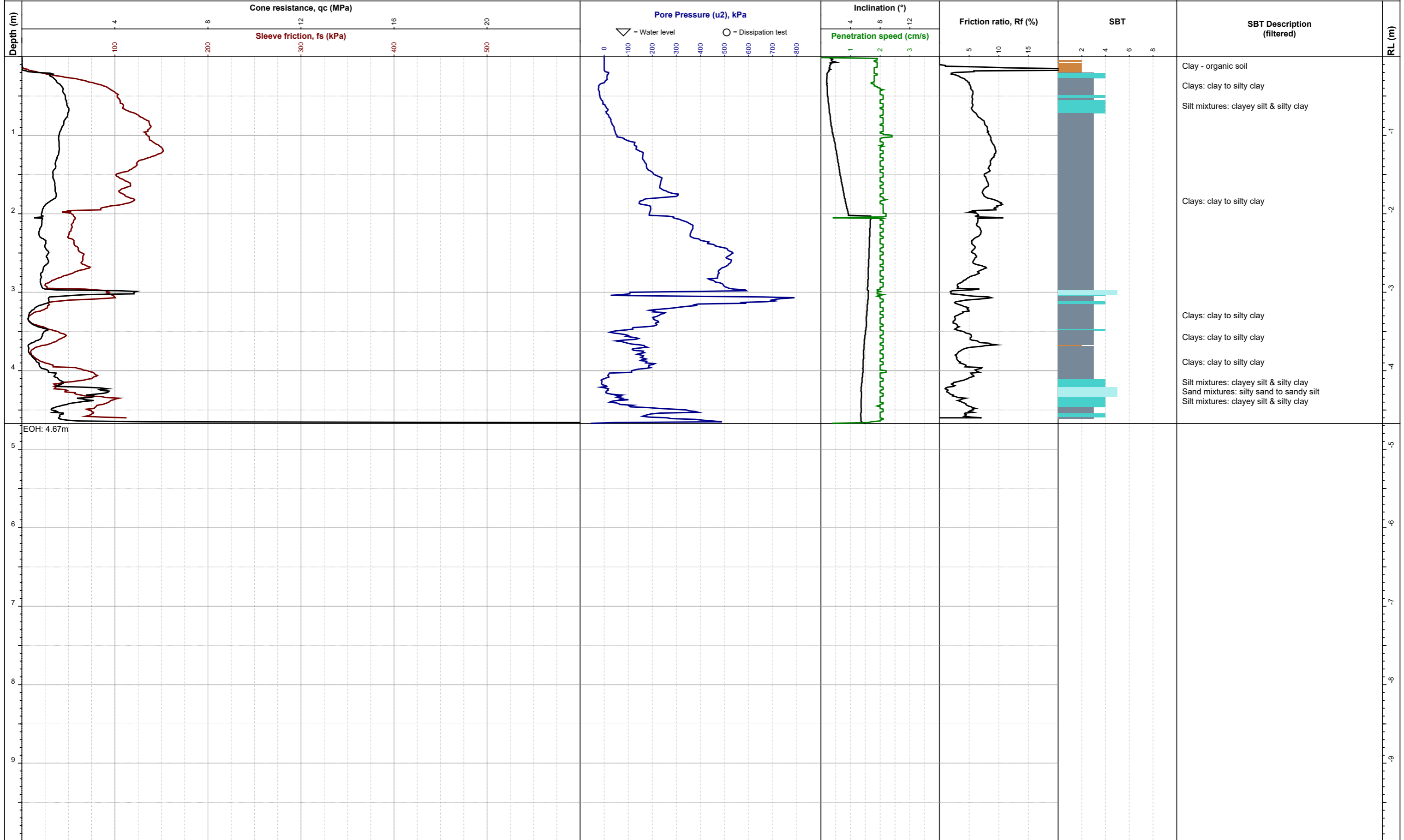
Soil Behaviour Type - Robertson 1986

0	Undefined	5	Sand mixtures: silty sand to sandy silt
1	Sensitive fine-grained	6	Sands: clean sands to silty sands
2	Clay - organic soil	7	Dense sand to gravelly sand
3	Clays: clay to silty clay	8	Stiff sand to clayey sand
4	Silt mixtures: clayey silt & silty clay	9	Stiff fine-grained

Test ID: **CPT-10**
Project ID: 21568
Depth: 3.36m
Sheet: 1 of 1
Date: 07/04/2022

Cone Penetration Test (CPTu) Log

Test ID: **CPT-11**



Client: LDE Land Development & Engineering

Project: Geotechnical Investigation

Location: Kerikeri Land Development Plan Review

Remarks:
Collapse of hole at surface prevented measurement of ground water.
Test according to ISO 22476-1:12

Termination Reason:
High cone resistance

Northing: 6102215mN

Easting: 1684348mE

System: NZTM

Elevation: Ground

Located By: Pagani GPS

Location:

Operator: CK

Rig: Pagani TG63-150

Cone ID: MKs651

Type: Comp. piezo cone

Cone Area: 10 cm²

Sleeve Area: 150 cm²

Area Ratio: 0.78

Soil Behaviour Type - Robertson 1986

0	Undefined	5	Sand mixtures: silty sand to sandy silt
1	Sensitive fine-grained	6	Sands: clean sands to silty sands
2	Clay - organic soil	7	Dense sand to gravelly sand
3	Clays: clay to silty clay	8	Stiff sand to clayey sand
4	Silt mixtures: clayey silt & silty clay	9	Stiff fine-grained

Test ID: **CPT-11**

Project ID: 21568

Depth: 4.67m

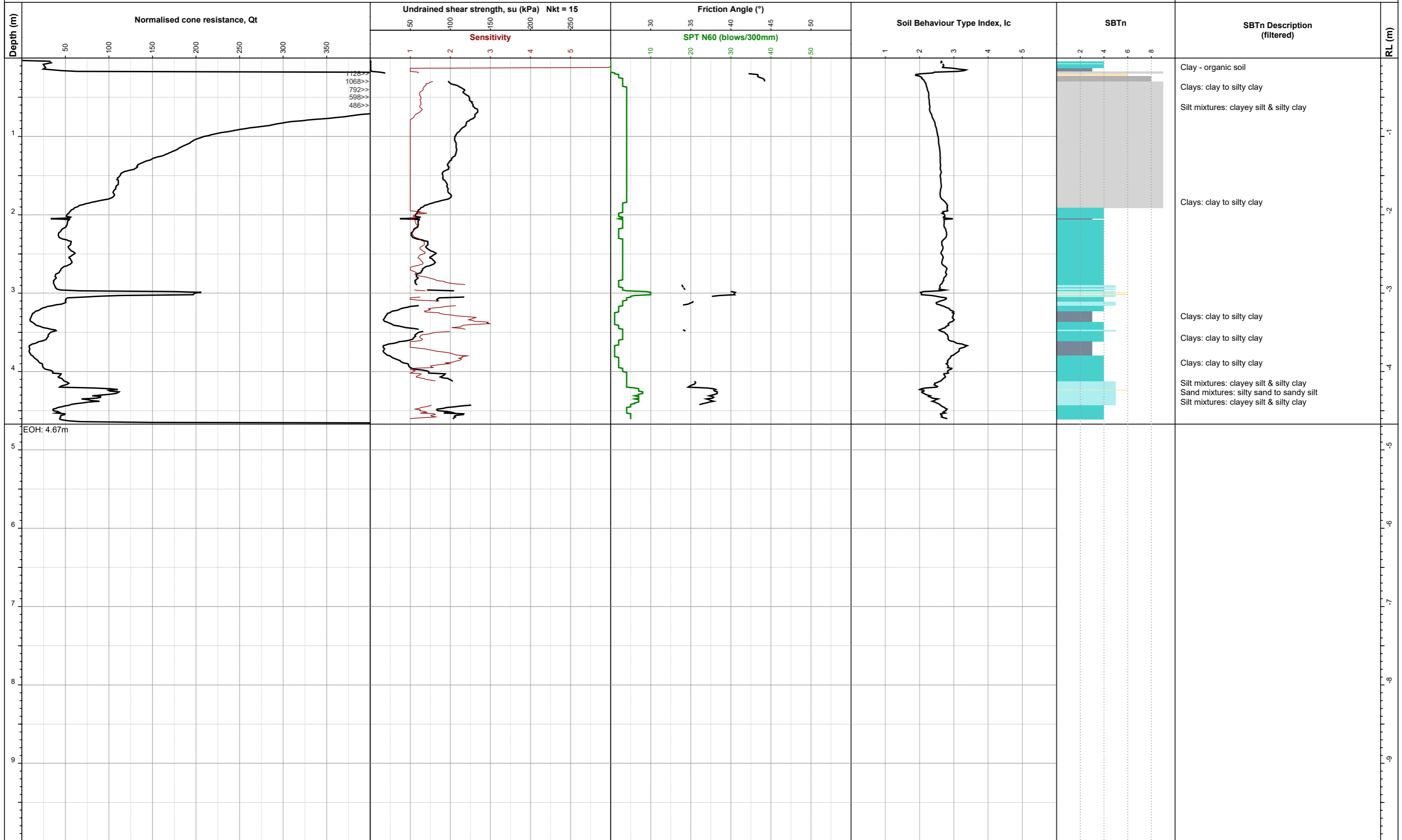
Sheet: 1 of 1

Date: 08/04/2022



Cone Penetration Test (CPTu) Parameter Log

Test ID: **CPT-11**



Client: LDE Land Development & Engineering
Project: Geotechnical Investigation
Location: Kerikeri Land Development Plan Review

Remarks:
 Collapse of hole at surface prevented measurement of ground water.
 Test according to ISO 22476-1:12
Termination Reason:
 High cone resistance

Northing: 6102215mN
Easting: 1684348mE
System: NZTM
Elevation: Ground
Located By: Pagani GPS
Location:

Operator: CK
Rig: Pagani TG63-150
Cone ID: MKs651
Type: Comp. piezo cone
Cone Area: 10 cm²
Sleeve Area: 150 cm²
Area Ratio: 0.78

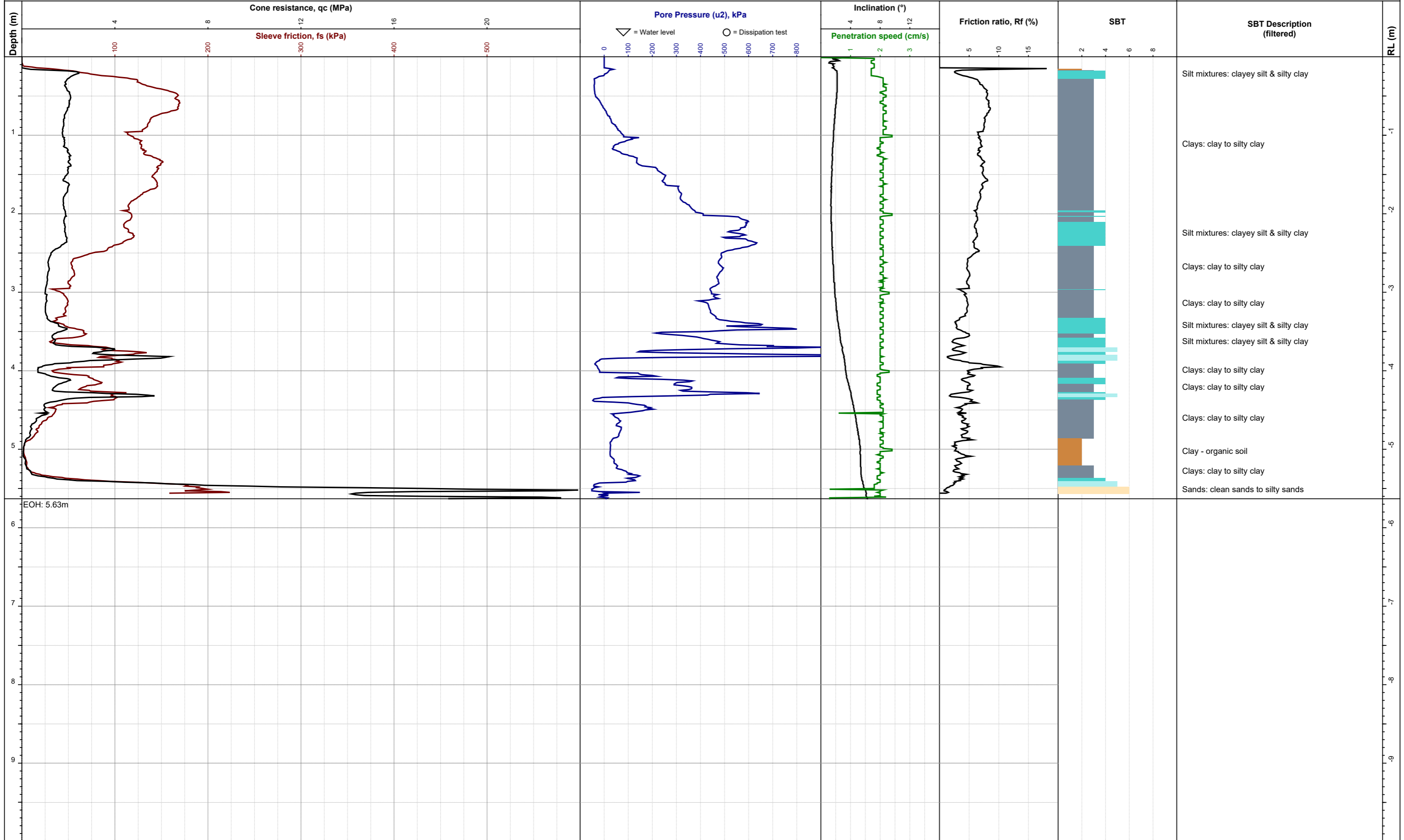
Soil Behaviour Type - Robertson 1986

0 Undefined	5 Sand mixtures: silty sand to sandy silt
1 Sensitive fine-grained	6 Sands: clean sands to silty sands
2 Clay - organic soil	7 Dense sand to gravelly sand
3 Clays: clay to silty clay	8 Stiff sand to clayey sand
4 Silt mixtures: clayey silt & silty clay	9 Stiff fine-grained

Test ID: **CPT-11**
Project ID: 21568
Depth: 4.67m
Sheet: 1 of 1
Date: 08/04/2022

Cone Penetration Test (CPTu) Log

Test ID: **CPT-12**



EOH: 5.63m



Client: LDE Land Development & Engineering
Project: Geotechnical Investigation
Location: Kerikeri Land Development Plan Review

Remarks:
 Collapse of hole at surface prevented measurement of ground water.
 Test according to ISO 22476-1:12
Termination Reason:
 High cone resistance

Northing: 6102464mN
Easting: 1684592mE
System: NZTM
Elevation: Ground
Located By: Pagani GPS
Location:

Operator: CK
Rig: Pagani TG63-150
Cone ID: MKs651
Type: Comp. piezo cone
Cone Area: 10 cm²
Sleeve Area: 150 cm²
Area Ratio: 0.78

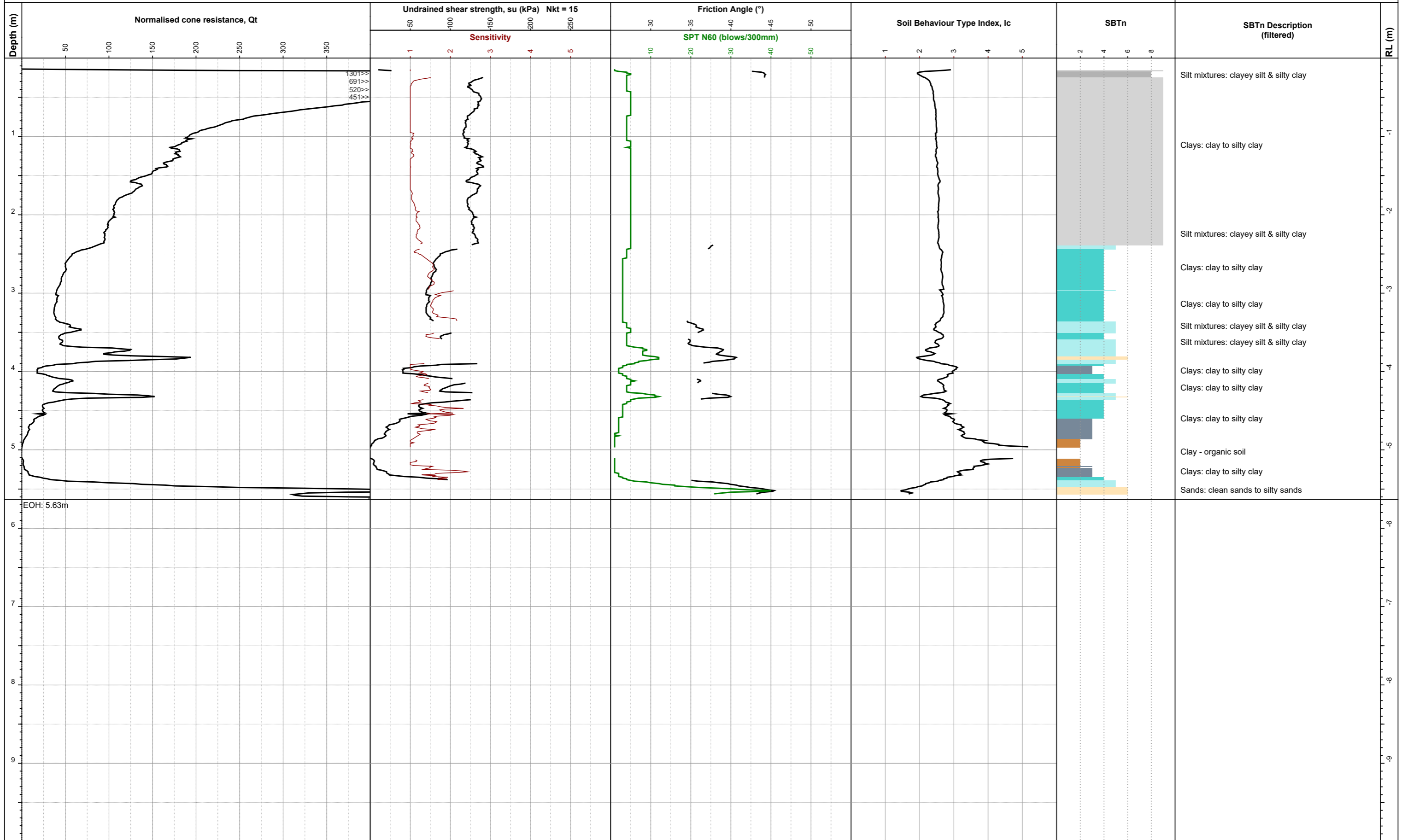
Soil Behaviour Type - Robertson 1986

0	Undefined	5	Sand mixtures: silty sand to sandy silt
1	Sensitive fine-grained	6	Sands: clean sands to silty sands
2	Clay - organic soil	7	Dense sand to gravelly sand
3	Clays: clay to silty clay	8	Stiff sand to clayey sand
4	Silt mixtures: clayey silt & silty clay	9	Stiff fine-grained

Test ID: **CPT-12**
Project ID: 21568
Depth: 5.63m
Sheet: 1 of 1
Date: 08/04/2022

Cone Penetration Test (CPTu) Parameter Log

Test ID: **CPT-12**



Client: LDE Land Development & Engineering
Project: Geotechnical Investigation
Location: Kerikeri Land Development Plan Review

Remarks:
 Collapse of hole at surface prevented measurement of ground water.
 Test according to ISO 22476-1:12
Termination Reason:
 High cone resistance

Northing: 6102464mN
Easting: 1684592mE
System: NZTM
Elevation: Ground
Located By: Pagani GPS
Location:

Operator: CK
Rig: Pagani TG63-150
Cone ID: MKs651
Type: Comp. piezo cone
Cone Area: 10 cm²
Sleeve Area: 150 cm²
Area Ratio: 0.78

Soil Behaviour Type - Robertson 1986

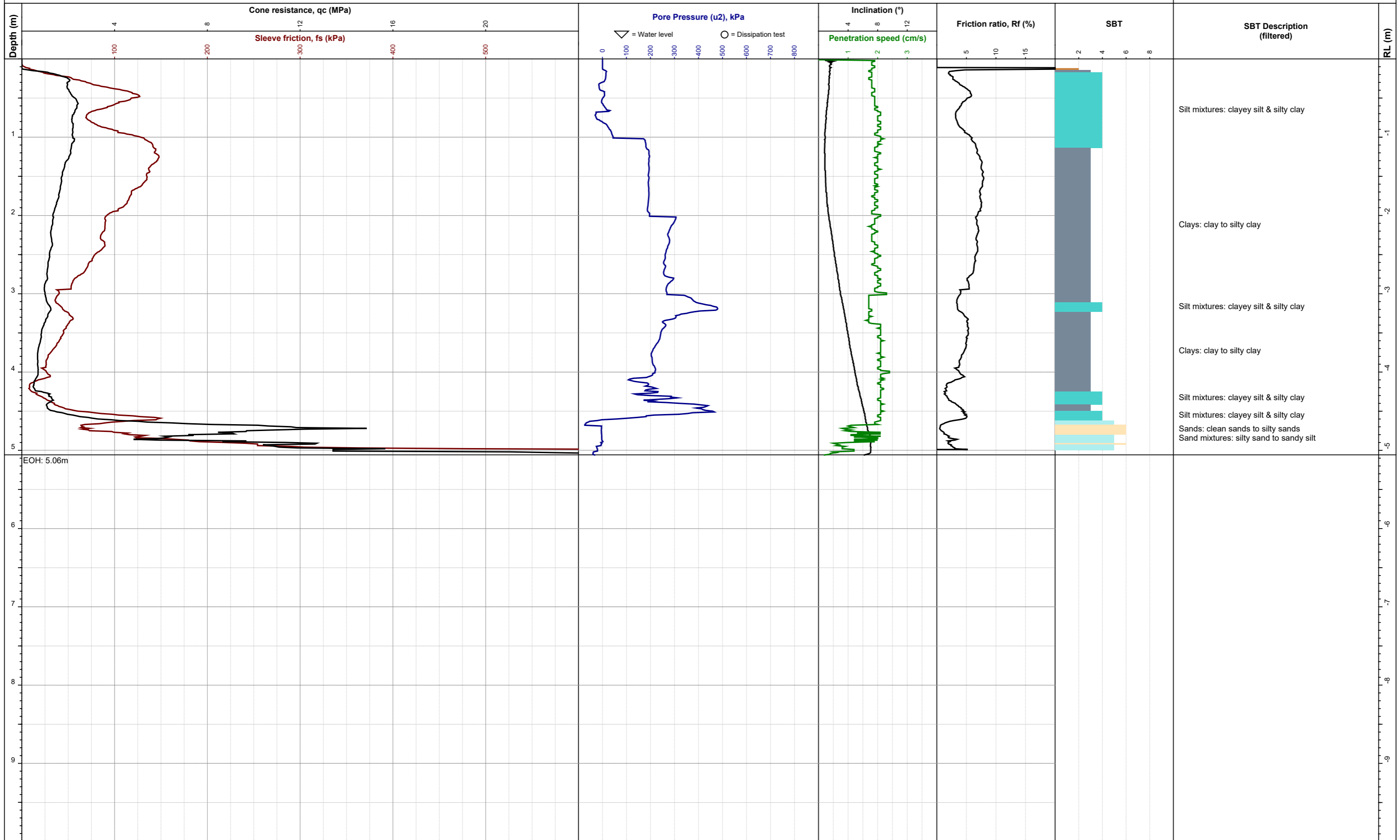
0	Undefined	5	Sand mixtures: silty sand to sandy silt
1	Sensitive fine-grained	6	Sands: clean sands to silty sands
2	Clay - organic soil	7	Dense sand to gravelly sand
3	Clays: clay to silty clay	8	Stiff sand to clayey sand
4	Silt mixtures: clayey silt & silty clay	9	Stiff fine-grained

Test ID: **CPT-12**
Project ID: 21568
Depth: 5.63m
Sheet: 1 of 1
Date: 08/04/2022



Cone Penetration Test (CPTu) Log

Test ID: **CPT-13**



Client: LDE Land Development & Engineering
Project: Geotechnical Investigation
Location: Kerikeri Land Development Plan Review

Remarks:
 Collapse of hole at surface prevented measurement of ground water.
 Test according to ISO 22476-1:12
Termination Reason:
 High cone resistance

Northing: 6102634mN
Easting: 1684856mE
System: NZTM
Elevation: Ground
Located By: Pagani GPS
Location:

Operator: JC
Rig: Pagani TG63-150
Cone ID: MKs651
Type: Comp. piezo cone
Cone Area: 10 cm²
Sleeve Area: 150 cm²
Area Ratio: 0.78

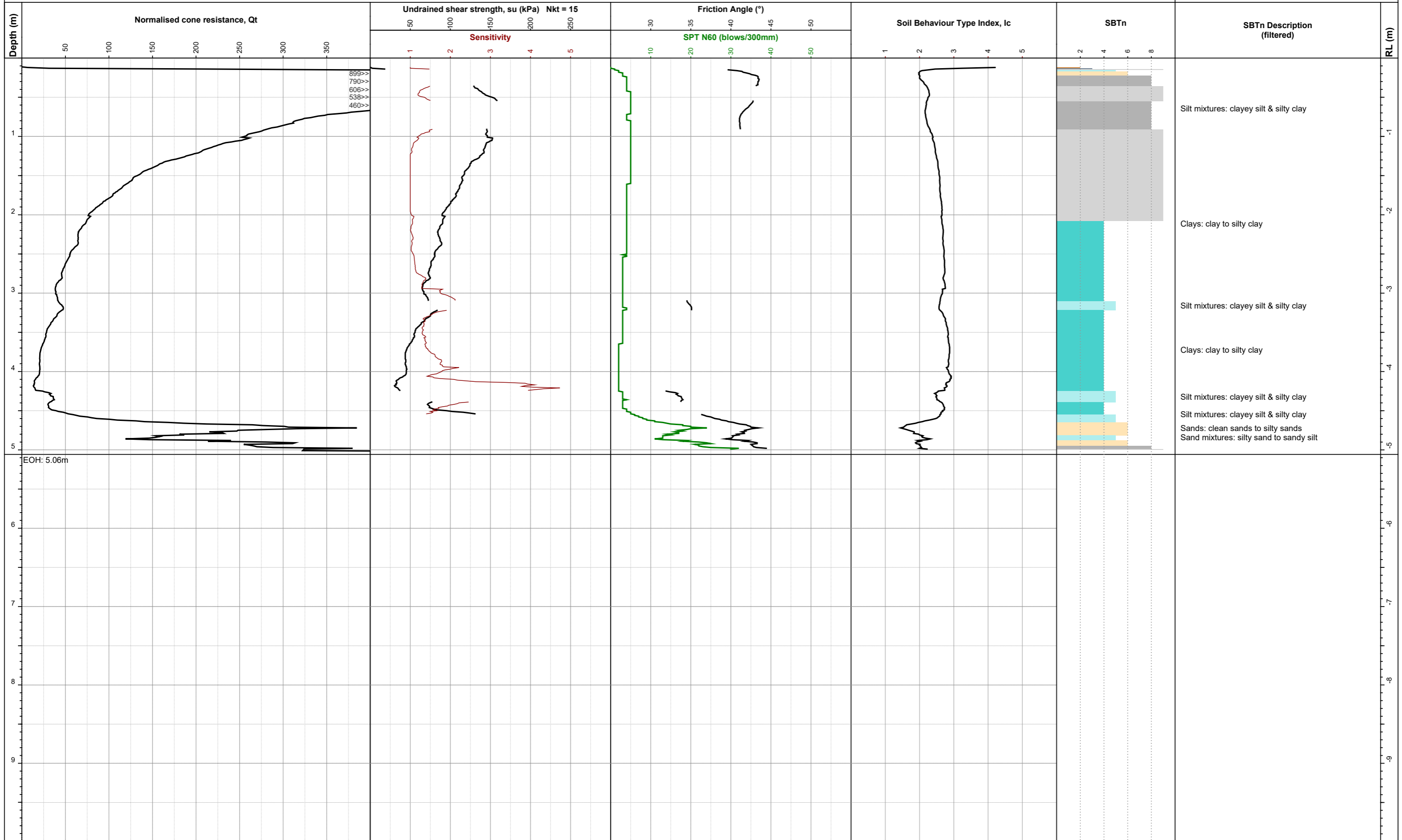
Soil Behaviour Type - Robertson 1986

0	Undefined	5	Sand mixtures: silty sand to sandy silt
1	Sensitive fine-grained	6	Sands: clean sands to silty sands
2	Clay - organic soil	7	Dense sand to gravelly sand
3	Clays: clay to silty clay	8	Stiff sand to clayey sand
4	Silt mixtures: clayey silt & silty clay	9	Stiff fine-grained

Test ID: **CPT-13**
Project ID: 21568
Depth: 5.06m
Sheet: 1 of 1
Date: 08/04/2022

Cone Penetration Test (CPTu) Parameter Log

Test ID: **CPT-13**



EOH: 5.06m



Client: LDE Land Development & Engineering
Project: Geotechnical Investigation
Location: Kerikeri Land Development Plan Review

Remarks:
 Collapse of hole at surface prevented measurement of ground water.
 Test according to ISO 22476-1:12
Termination Reason:
 High cone resistance

Northing: 6102634mN
Easting: 1684856mE
System: NZTM
Elevation: Ground
Located By: Pagani GPS
Location:

Operator: JC
Rig: Pagani TG63-150
Cone ID: MKs651
Type: Comp. piezo cone
Cone Area: 10 cm²
Sleeve Area: 150 cm²
Area Ratio: 0.78

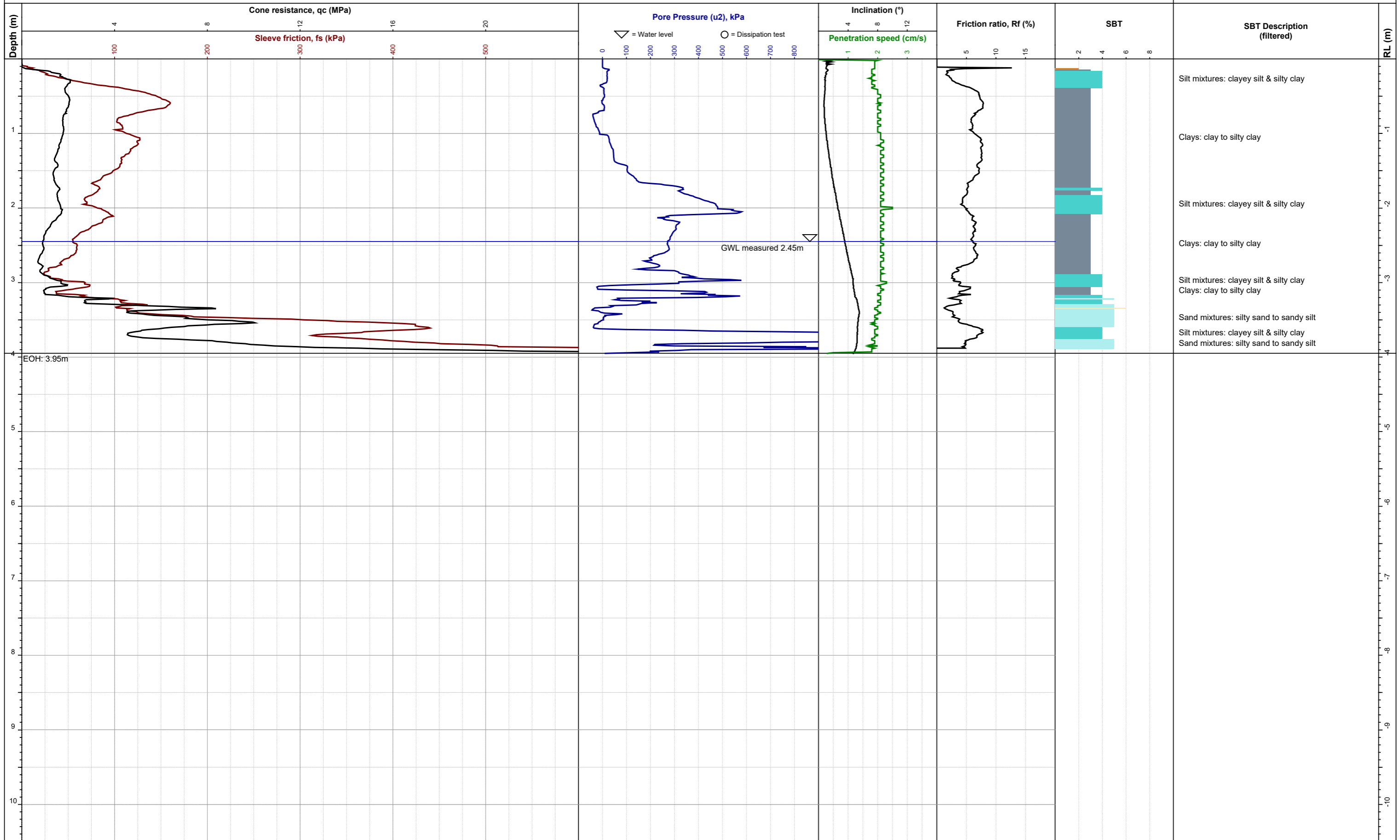
Soil Behaviour Type - Robertson 1986

0 Undefined	5 Sand mixtures: silty sand to sandy silt
1 Sensitive fine-grained	6 Sands: clean sands to silty sands
2 Clay - organic soil	7 Dense sand to gravelly sand
3 Clays: clay to silty clay	8 Stiff sand to clayey sand
4 Silt mixtures: clayey silt & silty clay	9 Stiff fine-grained

Test ID: **CPT-13**
Project ID: 21568
Depth: 5.06m
Sheet: 1 of 1
Date: 08/04/2022

Cone Penetration Test (CPTu) Log

Test ID: **CPT-14**



Client: LDE Land Development & Engineering
Project: Geotechnical Investigation
Location: Kerikeri Land Development Plan Review

Remarks:
 Ground water level located at 2.45m
 Test according to ISO 22476-1:12

Termination Reason:
 High cone resistance

Northing: 6102905mN
Easting: 1685220mE
System: NZTM
Elevation: Ground
Located By: Pagani GPS
Location:

Operator: JC
Rig: Pagani TG63-150
Cone ID: MKs651
Type: Comp. piezo cone
Cone Area: 10 cm²
Sleeve Area: 150 cm²
Area Ratio: 0.78

Soil Behaviour Type - Robertson 1986

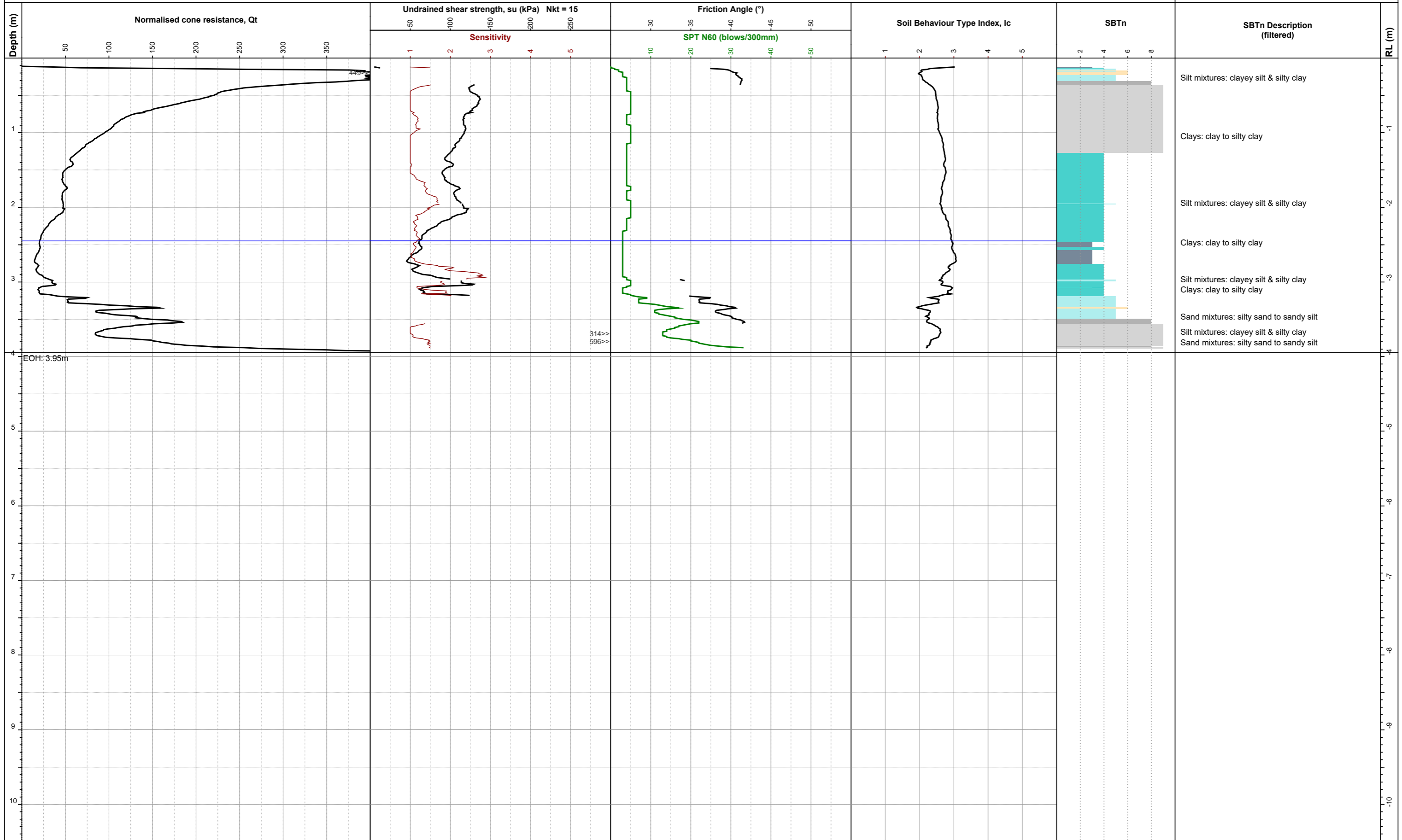
0	Undefined	5	Sand mixtures: silty sand to sandy silt
1	Sensitive fine-grained	6	Sands: clean sands to silty sands
2	Clay - organic soil	7	Dense sand to gravelly sand
3	Clays: clay to silty clay	8	Stiff sand to clayey sand
4	Silt mixtures: clayey silt & silty clay	9	Stiff fine-grained

Test ID: **CPT-14**

Project ID: 21568
Depth: 3.95m
Sheet: 1 of 1
Date: 07/04/2022

Cone Penetration Test (CPTu) Parameter Log

Test ID: **CPT-14**



Client: LDE Land Development & Engineering
Project: Geotechnical Investigation
Location: Kerikeri Land Development Plan Review

Remarks:
 Ground water level located at 2.45m
 Test according to ISO 22476-1:12

Termination Reason:
 High cone resistance

Northing: 6102905mN
Easting: 1685220mE
System: NZTM
Elevation: Ground
Located By: Pagani GPS
Location:

Operator: JC
Rig: Pagani TG63-150
Cone ID: MKs651
Type: Comp. piezo cone
Cone Area: 10 cm²
Sleeve Area: 150 cm²
Area Ratio: 0.78

Soil Behaviour Type - Robertson 1986

0	Undefined	5	Sand mixtures: silty sand to sandy silt
1	Sensitive fine-grained	6	Sands: clean sands to silty sands
2	Clay - organic soil	7	Dense sand to gravelly sand
3	Clays: clay to silty clay	8	Stiff sand to clayey sand
4	Silt mixtures: clayey silt & silty clay	9	Stiff fine-grained

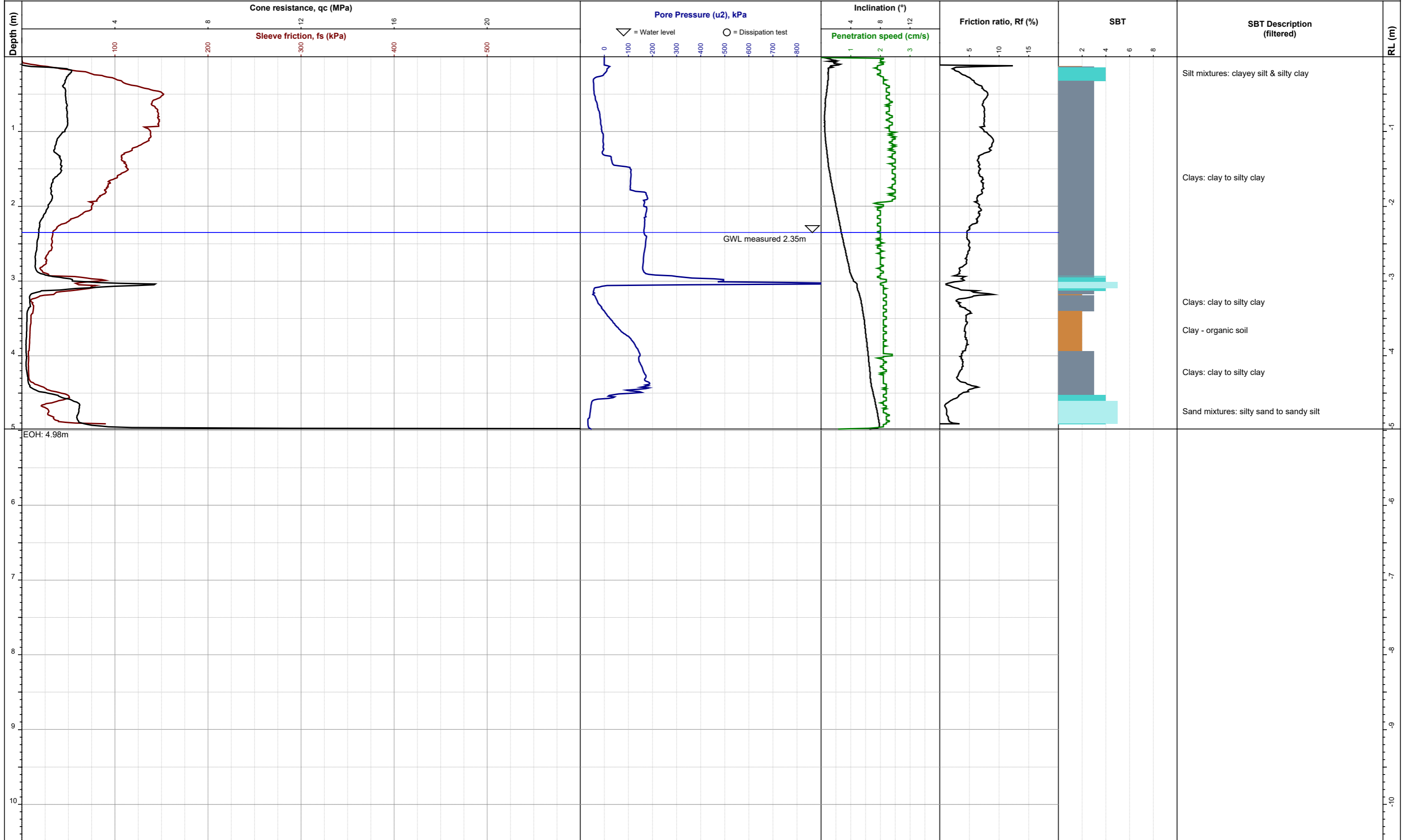
Test ID: **CPT-14**

Project ID: 21568
Depth: 3.95m
Sheet: 1 of 1
Date: 07/04/2022



Cone Penetration Test (CPTu) Log

Test ID: **CPT-15**



Client: LDE Land Development & Engineering
Project: Geotechnical Investigation
Location: Kerikeri Land Development Plan Review

Remarks:
 Ground water level located at 2.35m
 Test according to ISO 22476-1:12

Termination Reason:
 High cone resistance

Northing: 6103166mN
Easting: 1684937mE
System: NZTM
Elevation: Ground
Located By: Pagani GPS
Location:

Operator: JC
Rig: Pagani TG63-150
Cone ID: MKs651
Type: Comp. piezo cone
Cone Area: 10 cm²
Sleeve Area: 150 cm²
Area Ratio: 0.78

Soil Behaviour Type - Robertson 1986

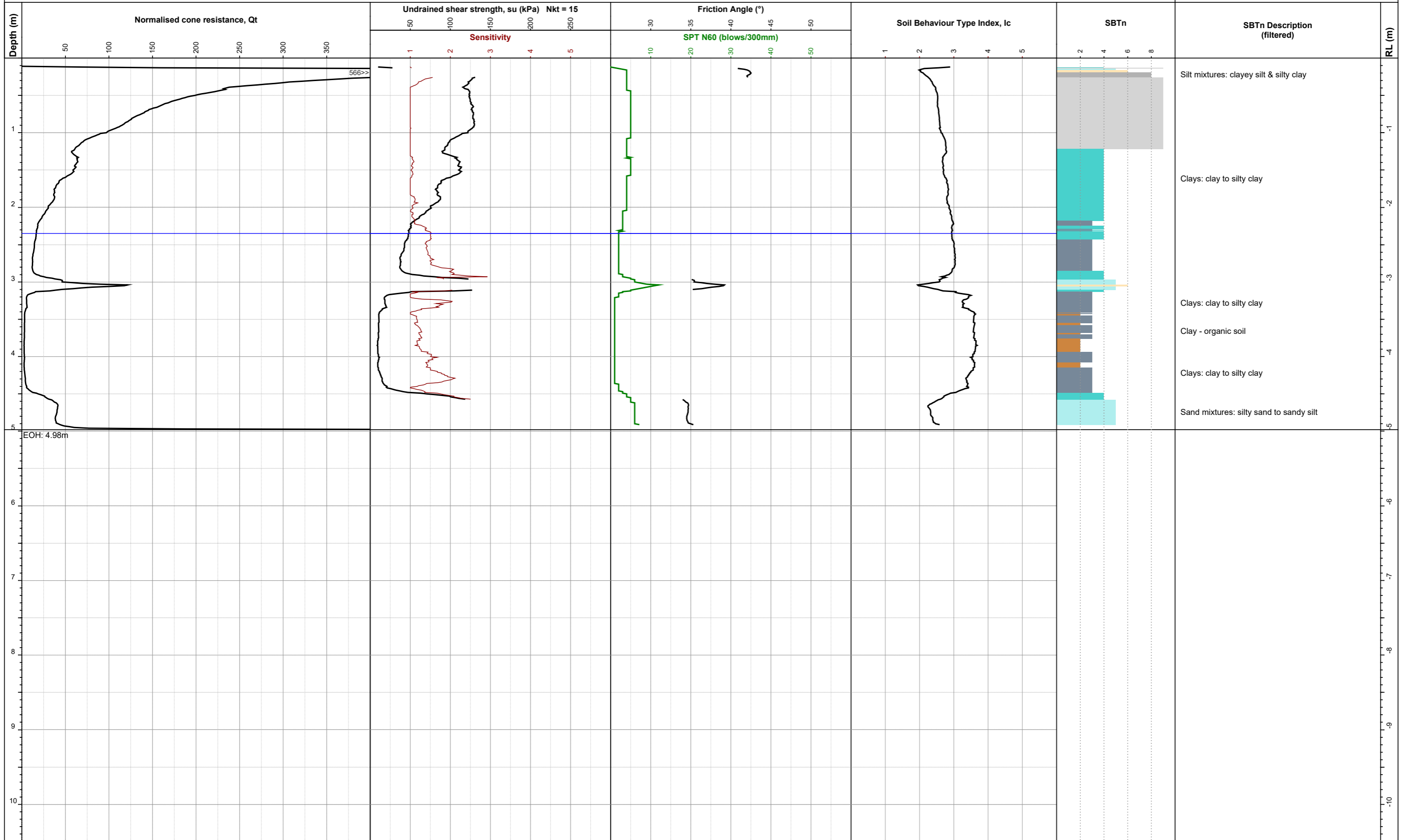
0	Undefined	5	Sand mixtures: silty sand to sandy silt
1	Sensitive fine-grained	6	Sands: clean sands to silty sands
2	Clay - organic soil	7	Dense sand to gravelly sand
3	Clays: clay to silty clay	8	Stiff sand to clayey sand
4	Silt mixtures: clayey silt & silty clay	9	Stiff fine-grained

Test ID: **CPT-15**

Project ID: 21568
Depth: 4.98m
Sheet: 1 of 1
Date: 07/04/2022

Cone Penetration Test (CPTu) Parameter Log

Test ID: **CPT-15**



Client: LDE Land Development & Engineering
Project: Geotechnical Investigation
Location: Kerikeri Land Development Plan Review

Remarks:
 Ground water level located at 2.35m
 Test according to ISO 22476-1:12
Termination Reason:
 High cone resistance

Northing: 6103166mN
Easting: 1684937mE
System: NZTM
Elevation: Ground
Located By: Pagani GPS
Location:

Operator: JC
Rig: Pagani TG63-150
Cone ID: MKs651
Type: Comp. piezo cone
Cone Area: 10 cm²
Sleeve Area: 150 cm²
Area Ratio: 0.78

Soil Behaviour Type - Robertson 1986

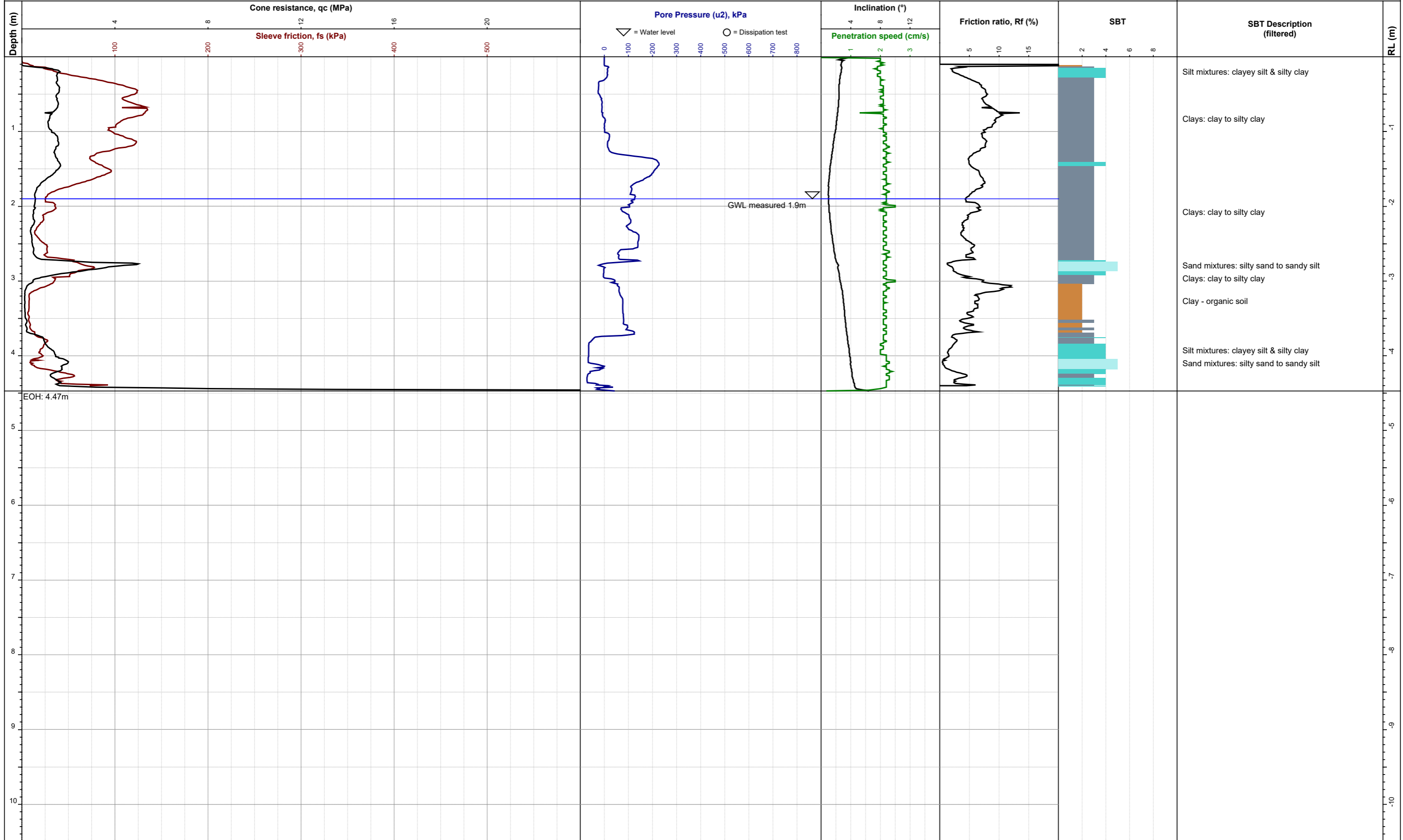
0	Undefined	5	Sand mixtures: silty sand to sandy silt
1	Sensitive fine-grained	6	Sands: clean sands to silty sands
2	Clay - organic soil	7	Dense sand to gravelly sand
3	Clays: clay to silty clay	8	Stiff sand to clayey sand
4	Silt mixtures: clayey silt & silty clay	9	Stiff fine-grained

Test ID: **CPT-15**
Project ID: 21568
Depth: 4.98m
Sheet: 1 of 1
Date: 07/04/2022



Cone Penetration Test (CPTu) Log

Test ID: **CPT-16**



Client: LDE Land Development & Engineering
Project: Geotechnical Investigation
Location: Kerikeri Land Development Plan Review

Remarks:
 Ground water level located at 1.90m
 Test according to ISO 22476-1:12

Termination Reason:
 High cone resistance

Northing: 6103294mN
Easting: 1685016mE
System: NZTM
Elevation: Ground
Located By: Pagani GPS
Location:

Operator: JC
Rig: Pagani TG63-150
Cone ID: MKs651
Type: Comp. piezo cone
Cone Area: 10 cm²
Sleeve Area: 150 cm²
Area Ratio: 0.78

Soil Behaviour Type - Robertson 1986

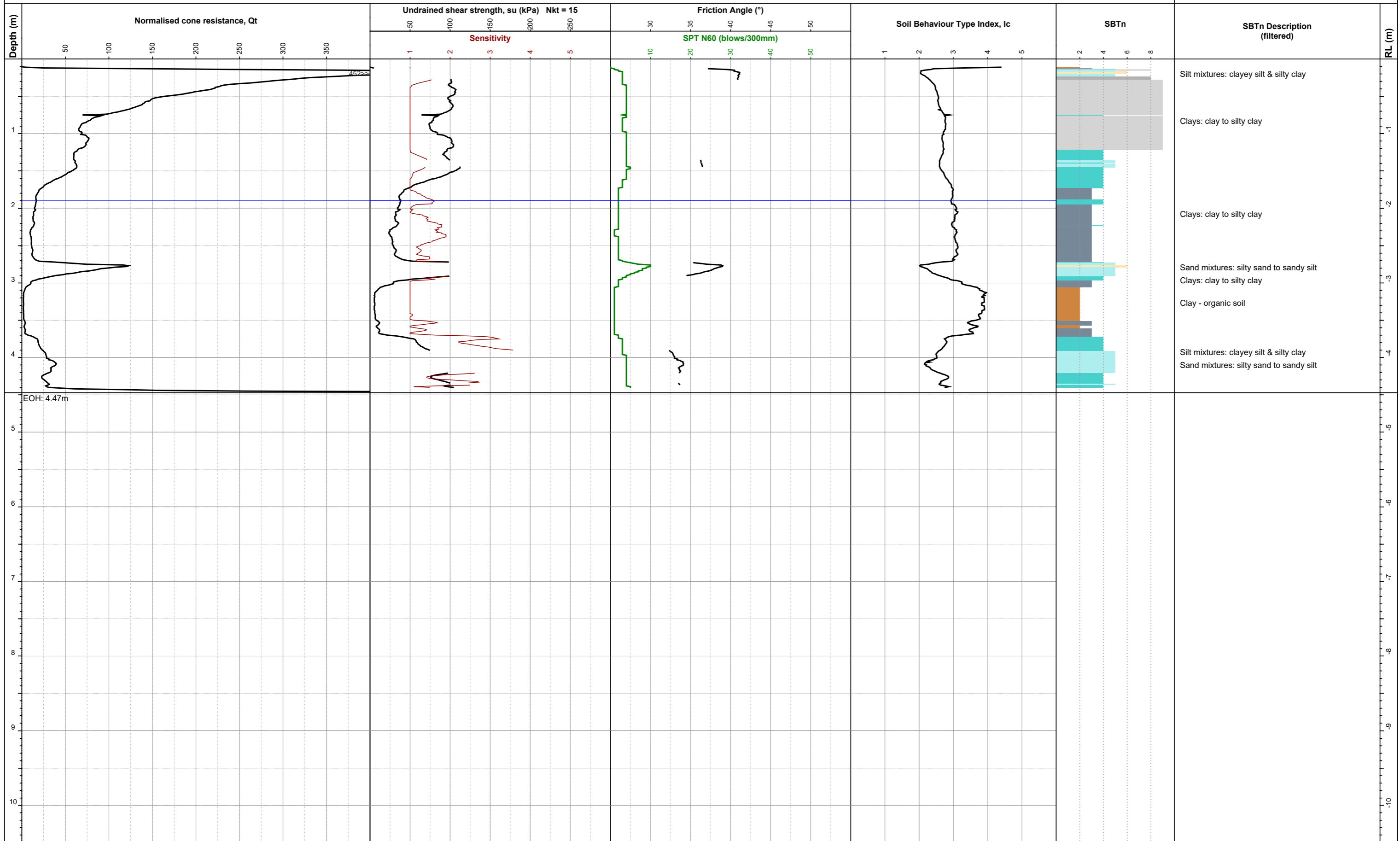
0	Undefined	5	Sand mixtures: silty sand to sandy silt
1	Sensitive fine-grained	6	Sands: clean sands to silty sands
2	Clay - organic soil	7	Dense sand to gravelly sand
3	Clays: clay to silty clay	8	Stiff sand to clayey sand
4	Silt mixtures: clayey silt & silty clay	9	Stiff fine-grained

Test ID: **CPT-16**

Project ID: 21568
Depth: 4.47m
Sheet: 1 of 1
Date: 07/04/2022

Cone Penetration Test (CPTu) Parameter Log

Test ID: **CPT-16**



Client: LDE Land Development & Engineering
Project: Geotechnical Investigation
Location: Kerikeri Land Development Plan Review

Remarks:
 Ground water level located at 1.90m
 Test according to ISO 22476-1:12
Termination Reason:
 High cone resistance

Northing: 6103294mN
Easting: 1685016mE
System: NZTM
Elevation: Ground
Located By: Pagani GPS
Location:

Operator: JC
Rig: Pagani TG63-150
Cone ID: MKs651
Type: Comp. piezo cone
Cone Area: 10 cm²
Sleeve Area: 150 cm²
Area Ratio: 0.78

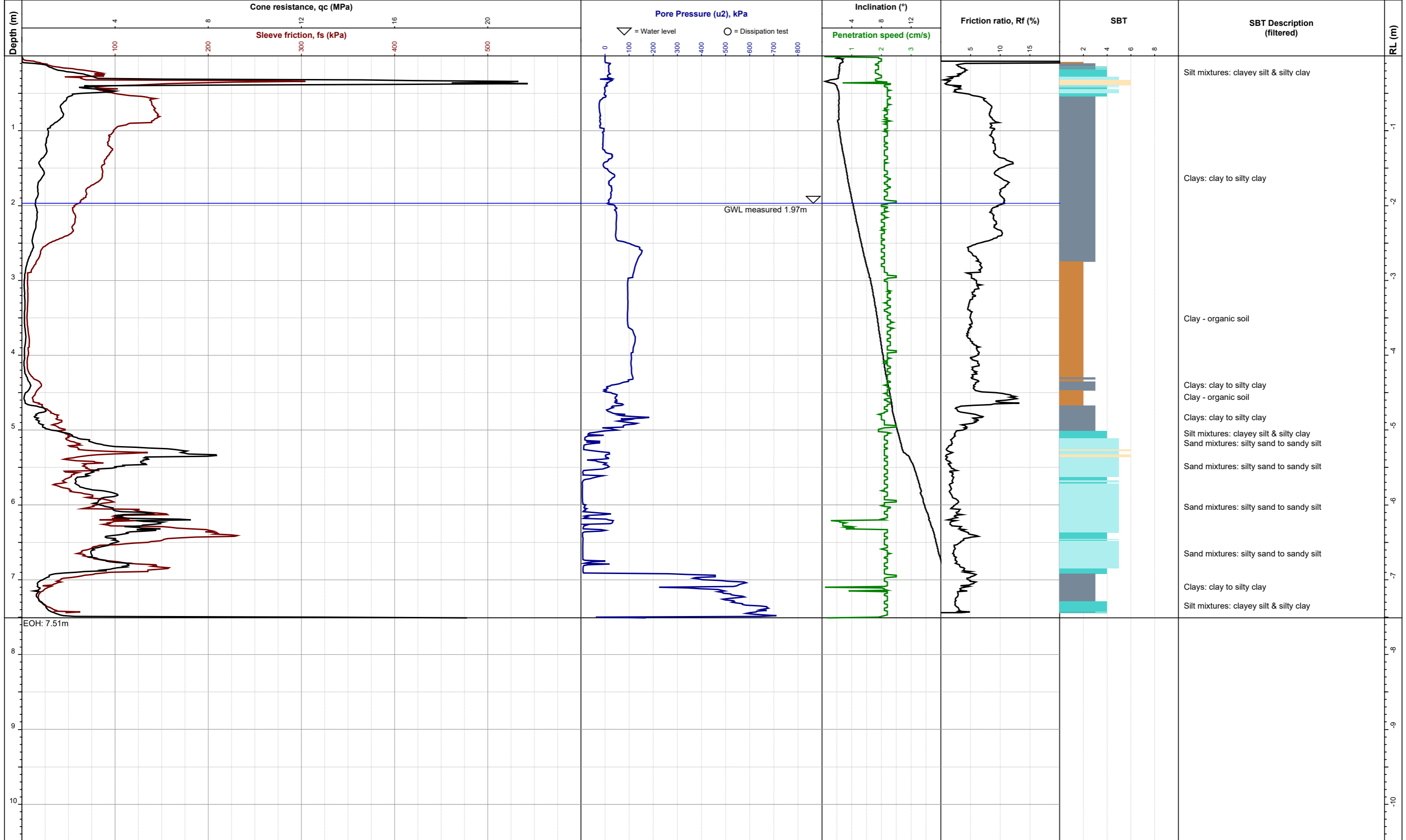
Soil Behaviour Type - Robertson 1986

0	Undefined	5	Sand mixtures: silty sand to sandy silt
1	Sensitive fine-grained	6	Sands: clean sands to silty sands
2	Clay - organic soil	7	Dense sand to gravelly sand
3	Clays: clay to silty clay	8	Stiff sand to clayey sand
4	Silt mixtures: clayey silt & silty clay	9	Stiff fine-grained

Test ID: **CPT-16**
Project ID: 21568
Depth: 4.47m
Sheet: 1 of 1
Date: 07/04/2022

Cone Penetration Test (CPTu) Log

Test ID: **CPT-17**



Client: LDE Land Development & Engineering
Project: Geotechnical Investigation
Location: Kerikeri Land Development Plan Review

Remarks:
 Ground water level located at 1.97m
 Test according to ISO 22476-1:12

Termination Reason:
 High cone resistance

Northing: 6103429mN
Easting: 1685086mE
System: NZTM
Elevation: Ground
Located By: Pagani GPS
Location:

Operator: JC
Rig: Pagani TG63-150
Cone ID: MKs651
Type: Comp. piezo cone
Cone Area: 10 cm²
Sleeve Area: 150 cm²
Area Ratio: 0.78

Soil Behaviour Type - Robertson 1986

0	Undefined	5	Sand mixtures: silty sand to sandy silt
1	Sensitive fine-grained	6	Sands: clean sands to silty sands
2	Clay - organic soil	7	Dense sand to gravelly sand
3	Clays: clay to silty clay	8	Stiff sand to clayey sand
4	Silt mixtures: clayey silt & silty clay	9	Stiff fine-grained

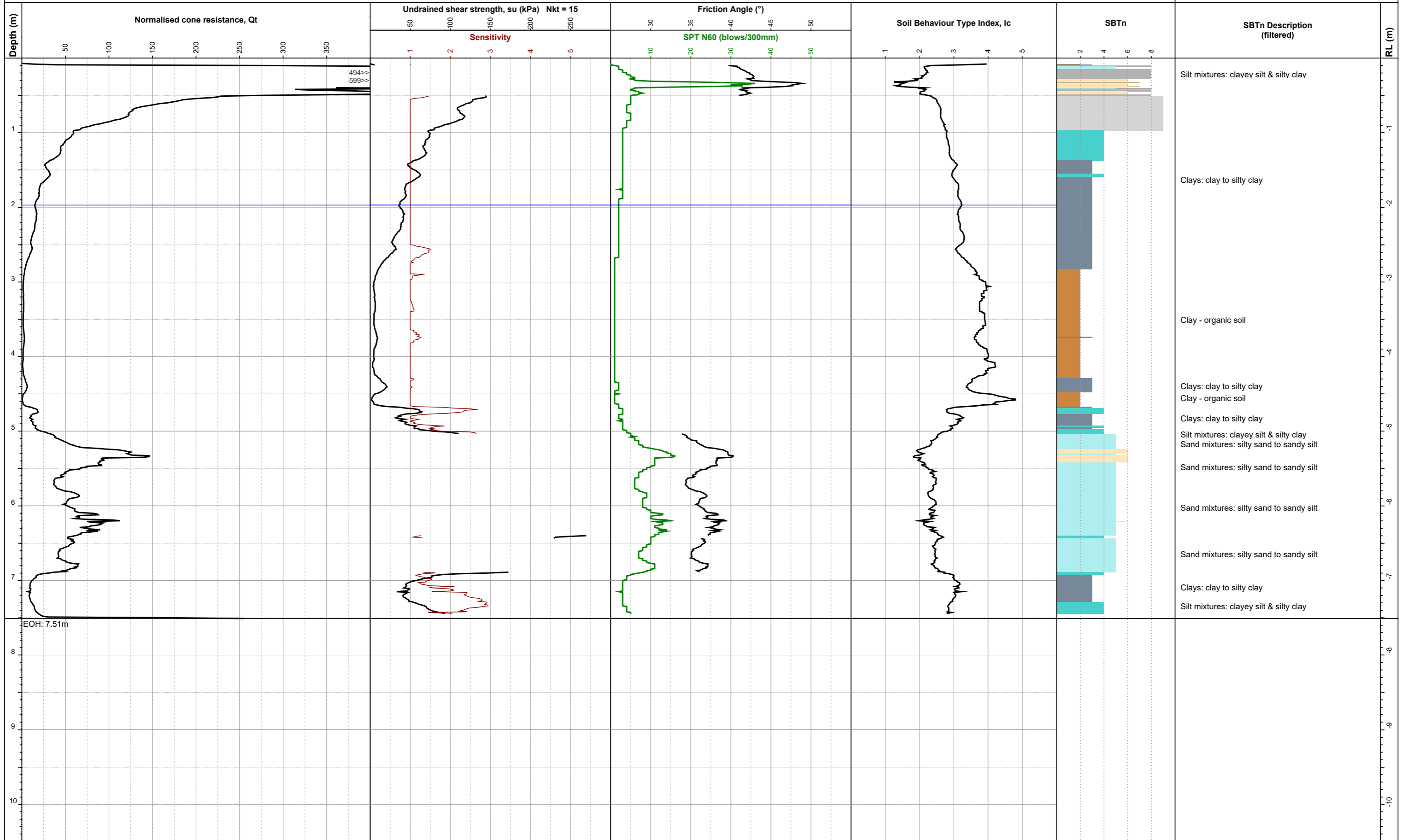
Test ID: **CPT-17**

Project ID: 21568
Depth: 7.51m
Sheet: 1 of 1
Date: 07/04/2022



Cone Penetration Test (CPTu) Parameter Log

Test ID: **CPT-17**



Client: LDE Land Development & Engineering
Project: Geotechnical Investigation
Location: Kerikeri Land Development Plan Review

Remarks:
 Ground water level located at 1.97m
 Test according to ISO 22476-1:12
Termination Reason:
 High cone resistance

Northing: 6103429mN
Easting: 1685086mE
System: NZTM
Elevation: Ground
Located By: Pagani GPS
Location:

Operator: JC
Rig: Pagani TG63-150
Cone ID: MKs651
Type: Comp. piezo cone
Cone Area: 10 cm²
Sleeve Area: 150 cm²
Area Ratio: 0.78

Soil Behaviour Type - Robertson 1986

0	Undefined	5	Sand mixtures: silty sand to sandy silt
1	Sensitive fine-grained	6	Sands: clean sands to silty sands
2	Clay - organic soil	7	Dense sand to gravelly sand
3	Clays: clay to silty clay	8	Stiff sand to clayey sand
4	Silt mixtures: clayey silt & silty clay	9	Stiff fine-grained

Test ID: **CPT-17**
Project ID: 21568
Depth: 7.51m
Sheet: 1 of 1
Date: 07/04/2022





Hand Auger Borehole Log

Method: 50mm Hand Auger

Test ID: **HA01**

Project ID: 21568

Sheet: 1 of 1

Client: LDE Land Development & Engineering
Project: Geotechnical Investigation
Location: Kerikeri Land Development Plan Review
Test Site: Refer to site plan

Coordinates: 6101787mN, 1684165mE
System: NZTM
Elevation: Ground
Located By: Site plan/map

Test Date: 07/04/2022
Logged By: JMN
Checked By: GH
Vane ID: 2864

Depth (m)	Graphic Log	Material Description	Geology	Water	In-situ Testing		Test Values peak / residual (sensitivity)	Depth (m)
					Dynamic Cone Penetrometer (blows / 50mm)	Shear Vane, Su (kPa)		
0.0 - 0.5	Clayey organic SILT; brown. Very stiff; dry; high plasticity; friable; rootlets	Topsoil						
0.5 - 1.0	Silty CLAY; brown. Stiff; moist; high plasticity 0.6m - 1.0m: Becoming greyish brown with black streaks	Alluvium					71 / 20 (3.6)	-0.5
1.0 - 1.4	1.0m - 1.4m: Becoming grey with brown and black streaks						98 / 25 (3.9)	-1.0
1.4 - 1.5	1.2m: Becoming saturated						106 / 44 (2.4)	-1.5
1.5 - 2.0	1.4m - 2.0m: Becoming light grey with thick black streaks						82 / 7 (11.7)	-2.0
2.0 - 3.0	Limited recovery. CLAY with minor silt and sand and trace organics; light grey. Soft; saturated; high plasticity. SAND; fine, poorly graded			Groundwater Not Encountered			95 / 34 (2.8)	-2.5
3.0 - 3.5							55 / 14 (3.9)	-3.0
							116 / 19 (6.1)	-3.5
							57 / 27 (2.1)	-4.0
							109 / 45 (2.4)	-4.5

Hole Depth: 3.00m **Termination:** Reached target depth

Remarks:

Materials are described in general accordance with NZGS 'Field Description of Soil and Rock' (2005).
 No correlation is implied between shear vane and DCP values.

● Vane peak ▼ Standing water level
 ○ Vane residual ◁ Groundwater inflow
 ◆ Vane UTP ▷ Groundwater outflow
 UTP = Unable to Penetrate

Generated with CORE-GS by Geric - HA/TP Log v8 - 22/04/2022 9:28:14 am



Hand Auger Borehole Log

Method: 50mm Hand Auger

Test ID: **HA02**

Project ID: 21568

Sheet: 1 of 1

Client: LDE Land Development & Engineering
Project: Geotechnical Investigation
Location: Kerikeri Land Development Plan Review
Test Site: Refer to site plan

Coordinates: 6102625mN, 1684850mE
System: NZTM
Elevation: Ground
Located By: Site plan/map

Test Date: 07/04/2022
Logged By: JMN
Checked By: GH
Vane ID: 2864

Depth (m)	Graphic Log	Material Description	Geology	Water	In-situ Testing				Test Values peak / residual (sensitivity)	Depth (m)
					Dynamic Cone Penetrometer (blows / 50mm)					
					Shear Vane, Su (kPa)					
					50	100	150	200		
0.0 - 0.5		Clayey organic SILT; brown. Very stiff; dry; high plasticity; friable; rootlets	Topsoil	Groundwater Not Encountered					191+	-0.5
0.5 - 1.0		Silty CLAY; yellowish brown. Very stiff; dry; high plasticity 0.5m: Becoming moist	Residual Soil - Kerikeri Volcanics						191+	
1.0 - 1.5		1.0m - 2.0m: Becoming light orange brown							191+	-1.0
1.5 - 2.0		1.5m: Becoming wet 1.8m: Red streaks							158 / 112 (1.4)	-1.5
2.0 - 2.5									134 / 95 (1.4)	-2.0
2.5 - 3.0									147 / 95 (1.5)	-2.5
3.0 - 3.5								134 / 93 (1.4)	-3.0	
3.5 - 4.0								131 / 93 (1.4)	-3.5	

Hole Depth: 2.00m **Termination:** Reached target depth

Remarks:

Materials are described in general accordance with NZGS 'Field Description of Soil and Rock' (2005).
 No correlation is implied between shear vane and DCP values.

● Vane peak ▼ Standing water level
 ○ Vane residual ◁ Groundwater inflow
 ◆ Vane UTP ▷ Groundwater outflow
 UTP = Unable to Penetrate

Generated with CORE-GS by Geric - HA/TP Log v8 - 22/04/2022 9:28:15 am



Hand Auger Borehole Log

Method: 50mm Hand Auger

Test ID: **HA03**

Project ID: 21568

Sheet: 1 of 1

Client: LDE Land Development & Engineering
Project: Geotechnical Investigation
Location: Kerikeri Land Development Plan Review
Test Site: Refer to site plan

Coordinates: 6103275mN, 1685001mE
System: NZTM
Elevation: Ground
Located By: Site plan/map

Test Date: 07/04/2022
Logged By: JMN
Checked By: GH
Vane ID: 2864

Depth (m)	Graphic Log	Material Description	Geology	Water	In-situ Testing				Test Values peak / residual (sensitivity)	Depth (m)
					Dynamic Cone Penetrometer (blows / 50mm)					
					Shear Vane, Su (kPa)					
					50	100	150	200		
0.0 - 0.5		Clayey organic SILT; brown. Very stiff; dry; high plasticity; friable; rootlets	Topsoil	Groundwater Not Encountered					191+	-0.5
0.5 - 1.0		SILT & CLAY; orange brown. Very stiff; moist; high plasticity	Alluvium						191+	-0.5
1.0 - 1.5		1.4m - 2.0m: Becoming sandy and reddish orange; SAND; fine; poorly graded							191+	-1.0
1.5 - 2.0		1.8m: Becoming wet							191+	-1.5
2.0 - 2.5									136 / 68 (2)	-1.5
2.5 - 3.0									123 / 68 (1.8)	-2.0
3.0 - 3.5									170 / 65 (2.6)	-2.5
3.5 - 4.0									123 / 35 (3.5)	-3.0
4.0 - 4.5										-3.5
4.5 - 5.0										-3.5

Hole Depth: 2.00m **Termination:** Reached target depth

Remarks:

Materials are described in general accordance with NZGS 'Field Description of Soil and Rock' (2005).
 No correlation is implied between shear vane and DCP values.

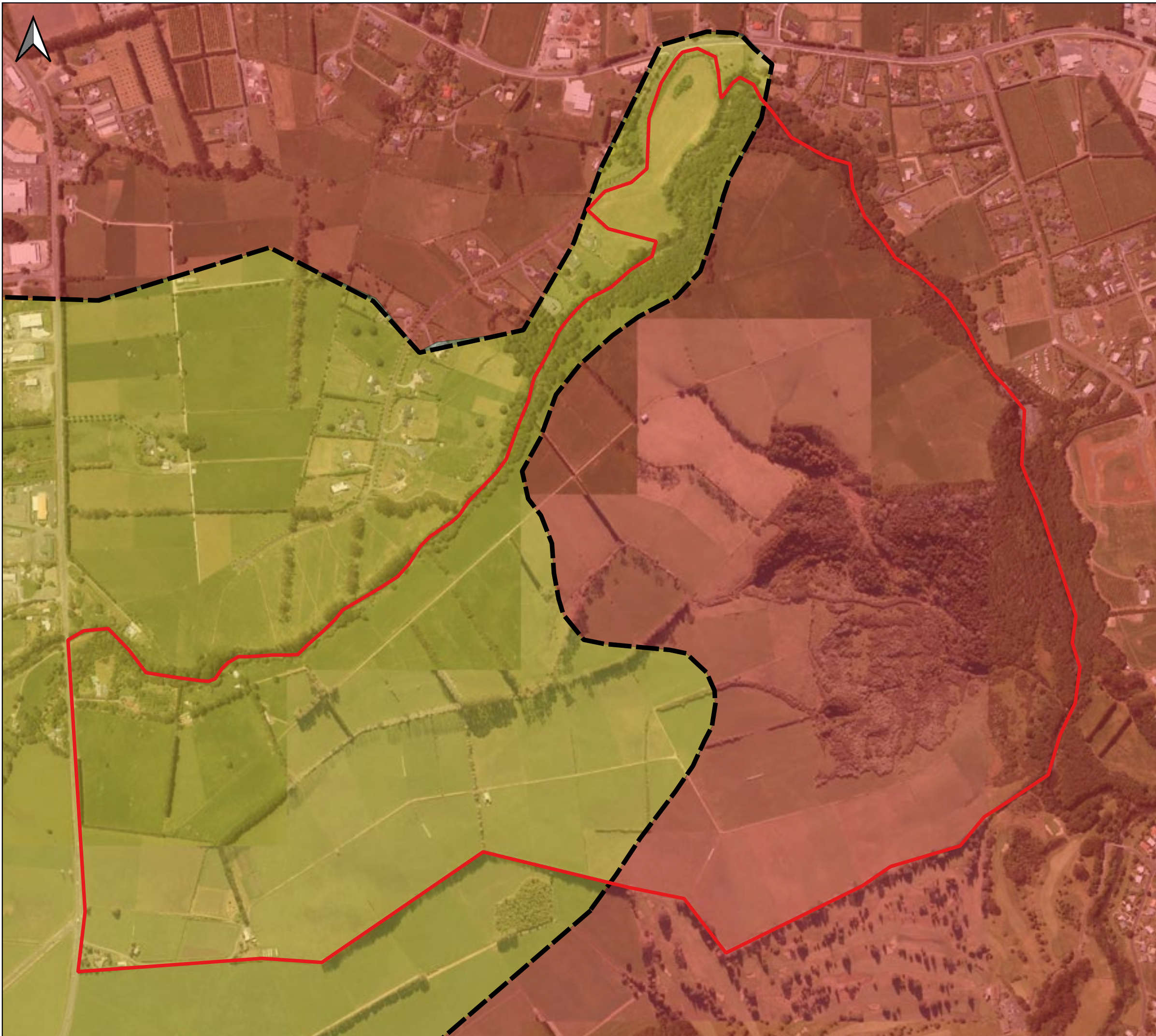
● Vane peak ▼ Standing water level
 ○ Vane residual ◁ Groundwater inflow
 ◆ Vane UTP ▷ Groundwater outflow

UTP = Unable to Penetrate

Generated with CORE-GS by Geric - HA/TP Log v8 - 22/04/2022 9:28:16 am

APPENDIX C

GEOLOGIC MAPPING AND CROSS SECTIONS



LEGEND

- Boundary
- Alluvium
- Kerikeri Volcanic Group

0 150 300 450 600 m



SCALE A3: 1:7500

NOTES

1. Aerial basemap and property boundaries sourced from LINZ Data Service (CC-BY 4.0).
2. Topographic contours derived from NRC LiDAR DEM (2018-2019 survey).
3. Lithologic boundaries shown as approximate only.

CLIENT

Kiwi Fresh Orange Company Ltd

PROJECT

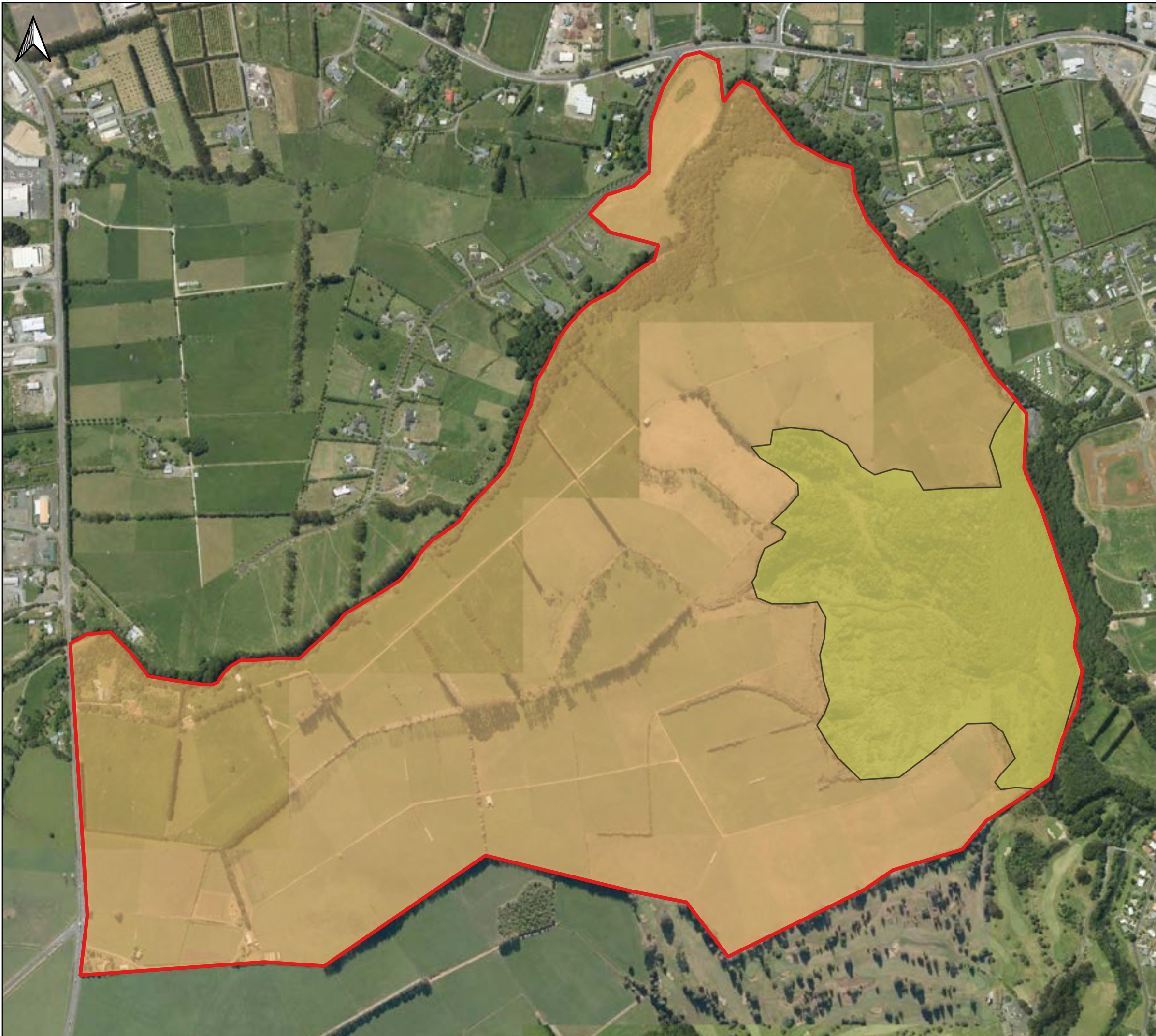
Kerikeri Land Development Plan Review

DRAWING TITLE

Interpreted Geologic Map



PROJECT REF 21568	DRAWING REF G01	REVISION B
DATE 15/06/2022	PREPARED BY JMN	CHECKED BY GH
FILE PATH M-FILES\LDE - Project\Base Data v3.1.qgz		



LEGEND

- Boundary
- Region B
- Region A

0 150 300 450 600 m



SCALE A3: 1:7500

NOTES
 1. Aerial basemap and property boundaries sourced from LINZ Data Service (CC-BY 4.0).

CLIENT
 Kiwi Fresh Orange Company Limited

PROJECT
 Kerikeri Plan Change

DRAWING TITLE
 Geomorphic Zones for the Kerikeri Plan Change Subject Area

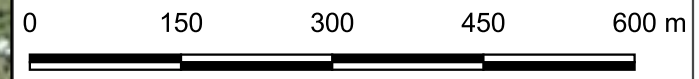


PROJECT REF 21568	DRAWING REF G01	REVISION B
DATE 15/06/2022	PREPARED BY JMN	CHECKED BY GH
FILE PATH M-FILES\LDE - Project\Bse Data v3.1.qgz		



LEGEND

- Boundary
- Scarps
- Terracettes
- Boulders
- Rivers
- Water
- ▶ Overland flow path



SCALE A3: 1:7500

NOTES
 1. Aerial basemap and property boundaries sourced from LINZ Data Service (CC-BY 4.0).

CLIENT
 Kiwi Fresh Orange Company Limited

PROJECT
 Kerikeri Plan Change

DRAWING TITLE
 Geomorphic Map

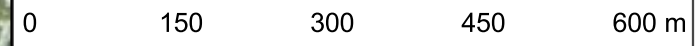


PROJECT REF 21568	DRAWING REF G01	REVISION B
DATE 15/06/2022	PREPARED BY JMN	CHECKED BY GH
FILE PATH M-FILES\LDE - Project\Base Data v3.1.qgz		



LEGEND

- Boundary
- CPT - Depth to Bedrock (m)
- Contours
- Major - 5m



SCALE A3: 1:7500

- NOTES
1. Aerial basemap and property boundaries sourced from LINZ Data Service (CC-BY 4.0).
 2. Topographic contours derived from NRC LiDAR DEM (2018-2019 survey).
 3. Investigation locations shown approximately only.

CLIENT
Kiwi Fresh Orange Company Ltd

PROJECT
Kerikeri Land Development Plan Review

DRAWING TITLE
Geotechnical Investigation Plan - Depth to Bedrock

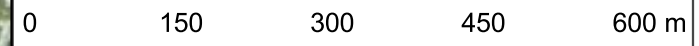


PROJECT REF 21568	DRAWING REF G02	REVISION B
DATE 15/06/2022	PREPARED BY JMN	CHECKED BY GH
FILE PATH M-FILES\LDE - Project\Base Data v3.1.qgz		



LEGEND

- Boundary
- Contours
 - Major - 5m
 - CPT - Depth to Groundwater (m)



SCALE A3: 1:7500

- NOTES
1. Aerial basemap and property boundaries sourced from LINZ Data Service (CC-BY 4.0).
 2. Topographic contours derived from NRC LiDAR DEM (2018-2019 survey).
 3. Investigation locations shown approximately only.

CLIENT
Kiwi Fresh Orange Company Ltd

PROJECT
Kerikeri Land Development Plan Review

DRAWING TITLE
Geotechnical Investigation Plan - Depth to Groundwater



PROJECT REF 21568	DRAWING REF G03	REVISION B
DATE 15/06/2022	PREPARED BY JMN	CHECKED BY GH
FILE PATH M-FILES\LDE - Project\Base Data v3.1.qgz		

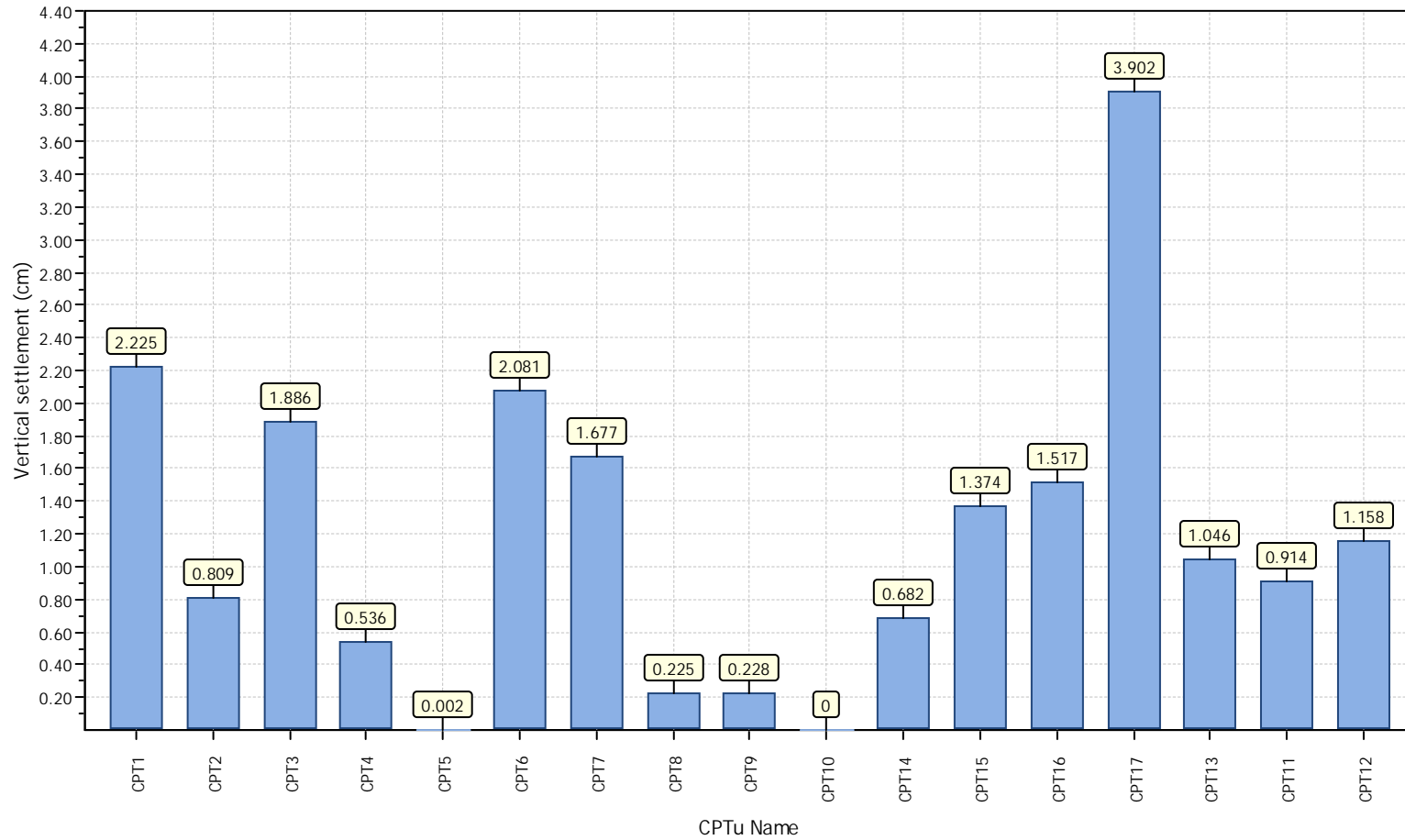
APPENDIX D

LIQUEFACTION ANALYSES

Project title : 21568 Liquefaction Settlement Analysis

Location : Kerikeri Plan Change

Overall vertical settlements report - ULS

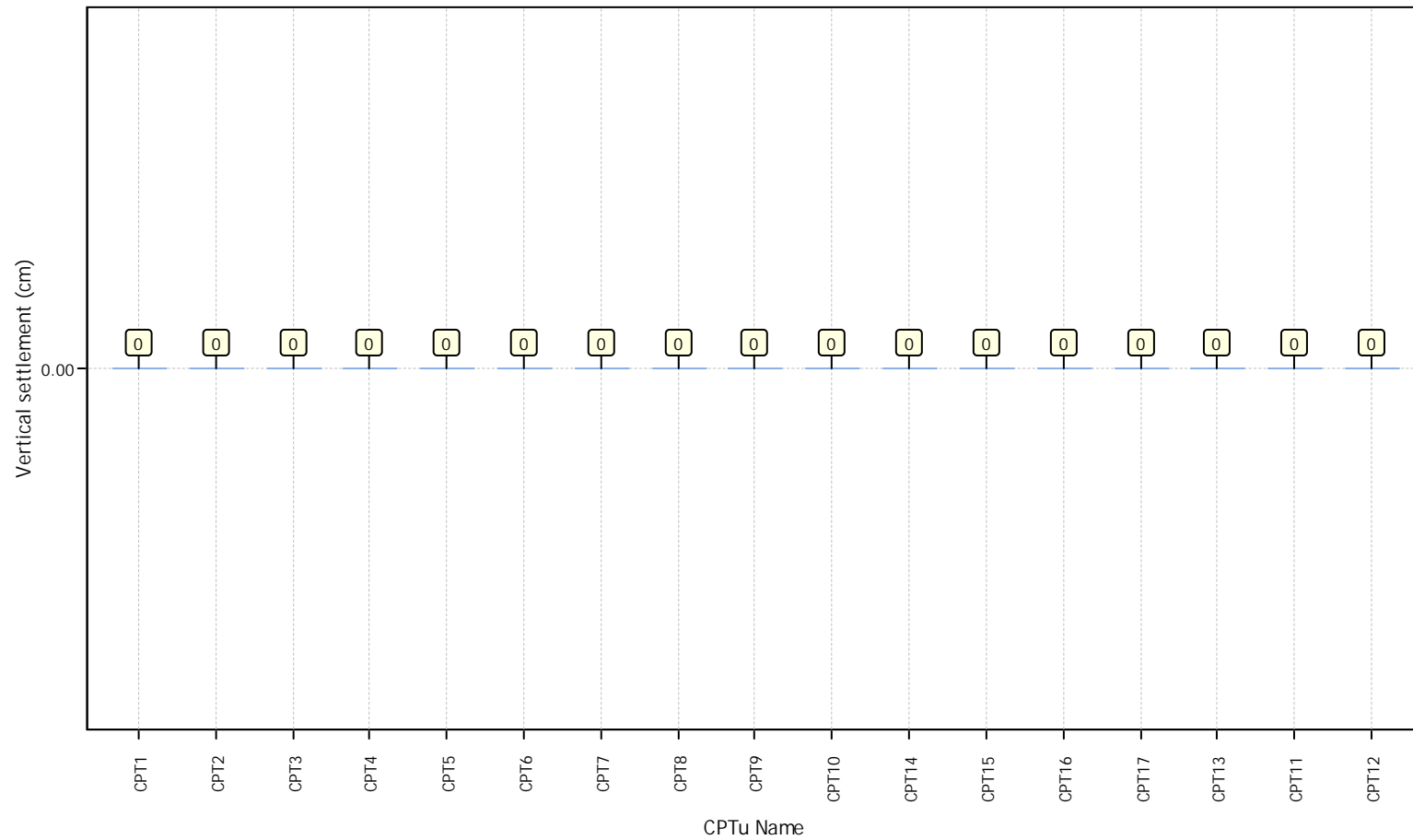




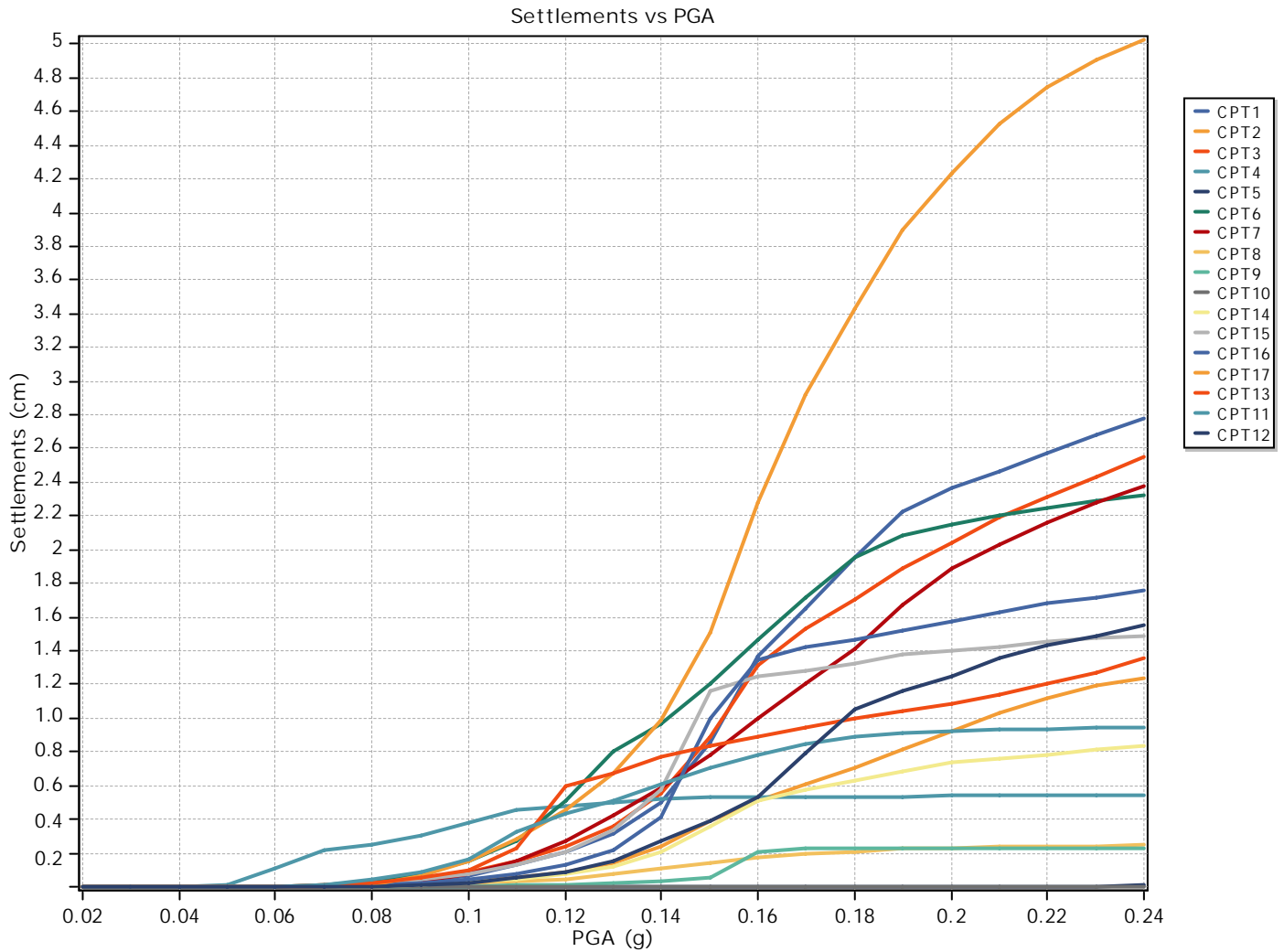
Project title : 21568 Liquefaction Settlement Analysis

Location : Kerikeri Plan Change

Overall vertical settlements report - SLS



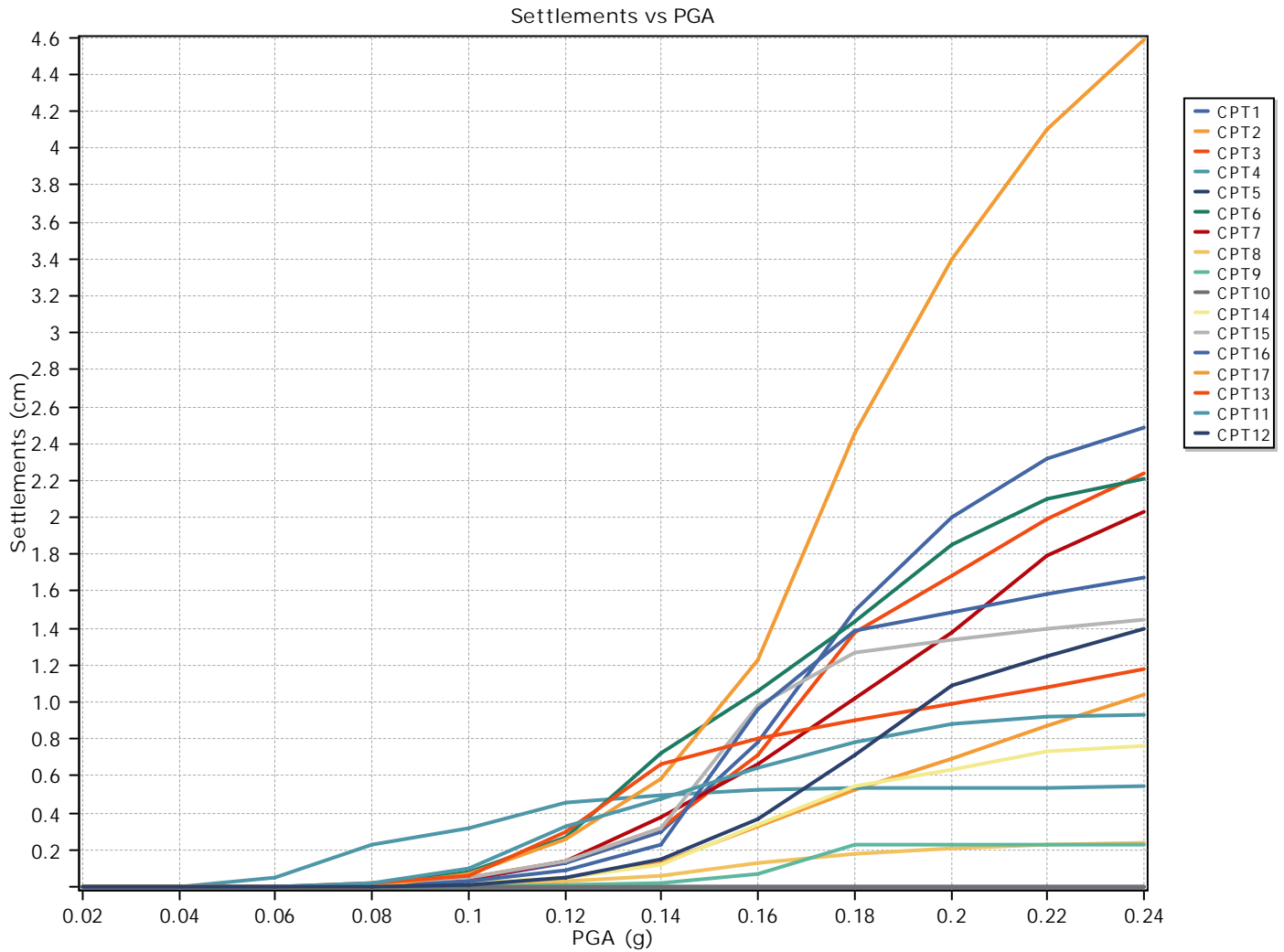
PGA Based Parametric Analysis - ULS



:: CPT main liquefaction parameters details ::

CPT Name	Assesment method	Earthquake Mag.	GWT in situ (m)	GWT earthq. (m)
CPT1	Boulanger & Idriss (2014)	6.50	1.20	1.20
CPT2	Boulanger & Idriss (2014)	6.50	1.55	1.55
CPT3	Boulanger & Idriss (2014)	6.50	1.22	1.22
CPT4	Boulanger & Idriss (2014)	6.50	0.00	0.00
CPT5	Boulanger & Idriss (2014)	6.50	1.80	1.80
CPT6	Boulanger & Idriss (2014)	6.50	1.07	1.07
CPT7	Boulanger & Idriss (2014)	6.50	1.09	1.09
CPT8	Boulanger & Idriss (2014)	6.50	0.79	0.79
CPT9	Boulanger & Idriss (2014)	6.50	1.07	1.07
CPT10	Boulanger & Idriss (2014)	6.50	1.60	1.60
CPT14	Boulanger & Idriss (2014)	6.50	1.00	1.00
CPT15	Boulanger & Idriss (2014)	6.50	1.30	1.30
CPT16	Boulanger & Idriss (2014)	6.50	1.90	1.90
CPT17	Boulanger & Idriss (2014)	6.50	1.97	1.97
CPT13	Boulanger & Idriss (2014)	6.50	0.75	0.75

PGA Based Parametric Analysis - SLS



:: CPT main liquefaction parameters details ::

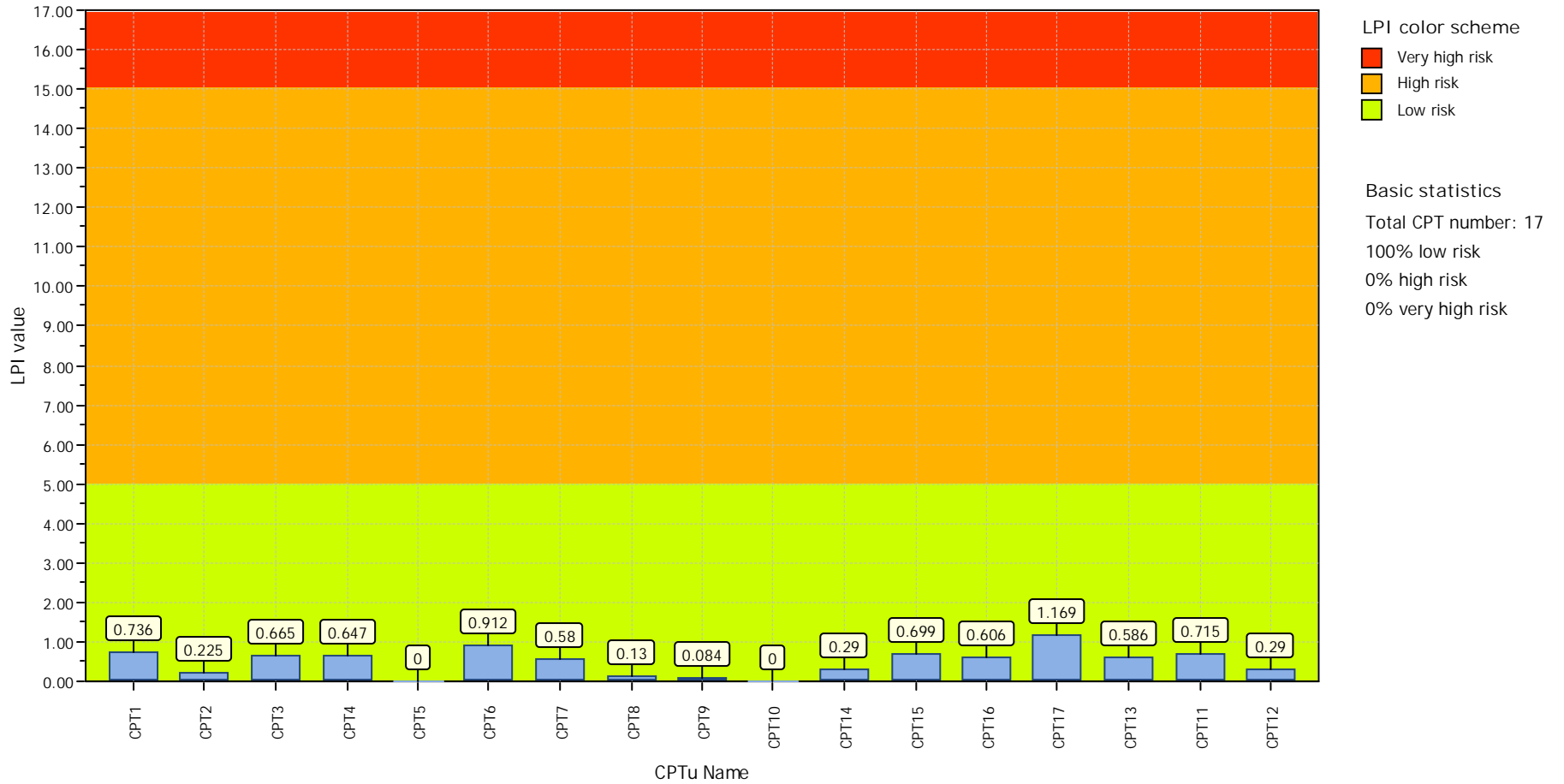
CPT Name	Assesment method	Earthquake Mag.	GWT in situ (m)	GWT earthq. (m)
CPT1	Boulanger & Idriss (2014)	5.80	1.20	1.20
CPT2	Boulanger & Idriss (2014)	5.80	1.55	1.55
CPT3	Boulanger & Idriss (2014)	5.80	1.22	1.22
CPT4	Boulanger & Idriss (2014)	5.80	0.00	0.00
CPT5	Boulanger & Idriss (2014)	5.80	1.80	1.80
CPT6	Boulanger & Idriss (2014)	5.80	1.07	1.07
CPT7	Boulanger & Idriss (2014)	5.80	1.09	1.09
CPT8	Boulanger & Idriss (2014)	5.80	0.79	0.79
CPT9	Boulanger & Idriss (2014)	5.80	1.07	1.07
CPT10	Boulanger & Idriss (2014)	5.80	1.60	1.60
CPT14	Boulanger & Idriss (2014)	5.80	1.00	1.00
CPT15	Boulanger & Idriss (2014)	5.80	1.30	1.30
CPT16	Boulanger & Idriss (2014)	5.80	1.90	1.90
CPT17	Boulanger & Idriss (2014)	5.80	1.97	1.97
CPT13	Boulanger & Idriss (2014)	5.80	0.75	0.75



Project title : 21568 Liquefaction Settlement Analysis

Location : Kerikeri Plan Change

Overall Liquefaction Potential Index report

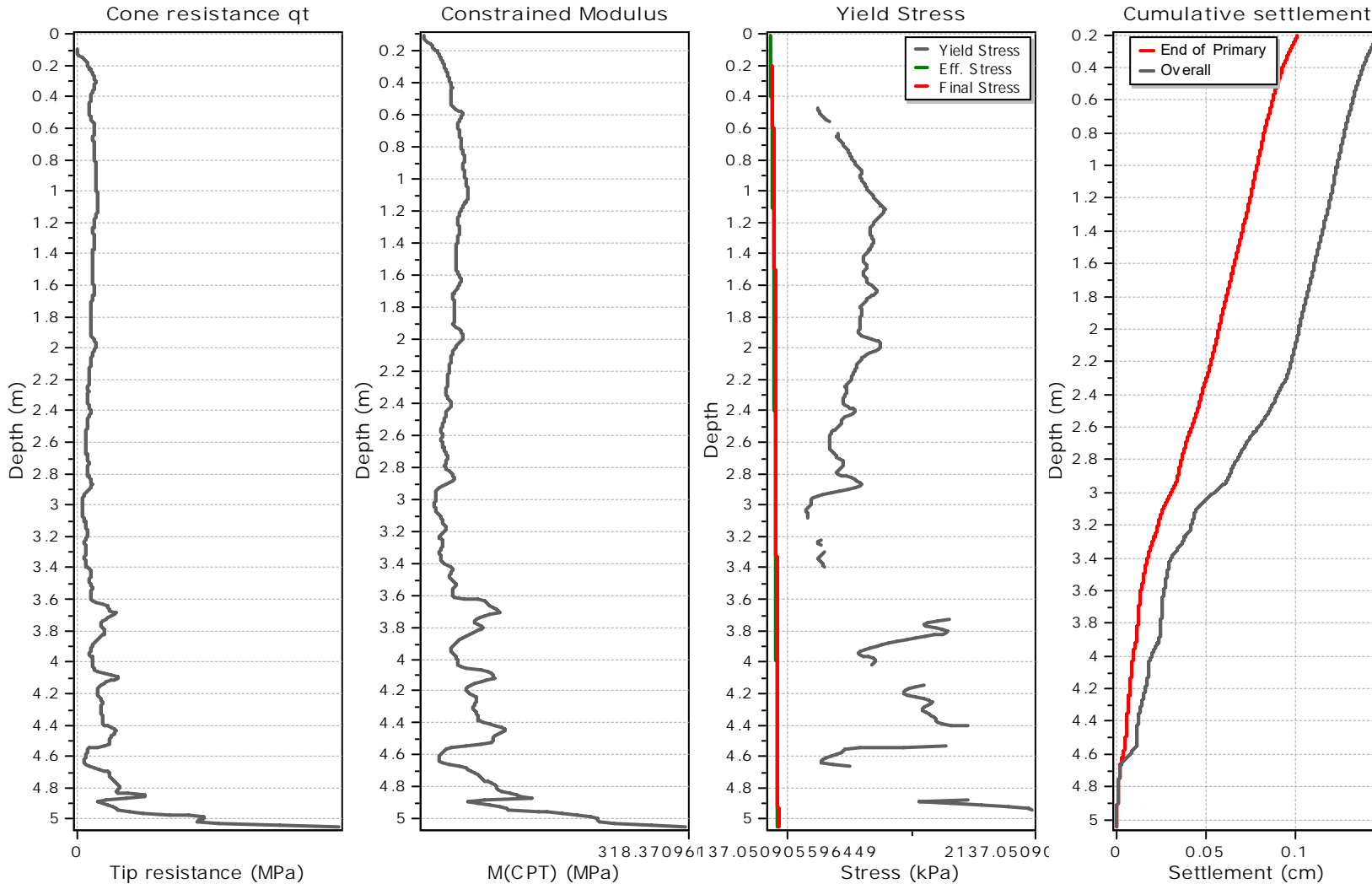


APPENDIX E

SETTLEMENT ANALYSES



Settlements calculation according to theory of elasticity*



Calculation properties

- Footing type: Rectangular
- Footing width: 12.00 (m)
- L/B: 1.0
- Footing pressure: 10.00 (kPa)
- Embedment depth: 0.20 (m)
- Footing is rigid: Yes
- Remove excavation load: No
- Apply 20% rule: No
- Calculate secondary settlements: Yes
- Time period for primary consolidation: 6 months
- Time period for second. settlements: 600 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta\sigma_v}{M_{CPT}} \Delta z$$

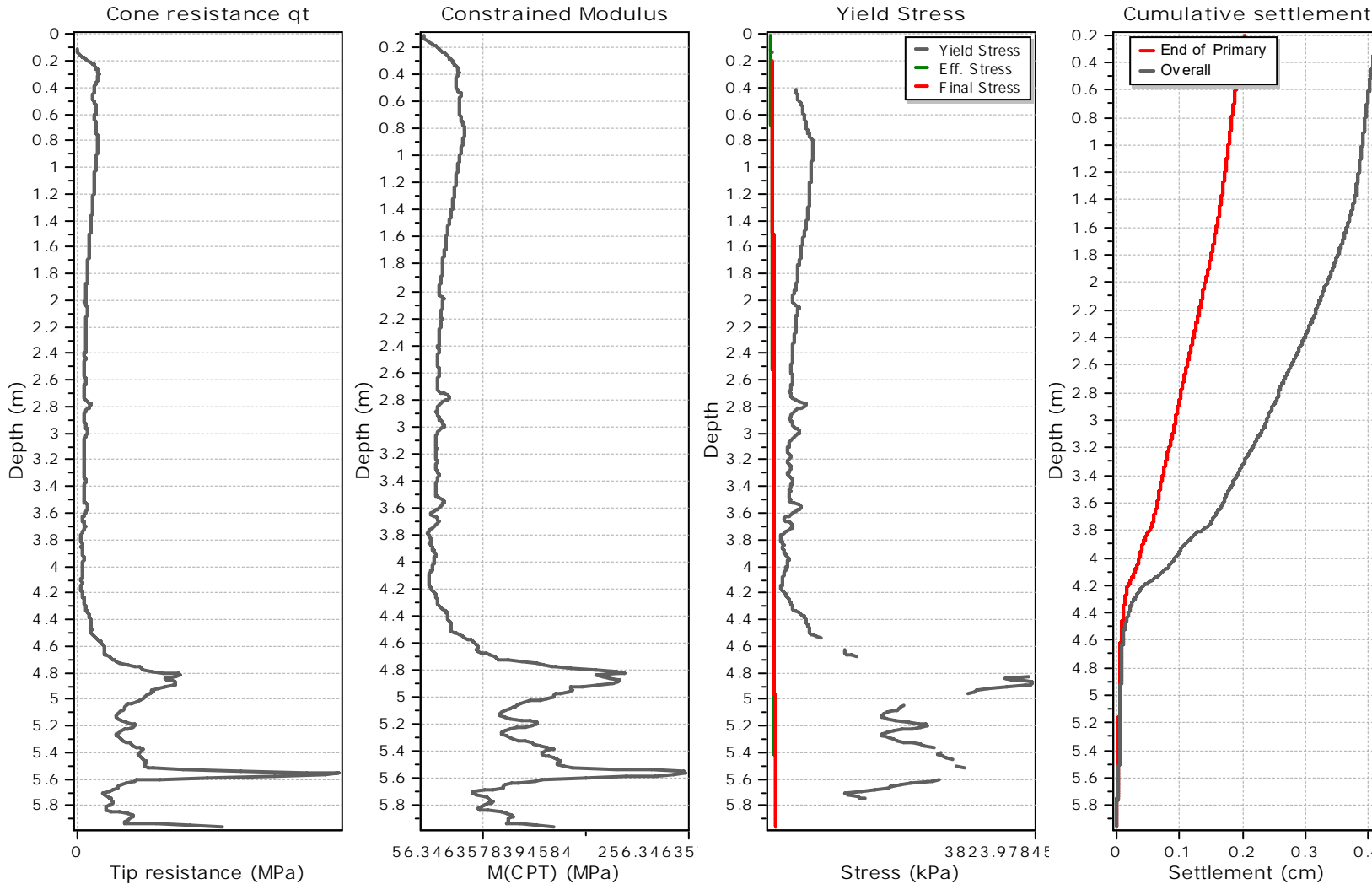
* Secondary (creep) settlement calculation is performed according to the following formula:

$$S = C_\alpha \cdot \Delta z \cdot \log(t/t_p)$$

where t_p is the duration of primary consolidation



Settlements calculation according to theory of elasticity*



Calculation properties

- Footing type: Rectangular
- Footing width: 12.00 (m)
- L/B: 1.0
- Footing pressure: 10.00 (kPa)
- Embedment depth: 0.20 (m)
- Footing is rigid: Yes
- Remove excavation load: No
- Apply 20% rule: No
- Calculate secondary settlements: Yes
- Time period for primary consolidation: 6 months
- Time period for second. settlements: 600 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta\sigma_v}{M_{CPT}} \Delta z$$

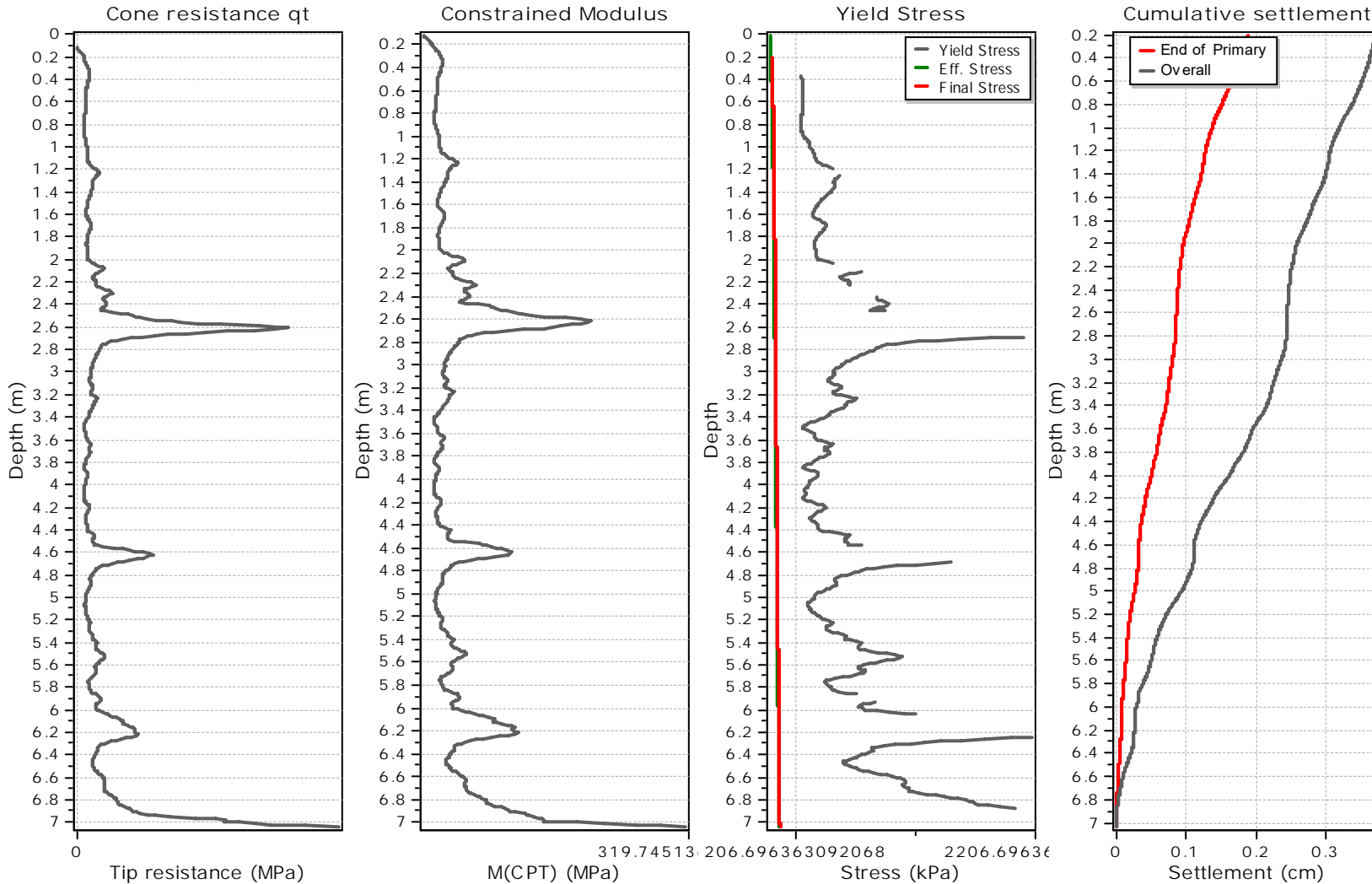
* Secondary (creep) settlement calculation is performed according to the following formula:

$$S = C_\alpha \cdot \Delta z \cdot \log(t/t_p)$$

where t_p is the duration of primary consolidation



Settlements calculation according to theory of elasticity*



Calculation properties

- Footing type: Rectangular
- Footing width: 12.00 (m)
- L/B: 1.0
- Footing pressure: 10.00 (kPa)
- Embedment depth: 0.20 (m)
- Footing is rigid: Yes
- Remove excavation load: No
- Apply 20% rule: No
- Calculate secondary settlements: Yes
- Time period for primary consolidation: 6 months
- Time period for second. settlements: 600 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta\sigma_v}{M_{CPT}} \Delta z$$

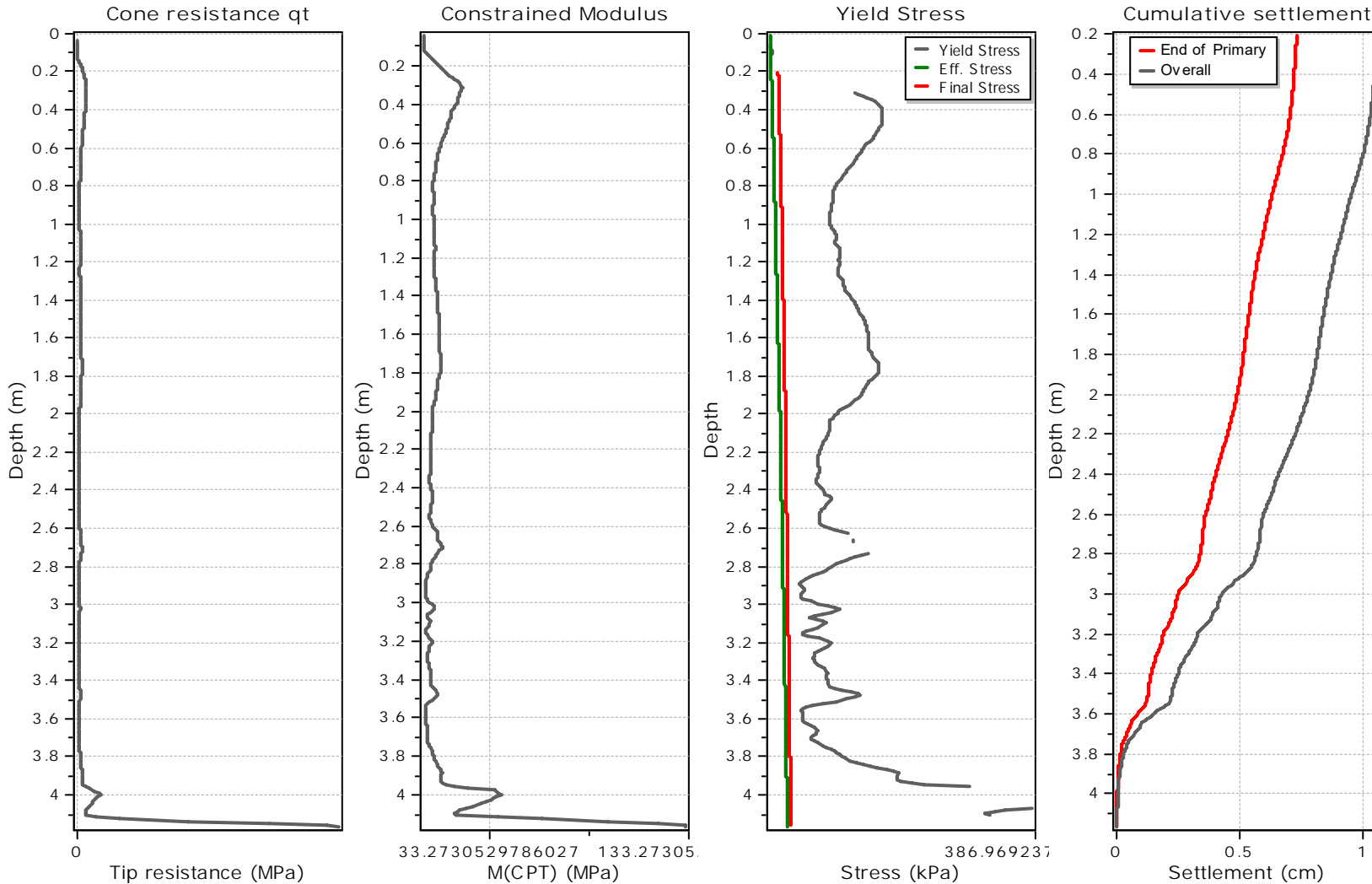
* Secondary (creep) settlement calculation is performed according to the following formula:

$$S = C_\alpha \cdot \Delta z \cdot \log(t/t_p)$$

where t_p is the duration of primary consolidation



Settlements calculation according to theory of elasticity*



Calculation properties

- Footing type: Rectangular
- Footing width: 12.00 (m)
- L/B: 1.0
- Footing pressure: 10.00 (kPa)
- Embedment depth: 0.20 (m)
- Footing is rigid: Yes
- Remove excavation load: No
- Apply 20% rule: No
- Calculate secondary settlements: Yes
- Time period for primary consolidation: 6 months
- Time period for second. settlements: 600 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta\sigma_v}{M_{CPT}} \Delta z$$

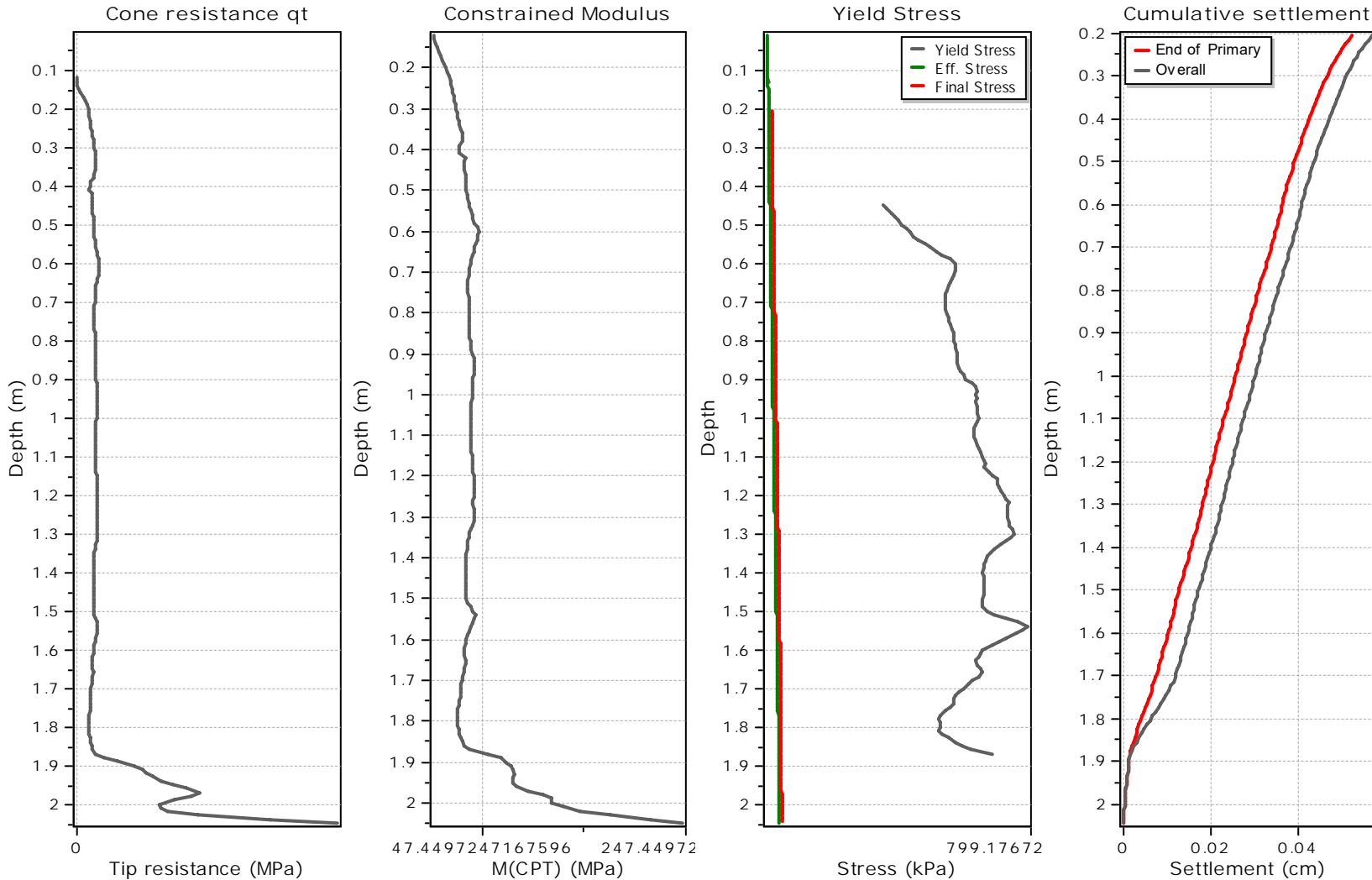
* Secondary (creep) settlement calculation is performed according to the following formula:

$$S = C_\alpha \cdot \Delta z \cdot \log(t/t_p)$$

where t_p is the duration of primary consolidation



Settlements calculation according to theory of elasticity*



Calculation properties

Footing type: Rectangular
 Footing width: 12.00 (m)
 L/B: 1.0
 Footing pressure: 10.00 (kPa)
 Embedment depth: 0.20 (m)
 Footing is rigid: Yes
 Remove excavation load: No
 Apply 20% rule: No
 Calculate secondary settlements: Yes
 Time period for primary consolidation: 6 months
 Time period for second. settlements: 600 months

* Primary settlement calculation is performed according to the following formula:

$$S = \sum \frac{\Delta\sigma_v}{M_{CPT}} \Delta z$$

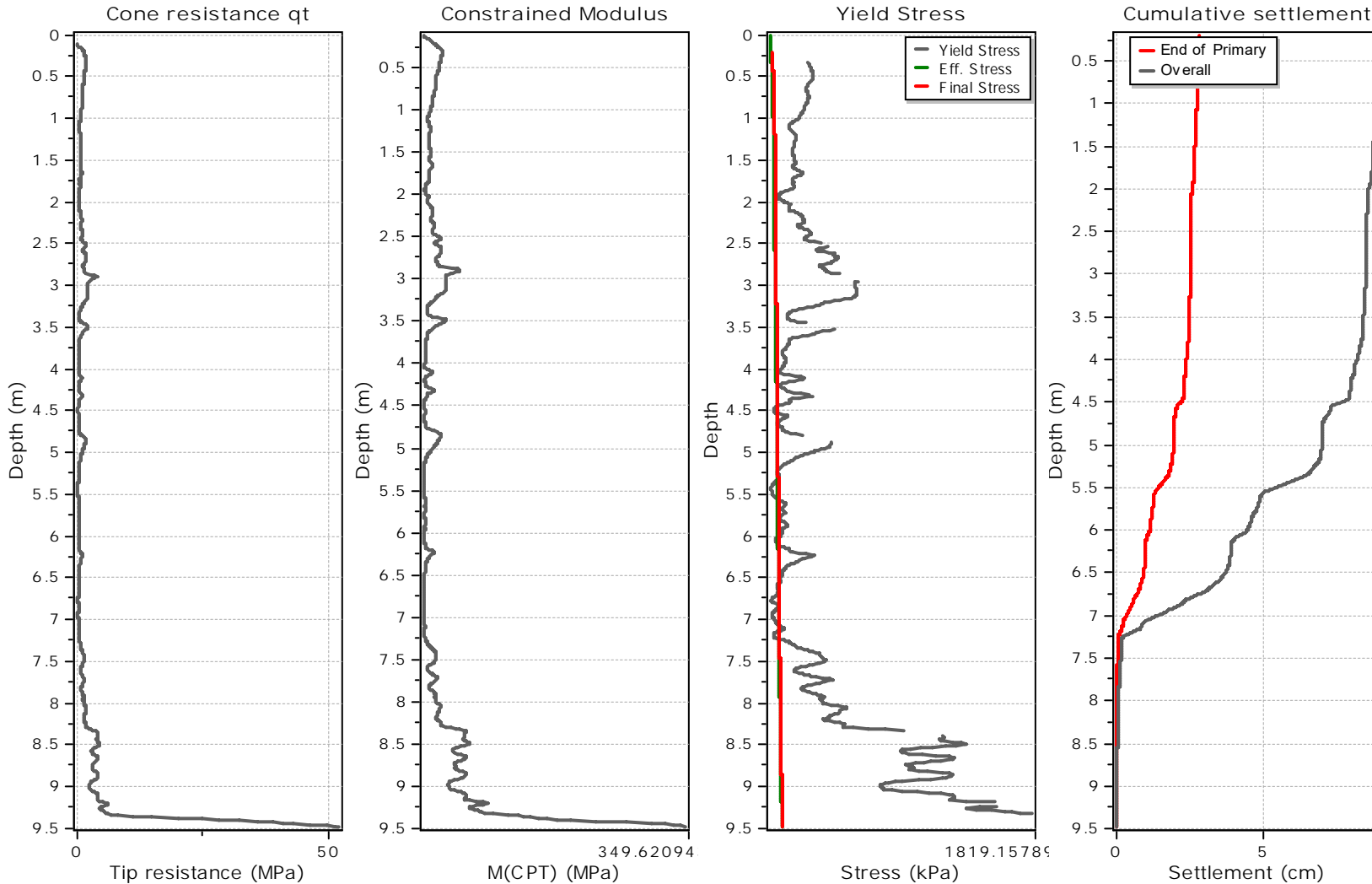
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$$S = C_\alpha \cdot \Delta z \cdot \log(t/t_p)$$

where t_p is the duration of primary consolidation



Settlements calculation according to theory of elasticity*



Calculation properties

- Footing type: Rectangular
- Footing width: 12.00 (m)
- L/B: 1.0
- Footing pressure: 10.00 (kPa)
- Embedment depth: 0.20 (m)
- Footing is rigid: Yes
- Remove excavation load: No
- Apply 20% rule: No
- Calculate secondary settlements: Yes
- Time period for primary consolidation: 6 months
- Time period for second. settlements: 600 months

* Primary settlement calculation is performed according to the following formula:

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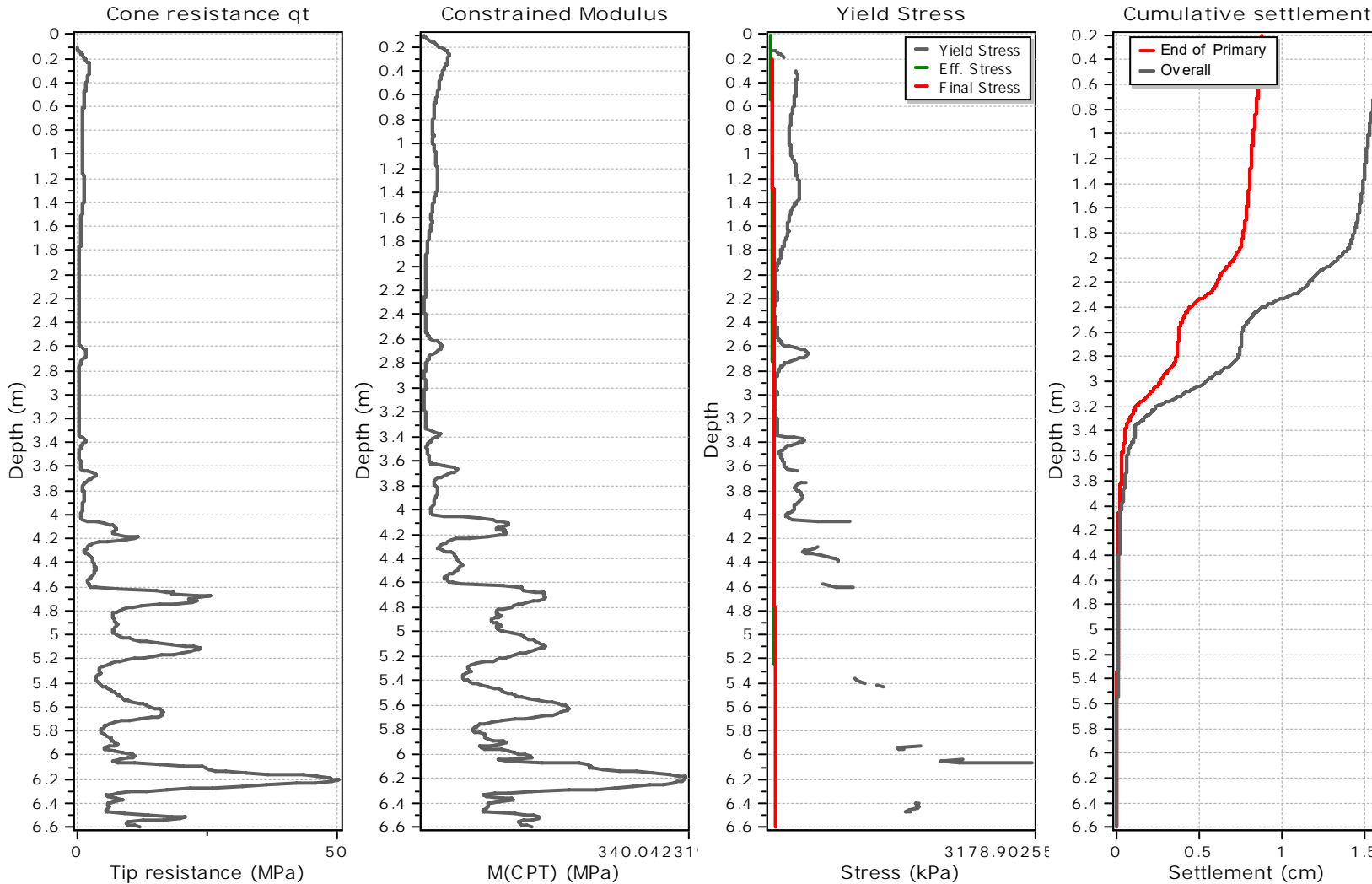
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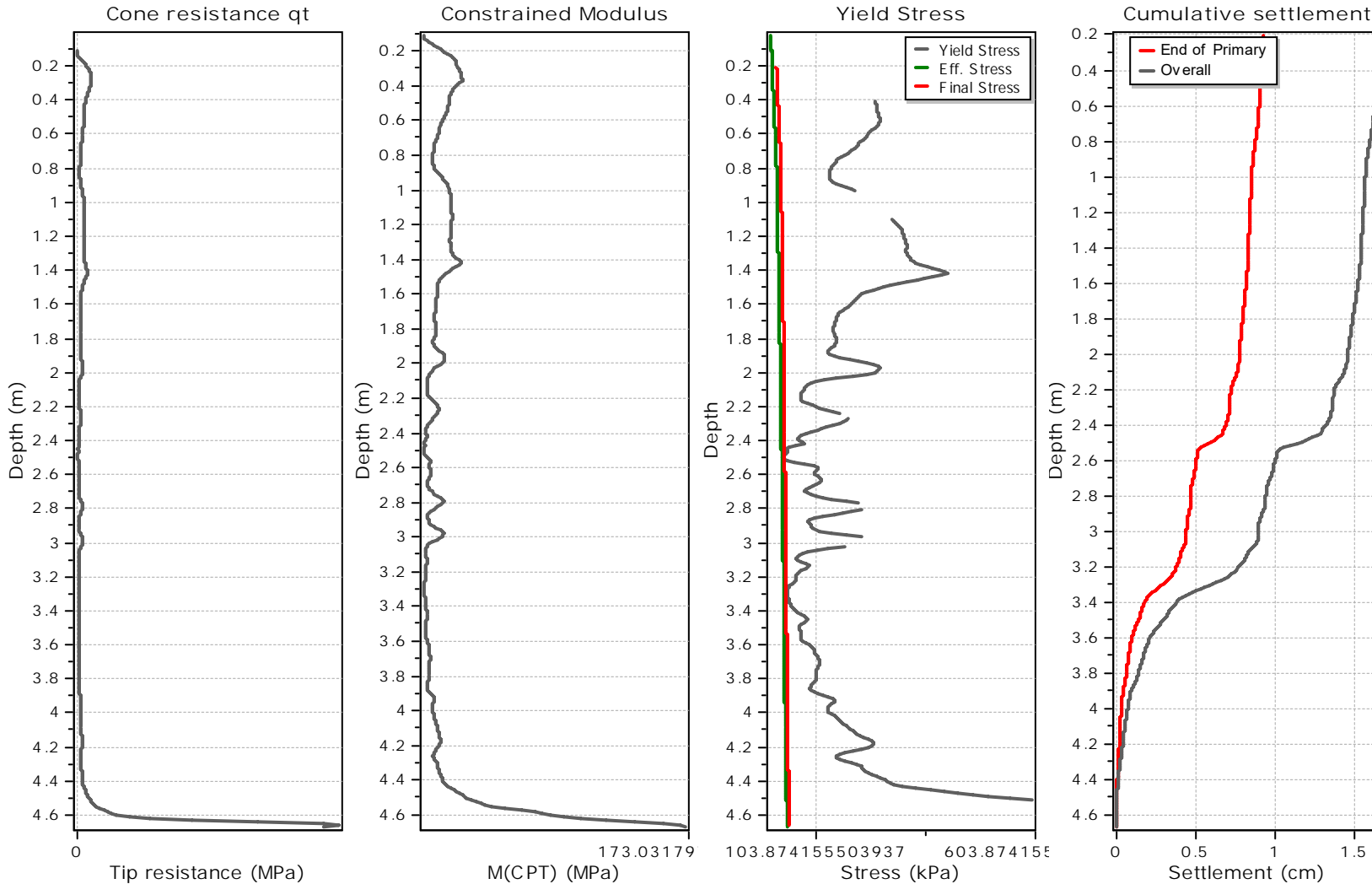
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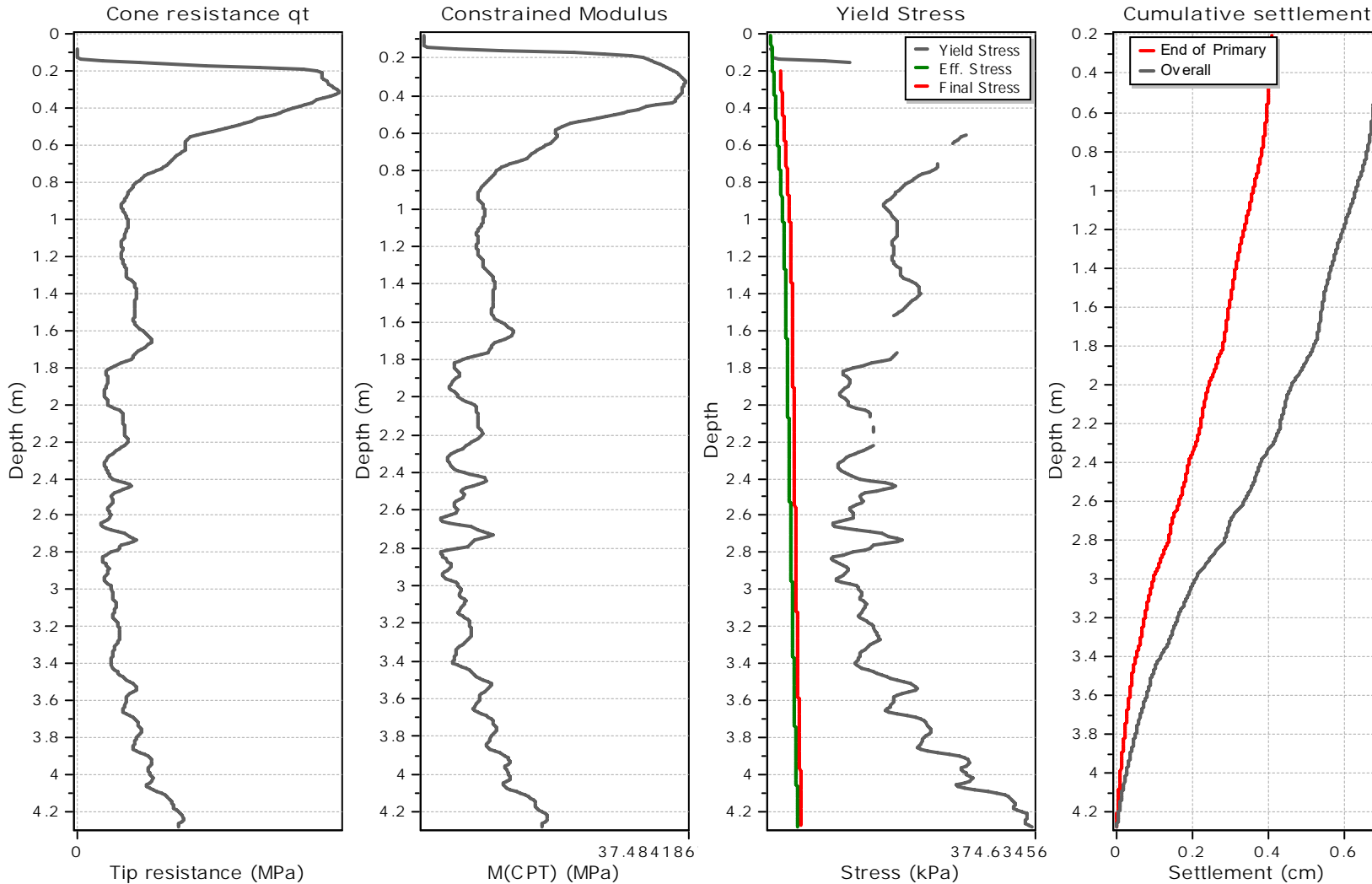
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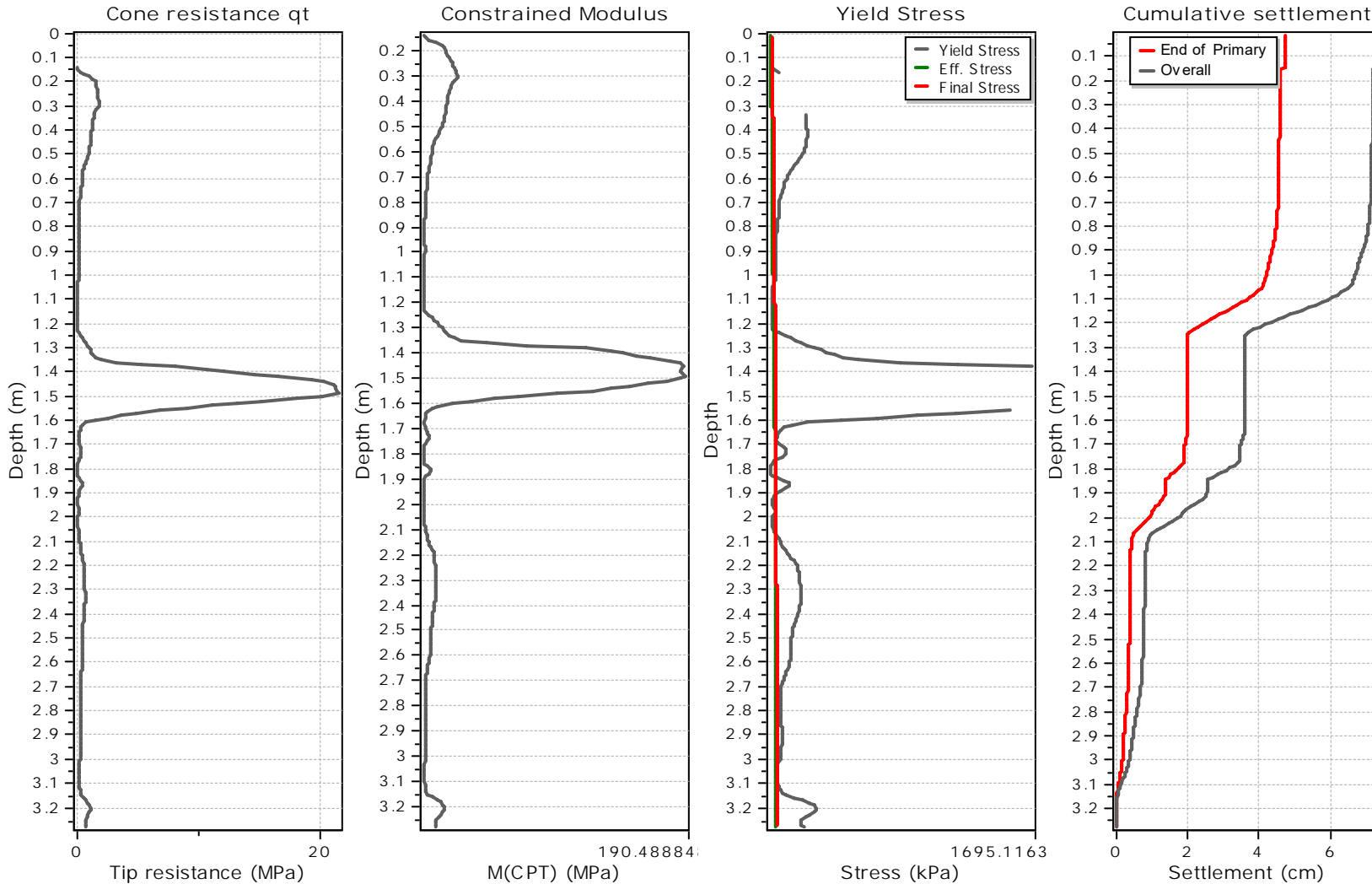
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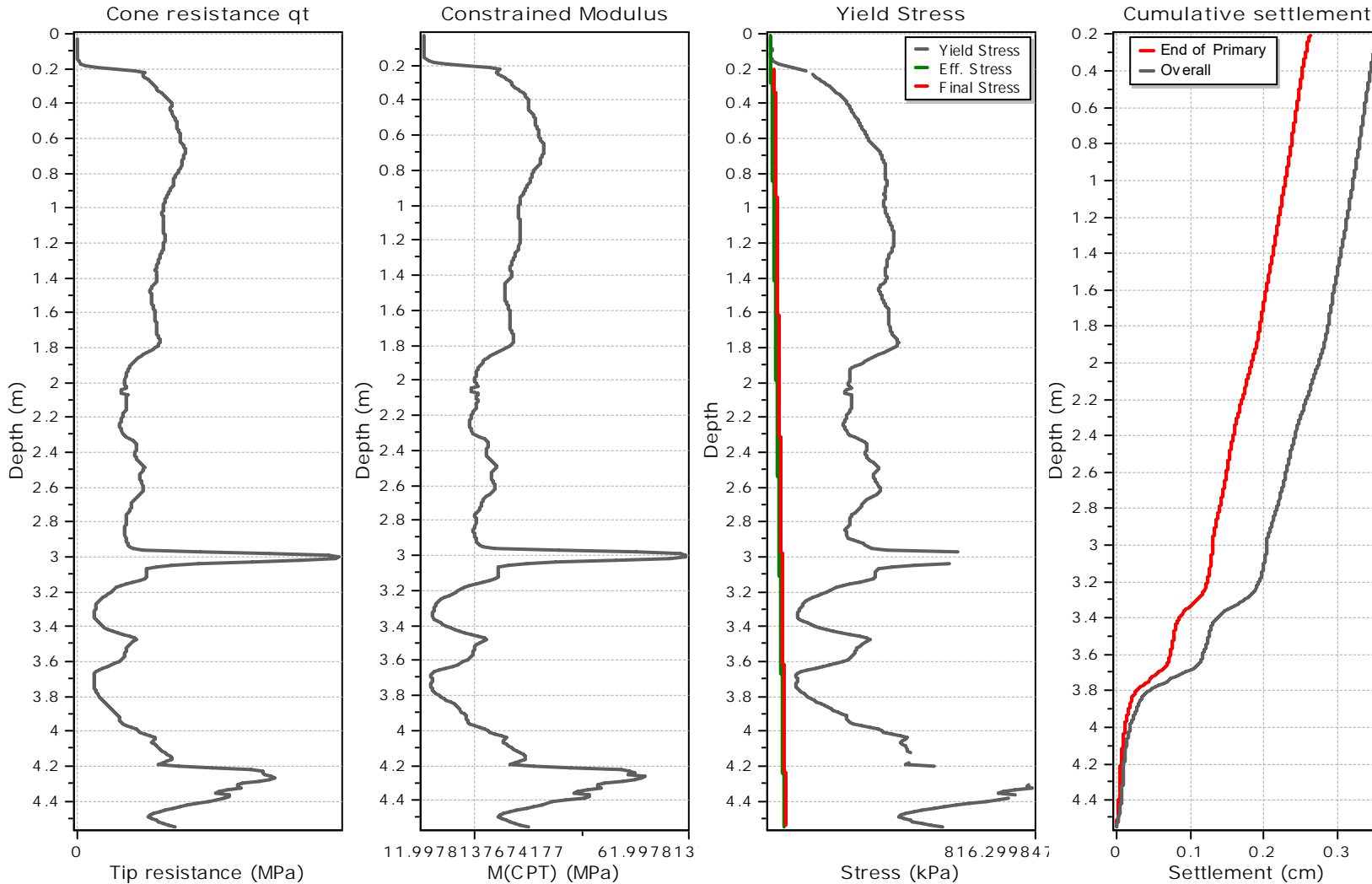
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- Footing pressure: 10.00 (kPa)
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- Footing is rigid: Yes
- Remove excavation load: No
- Apply 20% rule: No
- Calculate secondary settlements: Yes
- Time period for primary consolidation: 60 months
- Time period for second. settlements: 600 months

* Primary settlement calculation is performed according to the following formula:

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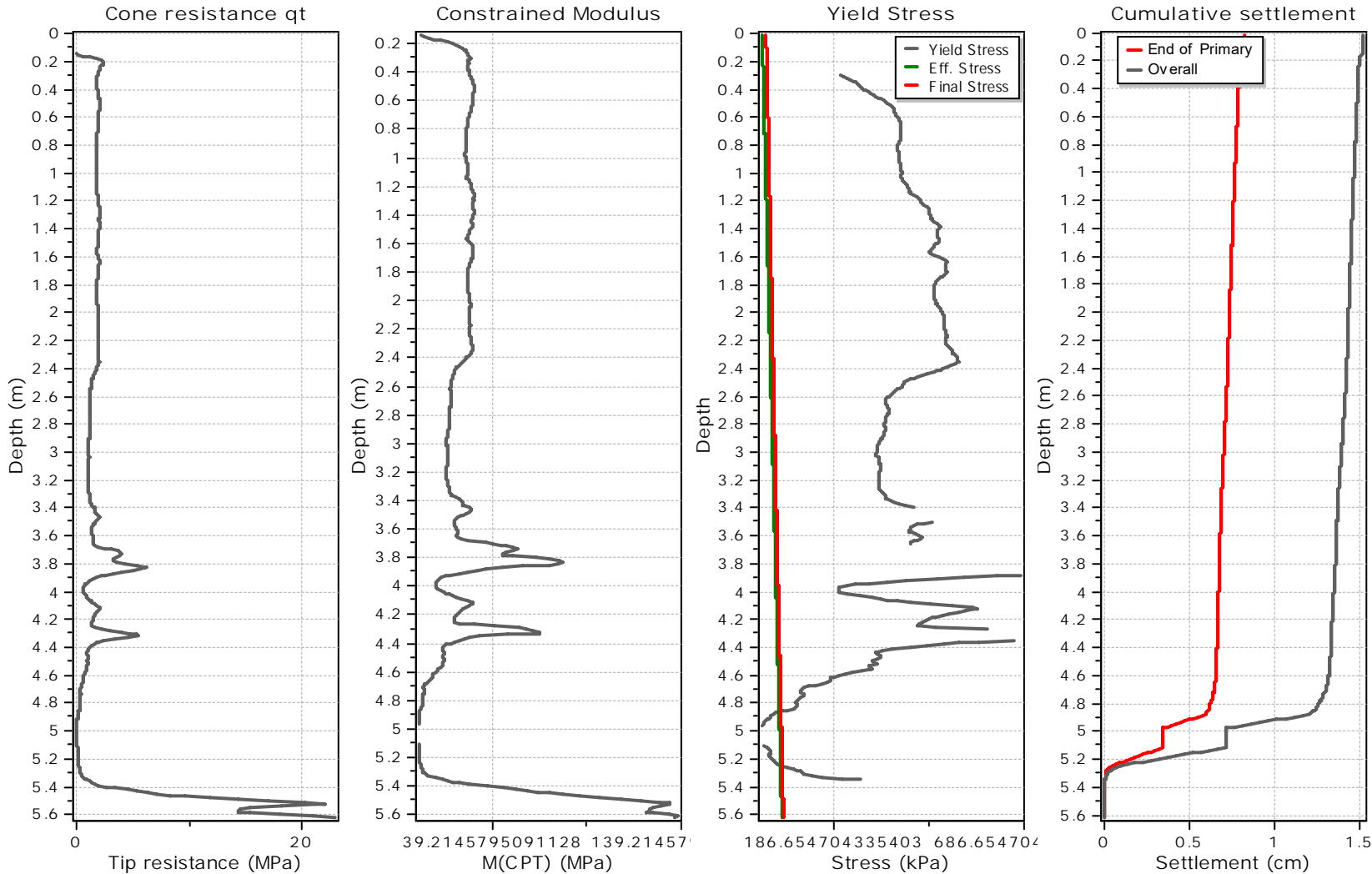
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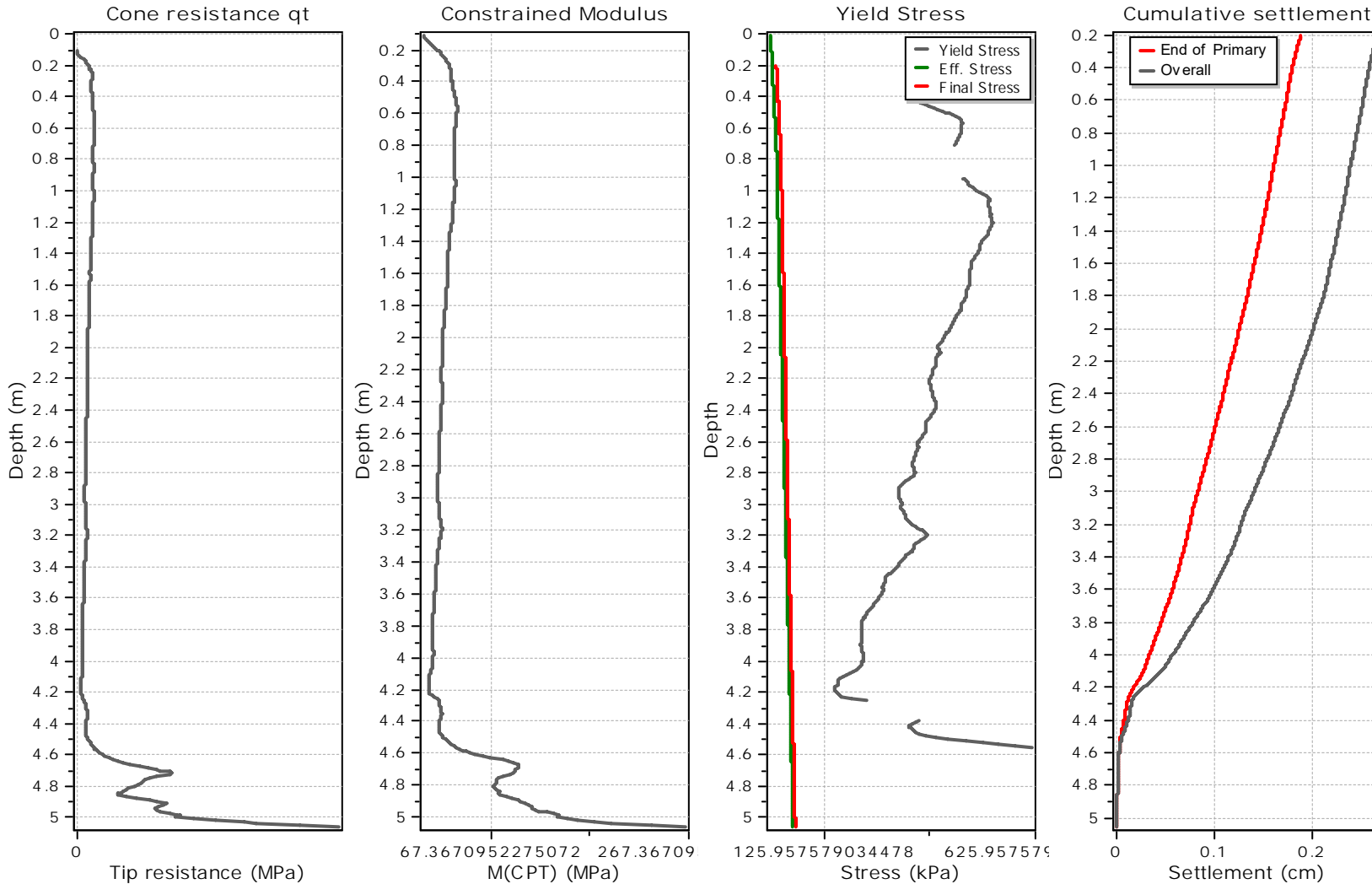
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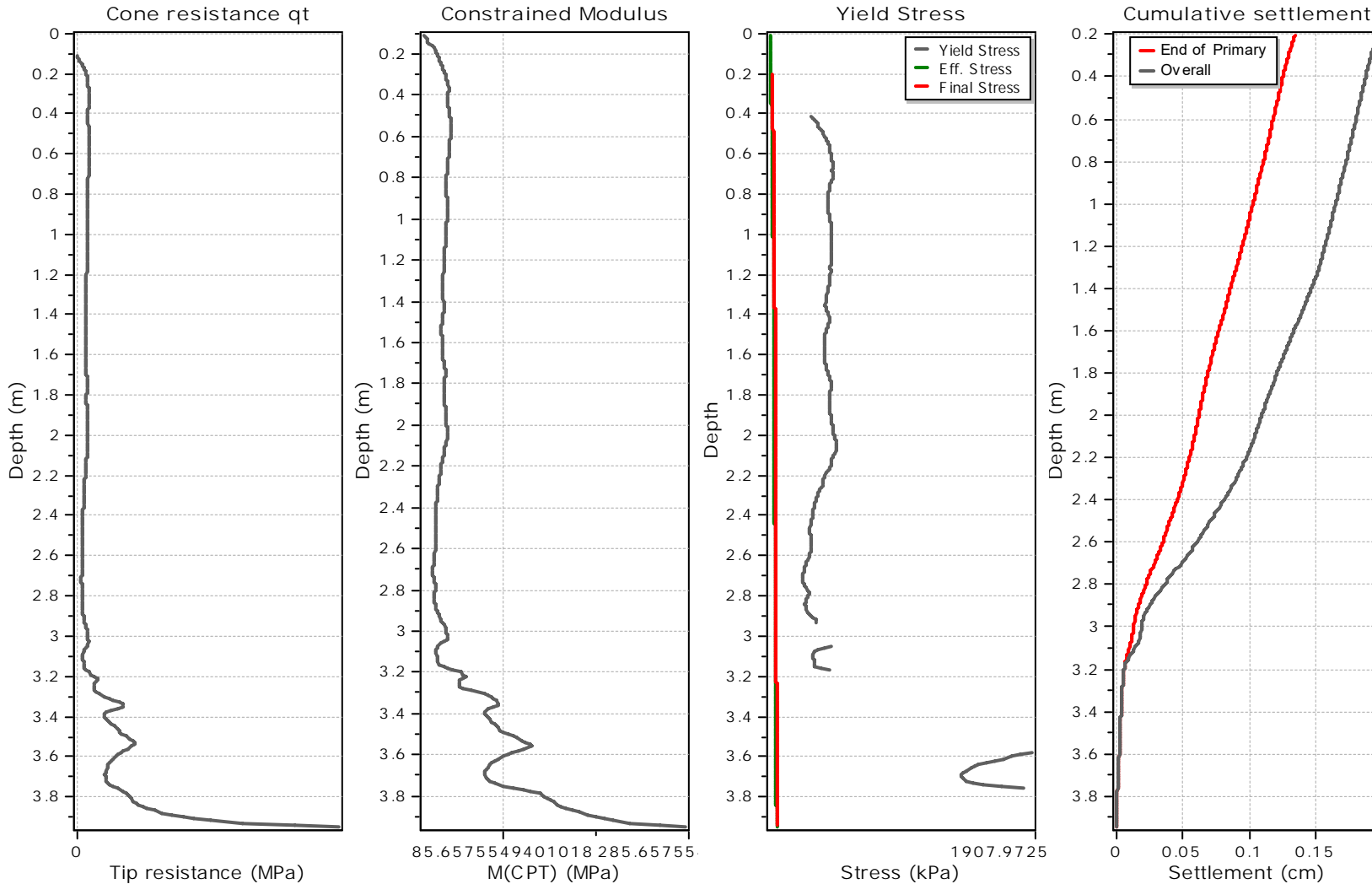
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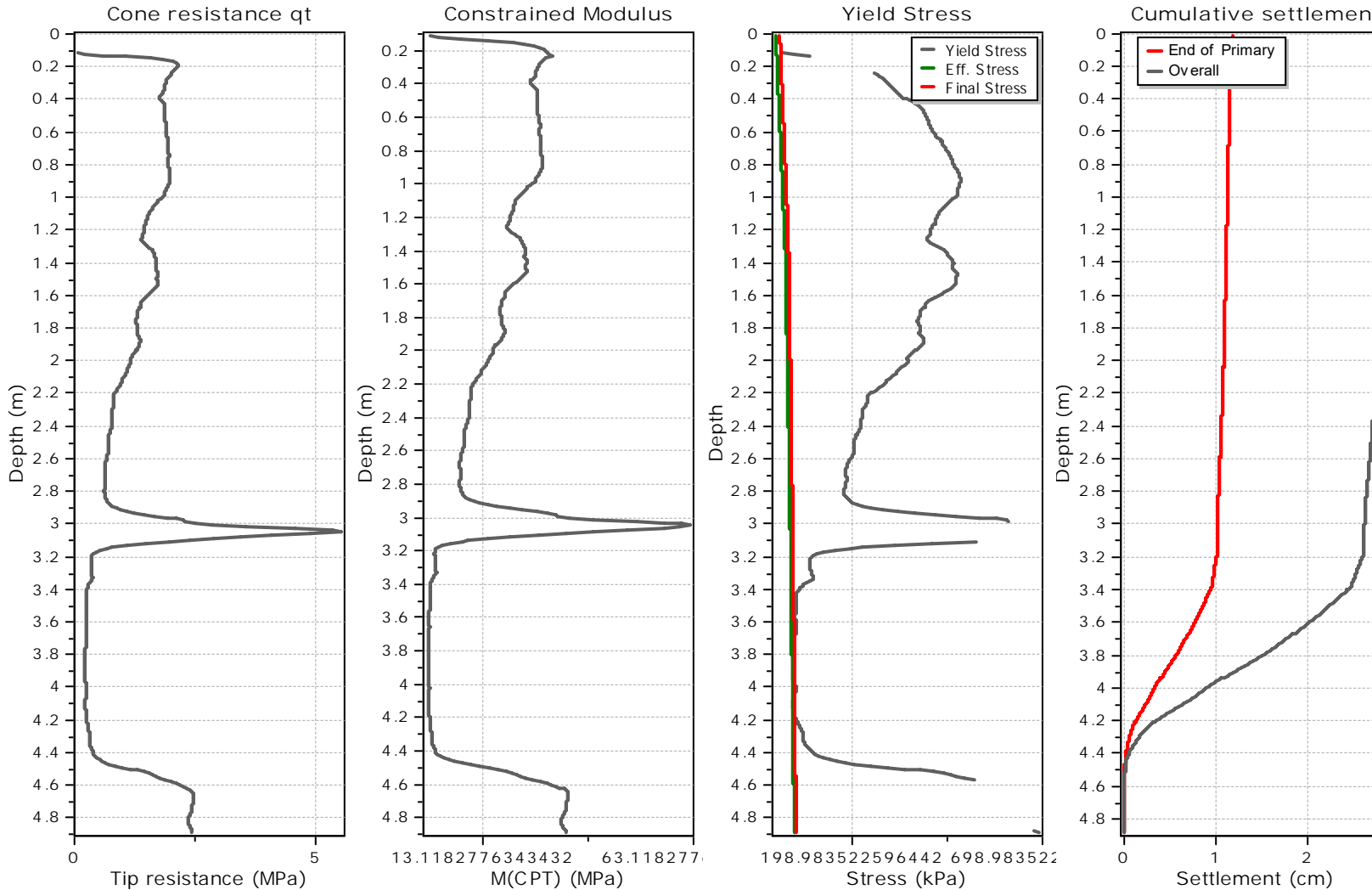
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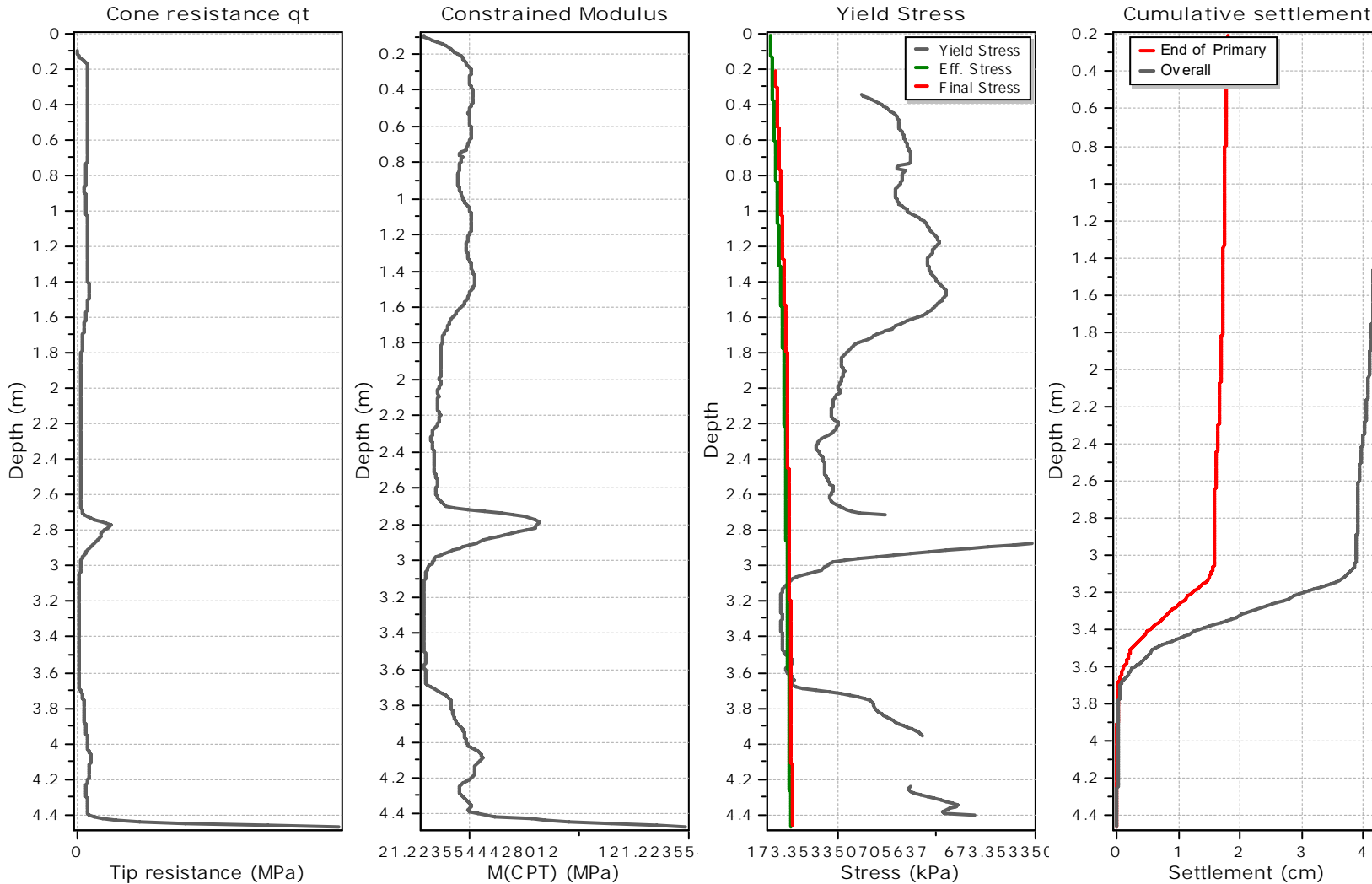
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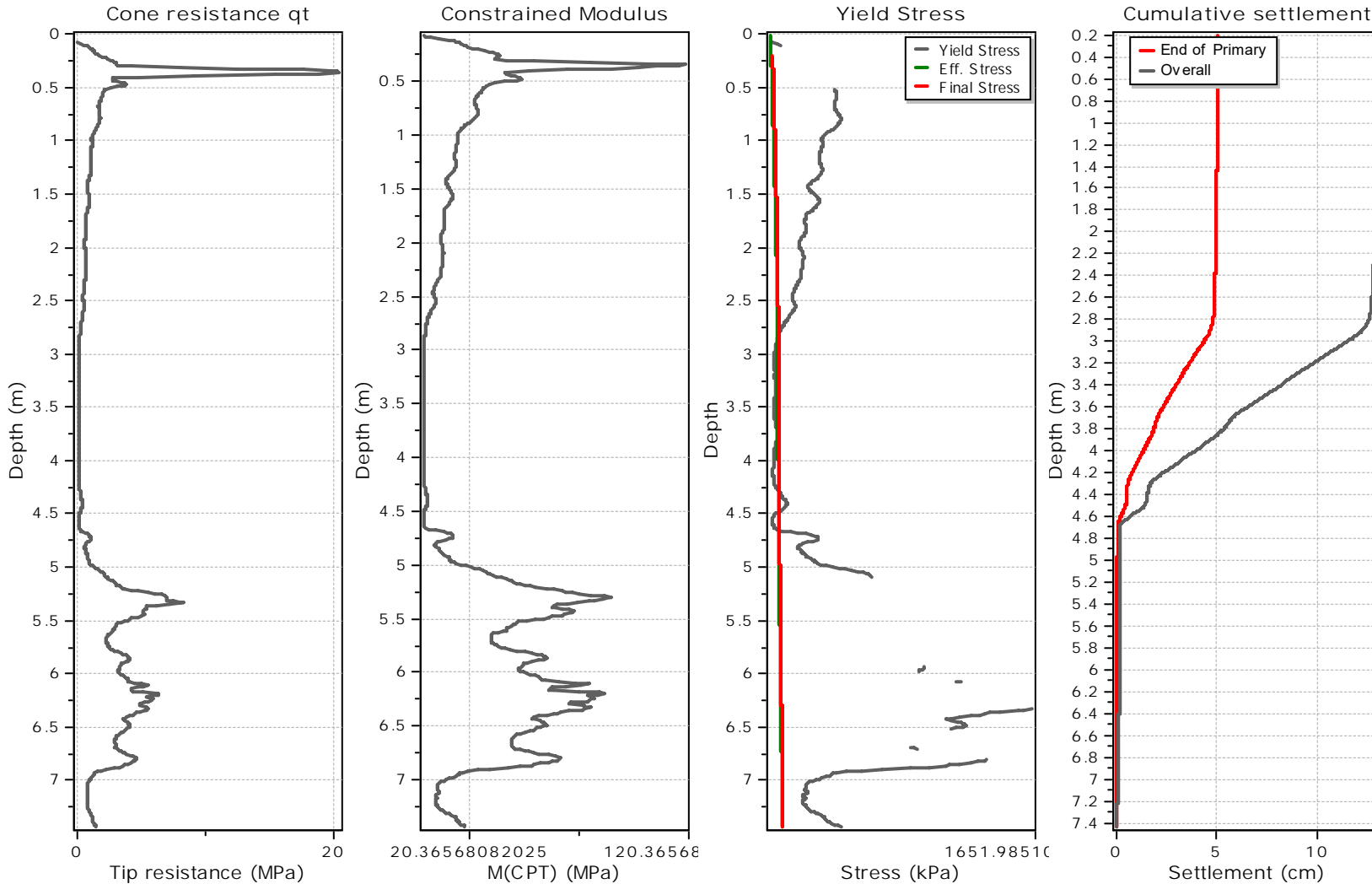
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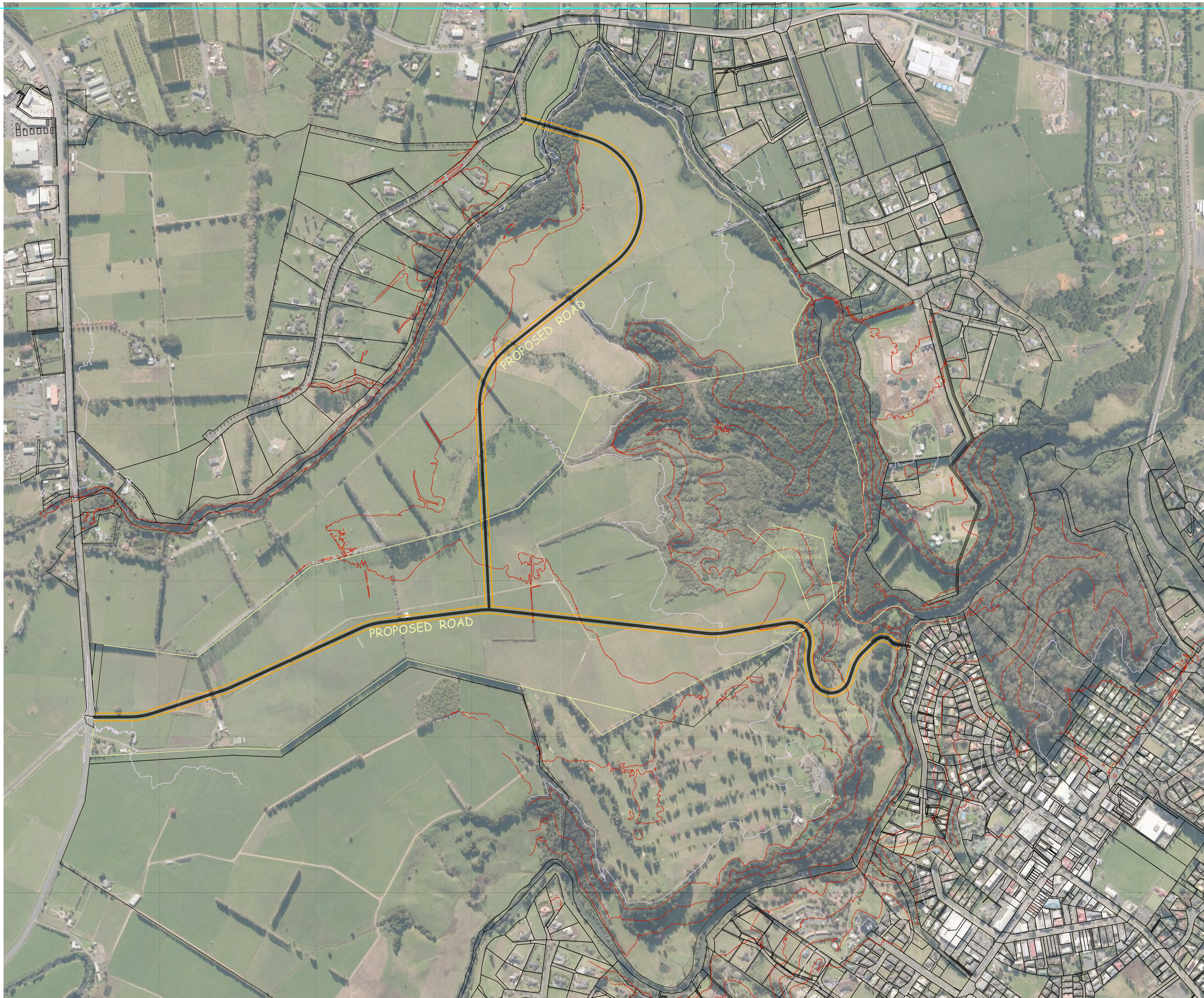
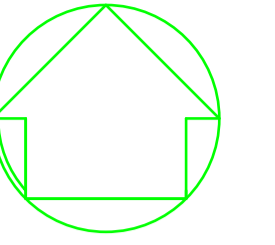
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NOTE: BOUNDARIES FROM LINZ DCDB

CONTOURS FROM NRC LIDAR

SCALE - A1 ORIGINAL: 1 : 5000

AMENDMENTS	

TE PLAN OF LAND AT WAIPAPA - KERIKERI

CLIENT:
For: KIWIFRESH

TERRAIN SURVEYING Ltd
102 Western Hills Drive
P.O. Box 5048
Whangarei
Ph :09 437 6912 Mobile: 027 224 5811 Web: www.terrainsurveying.co.nz

DATE:
1 APRIL 2022
S 3729/1

REZONING – KERIKERI - WAIPAPA

Background

An area of approximately 260ha in Waipapa has been proposed for rezoning to allow for development. Currently the area is zoned as Rural Production. A challenge to the proposed rezoning is the draft National Policy Statement (NPS) for highly productive land. The stated overall purpose of the NPS is to improve the way highly productive land is managed under the RMA to:

- recognise the full range of values and benefits associated with its use for primary production;
- maintain its availability for primary production for future generations; and
- protect it from inappropriate subdivision, use and development.

The NPS's objective is not to provide absolute protection for highly productive land.

To address the draft NPS the Northland Regional Council includes the following objective of its Northland Regional Policy Statement:

The maintenance, and where possible, enhancement of the life-supporting capacity of soils, especially those which have potential to support intensive primary production.

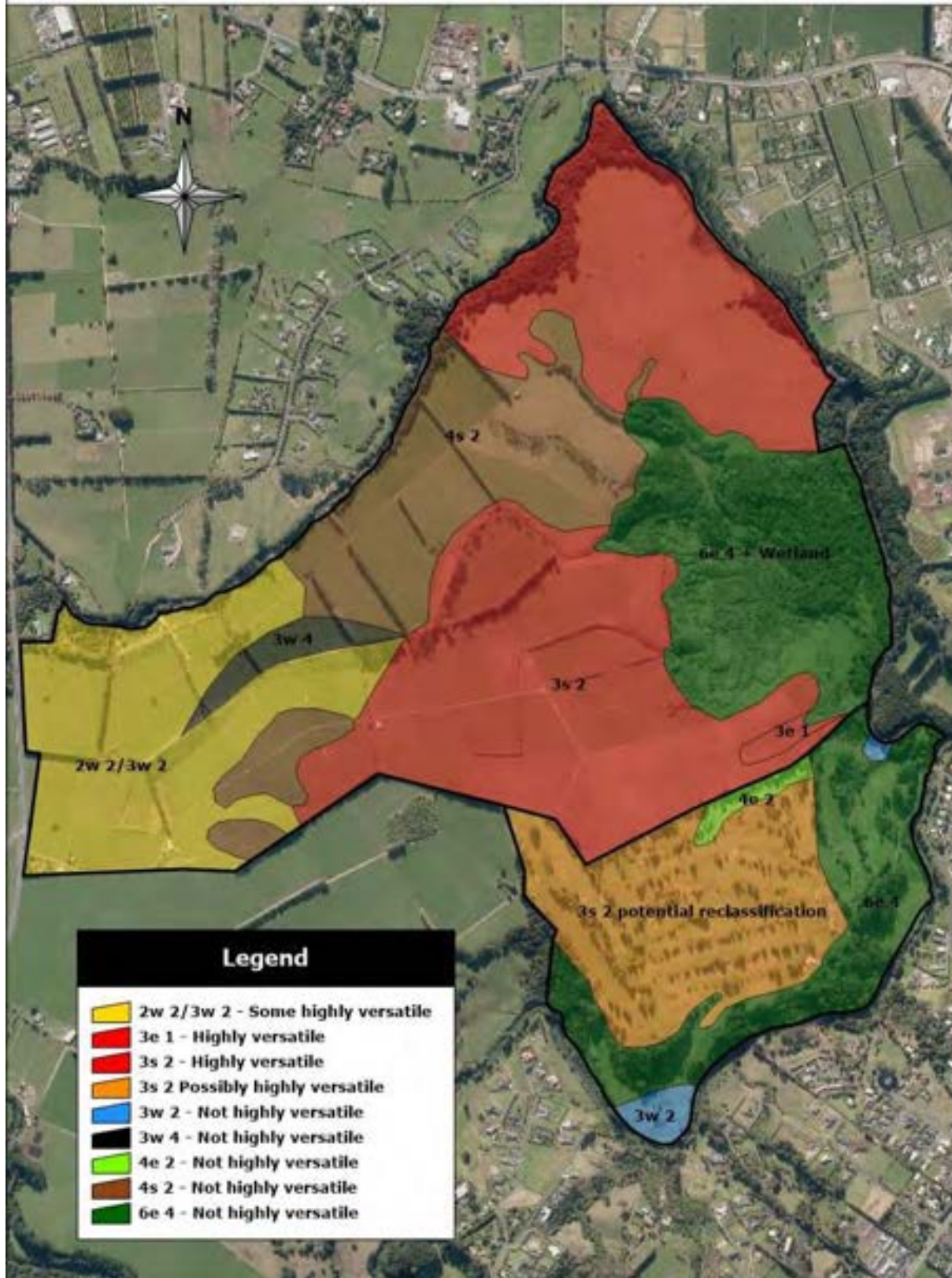
The Northland Regional Plan classifies these soils as highly versatile and defines them as LUC units: 1c 1, 2e 1, 2w 1, 2w 2, 2s 1, 3e 1, 3e 5, 3s 1 and 3s 2.

Investigation of the proposed site

Approximately 250ha of the proposed site was viewed on the 28th of March with sufficient soil sample holes dug and site observations made to give an overview of the LUC units present on the site (Further detailed soil mapping is required to identify soil boundaries and exact areas of each LUC unit). The table below presents the areas, classifications and percentage of the proposed site for each unit and is accompanied by a map on the following page. Of note is the area in yellow mapped as 2w 2 and 3w 2. This is a mix of highly versatile and non-highly versatile soils and needs detailed soil mapping to delineate these areas. The area on the golf course highlighted in orange, in its original, undisturbed state would be LUC unit 3s 2 and classed as highly versatile. However, the course development may have altered the land/soil profile sufficiently to justify a reclassification into a less versatile unit and therefore no longer classed as highly versatile. Again, further investigation is needed to determine that.

LUC Unit	Highly versatile	Area (ha)	% of total site
3s 2 (red)	Yes	86	34.4
2w 2, 3w 2 (yellow)	Yes and no	36	14.4
3s 2 – golf course (orange)	Possibly	30	12.0
3w 2, 3w 4, 4e 2, 4s 2, 6e 4	No	98	39.2

Proposed Rezoning Site Waipapa





**26 GOLF VIEW ROAD, KERIKERI
1828 & 1827 STATE HIGHWAY 10, WAIPAPA
WAITOTARA ROAD, WAIPAPA**

**LOT 1 DP 63499, LOT 2 DP 76850, LOT 1 DP 76850,
PT LOT 13 DP 41113, PT LOT 2 DP 89875,
LOT 1 DP 333643**

PRELIMINARY SITE INVESTIGATION

Job number 2022 502

Prepared for

KIWI FRESH ORANGE COMPANY LTD

Consultation

HAIL Reports

Ecological
Assessments

Resource Consent
Applications

Compliance
Monitoring

Water Quality
Monitoring

Environmental
Management

Pest Reduction
Advice

Enrichment
Planting

Restoration
Advice

NZE Quality System:

Document Reference	:	HAIL Projects/ 2022/ 2022 502 Zone change
Report Revision	:	
Report Status	:	Final
Prepared by	:	T Scott & H Windsor
Reviewed by	:	D Richards
Approved by	:	T Scott (CEnvP)
Date Created	:	30 March 2022
Date Issued	:	21 April 2022

TABLE OF CONTENTS

SECTIONS

1. INTRODUCTION	6
1.1 INVESTIGATION OBJECTIVES	6
1.2 SITE IDENTIFICATION	6
1.3 PROPOSED SITE USE	8
2. SITE DESCRIPTION	9
2.1 ENVIRONMENTAL SETTING	9
2.1.1 Site Inspection	9
2.1.2 Site Condition and Surrounding Environment	9
2.1.2.1 Area A and B – Bay of Islands Golf Course	9
2.1.2.2 Area C and D – Dairy Farm	9
2.1.2.3 Area E – Dry Stock Farm	10
2.1.2.4 Area F – Fallow	10
2.1.3 Geology and Hydrology	11
2.1.4 Site Layout	11
2.1.5 Current Site Uses – Refer Figure 1	11
3. HISTORICAL SITE USE	12
3.1 SUMMARY OF SITE HISTORY	12
3.2 REVIEW OF OTHER INFORMATION	12
4. SITE CHARACTERISATION	13
4.1.1.1 Area A and B – Bay of Islands Golf Course	13
4.1.1.2 Area C and D – Dairy Farm	15
4.1.1.3 Area E – Dry Stock Farm	16
4.1.1.4 Area F	17
5. RISK ASSESSMENT	18
5.1 CONCEPTUAL SITE MODEL	18
5.2 CONTAMINANT PROBABILITY	19
5.3 CHARACTERISATION OF POTENTIAL PATHWAYS	19
5.4 RISK SUMMARY	19
6. DISCUSSION & CONCLUSION	20
7. RECOMMENDATIONS	21
8. REPORT LIMITATIONS	22
9. SQEP CERTIFICATE OF REPORT	23
10. BIBLIOGRAPHY & REFERENCES	24
11. GLOSSARY	26

APPENDICES:

- Appendix A: Figures**
- Appendix B: Conceptual Site Model**
- Appendix C: Historical Photographs and Documentation**
- Appendix D: Contemporary Site Photographs**
- Appendix E: Supporting Tables & Documents**
- Appendix F: Selected Land Use Register**
- Appendix G: Property Titles**
- Appendix H: Statement of Qualification as a SQEP**

AUTHORS:

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Danette holds a BSc (Geology) and an MSc (Hons) in Environmental Science. Danette had seven years' experience in exploration mining for base metals in Western Australia prior to returning to New Zealand in 2000 and studying for her Masters (Environmental Science). Her contaminated site investigations work since 2003 includes petroleum storage facilities, timber treatment plants, landfills, agricultural chemical stores, horticultural and agricultural sites. Danette has been working with the current National Environmental Standards (NESCS) since their inception in January 2011. Danette is a member of the Australasian Land and Groundwater Association (ALGA) Ltd.

Heather Windsor – Earth Scientist

Heather holds a BSc in Earth Sciences and Biology and has more than 20 years' experience with work including testing for contaminants in ground and surface waters, coastal and riverine water quality sampling, hydrographic ratings, and processing data. Heather's work includes monitoring of groundwater, geothermal, lakes, springs and rivers, as well as soil and vegetation sampling for hydrocarbon, heavy metals and other contaminants. Heather has been working in the assessment and remediation of soils on HAIL or contaminated sites since the inception of the current National Environmental Standards (NESCS) in January 2011 undertaking assessments on a wide variety of sites, including orchards, commercial and industrial sites. Heather is a member of WasteMINZ and holds a Contaminated Sites Safety Certificate.

Tricia Scott – Environmental Biologist (CEnvP)

Tricia is the Director of NZ Environmental Limited and holds a BSc (Biology) and an NZCS (Paramedical). Tricia is a Certified Environmental Practitioner. Tricia has more than 20 years' experience testing and assessing habitats, and physical and chemical parameters in water, soils, air and biological material. The work includes establishing baseline conditions and assessing effects of activities on the environment. The reports aim to provide relevant information that enable management plans and remediation actions to be developed and/or sufficient information to enable decision makers to determine appropriate resource consent approval and/or conditions. Tricia has been working in the assessment and remediation of soils on HAIL or contaminated sites since the inception of the current National Environmental Standards (NESCS) in January 2011. Tricia has trained and worked at senior level in diagnostic laboratories for Neurophysiology, and in Respiratory and Cardiac Function (in New Zealand and Australia). Tricia has also worked as a quality control and laboratory testing technician. Tricia actively undertakes continuing professional development in the national environmental standards and other professional disciplines. Tricia is a member of WasteMINZ and ALGA and holds a Contaminated Sites Safety Certificate.

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Contents	Required	Required if relied on*
Introduction	✓	
- Investigation objectives	✓	
- Site Identification	✓	
- Proposed site use	✓	
Site Description		
- Environmental setting	✓	
- Site layout	✓	
- Current site uses	✓	
- Surrounding land uses	✓	
- Site inspection		✓
Historical Site use		
- Summary of site history	✓	
review of council records		✓
review of aerial photographs		✓
review of other historical information		✓
Risk Assessment		
- Conceptual Site model	✓	
- Evaluate the probability contamination exists on the site	✓	
- identify and characterise potential pathways and receptors or each exposure area through relevant site properties (eg geology, building construction, site use)	✓	
- Determine the likelihood the contamination poses a risk to identified receptors including potential receptors	✓	
- evaluate the level of that risk pursuant to regulation 8(4)(b) - <i>it is highly unlikely that there will be a risk to human health if the activity is done to the piece of land</i>	✓	
Conclusions	✓	
Recommendations if relevant to report purpose		✓
Report Limitations	✓	
SQEP Certificate of Report	✓	
References	✓	

EXECUTIVE SUMMARY

This investigation was undertaken over four adjacent properties, with six titles. The properties are located at; 26 Golf View Road, Kerikeri (Lot 1 DP 63499 & Lot 1 DP 76850), 1826 State Highway 10, Waipapa (Pt Lot 13 DP 41113 & Lot 2 DP 76850), 1878 State Highway 10, Waipapa (Pt Lot 2 DP 89875) and at the corner of Waitotara Drive and Waipapa Road, Waipapa (Lot 1 DP 333643).

The property has a land use history of pastoral farming and golfing course. Approximately 22% of the site would be assessed as the 'Piece of Land', of which the majority is confined within the Golf Course.

The HAIL category considered were:

- *A 10 - Persistent pesticide bulk storage or use including sport turfs, market gardens, orchards, glass houses or spray sheds.*
- *I - Any other land that has been subject to the intentional or accidental release of a hazardous substance in sufficient quantity that it could be a risk to human health or the environment)*
- *E1 - Asbestos products manufacture or disposal including sites with buildings containing asbestos products known to be in a deteriorated condition.*

This report goes in support of a zone change application and to inform possible future sub-division plans.

Target Areas were identified on all areas excepting Area F; the cut and carry – destocked block. This was not considered a piece of land and further investigation is not required.

Target Areas on Areas A and B (golf course) include the greenkeepers' shed and fairways.

Target Areas on Areas C and D (dairy farm) and Area E (dry stock farm) includes milking sheds and yards, various implement or storage sheds including areas where treated timber and plastic drums were stored on the ground, a burn pile and an orchard. One former dairy shed that may contain asbestos containing material was also noted with a second shed requiring confirmation of prior removal.

A review of the conceptual site model shows the source – pathway – receptor linkages have the potential to be complete in the Target Areas within the identified Pieces of Land.

Multiple Target Areas identified within the Pieces of Land require further investigation and as such, a Detailed Site Investigation is warranted.

1. INTRODUCTION

1.1 INVESTIGATION OBJECTIVES

NZ Environmental Ltd was engaged by the Kiwi Fresh Orange Company Ltd to undertake a Preliminary Site Investigation (PSI) in accordance with the National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health, 2011 (NESCS) on 26 Golf View Road, Kerikeri (Lot 1 DP 63499 & Lot 1 DP 76850), 1826 State Highway 10, Waipapa (Pt Lot 13 DP 41113 & Lot 2 DP 76850), 1878 State Highway 10, Waipapa (Pt Lot 2 DP 89875) and at the corner of Waitotara Drive and Waipapa Road, Waipapa (Lot 1 DP 333643). Hereafter the combined Lots will be referred to as the Site.

The investigation was undertaken to inform a zone change application. The PSI provides information on:

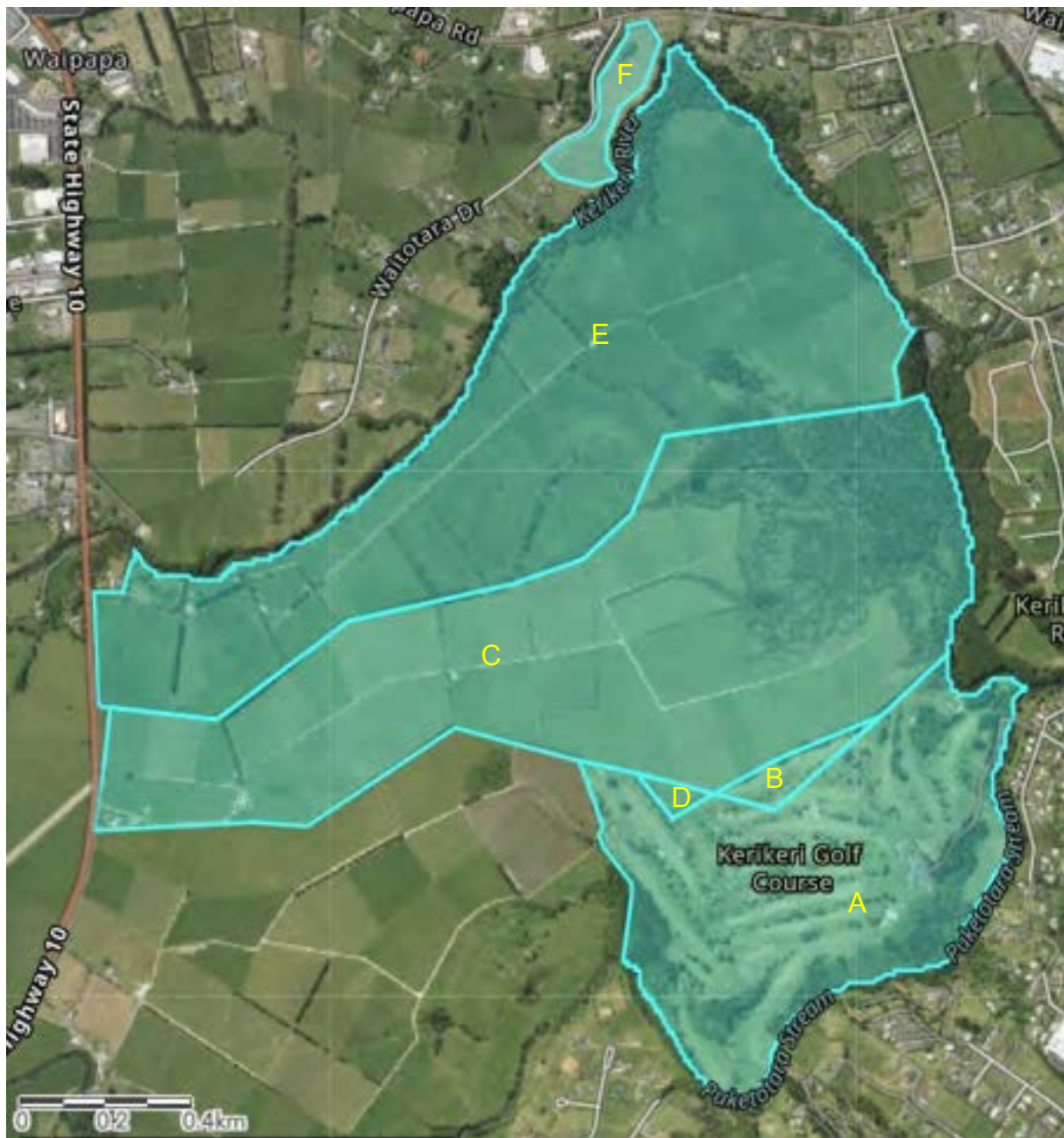
- a) Site information (history and use),
- b) Any likely contaminants from current and historical chemical use

1.2 SITE IDENTIFICATION

Five of the Lots are located between the Puketotara Stream and the Kerikeri River to the north-west of Kerikeri township. The remaining Lot is located north of the Kerikeri River (Figure 1).

Aerial photographs are included in Appendix C.

Certificates of Title is given in Appendix G.



Identifier	Address	Legal Description	Grid Reference
A	26 Golf View Road, Kerikeri	Lot 1 DP 63499	-35.222404 173.944333
B	26 Golf View Road, Kerikeri	Lot 1 DP 76850	-35.224242 173.938378
C	1826 State Highway 10, Waipapa	Pt Lot 13 DP 41113	-35.224415 173.921196
D	1826 State Highway 10, Waipapa	Lot 2 DP 76850	-35.22369 173.93508
E	1878 State Highway 10, Waipapa	Pt Lot 2 DP 89875	-35.220042 173.920986
F	Corner of Waitotara Drive & Waipapa Rd, Waipapa	Lot 1 DP 333643	-35.208102 173.934495

Figure 1 The Lots covered by this investigation (the Site)

1.3 PROPOSED SITE USE

Consideration is being made toward the development of a residential subdivision across part of the Site, with road connectivity, walking and cycling tracks connecting Kerikeri township to the Waipapa business district (Appendix A 1). This report goes to inform a zone change application.

2. SITE DESCRIPTION

2.1 ENVIRONMENTAL SETTING

2.1.1 Site Inspection

A site inspection (walkover) was carried out by Heather Windsor on 28 March 2022. Weather conditions at the time of inspection were fine and sunny. Photographs were taken and are shown in Appendix D.

A plan showing the contemporary site layout is given in Appendix A 2.

2.1.2 Site Condition and Surrounding Environment

According to NRC maps the site is not erosion prone¹.

2.1.2.1 Area A and B – Bay of Islands Golf Course

These two Lots are covered in manicured golf course with a mix of fairways, greens and vegetated areas (Appendix D 1). Paths for golf carts and trundlers connect the greens. A clubhouse, parking area and golf buggy parks are located in the south-east area. The greenkeepers' sheds are located 100m to the south-west of the club house (Appendix D 2). Mowers and other green keeping equipment are kept in this area, and there is a water tap by a concrete apron on the west side of the buildings. Some empty plastic barrels that once contained fertiliser are located in this area (Appendix D 3 and D 4). Onsite bulk fuel storage was not identified.

The Puketotara Stream defines the western and southern boundaries, and the remaining boundaries are defined by sound post and wire fences. Neighbouring, northern land use is pastoral, western land use is a mix of pastoral and residential, and the southern and eastern land use is predominantly residential.

According to FNDC and NRC maps this Lot is not significantly impacted by flood events².

No staining or odour was noted during the site visit.

2.1.2.2 Area C and D – Dairy Farm

Pt Lot 13 DP 41113 is an irregularly shaped Lot which stretches from State Highway 10 east to the Kerikeri River. Lot 2 DP 76850 is a small triangular Lot located between this Lot and the golf course which is situated on the south-east boundary (Appendix A 2). These Lots are in grazed pasture (Appendix D 5). Two houses are located near the SH10 boundary, the main residence was built in 1963, with the secondary (sharemilker) residence built in 1990. A shed which dates from the 1960's is located near the houses (Appendix D 6).

The dairy shed was built in 1981 and is constructed of concrete block and zinc-alum. This is located a further 250m to the east of the houses (Appendix D 7) along with old stock yards (Appendix D 8). A small storage shed that housed some chemicals is located beside the dairy shed (Appendix D 9) and a small shed, possibly a calf shed or stable is located to the east of the dairy shed. A half round hay barn, built in 1980 is located a further 560m east of the dairy shed (Appendix D 10).

¹ <https://localmaps.nrc.govt.nz/localmapsviewer/?map=79f54a18dcae4fbd9e1cf774aa2de871#>

² <https://fndc.maps.arcgis.com/apps/webappviewer/index.html?id=3baf5c44f716429497077101518a2342#>

These two Lots are generally maintained in grazed pasture with post and wire fences. In the eastern part of Pt Lot 13 DP 41113, pasture quality is lower with plant pest species such as tobacco weed, gorse and thistles present.

No staining or odour was noted during the site visit. An onsite fuel storage tank was not identified.

The northern, southern and western neighbouring land use is pastoral. The eastern boundary is defined by the Kerikeri River across which is residential use.

According to FNDC and NRC maps this lot is subject to flooding near the SH10 boundary and along the eastern Kerikeri River boundary².

2.1.2.3 Area E – Dry Stock Farm

This Lot is a retired dairy unit now used for dry stock grazing and in pasture/grass (Appendix D 11). Paddocks are divided by post and wire fences and occasional shelter hedges. A house with garage is in the north-west of the Lot. To the east of the house is an ~4000m² orchard. This orchard is predominantly citrus and macadamia, and was established in the 1970's. The orchard is now non-productive (Appendix D 12). A spray unit is located in a storage area indicating that spraying on the orchard occurred at some time in the past.

Several buildings are located within 200m of the orchard, including three implement sheds. The most western of these is in poor condition and is attached to the remains of old stock yards (Appendix D 13). An area used for storage of old farm troughs, iron and wood is located to the east of this shed (Appendix D 14). New stock yards are located to the south of this area (Appendix D 15).

Another two implement sheds are located 100m to the east. The half-round barn was built in 1981 on the site of the former or 'condemned dairy shed' (FNDC property file) and housed farm equipment, the water pump and the electric fence unit for the farm (Appendix D 16). The second large implement shed in this area housed a trailer, dog houses and empty fertiliser bags (Appendix D 17). Between these two buildings was a store of used tanalised posts (Appendix D 18).

The unused (condemned) dairy shed is located 80m south-east of these two sheds. This herring-bone shed is constructed of concrete block and sheet cladding – likely asbestos containing material (ACM) (Appendix D 19). A storage area for used treated timber is located along the fence line to the west of the dairy shed and a large rubbish pile including fencing material and ash is located nearby (Appendix D 20). A row of empty plastic barrels (unlabelled) are also present in this area (Appendix D 21).

A piggery, built in 1970 is located 100m north-east of the old dairy shed. This is constructed of concrete and steel (Appendix D 22). A further 900m to the north-east is a hay barn that was constructed in 1970 using Australian hardwood and steel (Appendix D 23).

No odour was noted during the site visit. The southern and western neighbouring land use is pastoral. The eastern and northern boundaries are defined by the Kerikeri River across which is residential use.

According to FNDC and NRC maps this Lot is subject to flooding along the state Highway 10 and Kerikeri River boundaries in 1 in 5 flood events².

2.1.2.4 Area F – Fallow

This Lot is an irregularly shaped property which is located between Waitotara Drive and the Kerikeri River. A small reserve is located to the north of the Lot, with neighbouring Lots being residential. The Lot is in pasture with a small area of bush in the northern area. At the time of visit the grass had recently been cut for baleage (Appendix D 24).

No staining or odour was noted during the site visit. Residential properties are located to the west and south of the Lot. According to FNDC and NRC maps this Lot is subject to flooding in 1 in 5 flood events².

2.1.3 Geology and Hydrology

Soil onsite are nodular oxidic and orthic gley³ soils which are mapped as Kerikeri Friable Clay with large boulder, Okaihau gravelly friable clay and Waipapa clay⁴. The first two soils form from weathered volcanic rock and the latter is a terrace alluvium formed from volcanic parent rock. The underlying geology is the Kerikeri Volcanic Group Late Miocene basalt of Kaikohe - Bay of Islands Volcanic Field⁵.

The contour was flat to moderately steep. Indicative surface drainage patterns over the Site is shown in Appendix A 8.

Drinking water is derived from town supply (golf course) and rainwater (all other Lots).

The Lots are located over the Kerikeri aquifer⁶ in the Kerikeri catchment. Two groundwater bores, located on the golf course (LOC.201133 and LOC.201134)⁶, were drilled in 1977 and no static water level was recorded at that time. No other bores are located on those Lots however another 15 boreholes located within close vicinity have an average static groundwater level at time of drilling of 6.5m bgl.

In 2014 the NRC undertook twelve borehole investigations on Area E as part of the Kerikeri flood spillway investigation. The twelve bores hole hit rock or impenetrable resistance at between 1.4m and 4.6m. Ground water was only encountered in one of the boreholes at 2.2m depth.

The Kerikeri River is located on the boundaries of Area C, E and F, and the Puketotara Stream is located on the boundary of Area A (Figure 1).

The flood risk for each area is detailed in section 2.1.2.

2.1.4 Site Layout

A plan showing the contemporary site layout and building locations is shown in Appendix A 2.

2.1.5 Current Site Uses – Refer Figure 1

- Area A and B (Lot 1 DP 63499 & Lot 1 DP 76850) – Bay of Islands Golf Course
- Area C and D (Pt Lot 13 DP 41113 & Lot 2 DP 76850) – small dairy herd grazing with residences
- Area E (Pt Lot 2 DP 89875) – dry stock grazing with residence
- Area F (Lot 1 DP 333643) – destocked, grass recently baled.

³ <https://soils-maps.landcareresearch.co.nz/>

⁴ <https://nrcgis.maps.arcgis.com/apps/webappviewer/index.html?id=fd6bac88893049e1beae97c3467408a9>

⁵ <https://data.gns.cri.nz/geology/>

⁶ <https://localmaps.nrc.govt.nz/localmapsviewer/?map=b1bce4c2e2f940288c1f7f679b2ac7b7>

3. HISTORICAL SITE USE

3.1 SUMMARY OF SITE HISTORY

The history of the land was obtained by reviewing council property files, aerial photographs, historic documents, and title information.

Information regarding the title information is summarised in Appendix E 1. Aerial photographs are provided in Appendix C.

Until around 1930 the area was part of the large Manako sheep and beef station. This large farm was subdivided by the North Auckland Land Development Corporation. All the Lots were within the 'Falls Block' of this subdivision plan (Appendix C 10). Initially this block was subdivided into forty-eight horticultural blocks which was later modified to eleven dairy blocks (Pickmere, 1994).

In 1955 the Silich brothers, Maxwell and Frederick purchased the land between State Highway 10 and the Kerikeri River / Puketotara stream (Areas A, B, C, D & E). They farmed the land as dairy farms. The northern farm was sold in 1965 but stayed as a dairy farm until recently. In 1977 part of the southern farm was subdivided off to become the golf course. The remainder of the land stayed as dairying until the present time.

The Bay of Island Golf Club Kerikeri is member owned, and initially was developed by member volunteers. The half-round shed used by the green keepers' was the original club house and entry to the course was via a ford in the river upstream of the current bridge crossing, which was put in in 1979. The club house was built in ~1984 and the proshop / buggy shed in 1991.

Area F, on Waitotara Drive has a history of pastoral farming. No buildings are known to have been located on this Lot.

A summary of land use is provided in Appendix E 2.

None of the Lots are listed on the NRC selected land use register.

NRC property files show one spray drift and one smoke nuisance incident against Lot 1 DP 63499 (the Golf Course). There is one incident noted against Pt Lot 13 DP 41113 (the south dairy farm) regarding dead stock and dairy effluent. No incidents are noted against the remaining Lots (Appendix F).

3.2 REVIEW OF OTHER INFORMATION

- Bore logs by the NRC in 2014 in the area of proposed Flood scheme were reviewed. Due to their size, they are not included in the appendices but can be made available if requested.

4. SITE CHARACTERISATION

The conceptual site model for the site is based aerial photographs, a site walk over and review of FNDC and NRC property files.

4.1.1.1 Area A and B – Bay of Islands Golf Course

Golf course maintenance is known to include intensive use of chemicals to achieve aesthetic objectives⁷. A request for information on chemical use was put to the groundskeeper of the Bay of Islands Golf Course, however due to work pressure that information could not be supplied at that time.

- An Environmental Canterbury report R12/115 states that: *it can be concluded that all sports turf sites have the potential to have been treated with hazardous chemicals and therefore residual contamination may exist which could cause the soils to be hazardous to the site end users. While this is unlikely under present site usage for sport, due to the limited exposure routes and exposure times, if the land use is changed, then investigation work following MfE Contaminated Land Management Guidelines should be undertaken to assess the suitability of the land according to its proposed end use. Consideration will also have to be given to disposal routes for soil during sports field development work (e.g. upgrading drainage and irrigation) as the soil will unlikely to be classed as clean-fill due to the potential presence of chemicals. This again would instigate the requirement for investigation prior to site works and potential consent requirements as required by the NES.*
- The applicable HAIL category would be A10 (Persistent pesticide bulk storage or use including sport turfs, market gardens, orchards, glass houses or spray sheds).
- The location of the groundskeeper sheds was identified as a Target Area in which the concentration of Contaminants of Interest may be present at elevated concentrations especially around the water tap area. The applicable HAIL category would be A10.
- A plan in the FNDC property file indicated a small shed was located on site in 1977 called a 'sewage treatment and utilities shed'. The plan noted that this shed had asbestos roofing material. The applicable HAIL category would be E1 (Asbestos products manufacture or disposal including sites with buildings containing asbestos products known to be in a deteriorated condition). This shed was not identified during the walk-over and may no longer be present.
- The entirety of both Lots (55.2561ha) would be identified as a 'Piece of Land'.
- A summary of size and location of Target Area is given in Appendix E 4.
- The location of Piece of Land and Target Areas as detailed above are shown on Figure 2 below.

⁷ Sports turf scoping study Canterbury Report No: R12/115. Canterbury Regional Council.

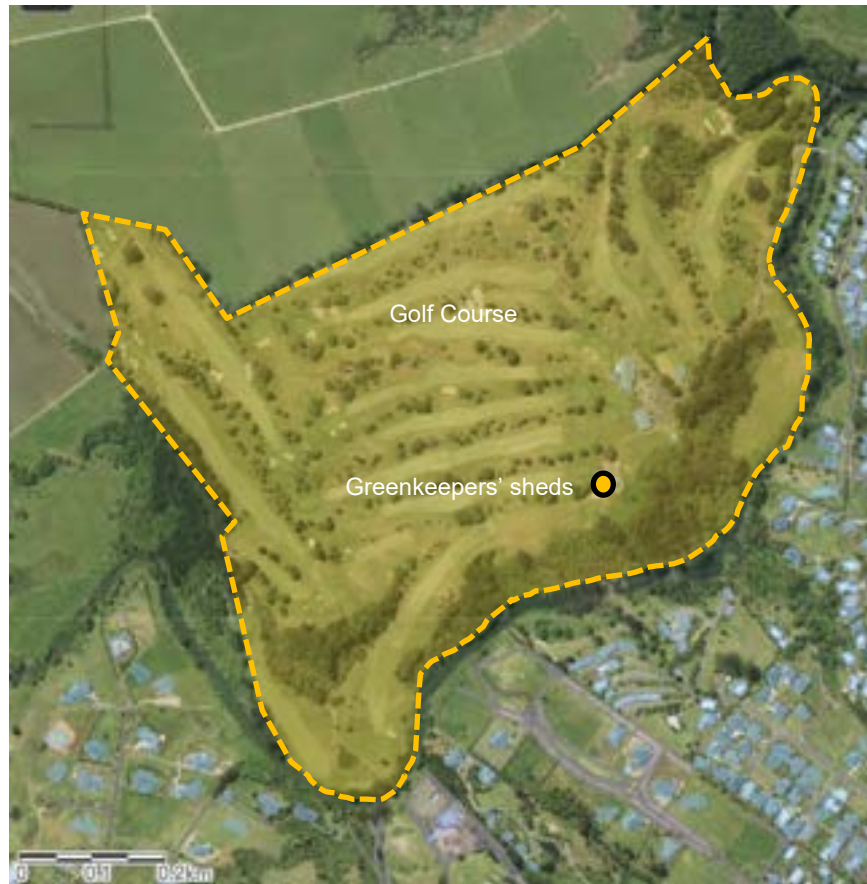


Figure 2 Area A & B - Piece of land (dotted line) and Target Area (circle)

4.1.1.2 Area C and D – Dairy Farm

The site walkover identified contemporary chemical use on the dairy unit. A list of identified chemicals present is shown in Appendix E 3.

- The implement shed located near the main residence on this Lot was identified as a Target Area requiring further investigation due to the likelihood of chemicals being used or stored in this area since the early 1960's. The shed and surrounds cover ~600m².
- The applicable HAIL categories would be A10 and I (Any other land that has been subject to the intentional or accidental release of a hazardous substance in sufficient quantity that it could be a risk to human health or the environment).
- The area around the milking shed and yards was identified as Target Areas warranting further investigation due to the likelihood of chemicals being used and stored in this area. This includes the possible storage and leaching of treated timber in the yards area.
- The dairy shed, storage shed and nearby surrounds cover ~250m². The yard area covers approximately 280m².
- The applicable HAIL categories would be A10 and I.
- The Piece of Land would be confined to the proximity of the areas detailed above.
- The Target Areas detailed above are shown on Figure 3 below.
- A summary of size and location of Target Areas are given in Appendix E 4.

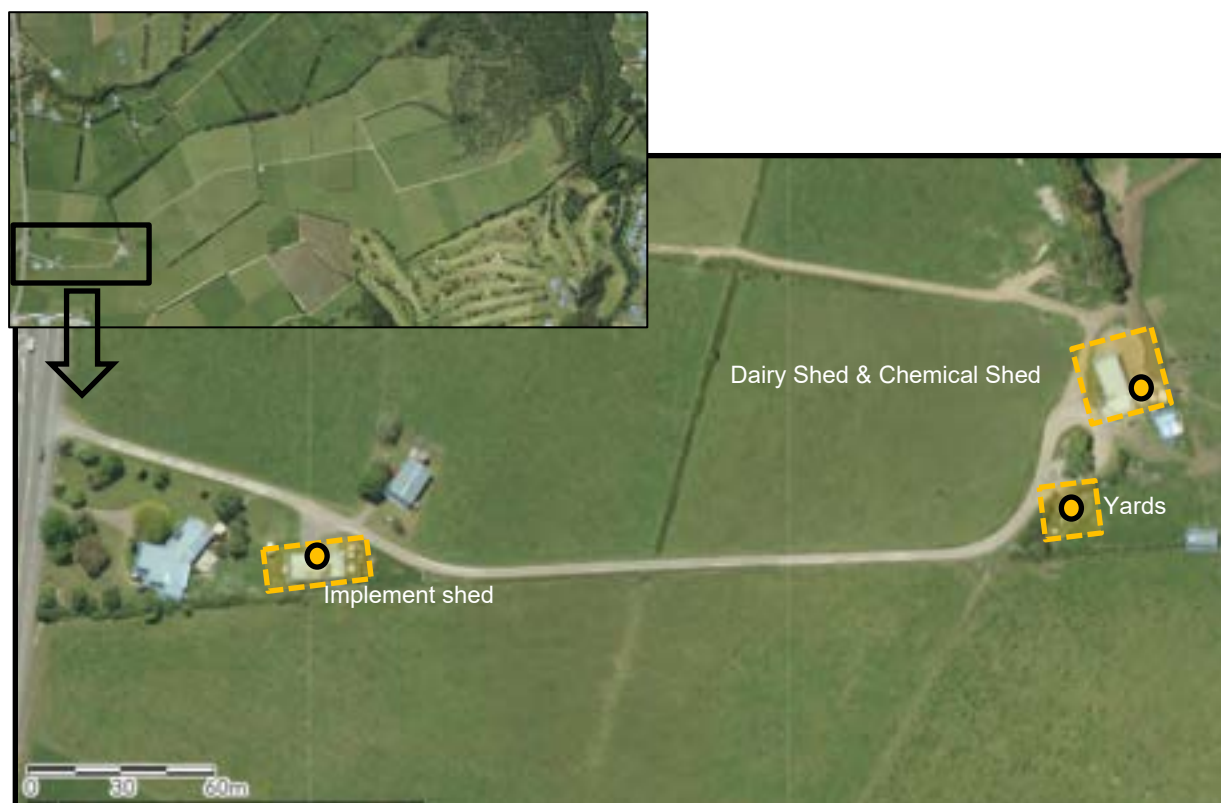


Figure 3 Area C - Piece of Land (dotted line) around Target Area (circle)

4.1.1.3 Area E – Dry Stock Farm

The site walkover identified contemporary chemical use on the pastoral unit. A list of identified chemicals present is shown in Appendix E 3.

- Three implement sheds were identified as Target Areas worthy of further investigation due to the likelihood of chemicals being used or stored in these locations over the long term (~400m²). The site walk over also identified uncovered storage of treated timber in the periphery of all three implement sheds (~120m²). The applicable HAIL categories would be A10 or I.
- Two stock yard areas were identified as Target Areas requiring further investigation due to the likelihood of chemicals being concentrated in these areas and the volume of tanalised timber used (~600m²). The applicable HAIL categories would be A10 and I.
- The old dairy shed was identified as a Target Area (~165m²). This shed has sheet cladding which may be asbestos containing. The applicable HAIL category would be E1. If the presence of asbestos is confirmed any removal should be carried out by a licensed asbestos removal specialist.
- Uncovered storage of treated fence posts (~60m²) is located to the west of the dairy shed; this is considered a Target Area. The applicable HAIL categories would be I.
- A rubbish pile is located to the west of the dairy shed (~100m²). This was identified as a Target Area as the pile included treated fence posts and wood fire ash. The applicable HAIL category would be I.
- A row of plastic drums was located near the dairy shed. Due to the soundness of the drums, it is unlikely that any leakage would have occurred however as the contents of the drums and chemical management practices are unknown this area is also identified as part of the Target Area.
- The orchard located near the house was identified as a Target Area under HAIL category A10 (~4000m²).
- The Target Areas detailed above are shown on Figure 4 below.
- The Piece of Land would be confined to the proximity of the areas detailed above.
- A summary of size and location of Target Areas is given in Appendix E 4.

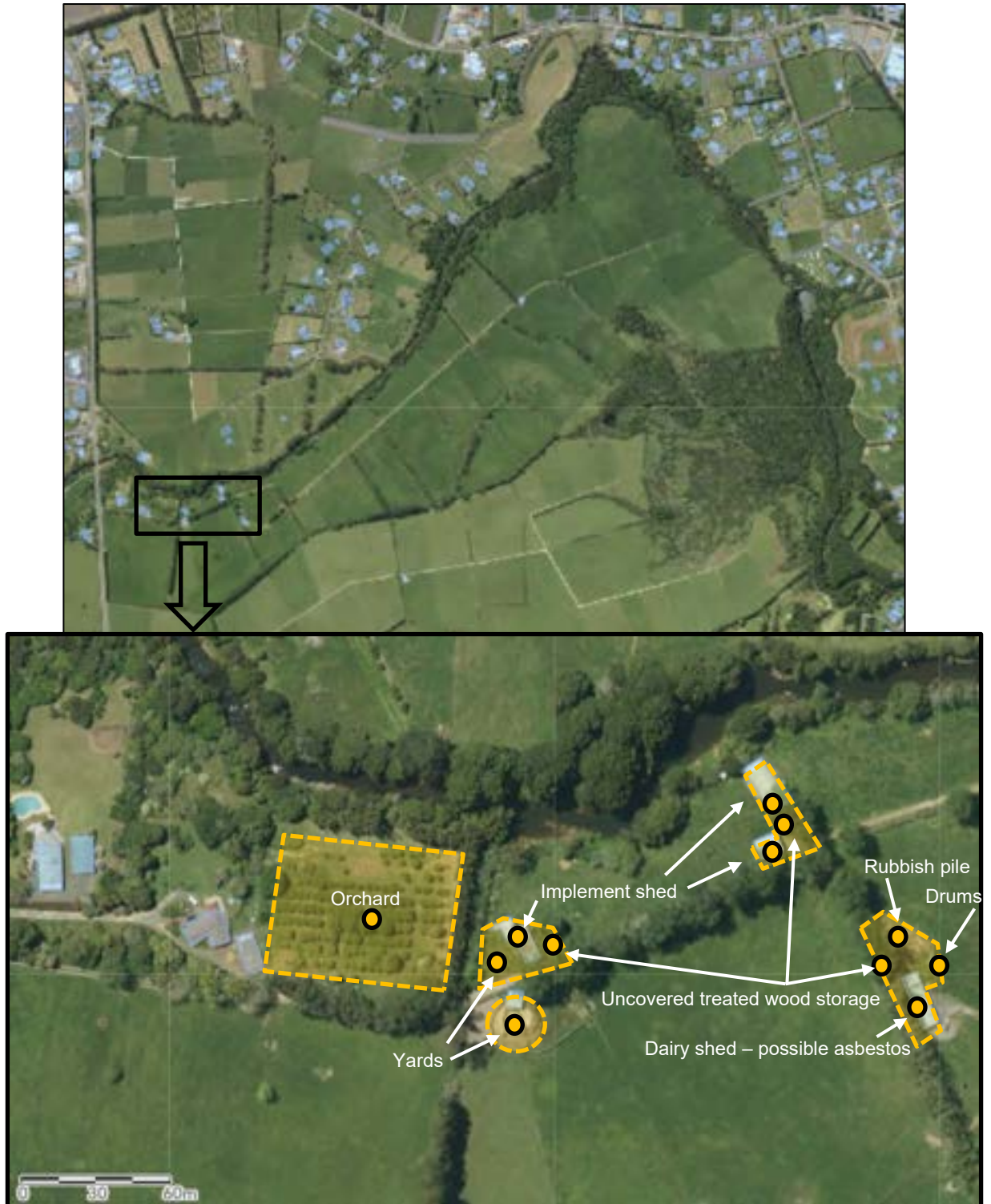


Figure 4 Area E - Piece of Land (dotted line) around Target Areas (circle)

4.1.1.4 Area F

- No HAIL activity was identified for this area and as such is not considered a 'Piece of Land' under NESCS legislation.

5. RISK ASSESSMENT

The NESCS identifies contaminants as a problem when the contaminants are at a concentration and a place where they have, or are reasonably likely to have, an adverse effect on human health and the environment (NESCS 2012). The NESCS 2012 further states that a key decider under the NESCS is whether, under the intended land-use, the exposure to soil is reasonably likely to harm human health.

5.1 CONCEPTUAL SITE MODEL

A Conceptual Site Model (CSM) was developed and shown in Appendix B. A summary of Target Areas showing size and likely HAIL category is shown in Appendix E 4.

The CSM for the site was based on a review of available title information, aerial photographs, council and historic records and a site inspection.

Land use on area of investigation at area A & B comprises:

- | | | |
|--------------------------|-------------|--|
| a) Pre 1977 | Pastoral | - consider fertiliser and pesticide use A10. |
| b) 1977 - present | Golf course | - consider A10, E1. |

Land use on area of investigation at area C & D comprises:

- | | | |
|---------------------------|------------|--|
| a) 1930's- present | Dairy Farm | - consider fertiliser and pesticide use A10 & I. |
|---------------------------|------------|--|

Land use on area of investigation at area E comprises:

- | | | |
|---------------------------|------------|---|
| a) 1930's ~2010 | Dairy Farm | - consider fertiliser and pesticide use A10 & I, E 1. |
| b) ~2010 - present | Pastoral | - consider A10 & I, E 1. |

Land use on area of investigation at area F comprises:

- | | | |
|----------------------------|----------|------------|
| a) 1930's - present | Pastoral | - Not HAIL |
|----------------------------|----------|------------|

The potential pathways considered future residential land use and included dermal absorption, accidental ingestion through contact with soil during play, work and maintenance, dust inhalation, and produce ingestion.

Potential receptors include children and adults.

5.2 CONTAMINANT PROBABILITY

This PSI was undertaken to ascertain if there is any potential contamination from past HAIL land use would be present in the soil.

- Nine 'Pieces of Land' were identified which could potentially contain Contaminants of Interest in the soil at concentrations above the NESCS residential guideline values (Figures 2, 3 & 4).
- One unused building was identified with cladding which may contain asbestos (ACM). A second building with ACM may also be present.
- Under the present land use, the likelihood that the contaminant poses any risk to receptors is assessed as low. The land use at the present time on Areas A & B is recreational, and on remaining areas is primary production.
- No residential housing is located in the identified Target Areas or Pieces of Land.

5.3 CHARACTERISATION OF POTENTIAL PATHWAYS

- Under current land use the potential pathway considered is direct dermal contact with chemicals in soil through contact with soil during maintenance.
- The ingestion pathway through fruit in the orchard is not considered applicable due to orchard fruit not currently being harvested.

If a future change in land use to residential is undertaken the potential pathways could also include:

- Crop uptake of chemicals from soil leading to ingestion (produce ingestion). Adult and child receptors.
- Direct dermal contact with chemicals in soil through contact with soil during play, gardening, and maintenance (dermal). Adult and child receptors.
- Accidental ingestion of chemicals in soil during play or maintenance. Adult and child receptors.
- Dust inhalation associated with earthworks. Adult and child receptors.

5.4 RISK SUMMARY

The risk to human health at the site, is assessed in the context of the possible future land use: that of residential living.

- Nine 'Pieces of Land' were identified where it was judged contaminants may potentially be present in the soil at concentrations above residential land use guideline values.
- The source of the potential contaminants include chemicals used in farming and golf course maintenance such as fertiliser and herbicide and leaching from tanalised timber. No sources of hydrocarbons were identified.
- Some asbestos containing materials may be present on buildings on the Site.
- The area of the Pieces of Land identified is small compared to the size of the site, with the exception of the Golf Course (Appendix E 4).

6. DISCUSSION & CONCLUSION

This PSI was undertaken to determine if soil on the Site is potentially contaminated. The collated information goes in support of a zone change application for future residential land use.

The information as presented in this PSI indicates the following results:

- The land has a history of pastoral farming (dairy and beef) and as a Golf Course.
- The Site is not listed on NRC Selected Land Use Register.
- The Piece of Land Identified as HAIL site under categories: A10 (*Persistent pesticide bulk storage or use including sport turfs, market gardens, orchards, glass houses or spray sheds*) comprises ~559346m² over this Site. Of that 553161m² is located over the golf course.
- The piece of land Identified as HAIL site under categories: I (*Any other land that has been subject to the intentional or accidental release of a hazardous substance in sufficient quantity that it could be a risk to human health or the environment*) comprises ~2155m² over the Site.
- The piece of land identified as HAIL site under categories: E1 (*Asbestos products manufacture or disposal including sites with buildings containing asbestos products known to be in a deteriorated condition*) comprises ~165m² over the Site.
- Target Areas were identified on all areas excepting Area F— destocked block. This was not considered a Piece of Land and will not need to be included in any further investigations.
- Target Areas on Areas A and B; golf course include the greenkeepers' shed and the fairways where intensive herbicide use is common.
- Target Areas on Areas C and D; dairy farm include the milking shed and yards, and various other implement or storage sheds including areas where treated timber were stored on the ground.
- Target Areas on Area E; dry stock farm include multiple implement or storage sheds, stock yards, rubbish pile, treated timber and plastic drum storage areas, an orchard and a condemned dairy shed that may contain asbestos containing material.
- Pursuant to regulation 8(4)(b) the results of the PSI does not indicate that it is highly unlikely there will be a risk to human health if there is a change of land use to residential. As such a Detailed Site Investigation is warranted around the identified Target Areas to characterise the Pieces of Land on the Site.

7. RECOMMENDATIONS

- It is recommended that the piles of uncovered treated timber be removed from site to an approved disposal facility. (Northland Waste facility at Waipapa accepts treated timber).
- It is recommended that the contents of the rubbish pile in Area E be removed to an approved disposal facility (Puwera Landfill or Redvale Landfill).
- It is recommended that any empty drums and chemical containers be removed from Site to an approved disposal facility. If contents are unknown advice is available through Hazchem ph 0800 110 984.
- It is recommended that a licensed asbestos surveyor be contracted to assess if the unused cowshed contains ACM and undertake removal if necessary⁸. Clean up certificates should be obtained and provided to support any future Detailed Site Investigation. Confirmation should also be sought to determine if the 'sewage treatment and utilities shed' shed is still present on the golf course site.

⁸ Eg. Gareth Jones Protec Group (022 389 8276) or Intertek (09 432 7521)

8. REPORT LIMITATIONS

The report was based on evidence gathered during a site walkover, viewing aerial photographs and by studying council and historic records. The information in this document is based on publicly available documents which were assumed to be accurate.

With time the site conditions and applicable environmental standards may change and as such the report conclusions may not apply at a future date.

An ecological investigation wasn't carried out as this is outside the scope. NZ Environmental will not be held liable for any future discovery of isolated hot spots or discharge unknown at the time of sampling, such as buried drums of chemicals.

9. SQEP CERTIFICATE OF REPORT

PRELIMINARY SITE INVESTIGATION CERTIFYING STATEMENT

I Tricia Scott of NZ Environmental certify that:

1. this preliminary site investigation meets the requirements of the Resource Management (National Environmental Standard for assessing and managing contaminants in soil to protect human health) Regulations 2011 because it has been:
 - a. done by a suitably qualified and experienced practitioner, and
 - b. reported on in accordance with the current edition of Contaminated land management guidelines No 1 – Reporting on contaminated sites in New Zealand, and
 - c. the report is certified by a suitably qualified and experienced practitioner.

The activity to be undertaken as defined in R 5(5) R5(6) is described:

- a. on page 8 of this preliminary site investigation.

Evidence of the qualifications and experience of the suitably qualified and experienced practitioner(s) who have done this investigation and have certified this report is appended to the preliminary site investigation report.

Signed and dated: ..  .13 April 2022

10. BIBLIOGRAPHY & REFERENCES

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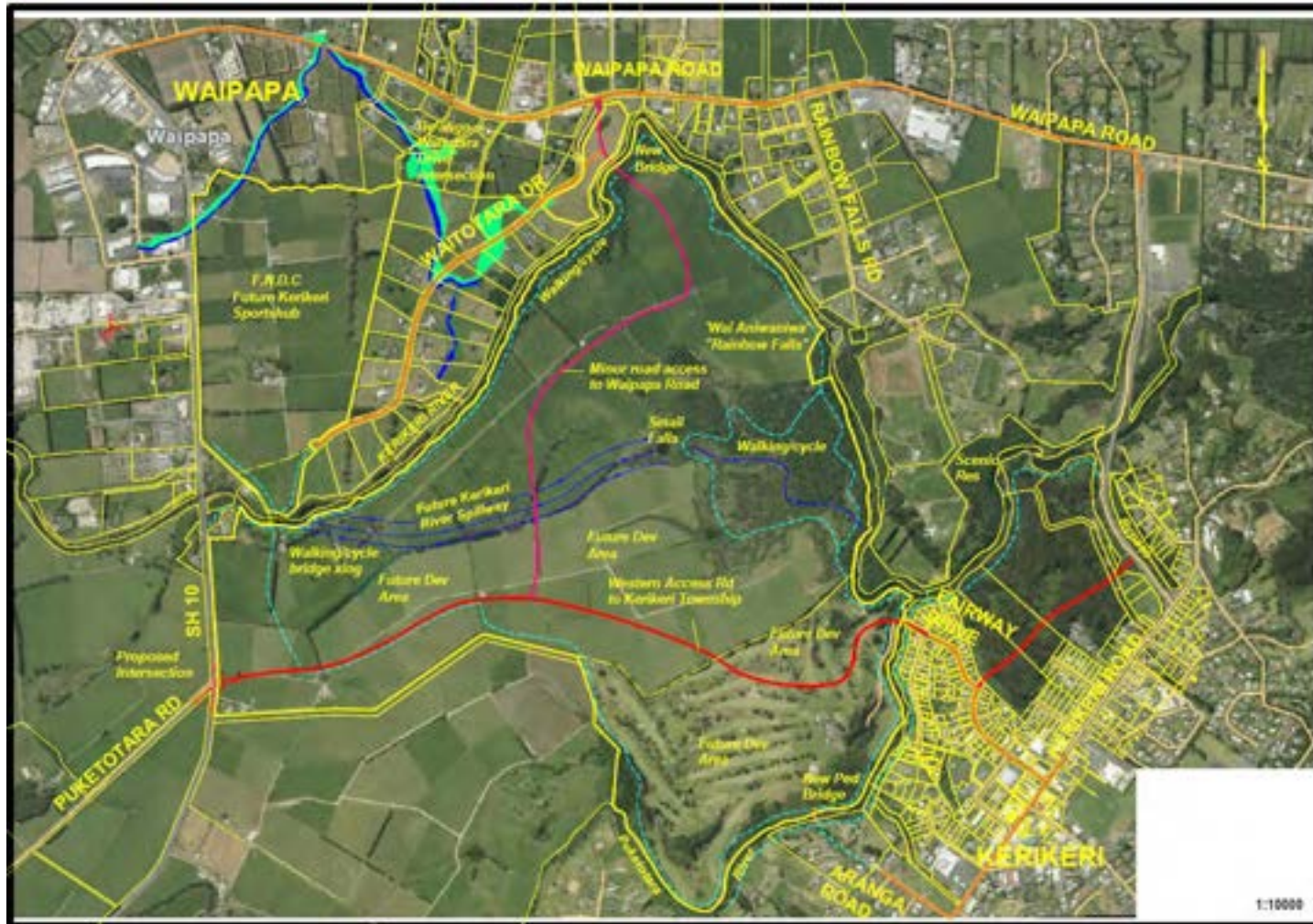
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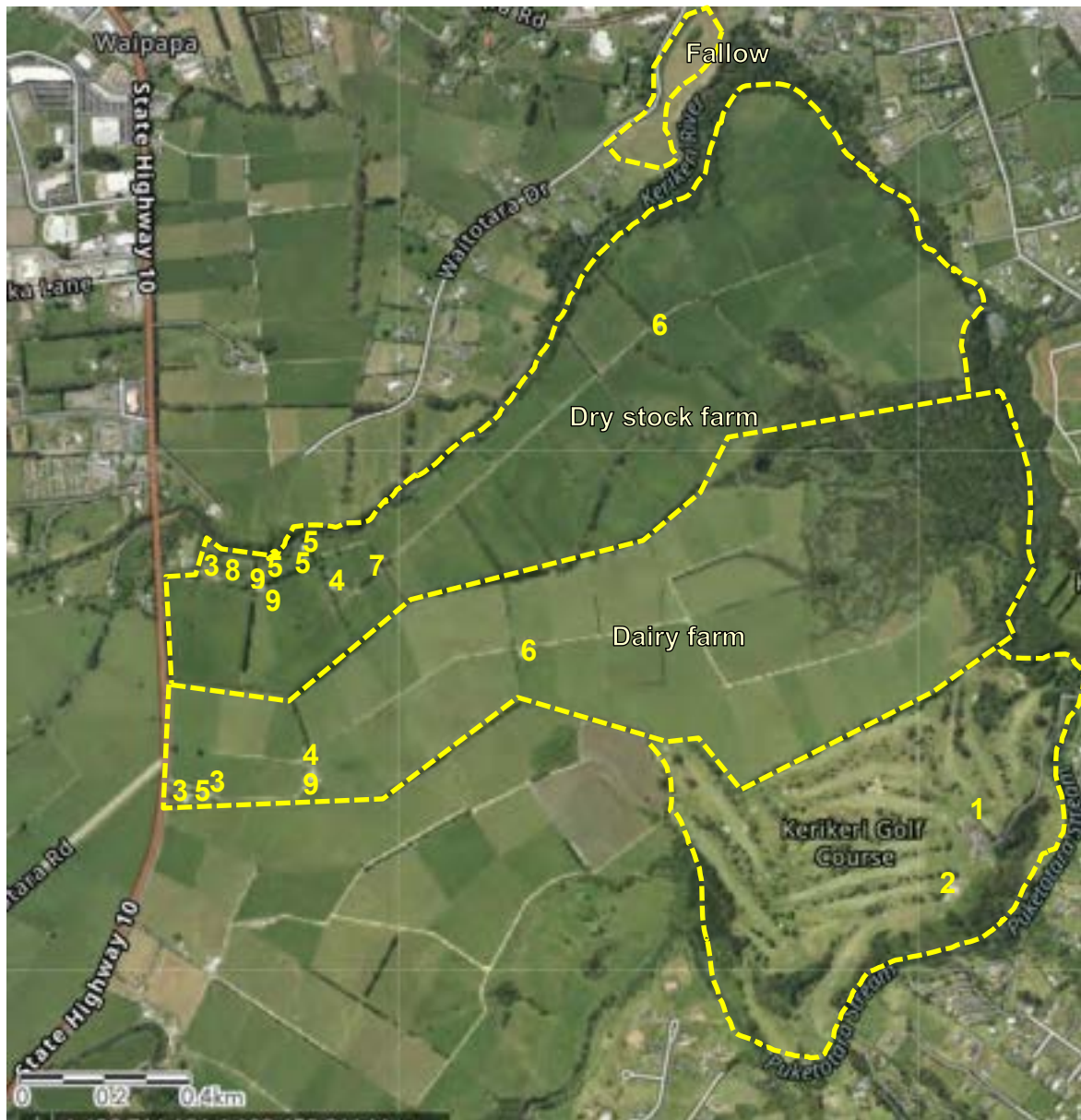
11. GLOSSARY

Target Area	An area or target within the piece of land identified as having hazardous substances on or in it at elevated levels or above background. Reported concentrations are below the soil contaminant standards for the applicable land use scenario with in-situ soils unlikely to pose a risk to human health. May require further investigation, management, or remediation for more conservative land use scenarios (largely applicable to soil removal offsite).
Area of Investigation	Location within a Piece of Land upon which there is a proposed change in land use.
Control Area	An investigated and defined area of contaminated soil on a piece of land, with hazardous substances in or on it that are above the soil contaminant standards for the applicable land use scenario and where the contaminants are reasonably likely to have adverse effects on the human health. The control area is reported as an area requiring remediation or management.
COI	Contaminants of interest
DSI	Detailed Site Investigation
FNDC	Far North District Council
HAIL	Hazardous Activities and Industries List
mg/kg	Milligrams per kilogram
NES	National Environmental Standard
NESCS	The National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health
NZKGI	New Zealand Kiwifruit Growers Incorporated
NZMS	New Zealand Map Series
NRC	Northland Regional Council
OCP	Organochlorine Pesticides
Piece of Land	The NESCS applies to any “piece of land” on which an activity or industry described in the current edition of the Hazardous Activities and Industries List (HAIL) is being undertaken, has been undertaken or is more likely than not to have been undertaken (see regulation 5(7)).
PSI	Preliminary Site Investigation
RAP	Remediation Action Plan
SVR	Site Validation Report
Target Area	An area or target within the piece of land identified as potentially having hazardous activities or industries resulting in contaminants to be present at elevated levels or above background.

APPENDIX A
Figures



A 1 Site plan showing possible future development options

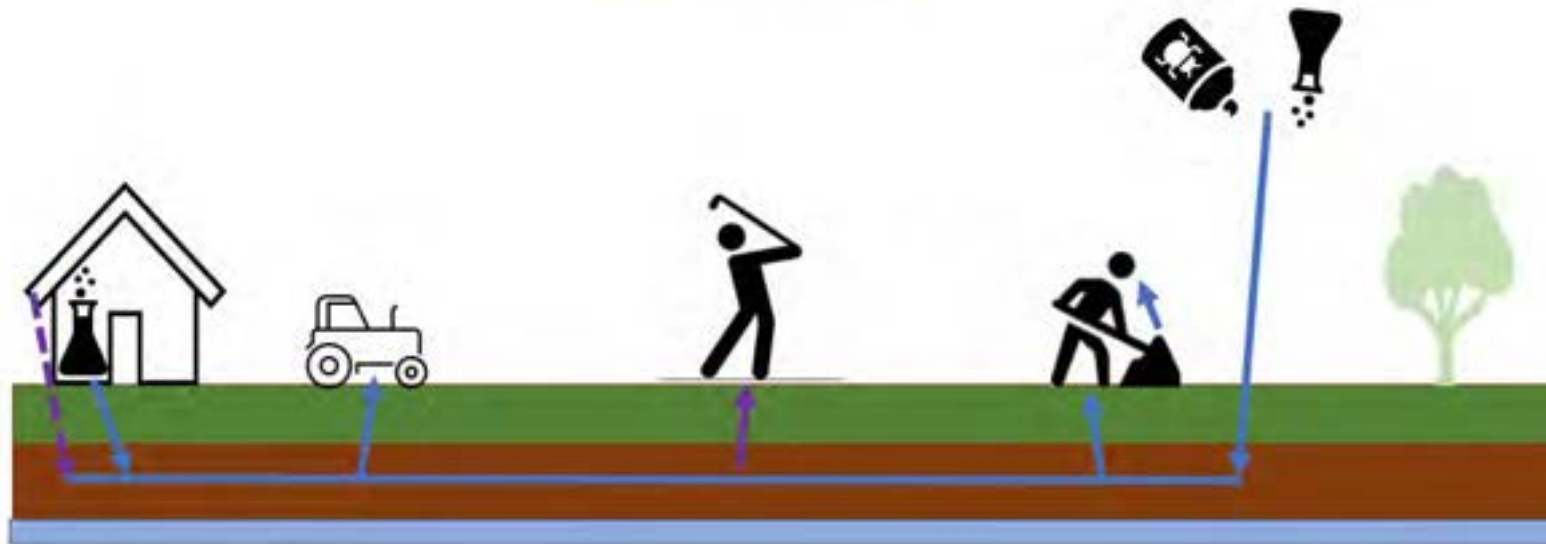


Identifier	Buildings
1	Club house
2	Green keeper shed
3	House
4	Dairy shed
5	Implement shed
6	Hay shed
7	Piggery
8	Orchard
9	Stock Yards

A 2 Contemporary land use

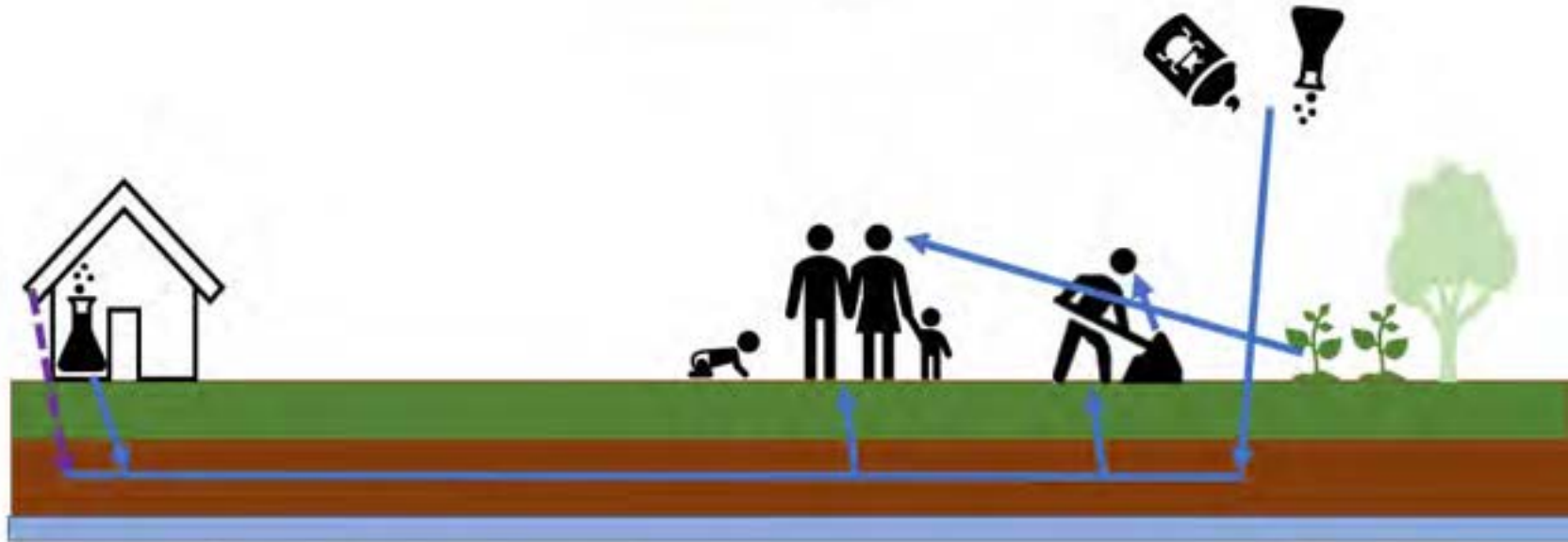
APPENDIX B
Conceptual Site Model

Conceptual Model – Area A & B Golf Course
 Contemporary land use



- | | |
|---|----------------------------------|
| • chemical from sprays or fertiliser to soil or groundwater. | [potentially complete] |
| • Direct dermal contact with chemicals in soil through contact with soil or ingestion (maintenance worker only) | [potentially complete] |
| • Dermal contact or dust inhalation associated with maintenance | [potentially complete] |
| • Accidental loss of chemicals to soil from stored equipment | [potentially complete] |
| • Hydrocarbons to ground from machinery | [incomplete, no stored fuel] |
| • Possible ACM to ground leading to dermal or dust ingestion | [incomplete, if ACM not on site] |

Conceptual Model – Area A & B Golf Course
 Residential land use



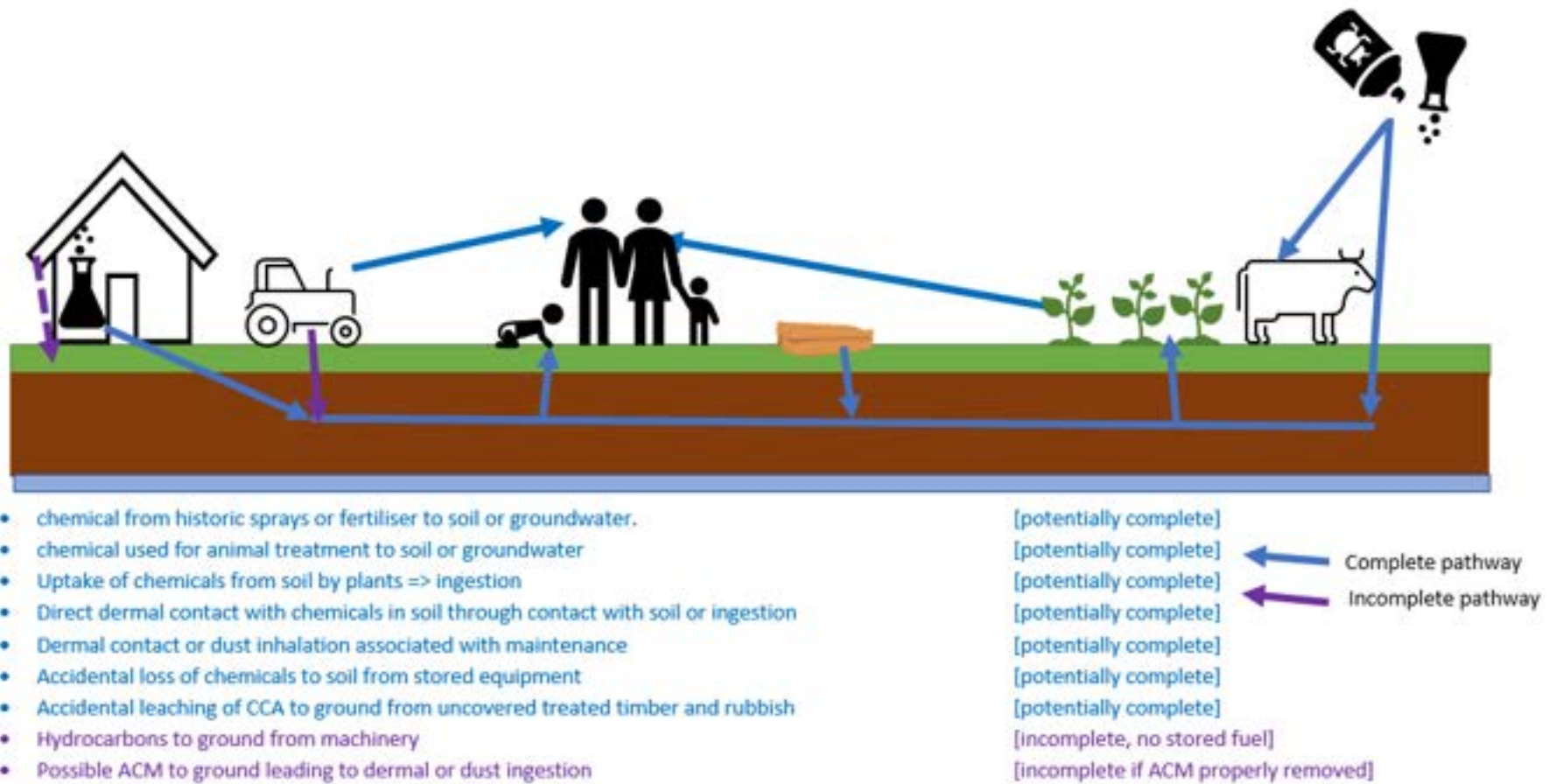
- chemical from historic sprays or fertiliser to soil or groundwater.
- Direct dermal contact with chemicals in soil through contact with soil or ingestion
- Uptake of chemicals from soil by plants => ingestion
- Dermal contact or dust inhalation associated with play, gardening, or maintenance
- Accidental loss of chemicals to soil from stored chemical or equipment
- Possible ACM to ground leading to dermal or dust ingestion

[potentially complete]
 [potentially complete]
 [potentially complete]
 [potentially complete]
 [potentially complete]
 [incomplete, if ACM not on site]

← Complete pathway
 ← Incomplete pathway

Conceptual Model – Farm Areas C, D & E

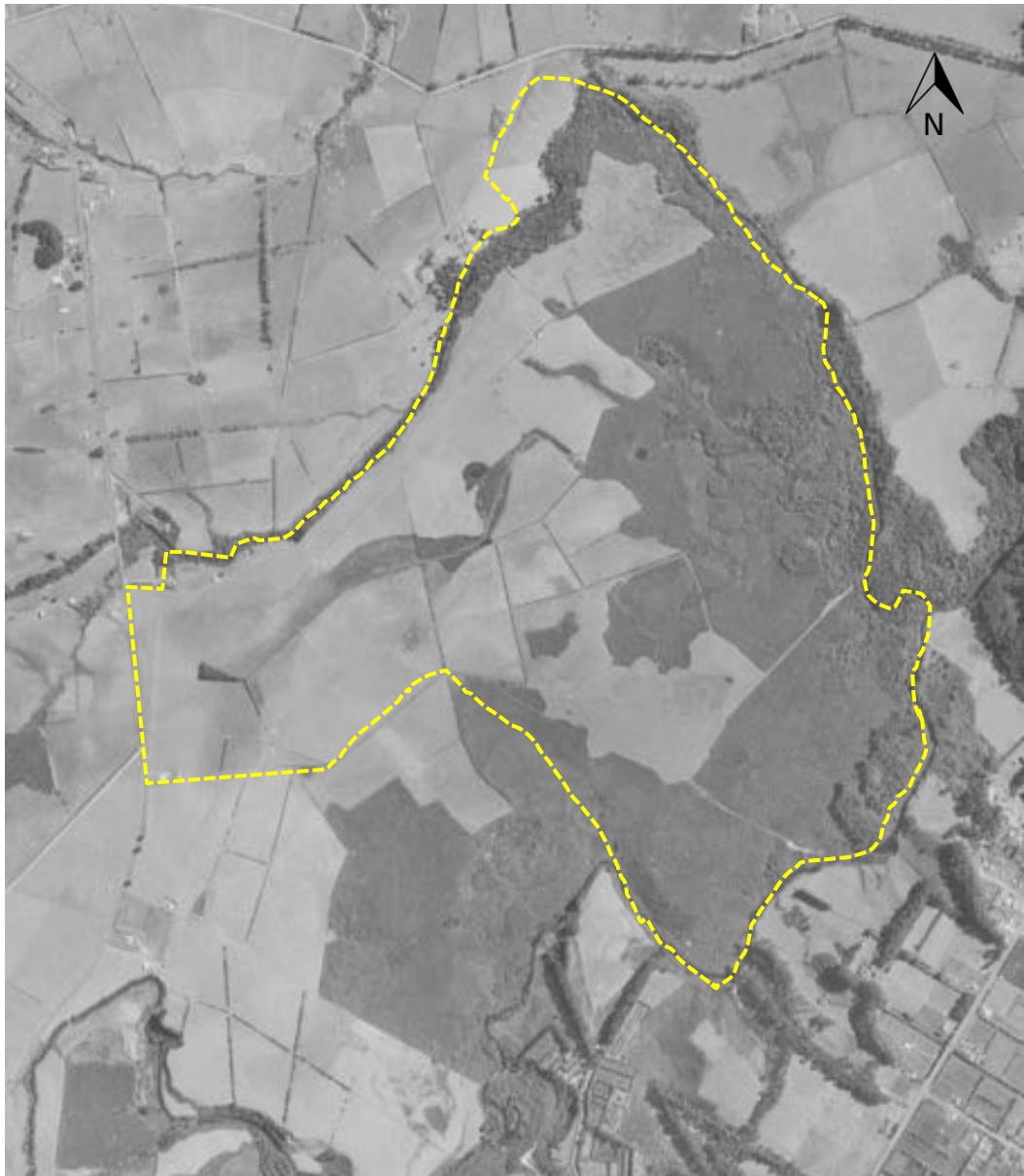
Future residential land use



APPENDIX C
Historic Photographs and Documentation



C 1 Aerial photograph taken in 1953 showing eastern portion of Site
(Source: Retrolens)



**C 2 Aerial photograph taken in 1968 showing approximate location of Site
(Source: Retrolens)**



C 3 Aerial photograph taken in 1979 showing approximate location of Site
(Source: Retrolens)



House & Implement shed Area C - 1979



Dairy shed Area C - 1979



Orchard Area E - 1979



Sheds Area E - 1979

**C4 Detail of Target Area from Aerial photograph taken in 1979
(Source: Retrolens)**



C 5 Aerial photograph taken in 1983 showing Site in mid-ground. (Source: Whites Aviation Ltd⁹)

⁹ Ref: WA-76477-F. Alexander Turnbull Library, Wellington. New Zealand / records/23228069



C6 Aerial photograph taken in 2003 showing approximate location of Site. visible
(Source: Google Earth)



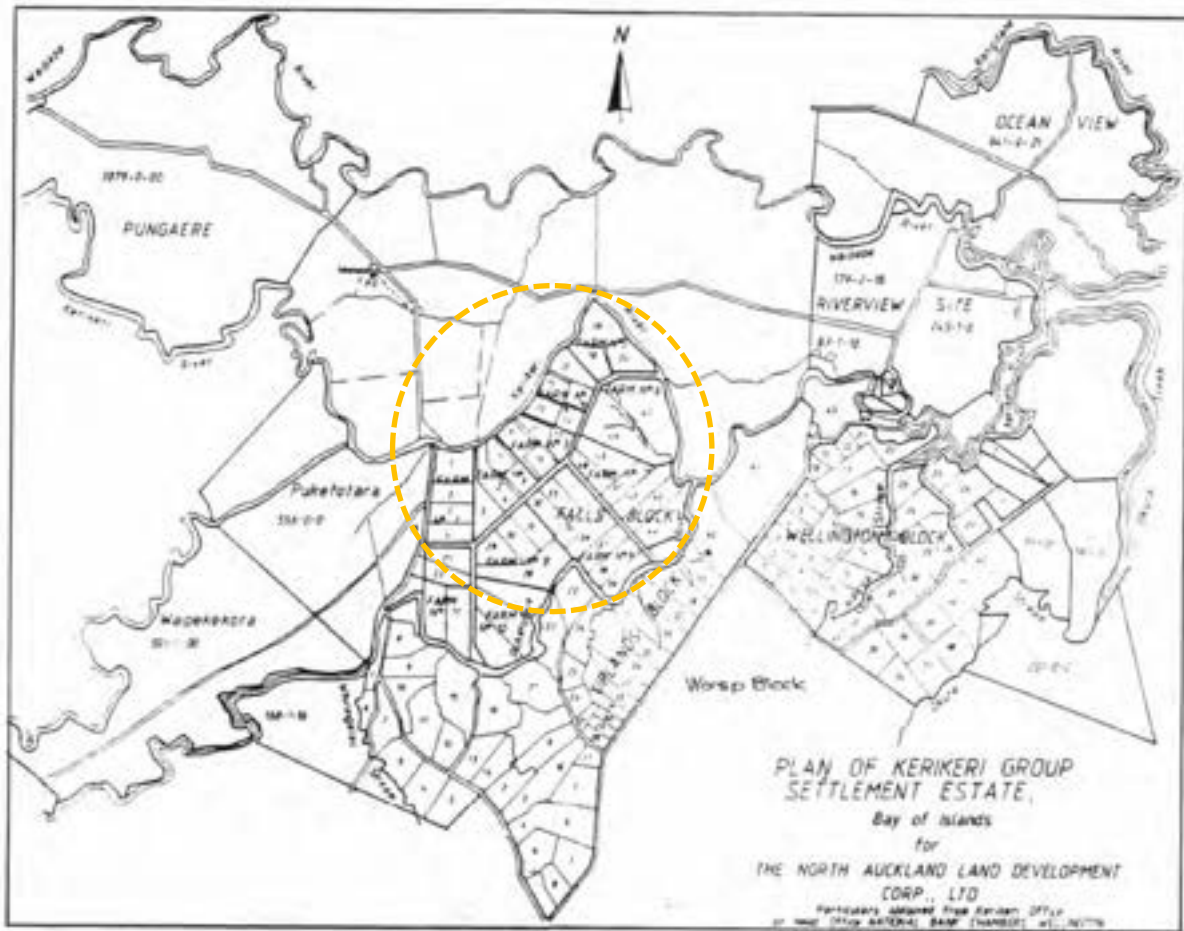
C7 Aerial photograph taken in 2012. (Source: Google Earth)



C 8 Aerial photograph taken in 2020. Drainage patterns indicated (Source: Google Earth)

Year of photograph	Land use on Area of Investigation	HAIL category
1953	Pasture or scrubland over all lots	
1968	South Farm: House, shed & dairy shed , North Farm: Hay shed, piggery, half round shed, implement shed	I, A10
1977	North Farm: Additional Dairy shed and implement shed by half round barn, start of small orchard . Start of development of golfcourse	I, A10
1979	Golf course well developed, North farm; orchard well established.	I, A10
1981	North farm orchard still present, South Farm: New hayshed present	I, A10
1983	As for present	I, A10
2003	As for present	I, A10
2013	As for present	I, A10
2020	As for present	I, A10

C 9 Summary of information seen in Aerial photographs



C 10 North Auckland Land Development Corporation subdivision plan circa @ 1930. Area of site indicated (Source: Pickmere 1994)

APPENDIX D
Contemporary Site Photographs

Plate no. D1	Date: 28/3/22	
Description: Golf course fairway. Target Area.		

Plate no. D2	Date: 28/3/22	
Description: Green keeper sheds Golf Course. Target Area.		

Plate no. D3	Date: 28/3/22	
Description: Hose behind green keeper shed Golf Course. Target area.		

Plate no. D4	Date: 28/3/22	
Description: Fertiliser drum behind green keeper shed, Golf Course. Area A		



Plate no. D7	Date: 28/3/22	
Description: Cowshed Area C. Target Area.		

Plate no. D8	Date: 28/3/22	
Description: Yards Area C. Target Area.		

Plate no. D9	Date: 28/3/22	
Description: Dairy shed and chemical store shed Area C. Target Area.		

Plate no. D10	Date: 28/3/22	
Description: Hay shed Area C		

Plate no. D11	Date: 28/3/22	
Description: Pasture Area E		

Plate no. D12	Date: 28/3/22	
Description: Orchard Area E. Target Area		

Plate no. D13	Date: 28/3/22	 A photograph showing a dirt area with several wooden stock yards. In the background, there is a shed with a corrugated metal roof. The area is surrounded by green trees and vegetation under a clear blue sky.
Description: Old stock yards by old implement shed Area E. Target Area.		

Plate no. D14	Date: 28/3/22	 A photograph of a post storage area. A large, weathered wooden tub sits on a pile of logs. A black tire is lying on the ground in the foreground. In the background, there is a wooden structure, possibly a shed or fence, and a body of water.
Description: Post storage area near old implement shed Area E. Target Area.		

Plate no. D15	Date: 28/3/22	
Description: New stock yards Area E. Target Area.		

Plate no. D16	Date: 28/3/22	
Description: Half round implement shed Area E. Target Area.		

Plate no. D17	Date: 28/3/22	
Description: Rectangle implement shed Area E. Target Area.		

Plate no. D18	Date: 28/3/22	
Description: Post storage area by implement sheds Area E. Target Area.		

Plate no. D19	Date: 28/3/22	
Description: Old dairy shed Area E – possible Asbestos containing cladding. Target Area		

Plate no. D20	Date: 28/3/22	
Description: Rubbish area west of dairy shed Area E. Target Area		

Plate no. D21	Date: 28/3/22	
Description: Drums near old dairy shed Area E. Target area		

Plate no. D22	Date: 28/3/22	
Description: Piggery Area E		

Plate no. D23	Date: 28/3/22	
Description: Hay shed east Area E		

Plate no. D24	Date: 28/3/22	
Description: Waitotara Drive		

APPENDIX E Supporting Tables & Documents

Golf course				
Certificate of Title	From	Registered Owners	Occupation	Area
1130/120	28/01/1955	Maxwell Allan Silich	Farmer	103.3971ha
NA33B/688	20/05/1977	Bay of Islands Golf Club Kerikeri Incorporated		58.5516ha
South Farm				
Certificate of Title	From	Registered Owners	Occupation	Area
1130/120	28/01/1955	Maxwell Allan Silich	Farmer	103.3971ha
NA33B/689	14/06/2018	Kiwi Fresh Orange Company Ltd		102.1634ha
North Farm				
Certificate of Title	From	Registered Owners	Occupation	Area
1130/121	28/01/1955	Frederick Malcom Silich	Farmer	91.8626ha
	10/08/1965	William Lodewyr Hendrikse	Farmer	
NA46D/1149	26/06/1980	Brownlee Brothers Ltd		93.55ha
Waitotara Drive				
Certificate of Title	From	Registered Owners	Occupation	Area
NA500/201	22/07/1925	Edwin James Vallentine	Gentleman	20.4695ha
	18/09/1933	Lewis Reardon	Settler	
	22/05/1937	Wilfred Evers Swindell		
	5/05/1939	John Read Gillett	Farmer	
	2/08/1977	Dorothy Anmanda Gillett, Raymond Govan Gillett and Graeme Benson Gillett		
	17/07/1981	Graeme Benson Gillett	Farmer	
	2/06/1983	Graeme Benson Gillett & Sharon Grace Gillett	Farmer and married woman	
NA55B/41	22/09/1983	Graeme Benson Gillett & Sharon Grace Gillett	Farmer and married woman	20.4695ha
	19/01/1995	Graeme Benson Gillett & Sharon Grace Gillett & Keith Frederick Arden	Farmer and married woman & accountant	
62861	7/03/2003	Waipapa 1 Ltd		30.776ha
	4/12/2003	Kerikeri River Estate Ltd		
137884	30/09/2004	Cole James Investments Ltd		3.3845ha

E 1 Landowner summary

Site History	Area A & B (refer Figure 1)	Area C & D	Area E	Area F
Land use history	pre 1930 - Sheep and Beef grazing	pre 1930 - Sheep and Beef grazing	pre 1930 - Sheep and Beef grazing	~1930 - present - Grazing
	1930 -1977 - Dairy farm	1930 - present - Dairy farm	1930- ~ 2010 - Dairy Farm	
	1977 - present - Golf Course		~2010 - present - Dry stock grazing	
Known incidents	1998 - Spray drift	2006 - effluent and dead stock		
	1996 - burning and smoke nuisance			
Management practices	Pre 1977 - conventional dairy farm	Conventional dairy unit	conventional dairy and dry stock unit	Unknown. Likely conventional grazing unit
	1977 - conventional golf course management			
Waste disposal	Unknown. Incident of burning noted by NRC	Unknown	Rubbish pile identified of inorganic farm waste	Unknown
Chemical storage practices	In green keeper sheds or on ground outside shed	In shed by cowshed - concrete floor	In implement sheds	NA
Chemicals used on the site	Unknown - green keeper unavailable. Assume high chemical input	Refer Appendix E3	Refer Appendix E3	Unknown
Certificates of title	Appendix G	Appendix G	Appendix G	Appendix G
Location of surface water drains and stormwater drainage channels	Puketotara stream on south and east boundaries	Kerikeri River on east boundary	Kerikeri River on north and east boundary	Kerikeri River on south-east boundary
Information on fill material	NA	NA	NA	NA
Potable drinking water source	Town supply. Has resource consent for water take for irrigation water.	Rain water	Rain water	Rain water
Proposed sewage disposal (if any)	Town system	Septic tank	Septic tank	NA

E 2 Land use summary

North Farm				
Fertiliser	Cleaner	Feed or medicinal	Insecticide	Herbicide
Balance DAP N,P,K, S fertiliser	KontACT	Biocare Bloat Control		Topsin fungicide
		Nutrimol Classic		Contact wetting agent
		Rumen-zyme plus		Bonza wetting agent
		Eclipse pour on		WeedMaster TS470
		Vibrostep		
South Farm				
Fertiliser	Cleaner	Feed or medicinal	Insecticide	Herbicide
Balance DAP N,P,K, S fertiliser	Cidiwash		Kaiso	Atrazine
				Sprint-7000 (2-4-D)
				Organosilicone penetrant

E 3 Chemicals identified during site walkover

Target Areas					
Lot Identifier (refer Figure 1)	Feature	Photo Reference - Appendix D	GPS Co-ordinates (NZTM)	Approximate Size (m ²)	HAIL category
A	Kerikeri Golf Course	D1	1685754 6101488	530059	A10
	Grounds keeper sheds	D2, D3	1685667 6101418	600	A10
	(possible shed with ACM)		1685667 6101418	10	E1
B	Kerikeri Golf Course small lot			22502	A10
C	Shed by residences	D6	1683906 6101646	600	A10, I
	yards	D8	1684126 6101646	280	A10, I
	dairy shed	D9	1684155 6101686	250	A10
D	dairy farm small lot				
E	orchard	D12	1683979 6102166	4000	A10
	old implement shed (west)	D13	1684049 6102164	120	A10, I
	old yards	D13	1684036 6102154	250	A10, I
	new yards	D15	1684045 6102130	350	A10, I
	rectangle implement shed	D17	1684146 6102208	75	A10, I
	posts by half round shed & rectangle shed	D18	1684145 6102213	60	A10, I
	half round implement shed	D16	1684144 6102219	200	A10, I
	posts by old implement shed (west)	D14	1684058 6102169	60	I
	posts by cowshed		1684175 6102178	60	I
rubbish pile by cowshed	D20	1684195 6102169	100	I	
cowshed	D19	1684190 6102186	165	E1	
F	Waitotara drive		1685024 6103455		
Total Area (m²)				559346	A10
				2155	I
				175	E1

E 4 Location and approximate size of identified Target Area on Site

APPENDIX F Selected Land Use Register

None of the properties four that you have enquired about are listed on the NRC Selected Land-use Register (SLR) for any current or historical Hazardous Activities and Industries List (HAIL) activities.
Please note that the SLR is not a comprehensive list of all sites that have a HAIL land use history. It is a live record and therefore continually being updated.

Regarding Lot 1 DP 63499

There are two environmental incidents recorded on the property:

Date	IRIS ID	Request Subject
25/02/1998	REQ.403614	Spraydrift
20/11/1996	REQ.402404	Burning and smoke nuisance

There are three active resource consents recorded on the property:

AUT.043361.01.01 – Discharge wastewater to land, Bay of Islands Golf Club
AUT.043361.02.01 – Discharge to air from wastewater disposal system, Bay of Islands Golf Club
AUT.001274.01.04 – Surface water take for purpose of irrigating golf course

Regarding Pt Lot 13 DP 41113

There is one environmental incident recorded on the property:

Date	IRIS ID	Request Subject
18/09/2006	REQ.414409	Farm dairy effluent and dead stock

There are no active resource consents recorded on the property.

Regarding Pt Lot 2 DP 8987

There are no environmental incidents recorded on the property.

There six active resource consents recorded on the property:

AUT.042455.(01-06) relating to river works and flood mitigation for the Whiriwhiritoa Stream

Regarding Lot 1 DP 333643

There are no environmental incidents recorded on the property.

There six active resource consents recorded on the property:

AUT.042455.(01-06) relating to river works and flood mitigation for the Whiriwhiritoa Stream

As per Rule C.6.8.1 of the [Proposed Regional Plan for Northland](#), copies of site investigation reports, where land disturbance has occurred, must be provided to the regional council within three months of completion of the investigation. Reports can be sent to contamination@nrc.govt.nz

Kind regards,
Heather

Ngā mihi

Heather Giles

Environmental Monitoring Officer – Waste Management
Northland Regional Council » Te Kaunihera ā rohe o Te Taitokerau

P 09 470 1210 ext 9212
M 027 615 3952



APPENDIX G
Property Titles



RECORD OF TITLE
UNDER LAND TRANSFER ACT 2017
FREEHOLD
Search Copy



R. W. Muir
Registrar-General
of Land

Identifier NA33B/688
Land Registration District North Auckland
Date Issued 20 May 1977

Part-Cancelled

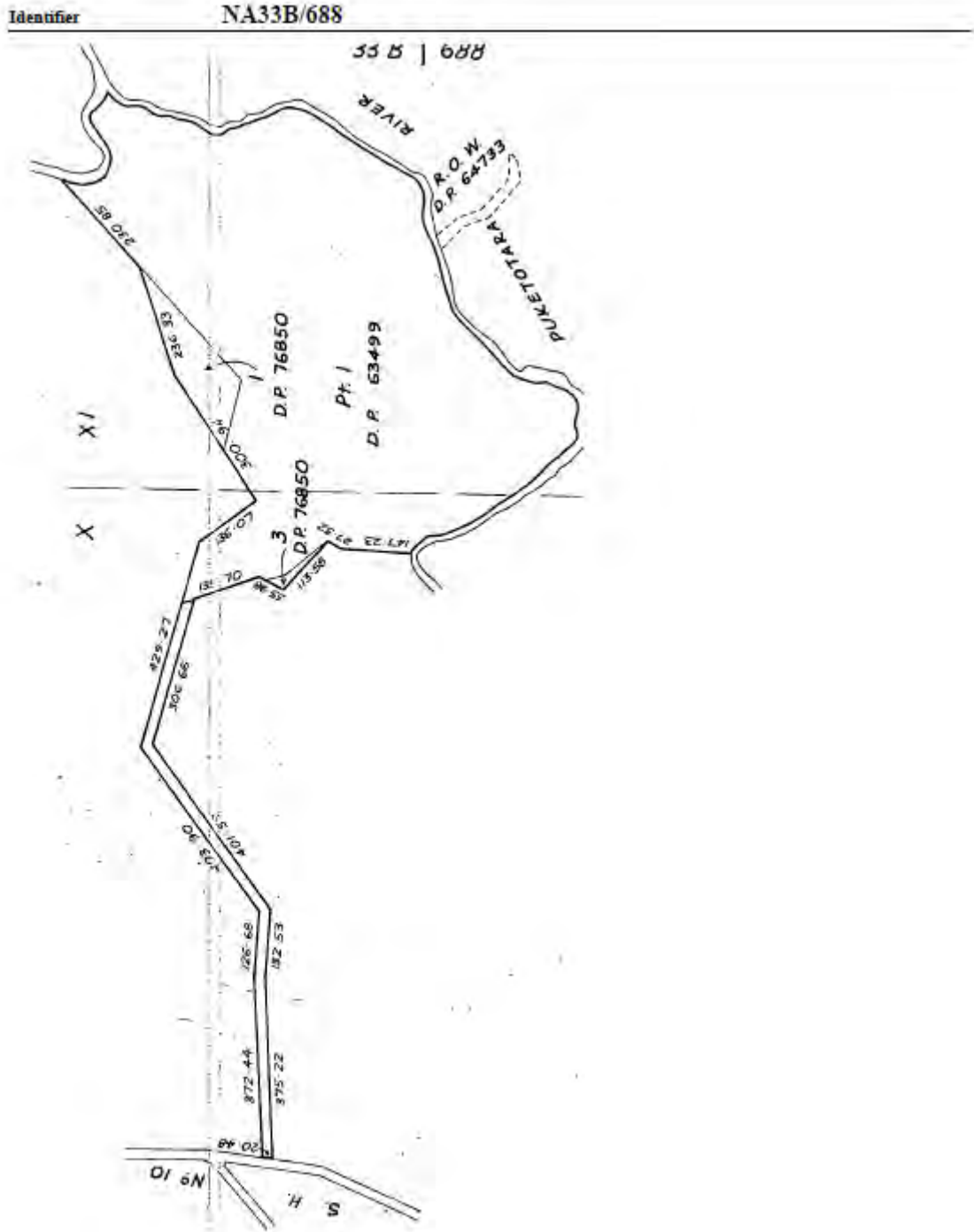
Prior References
NA1130/120 NA22A/326 NA22C/1466

Estate Fee Simple
Area 58.5516 hectares more or less
Legal Description Part Lot 1 Deposited Plan 63499 and Lot 1,
3 Deposited Plan 76850

Registered Owners
Bay of Islands Golf Club Kerikeri Incorporated

Interests

Subject to Section 36(4) Counties Amendment Act 1961 (Affects DP 76850)
Appurtenant to part is a right of way created by Transfer 233327.1 - 29.5.1973 at 11:27 am
573901.1 Gazette Notice declaring the adjoining State Highway No.10 to be a limited access road - 31.1.1979 at 10:51 am
B533382.5 Transfer of Lot 1 DP 109735 to Anthony Jozc Zivicovich CT NA61C/1153 issued - 6.5.1986 at 10:47 am
Appurtenant hereto is a right to convey water created by Transfer C953844.5 - 13.2.1996 at 3:33 pm
9278369.2 Mortgage to Bank of New Zealand - 21.12.2012 at 5:14 pm



Transaction ID: 6857189
Client Reference

Search Copy Dated 2003/12/3/02 pm Page 2 of 2
Register Only



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

Search Copy



R. W. Muir
Registrar-General
of Land

Identifier NA33B/688
Land Registration District North Auckland
Date Issued 20 May 1977

Part-Cancelled

Prior References
NA1130/120 NA22A/326 NA22C/1466

Estate Fee Simple
Area 58.5516 hectares more or less
Legal Description Part Lot 1 Deposited Plan 63499 and Lot 1,
3 Deposited Plan 76850

Registered Owners
Bay of Islands Golf Club Kerikeri Incorporated

Interests

Subject to Section 36(4) Counties Amendment Act 1961 (Affects DP 76850)
Appurtenant to part is a right of way created by Transfer 233327.1 - 29.5.1973 at 11:27 am
573901.1 Gazette Notice declaring the adjoining State Highway No.10 to be a limited access road - 31.1.1979 at 10:51 am
B533382.5 Transfer of Lot 1 DP 109735 to Anthony Joze Zivicovich CTNA61C/1153 issued - 6.5.1986 at 10:47 am
Appurtenant hereto is a right to convey water created by Transfer C953844.5 - 13.2.1996 at 3:33 pm
9278369.2 Mortgage to Bank of New Zealand - 21.12.2012 at 5:14 pm



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




R. W. Muir
Registrar-General
of Land

Identifier NA33B/689
Land Registration District North Auckland
Date Issued 20 May 1977

Prior References

NA1130/120 NA22A/326

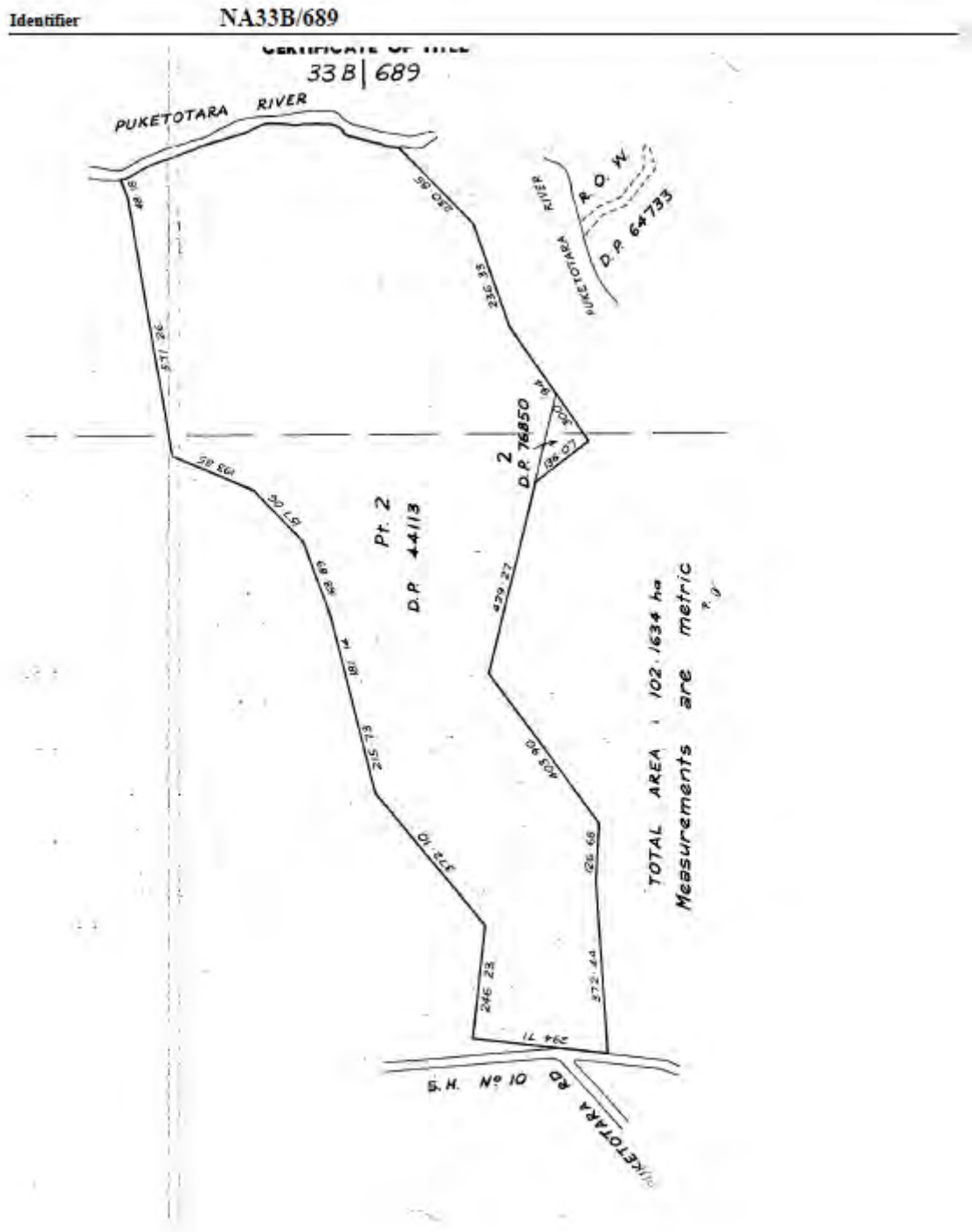
Estate Fee Simple
Area 102.1634 hectares more or less
Legal Description Lot 2 Deposited Plan 76850 and Part Lot 2
Deposited Plan 41113

Registered Owners

Kiwi Fresh Orange Company Limited

Interests

Subject to Section 36 (4) (5) (6) Counties Amendment Act 1961
Appurtenant hereto is a right of way created by Transfer 233327.1 (affects part Lot 2 DP 76850)
573901.1 Gazette Notice declaring adjoining state highway as a limited access road - 31.1.1979 at 10.51 am
11143716.5 Mortgage to Allan James McKenzie, Julie Christiana McKenzie and Trustee Services (2007) Limited -
14.6.2018 at 9:48 am



Transaction ID: 68533383
Client Reference:

Search Copy Dated 30/03/22 10:06 am, Page 2 of 2
Register Only



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

Search Copy




R. W. Muir
Registrar-General
of Land

Identifier NA46D/1149
Land Registration District North Auckland
Date Issued 26 June 1980

Part-Cancelled

Prior References
NA1130/121 NA31C/1308

Estate Fee Simple
Area 93.5500 hectares more or less
Legal Description Lot 2 Deposited Plan 89875
Registered Owners
Brownlie Brothers Limited

Interests

Subject to Section 59 Land Act 1948 (affects part formerly Section 13 Block X Kerikeri Survey District)
573901.1 Gazette Notice declaring adjoining State Highway as a limited access road - 31.1.1979 at 10:51 am
B056233.3 CT NA49B/1017 issued for Lot 1 DP 92890 - 20.4.1982 at 1:45 pm
8905225.3 Mortgage to Stephen Lawrence Brownlie and Christopher John Brownlie - 7.11.2011 at 1:57 pm

Transaction ID 68535781
Client Reference

Search Copy Dated 30/03/22 10:21 am, Page 1 of 2
Register Only

Identifier

NA46D/1149



Transaction ID: 68335781
 Client Reference

Search Copy, Dated 2022/11/10 2:46, Page 2 of 2
 Register Only



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



R. W. Muir
Registrar-General
of Land

Identifier 137884
Land Registration District North Auckland
Date Issued 30 September 2004

Prior References
62861

Estate Fee Simple
Area 3.3845 hectares more or less
Legal Description Lot 1 Deposited Plan 333643

Registered Owners
Cole James Investments Limited

Interests

Appurtenant hereto is a right of way and rights to transmit electricity and telecommunications created by Transfer D302958.13 - 18.8.1998 at 1.44 pm (affects part formerly CT 115C/213)

The easements created by Transfer D302958.13 are subject to Section 243 (a) Resource Management Act 1991

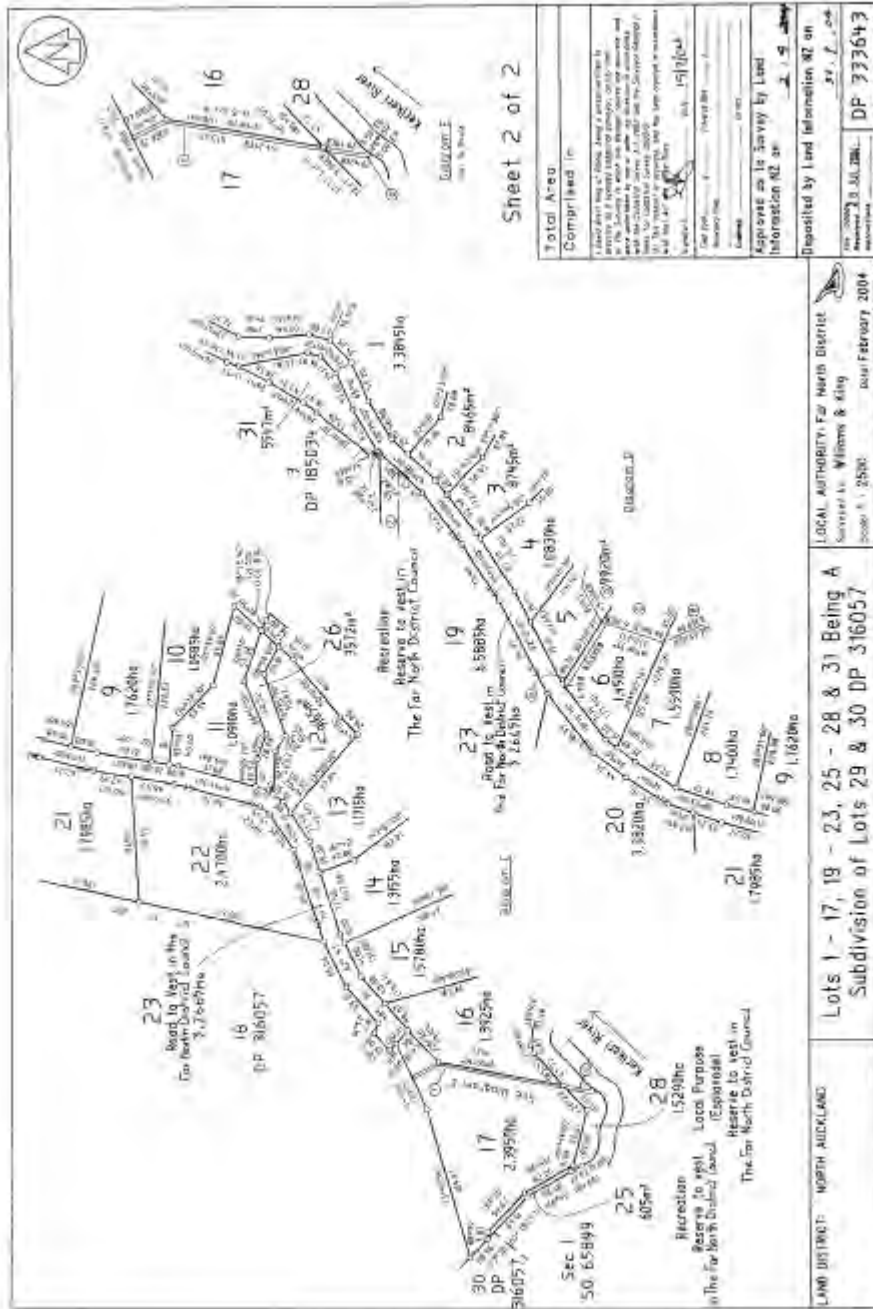
Appurtenant hereto is a right of way and electricity and telephone rights created by Transfer D349728.2 - 20.1.1999 at 2.37 pm (affects part formerly CT 115C/213)

6166730.2 Consent Notice pursuant to Section 221 Resource Management Act 1991 - 30.9.2004 at 9:00 am

Land Covenant in Easement Instrument 6201889.1 - 3.11.2004 at 9:00 am

Identifier

137884



Total Area	
Completed in	
<small>I and my firm have prepared this plan in accordance with the provisions of the Resource Management Act 1976 and the Land Information Act 2004. We warrant that the information contained in this plan is true and correct to the best of our knowledge and belief. We warrant that the information contained in this plan is true and correct to the best of our knowledge and belief. We warrant that the information contained in this plan is true and correct to the best of our knowledge and belief.</small>	
Approved on its Survey by Land Information NZ on	19/10/04
Deposited by Land Information NZ on	27/1/04
DP 333643	

LOCAL AUTHORITY: FAR NORTH DISTRICT
 Surveyor: Williams & Gray
 Scale: 1:2500
 Date: February 2004

**Lots 1 - 17, 19 - 23, 25 - 28 & 31 Being A
 Subdivision of Lots 29 & 30 DP 316057**

LAND DISTRICT: NORTH AUCKLAND

Transaction ID: 68223371
 Client Reference:

Search Copy (dated 20/03/22 10:12 am, Page 3 of 3)
 Register Only

APPENDIX H Statement of Qualification as a SQEP

As per the NESCS User Guide Suitably Qualified and Experienced Practitioner requirements Tricia Scott holds a Bachelor of Science degree and a NZ Certificate of Science. She has over 10 years experience investigating and reporting on contaminated land and is a Certified Environmental Practitioner (CEnvP).



State Highway 10, Waipapa, Kerikeri – Proposed Urban Development: Preliminary Archaeological Appraisal

Introduction:

Kiwi Fresh Orange Company is seeking to undertake a plan change and subsequent urban development of a block of land bordered to the north and east by the Kerikeri River, to the south by the Puketotara Stream and neighbouring rural properties and to the west by State Highway 10, Kerikeri (Figures 1 & 2). The legal descriptions of the property are: Part Lot 2 DP 41113, Lot 2 DP 76850, Part Lot 2 DP 89875, Lot 1 DP 63499 and Lot 1 DP 76850. The project is currently at the concept stage and no development plans are as yet available.

A preliminary archaeological appraisal of the project area was commissioned in the first instance by Kiwi Fresh Orange Company to identify archaeological/heritage constraints on the future development of the property. Recommendations have been made in accordance with the statutory requirements of the Resource Management Act 1991 (RMA) and the Heritage New Zealand Pouhere Taonga Act 2014.

Methodology

As part of the preparation of this brief appraisal report, the NZ Archaeological Association (NZAA) ArchSite database was searched for information on archaeological sites recorded within close proximity to the project area. The District Plan and the Heritage New Zealand List were consulted to determine if any sites had been scheduled or registered within or close to the proposed works area. Relevant archaeological assessments previously undertaken within the area were also consulted (see Bibliography). Historic survey plans, historic Certificates of Title held with Land Information New Zealand (LINZ) and aerial photographs were also inspected to provide information on past activities and land use.

A preliminary field inspection of the project area was undertaken on 28 March 2022 to determine the potential for previously unrecorded archaeological sites to be present on the property. The field inspection focussed upon the northern and north-eastern bounds of the property adjacent to the Kerikeri River, with the inland areas including the Kerikeri Golf Course also being briefly inspected.



Figure 1. Topographical map showing the location and extent of the project area (outlined in yellow)

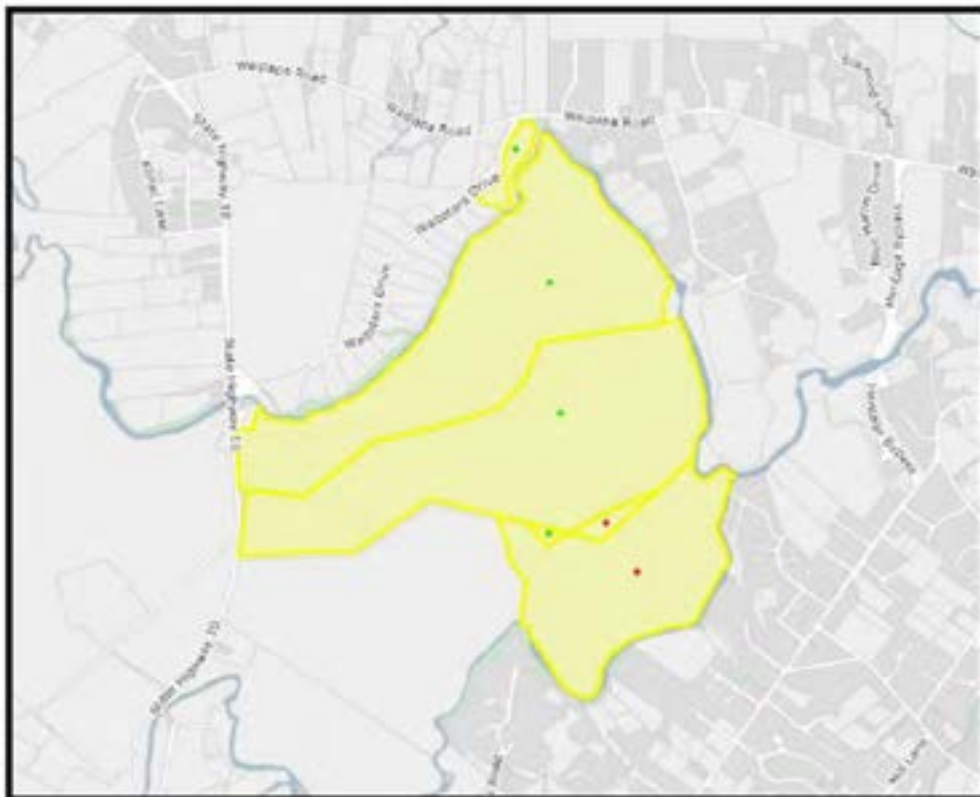


Figure 2. Map showing the project area (shaded)

Historic Background

The purpose of the brief historic background presented below is to provide context to the surviving archaeological record. A detailed history of human settlement of the area is not within the scope of this report or indeed the author's area of expertise. The rich history of the Kerikeri area has previously been detailed by Middleton (2006), Salmond (1997) and Easdale (1991). These publications should be referred to for further information regarding the human settlement history of Kerikeri.

The Bay of Islands has the highest density of recorded archaeological sites in New Zealand, reflecting the important role it played in the history of Māori settlement. Sites tend to be focussed around the coastal margins and along navigable waterways where resources were plentiful, soils were suitable for crop cultivation and there was access by waka. Inland forested areas would have provided additional resources including birds, edible/medicinal plants and berries and materials for building and textile production. Radiocarbon dating of archaeological remains across the wider area suggests that the Bay of Islands was settled by the Polynesian ancestors of the Māori around the mid-12th or early 13th centuries (Clough & Best 2003; Carpenter 2017).

Not only was there intensive Māori settlement in the Bay of Islands before the arrival of Europeans, but it was also the location of some of the earliest contacts between Māori and Europeans, and the focus of early European settlement in New Zealand.

The first mission station and the earliest permanent European settlement in the country was established in 1814 on the Purerua Peninsula at Oihi, near Rangihoua pā. Even before this period, there had been several years of trading contact between Europeans and Māori in the Bay of Islands, which was known as the rest and provisioning centre of New Zealand for whaling and other ships. Rangihoua pā was the main settlement of Ngāti Rehia in the early years of the 19th century. It was controlled by the local chief Te Pahi until his murder in 1810 following the Boyd Affair. Te Pahi had initiated contact with Europeans to advance trading opportunities by travelling to Norfolk Island and Port Jackson in 1805. His nephew Ruatara had travelled with him and subsequently joined ships' crews to visit many other places, including England. He returned from England to New South Wales with the missionary Samuel Marsden in 1809-10. He stayed on for eighteen months at Parramatta, acquiring knowledge of European agriculture, and returned to Rangihoua in early 1813, where he successfully introduced the cultivation of wheat to the Bay of Islands. Marsden's connection with Ruatara made it possible for him to establish the mission settlement at Oihi, under the promised protection of Ruatara and his close relative Hongi Hika.

Other mission stations soon followed. The second mission was established at Kerikeri in 1819, and became the centre of most of the Church Missionary Society's trade operations. Kemp House, the mission house built in 1821-2, is the oldest surviving European building in New Zealand, while the Kerikeri Stone Store (1832-36) is the oldest stone building.

The current project area forms part of the extensive c.6598 acre Mangaparirua block of land, known as Waipapa that was sold to CMS Missionary James Kemp on 10 April 1835 (Turton 1882). At Kemp's request, the whole block was surveyed by William Clarke for subdivision in 1857 (see OLC 60, Figure 3).

The current project area covers the entirety of the original Lot 7 and a small section of the original Lot 6 of the Mangaparirua block. Survey plan OLC 60 shows Lot 7 as under the ownership of ‘C [Charlotte] Norris’ – Kemp’s youngest daughter who had married Ebenezer Norris. Ebenezer held the lease to the Stone Store during this period and he and Charlotte resided in a cottage that had been built where the original mission buildings had stood (now the location of the current restaurant) (Middleton 2014:123). Lot 6 is shown as owned by S. Y. Clarke. OLC 60 shows a river crossing along the southern boundary of the golf club property (marked with arrow on Figure 3), however no other structures were shown within the project area.

A wider review of historic survey plans relating to the property did not identify any evidence of historic settlement (ML 134 (1859); Geological Map of Whakarara and Kerikeri Survey Districts (1922); DP 23092 (1930)). In addition, historic aerial photographs show the project area as farmland with areas of bush around the river margins (Figure 4), with no visible evidence of historic structures or former settlement areas. No evidence of pre-1900 archaeological sites was identified through this review, however the alignment of the 1910s Kauri Timber Company tramline can be seen on an aerial photograph dated to 1953 (Figure 4).



Figure 3. OLC 60 (1859) showing the subject property outlined. Source: Quickmap 2022

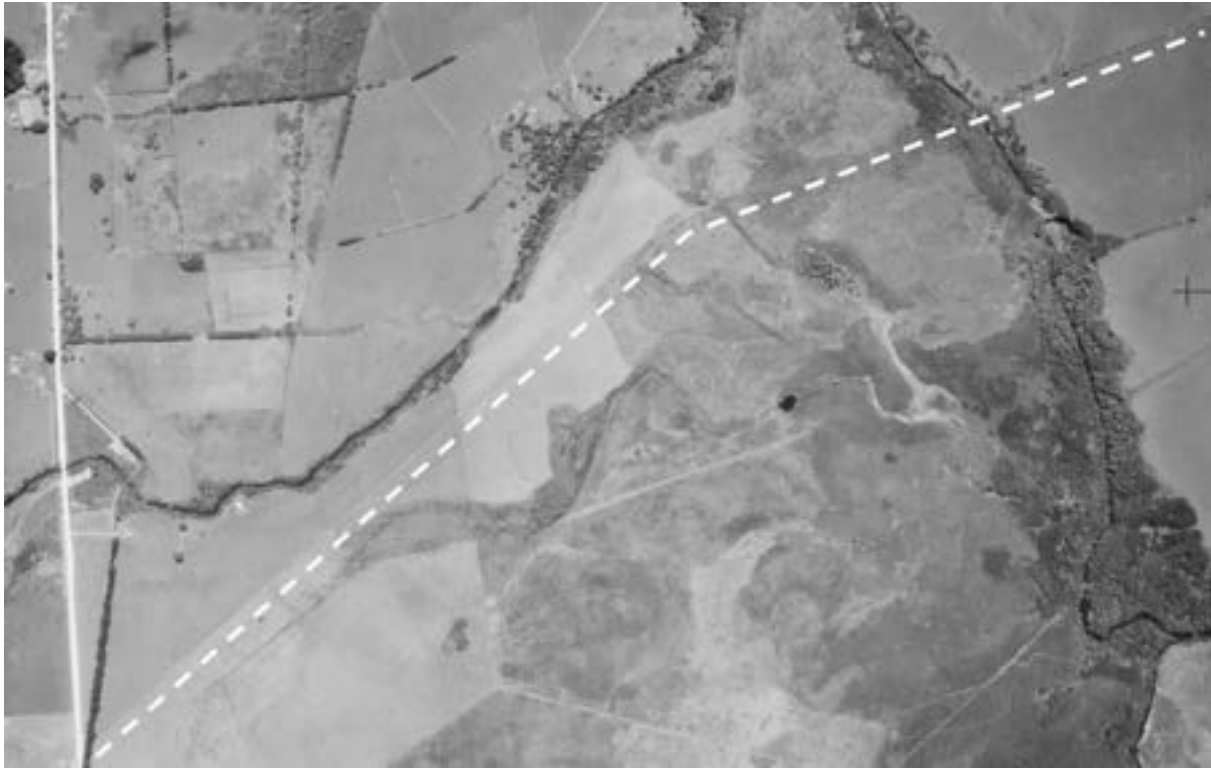


Figure 4. Detail of 1953 aerial photograph showing the alignment of the early 20th century tramline (visible just above (north) of the overlaid white line). Source: Retrolens ref. Crown-209-542-100

Archaeological Background

The vast majority of recorded archaeological sites within the Kerikeri area are focussed around the harbour and basin as well as along the banks of navigable waterways (Figure 5). Very few sites have been recorded further inland. The majority of the sites relate to pre-European Māori settlement, although a considerable percentage also relate to post-European contact and early European settlement.

In 1996, Michael Taylor undertook an archaeological assessment of a small block of land on Waipapa Road, Kerikeri as part of a proposed subdivision. The property was located in Lot 16 of the original Kemp land purchase. No archaeological remains were identified (Taylor 1996).

In 2006, Simon Best undertook an archaeological survey of a block of land on Rainbow Falls Road as part of a proposed subdivision. The property is located immediately east of the current project area, on the eastern bank of the Kerikeri River. No archaeological sites were identified within the property (Best 2006).

There is currently one archaeological/heritage site (P05/930) recorded within the subject property (Figure 6). The site was originally recorded by Simon Best in 2003 as the remains of the 1909-1915 Puketi Forest to Waipapa Landing tram line which carried timber for the Kauri Timber Company. The site is located c.250m north of the falls and comprises concrete strips evident on the bedrock with metal bars drilled into the rock. Embankments are also evident on either side of the river. On the western bank, the embankment is associated with two borrow ditches on each side ‘sloping down over about 100 metres and becoming a farm race or road’ (NZAA SRF). The alignment of the tram line is evident on Figure 4, while a 1912 photograph shows the train hauling logs along the tram line (Figure 7).

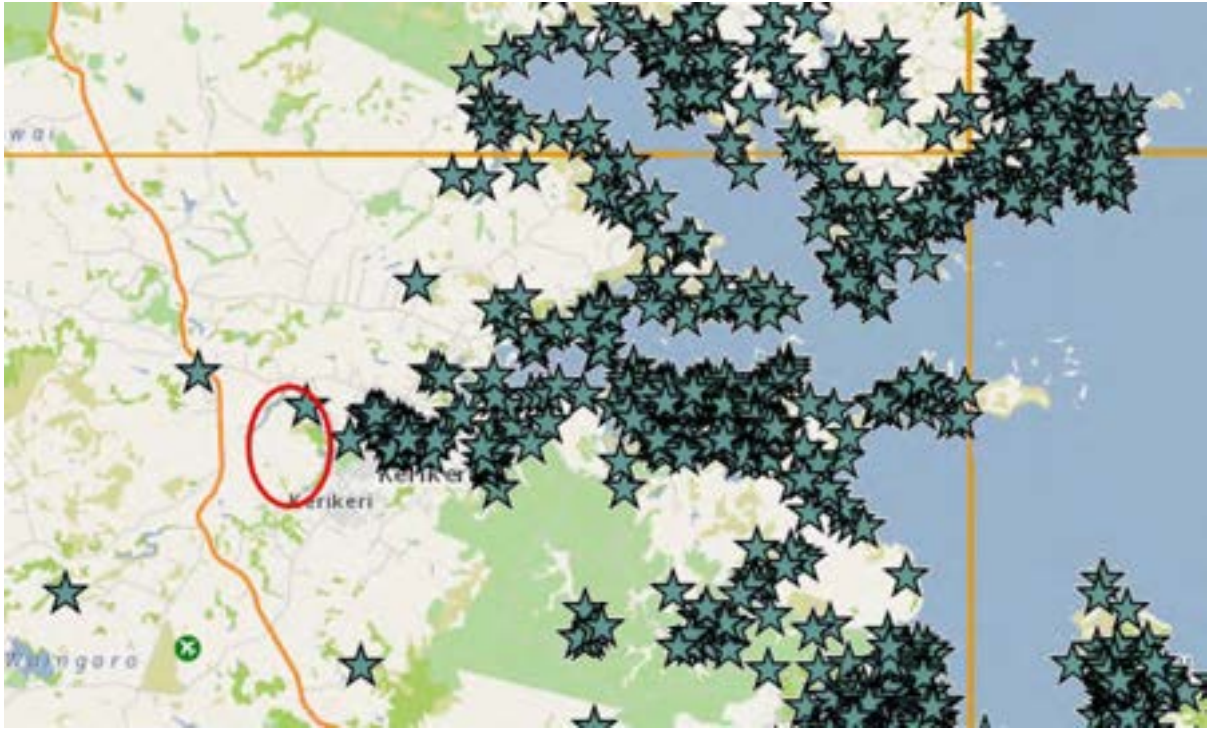


Figure 5. Map showing the distribution of recorded archaeological sites (marked with stars) within the wider Kerikeri area. The subject property is outlined. Source: NZ Archaeological Association Archsite 2022



Figure 6. Map showing the recorded location of site P05/930 in relation to the approximate bounds of the subject property (overlaid in red). Map source: NZ Archaeological Association Archsite 2022



Figure 7. 1912 photograph by Albert Percy Godber entitled ‘View of a logging train belonging to the Kauri Timber Company at Waipapa’. Source: Alexander Turnbull Library ref. APG-0626-1/2-G

Physical Landscape

Soils of the project area comprise Ōkaihau gravelly friable clay (OK) over much of the central portion; Kerikeri friable clay with large boulders (KEb) along the southern and eastern river bank margins and Waipapa clay (YF) around the northern and western sides (Figure 8).

Ōkaihau gravelly friable clay is a type of old basalt volcanic soil. Leaching within these soils is strong and results in an infertile friable topsoil overlying ironstone nodules. The soils are drought prone as they are free draining and subsoils are toxic to plant roots (Northland Regional Council Soil Fact Sheet 8.1.3).

Kerikeri friable clay with large boulders (KEb) is a type of mature basalt volcanic soil. The soils are formed on basalt lava. These soils are identified as classic volcanic soils which are generally suitable for crop cultivation, although their free draining nature does make them susceptible to drought (Northland Regional Council Soil Fact Sheet 8.1.2).

Waipapa clay is a type of terrace soil that is found on terraces and alluvial fans, generally located above flood level and no longer being replenished by sediment in floodwater. These soils are considered to be poorly drained as they have a pan layer that restricts natural drainage resulting in seasonal waterlogging, impacting root growth of crops and nutrient availability. In the dry summer season, the high clay content of the soil results in cracking, allowing water to drain quickly, leaching nutrients (Northland Regional Council Soil Fact Sheet 1.2).



Figure 8. Aerial map illustrating extent of identified soils within the project area. Source: Northland Regional Council GIS Viewer 2022

Results of Field Inspection

A brief preliminary field inspection of the project area focussing mainly along the northern and north-eastern extents but also including a brief inspection of the golf course and interior of the northern portion was undertaken on 28 March 2022.

The southern portion of the project area comprises the Kerikeri Golf Club across which substantial works have been undertaken in the past for the formation of the golfing greens and facilities. No archaeological sites were observed across this area as a result of the brief preliminary site inspection. The most likely place for unrecorded archaeological sites to be located within this southern portion would be along the southern and eastern boundaries within close proximity to the Puketotara Stream. The area where the bridge crossing was identified on historic survey plan OLC 60 (Figure 3) was not inspected and further survey would be required to determine if there are any remains of the crossing.

The central and northern portion of the project area covers an extensive area of farmland partially bisected by a deep bush filled gully that leads into the Kerikeri River. Drainage

channels have been cut over much of this land in recent times. The clear remains of the 1910s tram line recorded as P05/930 were identified along the eastern edge of the property (Figures 9-11). Further to the west, the alignment of the tram line has been re-utilised as the farm race. No other archaeological sites were identified as a result of the preliminary field inspection.



Figure 9. Aerial showing the location and alignment of P05/930 (overlaid in red). The most intact section which should be preserved as part of any future development is shown as a solid red line. Aerial source: Google Earth 2022



Figure 10. View looking north-east showing the tram line (P05/930) most clearly evident towards the eastern end of the property



Figure 11. View looking east over a section of the tram line (P05/930)

Summary and Conclusions

One archaeological/heritage site is located within the subject property. The site comprises a section of the remains of the Kauri Timber Company tram line which extends from Puketi Forest to the Waipapa Landing. The tram line dates from 1909-1915 and as such is not considered an ‘archaeological site’ under the Heritage NZ Pouhere Taonga Act 2014 definition. The site does however retain significant heritage values and it is strongly advised that the most intact section of the tram line (shown in bold red on Figure 9) is retained, protected and promoted within any future development. A review of historic survey plans has also identified a possible river crossing along the southern boundary of the property. Any surviving remains of this site would be considered an archaeological site and should be avoided or avoided to the extent possible during any future development.

There are currently no archaeological or heritage sites scheduled on the Operative Far North District Plan 2009 within the project area.

Preliminary research undertaken to date, including a review of historic survey plans, Certificates of Title, historic aerial photographs, published local histories and relevant archaeological assessments together with the brief field inspection has not identified any additional archaeological/heritage sites within the subject property.

It is possible that further sites of archaeological/heritage significance may be identified during any required future detailed field survey of the property or as the result of further research, however at this stage, the potential is considered to be limited.

Note: All archaeological sites are protected under the provisions of the Heritage New Zealand Pouhere Taonga Act 2014 (HNZPTA) (formerly the Historic Places Act 1993). It is an offence under this Act to destroy, damage or modify any archaeological site, whether or not the site is entered on the Heritage NZ (HNZ) Register of Historic Places, Historic Areas, Wahi Tapu and Wahi Tapu Areas. Under section 44 of the Act, applications must be made to the HNZ for an authority to destroy, damage or modify an archaeological site(s) where avoidance of effect is not practicable. It is the responsibility of the applicant (consent holder) to consult with the HNZ about the requirements of the HNZPTA and to obtain the necessary Authorities under the Act should these become necessary, as a result of any activity associated with the proposed development.

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Certificates of Title:

NA22A-326
NA22C-1466
NA33B-688
NA33B-689
NA46D-1149

To: The Planning Collective

Date: 26 April 2022

Attention: Claire Booth

Ref: 65528

Subject: Kerikeri Plan Change – High level ecological constraints analysis

Introduction

The Planning Collective, on behalf of their clients, is applying for a Private Plan Change for an approximately 150ha block of land east of Kerikeri. The land includes the Kerikeri Golf course and the farmed area north of the golf course to State Highway 10 in the west; bounded in the north and east by the Kerikeri River and to the south by Puketotara Stream (Figure 1).



Figure 1. Proposed private plan change area – Kerikeri east.

A site visit with the combined specialist group and development team was carried out on 28 March 2022.

This memorandum provides a high level summary of the ecological constraints, primarily freshwater constraints, observed during the site visit. Only part of the site was covered during the site visit, while the rest of the site was assessed via a desktop exercise. The assessments were carried out primarily to inform a high-level design and to inform the scope of future detailed ecological assessments.

The site was assessed by vehicle and foot with all major freshwater habitats in the eastern half of the site either marked with a hand held GPS or mapped from high points of the landforms. All of the western half of the site was in pasture or crops, with the eastern half divided equally into pasture; bush and vegetated slopes leading to streams or wetlands; and golf course.

National Policy Statement for Freshwater

National Policy Statement for Freshwater Management (NPS-FM), and the National Environmental Standards for Freshwater (NES-F) provide for protection of freshwater habitats. The regulations relating to 'natural wetlands' are a serious constraint to development as reclamation of the majority of natural wetlands is a prohibited activity, and in most cases vegetation alteration or removal within 10m of a natural wetland is a non-complying activity and alteration of the hydrology within 100m of a natural wetland is a non-complying activity. (NES-F Regulations 52, 53 and 54). Under the NPS-FM and NES-F works within streams is subject to the effects management hierarchy with reclamation a discretionary activity (NES-F Regulation 57).

Within the context of this plan change the definition of 'specified infrastructure' part (c) under the NPS-FM should be considered, as there are likely to be freshwater constraints associated with the proposed flood mitigation works in the centre of the site (Figure 2). Part (c) relates to public flood control and flood protection. If the flood mitigation works could be assessed to be specified infrastructure then works in and near 'natural wetlands' for the construction of the flood control mitigation are discretionary activities.

and other smaller native shrubs mixed with eucalyptus, wattle (*Paraserianthes lophantha*), pine (*Pinus* spp.) and woolly nightshade (*Solanum mauritianum*).



Figure 3. Freshwater habitats within the Kerikeri Plan Change Area (dark blue - rivers / streams; blue - ponds; light blue – assumed streams; green – natural wetlands; yellow – farm drains.

The eastern part of the site north of the wetland gully system was accessed from 1826 State Highway 10 near the northern boundary. Most of the land to the north of the farm access and some blocks to the south were in the process of being harvested (cropping). No streams or wetlands were observed for the first two-third of the route east-wards. At about 1270m east of the gate the top of a likely stream was observed draining towards the eastern gully system and at 1500m east of the gate a small wetland was present north of the access track with an incised stream downstream of the culvert outlet under the access track (Figure 4 and Figure 5).

To the east and north the site was pasture with occasional well defined straight drains leading to the Kerikeri River. No streams were present. The riparian vegetation near the river was dominated by tōtara, with māpou (*Myrsine australis*), kūmarahou (*Pomaderris kumeraho*), cabbage tree (*Cordyline australis*), karamū (*Coprosma robusta*) and kānuka (*Kunzea robusta*) patchily common.



Figure 4. Putative stream (light blue), stream dark blue draining south-east towards top of vegetated gully. Wetlands – green and farm drains – yellow.



Figure 5. Stream habitat downstream of access road culvert outlet.

Several patches of potential wetland habitat were present (marked in red in Figure 6) and one area of ‘natural wetland’ (marked in green in Figure 6). All three of these habitats should be delineated in accordance with the Ministry of Environment recommended methodologies to confirm their status as natural wetlands or not wetlands.



Figure 6. Northern corner of the site, illustrating position of farm drains (yellow), wetland (green) and two putative wetlands (red).

Conclusions:

- Preliminary assessment of the Golf Course indicated few ecological constraints. The area contains some patches of native vegetation and large specimen trees, which could provide constraints (manageable through mitigation of effects) for native fauna and constructed ponds (some of which have formed wetland characteristics).
- The majority of the farmland is well maintained, and used for both pasture and cropping for animal feed. Farm drainage channels were present throughout and some of these could be assessed as modified natural streams.
- The gully between the golf course and the farm has well established native vegetation and ‘natural wetlands’ and is therefore subject to the NES-F regulations regarding wetlands.
- The central flood path could provide some constraints with regards to potential streams in the pathway and the wetlands. Investigation of the status of the flood mitigation measures as ‘specified infrastructure’ is recommended.
- A 20m esplanade reserve will be required upon subdivision. This will protect most the existing riparian vegetation but there are several areas, particularly in the northern corner where this would need to be wider to include all of the established native riparian vegetation.
- Good land management and farm maintenance is crucial to maintain the status of the drains and marginal wetted areas as not ‘natural wetlands’ and to prevent induced wetlands forming.

Yours sincerely
BIORESEARCHES



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Kerikeri Subdivision & Flood Scheme Investigation and Proof-of-Concept Design

Kerikeri, Northland

Kiwi Fresh Orange Company Limited

10 October 2022



Quality Control

Author	D McMullan	Client	Kiwi Fresh Orange Company Limited
Reviewed by	L Kuta	Date Issued	10/10/2022
Approved by	L Kuta	Revision No.	1.0
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Disclaimer

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Project No. 22017

EXECUTIVE SUMMARY

Kiwi Fresh Orange Company Limited are seeking to submit on the Far North District Council proposed district plan to support the rezoning of a 197-ha block of land (the applicant's land) on the western boundary of the Kerikeri township. The site is bounded on the northern and eastern boundaries by the Kerikeri River. The rezoning will facilitate the development of residential and commercial properties on this land. Flood modelling of the wider catchment undertaken by Northland Regional Council has highlighted that the site is subject to significant floodwaters which spill out from the Kerikeri River and flows across the site. The existing flood hazard on site therefore limits the land available for development in its current state.

A managed floodway across the site is proposed to efficiently convey floodwaters on site while mitigating the impact on flood hazard outside of the site. The alignment of this floodway generally follows the alignment of the existing overland flow path once it has collected floodwaters that spilled across SH10. Floodwaters which spill from the true right bank of the Kerikeri River to the applicant's land are proposed to be blocked off in favour of taking increased flows into site from the spill over SH10. The design concept is for approximately the same flow rate to discharge from the floodway back into Kerikeri River. The managed floodway will typically have a total width of 120 m.

The conceptual design of flood management structure, will result in changes in how flood dynamics occur in the local area. These changes occur in relation to discharge rates across conveyance paths, peak water levels, peak flow velocities, and in flooding durations. The proposed conceptual floodway design will ensure that the development potential of the applicant's land can be maximised, while ensuring that the flood hazard and risk on site is appropriately managed. Overall, we assess that the estimated effects from the proposed conceptual design on off-site flood risk (both upstream and downstream areas) are less than minor, with any potential areas of concern able to be managed in the future detailed design process.

CONTENTS

Executive Summary.....	i
1 Introduction.....	1
1.1 Limitations.....	2
2 Site Description.....	2
2.1 Overview	2
2.2 Topography	4
3 Flood Modelling Approach	4
3.1 NRC Flood Modelling.....	4
3.2 e2 Flood Modelling.....	4
3.3 e2 Flood Model Validation Against NRC Flood Model.....	6
4 Existing Flood Risk	6
4.1 Flows In The Kerikeri River And Across The Floodplain	6
4.2 On-Site Flood Risk	6
5 Conceptual Floodway Design	7
5.1 Design Approach	7
5.2 Modelled Floodway.....	7
5.3 Future Design of Floodway	8
6 Assessment of Flood Hazard Effects from Development.....	9
6.1 Context.....	9
6.2 Change in Flow Rates	9
6.3 Change In Peak Water Levels	11
6.4 Change In Peak Flow Velocities.....	12
6.5 Change In Flooding Duration.....	12
6.6 Assessment of Effects.....	15
7 Potential Opportunities to Reduce Wider Catchment Flood Risk.....	15
8 Safety In Design	15
9 Summary.....	16
Appendix A – Site Photos.....	17
Appendix B – Site Maps	23
Appendix C – Modelling & Design Information	24

Appendix D – Flood Maps & Model Results 25
Appendix E – Potential Zoning Options 26

Ammendment Register

Version #	Description	By	Date
0.1	Draft - For Approval	D McMullan	13 September 2022
1.0	For Approval	D McMullan	10 October 2022

1 INTRODUCTION

Kiwi Fresh Orange Company Limited are seeking to submit on the Far North District Council (FNDC) proposed district plan to support the rezoning of a 197-ha block of land (the applicant's land) on the western boundary of the Kerikeri township (see Figure 1). The site is bounded on the northern and eastern boundaries by the Kerikeri River. The rezoning will facilitate the development of residential and commercial properties on this land. Flood modelling of the wider catchment undertaken by Northland Regional Council (NRC) has highlighted that the site is subject to floodwaters which spill out from the Kerikeri River and flows across the site. The existing flood hazard on site therefore limits the land available for development in its current state.

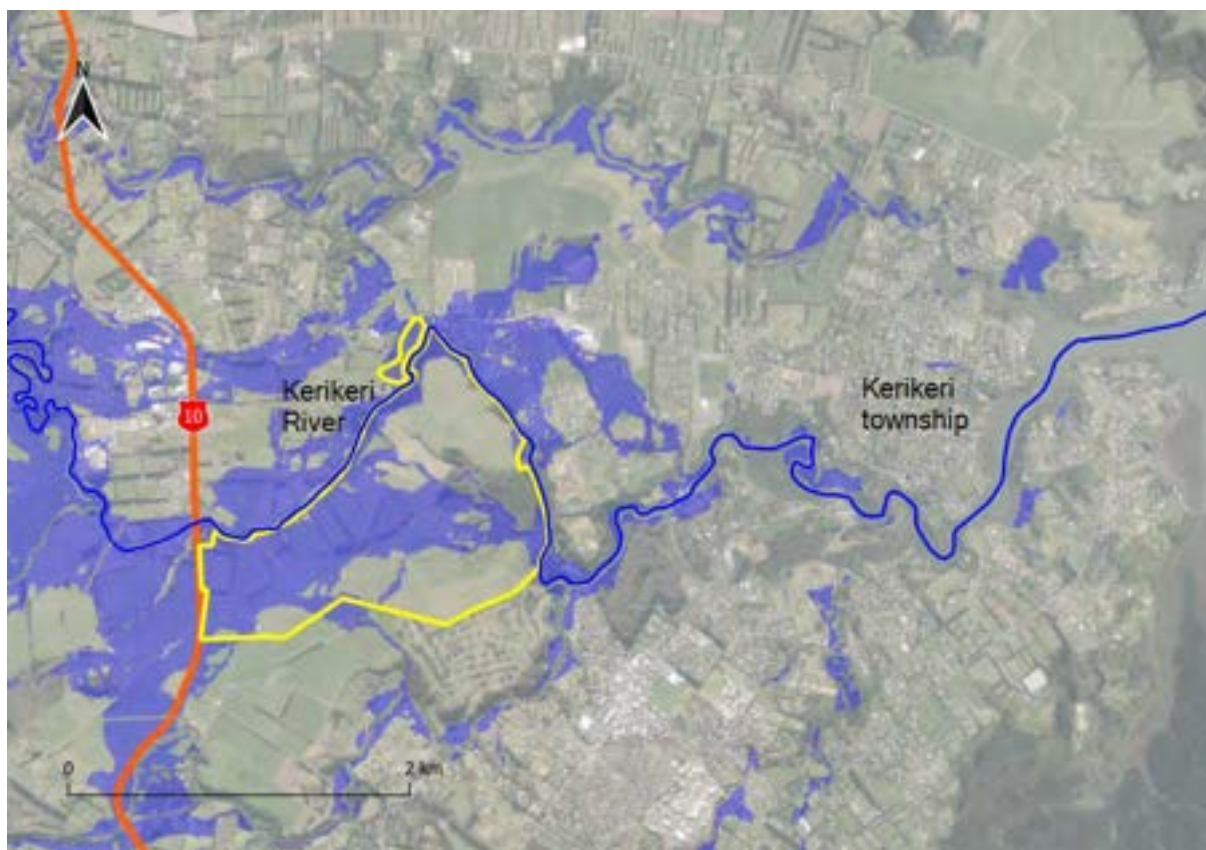


Figure 1 Location of the applicant's land (highlighted in yellow), and extent of inundation in 1% AEP +CC flood event (NRC modelling)

e2Environmental Ltd (e2) have been engaged by Kiwi Fresh Orange Company Limited to undertake flood scheme investigations and proof-of-concept design. The purpose of our investigations and design is to:

- Better understand flood risk across site, nearby transport links and the surrounding areas;
- Identify areas that will need to be excluded from development due to flood hazard;
- Conceptualise design opportunities to reduce the area of land subject to flood hazard, and can therefore be freed up for development;

- Demonstrate works on site will have a less than minor effect on flood risk outside of the site boundaries; and
- Identify opportunities to reduce flood risk outside of site through engagement with NRC.

The purpose of this report is to present the findings of the flood scheme investigations, propose a conceptual proof-of-concept design to manage flood risk on site, and discuss the effects of any works on flood risk across the wider catchment.

1.1 Limitations

The information, views and conclusions drawn concerning the site are based, in part, on information supplied to e2 by other parties. e2 has proceeded in good faith on the assumption that this information is accurate.

This report is solely focussed on the existing flood hazard and the potential management of that flood hazard and does not discuss the management of on-site stormwater from either a water quantity or water quality perspective.

2 SITE DESCRIPTION

2.1 Overview

The site and surrounding catchment have a number of key features which influence the level of flood risk both on-site and on nearby areas. These features are highlighted in Figure 2, and described further in Table 1 below. Photos of these features are provided in Appendix A where possible.

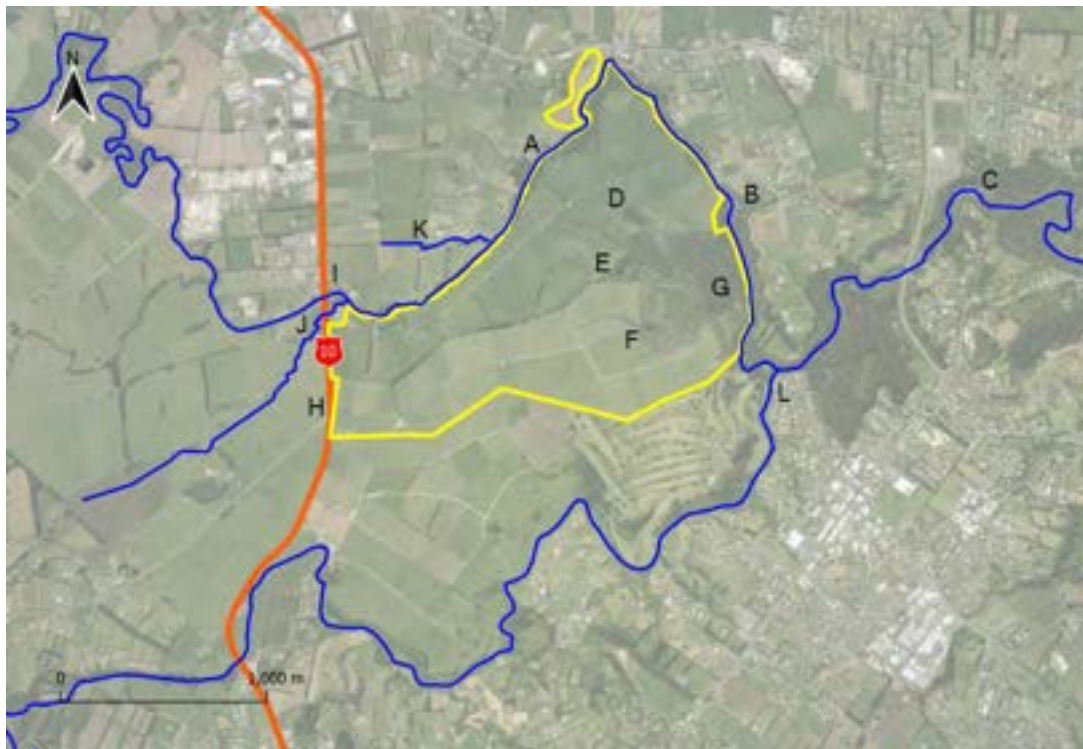


Figure 2 Location of catchment features

Table 1 Catchment features

Ref.	Feature	Description
A	Kerikeri River	Kerikeri River is generally 20-30 m wide in its low flow channel, and has a cobble / gravel invert, with native trees and bush along its banks. Along the northern boundary of the site, floodplain flows spill into the Kerikeri River 200 m downstream of SH10, and then further downstream at two locations, floodwaters spill out of Kerikeri River back onto the property.
B	Rainbow Falls	Rainbow Falls is a waterfall on the Kerikeri River with a drop height of approximately 25 m.
C	Wharepoke Falls	The Wharepoke Falls are located on the Kerikeri River approximately 550 m downstream of the Heritage Bypass Bridge, and have a drop height of approximately 6 m.
D	On-site waterfall #1	This waterfall takes flow from a small on-site waterway with a drop height of approximately 15 m.
E	On-site waterfall #2	This waterfall takes flow from a small ephemeral on-site waterway with a drop height of approximately 20 m.
F	On-site waterfall #3	This waterfall takes flow from a small ephemeral on-site waterway with a drop height of approximately 18 m.
G	On-site wetland area	A natural wetland area is located downstream of the on-site waterfalls, but upstream of the Kerikeri River.
H	State Highway 10 (SH10)	Located along the western boundary of the site, the low road embankment of SH10 acts as a weir, controlling floodplain flows from the Kerikeri River Branch into site. The road crest level is generally 300 – 600 mm above surrounding ground levels.
I	SH10 Kerikeri River Bridge	The SH10 Kerikeri River Bridge is made up of three spans, with one crossing the low flow channel, and the other two crossing the left and right grassed banks. The bridge has rectangular piers generally aligned with the direction of river flow. Flood modelling by NRC indicates that the bridge structure may be overtopped by 300 mm in a 1% AEP +CC flood event.
J	SH10 Kerikeri River Branch culvert	This river branch which flows into the Kerikeri River approximately 140 m downstream of SH10, crosses SH10 via twin Ø1200 culverts.
K	Waitotara Road Drain	Waitotara Road Drain flows into the Kerikeri River approximately 1 km downstream of SH10.
L	Puketotara Stream	Puketotara Stream flows into the Kerikeri River approximately 275 m downstream of the SE corner of the site.

2.2 Topography

The site's topography is characterised by gently sloping plains across the majority of the site (falling west to east at approximately 1 in 130), which then transition into steep slopes in the eastern area of the site before transitioning back to a relatively flat area upstream of the Kerikeri River. The on-site waterfalls described above are located in amongst the steep slopes.

3 FLOOD MODELLING APPROACH

3.1 NRC Flood Modelling

NRC have undertaken wider catchment flood modelling which includes the applicant's site of the proposed rezoning. This modelling has simulated the 10% annual exceedance probability (AEP) flood event, the 2% AEP flood event, and the 1% AEP flood event including the effects of climate change (+CC). Each of these events have considered maximum probable development (MPD).

The flood modelling was undertaken in DHI's MIKE FLOOD software, with the floodplains represented in MIKE21, and the waterways represented in MIKE11. The hydrology was modelled using MIKE11's rainfall-runoff module. The runoff from catchments was then discharged into MIKE11 waterway branches across an appropriate length. The floodplain was represented by a rectangular mesh with 5 m by 5 m cells.

3.2 e2 Flood Modelling

We have recreated NRC's flood model, also using DHI's MIKE FLOOD software, but for a smaller catchment area with improved model resolution. The purpose of recreating the flood model is to reduce model run times, and to improve the model's representation of key topographical features. The change in model extents is shown in Appendix C. To ensure our flood model appropriately represents catchment flooding, hydrological and hydraulic boundary conditions have been taken directly from the NRC flood model; including upstream catchment inflows into the model extent (both in waterways and across floodplains), discharges from rainfall-runoff models into waterways, and downstream water levels. No changes have been made to the model's hydraulic roughness parameters (for the existing situation), waterway cross-sections, hydraulic structures, or solution techniques unless specified otherwise. The e2 model has been run in MIKE 2016 version with service pack 3, which we understand the NRC model was also run in. However, some areas of the model have been changed, and these are detailed below in Table 2.

Table 2 Changes in modelling approach

Area of model	Change in approach
MIKE21 floodplain mesh across the wider catchment	We have opted for a triangular mesh with a maximum cell size of 25 m ² , as opposed to NRC's model which uses a rectangular mesh with 5 m by 5 m cells. The triangular mesh, and in particular, its allowance for smaller cell elements in key areas, results in a more realistic representation of the topography in the e2 model and thus more refined hydraulic results.

Area of model	Change in approach
Representation of SH10 in the mesh	We have set the triangular mesh elements to have a maximum width of 3 m down the centreline of SH10. This means that when the topographical levels of SH10 are interpolated into the mesh, there is a better representation of the road crest height which is a key hydraulic control for floodplain flows spilling across onto the site of interest. This results in lower flows across SH10, and slightly changes the balance of flows between the Kerikeri River and the wider floodplain flows. This is discussed further in section 4.
Other areas of improved mesh resolution	We have decreased the triangular mesh cell size on the banks of Kerikeri River to 16 m ² to better represent the flows coming in and out of the Kerikeri River. We have also decreased the triangular mesh cell size along Waipapa Road to 9 m ² to better represent the topography around this road.
Waitotara Road Drain	NRC's model did not block out Waitotara Road Drain from the mesh, and used a single lateral link to transfer flows from the floodplain (represented in MIKE21) to the waterway (represented in MIKE11). This meant the model was double counting the available storage volume in the waterway. It also resulted in a hydraulic control forming which caused a 900 mm headloss in water levels either side of the drain in the NRC previously modelled scenarios, effectively attenuating flows on the true left bank of Kerikeri River and lowering water levels on the floodplain north of the drain. We have instead blocked out Waitotara Road Drain from the mesh, and linked the MIKE11 branch to MIKE21 on the left and right side of the waterway. This also removed the hydraulic control so that water levels either side of the waterway follow the hydraulic grade of the floodplain as would occur in a real-world scenario. The removal of the hydraulic control also results in the release of previously attenuated floodwaters, increasing water levels on the true left bank of the Kerikeri River north of Waitotara Road Drain.
Topographical data	We have used LiDAR data (in a 1 m by 1 m rectangular grid) supplied by NRC to be interpolated by our triangular mesh and set the overall levels across the floodplain in the model (see Appendix B for topographical plans). This LiDAR data uses the One Tree Point (m OTP) vertical datum. Inspection of the LiDAR data and NRC mesh indicates that the topographical levels in NRC mesh is shifted southeast from the LiDAR data by 10-15 m. We are unsure of the reasoning behind this, but note that the location of modelled flood inundation is slightly different due to this. A comparison of the NRC flood map and the e2 flood map in Appendix D highlights these differences. Overall, we remain satisfied that both the NRC flood model and our flood model are both suitable for their respective intended uses.

3.3 e2 Flood Model Validation Against NRC Flood Model

Comparison of model results between the NRC flood model and the e2 flood model show that flood patterns, flood extents and flood levels are very much the same between the 10% AEP, 2% AEP and 1% AEP +CC flood events. Some changes in flood extents do occur, but these are due to the changes in modelling approach discussed above in section 3.2. Flood extents are slightly different in places due to how the different mesh has captured the underlying topographical data. Flood maps of the NRC and the e2 model results are provided in Appendix D.

Overall, confidence can be placed in the e2 flood model as a tool to understand existing flood risk, and investigate/test design options to manage flood flows on site.

4 EXISTING FLOOD RISK

4.1 Flows In The Kerikeri River And Across The Floodplain

Flows are conveyed from the upstream catchment towards the site via the Kerikeri River, and a branch of the Kerikeri River which flows into the river just downstream of SH10. This branch is located on the south side of Kerikeri River and to the west of the site. In the 10% AEP flood event, the floodplain of the two waterways begin to merge as the waterways are overwhelmed by the volume of floodwaters. As the size of the flood increases, water levels on the floodplain increase, and the proportion of floodwaters that flow over SH10 and through the site increase substantially. For instance, in the 10% AEP flood event, approximately 3% of the floodwaters flow across site, however in the 2% and 1% AEP +CC flood events, this increases to approximately 23% and 46%, respectively. Flows taken from the Rainbow Falls on the Kerikeri River, and from the outlet of the site's floodplain are presented in Table 3.

Additionally, a portion of the flows that enter site from overflowing SH10 then re-enter Kerikeri River in the 500 m reach downstream of SH10. There are also two locations just upstream and downstream of Waitotara Road Drain where flows in the Kerikeri River overtop the true right river bank and flow into site. An additional flood map of the 1% AEP +CC model results in Appendix D includes vectors to show the flow directions across the floodplain.

Table 3 Flows split between Kerikeri River and the on-site floodplain

Flood Event	Peak flow over Rainbow Falls (m ³ /s)	Peak flow from Site (m ³ /s)
10% AEP	202.3	6.1
2% AEP	243.1	72.6
1% AEP +CC	259.5	223.1

4.2 On-Site Flood Risk

Floodwaters overtop SH10 and sheet flow across the first 300-500 m before converging in a wide overland flow path. Flood depths and flow velocities are notably higher in this overland flow path than across the wider on-site floodplain. The overland flow path initially

discharges over an on-site waterfall in events (feature E described above), but as flows increase, additional smaller overland flow paths are activated and so the other on-site waterfalls also begin to discharge in larger events (features D and F described above).

Flood maps showing peak flood depths and flow velocities in the 10% AEP, 2% AEP and 1% AEP +CC flood events are provided in Appendix D.

5 CONCEPTUAL FLOODWAY DESIGN

5.1 Design Approach

A managed floodway across the site is proposed to efficiently convey floodwaters in large flood events. The alignment of this floodway generally follows the alignment of the existing overland flow path once it has collected floodwaters that spilled across SH10. This approach helps minimise earthworks and provides some amenity benefit. The alignment can be seen in Figure C2 in Appendix C. Floodwaters which spill from the true right bank of the Kerikeri River are proposed to be blocked off in favour of taking increased flows into site from the spill over SH10. This will be done via raised on-site ground levels behind the bank of the Kerikeri River. The design concept is for approximately the same flow rate to discharge from the floodway back into Kerikeri River for the key design events (10% AEP, 2% AEP and 1% AEP +CC flood events).

As discussed in section 4.1, the magnitude of flows increases quickly once the water level in the floodplain begins to increase above the SH10 road level. Ground levels at the inlet of the floodway therefore need to be designed to ensure the right flow rates enter the floodway for each design flood event.

5.2 Modelled Floodway

The floodway has initially been modelled at its conceptual design stage in MIKE21 with the following details:

- Total floodway width = 120 m
- Floodway base width = 92 m
- Side slopes = 1:5 (vertical: horizontal)
- Depth = 1.8 m, including 0.3 m of freeboard above the 1% AEP +CC flood level
- Longitudinal grade = 1 in 130
- Maintenance access width of 5 m either side of channel

A typical cross-section of the floodway is shown in Figure 3. Note that while the figure is slim, the vertical scale on the cross-section is still exaggerated.



Figure 3 Typical cross-section of floodway

The inlet of the floodway has been modelled with a dike structure¹ in MIKE21 to control the flows into the floodway. The elevation profile of the dike can be seen in Figure 4, which has a much more exaggerated vertical scale.

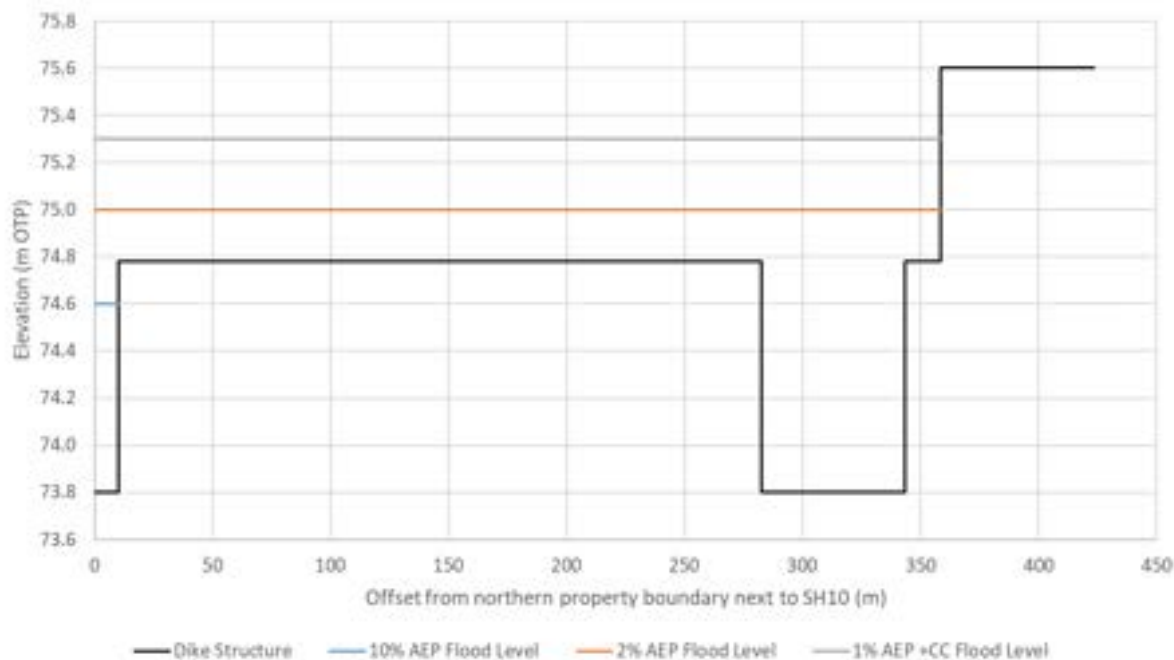


Figure 4 Floodway inlet – dike elevation profile

5.3 Future Design of Floodway

While the floodway has largely been modelled as a trapezoidal channel with a single grade, future detailed design of the floodway will be modified to better manage flow velocities and provide additional amenity benefit. Future design is likely to include:

- Low flow channel to manage small overflows and local drainage;
- Areas of vegetation to improve amenity benefit;
- Flatter longitudinal grade with drop structures to slow flow velocities and minimise risk of scour and erosion;
- Ground stability and protection against scour / erosion at and around on-site waterfall #2 as floodwaters flow over the waterfall;
- Consideration of any bridge structures for transport links across the floodway; and
- Footpaths, cycling paths, and street furniture such as park benches will also be designed as part of the landscape architecture.

The total area required for the conceptual floodway between SH10 and on-site waterfall #2 is approximately 20 ha. An additional 15.5 ha is expected to be required for flood hazard along the true right bank of the Kerikeri River (see Appendix E for zoning restrictions due to

¹ Dike structures in MIKE21 are a representation of a weir structure that can be translated to a constructable design in the future.

flood hazard). The sizing of these areas will also be reviewed during future design stages to manage any potential risks and opportunities. The land required to manage the flood hazard has informed the Proposed Structure Plan for the development of the applicant's land.

We recommend that the floodway is fully designed and constructed prior to the development of the site for residential or commercial purposes in areas of existing flood risk.

6 ASSESSMENT OF FLOOD HAZARD EFFECTS FROM DEVELOPMENT

6.1 Context

The proposed submission on district re-zoning regarding the 197-ha block of land east of Kerikeri, and its associated conceptual design of flood management structure, will result in changes in how flood dynamics occur in the local area. These changes occur in relation to discharge rates across conveyance paths, peak water levels, peak flow velocities, and in flooding durations.

Due to the nature of how a computational hydraulic model represents the existing situation and the proposed conceptual design, changes are discussed in terms of orders of magnitude rather than exact specific change. For instance, only water level changes greater than 50 mm are discussed. This is because:

- The design is only at a conceptual stage, and so future detailed design will result in slightly different water level changes;
- Post-development water levels will be subject to the timing of the flood with vegetation growth and maintenance cycles which will affect how floodwaters spill into and flow through the floodway; i.e., channel roughness and backwater effects on the floodway inlet; and
- Post-development water levels are also subject to construction tolerances, and there is particular sensitivity around the floodway inlet.

This section of the report describes these changes and discusses the potential impact of those respective changes.

6.2 Change in Flow Rates

Table 4 and Table 5 present the flow rates discharging over the Rainbow Falls on Kerikeri River and through the site's floodway in the existing situation and as a result of the proposed conceptual design. The change in flow rates is shown in brackets. The increase in flow rates through the floodway is greater than the decrease in flows over Rainbow Falls due to the attenuation effect of the Kerikeri River floodplain; i.e., the flow rates now discharging through the floodway are no longer able to be attenuated on the wider floodplain. Figure 5 then presents the time-varying discharge rates over the Wharepoke Falls downstream of the site and its confluence with the Puketotara Stream. This shows that in each event the post-development flows mimic the pre-development flows.

These changes in flow rates are not impacts themselves, but instead they help provide context to changes in peak water levels, peak flow velocities and flooding durations.

Table 4 Change in peak flows discharging over the Rainbow Falls

Flood Event	Existing Situation (m ³ /s)	Post-Development Situation (m ³ /s)
10% AEP	202.3	198.0 (-4.3)
2% AEP	243.1	240.9 (-2.2)
1% AEP +CC	259.5	257.9 (-1.6)

Table 5 Change in peak flows discharging from the site's floodway back to Kerikeri River

Flood Event	Existing Situation (m ³ /s)	Post-Development Situation (m ³ /s)
10% AEP	6.1	11.7 (+5.6)
2% AEP	72.6	80.7 (+8.1)
1% AEP +CC	223.1	235.0 (+11.9)

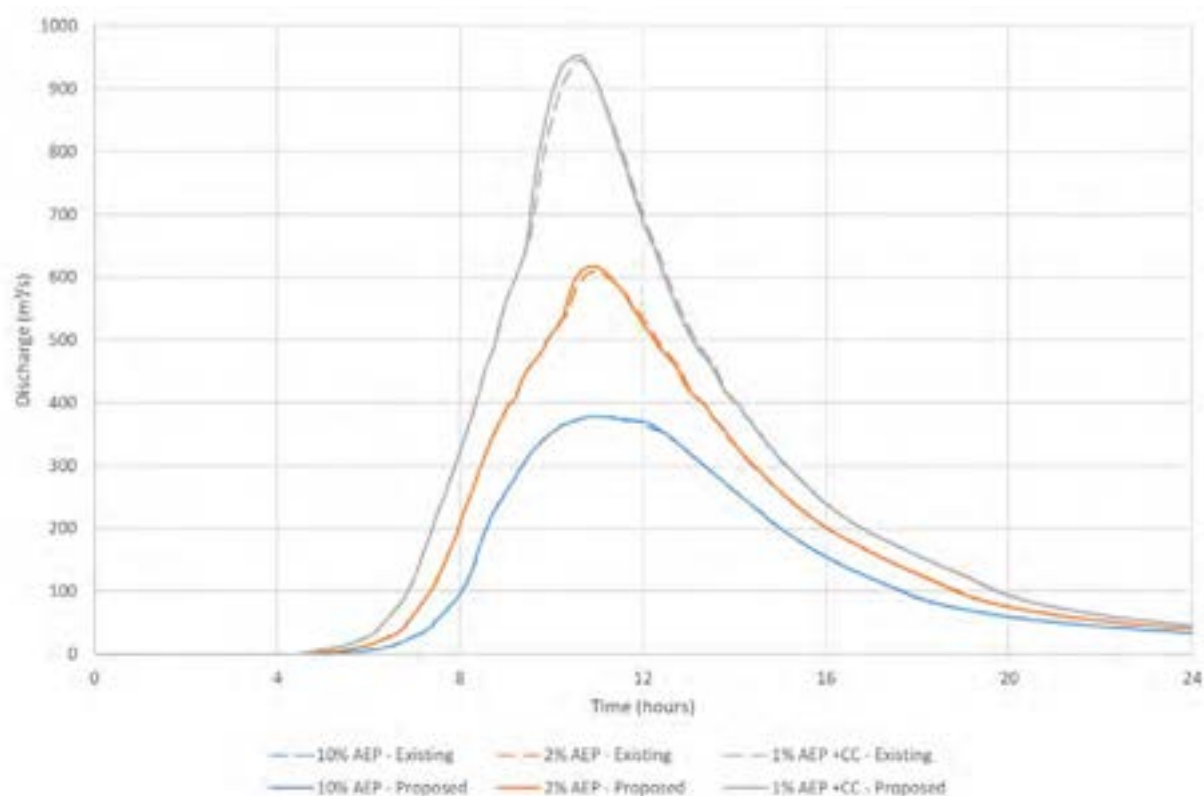


Figure 5 Discharge rates over Wharepoke Falls

Additionally, due to the constrained nature of the proposed floodway, floodwaters no longer spill over the on-site waterfalls #1 and #3. Table 6 presents the flow rates discharging over

on-site waterfall #2 as a result of the proposed conceptual design. The change in flow rates is shown in brackets.

Table 6 Change in peak flows discharging over on-site waterfall #2

Flood Event	Existing Situation (m ³ /s)	Post-Development Situation (m ³ /s)
10% AEP	6.1	11.7 (+5.6)
2% AEP	70.5	80.7 (+10.2)
1% AEP +CC	188.0	235.0 (+47.0)

A small overland flow path that discharges in the 1% AEP +CC flood event from the site to Puketotara Stream just west of the golf course has been closed off due to the proposed floodway. The peak flow rate of this overland flow path in the existing situation is estimated to be approximately 1.2 m³/s. The changes in flood dynamics related to this small overland flow path has been accounted for within the model results presented in this report.

6.3 Change In Peak Water Levels

Figures D4, D7 and D10 show the changes in peak water levels (greater than 50 mm) due to the proposed development for the 10% AEP, 2% AEP and 1% AEP +CC flood events respectively. Figure D11 also shows the change in water levels (greater than 50 mm) due to the proposed development in the 1% AEP +CC flood event where the floodway has a higher roughness of Manning's n = 0.05.

Note that these changes were estimated by calculating the difference in peak water depths, and so due to the change in ground terrain in the floodway, the results through the floodway are not entirely meaningful. Regardless, these figures show the following:

- Changes in the 10% AEP flood event:
 - There are no increases in peak water levels outside of the site boundary.
 - There are decreases of 50 – 80 mm in peak water levels along the Kerikeri River floodplain.
- Changes in the 2% AEP flood event:
 - Increases in peak water levels outside of the site boundary are generally limited to the road reserve of SH10. These increases are in the order of 50 – 100 mm, noting that SH10 was already inundated by up to 700 mm over the centreline along this stretch of road.
 - Decreases in water levels along the Kerikeri River floodplain are smaller in extent than in the 10% AEP flood event, and are generally in the order of 50 – 70 mm.
- Changes in the 1% AEP +CC flood event:
 - Increases in peak water levels outside of the site boundary are generally limited to the immediate Kerikeri River floodplain between the river's confluence with Puketotara Stream and Heritage Bypass. These increases are in the order of 50 – 60 mm.

- Some increases of 50 – 90 mm are also located on a 70 m stretch of SH10 along the eastern southbound lane.
- There are decreases of 50 – 90 mm in peak water levels along the Kerikeri River floodplain.
- There is also a decrease in water levels south of the property where an existing overland flow path to Puketotara Stream has been removed.
- Changes in the 1% AEP +CC flood event assuming a higher roughness floodway:
 - Increases in peak water levels outside of the site boundary are limited to 50 – 60 mm upstream of the SH10 road reserve, and 60 – 200 mm on the SH10 road reserve itself with the higher increases on the east side of the centreline only.
 - There are decreases of 70 – 90 mm in peak water levels along the Kerikeri River floodplain, but these decreases are smaller in extent.

6.4 Change In Peak Flow Velocities

Figures D12 through to D17 present the peak flow velocities for the 10% AEP, 2% AEP, and 1% AEP +CC flood events for both the existing and proposed situations. These figures show that for each of these events:

- Flow velocities across SH10, just upstream of the floodway inlet, are slightly higher by 0.4 m/s on average. The extent of the increase in flow velocities is largest in the 10% AEP flood event, and smallest in the 1% AEP +CC flood event.
- Flow velocities on the Kerikeri River floodplain are slightly slower due to lower flow rates down the Kerikeri River. These are generally no more than 0.2 m/s faster.
- Flow velocities are higher downstream of the on-site waterfall due to higher flow rates through the floodway. These are generally no more than 0.3 m/s faster.

6.5 Change In Flooding Duration

The nature by which floodwaters enter and exit the proposed floodway through the site result in slight changes to flooding durations out of the site. These changes are discussed below:

- As discussed in section 6.3, there are some small increases in peak water levels upstream of the floodway in the 2% AEP and 1% AEP +CC flood events. This does slightly increase the time of when water levels are elevated at their highest levels. However, the additional capacity of the floodwater inlet for the 10% AEP flood event means that the conveyance capacity at the tail end of the event increases. Overall, the total time of flooding is estimated to decrease by 10 minutes for each of the design flood events. See Figure 6 for a plot of the time-varying water levels at this location.
- No discernible change in the total flooding duration occurs at the confluence of Waitotara Road Drain and the Kerikeri River. However, the time at which water levels are elevated are slightly decreased (5 – 10 minutes) due to the lower flow rates down the Kerikeri River. See Figure 7 for a plot of the time-varying water levels at this location.
- No discernible change in the total flooding duration occurs at the confluence of Puketotara Stream and the Kerikeri River. However, the time at which water levels

are elevated are slightly increased in the 2% and 1% AEP +CC events only (approximately 5 minutes) due to the higher flow rates down the site's floodway. See Figure 8 for a plot of the time-varying water levels at this location.

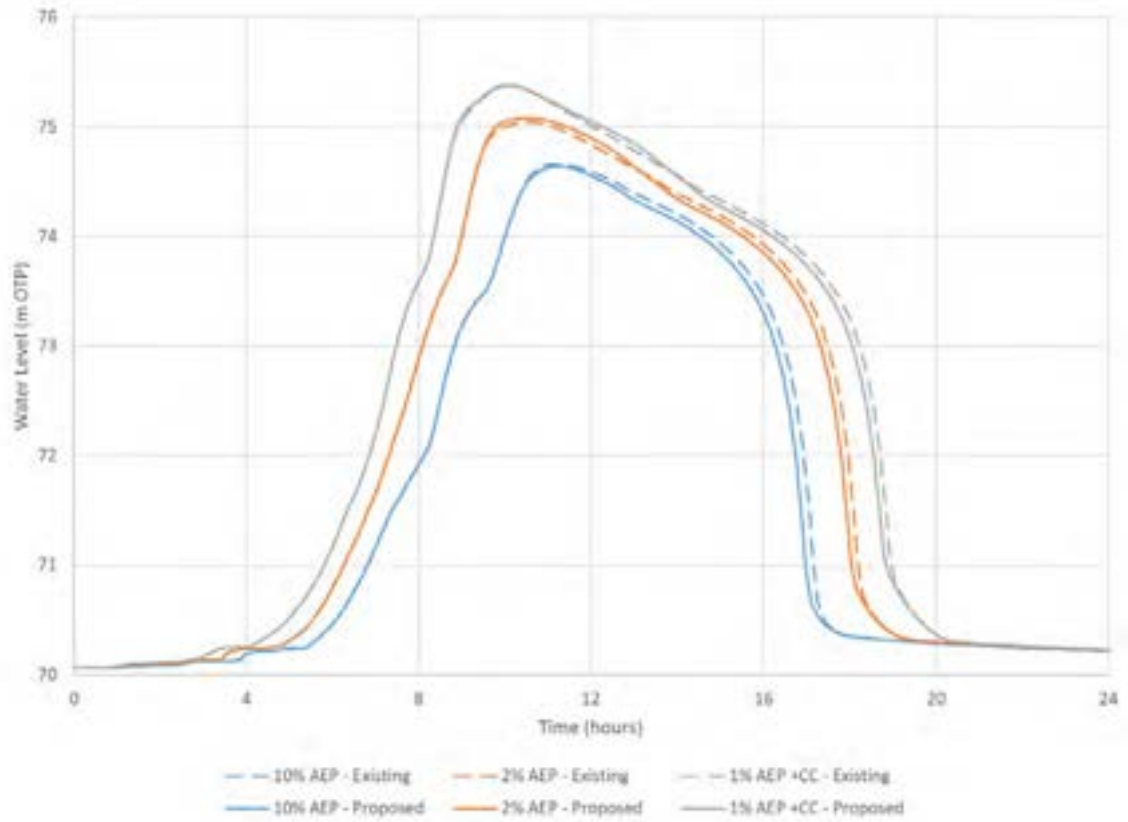


Figure 6 Flooding duration upstream of site in a branch of the Kerikeri River

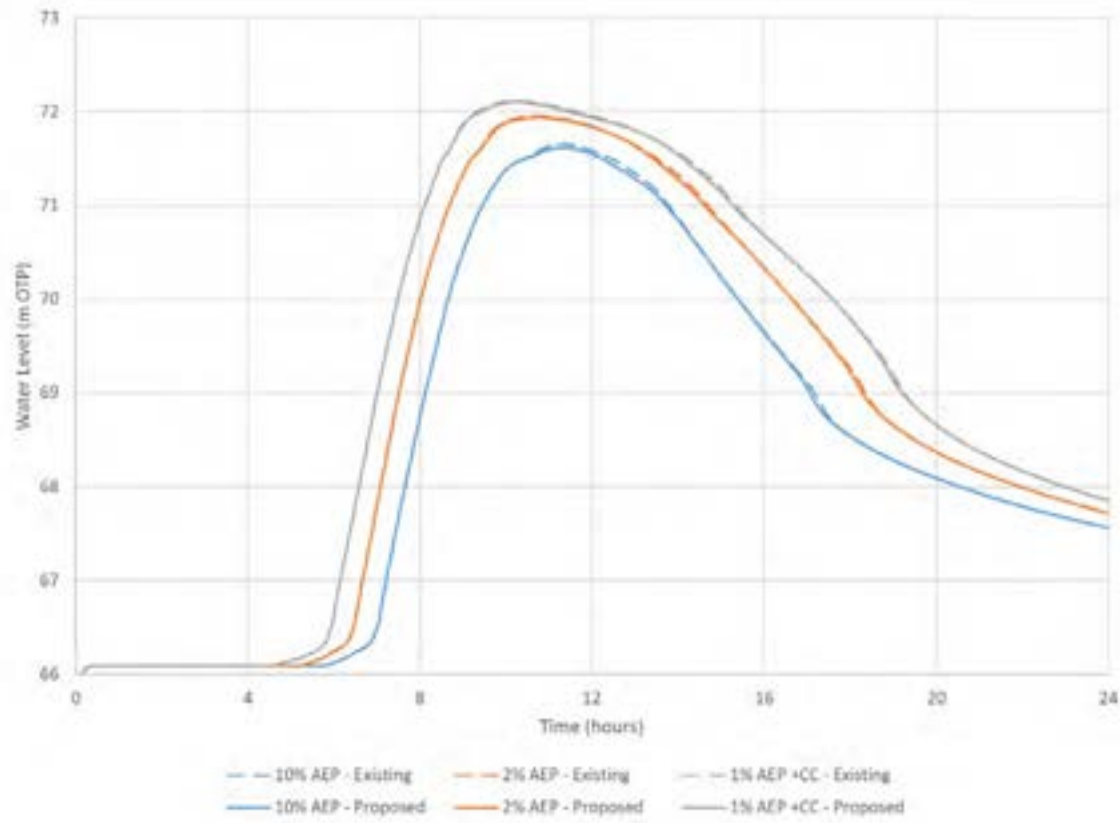


Figure 7 Flooding duration at the confluence of Waitotara Road Drain and Kerikeri River

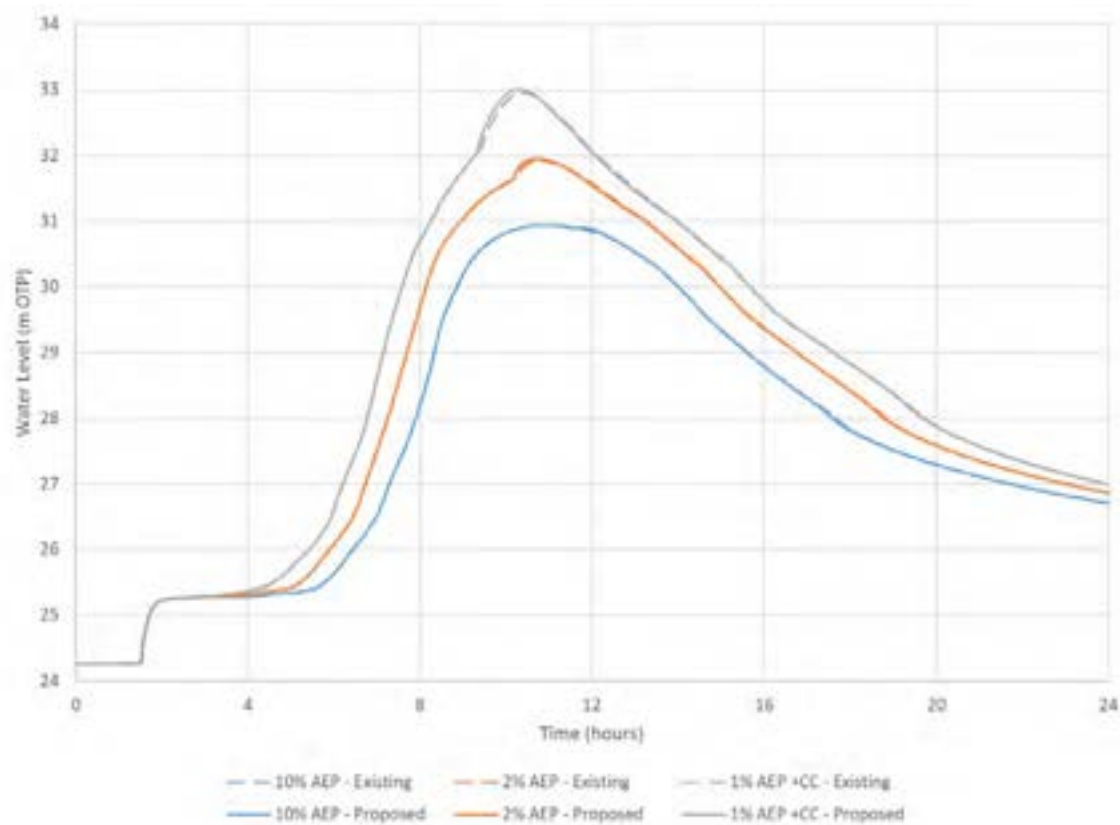


Figure 8 Flooding duration at the confluence of Puketotara Stream and Kerikeri River

6.6 Assessment of Effects

Sections 6.2 to 6.5 discuss and quantify the estimated changes in flow rates, water levels, flow velocities, and flooding durations. In summary:

- Changes in flow rates do not indicate any notable difference in how the flood dynamics around the site operate;
- They demonstrate that changes in water levels are typically small, and with increases above 50 mm only occurring in locations that were previously inundated;
- Changes in flow velocities are small, with increases generally located within the site's property boundaries or on SH10's road reserve; and
- They show that changes in flooding durations are short (5 – 10 minutes).

Overall, we assess that the estimated effects from the proposed conceptual design are less than minor, with any potential areas of concern able to be managed in the future detailed design process.

7 POTENTIAL OPPORTUNITIES TO REDUCE WIDER CATCHMENT FLOOD RISK

The conceptual design presented above has been focussed on safely and efficiently conveying floodwaters through the site whilst neutralising changes in flood dynamics off-site. Section 6 also notes that due to the taking of slightly more flows down the floodway than down the Kerikeri River, water levels across the Kerikeri River floodplain have slightly decreased. This highlights that there may opportunities to undertake further work around the local catchment, in conjunction with this proposed subdivision, to provide betterment to the wider catchment.

Although these options have not been investigated using the catchment model, we note that the following options may provide opportunity that are worth exploring at a later date with NRC:

- Improving conveyance through the Kerikeri River SH10 bridge to minimise headloss through the structure;
- Taking more flow through the development site to reduce wider catchment flooding; and
- Identifying and protecting key areas at-risk from flooding.

The consequence of these options would need to be identified and quantified through hydraulic modelling to ensure any possible negative effects are eliminated, minimised and / or appropriately mitigated.

8 SAFETY IN DESIGN

Safety in design is included to identify, avoid / address and mitigate risks during the lifecycle of the asset. There are four particular lifecycle segments in the lifecycle, being:

- **Design** (design should be practical and avoid, minimise or manage risks during the asset lifecycle).
- **Construction** (design should be constructible and allow for the asset to be constructed in a secure and safe manner).
- **Operation / Maintenance** (asset is designed and constructed to operate effectively, to minimise maintenance needs. If periodic maintenance is required the asset is designed and constructed to allow maintenance to be conducted in a safe manner).
- **Demolition** (asset has appropriated as-built information that allows easy location for demolition and is constructed of non-toxic or other health adverse materials (e.g., asbestos) that can have adverse health effects. It should be easy to demolish or abandon).

All options will require a full safety in design assessment during any design phase. Key risks that need to be considered and avoided / mitigated include, and are not limited to:

- Areas of high water depths and / or flow velocities, and how these interact with public safety including vehicles;
- Egress routes during flood events;
- Potential fall hazards around drop structures and rock riprap scour protection; and
- Fall hazards around on-site waterfalls and steep slopes.

9 SUMMARY

The proposed rezoning of the applicant's land requires careful management of existing flood risk to ensure any development is safe, and that any potential consequences of the proposed flood management design are acceptable. The investigations and design undertaken in this study build on NRC's current flood model to provide an understanding of the catchment's flooding dynamics. A proof-of-concept floodway has been designed to manage this flooding, with the effects of this concept design estimated to be less than minor. By prioritising the construction of a floodway through the site, the flood risk can be appropriately mitigated to ensure that the land is suitable for both residential and commercial development.

APPENDIX A – SITE PHOTOS



Figure A 1 View of Kerikeri River looking upstream from Rainbow Falls



Figure A 2 View of Rainbow Falls



Figure A 3 View looking downstream from Rainbow Falls



Figure A 4 View of Rainbow Falls



Figure A 5 View of on-site waterfall #2



Figure A 6 Wider view of on-site waterfall #2 and upstream topography



Figure A 7 View of wetland area



Figure A 8 View of steep slopes looking north from the south-east end of site



Figure A 9 View of upstream side of SH10 bridge over Kerikeri River



Figure A 10 View of downstream side of SH10 bridge over Kerikeri River

APPENDIX B – SITE MAPS

- B1 - Aerial plan
- B2 - Topographical plan highlighting upper site
- B3 - Topographical plan highlighting mid site
- B4 - Topographical plan highlighting lower site



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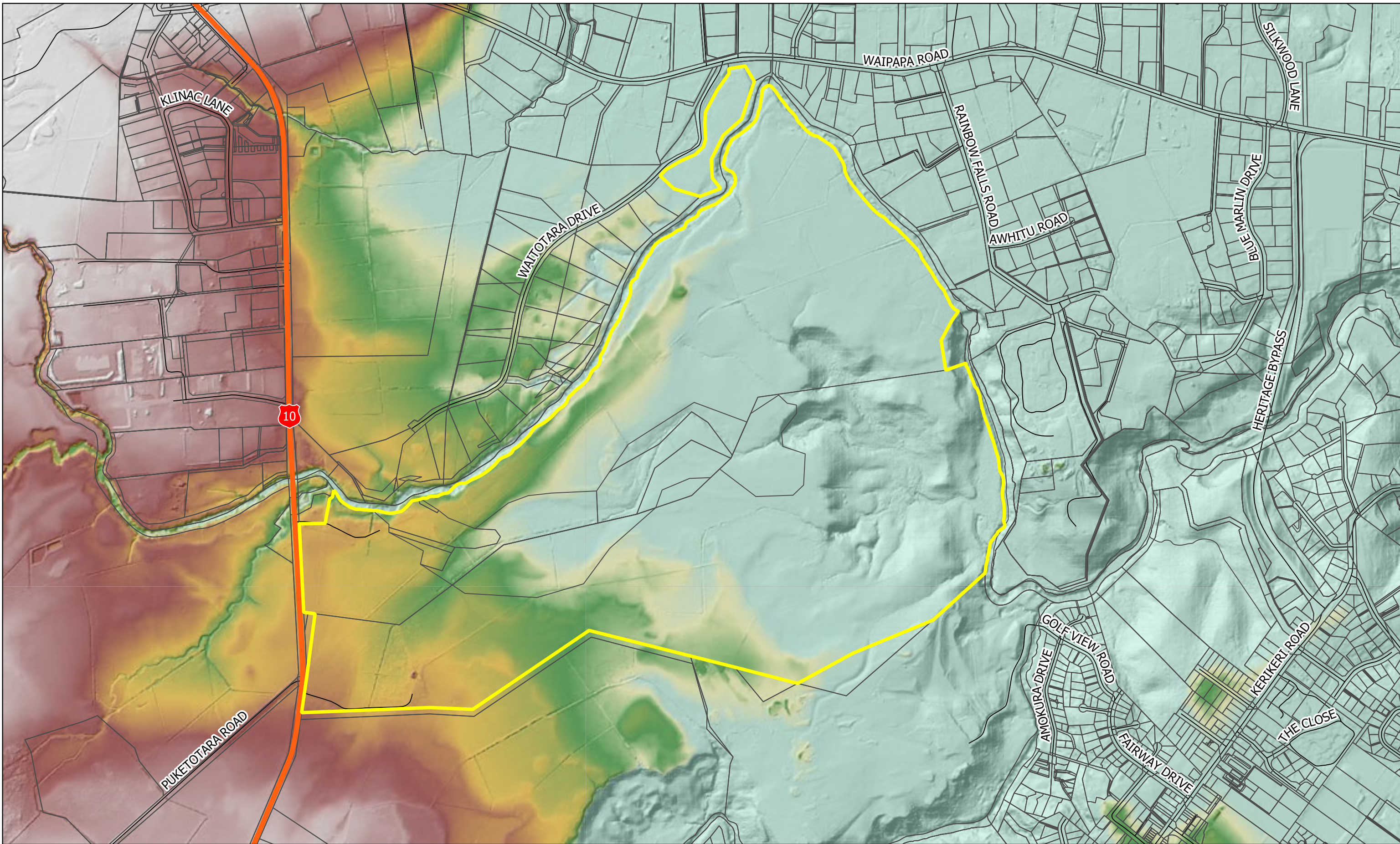


Legend
 Site Boundary
 Key Waterways

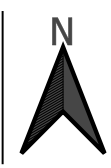


Kiwi Fresh Orange Company Limited
 Keri-keri Subdivision & Flood Scheme Investigation and Design
 B1 - Aerial Plan

Job Number	22017
Revision	2
Date	10/10/2022



Paper Size A3
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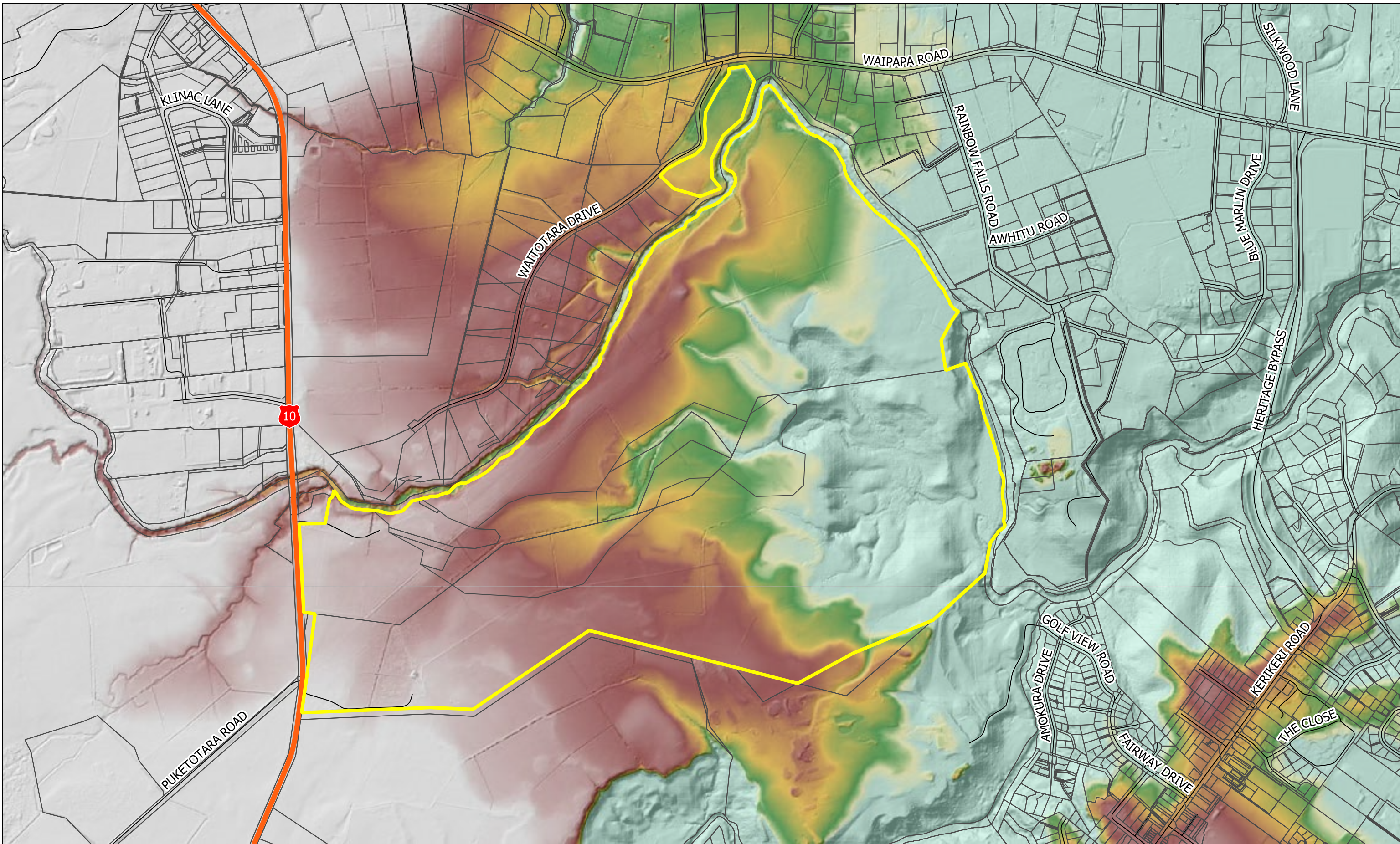


Legend
 Existing Ground Levels (m OTP) Site Boundary



Kiwi Fresh Orange Company Limited
 Kerikeri Subdivision & Flood Scheme Investigation and Design
 B2 - Topographical Plan (Upper Site)

Job Number | 22017
 Revision | 2
 Date | 10/10/2022



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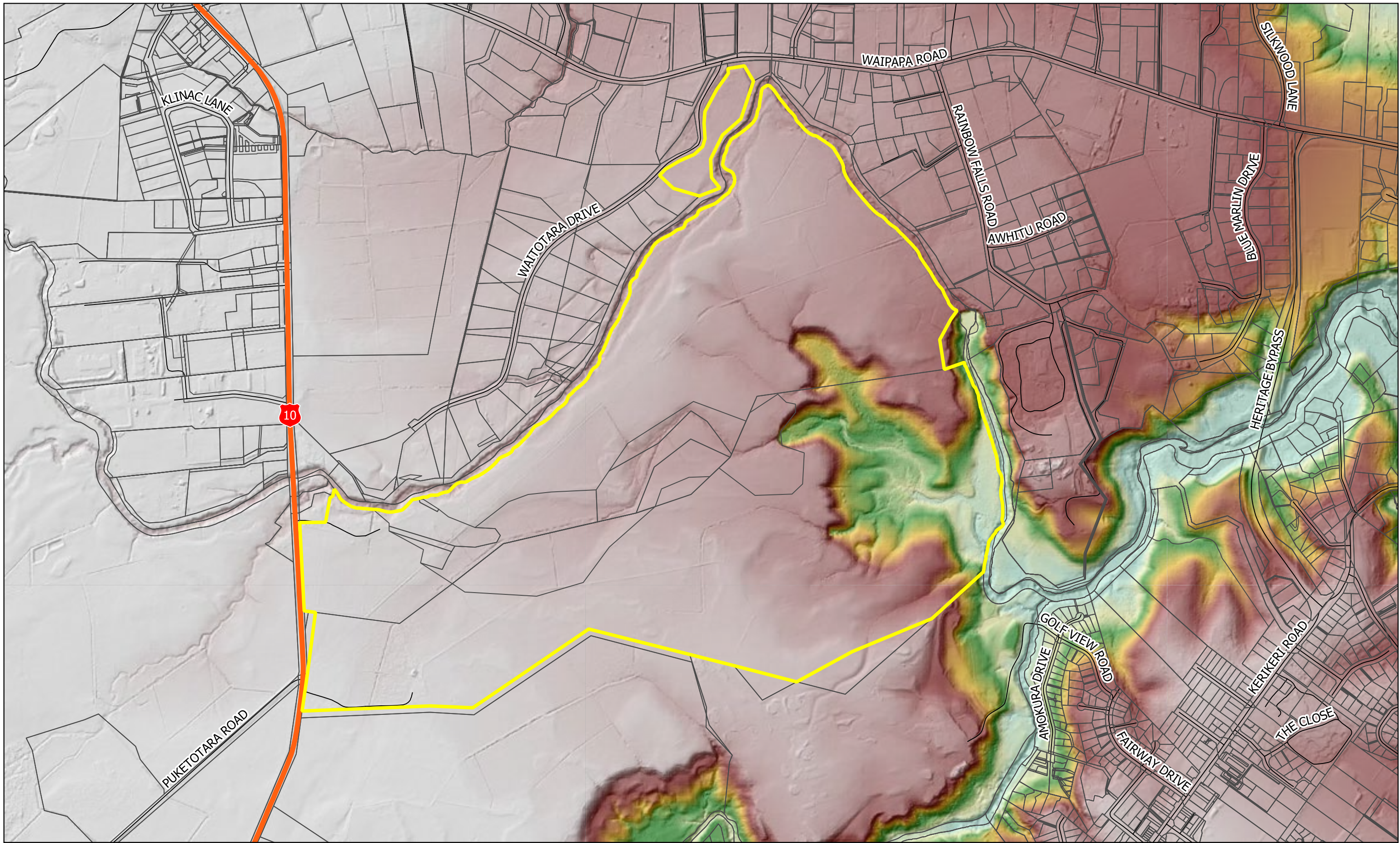


Legend
 Existing Ground Levels (m OTP) Site Boundary
 65 75



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 B3 - Topographical Plan (Middle of Site)

Job Number | 22017
 Revision | 2
 Date | 10/10/2022



Paper Size A3
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Legend
 Existing Ground Levels (m OTP) Site Boundary



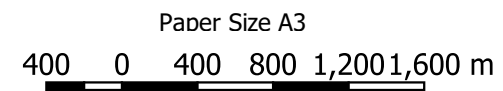
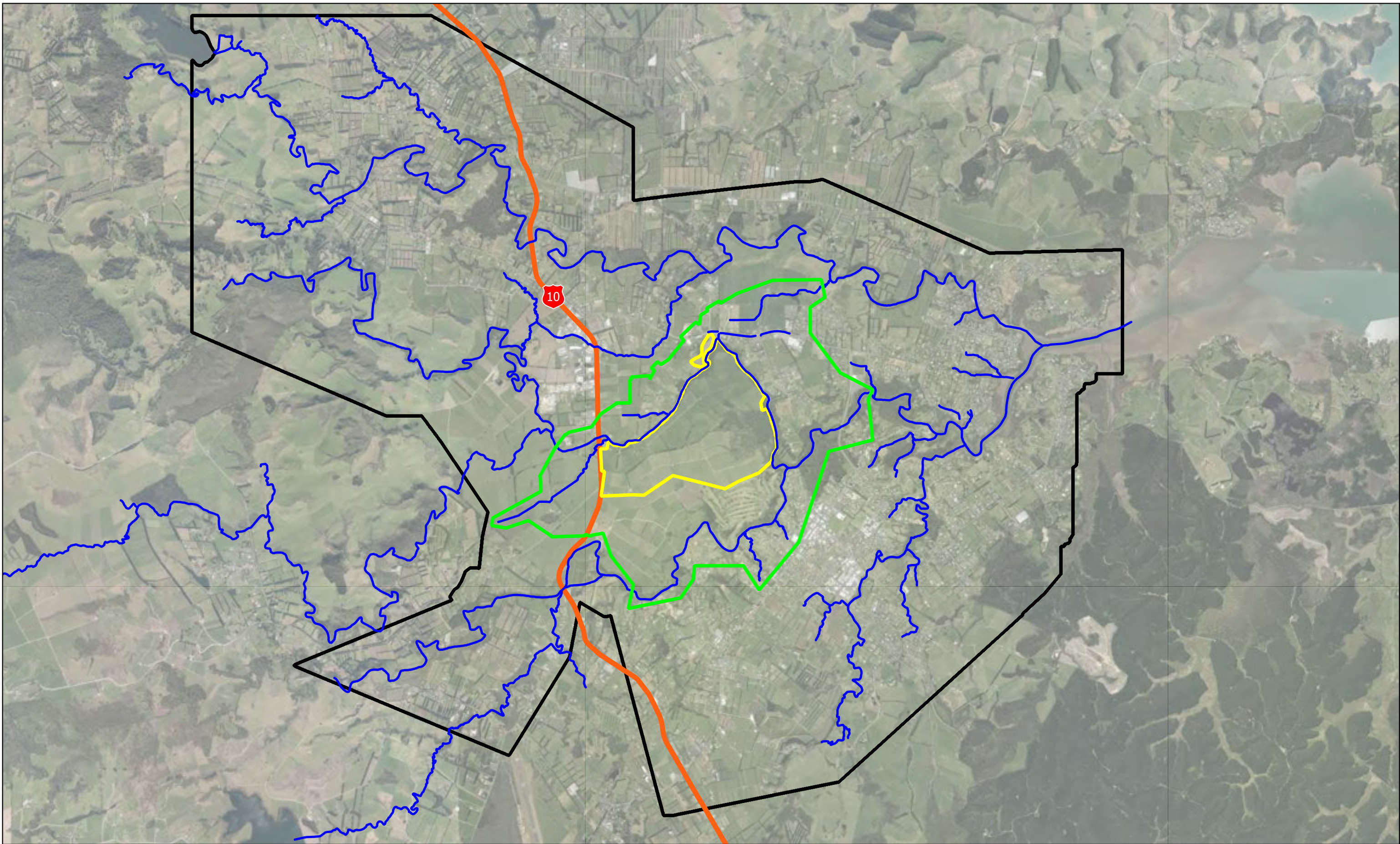
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Job Number | 22017
 Revision | 2
 Date | 10/10/2022

B4 - Topographical Plan (Lower Site)

APPENDIX C – MODELLING & DESIGN INFORMATION

- C1 - Change in model extents
- C2 - Extent of modelled dikes / bunds



Paper Size A3
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Legend

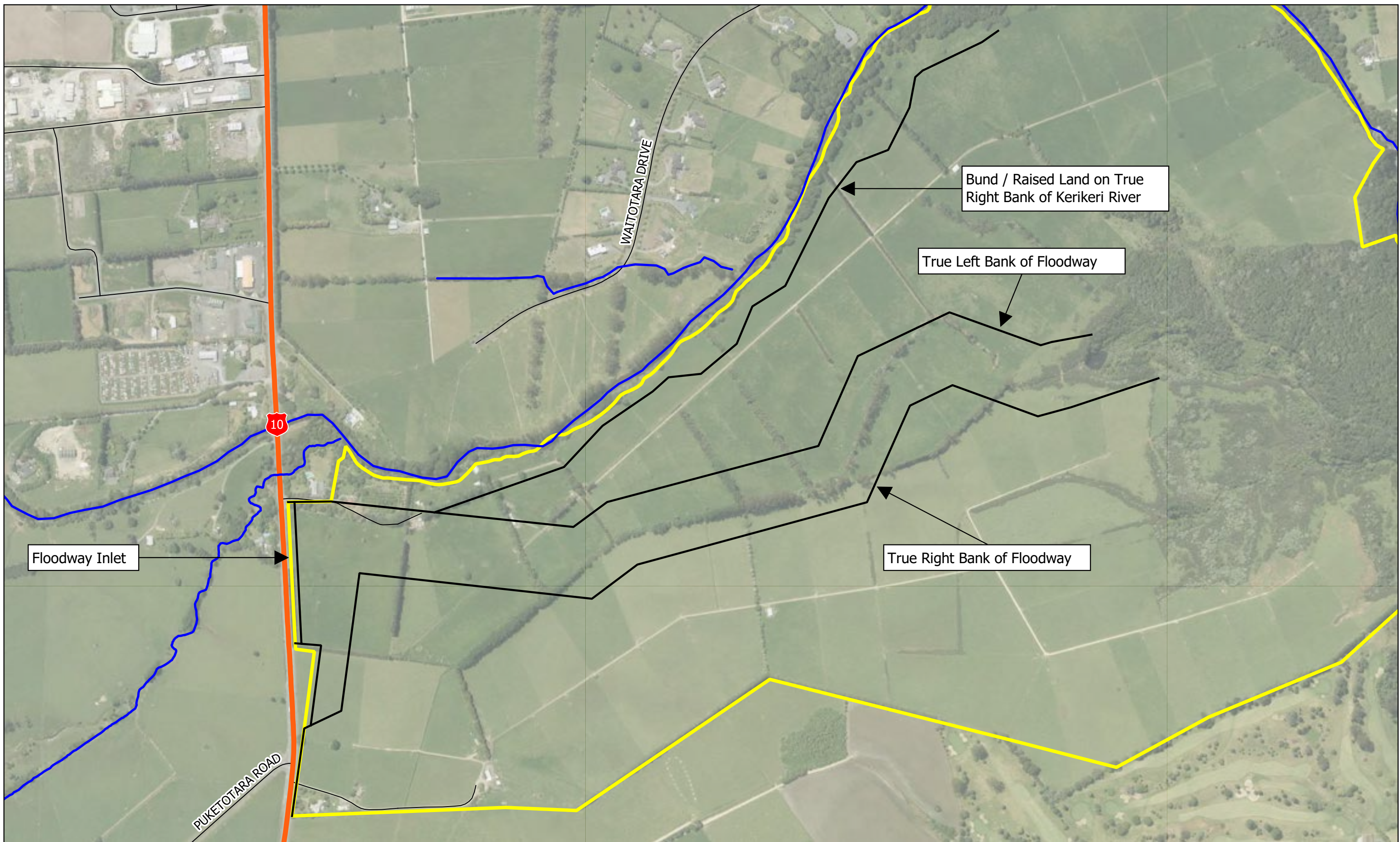
- Site Boundary
- NRC Model Extent
- NRC M11 Waterways
- e2 Model Extent



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C1 - Model Extents

Job Number	22017
Revision	2
Date	10/10/2022



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Legend
 Site Boundary
 Key Waterways
 Dikes

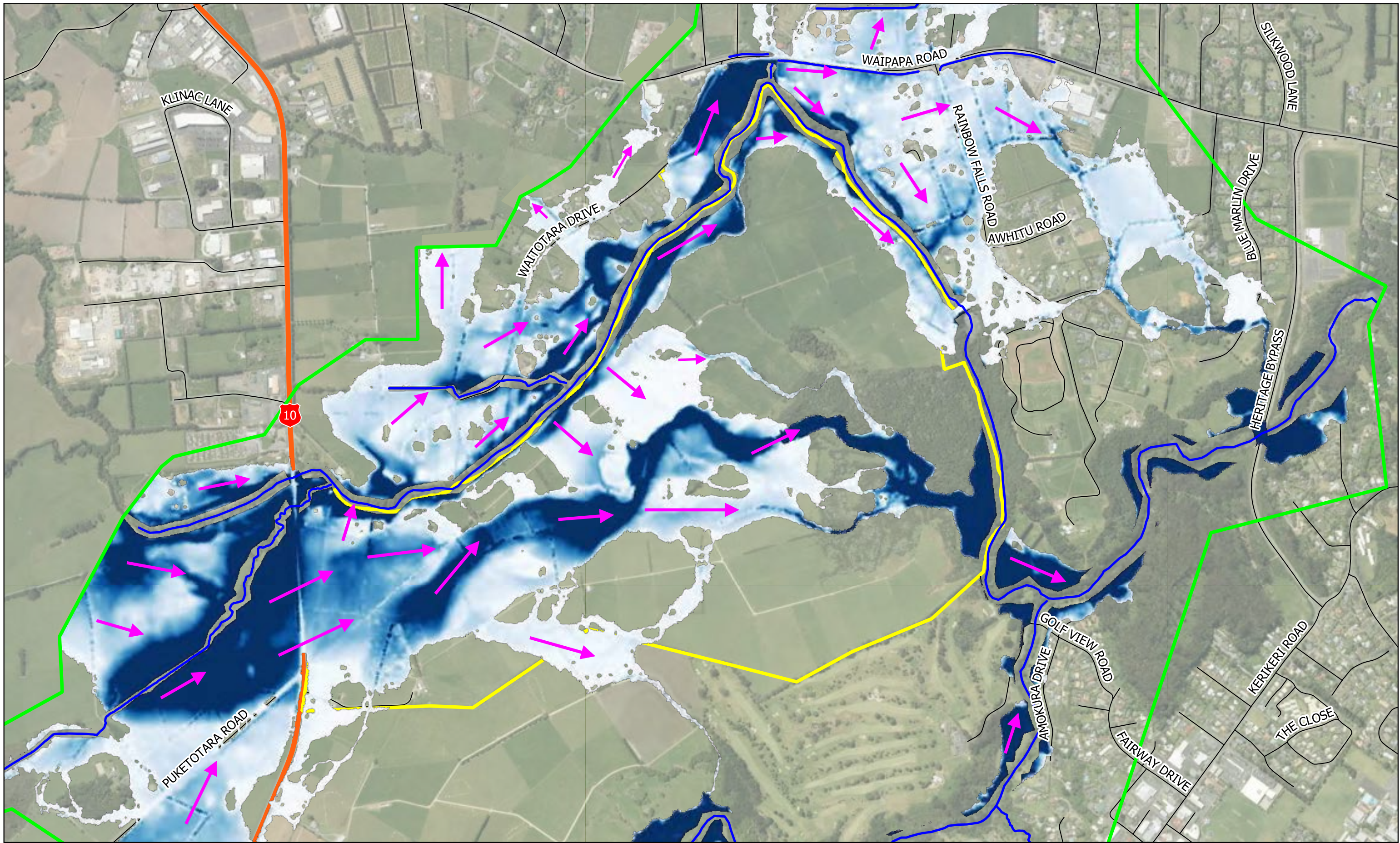


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 C2 - Modelled Dikes / Bunds

Job Number | 22017
 Revision | 2
 Date | 10/10/2022

APPENDIX D – FLOOD MAPS & MODEL RESULTS

- D1 - Existing 1% AEP +CC with flow direction arrows
- D2 – 10% AEP – existing – peak water depths (NRC model)
- D3 - 10% AEP – existing – peak water depths (e2 model)
- D4 - 10% AEP – proposed – peak water depths (e2 model)
- D5 - 10% AEP – change in water levels (e2 model)
- D6 – 2% AEP – existing – peak water depths (NRC model)
- D7 - 2% AEP – existing – peak water depths (e2 model)
- D8 - 2% AEP – proposed – peak water depths (e2 model)
- D9 - 2% AEP – change in water levels (e2 model)
- D10 – 1% AEP +CC – existing – peak water depths (NRC model)
- D11 - 1% AEP +CC – existing – peak water depths (e2 model)
- D12 - 1% AEP +CC – proposed – peak water depths (e2 model)
- D13 - 1% AEP +CC – change in water levels (e2 model)
- D14 - 1% AEP +CC (higher floodway roughness) – change in water levels (e2 model)
- D15 - 10% AEP – existing – peak flow velocities (e2 model)
- D16 - 10% AEP – proposed – peak flow velocities (e2 model)
- D17 - 2% AEP – existing – peak flow velocities (e2 model)
- D18 - 2% AEP – proposed – peak flow velocities (e2 model)
- D19 - 1% AEP +CC – existing – peak flow velocities (e2 model)
- D20 - 1% AEP +CC – proposed – peak flow velocities (e2 model)

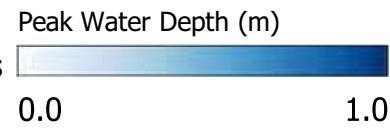


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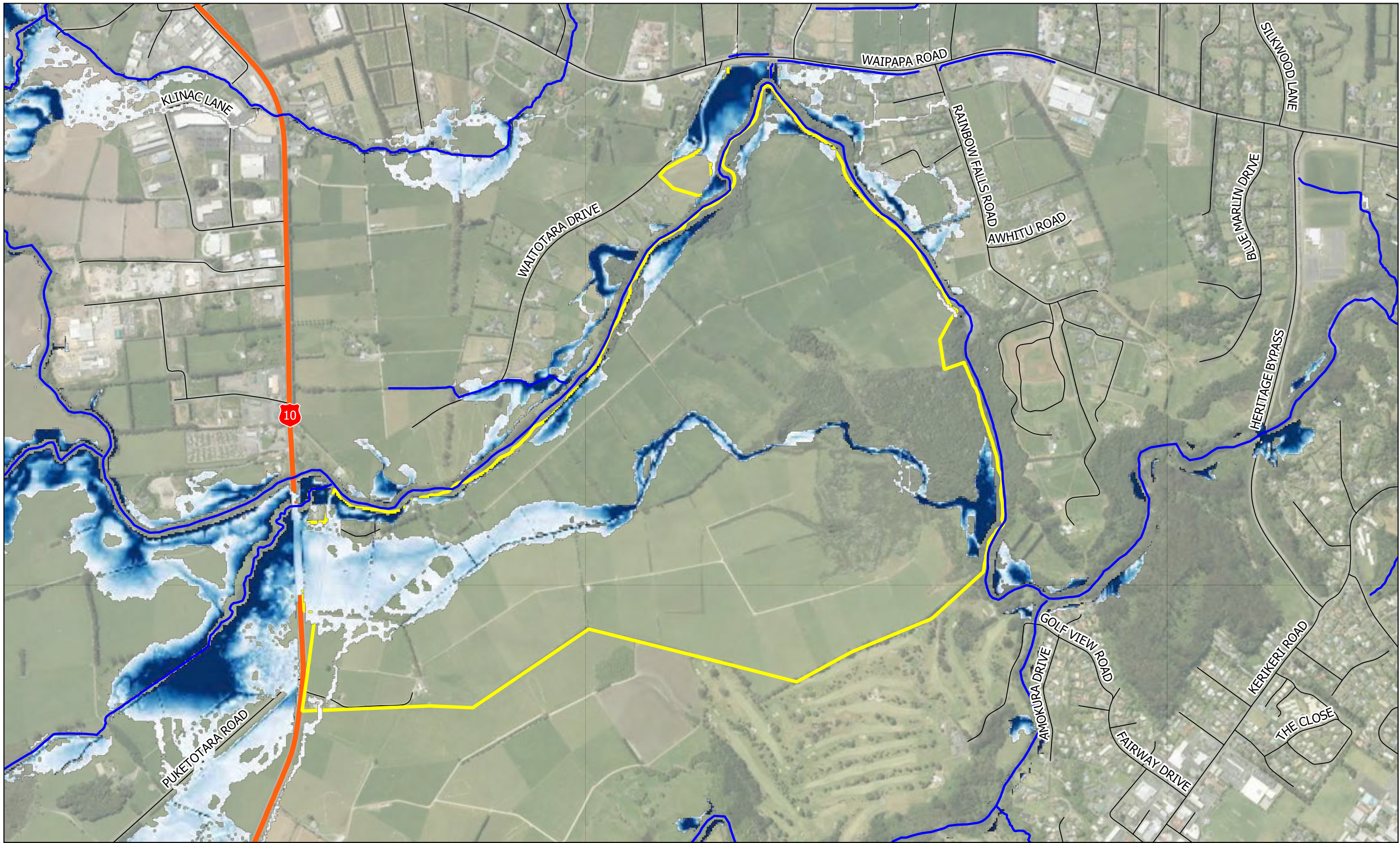
- Site Boundary
- Modelled Waterways
- e2 Model Extent



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Job Number | 22017
 Revision | 2
 Date | 10/10/2022

D1 - 1% AEP +CC Peak Flood Depths for Existing Situation with
 Flow Direction Arrows (e2 Flood Model)



Paper Size A3
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 Grid: NZGD 2000 New Zealand Transverse Mercator



Legend

- Site Boundary
- Modelled Waterways

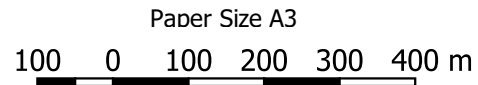
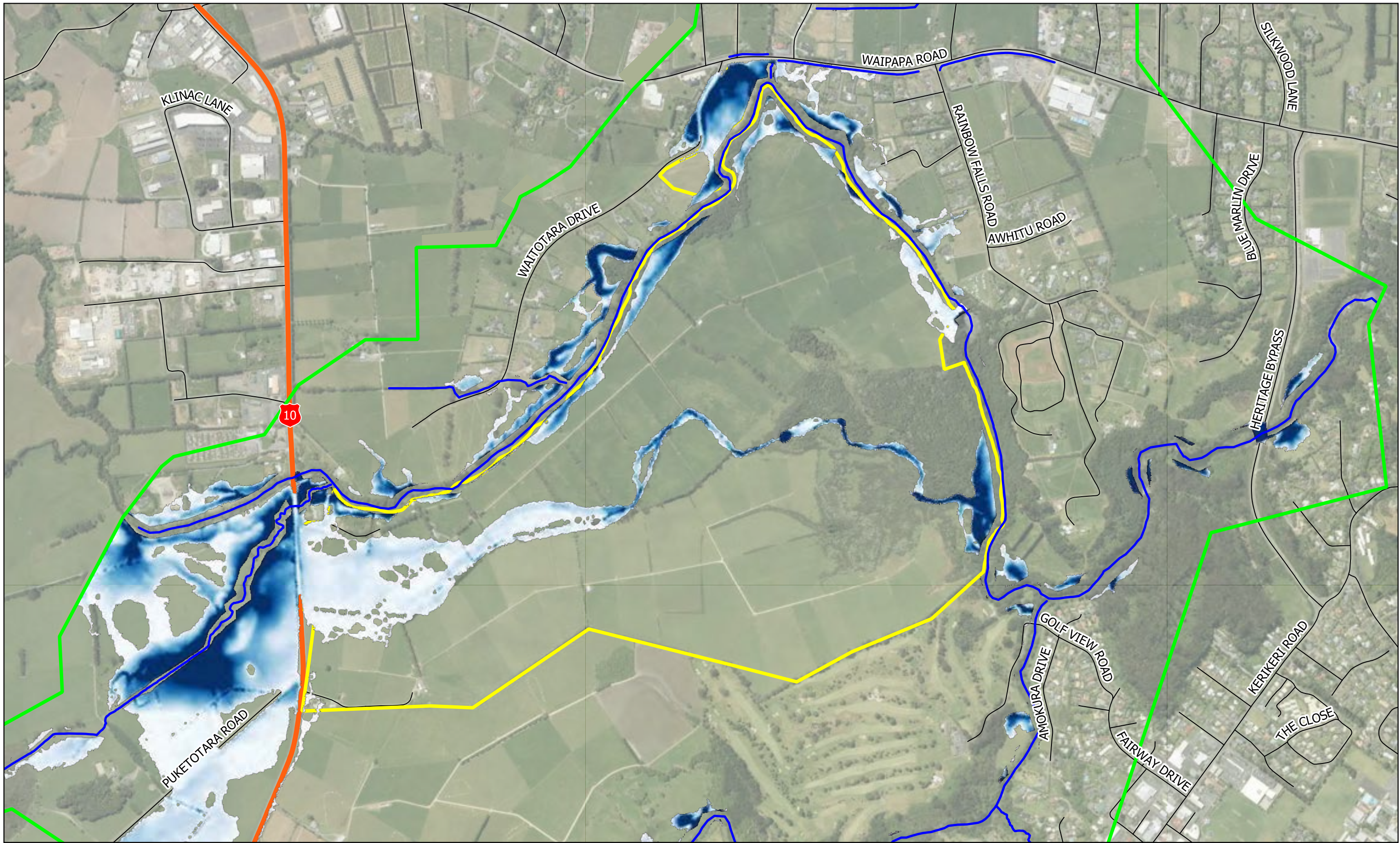
Peak Water Depth (m)

0.0
1.0



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 Kerikeri Subdivision & Flood Scheme Investigation and Design
**D2 - 10% AEP Peak Flood Depths for Existing Situation
 (NRC Flood Model)**

Job Number	22017
Revision	2
Date	10/10/2022

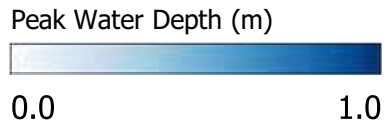


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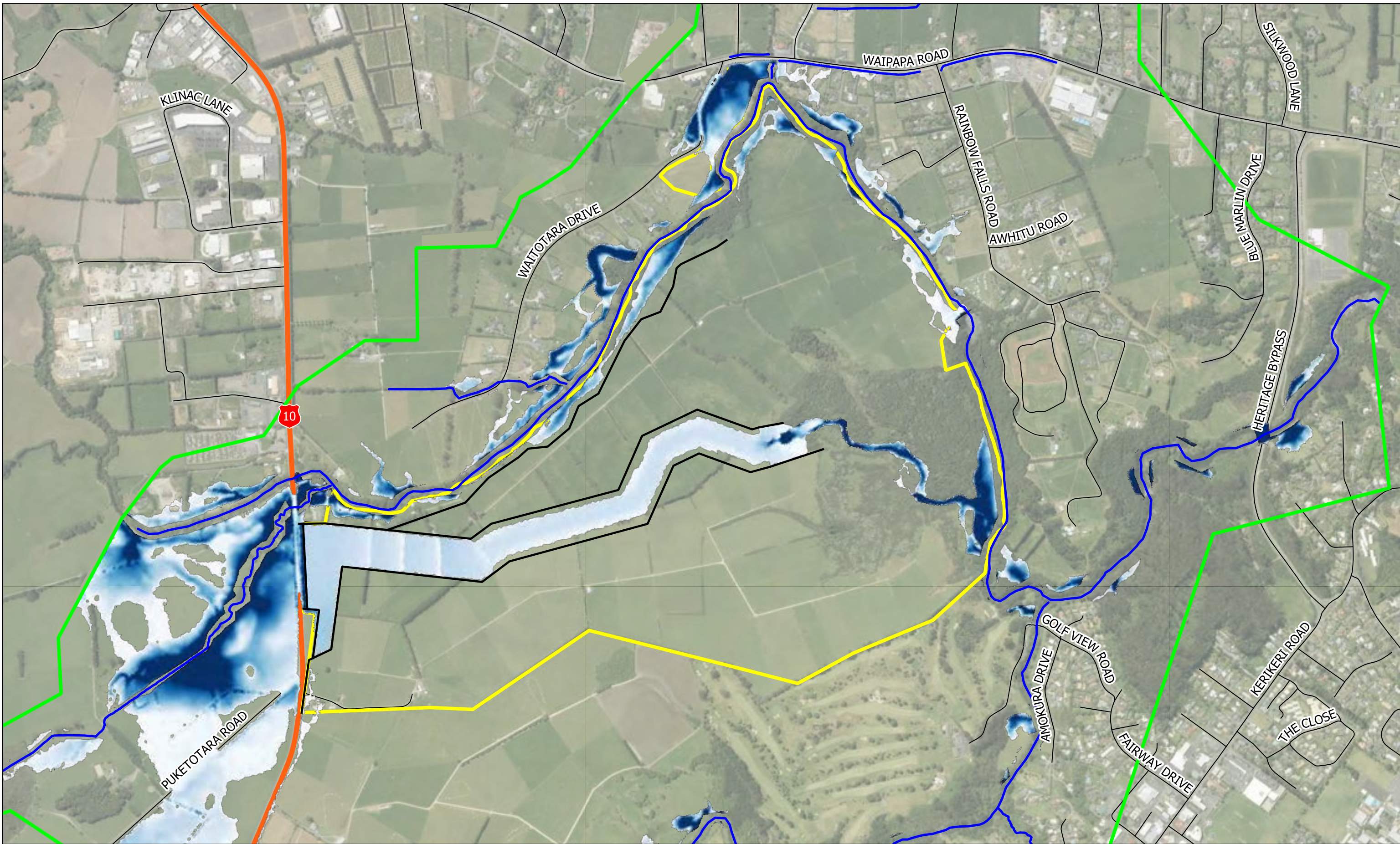
- Site Boundary
- Modelled Waterways
- e2 Model Extent



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 Kerikeri Subdivision & Flood Scheme Investigation and Design

**D3 - 10% AEP Peak Flood Depths for Existing Situation
 (e2 Flood Model)**

Job Number	22017
Revision	2
Date	10/10/2022



Paper Size A3
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Legend

- Site Boundary
- Modelled Waterways
- e2 Model Extent

Peak Water Depth (m)

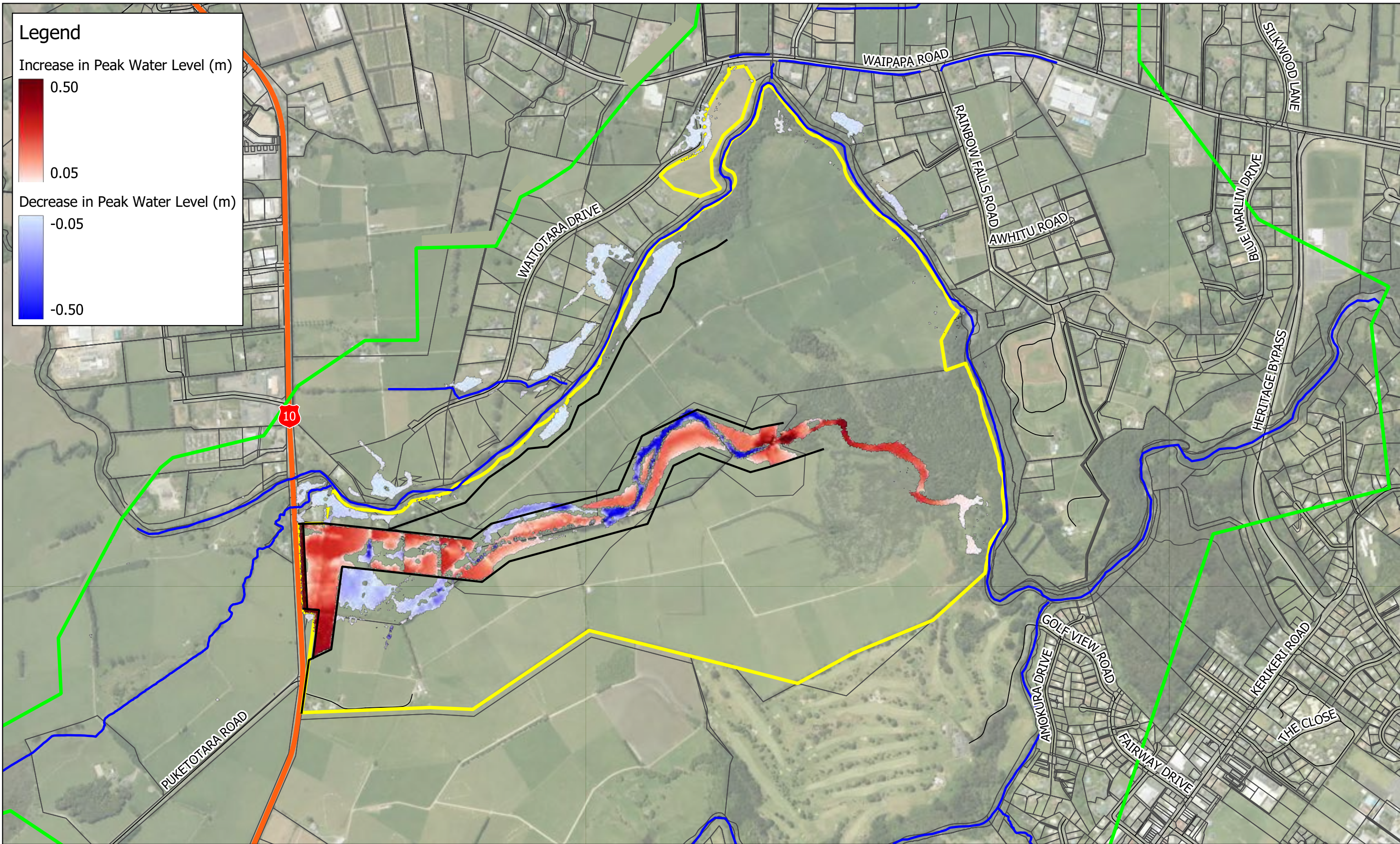
0.0 1.0



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 Kerikeri Subdivision & Flood Scheme Investigation and Design

Job Number	22017
Revision	2
Date	10/10/2022

D4 - 10% AEP Peak Flood Depths for Proposed Situation (e2 Flood Model)



Paper Size A3

100 0 100 200 300 400 m

Scale: 1 : 10000 (A3)

Horizontal Datum: NZGD 2000

Grid: NZGD 2000 New Zealand Transverse Mercator



Legend

Site Boundary

Modelled Waterways

e2 Model Extent

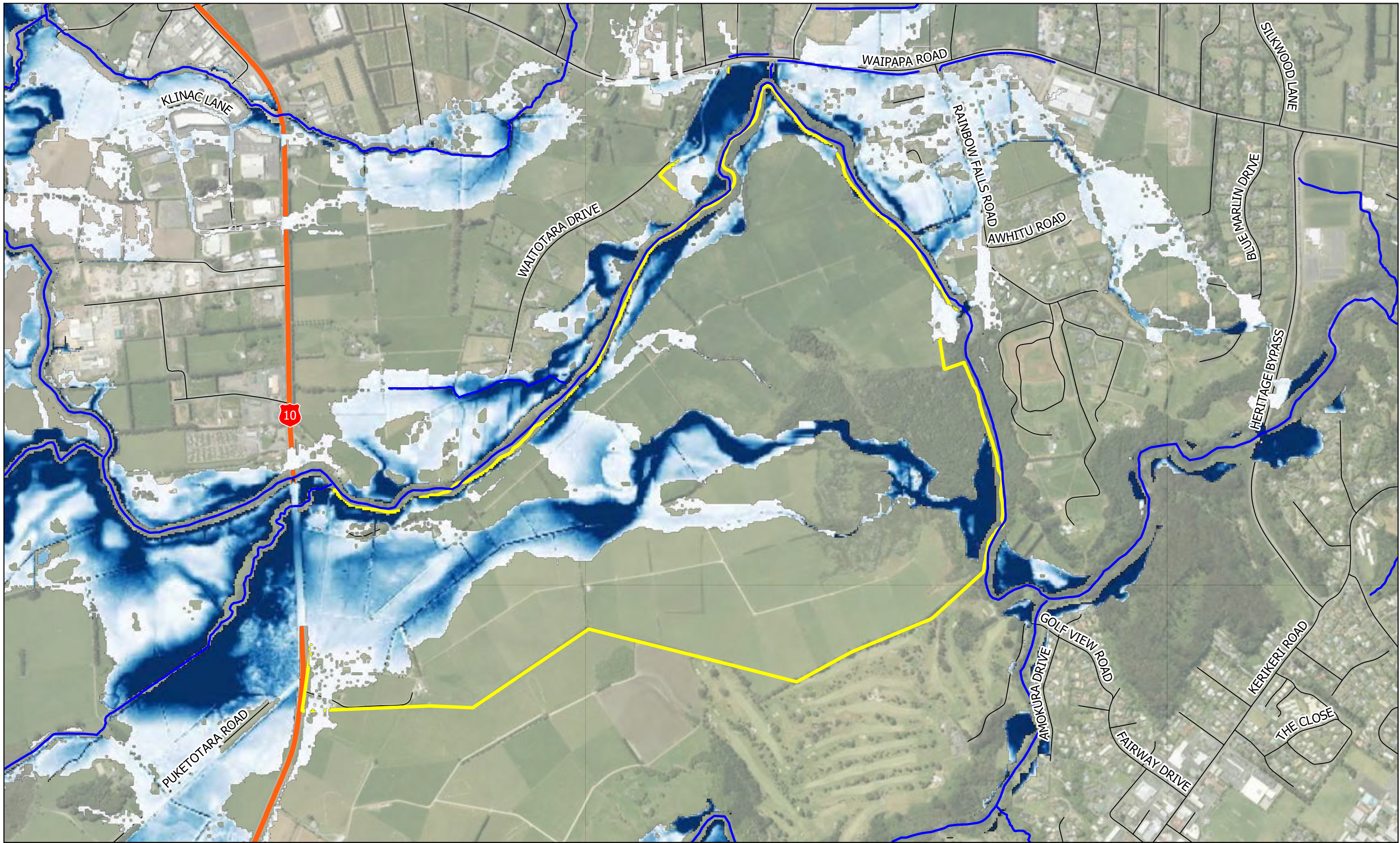
Modelled Dikes



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 Kerikeri Subdivision & Flood Scheme Investigation and Design

D5 - 10% AEP Change in Peak Water Levels
 (e2 Flood Model)

Job Number | 22017
 Revision | 2
 Date | 10/10/2022

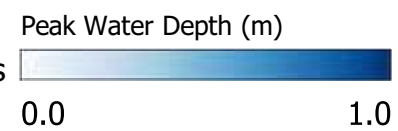


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Legend

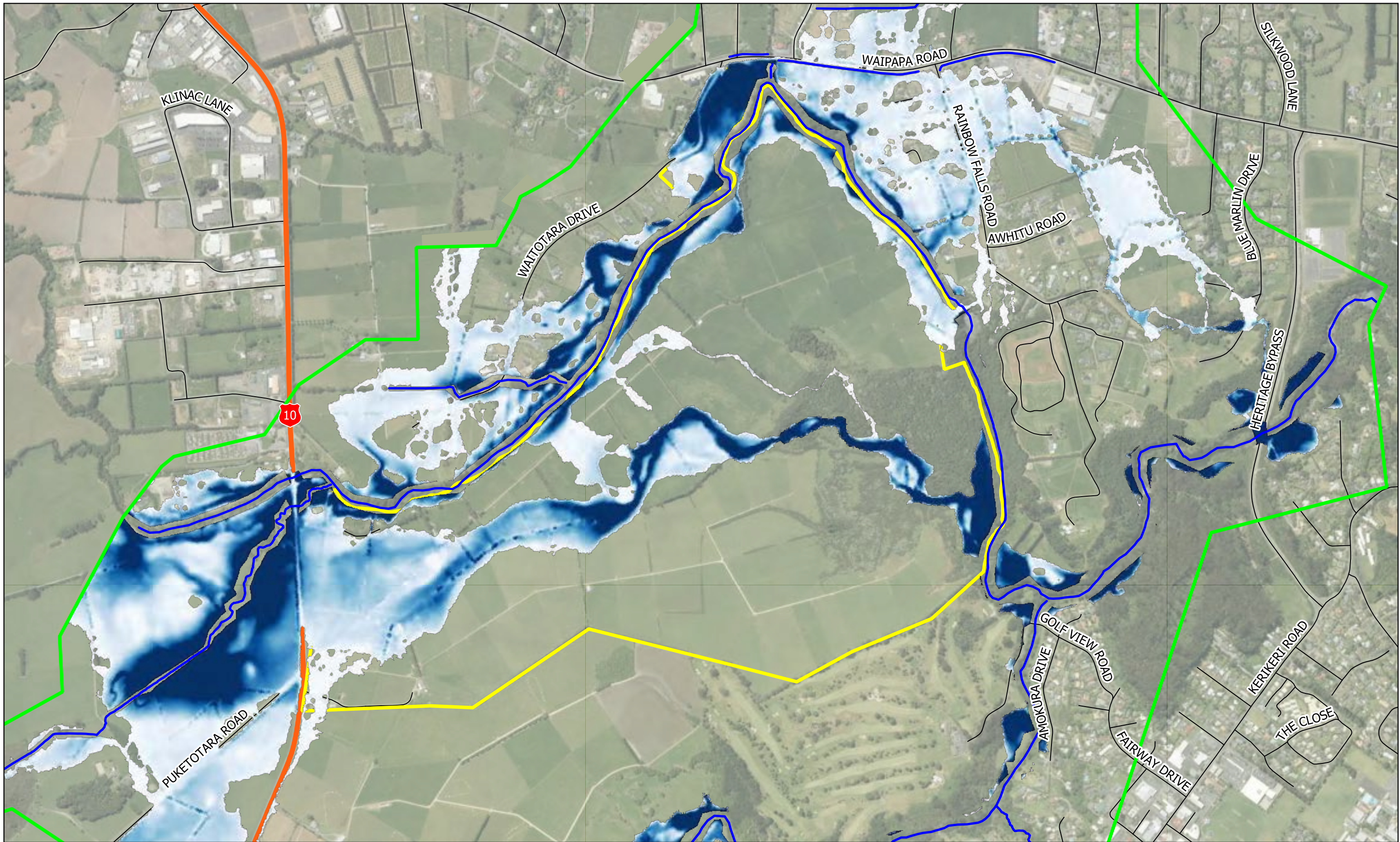
- Site Boundary
- Modelled Waterways



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 Kerikeri Subdivision & Flood Scheme Investigation and Design

Job Number | 22017
 Revision | 2
 Date | 10/10/2022

**D6 - 2% AEP Peak Flood Depths for Existing Situation
 (NRC Flood Model)**



Paper Size A3
 100 0 100 200 300 400 m
 Scale: 1 : 10000 (A3)
 Horizontal Datum: NZGD 2000
 Grid: NZGD 2000 New Zealand Transverse Mercator



Legend

- Site Boundary
- Modelled Waterways
- e2 Model Extent

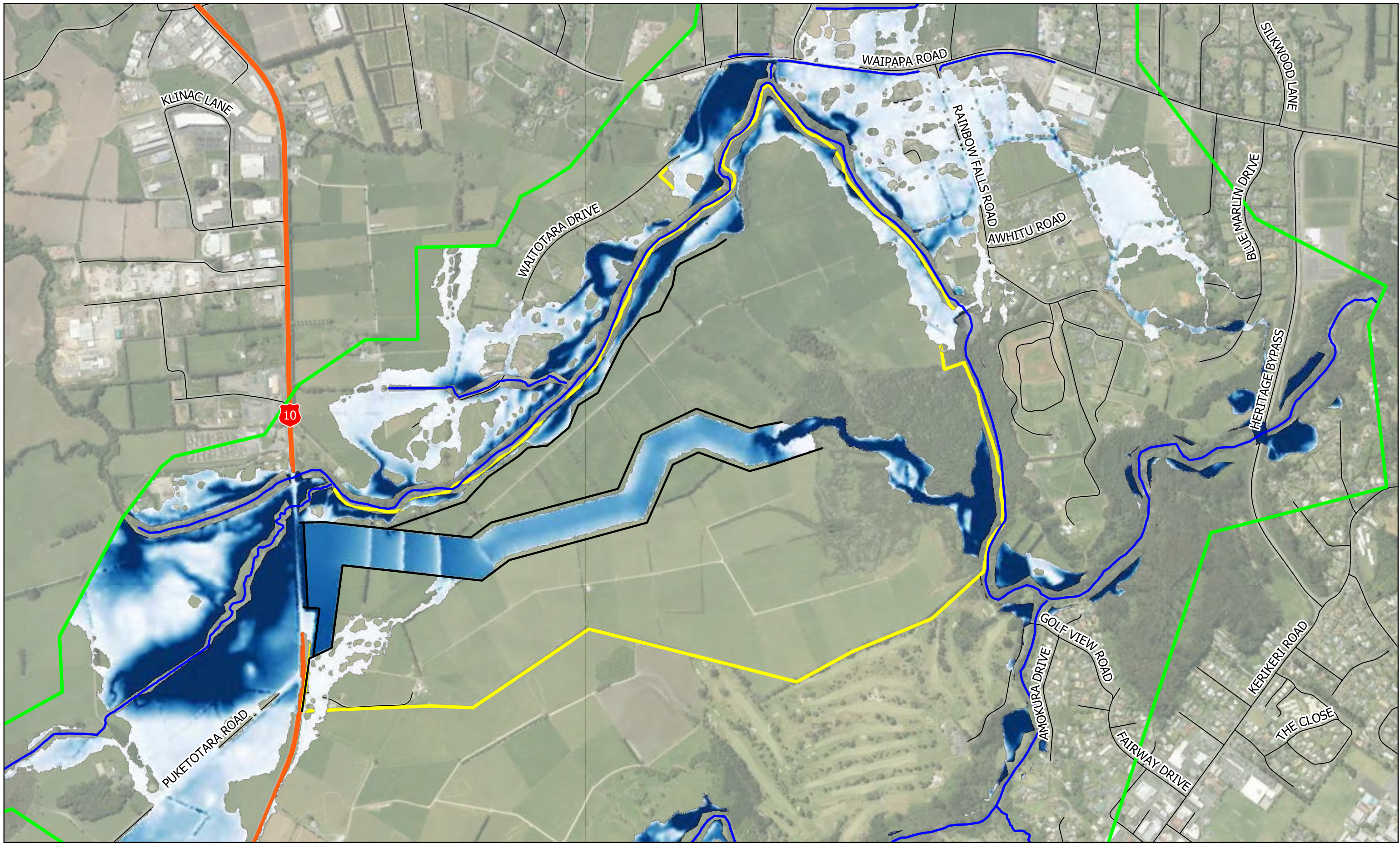
Peak Water Depth (m)

0.0 1.0



Kiwi Fresh Orange Company Limited
 Kerikeri Subdivision & Flood Scheme Investigation and Design
 D7 - 2% AEP Peak Flood Depths for Existing Situation
 (e2 Flood Model)

Job Number	22017
Revision	2
Date	10/10/2022

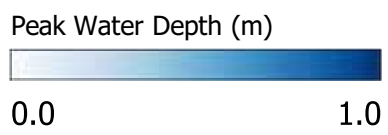


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Legend

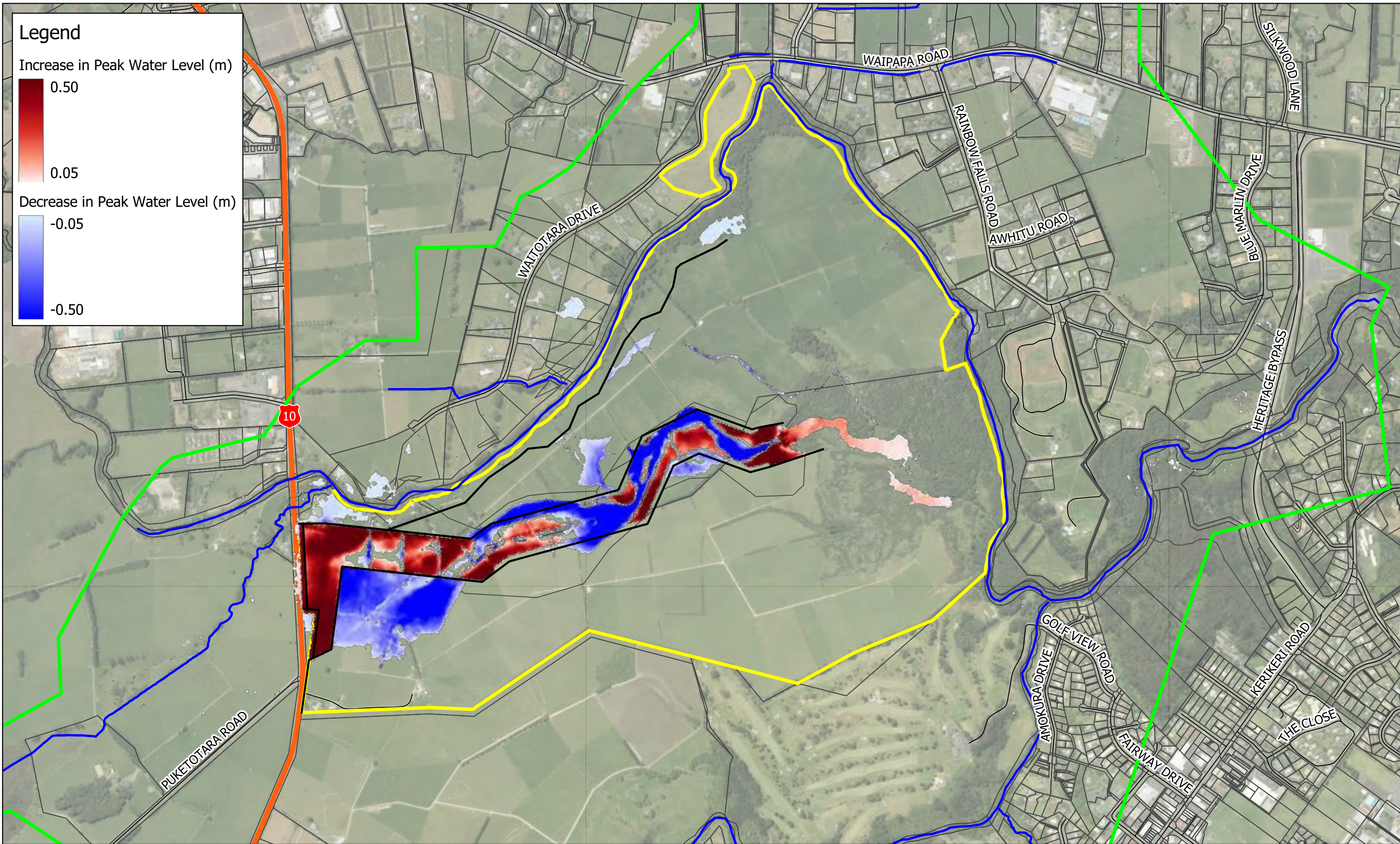
- Site Boundary
- Modelled Waterways
- e2 Model Extent



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 Kerikeri Subdivision & Flood Scheme Investigation and Design

Job Number | 22017
 Revision | 2
 Date | 10/10/2022

**D8 - 2% AEP Peak Flood Depths for Proposed Situation
 (e2 Flood Model)**



Paper Size A3
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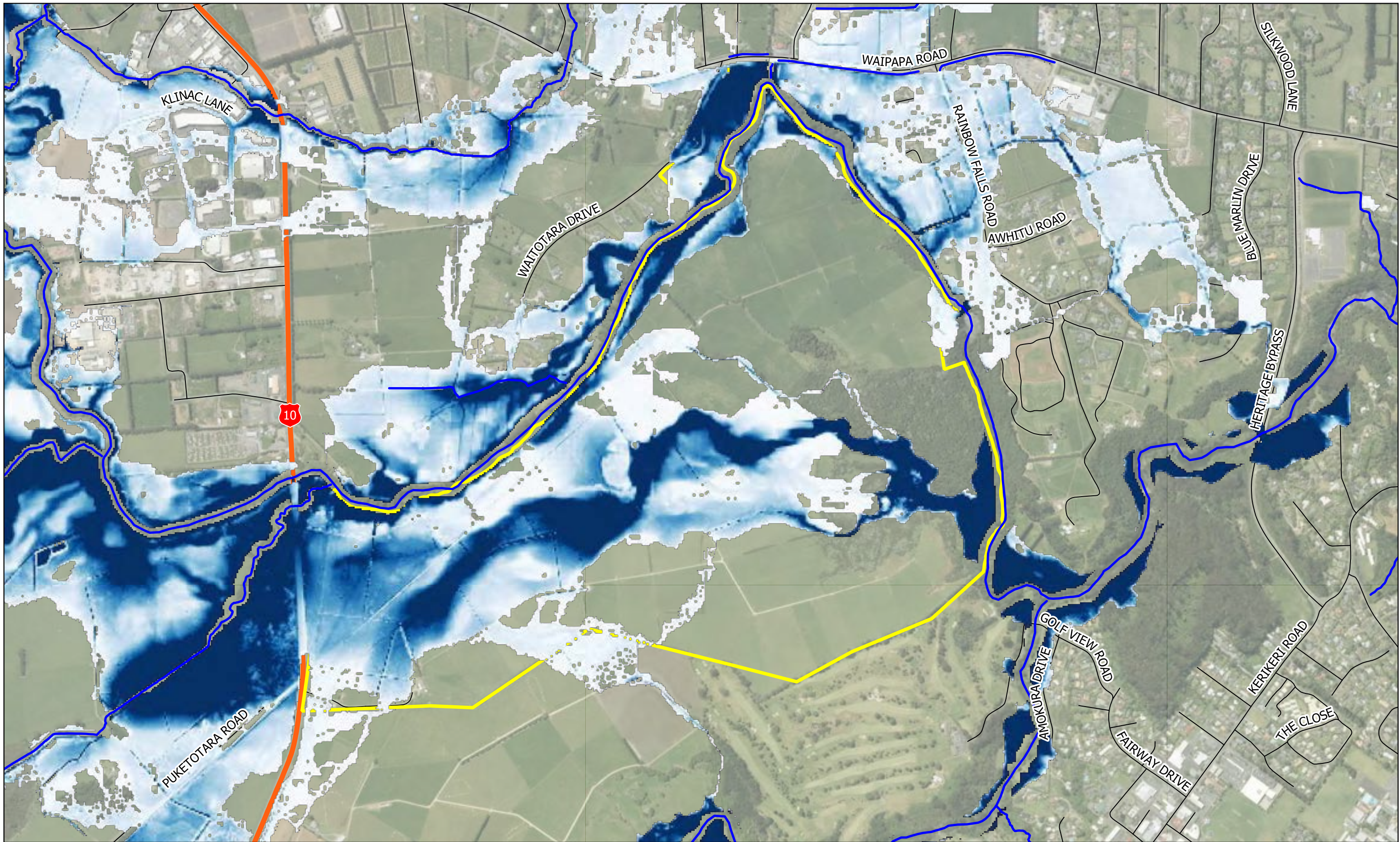


Legend
 Site Boundary (yellow outline)
 Modelled Waterways (blue line)
 e2 Model Extent (green outline)
 Modelled Dikes (black line)



Kiwi Fresh Orange Company Limited
 Kerikeri Subdivision & Flood Scheme Investigation and Design
 D9 - 2% AEP Change in Peak Water Levels
 (e2 Flood Model)

Job Number | 22017
 Revision | 2
 Date | 10/10/2022

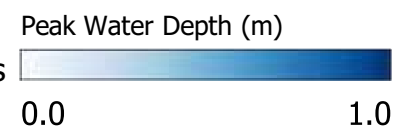


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Legend

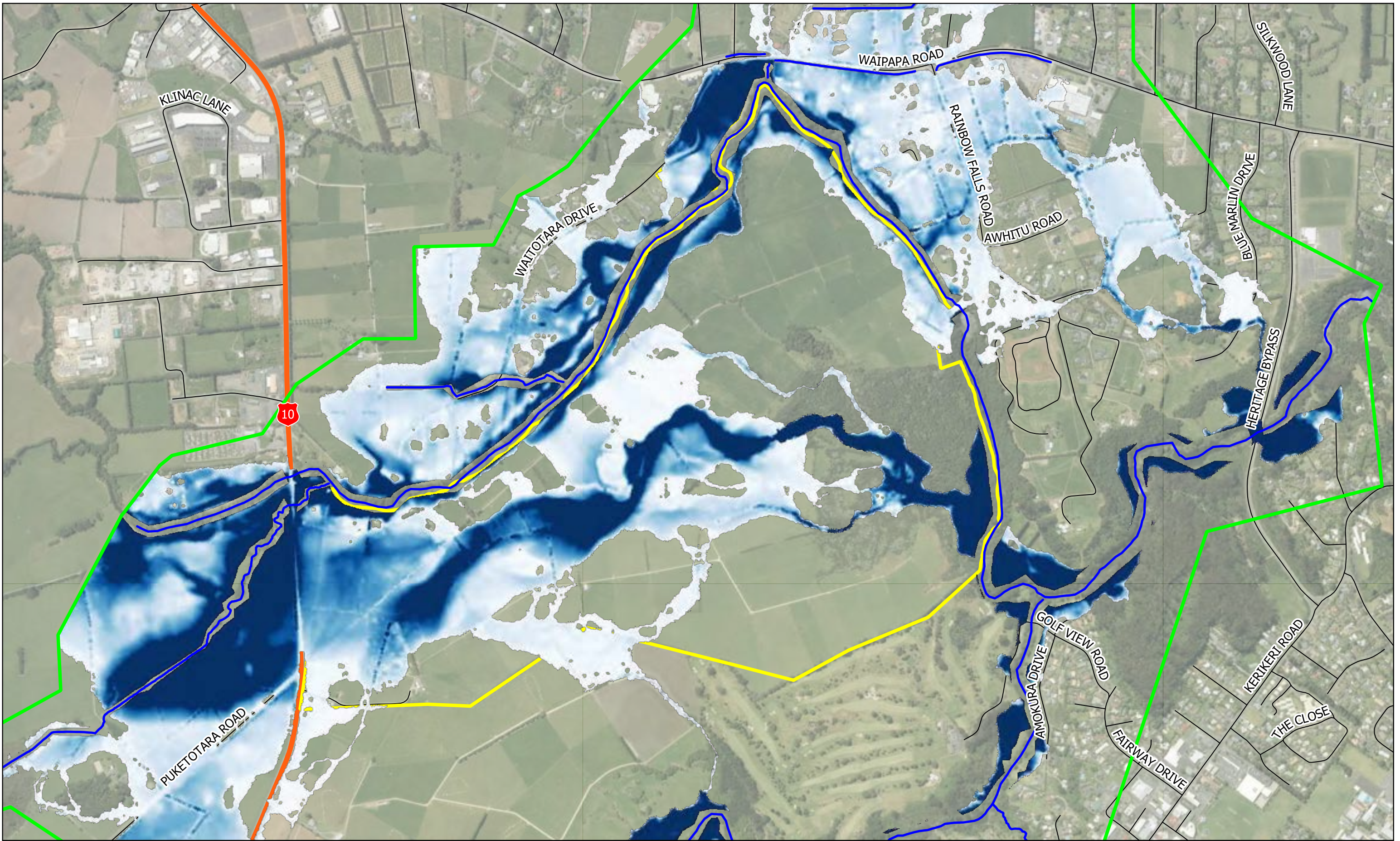
- Site Boundary
- Modelled Waterways



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 Kerikeri Subdivision & Flood Scheme Investigation and Design

Job Number | 22017
 Revision | 2
 Date | 10/10/2022

**D10 - 1% AEP +CC Peak Flood Depths for Existing Situation
 (NRC Flood Model)**

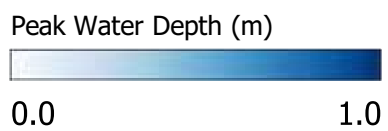


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Legend

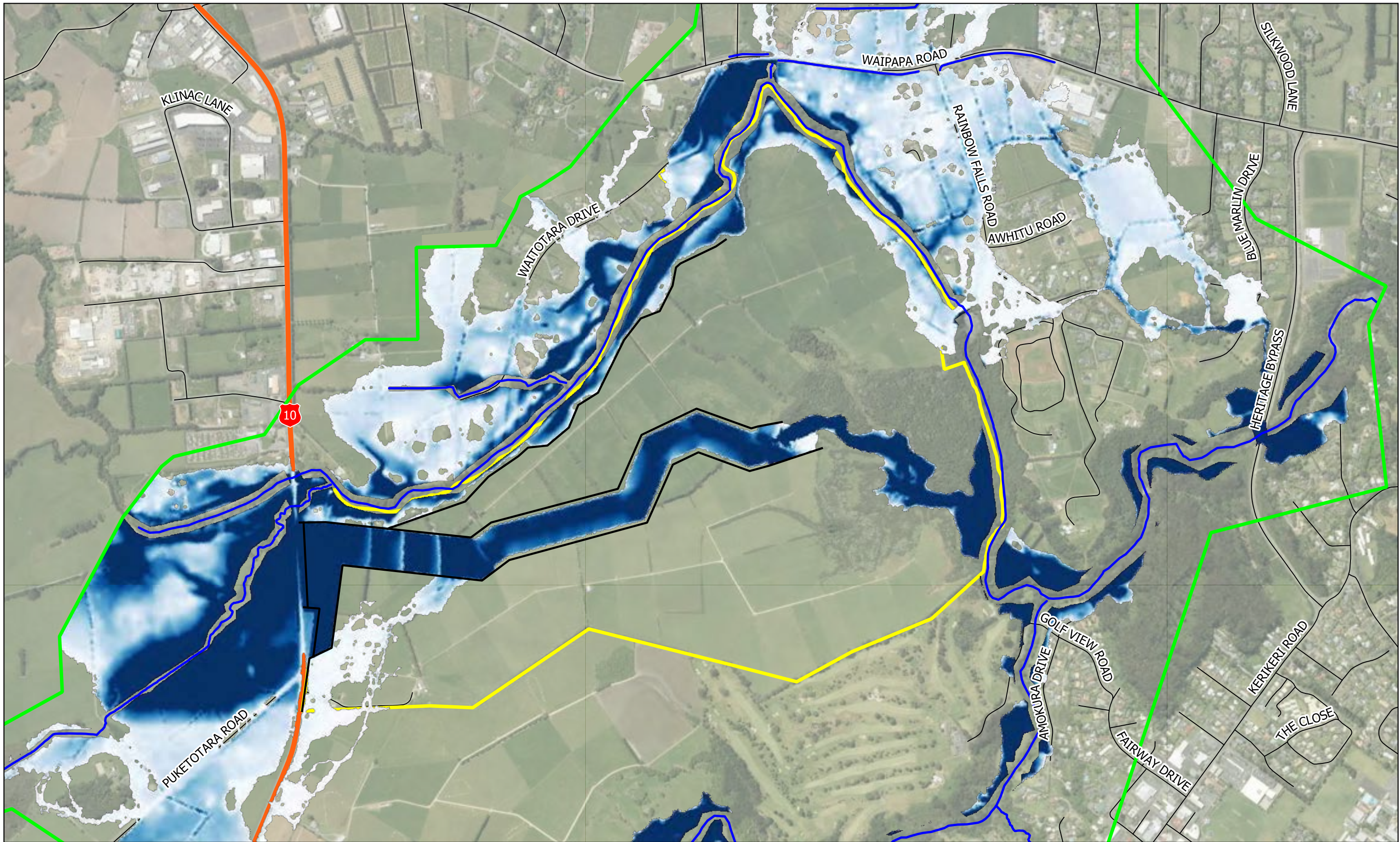
- Site Boundary
- Modelled Waterways
- e2 Model Extent



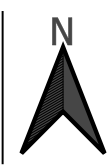
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 Kerikeri Subdivision & Flood Scheme Investigation and Design

Job Number | 22017
 Revision | 2
 Date | 10/10/2022

D11 - 1% AEP +CC Peak Flood Depths for Existing Situation
 (e2 Flood Model)



Paper Size A3
 100 0 100 200 300 400 m
 Scale: 1 : 10000 (A3)
 Horizontal Datum: NZGD 2000
 Grid: NZGD 2000 New Zealand Transverse Mercator



Legend

- Site Boundary
- Modelled Waterways
- e2 Model Extent

Peak Water Depth (m)

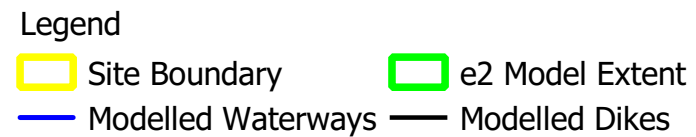
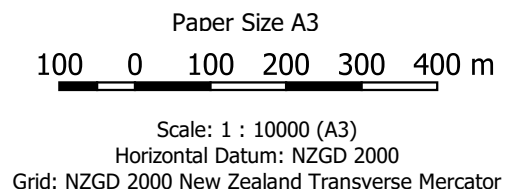
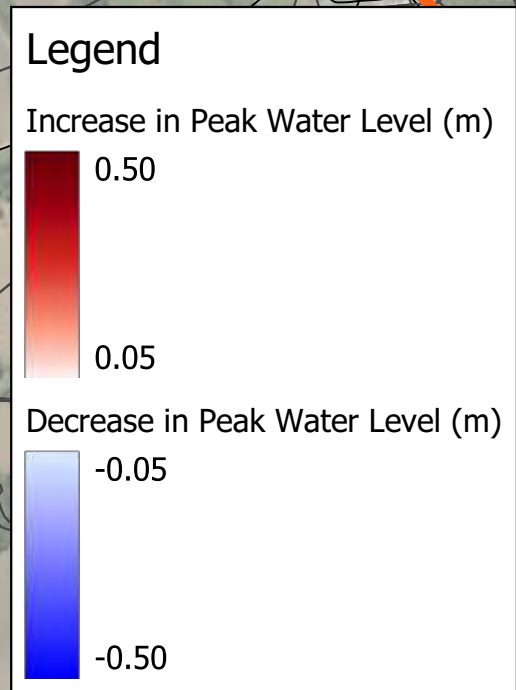
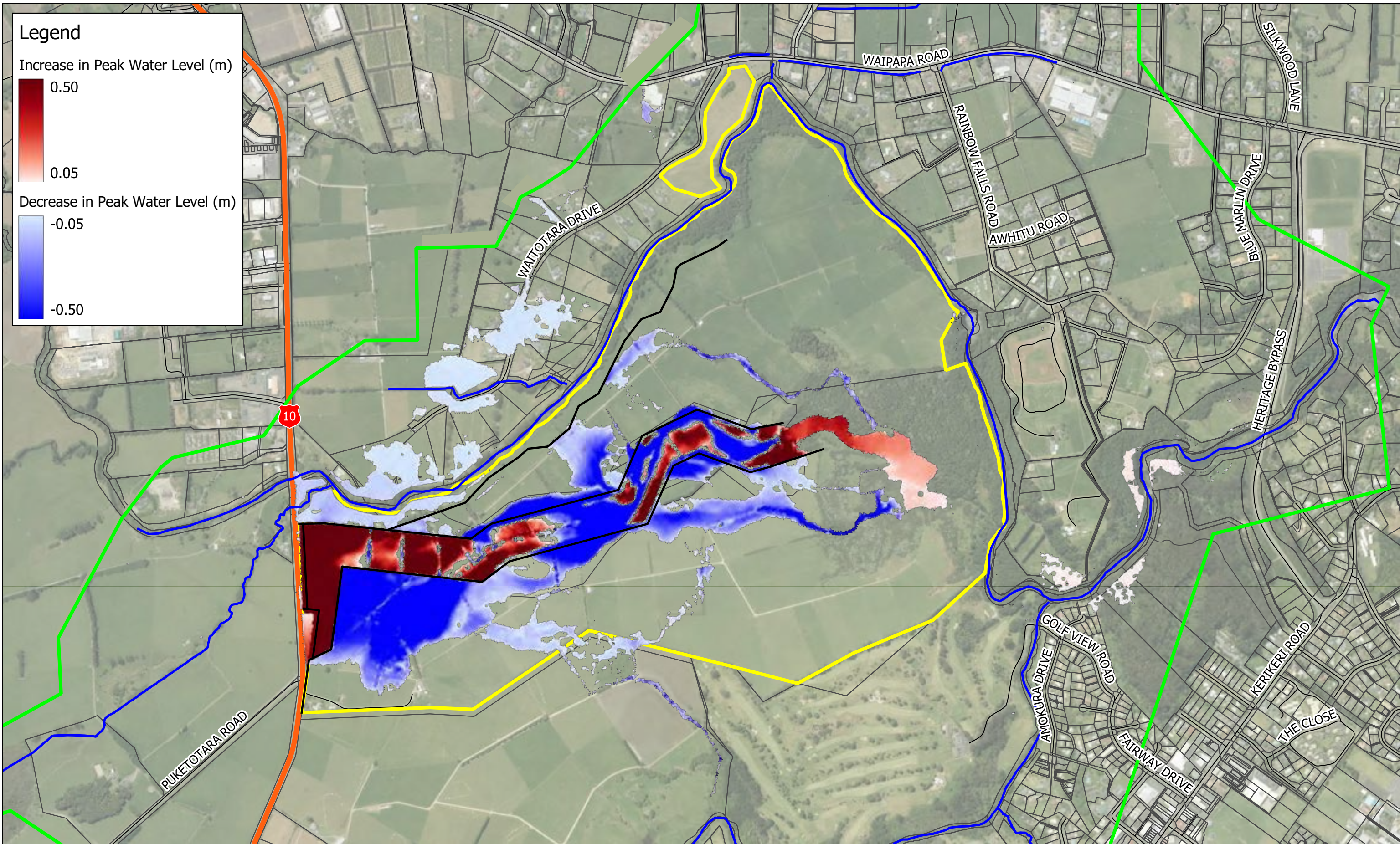
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Kiwi Fresh Orange Company Limited
 Kerikeri Subdivision & Flood Scheme Investigation and Design

Job Number | 22017
 Revision | 2
 Date | 10/10/2022

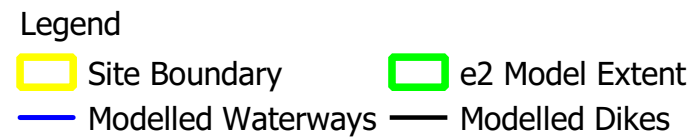
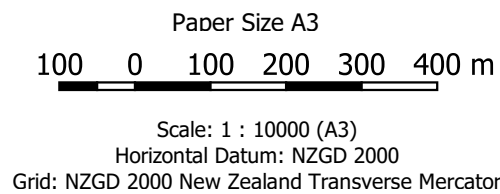
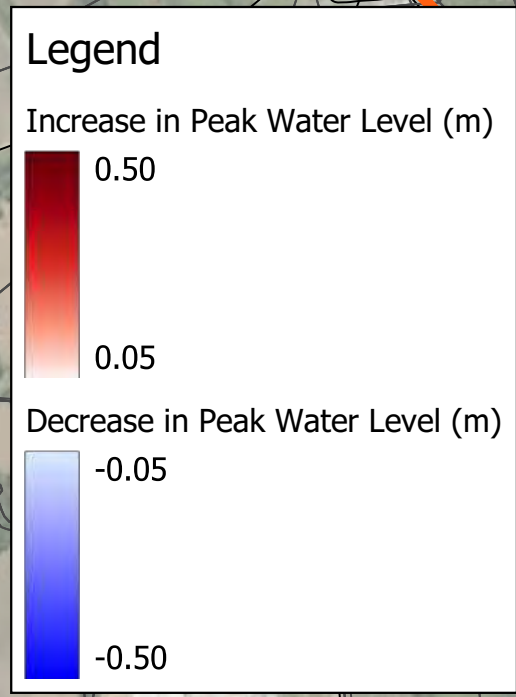
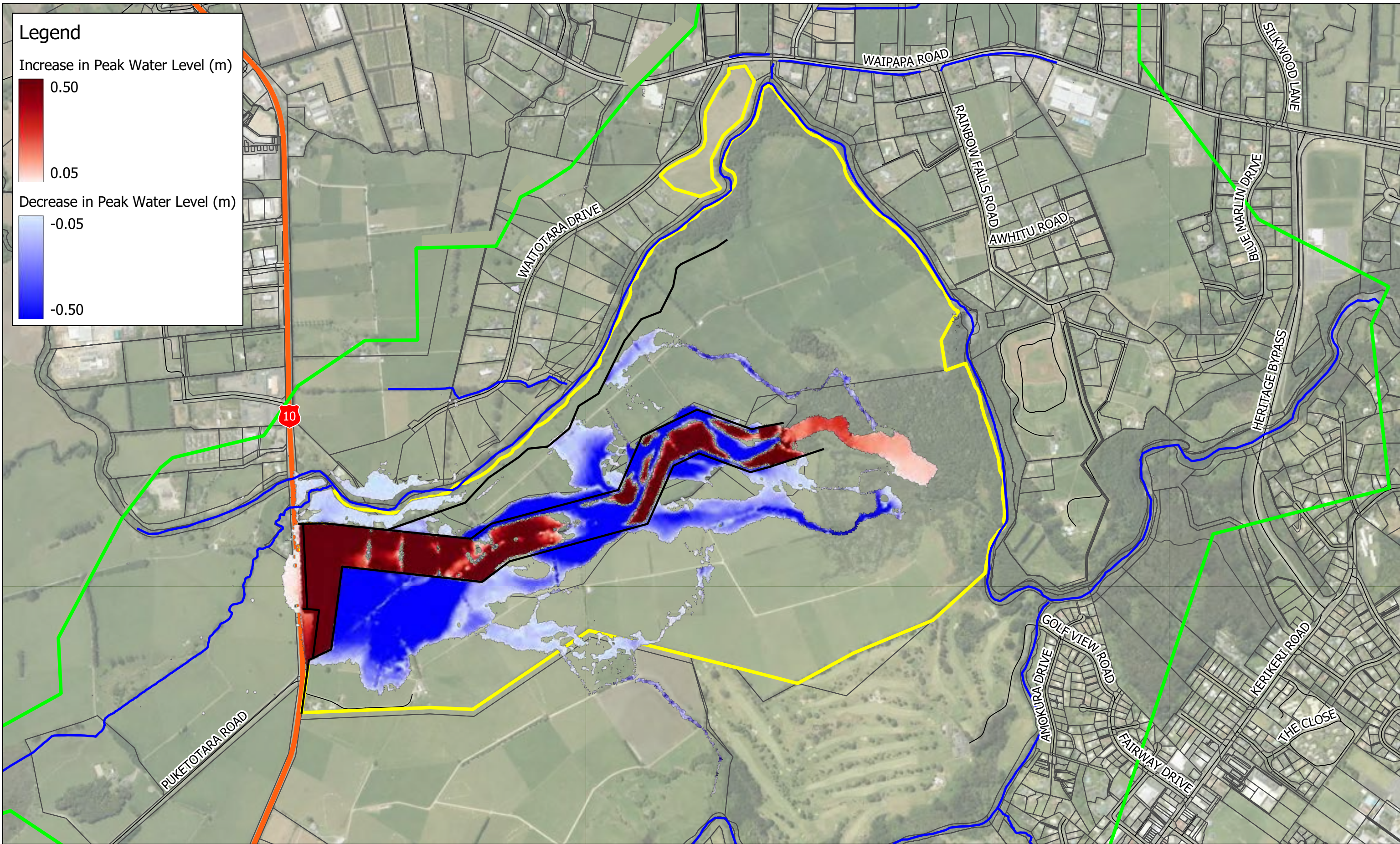
D12 - 1% AEP +CC Peak Flood Depths for Proposed Situation
 (e2 Flood Model)



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 Kerikeri Subdivision & Flood Scheme Investigation and Design

**D13 - 1% AEP +CC Change in Peak Water Levels
 (e2 Flood Model)**

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 Kerikeri Subdivision & Flood Scheme Investigation and Design

Job Number | 22017
 Revision | 2
 Date | 10/10/2022

D14 - 1% AEP +CC (Higher Floodway Roughness) Change in Peak
 Water Levels (e2 Flood Model)



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 Scale: 1 : 10000 (A3)
 Horizontal Datum: NZGD 2000
 Grid: NZGD 2000 New Zealand Transverse Mercator



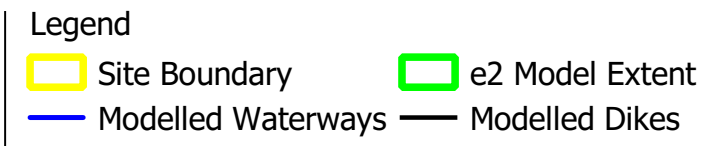
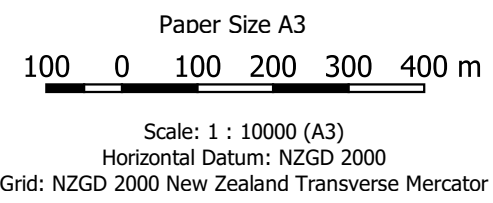
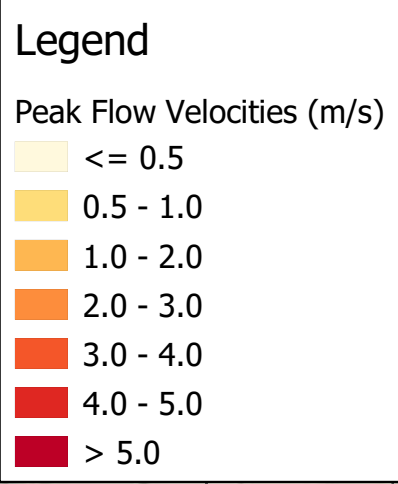
Legend
 Site Boundary
 Modelled Waterways
 e2 Model Extent



Kiwi Fresh Orange Company Limited
 Kerikeri Subdivision & Flood Scheme Investigation and Design

Job Number | 22017
 Revision | 2
 Date | 10/10/2022

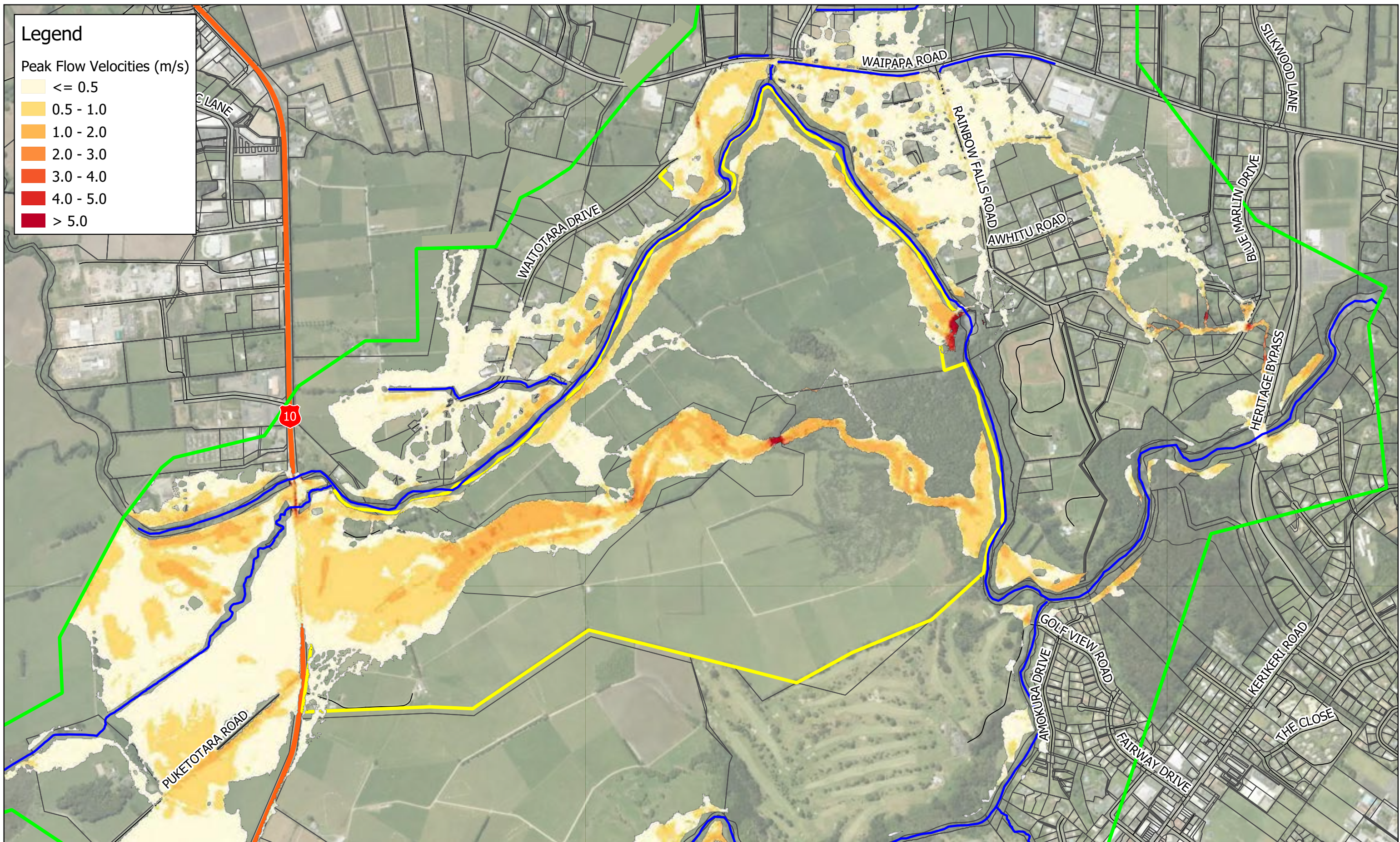
D15 - 10% AEP Peak Flow Velocities for Existing Situation
 (e2 Flood Model)



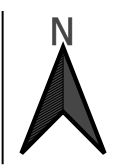
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Job Number | 22017
Revision | 2
Date | 10/10/2022

D16 - 10% AEP Peak Flow Velocities for Proposed Situation
(e2 Flood Model)



Paper Size A3
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 Grid: NZGD 2000 New Zealand Transverse Mercator



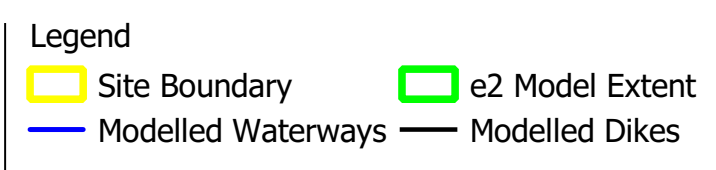
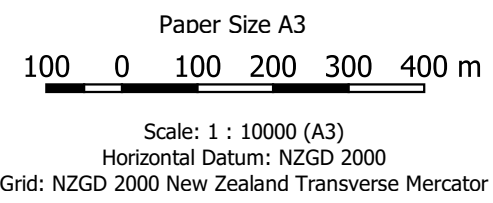
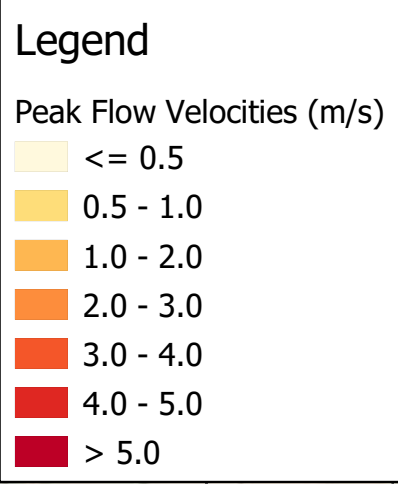
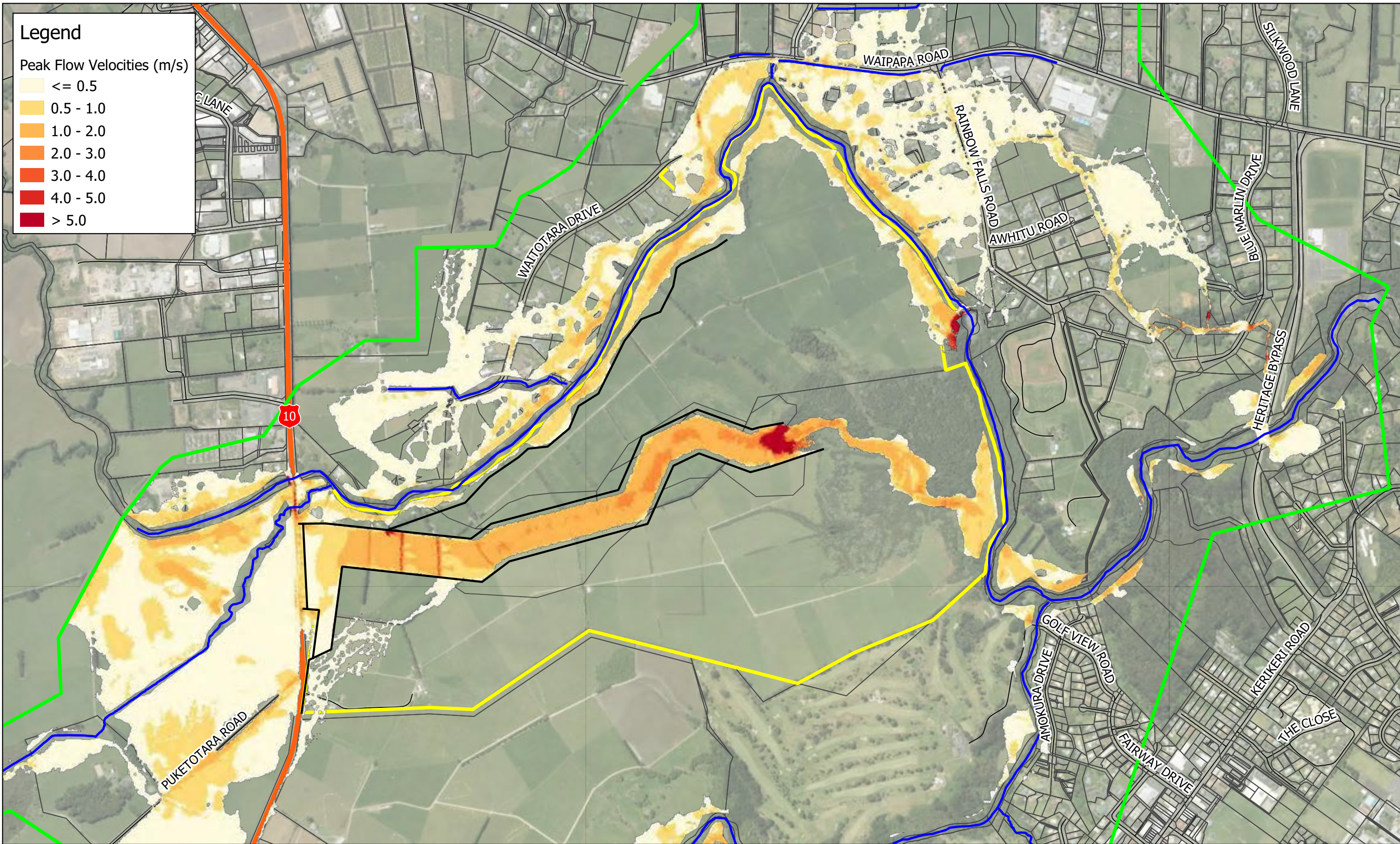
Legend
 Site Boundary
 Modelled Waterways
 e2 Model Extent



Kiwi Fresh Orange Company Limited
 Kerikeri Subdivision & Flood Scheme Investigation and Design

Job Number | 22017
 Revision | 2
 Date | 10/10/2022

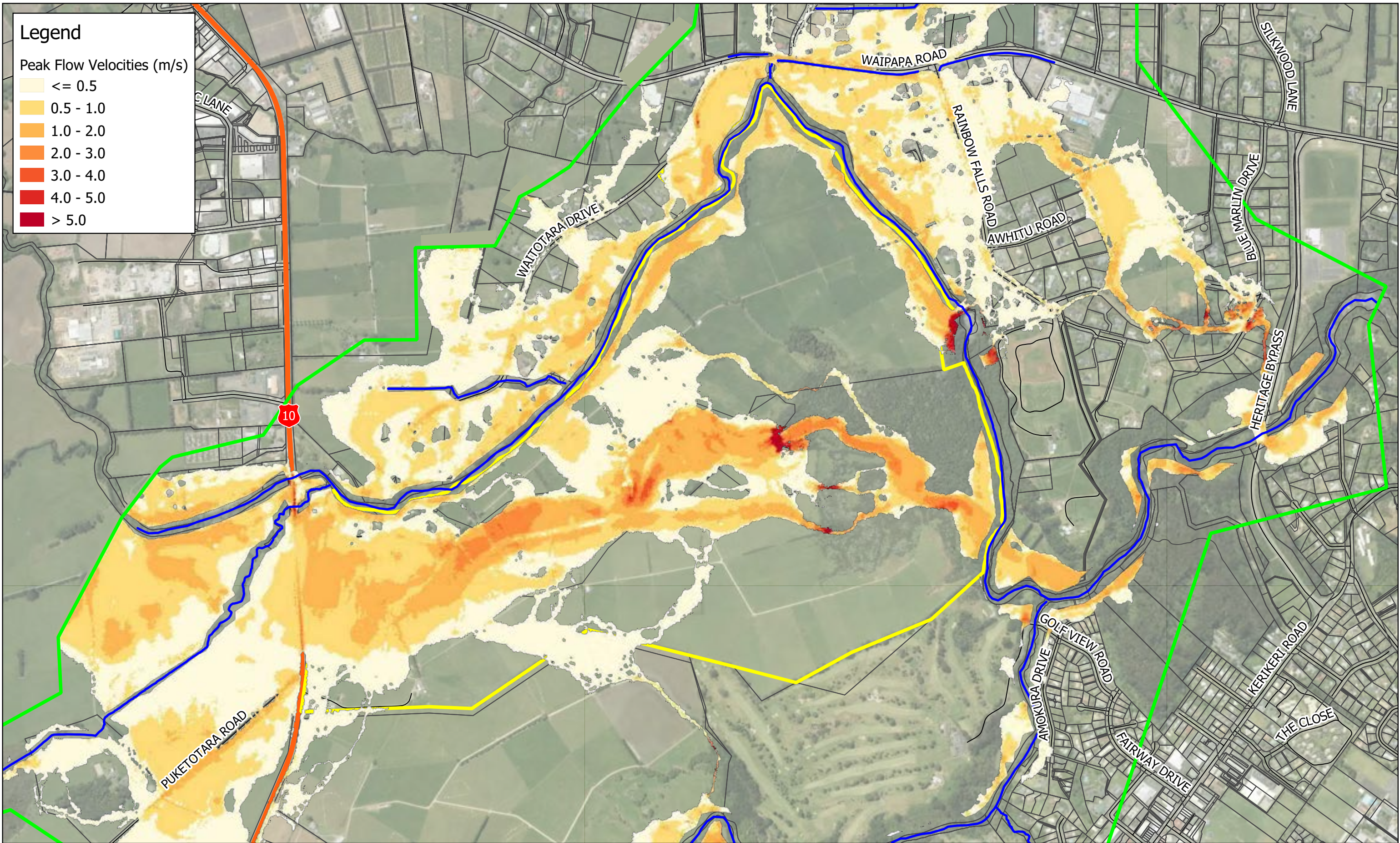
D17 - 2% AEP Peak Flow Velocities for Existing Situation
 (e2 Flood Model)



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 Kerikeri Subdivision & Flood Scheme Investigation and Design

Job Number | 22017
 Revision | 2
 Date | 10/10/2022

D18 - 2% AEP Peak Flow Velocities for Proposed Situation
 (e2 Flood Model)



Paper Size A3
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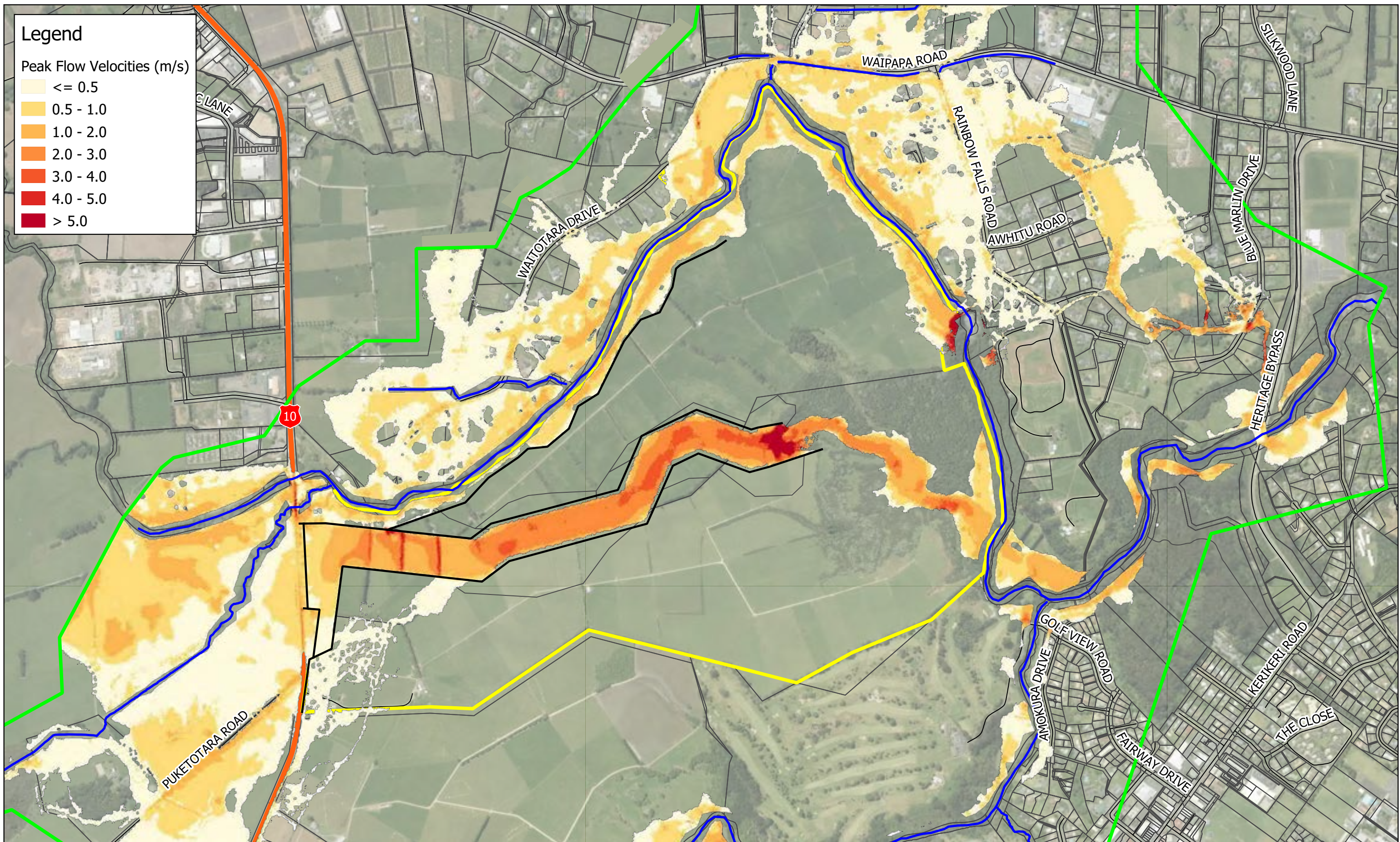
Legend
 Site Boundary
 Modelled Waterways
 e2 Model Extent



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 Kerikeri Subdivision & Flood Scheme Investigation and Design

Job Number | 22017
 Revision | 2
 Date | 10/10/2022

D19 - 1% AEP +CC Peak Flow Velocities for Existing Situation
 (e2 Flood Model)



Legend

Peak Flow Velocities (m/s)

- <= 0.5
- 0.5 - 1.0
- 1.0 - 2.0
- 2.0 - 3.0
- 3.0 - 4.0
- 4.0 - 5.0
- > 5.0

Paper Size A3

100 0 100 200 300 400 m

Scale: 1 : 10000 (A3)

Horizontal Datum: NZGD 2000

Grid: NZGD 2000 New Zealand Transverse Mercator



Legend

- Site Boundary
- Modelled Waterways
- e2 Model Extent
- Modelled Dikes



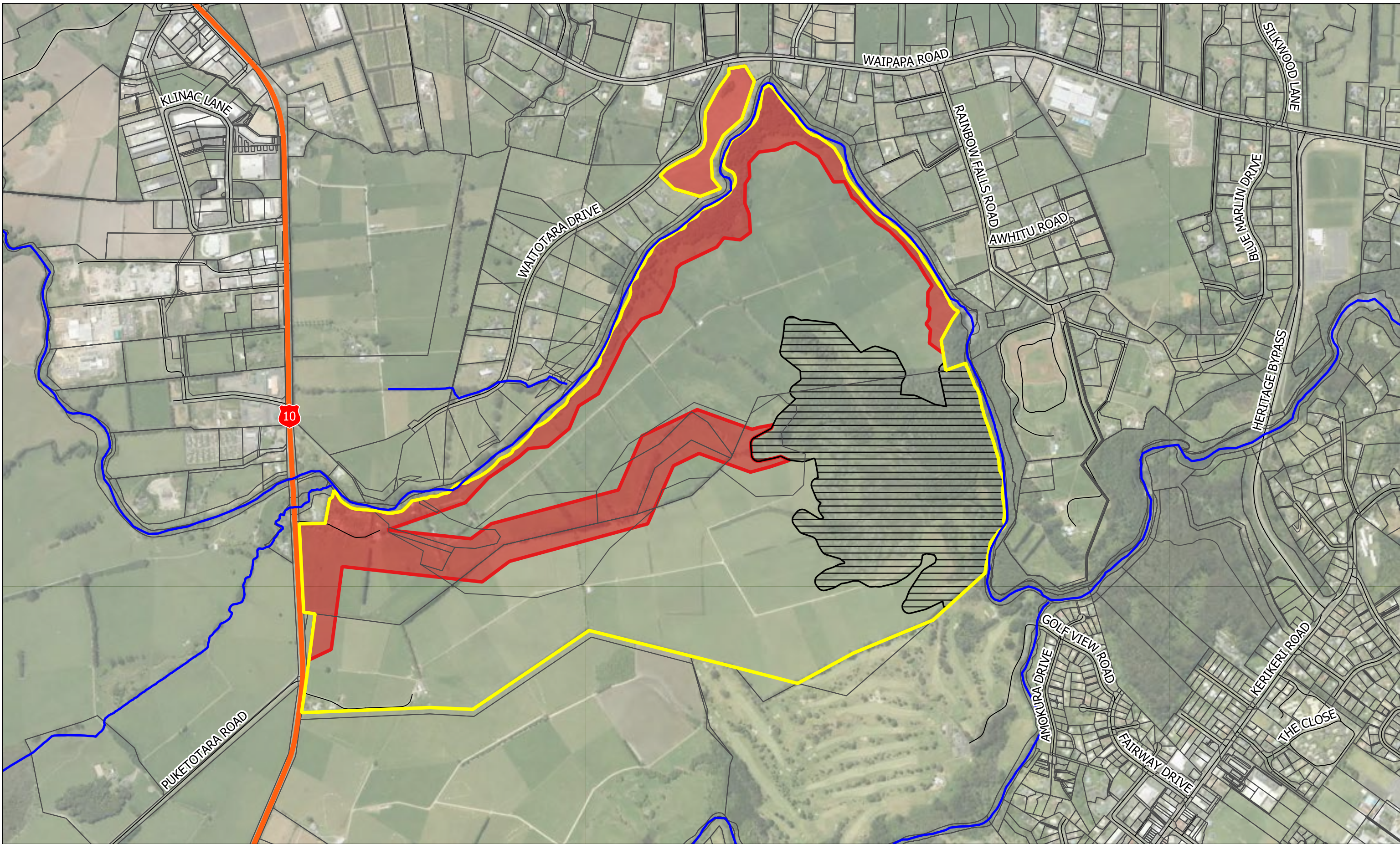
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 Kerikeri Subdivision & Flood Scheme Investigation and Design

Job Number | 22017
 Revision | 2
 Date | 10/10/2022

D20 - 1% AEP +CC Peak Flow Velocities for Proposed Situation
 (e2 Flood Model)

APPENDIX E – POTENTIAL ZONING OPTIONS

- E1 - Plan showing restrictions in development due to flood hazard



Paper Size A3
 100 0 100 200 300 400 m
 Scale: 1 : 10000 (A3)
 Horizontal Datum: NZGD 2000
 Grid: NZGD 2000 New Zealand Transverse Mercator



Legend
 Site Boundary (Yellow outline)
 Key Waterways (Blue line)
 Required for Flood Hazard (Red fill)
 Other Site Constraints (Hatched area)



Kiwi Fresh Orange Company Limited
 Kerikeri Subdivision & Flood Scheme Investigation and Design
 E1 - Zoning Restrictions Due to Flood Hazard

Job Number | 22017
 Revision | 2
 Date | 10/10/2022

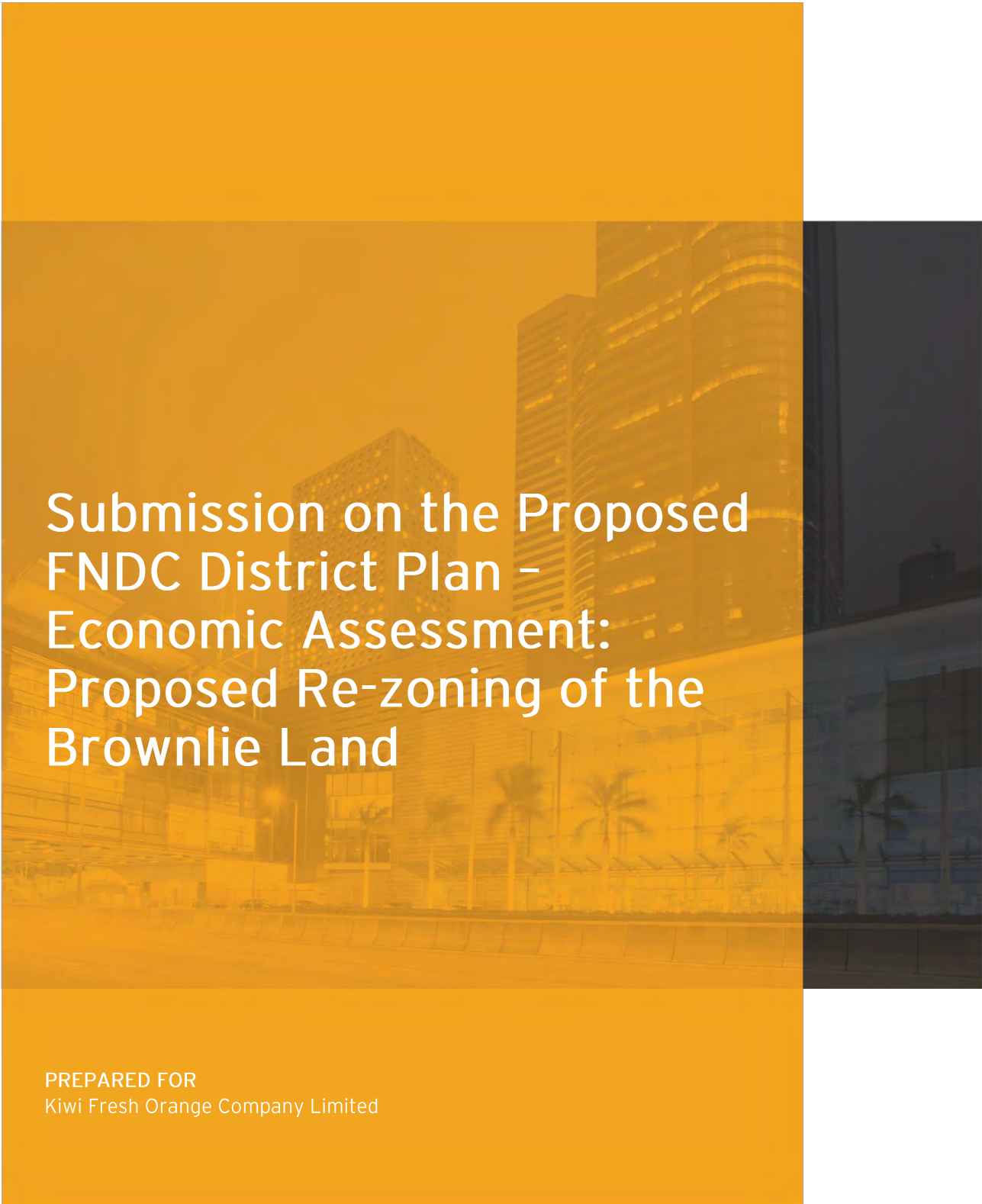
e2Environmental Ltd.

46 Acheron Drive

PO Box 31159

Christchurch NZ

<https://www.e2Environmental.com>



Submission on the Proposed
FNDC District Plan -
Economic Assessment:
Proposed Re-zoning of the
Brownlie Land

PREPARED FOR
Kiwi Fresh Orange Company Limited



ABOUT US

OUR AREAS OF EXPERTISE

Economic Analysis

Our work aims to bridge the gap between land-use planning and urban economics. Our focus is on the interaction between land markets, land-use regulations, and urban development. We have developed a range of methodologies using a quantitative approach to analyse urban spatial structure and audit land-use regulations.

Property Research

We provide property and retail market research to assist with planning and marketing of new projects. This includes identification of new sites and market areas, assessments of market potential and positioning, and the evaluation of market-feasibility of specific projects.

Development Advisory

We provide development planning and costing advisory services to support small and large-scale developments.

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CONTENTS

1.	EXECUTIVE SUMMARY	5
2.	THE PROPOSAL	9
3.	POPULATION GROWTH ANALYSIS.....	11
3.1.	Population/Household Growth Analysis Study Area.....	11
3.2.	Auckland Exodus and the Rise of the Regions.....	12
3.3.	Drivers of Population Growth in the Far North.....	20
3.4.	Far North and Kerikeri Population Projections.....	22
3.5.	Infometrics Methodology Commentary.....	25
4.	ASSESSMENT OF COMMERCIALY FEASIBLE HOUSING IN KERIKERI-WAIPAPA	26
5.	HOUSING DEMAND ANALYSIS.....	28
5.1.	First Home Buyers.....	28
5.2.	Demand by Dwelling Price.....	31
5.3.	Kerikeri-Waipapa Sales Profile.....	33
6.	HOUSING DEVELOPMENT CAPACITY	34
7.	COMMERCIAL AND EMPLOYMENT CENTRE	37
8.	RETIREMENT VILLAGE DEMAND AND SUPPLY	39
8.1.	Retirement Village Supply	39
8.2.	Retirement Village Demand.....	41
9.	HOTEL & TOURISM MARKET ASSESSMENT	43
10.	EMPLOYMENT & GDP IMPACT	47
10.1.	Employment & GDP Generation from Construction	47
10.2.	Employment & GDP Generation from Ongoing Operation.....	47
10.3.	Rates Contributions.....	48
10.4.	Summary of Employment & GDP Generation.....	48
11.	ECONOMIC EFFICIENCIES OF INFILL AND GREENFIELD DEVELOPMENT.....	49
12.	NPS-UD PROVISIONS	50
13.	NPS-HPL PROVISIONS.....	52
14.	ECONOMIC COSTS AND BENEFITS	53
15.	CONCLUSION & RECOMMENDATIONS.....	54



16.	APPENDIX 1: KERIKERI-WAIPAPA DWELLING PRICE REGRESSION ANALYSIS.....	55
17.	APPENDIX 2: COMMERCIAL FEASIBILITY MODELLING METHODOLOGY	56
18.	APPENDIX 3: KERIKERI TOWN POPULATION ESTIMATES	61
19.	APPENDIX 4: INDICATIVE GREENFIELD & INFILL DWELLING PRICES.....	65



1. Executive Summary

New Zealand's population increased by 32,600 for the year ending March 2021 and by 63,000 for the year ending March 2022.

By comparison the Auckland population has declined by 1,300 people for the year ending March 2021 and by 4,500 for the year ending March 2022. This is the first decline Auckland has seen since 1861 and this exodus has led to the rise of the population in the regions.

An analysis of the impact of house prices on population growth shows that, in broad terms, cities with average house prices of over \$600,000 achieved growth that would be below the projected growth, and conversely, cities with average house prices of less than \$600,000 achieved growth that was above projected growth.

Far North's annual population growth has increased from around 300 people per annum over the 2000-2012 period to around 1,500 per annum over the 2012-2020 period. This represents a major step-change in the Far North's population growth and has now been occurring for ten years.

There have been some notable demographic changes that have underpinned population growth in Kerikeri since 2014. This has been driven by an increase in empty nesters and retirees entering the town. This is likely because Kerikeri is a popular destination for Aucklanders looking to move into the Far North, given it is the largest town and offers a range of amenities (retail, community, recreation, etc).

Over the 2013-2021 period, the population for Kerikeri increased by around 310 per annum. Both Statistics NZ and Infometrics expect this growth to drop over the 2023-2028 period, to 160 and 220 respectively, a drop of 48% and 29%. By contrast, the UE Medium projections are for an increase to 500 people per annum over the 2023-2028 period, and the UE High projections are for an increase of 760 people per annum over the 2023-2028 period.

Plan Enabled Capacity

Urban Economics have undertaken an assessment of plan enabled capacity, with similar results to the estimates prepared by the Far North District Council. This shows total capacity in Kerikeri-Waipapa for 3,450 dwellings under the Without Multi-Unit Rule and for 5,560 dwellings under the With Multi-Unit Rule.

To determine the commercially feasible capacity within Kerikeri-Waipapa, four unit type scenarios have been tested. Commercially Feasible Capacity ranges from 1,230-1,460 dwellings under the four scenarios. Commercially Feasible Capacity for multi-unit provisions ranges from 2,410-2,930 dwellings under the four scenarios.

The Reasonably Expected to be Realised Likely Market Scenario capacity ranges from 920-1,090 dwellings under the four unit type scenarios.

Under the UE Medium Projection Scenario there is 5.4-6.4 years of capacity, indicating the short-



term development capacity requirements of the NPS-UD are met, however that the medium and long term development capacity requirements are not.

Under the UE High Projection Scenario there is 3.5-4.2 years of capacity, indicating the short-term development capacity requirements of the NPS-UD are met, however that the medium and long term development capacity requirements are not. This will result in housing becoming more unaffordable.

As the FNDC has not proposed any additional urban zoned land in the PDP in Kerikeri-Waipapa, there is no capacity that would provide additional development capacity, other than infill/redevelopment of the existing zones.

Overall it is concluded that the PDP has insufficient development capacity to meet demand and therefore does not meet the requirements of the NPS-UD.

Affordability

Under the UE Medium Growth projections, first home buyer households will increase from approximately a 11% share of the market in 2021, to 27% in 2031 and 52% in 2051. The UE high Growth projections achieve a similar growth in market share.

45% of households in Kerikeri-Waipapa earn less than \$50,000 per annum. This is a considerable barrier to entering the housing market for first home buyers, with 21% of all buyers requiring a dwelling for under \$600,000.

Under all projections, apart from Statistics NZ, at least half of households in Kerikeri-Waipapa will be unable to afford dwellings of more than \$600,000. This highlights the importance of increasing housing supply in the lower price bands, which will place downward pressure on the price of housing, and make housing more accessible to lower income households.

The majority of stand alone dwellings in Kerikeri-Waipapa sold over the past two years sold for between \$600,000-\$1,000,000, with very few selling for under \$600,000.

In broad terms, greenfield developments enable developers to produce dwellings at a more affordable price than infill developments. This is due to the lower 'raw land cost' and the economies of scale which enable the developers to efficiently produce lots and dwellings. In the case of Kerikeri-Waipapa, stand alone greenfield houses can be supplied for \$634,000 on average, which is \$285,000 or 47% more affordable than infill stand alone houses. Greenfield terrace houses can be supplied for \$544,000 on average, which is \$125,000 or 23% more affordable than infill terrace houses.

Retail Market

There is market demand for an estimated 5,870m² of convenience retail floorspace in 2022. This increases to 6,930m² in 2027, 8,810m² in 2032, and to 11,790m² in 2041. There is a total of 7,500m² of convenience retail, including a supermarket, anticipated for the proposed commercial and employment centre. A centre of this size would have a function that would not adversely compete



with the town centre, given its primary function would be access to day-to-day goods and services. It is recommended that the submission zone provisions have a 'retail floorspace cap' of 7,500m² that applies to specialty retail stores and a supermarket, with a discretionary (or similar) activity status for additional floorspace.

Retirement Market

There are four retirement villages in Kerikeri-Waipapa, with a total of 500 occupied units, 260 planned units and 10 vacant units. This amounts to a total supply of 770 units.

The total vacancy rate of the retirement villages in Kerikeri-Waipapa is low at 2%, indicating a shortage of supply relative to demand.

Kerikeri-Waipapa will have demand for two additional retirement villages by 2032 and for five additional retirement villages by 2041. These estimates are considered to be conservative given locations such as Kerikeri are expected to attract a higher proportion of Auckland residents for retirement housing over the next 1-2 decades, due to the relative affordability and lifestyle offered in the Far North District.

Hotel Market

The hotel market in the Far North saw an upward trend in the number of occupied rooms and the occupancy rate in the years leading up to 2020. There was an increase from 80,000 occupied rooms in 2012 to 107,000 occupied rooms in 2019, representing a 34% increase in the number of rooms occupied over a seven year period (approximately 5% growth per annum).

The proposed hotel will be of a medium-large scale, at approximately 80-120 rooms. This is comparable to the medium-large scale hotels found in other locations within the Far North District.

Contribution to GDP and Employment

The construction of the proposed residential dwellings and commercial and employment centre would result in a net additional value-added to GDP per annum of \$14.7 million, a present value of \$166.4 million over the construction period of approximately 14-15 years, generating approximately 1,500 FTE jobs.

The net additional household expenditure is estimated to result in a value-added to GDP per annum of approximately \$21.6 million. This equates to a present value of \$280.8 million over a 30-year period. This supports the equivalent of approximately 261 FTE jobs within the district.

Over a 30-year period, the proposed development would result in a net present value of \$503.6 million and an additional 1,740 FTE jobs over the base case. This is a considerable net economic benefit.

The proposed development would displace 112 hectares of rural land currently valued at approximately \$9,680,000. The value-added per annum of the displacement of land suitable for agricultural use is approximately \$0.1 million with a present value of \$2.1 million over a 30-year



period. This is a relatively small economic cost to consider. It should be noted that there are economic efficiencies that can be achieved from utilising other rural land which has horticultural infrastructure services already in place.

The proposal would have economic benefits that far outweigh the economic costs and is recommended for approval. This recommendation is subject to the retail floorspace cap outlined in Section 7.



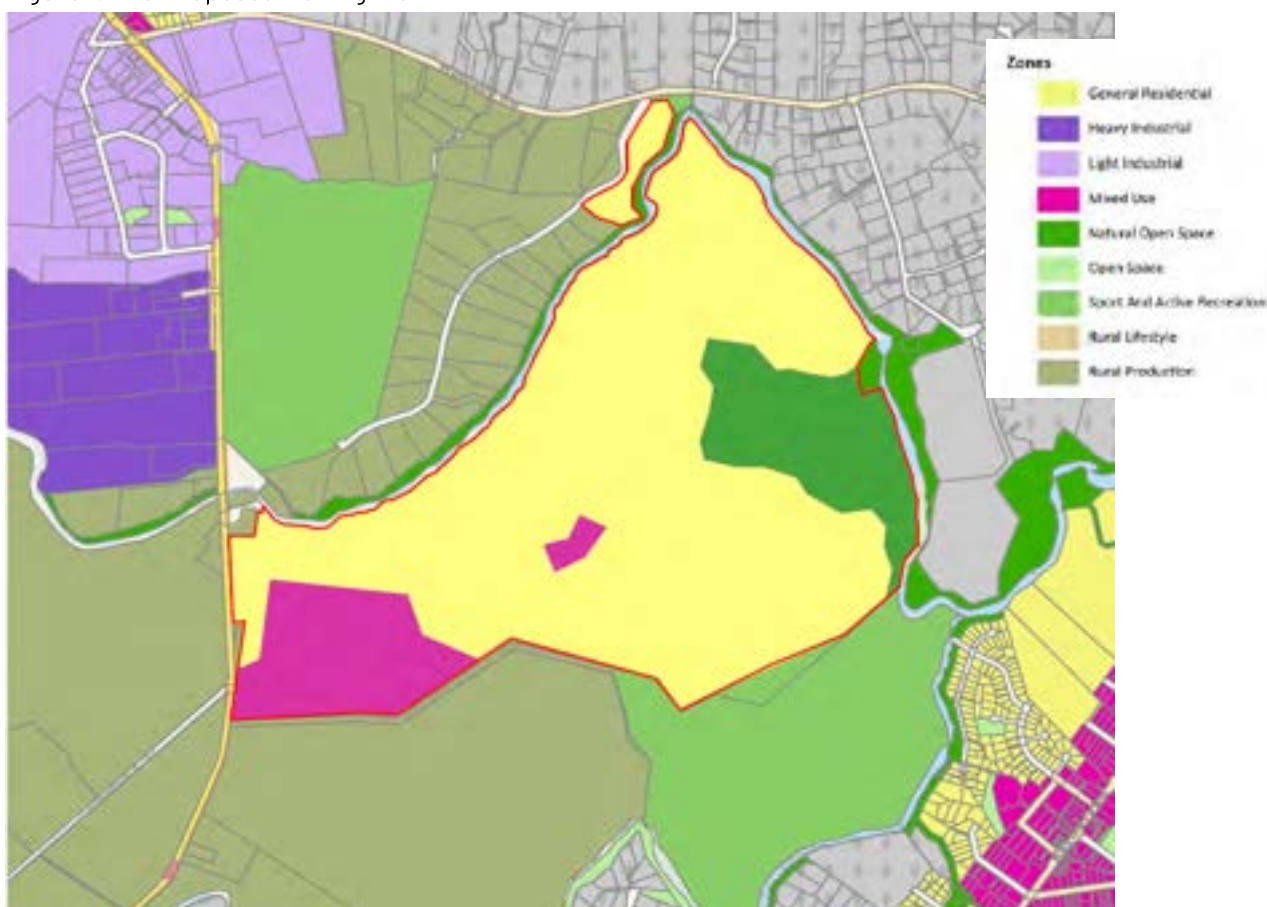
2. The Proposal

This submission on the Far North District Council (FNDC) Proposed District Plan is for large mixed-use development located between Kerikeri and Waipapa. This is referred to as the Submission in this report. Figure 1 shows the proposed zoned areas and Figure 2 provides an estimate of the scale and composition of activities this would enable. The medium yield is considered most likely. In broad terms this includes:

- A **Commercial and Employment Centre** of 15.4 hectares (net), comprised of:
 - A retail centre focused on providing access to day-to-day goods and services for the residents of the development and surrounding area. This would include approximately 5,000m² of specialty retail stores, a medium supermarket (2,000 - 3,000m²), and potentially another large format retail store. In total there would be appropriate 12,500m² of retail floorspace within the proposed centre. This significantly smaller than the Kerikeri town centre.
 - A light industry area with approximately 15,000m² of floor area. This would provide local access to employment and would attract firms that service the wider Far North District that require a high amenity and accessible location.
 - A range of other activities that are typical in medium scale commercial centres, including commercial services, office, accommodation, recreation and health.
 - A small amount of residential above grade.
- Two small **Local Centres** providing walking access to cafes, dairies, etc.
- A **Hotel and Tourism** facility, including a medium scale hotel of 80-120 units, potentially associated with a tourism facility, which could for example have an agricultural, recreation or cultural focus.
- A **Residential Development** on 60.9 hectares (net), yielding approximately 1,830 dwellings.



Figure 1: The Proposed Zoning Plan



Source: Pacific Environments Architects

Figure 2: The Proposed Zoning Plan Yield Estimates

Proposed Zones	Type	Total Land (Gross Ha)	Total Land (Net Ha)	Low	Medium	High
Mixed Use	Commercial and Employment	22.0	15.4	33,400m ²	44,500m ²	55,600m ²
Mixed Use	Local Centre	1.5	1.1	1,500m ²	2,000m ²	2,500m ²
Hotel & Tourism	Accommodation	1.0	0.7	5,600m ²	7,500m ²	9,400m ²
Local Centre	Local Centre	0.5	0.4	400m ²	500m ²	600m ²
Sub Total		25.0	17.6	40,900m²	54,500m²	68,100m²
Residential	Dwellings	87.0	60.9	1,220	1,830	2,440
Total		112.0	78.5			

Source: Urban Economics, Pacific Environments Architects



3. Population Growth Analysis

This section provides an analysis of the population and household growth potential for the Far North and Kerikeri.

3.1. Population/Household Growth Analysis Study Area

The following figure shows the study area used in the population growth analysis to define Kerikeri's urban and rural areas¹. In total this includes both Kerikeri and the surrounding smaller towns of Waipapa, Riverview and Puketotara. It should be noted that the Kerikeri-Waipapa area is shown as the Kerikeri Urban Area in Figure 3 and is anticipated to achieve approximately 85% of growth in the total study area.

Figure 3: Study Area



Source: Statistics NZ, Urban Economics

¹ Appendix 3 includes a definition of the Kerikeri Urban area that responds to the NPS-UD definition. This is slightly larger area than the urban area shown in Figure 3. However, in order to rely on the Statistics NZ SA2s, for various analyses in this report, and to enable comparison with existing FNDC analyses, the urban area shown in Figure 3 has been adopted for the purpose of the economic assessment.

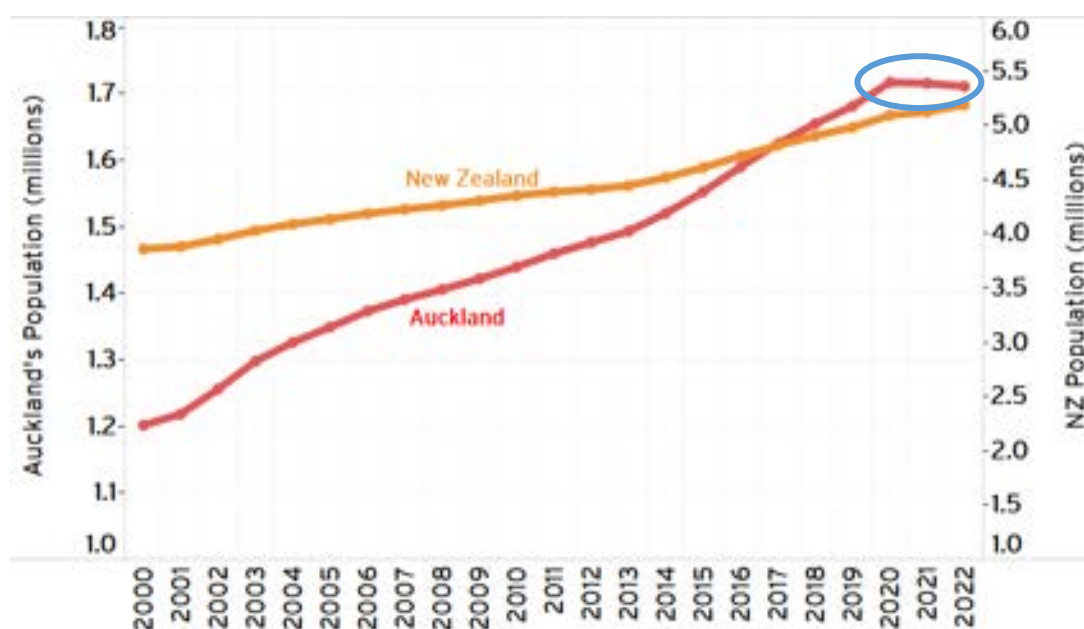


3.2. Auckland Exodus and the Rise of the Regions

New Zealand has experienced strong population growth over the past two decades and this continued through the Covid 19 period, including years ending March 2021 and 2022. New Zealand's population increased by 32,600 for the year ending March 2021 and by 63,000 for the year ending March 2022.

By comparison the Auckland population has declined over the last two years, by 1,300 people for the year ending March 2021 and by 4,500 for the year ending March 2022. This is the first decline Auckland has seen since 1861 and this exodus has led to the rise of the regions. This is likely to be the defining national demographic trend of the 2020s and of central importance for places that are the recipients of the outflow from Auckland.

Figure 4: NZ and Auckland Growth 2000-2021

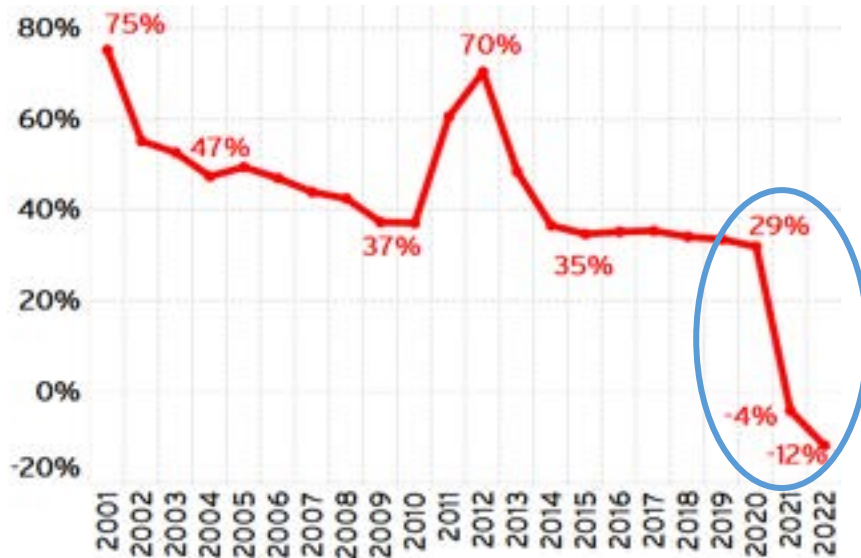


Source: Statistics NZ

Auckland's share of the national population growth has declined from 75% in 2001 to 29% in 2020. The only exception was a brief period following the Christchurch earthquake, during which time Auckland attracted population leaving Christchurch. Over the year ending 2021 Auckland's share of national population growth was -4% and over the year ending 2022 Auckland's share of national population growth was -12% (i.e Auckland's population declined for these two years).



Figure 5: Auckland Share of the National Population Growth 2000-2022



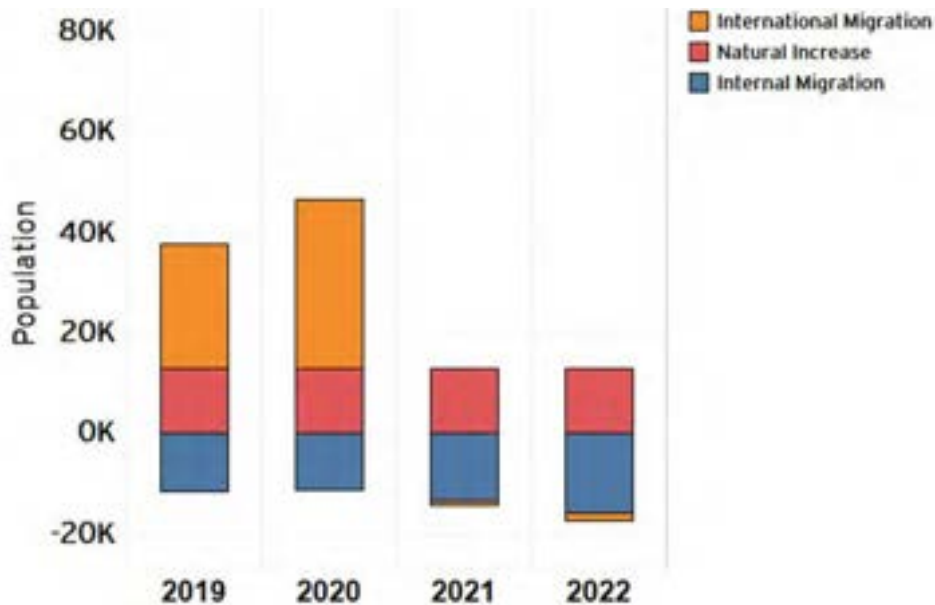
Source: Statistics NZ

A city's growth is comprised of natural population growth (births minus deaths), international migration (the net in/outflow to overseas countries) and internal migration (the net in/outflow from other cities in New Zealand).

As shown in Figure 6, Auckland's natural growth has been steady, at around 12,900 per annum (shown in red) over the 2019-2022 period. However, the internal migration (shown in blue) has been in decline with around 11,400 people leaving Auckland for the 2019 and 2020 years, increasing to 13,500 in 2021 and 15,900 in 2022. Overall, the New Zealand born population has been in decline and this rate of decline is increasing. This trend is expected to continue. By contrast, the international migration in Auckland has been historically strong, and recently this was 25,000 for 2019 and 33,800 for 2020. With restrictions on international migration over the Covid period, Auckland's only source of population growth was curtailed, and the total population went into decline.



Figure 6: Composition of Auckland's population growth 2019-2022



Source: Statistics NZ

Statistics NZ has been relied upon to prepare population projections for many decades. Statistics NZ has prepared a 2006, 2013 and 2018 base projection, corresponding to the recent census data. As shown in Figure 7, Statistics NZ's projections for Auckland have anticipated an increasing share of the national population growth, for example, the 2006 base projection anticipated Auckland would achieve around 50% of national growth in 2006 and that this would increase to around 70% by 2022. The subsequent two projections were similar. However, as shown by the actual population growth, Auckland has experienced a rapid decline to around 30% of national growth in 2020 (pre-Covid). This is expected to continue to decline to around 25% of national growth post-Covid as shown by the UE Projection in Figure 7.



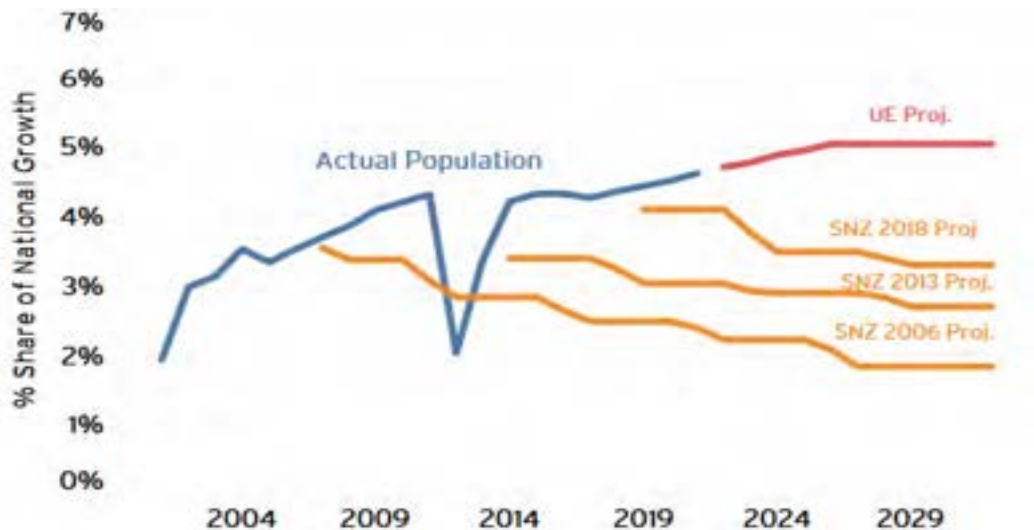
Figure 7 Auckland's Share of National Population Growth 2000-2032



Source: Statistics NZ, Urban Economics

Auckland's declining share of national population growth has been offset by rapid growth in the regions - the rise of the regions. Statistics NZ has consistently underestimated the growth in the regions, as shown in Figure 8.

Figure 8: Regions Share of National Population Growth



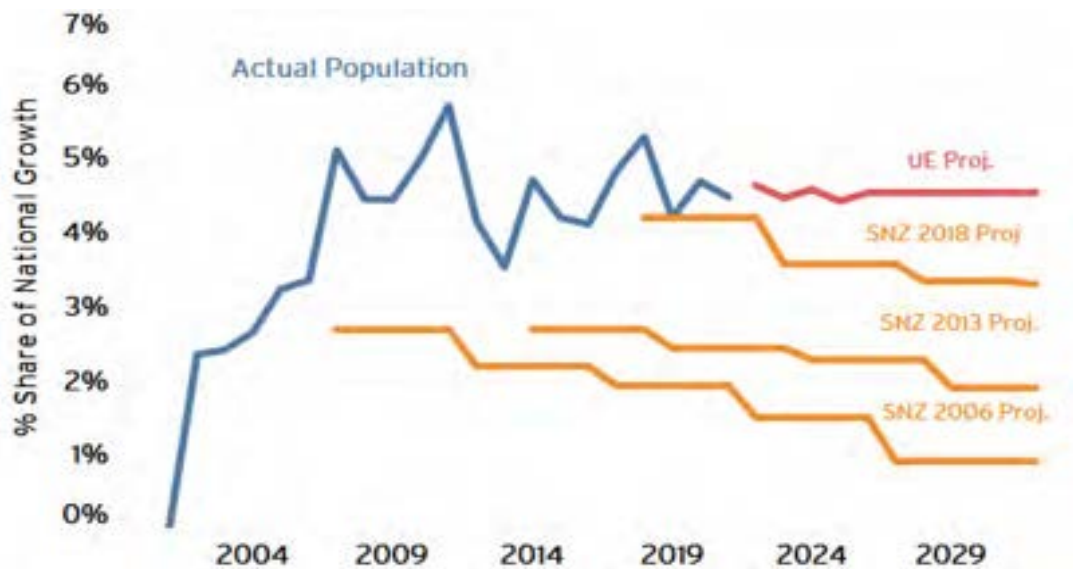
Source: Statistics NZ, Urban Economics

The Far North District has seen the same trend as most other regions and has consistently outperformed Statistics NZ's projections. As shown in Figure 9, Northland has increased from attracting 1-2% of national growth in the early 2000s to around 5% of nation growth over the last



decade.

Figure 9: Northland Share of National Population Growth

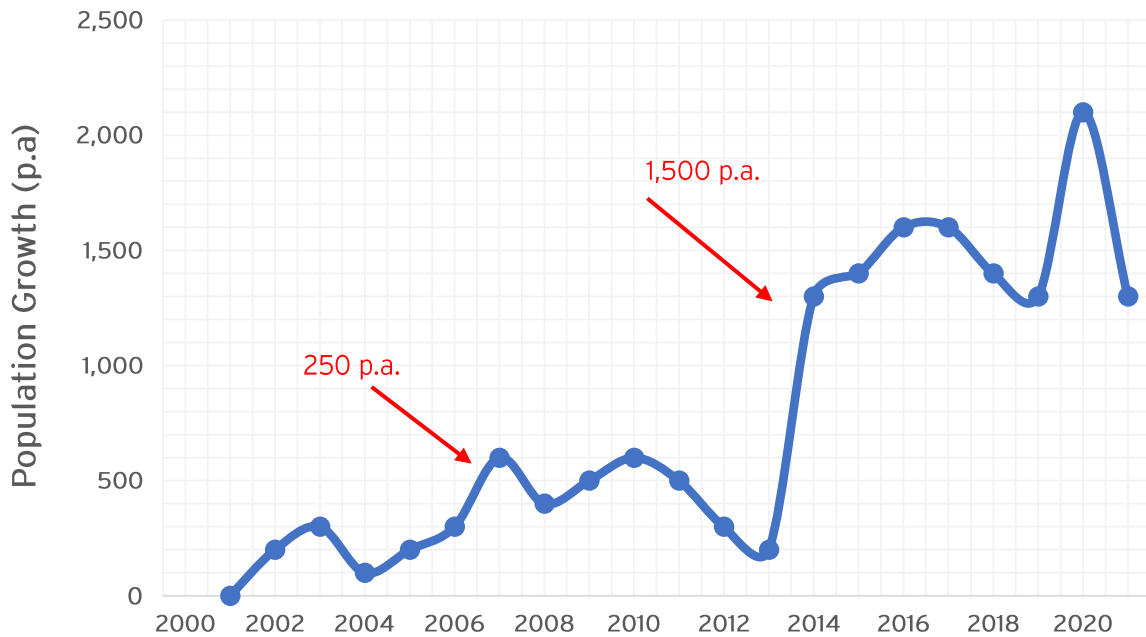


Source: Statistics NZ, Urban Economics

As shown in Figure 10, the Far North District annual population growth has increased from around 300 people per annum over the 2000-2012 period to around 1,500 per annum over the 2012-2020 period. This represents a major step-change in the Far North's population growth and has now been occurring for ten years, confirming it is the established rate of growth and the basis for private sector investment decisions (e.g. the recent Mitre 10 Mega that established in Waipapa would have accounted for this recent rate of growth). It is this recent trend that is most reliable basis for estimating the growth over the next 5-10 years.



Figure 10: Far North District Annual Population Growth (p.a.) 2000-2021



Source: Statistics NZ

There have been some notable demographic changes that have underpinned population growth in the Far North since 2014. This has been driven by an increase in empty nesters and retirees, which increased from a growth of 200-300 per annum pre-2014, to 500-600 per annum post-2014. Perhaps more significant, it was also driven by an increase in young family age population 15-39 and 0-14, both of which were in decline pre-2014 (-300-500 per annum) however increased significantly to the growth of 700-1,000 post-2014. While all population growth contributes positively, it is the increase in family age population that is most interesting, as the Far North has become an attractive destination for younger family aged people. This will support economic growth as the working age population and the ability to attract and support new businesses increases.



Figure 11: Far North Annual Population Growth (p.a.) by Age 1997-2021

Age Range	0-14	15-39	0-39	40-64	65+	Total
1997	0	-100	-100	600	200	700
1998	0	-200	-200	500	100	400
1999	0	-300	-300	500	200	400
2000	-100	-300	-400	500	200	300
2001	-200	-400	-600	400	200	0
2002	-200	-100	-300	400	100	200
2003	-300	0	-300	500	100	300
2004	-300	-200	-500	400	200	100
2005	-200	-200	-400	300	200	100
2006	-100	-200	-300	300	300	300
2007	-100	100	0	400	300	700
2008	-100	-100	-200	300	300	400
2009	0	0	0	200	300	500
2010	100	0	100	200	400	700
2011	100	-200	-100	200	400	500
2012	0	-200	-200	0	500	300
2013	0	-200	-200	0	400	200
2014	0	400	400	400	400	1,200
2015	0	600	600	400	500	1,500
2016	100	700	800	300	500	1,600
2017	300	400	700	200	500	1,400
2018	300	400	700	200	600	1,500
2019	100	400	500	200	600	1,300
2020	200	800	1,000	500	600	2,100
2021	200	400	600	0	600	1,200
5-Year Average	220	480	700	220	580	1,500
% Total Growth	15%	32%	47%	15%	39%	100%

Large step change in population growth

Source: Statistics NZ



Kerikeri has experienced similar demographic changes, however with a slightly higher proportion of empty nesters and retirees entering the town. This is likely because Kerikeri is a popular destination for Aucklanders looking to move into the Far North, given it is the largest town and offered a range of amenities (retail, community, recreation, etc).

Figure 12: Kerikeri Annual Population Growth (p.a.) by Age 1997-2021

Age Range	0-14	15-39	0-39	40-64	65+	Total
2000	70	20	90	110	80	280
2001	10	20	30	110	60	200
2002	20	70	90	130	20	240
2003	50	70	120	180	80	380
2004	40	70	110	160	50	320
2005	50	30	80	170	70	320
2006	70	60	130	130	100	360
2007	70	60	130	150	130	410
2008	50	50	100	140	60	300
2009	70	50	120	80	80	280
2010	80	40	120	80	110	310
2011	40	60	100	30	120	250
2012	20	-10	10	-30	110	90
2013	0	-50	-50	-40	70	-20
2014	-60	70	10	70	110	190
2015	10	50	60	80	160	300
2016	-40	70	30	80	140	250
2017	50	70	120	70	170	360
2018	0	140	140	70	200	410
2019	30	60	90	70	130	290
2020	50	80	130	120	160	410
2021	70	70	140	20	120	280
5-Year Average	40	84	124	70	156	350
% Total Growth	11%	24%	35%	20%	45%	100%

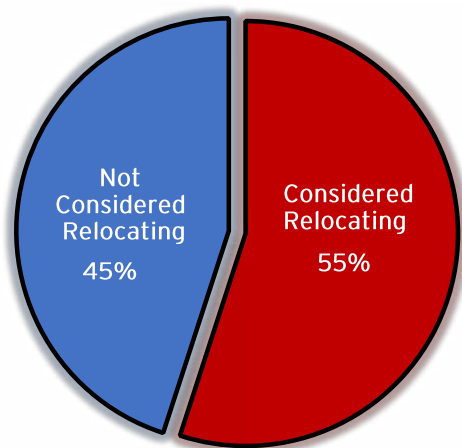
Source: Statistics NZ



3.3. Drivers of Population Growth in the Far North

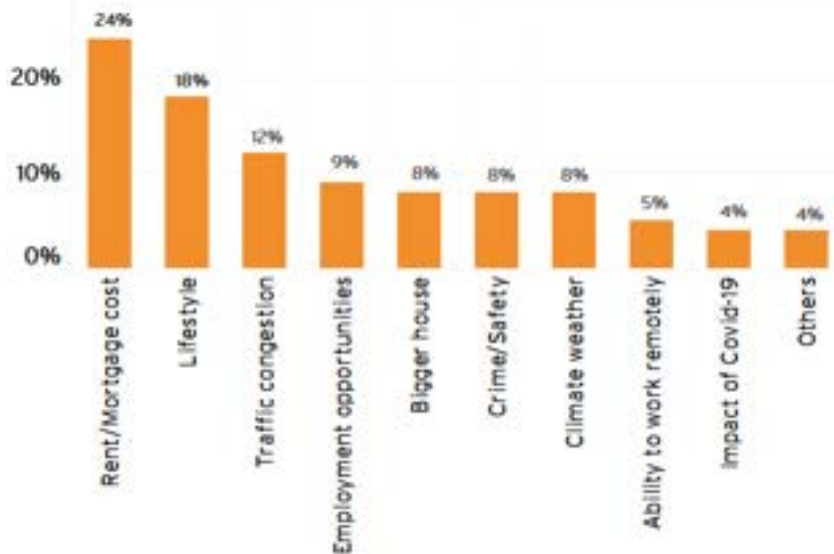
A survey of Auckland residents commissioned by Urban Economics (“UE”) in 2022 found that 55% are considering relocating out of Auckland. The main reasons for this are the cost of mortgage/rent, lifestyle and traffic congestion. This is commonplace in cities that have high house prices, and many locations, such as Sydney and San Francisco, which have similar high housing prices to Auckland, are seeing lower rates of population growth or a declining population. Additionally, around 5% of the Auckland Residents surveyed stated that the ability to work remotely is a contributing factor for considering relocating. This is a growing trend especially following the COVID-19 Pandemic, which allows for more flexibility when choosing where to live. This has resulted in an increased demand for lifestyle locations such as Kerikeri.

Figure 13: Aucklanders Considering Relocating



Source: Urban Economics

Figure 14 Main Reasons for People to Consider Relocating from Auckland



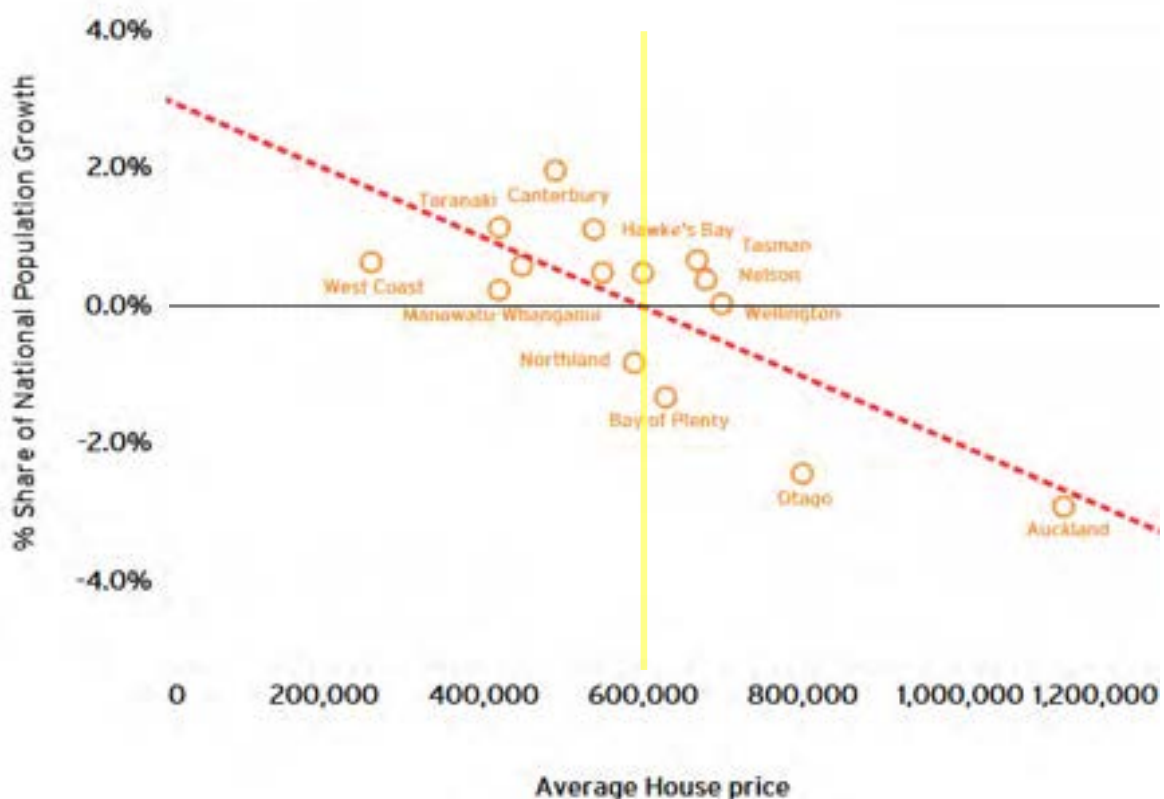
Source: Urban Economics



An analysis of the impact of house prices on population growth, and in particular whether a region performed above or below the projected growth, has been undertaken. The results presented in Figure 11 show that, in broad terms, cities with average house prices of over \$600,000 achieved growth that would be below the projected growth, and conversely, cities with average house prices of less than \$600,000 achieved growth that was above projected growth.

This analysis has a r^2 of 57% indicating a strong correlation. The main implication is that cities that have affordable housing will attract a high rate of growth and vice versa. This has important implications, as regions that enable affordable housing will be able to achieve population and economic growth, at a faster rate than cities that do not enable affordable housing. For regions that have had nil or low growth, this presents an important opportunity to strengthen local economies, provide employment, and attract a diverse population. Far North District has 10-15 year period within which to attract population growth and to a large extent this will depend on the availability of suitable housing options being available, in terms of house type, location, amenity and price, for new residents entering the district.

Figure 15: House Prices and Share of National Population Growth Above/Below Statistics NZ Projections



Source: Statistics NZ, Urban Economics, QV



3.4. Far North and Kerikeri Population Projections

The following figures display the Statistics NZ, Infometrics² and UE population projections for the Far North. Over the 2013-2021 period, the population increased by around 1,500 per annum.

Both Statistics NZ and Infometrics have a pessimistic growth expectation and project growth will drop by 50% over the next year to 750 per annum and by around 60% over the following five years to around 600 per annum. The Infometrics High projection over the 2023-2028 period is for a growth of 880 people per annum, only 56% of the rate seen over the 2018-2021 period.

By contrast, the UE Medium projection estimates growth will continue to be strong at the same approximate amount (1,440 per annum over the 2023-2028 period) and slightly above historic trends under the UE High projections (2,200 over the 2023-2028 period). Given the expectation that there will be a significant inflow of Aucklanders to the Far North, due to high house prices in Auckland and comparatively affordable housing in the Far North, the UE Medium and High projections are considered more reliable basis for land use policy (i.e. there are larger economic costs from undersupplying than oversupplying land). More generally, land use policy should be based on a higher rate of growth, as the costs of underproviding for growth far exceed the costs of underproviding for growth.

Figure 16: Far North Historical Actual and Projected Population 2006-2033

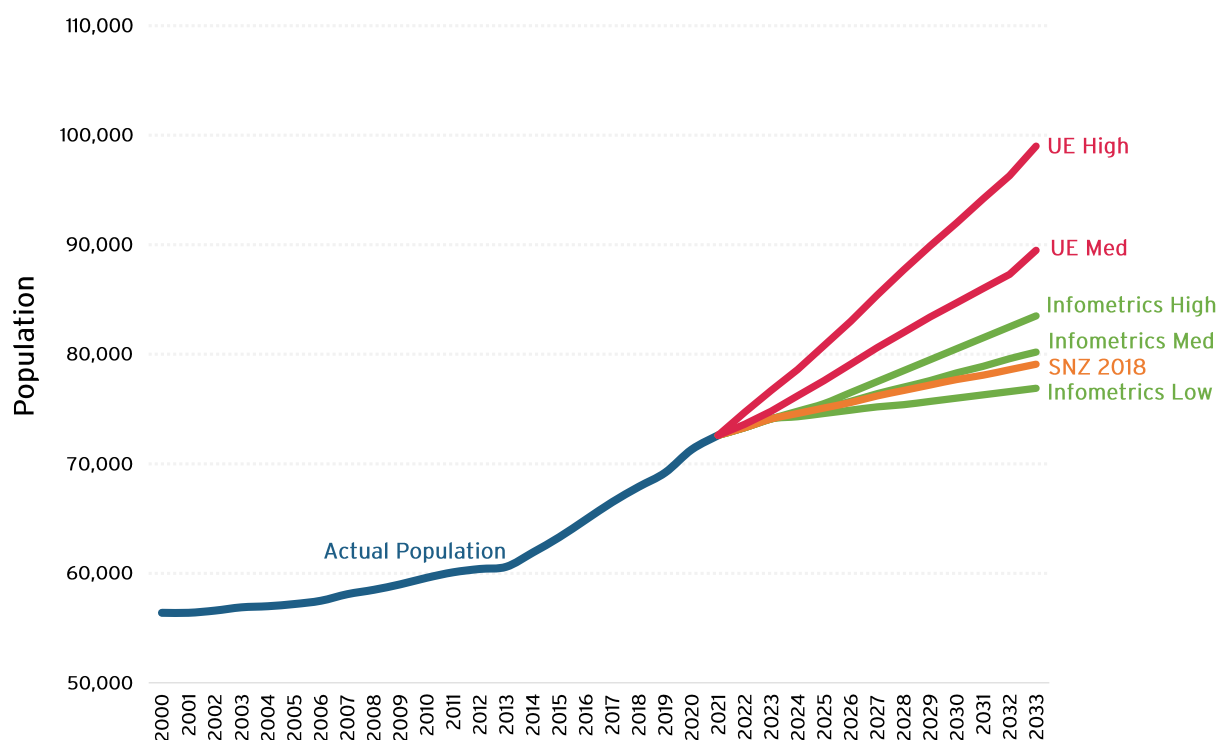
Population	Actual Population			Projection				Growth P.A					
	2006	2013	2018	2021	2023	2028	2033	2006-2013	2013-2018	2018-2021	2021-2023	2023-2028	2028-2033
Stats NZ	57,500	60,600	67,900	72,600	74,100	76,700	79,100	440	1,460	1,570	750	520	480
Infometrics Low	57,500	60,600	67,900	72,600	74,100	75,400	76,900	440	1,460	1,570	750	260	300
Infometrics Med	57,500	60,600	67,900	72,600	74,100	77,000	80,200	440	1,460	1,570	750	580	640
Infometrics High	57,500	60,600	67,900	72,600	74,100	78,500	83,500	440	1,460	1,570	750	880	1,000
UE Med	57,500	60,600	67,900	72,600	74,800	82,000	89,500	440	1,460	1,570	1,100	1,440	1,500
UE High	57,500	60,600	67,900	72,600	76,700	87,700	99,000	440	1,460	1,570	2,050	2,200	2,260
Household	2006	2013	2018	2021	2023	2028	2033	2006-2013	2013-2018	2018-2021	2021-2023	2023-2028	2028-2033
Stats NZ	23,000	24,240	27,160	29,000	29,600	30,680	31,640	180	580	610	280	210	180
Infometrics High	23,000	24,240	27,160	29,000	29,600	30,200	30,760	180	580	610	300	120	110
Infometrics Med	23,000	24,240	27,160	29,000	29,600	30,800	32,080	180	580	610	300	240	260
Infometrics low	23,000	24,240	27,160	29,000	29,600	31,400	33,400	180	580	610	300	360	400
UE Medium	23,000	24,240	27,160	29,000	29,900	32,800	35,800	180	580	610	420	560	580
UE High	23,000	24,240	27,160	29,000	30,700	35,100	39,600	180	580	610	790	850	870

Source: Statistics NZ, Infometrics, Urban Economics

² Completed as part of the assessment for the Far North District Council Section 32 analysis to support the Proposed District Plan.



Figure 17: Far North Historical Actual and Projected Population 2006-2033



Source: Statistics NZ, Infometrics, Urban Economics

The following figures display the Statistics NZ, Infometrics and UE population projections for Kerikeri. Over the 2013-2021 period, the population increased by around 310 per annum. Both Statistics NZ and Infometrics have a pessimistic view and expect this growth to drop over the 2023-2028 period, to 160 and 220 respectively, a drop of 48% and 29%. By contrast, the UE Medium projections are for an increase to 500 people per annum over the 2023-2028 period, and the UE High projections are for an increase of 760 people per annum over the 2023-2028 period.

Given the expectation that there will be a significant inflow of Aucklanders to the Far North, due to high house prices in Auckland and the lifestyle offered in the Far North, and that Kerikeri is emerging as the main large town within the Far North, the UE Medium/High projections are considered to be a more reliable and appropriate basis for land use policy in Kerikeri, as the costs of underproviding for growth far exceed the costs of underproviding for growth.



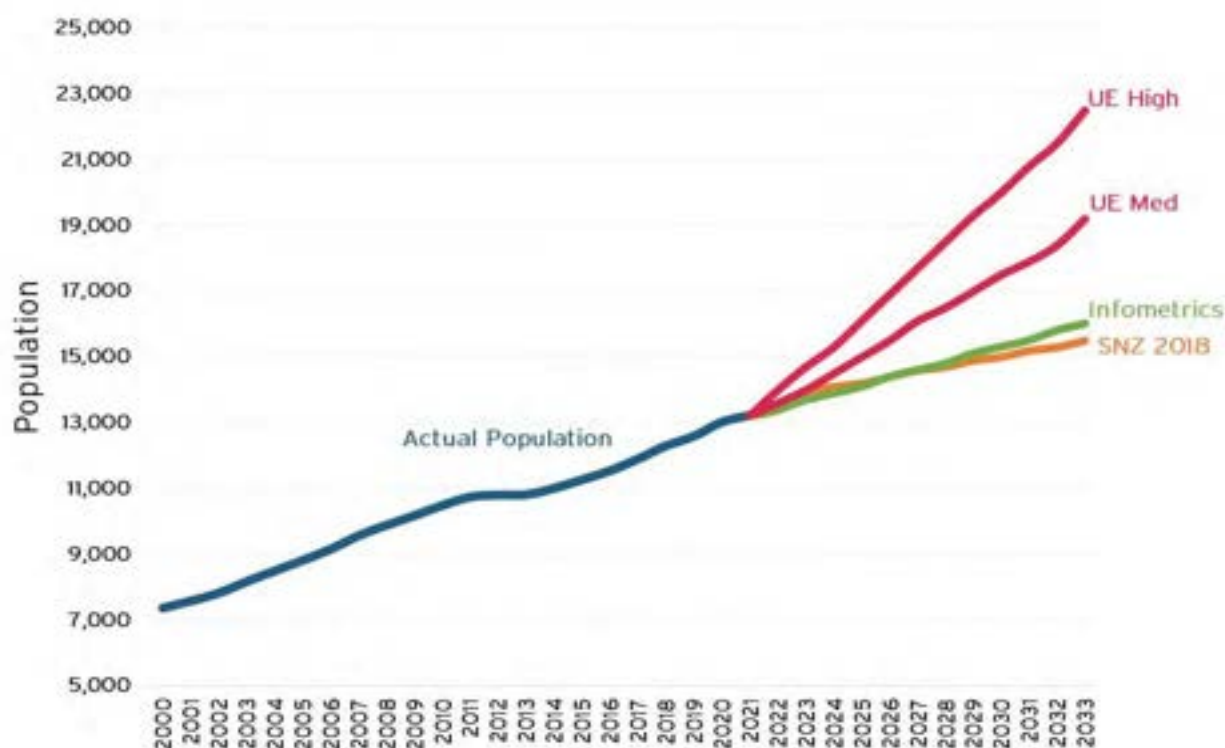
Figure 18: Kerikeri Historical Actual and Projected Population 2006-2031

Population	Actual Population			Projection				Growth P.A					
	2006	2013	2018	2021	2023	2028	2033	2006-2013	2013-2018	2018-2021	2021-2023	2023-2028	2028-2033
Stats NZ	9,150	10,810	12,290	13,220	13,900	14,700	15,500	240	300	310	340	160	160
Infometrics	9,150	10,810	12,290	13,220	13,700	14,800	16,000	240	300	310	240	220	240
UE Med	9,150	10,810	12,290	13,220	14,000	16,500	19,200	240	300	310	390	500	540
UE High	9,150	10,810	12,290	13,220	14,700	18,500	22,500	240	300	310	740	760	800

Household	Actual Population			Projection				Growth P.A					
	2006	2013	2018	2021	2023	2028	2033	2006-2013	2013-2018	2018-2021	2021-2023	2023-2028	2028-2033
Stats NZ	3,700	4,300	4,900	5,300	5,600	5,900	6,200	90	120	130	150	60	60
Infometrics	3,700	4,300	4,900	5,300	5,500	5,900	6,400	90	120	130	100	80	100
UE Medium	3,700	4,300	4,900	5,300	5,600	6,600	7,700	90	120	130	150	200	220
UE High	3,700	4,300	4,900	5,300	5,900	7,400	9,000	90	120	130	300	300	320

Source: Statistics NZ, Infometrics, Urban Economics

Figure 19: Kerikeri Historical Actual and Projected Population 2006-2031



Source: Statistics NZ, Infometrics, Urban Economics



3.5. Infometrics Methodology Commentary

Infometrics relies on historical employment levels within the district to project the future population and household growth. This is an unconventional methodology to project population growth, as it is not necessarily the case that people follow jobs, as implied by this methodology, and often firms move to areas where there is a sufficient population to provide a workforce, and where land is more affordable with suitable infrastructure. This is particularly the case for locations that are attractive to empty nesters and retirees, that work part-time or are no longer working. This demographic is often attracted to locations that offer a lifestyle and are less influenced by the opportunity for work. However, locations in which there is a growing number of empty nesters and retirees create work opportunities, related to the construction of new houses, and the provision of goods and services to meet the needs of this population. The Far North has 39% of population growth as empty nesters and retirees, and Kerikeri has 45% of its population growth as empty nesters and retirees. This is a major sector of growth for the district that is not accounted for in the Infometric population projections.

More generally, neither Statistics NZ or Infometrics projections appear to account for the high levels of growth seen over the past 7-10 years, which is being driven primarily from Aucklanders relocating to the Far North as a result of the high house prices and lifestyle offered. As Auckland has a large shortage of houses, estimated at 50,000 dwellings, it would be at least 10 years before the city can potentially return to more affordable houses, and locations such as the Far North are expected to have ongoing high growth, similar to the rates seen over the past 7-10 years. As a conservative approach, land use policy should be based on the assumption that the rate of growth experienced over the past 7-10 years is likely to continue over the next 10 years.



4. Assessment of Commercially Feasible Housing in Kerikeri-Waipapa

This section estimates the quantity of housing that is 'plan enabled', 'commercially feasible' and 'reasonably expected to be realised' in Kerikeri-Waipapa under the Proposed District Plan ("PDP"). This is the required methodology for estimating future housing construction in the National Policy Statement - Urban Development (section 12) and is established best practice for all district plan reviews, irrespective of whether the Council is required to complete the assessment.

Figure 20 shows the study area used in this capacity analysis that defines Kerikeri. This is comprised of Kerikeri Central, Kerikeri South, Riverview and Waipapa Statistical Area 2's, corresponding with the SA2's used in the FNDC Kerikeri population and capacity report to ensure that the same areas have been assessed.

Figure 21 displays a summary of the outputs from the capacity analysis. A detailed explanation of the data and methodology is provided in Appendix 2. To determine the commercially feasible capacity within the town, four scenarios have been tested. This informs the 'Reasonably Expected to be Realised' (RER) capacity. The four scenarios are summarised in Figure 22 and in broad terms include:

1. Small Units - This scenario analyses a more intensive development outcome, assessing a 160m² stand alone dwelling priced at \$945,000, and a 110m² terrace house priced at \$670,000.
2. Medium Units - This scenario analyses a development outcome more closely aligned with a typical market outcome, assessing a 170m² stand alone dwelling priced at \$985,000, and a 120m² terrace house priced at \$710,000.
3. Large Units - This scenario tests a less intensive development outcome, assessing a 180m² stand alone dwellings priced at \$1,025,000, and a 130m² terrace house priced at \$755,000
4. 1-Level Retiree Units - This scenario tests a retiree suitable development outcome with smaller 1-level product, assessing a 90m² stand alone dwelling priced at \$720,000, and an 80m² terrace dwelling priced at \$540,000.

The key points to note from Figure 21 are:

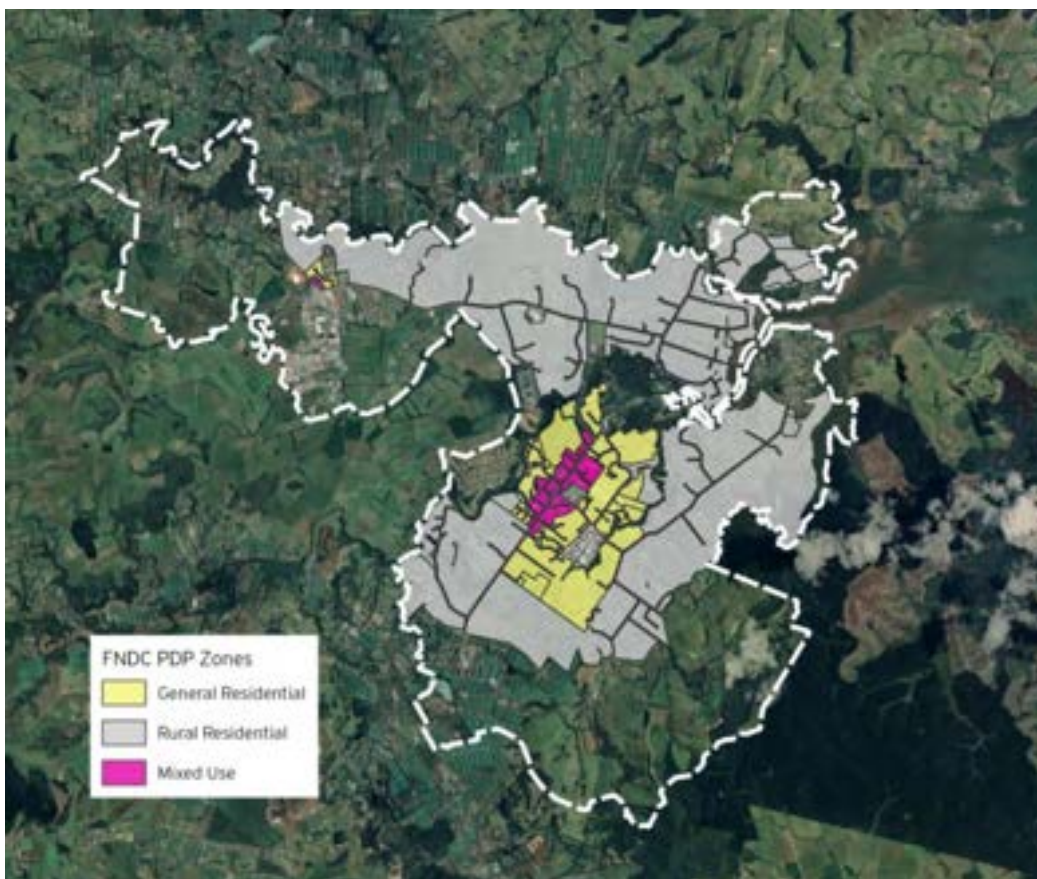
- The FNDC Plan Enabled Capacity estimated by the Far North District Council³ is considered to be an accurate estimate of the total plan enabled capacity for the study area. Urban Economics have undertaken a similar assessment and find that plan enabled capacity is similar to the estimates prepared by the Far North District Council. This shows total capacity in Kerikeri for 3,450 dwellings under the Without Multi-Unit Rule and for 5,560 dwellings under the With Multi-Unit Rule.

³ FNDC Section 32 Report, Appendix 7e Pages 9-12



- The commercial feasibility of the Plan Enabled Capacity is then assessed for each scenario, as required by the NPS-UD. Commercially Feasible Capacity ranges from 1,230-1,460 dwellings under the four scenarios.
- The additional capacity from the multi-unit provisions are then assessed. Commercially Feasible Capacity ranges from 2,410-2,930 dwellings under the four scenarios.
- A 'reasonably expected to be realised' scenario is then tested - R.E.R Likely Market Scenario. This scenario applies the assumption that approximately 15% of new dwelling construction will be terrace houses and 85% will be conventional stand alone dwellings. This scenario is informed by the recent construction rates of terrace dwellings in the town and the district which shows only a small fraction of new dwellings are terrace houses. R.E.R Likely Market Scenario capacity ranges from 920-1,090 dwellings under the four scenarios. This is considered the most likely future housing construction under the PDP, as it accounts for plan enabled, commercially feasible and reasonably expected to be realised capacity, as set out in the NPS-UD.

Figure 20: Study Area (Kerikeri-Waipapa)



Source: Statistics NZ, Far North District Council, Urban Economics



Figure 21: Kerikeri-Waipapa Residential Capacity Summary Table

	FNDC Plan Enabled Capacity	Commercially Feasible Capacity			
		Small Units	Medium Units	Large Units	1-Level Retiree Units
General Residential - Controlled	1,060	780	780	760	870
General Residential - Controlled (Multi-Unit Rule)*	3,170	2,310	2,270	1,940	2,350
Rural Residential - Restricted Discretionary	1,010	490	490	460	580
Mixed Use - Controlled	1,390	10	10	10	10
Total Capacity (w/out Multi-Unit Rule)	3,460	1,280	1,280	1,230	1,460
Total Capacity (w Multi-Unit Rule)	5,570	2,810	2,770	2,410	2,940
R.E.R (w/out Multi-Unit Rule)**	-	640	640	620	730
R.E.R (w Multi-Unit Rule)**	-	1,410	1,390	1,210	1,470
R.E.R Likely Market Scenario***	-	990	980	920	1,090

Source: Urban Economics, Far North District Council

*PDP multi-unit development rule

** Reasonably expected to be realised (R.E.R) estimated at 50%

*** 15% of R.E.R capacity realised as terrace, remainder stand alone.

Figure 22: Summary of Commercially Feasible Inputs

	Small Units			Medium Units			Large Units			1-Level Retiree Units		
	Average GFA	Average m ² Rate	Average Sale Price (\$000)	Average GFA	Average m ² Rate	Average Sale Price (\$000)	Average GFA	Average m ² Rate	Average Sale Price (\$000)	Average GFA	Average m ² Rate	Average Sale Price (\$000)
Stand Alone	160	\$5,900	\$945	170	\$5,800	\$985	180	\$5,700	\$1,025	90	\$8,000	\$720
Terrace	110	\$6,100	\$670	120	\$5,900	\$710	130	\$5,800	\$755	80	\$6,750	\$540

Source: Corelogic, Urban Economics

5. Housing Demand Analysis

This section undertakes an analysis of residential demand in Kerikeri-Waipapa, with a particular emphasis on the growth of 'first home buyers', and the prices at which they can afford to purchase dwellings. For the purpose of this analysis, it is assumed that as of 2021, households within the 20-29 age group are classified as FHB's. This is a conservative assumption as many households purchase their first house in the 30-39 age group.

5.1. First Home Buyers

Households that purchased dwellings 5, 10 or 20 years ago were able to access more affordable housing than is currently available, and have become wealthier as their homes have increased in value. These households have significant equity and can afford high priced houses, e.g. for \$1 million or more.

Conversely, first home buyers entering the market today must pay the current prices. For many



first home buyers these prices are unaffordable. Each year over the next 30 years there will be new first home buyers that enter the market. Figures 23-26 show that over the next 30 years, first home buyers will comprise around 50% of all households. This illustrates the importance of a district plan providing ongoing access to affordable housing for first home buyers.

Figure 23-26 display the Statistics NZ, Infometrics and Urban Economics (UE) household projections for the 2021-2051 period. This cumulative market share of first home buyers (F.H.B) highlighted in yellow) and is summarised in the F.H.B Count row. The key points to note are:

- Under the Statistics NZ projections, first home buyer households in Kerikeri-Waipapa will increase from approximately a 11% share of the market in 2021, to 25% in 2031 and 53% in 2051.
- Under the Infometrics projections completed for FNDC, first home buyer households will increase from approximately a 11% share of the market in 2021, to 25% in 2031 and 53% in 2051.
- Under the UE Medium Growth projections, first home buyer households will increase from approximately a 11% share of the market in 2021, to 27% in 2031 and 52% in 2051.
- Under the UE High Growth projections, first home buyer households will increase from approximately a 11% share of the market in 2021, to 27% in 2031 and 52% in 2051.



Figure 23: Statistics NZ Projections (2021-2051)

Age Group	2021	2026	2031	2036	2041	2046	2051
20-29 years	380	440	480	515	555	595	630
30-39 years	490	560	600	645	690	735	780
40-49 years	490	525	550	575	595	620	645
50-59 years	605	645	665	690	715	740	760
60+ Years	1,650	1,850	1,975	2,100	2,225	2,350	2,475
Total	3,615	4,020	4,270	4,525	4,780	5,040	5,290
F.H.B Count	380	-	1,080	-	1,840	-	2,815
% F.H.B	11%	-	25%	-	38%	-	53%

Source: Statistics NZ

Figure 24: Infometrics Projections (2021-2051)

Age Group	2021	2026	2031	2036	2041	2046	2051
20-29 years	380	435	495	560	620	685	750
30-39 years	490	555	620	695	770	840	915
40-49 years	490	525	560	600	640	680	720
50-59 years	605	640	675	715	755	795	835
60+ Years	1,650	1,835	2,025	2,235	2,445	2,655	2,860
Total	3,615	3,990	4,375	4,805	5,230	5,655	6,080
F.H.B Count	380	-	1,115	-	2,030	-	3,220
% F.H.B	11%	-	25%	-	39%	-	53%

Source: FNDC, Infometrics

Figure 25: UE Medium Projections (2021-2051)

Age Group	2021	2026	2031	2036	2041	2046	2051
20-29 years	380	510	650	790	930	1,070	1,125
30-39 years	490	635	795	960	1,120	1,280	1,345
40-49 years	490	570	655	745	830	920	955
50-59 years	605	685	770	860	945	1,035	1,070
60+ Years	1,650	2,070	2,525	2,985	3,445	3,905	4,090
Total	3,615	4,470	5,395	6,340	7,270	8,210	8,585
F.H.B Count	380	-	1,445	-	2,880	-	4,495
% F.H.B	11%	-	27%	-	40%	-	52%

Source: Urban Economics

Figure 26: UE High Projections (2021-2051)

Age Group	2021	2026	2031	2036	2041	2046	2051
20-29 years	380	570	770	975	1,180	1,380	1,585
30-39 years	490	710	935	1,170	1,405	1,640	1,875
40-49 years	490	610	730	860	985	1,115	1,240
50-59 years	605	725	845	975	1,100	1,230	1,355
60+ Years	1,650	2,275	2,930	3,595	4,265	4,935	5,600
Total	3,615	4,890	6,210	7,575	8,935	10,300	11,655
F.H.B Count	380	-	1,705	-	3,570	-	6,055
% F.H.B	11%	-	27%	-	40%	-	52%

Source: Statistics NZ



5.2. Demand by Dwelling Price

Figure 27 displays the household income profile of Kerikeri-Waipapa's 20+ households. This is aggregated over time to account for households entering and exiting the housing market, in the different price bands. This has been used to estimate how much households within each income band can raised via a mortgage, using ANZ's home loan calculator tool. This is used to inform the demand profile by price bracket shown in Figure 28 for each household projection, which is applied in the development capacity sufficiency analysis in Section 6. It should be noted that this does not account for existing equity (e.g owning an existing house), and income levels and house prices have been held constant. The key points to note are:

- Of the 20+ years households in the Kerikeri-Waipapa area, approximately 45% earn less than \$50,000 per annum. This is a considerable barrier to entering the housing market for first home buyers.
- Approximately 21% of households are only able to afford dwellings up to \$600,000 based on their annual household income.
- Under the Statistics NZ projections, the proportion of households that can only afford dwellings of up to \$600,000 increases to 30% in 2031 and 47% in 2051.
- Under the Infometrics and UE Medium projections, the proportion of households that can only afford dwellings up to \$600,000 increases to 30% in 2031 and 46% in 2051.
- Under the UE High projections, the proportion of households that can only afford dwellings up to \$600,000 increases to 31% in 2031 and 46% in 2051.
- Under all projections, apart from Statistics NZ, at least half of households in Kerikeri-Waipapa will be unable to afford dwellings of more than \$600,000. This highlights the importance of increasing housing supply in the lower price bands, which will place downward pressure on the price of housing, and make housing more accessible to lower income households.

Figure 27: Kerikeri-Waipapa 20+ Years Household Income Profile

Household Income	Count	%
\$20,000 or less	330	9%
\$20,001-\$30,000	525	15%
\$30,001-\$50,000	745	21%
\$50,001-\$70,000	580	16%
\$70,001-\$100,000	520	14%
\$100,001-\$150,000	555	15%
\$150,001 or more	360	10%
Total	3,615	100%

Source: Statistics NZ



Figure 28: Kerikeri Demand Price Profile (2021-2051)

Price Bracket (\$000)	Projection Scenario											
	Statistics NZ			Infometrics			UE Medium			UE High		
	2021	2031	2051	2021	2031	2051	2021	2031	2051	2021	2031	2051
Less than \$200	175	485	1,250	175	500	1,435	175	650	2,000	175	765	2,695
\$200-\$300	115	170	290	115	175	335	115	215	465	115	255	625
\$300-\$400	105	155	280	105	165	325	105	205	450	105	235	605
\$400-\$500	125	170	275	125	175	315	125	220	440	125	260	600
\$500-\$600	250	295	370	250	305	410	250	380	605	250	435	820
\$600-\$700	410	460	505	410	470	580	410	575	825	410	660	1,120
\$700-\$800	615	665	665	615	675	765	615	825	1,085	615	945	1,480
\$800-\$900	560	590	560	560	600	640	560	730	910	560	840	1,245
\$900-\$1,000	385	415	425	385	420	480	385	515	685	385	590	935
\$1,000-\$1,100	210	205	160	210	210	195	210	260	270	210	295	365
\$1,100-\$1,200	185	180	140	185	185	165	185	225	235	185	255	320
\$1,200-\$1,300	160	160	120	160	165	145	160	200	205	160	225	280
\$1,300-\$1,400	95	95	75	95	95	85	95	115	120	95	130	165
\$1,400-\$1,500	110	110	85	110	115	100	110	135	140	110	155	195
\$1,500 Plus	115	115	90	115	120	105	115	145	150	115	165	205
Total	3,615	4,270	5,290	3,615	4,375	6,080	3,615	5,395	8,585	3,615	6,210	11,655

Source: Statistics NZ, Infometrics, Urban Economics

Figure 29: Kerikeri Demand Price Profile (Percentage) (2021-2051)

Price Bracket (\$000)	Projection Scenario											
	Statistics NZ			Infometrics			UE Medium			UE High		
	2021	2031	2051	2021	2031	2051	2021	2031	2051	2021	2031	2051
Less than \$200	5%	11%	24%	5%	11%	24%	5%	12%	23%	5%	12%	23%
\$200-\$300	3%	4%	5%	3%	4%	6%	3%	4%	5%	3%	4%	5%
\$300-\$400	3%	4%	5%	3%	4%	5%	3%	4%	5%	3%	4%	5%
\$400-\$500	3%	4%	5%	3%	4%	5%	3%	4%	5%	3%	4%	5%
\$500-\$600	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%
\$600-\$700	11%	11%	10%	11%	11%	10%	11%	11%	10%	11%	11%	10%
\$700-\$800	17%	16%	13%	17%	15%	13%	17%	15%	13%	17%	15%	13%
\$800-\$900	15%	14%	11%	15%	14%	11%	15%	14%	11%	15%	14%	11%
\$900-\$1,000	11%	10%	8%	11%	10%	8%	11%	10%	8%	11%	10%	8%
\$1,000-\$1,100	6%	5%	3%	6%	5%	3%	6%	5%	3%	6%	5%	3%
\$1,100-\$1,200	5%	4%	3%	5%	4%	3%	5%	4%	3%	5%	4%	3%
\$1,200-\$1,300	4%	4%	2%	4%	4%	2%	4%	4%	2%	4%	4%	2%
\$1,300-\$1,400	3%	2%	1%	3%	2%	1%	3%	2%	1%	3%	2%	1%
\$1,400-\$1,500	3%	3%	2%	3%	3%	2%	3%	3%	2%	3%	2%	2%
\$1,500 Plus	3%	3%	2%	3%	3%	2%	3%	3%	2%	3%	3%	2%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Source: Statistics NZ, Infometrics, Urban Economics

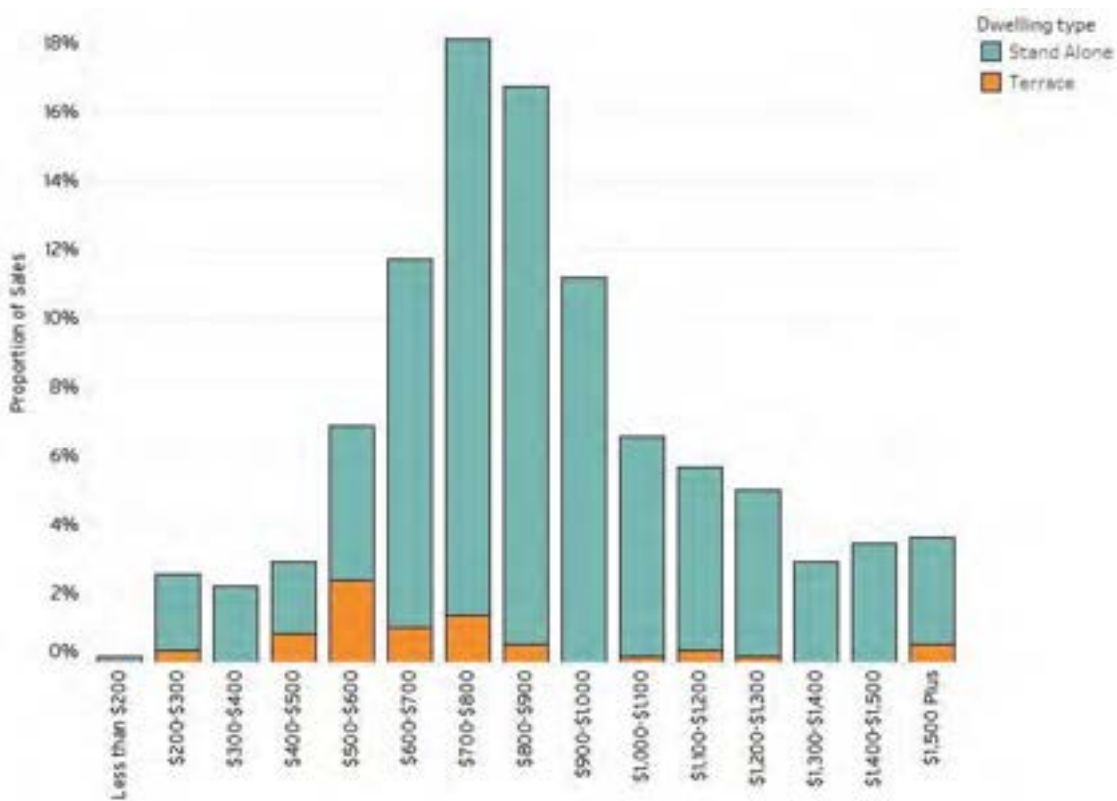


5.3. Kerikeri-Waipapa Sales Profile

Figure 30 displays a price profile of the dwellings sold in the Kerikeri-Waipapa area over the September 2020-2022 period. The key points to note are:

- The majority of stand alone dwellings sold for between \$600,000-\$1,000,000, with an average sale price of approximately \$850,000.
- The majority of terrace dwellings sold for between \$500,000-\$800,000, with an average sale price of approximately \$700,000. It should be noted that over this period, only 8% (45 dwellings) of all dwellings sold over this period were terrace houses. This indicates a low level of demand for this type of housing in Kerikeri-Waipapa.

Figure 30: Profile of Recent Sales in Kerikeri (September 2020-2022)



Source: Corelogic



6. Housing Development Capacity

The following section applies the R.E.R Likely Market Scenario from Figure 21 and compares it with the demand profiles from each population/household projection scenario. Based on recent terrace/townhouse construction trends in Kerikeri and the Far North District, it is considered that the R.E.R Likely Market Scenario for Kerikeri will eventuate in the order of approximately 15% of total capacity being terrace/townhouse dwellings, with the remaining capacity being stand alone dwellings. Additionally, a 20% buffer has been applied to demand. The key points to note are:

- Based on the Statistics NZ demand projection, the R.E.R Likely Market Scenario results in a surplus for all of the scenarios ranging from 120-290 units over the 2021-2031 period. Over the 2021-2051 period there is a shortage of units relative to demand, in the order of 1,160-1,330 units.
- Based on the Infometrics demand projection, the R.E.R Likely Market Scenario results in a shortage for one out of the three scenarios, and a surplus of 60-170 units over the 2021-2031 period. Over the 2021-2051 period there is a significant shortage of units relative to demand, in the order of 1,950-2,120 units.
- Based on the UE Medium demand projection, the R.E.R Likely Market Scenario results in a shortage for all of the scenarios ranging from 1,050-1,220 units over the 2021-2031 period. Over the 2021-2051 period there is a significant shortage of units relative to demand, in the order of 4,870-5,040 units.
- Based on the UE High demand projection, the R.E.R Likely Market Scenario results in a shortage for all of the scenarios ranging from 2,030-2,200 units over the 2021-2031 period. However, over the 2021-2051 period there is a significant shortage of units relative to demand, in the order of 8,540-8,710 units.



Figure 31: R.E.R Likely Market Scenario Development Capacity (Statistics NZ Projections)

Price Bracket (\$'000)	Demand Growth*		Terrace House Feasible Capacity				Stand Alone Dwelling Feasible Capacity				Small Units		Medium Units		Large Units		1-Level Retiree Units	
	2021-2031	2021-2051	Small	Medium	Large	1-Level Retiree	Small	Medium	Large	1-Level Retiree	2021-2031	2021-2051	2021-2031	2021-2051	2021-2031	2021-2051	2021-2031	2021-2051
	Less than \$200	370	1,290	0	0	0	0	0	0	0	0	-370	-1,290	-370	-1,290	-370	-1,290	-370
\$200-\$300	70	210	0	0	0	0	0	0	0	0	-70	-210	-70	-210	-70	-210	-70	-210
\$300-\$400	60	210	0	0	0	0	0	0	0	0	-60	-210	-60	-210	-60	-210	-60	-210
\$400-\$500	50	180	0	0	0	73	0	0	0	0	-50	-180	-50	-180	-50	-180	23	-107
\$500-\$600	50	140	70	0	0	73	0	0	0	0	20	-70	-50	-140	-50	-140	23	-67
\$600-\$700	60	110	70	68	60	73	0	0	0	290	10	-40	8	-42	0	-50	303	253
\$700-\$800	60	60	70	68	60	0	0	0	0	290	10	10	8	8	0	0	230	230
\$800-\$900	40	0	0	68	60	0	260	258	0	290	220	260	287	327	20	60	250	290
\$900-\$1,000	40	50	0	0	0	0	260	258	247	0	220	210	218	208	207	197	-40	-50
\$1,000-\$1,100	-10	-60	0	0	0	0	260	258	247	0	260	260	258	258	247	247	0	0
\$1,100-\$1,200	-10	-50	0	0	0	0	0	0	247	0	0	0	0	247	247	0	0	0
\$1,200-\$1,300	0	-50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
\$1,300-\$1,400	0	-20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
\$1,400-\$1,500	0	-30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
\$1,500 Plus	0	-30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	780	2,010	210	205	180	220	780	775	740	870	190	-1,260	180	-1,270	120	-1,330	290	-1,160

Source: Urban Economics

* demand includes 20% buffer

Figure 32: R.E.R Likely Market Scenario Development Capacity (Infometrics Projections)

Price Bracket (\$'000)	Demand Growth*		Terrace House Feasible Capacity				Stand Alone Dwelling Feasible Capacity				Small Units		Medium Units		Large Units		1-Level Retiree Units	
	2021-2031	2021-2051	Small	Medium	Large	1-Level Retiree	Small	Medium	Large	1-Level Retiree	2021-2031	2021-2051	2021-2031	2021-2051	2021-2031	2021-2051	2021-2031	2021-2051
	Less than \$200	390	1,510	0	0	0	0	0	0	0	0	-390	-1,510	-390	-1,510	-390	-1,510	-390
\$200-\$300	70	260	0	0	0	0	0	0	0	0	-70	-260	-70	-260	-70	-260	-70	-260
\$300-\$400	70	260	0	0	0	0	0	0	0	0	-70	-260	-70	-260	-70	-260	-70	-260
\$400-\$500	60	230	0	0	0	73	0	0	0	0	-60	-230	-60	-230	-60	-230	13	-157
\$500-\$600	70	190	70	0	0	73	0	0	0	0	0	-120	-70	-190	-70	-190	3	-117
\$600-\$700	70	200	70	68	60	73	0	0	0	290	0	-130	-2	-132	-10	-140	293	163
\$700-\$800	70	180	70	68	60	0	0	0	0	290	0	-110	-2	-112	-10	-120	220	110
\$800-\$900	50	100	0	68	60	0	260	258	0	290	210	160	277	227	10	-40	240	190
\$900-\$1,000	40	110	0	0	0	0	260	258	247	0	220	150	218	148	207	137	-40	-110
\$1,000-\$1,100	0	-20	0	0	0	0	260	258	247	0	260	260	258	258	247	247	0	0
\$1,100-\$1,200	0	-20	0	0	0	0	0	0	247	0	0	0	0	247	247	0	0	0
\$1,200-\$1,300	10	-20	0	0	0	0	0	0	0	0	-10	0	-10	0	-10	0	-10	0
\$1,300-\$1,400	0	-10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
\$1,400-\$1,500	10	-10	0	0	0	0	0	0	0	0	-10	0	-10	0	-10	0	-10	0
\$1,500 Plus	10	-10	0	0	0	0	0	0	0	0	-10	0	-10	0	-10	0	-10	0
Total	920	2,950	210	205	180	220	780	775	740	870	70	-2,050	60	-2,060	0	-2,120	170	-1,950

Source: Urban Economics

* demand includes 20% buffer



Figure 33: R.E.R Likely Market Scenario Development Capacity (UE Medium Projections)

Price Bracket (\$000)	Demand Growth*		Surplus/Shortage																	
			Terrace House Feasible Capacity				Stand Alone Dwelling Feasible Capacity				Small Units		Medium Units		Large Units		1-Level Retiree Units			
			Small	Medium	Large	1-Level Retiree	Small	Medium	Large	1-Level Retiree	2021-2031	2021-2051	2021-2031	2021-2051	2021-2031	2021-2051	2021-2031	2021-2051		
Less than \$200	570	2,190	0	0	0	0	0	0	0	0	0	0	-570	-2,190	-570	-2,190	-570	-2,190	-570	-2,190
\$200-\$300	120	420	0	0	0	0	0	0	0	0	0	0	-120	-420	-120	-420	-120	-420	-120	-420
\$300-\$400	120	410	0	0	0	0	0	0	0	0	0	0	-120	-410	-120	-410	-120	-410	-120	-410
\$400-\$500	110	380	0	0	0	73	0	0	0	0	0	0	-110	-380	-110	-380	-110	-380	-37	-307
\$500-\$600	160	430	70	0	0	73	0	0	0	0	0	0	-90	-360	-160	-430	-160	-430	-87	-357
\$600-\$700	200	500	70	68	60	73	0	0	0	290	0	0	-130	-430	-132	-432	-140	-440	163	-137
\$700-\$800	250	560	70	68	60	0	0	0	0	290	0	0	-180	-490	-182	-492	-190	-500	40	-270
\$800-\$900	200	420	0	68	60	0	260	258	0	290	60	-160	127	-93	-140	-360	90	-130	90	-130
\$900-\$1,000	160	360	0	0	0	0	260	258	247	0	100	-100	98	-102	87	-113	-160	-360	-160	-360
\$1,000-\$1,100	60	70	0	0	0	0	260	258	247	0	200	190	198	188	187	177	-60	-70	-60	-70
\$1,100-\$1,200	50	60	0	0	0	0	0	0	247	0	-50	-60	-50	-60	197	187	-50	-60	-50	-60
\$1,200-\$1,300	50	50	0	0	0	0	0	0	0	0	-50	-50	-50	-50	-50	-50	-50	-50	-50	-50
\$1,300-\$1,400	20	30	0	0	0	0	0	0	0	0	-20	-30	-20	-30	-20	-30	-20	-30	-20	-30
\$1,400-\$1,500	30	40	0	0	0	0	0	0	0	0	-30	-40	-30	-40	-30	-40	-30	-40	-30	-40
\$1,500 Plus	40	40	0	0	0	0	0	0	0	0	-40	-40	-40	-40	-40	-40	-40	-40	-40	-40
Total	2,140	5,960	210	205	180	220	780	775	740	870	-1,150	-4,970	-1,160	-4,980	-1,220	-5,040	-1,050	-4,870	-1,050	-4,870

Source: Urban Economics

* demand includes 20% buffer

Figure 34: R.E.R Likely Market Scenario Development Capacity (UE High Projections)

Price Bracket (\$000)	Demand Growth*		Surplus/Shortage																	
			Terrace House Feasible Capacity				Stand Alone Dwelling Feasible Capacity				Small Units		Medium Units		Large Units		1-Level Retiree Units			
			Small	Medium	Large	1-Level Retiree	Small	Medium	Large	1-Level Retiree	2021-2031	2021-2051	2021-2031	2021-2051	2021-2031	2021-2051	2021-2031	2021-2051		
Less than \$200	710	3,020	0	0	0	0	0	0	0	0	-710	-3,020	-710	-3,020	-710	-3,020	-710	-3,020	-710	-3,020
\$200-\$300	170	610	0	0	0	0	0	0	0	0	-170	-610	-170	-610	-170	-610	-170	-610	-170	-610
\$300-\$400	160	600	0	0	0	0	0	0	0	0	-160	-600	-160	-600	-160	-600	-160	-600	-160	-600
\$400-\$500	160	570	0	0	0	73	0	0	0	0	-160	-570	-160	-570	-160	-570	-87	-497	-87	-497
\$500-\$600	220	680	70	0	0	73	0	0	0	0	-150	-610	-220	-680	-220	-680	-147	-607	-147	-607
\$600-\$700	300	850	70	68	60	73	0	0	0	290	-230	-780	-232	-782	-240	-790	63	-487	63	-487
\$700-\$800	400	1,040	70	68	60	0	0	0	0	290	-330	-970	-332	-972	-340	-980	-110	-750	-110	-750
\$800-\$900	340	820	0	68	60	0	260	258	0	290	-80	-560	-13	-493	-280	-760	-50	-530	-50	-530
\$900-\$1,000	250	660	0	0	0	0	260	258	247	0	10	-400	8	-402	-3	-413	-250	-660	-250	-660
\$1,000-\$1,100	100	190	0	0	0	0	260	258	247	0	160	70	158	68	147	57	-100	-190	-100	-190
\$1,100-\$1,200	80	160	0	0	0	0	0	0	247	0	-80	-160	-80	-160	167	87	-80	-160	-80	-160
\$1,200-\$1,300	80	140	0	0	0	0	0	0	0	0	-80	-140	-80	-140	-80	-140	-80	-140	-80	-140
\$1,300-\$1,400	40	80	0	0	0	0	0	0	0	0	-40	-80	-40	-80	-40	-80	-40	-80	-40	-80
\$1,400-\$1,500	50	100	0	0	0	0	0	0	0	0	-50	-100	-50	-100	-50	-100	-50	-100	-50	-100
\$1,500 Plus	60	110	0	0	0	0	0	0	0	0	-60	-110	-60	-110	-60	-110	-60	-110	-60	-110
Total	3,120	9,630	210	205	180	220	780	775	740	870	-2,130	-8,640	-2,140	-8,650	-2,200	-8,710	-2,030	-8,540	-2,030	-8,540

Source: Urban Economics

* demand includes 20% buffer



7. Commercial and Employment Centre

This section evaluates the demand (or need) for additional commercial and employment land within the Submission area.

Figure 35 shows the catchment areas that the proposed commercial and employment centre will service.

Figure 35: Commercial and Employment Centre Catchments



Source: Urban Economics

Figure 36 shows the current and forecast population for each catchment. The Submission area catchment is included as part of the Kerikeri-Waipapa study area in Figure 35. The typical demand for a local convenience retail centre, including a medium scale supermarket, is 1.0m² per capita. Various market shares are anticipated, including 90% from the Submission Area, 40% from the Kerikeri Rural Area, 30% from the Secondary Rural Area, and 10% from the Kerikeri Urban area.

In total, there is market demand for an estimated 5,870m² of convenience retail floorspace in 2022.



This increases to 6,930m² in 2027, 8,810m² in 2032, and to 11,790m² in 2041.

Figure 36: Submission Area Supportable Convenience Retail Floorspace Projections 2022-2042

Population					
Catchment	2022	2027	2032	2037	2042
Kerikeri Urban	9,610	11,140	11,870	12,410	13,730
Kerikeri Rural	4,410	4,780	5,110	5,420	5,690
PPC Area	0	630	2,190	3,750	4,580
Secondary Rural	10,490	10,940	11,310	11,610	11,850
Subtotal Population	24510	27480	30,470	33,190	35,850

Supportable GFA (sqm)					
Catchment	2022	2027	2032	2037	2042
Kerikeri Urban (10%)	960	1,110	1,190	1,240	1,370
Kerikeri Rural (40%)	1,760	1,910	2,040	2,170	2,280
PPC Area (90%)	0	630	2,190	3,750	4,580
Secondary Rural (30%)	3,150	3,280	3,390	3,480	3,560
Subtotal Population	5,870	6,930	8,810	10,640	11,790
Total Supportable GFA	5,980	7,150	9,130	10,860	12,040

Source: Statistics NZ, Urban Economics

Figure 37 provides an indicative floorspace composition for the proposed commercial and employment centre.

There is a total of 7,500m² of convenience retail, including a supermarket, anticipated. This is below the total demand estimated in Figure 36 for the 2032 year, however is considered to be a suitable size for a centre given the surrounding population. A centre of this size would have a complimentary function that would not adversely compete with the town centre, given its primary function would be access to day-to-day goods and services. It is recommended that the Submission zone provisions have a 'retail floorspace cap' of 7,500m² that applies to specialty retail stores and a supermarket, with a discretionary (or similar) activity status for additional floorspace. This would ensure that any adverse effects of a larger centre on the town centre are evaluated in the future.

In addition, the proposed commercial and employment centre would include:

- 5,000m² of large format retail ("LFR").
- A light industry area with approximately 15,000m² of floor area. This would provide local access to employment and would attract firms that service the wider Far North District that require a high amenity and accessible location.
- A range of other activities that are typical in medium scale commercial centres, including commercial services, office, accommodation, recreation and health.
- A small amount of residential above grade.

Based on the indicative composition, the proposed commercial and employment centre would require approximately 17.5 hectares (net) of land. This is consistent with the proposed land area of



15.4 hectares (net).

Figure 37: Submission Area Commercial & Employment Centre Indicative Floorspace Composition (m²)

Proposed Zones	Type	Total Land (Gross Ha)	Total Land (Net Ha)	Indicative Composition GFA (m ²)									Total
				Retail	Super market	LFR	Comm ercial Service	Office	Light Indust ry	Reside ntial	Accom modat ion	Recre ation & Health	
Mixed Use	Commercial and Employment Centre	22.0	15.4	5,000	2,500	5,000	2,500	2,500	15,000	5,000	2,000	5,000	44,500
Mixed Use	Local Centre	1.5	1.1	750	-	-	750	500	-	-	-	-	2,000
Hotel	Accommodation	1.0	0.7	-	-	-	-	-	-	-	7,500	-	7,500
Local Centre	Local Centre	0.5	0.4	500	-	-	-	-	-	-	-	-	500
Total		25.0	17.5										54,500

Source: Pacific Environments, Urban Economics

8. Retirement Village Demand and Supply

This section evaluates the demand and supply of retirement villages within Kerikeri-Waipapa.

8.1. Retirement Village Supply

The following figures display key information on the current supply of retirement village units in Kerikeri-Waipapa. The main points to note are:

- There are four retirement villages in Kerikeri-Waipapa, with a total of 500 occupied units, 260 planned units and 10 vacant units. This amounts to a total supply of 770 units.
- The total vacancy rate of the retirement villages in Kerikeri-Waipapa is low at 2%, indicating a shortage of supply relative to demand.

Figure 38: Retirement Village Supply in Kerikeri-Waipapa

Village Name	Care Type	Planned Units	Vacant Units	Occupied Units	Total Units
Quail Ridge Country Club	Assisted/Independent Living	76	3	104	183
Arvida Te Puna Waiora	Independent Living	184	0	16	200
Oakridge Villas	Independent Living	0	1	80	81
Kerikeri	Assisted/Independent Living	0	3	84	87
Kerikeri Retirement Village	Rest Home/Care Beds	0	0	66	66
	Sub-total	0	3	150	153
Total		260	10	500	770

Source: Eldernet, Retirement Village Websites



Figure 39: Retirement Villages in Kerikeri-Waipapa



Source: Eldernet, Retirement Village Websites



8.2. Retirement Village Demand

The following table displays a summary of the current and projected retirement village demand across the catchment. The key points to note are:

- As of 2022, there are approximately 2,405 65+ households residing in the Kerikeri-Waipapa area. At a market penetration rate of 25%, this equates to retirement village demand of approximately 600 units. Based on the existing and planned retirement village unit supply, there is a surplus of 170 units (with the surplus attributed to the future pipeline supply rather than currently built units).
- By 2027, demand is forecast to exceed supply, with a shortage of approximately 40 units (shown in red). This shortage is anticipated to increase over time, to 285 units by 2032 and to 755 units by 2041.
- This shows that the Kerikeri-Waipapa area will have demand for two additional retirement villages by 2032 and for five additional retirement villages by 2041. These estimates are considered to be conservative given locations such as Kerikeri are expected to attract a higher proportion of Auckland residents for retirement housing over the next 1-2 decades, due to the relative affordability and lifestyle offered in the Far North District.



Figure 40: Retirement Village Demand and Sufficiency Analysis

	Year	65+ HH's	65+ HH's Growth p.a.	R.V. Demand	R.V. Demand Growth p.a.	R.V. Existing & Planned Supply	R.V. Sufficiency
Historic Actuals	1997	625	45	155	10	-	-
	1998	665	40	165	10	-	-
	1999	705	40	175	10	-	-
	2000	760	55	190	15	-	-
	2001	800	40	200	10	-	-
	2002	815	15	205	5	-	-
	2003	865	55	215	15	-	-
	2004	900	35	225	10	-	-
	2005	945	45	235	10	-	-
	2006	1,015	65	255	15	-	-
	2007	1,100	85	275	20	-	-
	2008	1,140	40	285	10	-	-
	2009	1,195	55	300	15	-	-
	2010	1,265	75	315	20	-	-
	2011	1,345	80	335	20	-	-
	2012	1,420	75	355	20	-	-
	2013	1,465	45	365	10	-	-
	2014	1,540	75	385	20	-	-
	2015	1,645	105	410	25	-	-
	2016	1,740	95	435	25	-	-
	2017	1,855	115	465	30	-	-
2018	1,985	135	495	35	-	-	
2019	2,075	85	520	20	-	-	
2020	2,180	105	545	25	-	-	
2021	2,260	80	565	20	-	-	
Projections	2022	2,405	145	600	35	770	170
	2023	2,560	155	640	40	770	130
	2024	2,720	160	680	40	770	90
	2025	2,885	165	720	40	770	50
	2026	3,060	175	765	45	770	5
	2027	3,240	180	810	45	770	-40
	2028	3,425	185	855	45	770	-85
	2029	3,615	190	905	50	770	-135
	2030	3,810	195	955	50	770	-185
	2031	4,010	200	1,005	50	770	-235
	2032	4,215	205	1,055	50	770	-285
	2033	4,425	210	1,105	55	770	-335
	2034	4,635	210	1,160	55	770	-390
	2035	4,845	210	1,210	55	770	-440
	2036	5,055	210	1,265	55	770	-495
2037	5,265	210	1,315	55	770	-545	
2038	5,475	210	1,370	55	770	-600	
2039	5,685	210	1,420	55	770	-650	
2040	5,895	210	1,475	55	770	-705	
2041	6,105	210	1,525	55	770	-755	

Source: Statistics NZ, Urban Economics



9. Hotel & Tourism Market Assessment

This section evaluates the hotel and tourism market in Kerikeri and the Far North District.

Figure 41 provides a summary of the hotel and motel supply in the Far North District over the 2012-2022 period. This includes the number of hotels (including motels), the average number of rooms per hotel, the occupancy rate and the number of occupied rooms per annum.

The hotel market in the Far North saw an upward trend in the number of occupied rooms and the occupancy rate in the years leading up to 2020. It is considered most useful to assess the pre Covid market as the basis for understanding the market potential over the next 2-3 decades. There was an increase from 80,000 occupied rooms in 2012 to 107,000 occupied rooms in 2019, representing a 34% increase in the number of rooms occupied over a seven year period (approximately 5% growth per annum).

A notable trend over this period is consistent decrease in the total number of hotels in the Far North District each year, at an average of 4 hotels per annum. This can be explained in part due to the growing Air-BNB market pushing smaller lower quality hotels out of the accommodation market, and the increasing housing affordability pressures resulting in a large number of hotels being used for emergency housing.

Figure 41: Far North District Hotel Occupancy Rates 2012-2022

Year	No. of Hotels	Average Rooms per Hotel	Occupancy Rate	Occupied Rooms
2012	160	39	25%	80,000
2013	158	38	25%	78,000
2014	154	38	26%	80,000
2015	154	39	28%	87,000
2016	154	39	30%	92,000
2017	150	39	31%	95,000
2018	146	39	32%	94,000
2019	139	41	36%	107,000
2020	124	40	30%	76,000
2021	121	39	28%	67,000
2022	118	38	29%	69,000

Source: Statistics NZ, MBIE

Figure 42 displays the growth in tourism GDP in the Far North District over the 2000-2020 period. Tourism accounts for a large proportion of GDP growth in the Far North District, and over this 20-year period, GDP has grown consistently, most notably over the past 10-years, which saw a significant increase from \$145 million in 2011 to \$251 million in 2020, representing a 73% increase (or 7% per annum). This strong market growth has occurred despite the recent COVID-19 pandemic and indicates that there is sufficient demand for a cultural/recreational/agricultural tourism facility to be co-located with the proposed hotel, improving the hotel's overall commercial viability.



Figure 42: Tourism GDP Growth Far North District 2000-2020

Year	Tourism GDP (\$m)
2000	\$62
2001	\$70
2002	\$79
2003	\$90
2004	\$99
2005	\$110
2006	\$118
2007	\$123
2008	\$139
2009	\$129
2010	\$138
2011	\$145
2012	\$144
2013	\$141
2014	\$157
2015	\$177
2016	\$199
2017	\$216
2018	\$239
2019	\$237
2020	\$251

Source: Infometrics

Figure 43 displays the building consent data for hotels in the Far North District over the 2011-2021 period. Since 2017, an average of 3 hotels were consented per annum, with an average GFA of 1,120m². At a room GFA of 50m², this equates to an average hotel room count of 22. This uptake of smaller hotels is comparable to the existing supply of hotels in Kerikeri shown in Figure 43, of which all but one hotel is of a scale larger than 20 rooms.

The proposed hotel will be of a medium-large scale, at approximately 80-120 rooms. This is comparable to the medium-large scale hotels found in other locations within the Far North District, shown in Figure 45. The most comparable hotels to the proposed development are the Kingsgate (113 rooms) and the Scenic (114 rooms) hotels located in Paihia. It should be noted that the primary reason for these medium-large hotels being supportable in these locations is because they are two major holiday/tourist locations in the Far North District. However, it is considered that the co-location of a cultural/recreational/agricultural tourist facility with the proposed hotel will increase the Kerikeri Townships tourist numbers, thereby increasing the proposed hotels commercial viability.



Figure 43: Far North District Hotel Building Consents 2011-2021

Year	Hotels	GFA (m2)
2011	2	70
2012	5	780
2013	2	290
2014	7	580
2015	8	1,380
2016	2	80
2017	9	3,030
2018	2	1,520
2019	2	500
2020	2	410
2021	2	160

Source: Statistics New Zealand

Figure 44: Hotels/Motels in Kerikeri 2022

Hotel	Rooms	Price	Stars	Map Label
Wharepuke Subtropical	5	\$160	4.0	A
Colonial House	10	\$190	3.5	B
Stay Kerikeri	10	\$270	4.0	C
Woodlands Motel	20	\$170	3.0	D
Kerikeri Court	15	\$220	4.0	E
Kerikeri Homestead	37	\$225	3.0	F
Kerigold Chalets	10	\$155	3.0	G
Avalon Resort	8	-	4.0	H
Kauri Park	12	\$220	4.0	I
Kerikeri Park Lodge	20	\$190	3.5	J
Puketotara Lodge	5	\$700	5.0	K
Total	152	\$260	3.9	

Source: Hotels.co.nz, Booking.com



Figure 45: Location of Hotels/Motels in Kerikeri 2022



Source: Google Maps

Figure 46: Medium-Large Scale Hotels in Far North District 2022

Hotel	Location	Rooms	Price	Stars
Kingsgate	Paihia	113	\$340	3.5
Scenic	Paihia	114	\$335	4
Copthorne	Waitangi	184	\$255	4
Total		411	\$310	3.8

Source: Hotels.co.nz, Booking.com



10. Employment & GDP Impact

This section assesses the impact of the proposed rezoning on employment and GDP. This is required under Section 32(2)(a) of the RMA with regard to economic growth and employment generation.

10.1. Employment & GDP Generation from Construction

The national 'value-added per employee' for each sector has been used to estimate the full-time equivalent (FTE) employment for this proposal.

Figure 47 outlines the FTEs and value-added to GDP that the proposed development would generate. It is estimated that the construction of the 1,830 residential dwellings would result in a total of 2,348 FTE jobs and would contribute \$335.8 million to GDP. The construction of the proposed commercial & employment centre would result in an estimated 653 FTE jobs and would contribute \$93.3 million to GDP. Overall, the Submission would have a total net project value from construction of \$1.4 billion, and value-added GDP of \$425.6 million, and would generate 2,980 FTEs. This accounts for the sites current agricultural use, which would generate an estimated \$3.5 million to value added GDP and create 21 FTE jobs.

Figure 47: FTE Employment & GDP Generation from Construction of Proposed Development

	Dwellings/ GFA	Project Completion Value (@80%)	Value Added GDP (\$M)	FTE Employees
Proposed Residential	1,830	\$1,098	\$335.8	2,348
Proposed Commercial & Employment	54,500m ²	\$305.2	\$93.3	653
Base Case (Agriculture)	-	\$7.7	\$3.5	21
Net Benefit from Proposal	-	\$1,395.5	\$425.6	2,980

Source: Statistics NZ, Urban Economics

10.2. Employment & GDP Generation from Ongoing Operation

Figure 48 provides an estimate of the ongoing expenditure expected upon the completion of the development. This considers an estimate of the average annual household expenditure applied to the permanent residents. The main points to note are:

- Upon completion of the project, the average household expenditure is forecast to be approximately \$43,400 per household, per annum. This generates a value-added to GDP of approximately \$24,800 per annum.
- The total ongoing household expenditure from the residents of the proposed development upon completion is estimated to be \$79,420,000 per annum. This generates a value-added GDP of approximately \$45,380,000 per annum, supporting approximately 522 FTE jobs.



Figure 48: Employment & GDP Generation from Ongoing Operation

Annual Expenditure	Spend (p.a.)	Value Added GDP (p.a.)	FTE Employees
Estimate per Household	\$43,400	\$24,800	-
Ongoing Household Expenditure	\$79,420,000	\$45,380,000	522

Source: Statistics NZ, Urban Economics

10.3. Rates Contributions

Figure 49 provides an estimate of the annual rates contribution per lot following the completion of the development. This is estimated based on an approximate average of current rates of properties in Kerikeri-Waipapa with a capital value of \$800,000. This results in estimated rates of \$4,500 per lot, per annum, resulting in a total of approximately \$8,235,000 once the development is fully constructed.

Figure 49: Proposed Development Council Rates Estimate

	C.V.	Council Rates (p.a.)	Total Rates Charges
Site (Current)	\$9,680,000	\$50,500	\$50,500
Proposed Development (per Lot)*	\$800,000	\$4,500	\$8,235,000

Source: Far North District Council, Urban Economics

*Estimate

10.4. Summary of Employment & GDP Generation

Figure 50 provides a summary of the estimated economic contribution from the construction and ongoing operational of the proposed development and compares it with the 'base case' scenario. A 4% discount rate has been applied in calculating the present value of the economic costs/benefits. In addition, the development is expected to retain population and employment within the district, that would not otherwise occur. This is assumed to equate to 50% of the total development. The main points to note are:

- The construction of the proposed residential dwellings and commercial and employment centre would result in a net additional value-added to GDP per annum of \$14.7 million, a present value of \$166.4 million over the construction period of approximately 14-15 years, generating approximately 1,500 FTE jobs.
- The net additional household expenditure is estimated to result in a value-added to GDP per annum of approximately \$21.6 million. This equates to a present value of \$280.8 million over a 30-year period. This supports the equivalent of approximately 261 FTE jobs within the district.



- Upon completion, the proposed development would contribute approximately \$4,500 in rates per lot, per annum. Over a 30-year period, the net additional rates equate to a present value of \$58.5 million, thereby retaining a significant quantity of rates contributions within the Far North District.
- The value-added per annum of the land suitable for agricultural use is approximately \$0.1 million with a present value of \$2.1 million and 21 FTEs over a 30-year period.
- Over a 30-year period, the proposed development would result in a net present value of \$503.6 million and an additional 1,740 FTE jobs over the base case. This is a considerable net economic benefit.

Figure 50: Summary of Employment & GDP Generation from Proposed Development

		Value Added per Annum (\$M)	Present Value (\$M)	Time Period (Years)	FTE Employee es	
Proposal Benefits	Construction Period	House Construction	\$22.9	\$260.5	14.6*	2,348
		Net Additional House Construction**	\$11.5	\$130.2	14.6*	1,174
		Commercial & Employment Construction	\$6.4	\$72.4	14.6*	653
		Net Additional Commercial and Employment Construction**	\$3.2	\$36.2	14.6*	326
	Ongoing Benefits	Household Expenditure	\$43.3	\$561.6	30	522
		Net Additional Household Expenditure**	\$21.6	\$280.8	30	261
		Rates Contribution Estimate	-	\$116.9	30	-
		Net Additional Rates Contribution Estimate**	-	\$58.5	30	-
Proposal Costs	'Base Case' (Agriculture) Displacement	\$0.1	\$2.1	30	21	
Net Present Value		-	\$503.6	30	1,740	

Source: Statistics NZ, Urban Economics

*Estimated at 125 dwellings built p.a.

**@50%

11. Economic Efficiencies of Infill and Greenfield Development

Infill and greenfield development both offer potential efficiencies which vary based on local circumstances.

The economic benefits from infill development are:

- Efficient utilization of existing infrastructure which may have unutilized capacity.
- Increased density can reduce transportation costs.
- Can improve the quality of building stock in existing suburbs.
- Provides development opportunities for small-medium sized developers and builders.

The economic benefits from greenfield development are:

- Are able to offer lower cost and affordable housing due to the low 'raw land cost' (rural versus urban).



- Enables economies of scale for developers which can efficiently produce lots and dwellings.
- Can be master planned which enables onsite amenities, access to services and integrated design that supports higher density forms of housing. This is due to the quality of the environment that can be created with good urban design. This includes provision/vesting of land for parks and open spaces within the development.
- Offer a variety of housing types, from retirement, to affordable to large family homes.
- Can achieve densities that are often greater than the existing urban areas, increasing the overall density of the town/city.
- Developers are incentivized to provide a high quality development as buyers will only purchase if the completed stages are attractive.
- Can have lower costs to service with infrastructure when compared to upgrading existing suburbs infrastructure.

The foregoing comparison demonstrates that infill and greenfield development each offer unique potential efficiencies. It is for this reason that district plans typically enable both infill and greenfield development to provide for future growth.

12. NPS-UD Provisions

The NPS-UD defines an urban environment as:

“any area of land (regardless of size, and irrespective of local authority or statistical boundaries) that:

(a) is, or is intended to be, predominantly urban in character; and

(b) is, or is intended to be, part of a housing and labour market of at least 10,000 people”

Under the above definitions, Kerikeri-Waipapa is considered to be an urban environment, as it is intended to be predominantly urban in character with a population that will exceed 10,000 people over the medium term. More specifically, FNDC project Kerikeri-Waipapa will reach a population of 10,000 by 2027, while UE estimates that Kerikeri-Waipapa will reach a population of 10,040 by 2024 (refer Appendix 3). As a result, the key provisions of the NPS-UD listed below are relevant considerations for this submission on the Proposed District Plan.

The key provisions of the NPS-UD that relates to efficient residential and business land markets are as follows:

“Objective 2: Planning decisions improve housing affordability by supporting competitive land and development markets.”

“Policy 1: Planning decisions contribute to well-functioning urban environments, which are



urban environments that, as a minimum: have or enable a variety of homes that:

(i) meet the needs, in terms of type, price, and location, of different households...”

“Policy 2: Tier 1, 2, and 3 local authorities, at all times, provide at least sufficient development capacity to meet expected demand for housing and for business land over the short term [1 to 3 years], medium term [3 to 10 years], and long term. [11 to 30 years]”

“Policy 8: Local authority decisions affecting urban environments are responsive to plan changes that would add significantly to development capacity and contribute to well functioning urban environments”

With reference to Objective 2 and Policy 1(i) of the NPS-UD, the Kerikeri-Waipapa area currently has a shortage of affordable housing, with average sale prices over the past two years for stand alone dwellings and terrace houses of approximately \$850,000 and \$700,000 respectively. The majority of stand alone dwellings sold over this period sold for between \$600,000-\$1,000,000, with very few selling for under \$600,000. This indicates a shortage of affordable housing and represents a significant barrier to first home buyers entering the market.

Figure 51 provides an estimate of the years of supply of housing using the R.E.R Likely Market Scenarios (supply) and the UE Medium and High Projection Scenarios (demand). The main findings are:

- Under the UE Medium Projection Scenario there is 5.4-6.4 years of capacity, indicating the short-term development capacity requirements of the NPS-UD are met, however that the medium and long term development capacity requirements are not.
- Under the UE High Projection Scenario there is 3.5-4.2 years of capacity, indicating the short-term development capacity requirements of the NPS-UD are met, however that the medium and long term development capacity requirements are not.
- As the FNDC has not proposed any additional urban zoned land in the PDP in Kerikeri, there is no capacity that would provide additional development capacity, other than infill/redevelopment of the existing zones.

Figure 51: Kerikeri Development Capacity (Years of Housing Supply)

Unit Scenario	UE Medium Projection Scenario				UE High Projection Scenario			
	Small	Medium	Large	1-Level Retiree	Small	Medium	Large	1-Level Retiree
R.E.R Likely Market Scenario	990	980	920	1,090	990	980	920	1,090
Demand per annum	170	170	170	170	260	260	260	260
Years of Supply	5.8	5.8	5.4	6.4	3.8	3.8	3.5	4.2
Short Term (0-3 years)	Met				Met			
Medium Term (3-10 years)	Not Met				Not Met			
Long Term (10-30 years)	Not Met				Not Met			

Source: Urban Economics



13. NPS-HPL Provisions

Section 3.6(4) of the NPS-HPL outlines the requirements that must be met for urban rezoning of highly productive land. These include:

- (a) the urban zoning is required to provide sufficient development capacity to meet expected demand for housing or business land in the district; and*
- (b) there are no other reasonably practicable and feasible options for providing the required development capacity; and*
- (c) the environmental, social, cultural and economic benefits of rezoning outweigh the environmental, social, cultural and economic costs associated with the loss of highly productive land for land-based primary production, taking into account both tangible and intangible values.*

With regard to 3.6(4)(a), it is concluded in section 6 that there is insufficient development capacity in Kerikeri-Waipapa to meet demand in general, however, with particular reference to retirement housing and affordable housing.

The Rural Residential zone includes large lot residential areas and is comprised of 774 properties. These have average lot size of 8,400m², an average house size of 215m², and an average valuation of \$900,000. It is therefore an upmarket lifestyle area with relatively large expensive houses. Any additional development capacity in this area would require rezoning and it could possibly be considered in the district plan review process, although such a change has not been included in this district plan review, as there are a wide range of matters to consider in terms of efficiency and certainty that capacity would be realised.

It may be worth noting that Rural Residential or lifestyle property areas are typically seen to be difficult for redevelopment, and are excluded from the MDRS for this reason:

"We note that we expect that the zone will not apply to areas zoned as rural residential (including large lifestyle lots), even though these can be considered to be residential zones. These are typically far from the centre of urban areas, with limited infrastructure provision."

(Briefing 3: Advice on applying a medium density residential zone - exemptions and independent panel process, Para. 42, Page 10).

With regard to 3.6(4)(b), after assessing other locations including the Rural Residential zone for development capacity in Kerikeri-Waipapa, it is concluded that there are no other 'reasonably practical and feasible options' locations for additional development capacity that properly meets demand in Kerikeri. As shown in Figure 58 and Appendix 3, Kerikeri-Waipapa is almost entirely surrounded by lifestyle properties, of under 5 hectares. This type of land use presents a challenge for urban developments, as most owners are typically reluctant to sell these properties, and this can stifle the development of roading and other infrastructure that is required to coordinate



development. Consequently, the development of these areas would be highly fragmented and is unlikely to provide a high quality area. These areas of lifestyle blocks are not considered to be reasonably practicable and feasible for development for these reasons.

With regard to 3.6(4)(c), the Submission site is considered to have economic and social benefits relating to meeting the housing needs of Kerikeri-Waipapa that significantly exceed the loss of productive land, and to meet 3.6(4)(c) of the NPS-HPL. As a benchmark, the site currently has a value of \$9,680,000. The value-added per annum of the displacement of land suitable for agricultural use is approximately \$0.1 million with a present value of \$2.1 million over a 30-year period. This is a relatively small economic cost. However, by comparison, the Submission would result in a net present value of \$503.6 million and an additional 9,303 FTE jobs over the base case. This is a considerable net economic benefit. More generally, the Submission site presents a unique opportunity to provide a large masterplanned development that links the two main urban areas of Kerikeri and Waipapa, which would provide inherent efficiencies.

14. Economic Costs and Benefits

The economic benefits of the proposed development are:

- It is estimated that the construction of the 1,830 residential dwellings would result in a total of 2,348 FTE jobs and would contribute \$335.8 million to GDP. The construction of the proposed commercial & employment centre would result in an estimated 653 FTE jobs and would contribute \$93.3 million to GDP.
- The total ongoing household expenditure from the residents of the proposed development upon completion is estimated to be \$79,420,000 per annum. This generates a value-added to GDP of approximately \$45,380,000 per annum, supporting approximately 522 FTE jobs.
- This is estimated based on an approximate average of current rates of properties in Kerikeri-Waipapa with a capital value of \$800,000. This results in estimated rates of \$4,500 per lot, per annum, resulting in a total of approximately \$8,235,000 once the development is fully constructed.
- Over a 30-year period, the proposed development would result in a net present value of \$503.6 million and an additional 9,303 FTE jobs over the base case. This is a considerable net economic benefit.

The economic costs of the proposed development are:

- The proposed development would displace 112 hectares of rural land currently valued at approximately \$9,680,000. The value-added per annum of the displacement of land suitable for agricultural use is approximately \$0.1 million with a present value of \$2.1 million over a 30-year period. This is a relatively small economic cost.



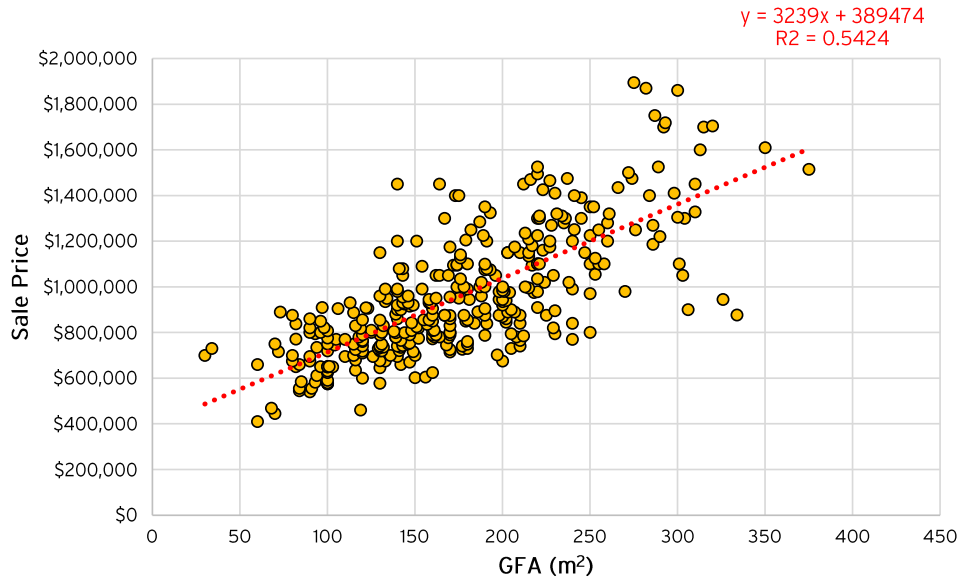
15. Conclusion & Recommendations

The proposal would have economic benefits that far outweigh the economic costs and is recommended for approval. This recommendation is subject to the retail floorspace cap outlined in Section 7, or other planning mechanisms that ensures the overall objectives are achieved in the best way possible.



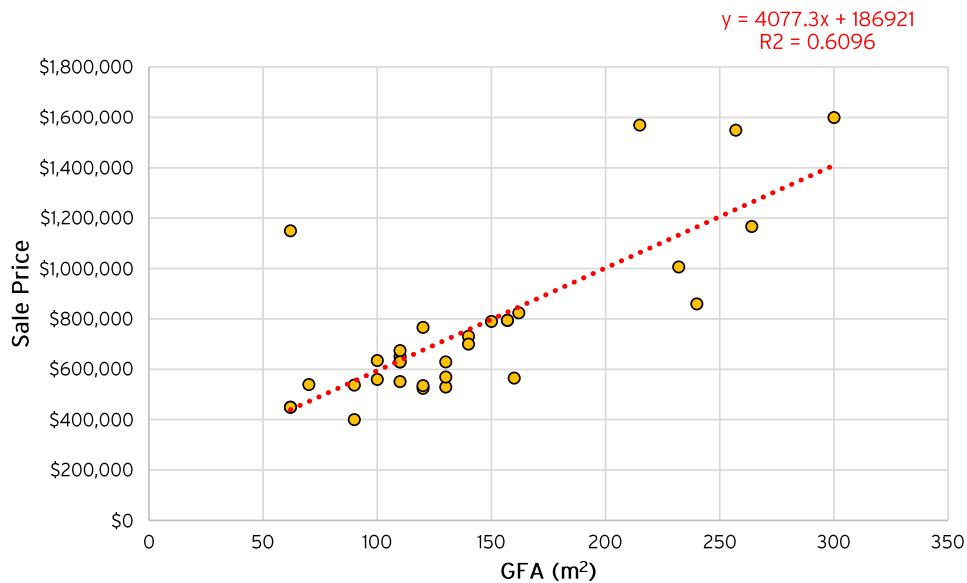
16. Appendix 1: Kerikeri-Waipapa Dwelling Price Regression Analysis

Figure 52: Stand Alone Regression of Sales Over September 2020-2022 Period



Source: Corelogic

Figure 53: Terrace Regression Sales Over September 2020-2022 Period



Source: Corelogic



17. Appendix 2: Commercial Feasibility Modelling Methodology

Section 3.2 of the NPS-UD requires local authorities to provide sufficient development capacity for housing. This is defined as:

- (1) *“Every tier 1, 2, and 3 local authority must provide at least sufficient development capacity in its region or district to meet expected demand for housing:*
 - a. *In existing and new urban areas; and*
 - b. *For both standalone dwellings and attached dwellings; and*
 - c. *In the short term, medium term and long term.”*
- (2) *“In order to be sufficient to meet expected demand for housing, the development capacity must be:*
 - a. *Plan-enabled; and*
 - b. *Infrastructure-ready; and*
 - c. *Feasible and reasonably expected to be realised...”*

Urban Economics has applied a methodology that complies with the NPS-UD provisions for estimated development capacity (plan-enabled, infrastructure ready, feasible and reasonably expected to be realised). The FNDC’s Section 32 report on the Proposed District Plan appears to have only considered plan-enabled capacity and does not consider whether the capacity is infrastructure ready, feasible and reasonably expected to be realised. It therefore does not comply with the NPS-UD.

The following outlines the data, methodology and assumptions for the assessment of development capacity presented in Section 4.

The study area used for this analysis corresponds with the area used to define Kerikeri-Waipapa in the FNDC’s Section 32 report. Every parcel within the General Residential, Rural Residential and Mixed-Use Zones were compiled and joined to property valuation data collected from Property Guru (Corelogic).

The minimum lot sizes used in this assessment are based on the controlled subdivision standards for the General Residential and Mixed-Use Zones, and the Restricted Discretionary subdivision standards for the Rural Residential Zone. The minimum lot sizes are:

- General Residential: 600m²
- Rural Residential: 3,000m²
- Mixed-Use: 250m²



The total plan enabled capacity for Kerikeri-Waipapa is estimated based on the above minimum lot sizes. Plan enabled capacity is defined under the NPS-UD as the capacity on land zoned or set aside for housing without accounting for any constraints. Urban Economics' analysis concludes that the FNDC's assessment of plan enabled capacity is an accurate representation of the supply of plan enabled capacity in Kerikeri-Waipapa.

Infrastructure-ready capacity is defined as having either adequate development infrastructure to support development in the short term or having funding for adequate infrastructure identified for the medium term. Urban Economics have assumed that there is currently sufficient infrastructure capacity to support future development and population growth.

Commercially feasible capacity is estimated by evaluating the costs and revenues for development of each individual parcel, for a range of lot size and composition scenarios, as outlined below.

Unit Scenarios by Type, Size and Price

1. Small Units - This scenario analyses a more intensive development outcome, assessing a 160m² stand alone dwelling priced at \$940,000, and a 110m² terrace house priced at \$670,000.
2. Medium Units - This scenario analyses a development outcome more closely aligned with a typical market outcome, assessing a 170m² stand alone dwelling priced at \$990,000, and a 120m² terrace house priced at \$710,000.
3. Large Units - This scenario tests a less intensive development outcome, assessing a 180m² stand alone dwellings priced at \$1,030,000, and a 130m² terrace house priced at \$750,000
4. 1-Level Retiree Units - This scenario tests a retiree suitable development outcome with smaller 1-level product, assessing a 90m² stand alone dwelling priced at \$720,000, and an 80m² terrace dwelling priced at \$540,000.

Commercially Feasible Capacity Methodology

- Using the plan enabled additional lots on each site, the sales price and unit size scenarios are applied to each additional lot that can be created to determine the total revenue created from the subdivision (sale price multiplied by the number of additional lots).
- The total cost is calculated based on the following:
 - A construction cost of \$2,800 per m² for a stand alone dwelling and \$2,550 per m² for a terrace house. This is sourced from QV cost builder.
 - A development cost per lot estimated at \$80,000.
 - An estimated capital value of the site (20% increase over the 2019 council valuation).
 - A sales cost of 3% is applied to the total revenue created from the subdivision.



- GST subtracted from the total revenue (15%).
- The net revenue is calculated by subtracting the total cost from the total sales revenue.
- A company tax of 28% has been applied to the net revenue. This determines the net profit from the subdivision.
- A profit margin is then calculated based on the net profit divided by the total costs.
- A subdivision is considered to be feasible if the profit margin is 20% or higher.
- Sites that achieve a profit margin of 20% or higher after subdivision are then compiled and broken down by zone.

The same methodology is applied for the Multi-Unit Rule on sites located in the General Residential Zone, resulting in a yield of three attached (terrace) dwellings for each additional lot that can be created.

The sale price for dwellings within each scenario are derived from the regression analysis of recent sales in Appendix 1. Sales data is sourced from Property Guru (Corelogic).

A sample outputs from the commercial feasibility model are provided below. The sample is of properties located within the General Residential Zone of the Proposed District Plan. Properties with a profit margin of less than 20% are not considered to be commercially feasible and have been coloured in red. These outputs enable a peer review of the model.

Figure 54: Small Unit Scenario Commercially Feasible Capacity Sample

Site Address	Greenfield /Infill	Adjusted C.V. (20% increase)	Unit Type	Unit Size	Sale Price	Lots Yielded	Construction Cost (\$/m ²)	Small Units							Profit Margin	
								Total Sales Revenue	Total Construction Cost	Total Development Cost	Sales Cost	GST	Net Revenue	Company Tax		Net Profit
Without Multi-Unit Rule	46 Hall Road	Infill	Stand Alone	160	\$945,000	3	\$2,550	\$2.84M	\$1.22M	\$2.4M	\$0.9M	\$4.3M	-\$1.0M	-\$0.3M	-\$0.7M	-3%
	19 Shepherd Road	Greenfield	Stand Alone	160	\$945,000	9	\$2,550	\$8.51M	\$3.67M	\$7.2M	\$2.6M	\$1.28M	\$1.56M	\$4.4M	\$1.12M	20%
	65 Hone Heke Road	Infill	Stand Alone	160	\$945,000	2	\$2,550	\$1.89M	\$8.2M	\$1.6M	\$0.6M	\$2.8M	-\$0.8M	-\$0.25M	-\$0.63M	-25%
	49 Amokura Drive	Infill	Stand Alone	160	\$945,000	2	\$2,550	\$1.89M	\$8.2M	\$1.6M	\$0.6M	\$2.8M	-\$0.9M	-\$0.2M	-\$0.6M	-4%
21 Peacock Garden Drive	Greenfield	Stand Alone	160	\$945,000	10	\$2,550	\$9.45M	\$4.08M	\$8.0M	\$2.8M	\$1.42M	\$1.91M	\$5.3M	\$1.37M	22%	
With Multi-Unit Rule	46 Hall Road	Infill	Terrace	110	\$670,000	9	\$2,800	\$6.03M	\$2.77M	\$7.2M	\$1.8M	\$9.0M	\$4.9M	\$1.4M	\$3.5M	8%
	19 Shepherd Road	Greenfield	Terrace	110	\$670,000	27	\$2,800	\$18.09M	\$8.32M	\$2.16M	\$5.4M	\$2.71M	\$3.34M	\$9.3M	\$2.40M	20%
	65 Hone Heke Road	Infill	Terrace	110	\$670,000	6	\$2,800	\$4.02M	\$1.85M	\$4.8M	\$1.2M	\$6.0M	-\$0.48M	-\$0.14M	-\$0.35M	-9%
	49 Amokura Drive	Infill	Terrace	110	\$670,000	6	\$2,800	\$4.02M	\$1.85M	\$4.8M	\$1.2M	\$6.0M	\$0.31M	\$0.9M	\$2.2M	7%
21 Peacock Garden Drive	Greenfield	Terrace	110	\$670,000	30	\$2,800	\$20.10M	\$9.24M	\$2.40M	\$6.0M	\$3.02M	\$3.88M	\$1.09M	\$2.80M	21%	

Source: Urban Economics, QV Costbuilder, Corelogic



Figure 55: Medium Unit Scenario Commercially Feasible Capacity Sample

		Medium Units																
Site Address	Greenfield /Infill	Adjusted C.V. (20% increase)	Unit Type	Unit Size	Sale Price	Lots Yielded	Construction Cost (\$/m ²)	Total Sales Revenue	Total Construction Cost	Total Development Cost	Sales Cost	GST	Net Revenue	Company Tax	Net Profit	Profit Margin		
Without Multi-Unit Rule	46 Hall Road	Infill	Stand Alone	170	\$985,000	3	\$2,550	\$2.96M	\$1.30M	\$2.4M	\$0.9M	\$4.4M	-\$0.8M	-\$0.2M	-\$0.6M	-2%		
	19 Shepherd Road	Greenfield	Stand Alone	170	\$985,000	9	\$2,550	\$8.87M	\$3.90M	\$7.2M	\$2.7M	\$13.3M	\$1.63M	\$4.6M	\$1.17M	20%		
	65 Hone Heke Road	Infill	Stand Alone	170	\$985,000	2	\$2,550	\$1.97M	\$0.87M	\$1.6M	\$0.6M	\$3.0M	-\$0.86M	-\$0.24M	-\$0.62M	-24%		
	49 Amokura Drive	Infill	Stand Alone	170	\$985,000	2	\$2,550	\$1.97M	\$0.87M	\$1.6M	\$0.6M	\$3.0M	-\$0.07M	-\$0.2M	-\$0.05M	-3%		
	21 Peacock Garden Drive	Greenfield	Stand Alone	170	\$985,000	10	\$2,550	\$9.85M	\$4.34M	\$8.0M	\$3.0M	\$14.8M	\$1.98M	\$5.5M	\$1.43M	22%		
With Multi-Unit Rule	46 Hall Road	Infill	Terrace	120	\$710,000	9	\$2,800	\$6.39M	\$3.02M	\$7.2M	\$1.9M	\$9.6M	\$5.4M	\$1.5M	\$3.9M	8%		
	19 Shepherd Road	Greenfield	Terrace	120	\$710,000	27	\$2,800	\$19.17M	\$9.07M	\$2.16M	\$5.8M	\$2.88M	\$3.47M	\$0.97M	\$2.50M	19%		
	65 Hone Heke Road	Infill	Terrace	120	\$710,000	6	\$2,800	\$4.26M	\$2.02M	\$4.8M	\$1.3M	\$6.4M	-\$0.45M	-\$0.13M	-\$0.33M	-8%		
	49 Amokura Drive	Infill	Terrace	120	\$710,000	6	\$2,800	\$4.26M	\$2.02M	\$4.8M	\$1.3M	\$6.4M	\$0.34M	\$0.9M	\$0.24M	7%		
	21 Peacock Garden Drive	Greenfield	Terrace	120	\$710,000	30	\$2,800	\$21.30M	\$10.08M	\$2.40M	\$6.4M	\$3.20M	\$4.03M	\$1.13M	\$2.90M	21%		

Source: Urban Economics, QV Costbuilder, Corelogic

Figure 56: Large Unit Scenario Commercially Feasible Capacity Sample

		Large Units																
Site Address	Greenfield /Infill	Adjusted C.V. (20% increase)	Unit Type	Unit Size	Sale Price	Lots Yielded	Construction Cost (\$/m ²)	Total Sales Revenue	Total Construction Cost	Total Development Cost	Sales Cost	GST	Net Revenue	Company Tax	Net Profit	Profit Margin		
Without Multi-Unit Rule	46 Hall Road	Infill	Stand Alone	180	\$1,025,000	3	\$2,550	\$3.08M	\$1.38M	\$2.4M	\$0.9M	\$4.6M	-\$0.6M	-\$0.2M	-\$0.4M	-1%		
	19 Shepherd Road	Greenfield	Stand Alone	180	\$1,025,000	9	\$2,550	\$9.23M	\$4.13M	\$7.2M	\$2.8M	\$13.8M	\$1.69M	\$4.7M	\$1.22M	20%		
	65 Hone Heke Road	Infill	Stand Alone	180	\$1,025,000	2	\$2,550	\$2.05M	\$0.92M	\$1.6M	\$0.6M	\$3.1M	-\$0.85M	-\$0.24M	-\$0.61M	-24%		
	49 Amokura Drive	Infill	Stand Alone	180	\$1,025,000	2	\$2,550	\$2.05M	\$0.92M	\$1.6M	\$0.6M	\$3.1M	-\$0.06M	-\$0.02M	-\$0.04M	-2%		
	21 Peacock Garden Drive	Greenfield	Stand Alone	180	\$1,025,000	10	\$2,550	\$10.25M	\$4.59M	\$8.0M	\$3.1M	\$15.4M	\$2.06M	\$5.8M	\$1.48M	22%		
With Multi-Unit Rule	46 Hall Road	Infill	Terrace	130	\$755,000	9	\$2,800	\$6.80M	\$3.28M	\$7.2M	\$2.0M	\$10.2M	\$6.2M	\$1.7M	\$4.4M	9%		
	19 Shepherd Road	Greenfield	Terrace	130	\$755,000	27	\$2,800	\$20.39M	\$9.83M	\$2.16M	\$6.1M	\$3.06M	\$3.71M	\$1.04M	\$2.67M	20%		
	65 Hone Heke Road	Infill	Terrace	130	\$755,000	6	\$2,800	\$4.53M	\$2.18M	\$4.8M	\$1.4M	\$6.8M	-\$0.40M	-\$0.11M	-\$0.29M	-7%		
	49 Amokura Drive	Infill	Terrace	130	\$755,000	6	\$2,800	\$4.53M	\$2.18M	\$4.8M	\$1.4M	\$6.8M	\$0.39M	\$1.1M	\$0.28M	8%		
	21 Peacock Garden Drive	Greenfield	Terrace	130	\$755,000	30	\$2,800	\$22.65M	\$10.92M	\$2.40M	\$6.8M	\$3.40M	\$4.29M	\$1.20M	\$3.09M	21%		

Source: Urban Economics, QV Costbuilder, Corelogic

Figure 57: 1-Level Retiree Unit Scenario Commercially Feasible Capacity Sample

		1-Level Retiree Units																
Site Address	Greenfield /Infill	Adjusted C.V. (20% increase)	Unit Type	Unit Size	Sale Price	Lots Yielded	Construction Cost (\$/m ²)	Total Sales Revenue	Total Construction Cost	Total Development Cost	Sales Cost	GST	Net Revenue	Company Tax	Net Profit	Profit Margin		
Without Multi-Unit Rule	46 Hall Road	Infill	Stand Alone	90	\$720,000	3	\$2,550	\$2.16M	\$0.69M	\$2.4M	\$0.6M	\$3.2M	-\$0.12M	-\$0.03M	-\$0.08M	-4%		
	19 Shepherd Road	Greenfield	Stand Alone	90	\$720,000	9	\$2,550	\$6.48M	\$2.07M	\$7.2M	\$1.9M	\$9.7M	\$1.51M	\$4.2M	\$1.09M	27%		
	65 Hone Heke Road	Infill	Stand Alone	90	\$720,000	2	\$2,550	\$1.44M	\$0.46M	\$1.6M	\$0.4M	\$2.2M	-\$0.89M	-\$0.25M	-\$0.64M	-30%		
	49 Amokura Drive	Infill	Stand Alone	90	\$720,000	2	\$2,550	\$1.44M	\$0.46M	\$1.6M	\$0.4M	\$2.2M	-\$0.10M	-\$0.03M	-\$0.07M	-5%		
	21 Peacock Garden Drive	Greenfield	Stand Alone	90	\$720,000	10	\$2,550	\$7.20M	\$2.30M	\$8.0M	\$2.2M	\$10.8M	\$1.85M	\$5.2M	\$1.33M	31%		
With Multi-Unit Rule	46 Hall Road	Infill	Terrace	80	\$540,000	9	\$2,800	\$4.86M	\$2.02M	\$7.2M	\$1.5M	\$7.3M	\$2.9M	\$0.8M	\$2.1M	5%		
	19 Shepherd Road	Greenfield	Terrace	80	\$540,000	27	\$2,800	\$14.58M	\$6.05M	\$2.16M	\$4.4M	\$2.19M	\$2.73M	\$0.76M	\$1.96M	20%		
	65 Hone Heke Road	Infill	Terrace	80	\$540,000	6	\$2,800	\$3.24M	\$1.34M	\$4.8M	\$1.0M	\$4.9M	-\$0.62M	-\$0.17M	-\$0.45M	-13%		
	49 Amokura Drive	Infill	Terrace	80	\$540,000	6	\$2,800	\$3.24M	\$1.34M	\$4.8M	\$1.0M	\$4.9M	\$0.17M	\$0.05M	\$0.12M	5%		
	21 Peacock Garden Drive	Greenfield	Terrace	80	\$540,000	30	\$2,800	\$16.20M	\$6.72M	\$2.40M	\$4.9M	\$2.43M	\$3.20M	\$0.90M	\$2.31M	22%		

Source: Urban Economics, QV Costbuilder, Corelogic



The NPS-UD considers Reasonably Expected to be Realised capacity as an estimate of the realistic supply that will enter the market. Urban Economics has approached this in two steps, as follows:

- (1) A 50% realisation rate over a ten year period has been applied to commercially feasible capacity for the With Multi-Unit Rule and Without Multi-Unit Rule Scenarios. This accounts for some owners choosing not to develop and other commercial constraints to development (e.g. access to finance).
- (2) The R.E.R Likely Market Scenario applies the assumption that approximately 15% of new dwelling construction will be terrace houses and 85% will be conventional stand alone dwellings. This scenario is informed by the recent construction rates of terrace dwellings in Kerikeri and the District which shows only a small fraction of new dwellings are terrace houses.



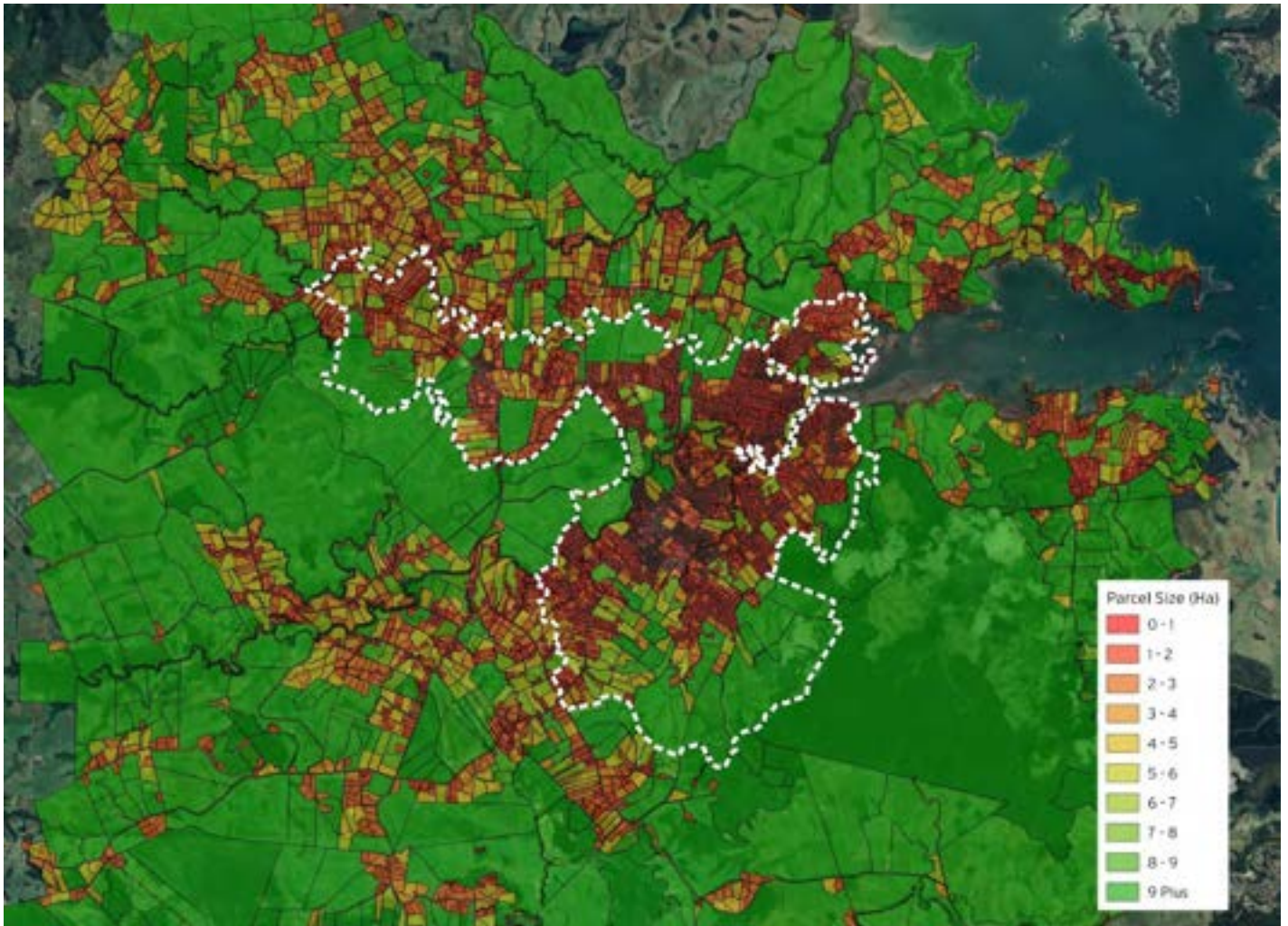
18. Appendix 3: Kerikeri Town Population Estimates

The following figures show the difference between the FNDC and UE population estimates for Kerikeri. In figure 59, the Kerikeri Township area (Kerikeri-Waipapa) that FNDC have relied upon to estimate population is shown in blue. There is however a large quantity of lifestyle property that has an urban rather than rural function, to the north and south of the Kerikeri township (shown as Kerikeri Urban North and South in Figure 59).

Figure 61 demonstrates that approximately 56% of properties within the Kerikeri Urban North and South area are less than 2 hectares and 73% of properties are less than 4 hectares. Given the predominant urban land use, it is considered reasonable to include the total catchment shown in Figure 58 to determine the total population of Kerikeri. This currently equates to 12,300 people. By contrast, the slightly smaller blue area currently has approximately 9,300 people, however this is expected to reach 10,040 people within two years, by 2024. As such, the Kerikeri township is considered to have over 10,000 people currently based on the total catchment or will have 10,000 people by 2024 based on the Kerikeri Township (Kerikeri-Waipapa) catchment. Under both catchments Kerikeri is therefore considered to meet the definition of an urban area under the NPS-UD.



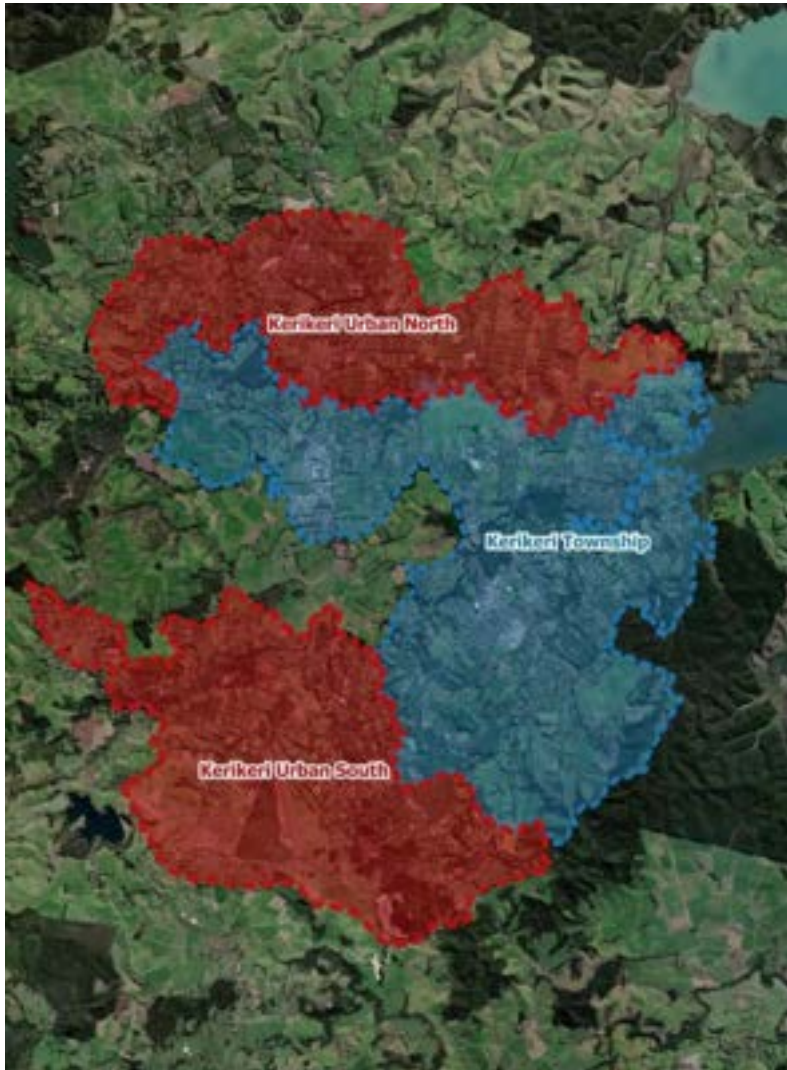
Figure 58: Map of Parcels by Size for Kerikeri Town



Source: LINZ



Figure 59: Kerikeri Township Catchments



Source: Urban Economics

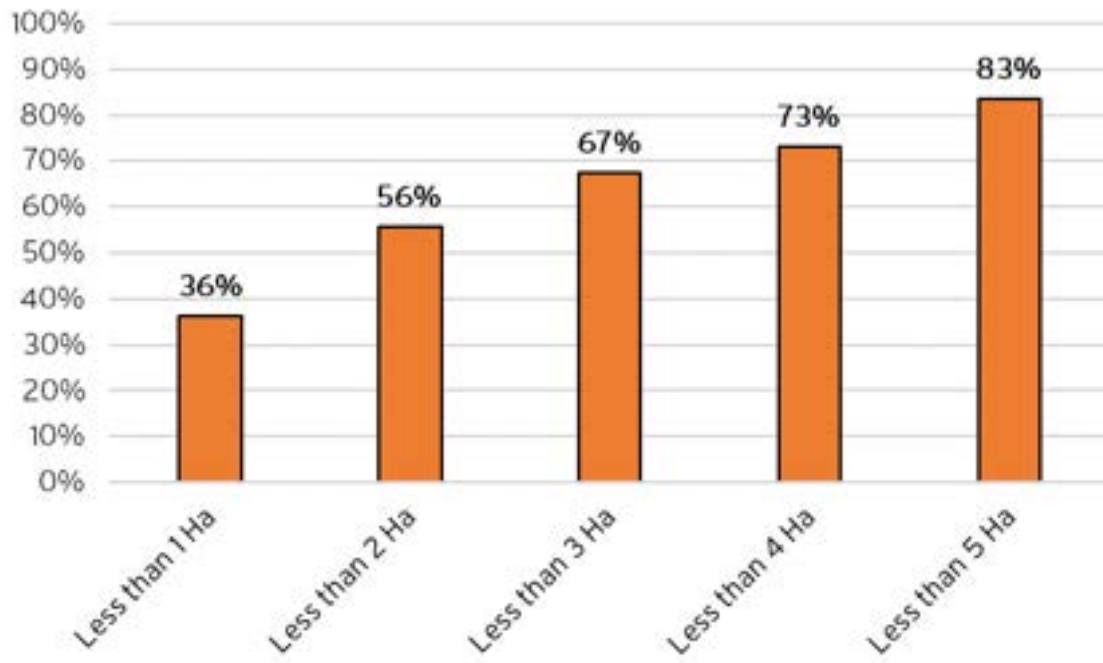
Figure 60: Kerikeri Population Estimates

Population	Historic	Projected										
	2021	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Kerikeri Township	9,000	9,600	10,040	10,480	10,920	11,360	11,800	12,260	12,720	13,180	13,640	14,100
Kerikeri Urban North	1,800	1,900	1,920	1,940	1,960	1,980	2,000	2,040	2,080	2,120	2,160	2,200
Kerikeri Urban South	1,500	1,600	1,640	1,680	1,720	1,760	1,800	1,800	1,800	1,800	1,800	1,800
Total	12,300	13,100	13,600	14,100	14,600	15,100	15,600	16,100	16,600	17,100	17,600	18,100

Source: Property Guru, Statistics NZ



Figure 61: Kerikeri Urban North and Urban South Proportion of Properties Less than 5 Hectares



Source: Corelogic



19. Appendix 4: Indicative Greenfield & Infill Dwelling Prices

The following figure provides an indicative dwelling price for dwellings in greenfield developments using the four unit type scenarios described in Appendix 2. This demonstrates the more affordable dwellings prices in greenfield developments when compared to infill developments. The key points to note are:

- Under the Small Unit scenario, a 160m² stand alone dwelling could be supplied to the market at approximately \$655,000, while a 110m² terrace house could be supplied for \$535,000. By comparison, an infill development in Kerikeri-Waipapa is estimated to supply these dwellings to the market for \$945,000 and \$670,000 respectively.
- Under the Medium Unit scenario, a 170m² stand alone dwelling could be supplied to the market at approximately \$695,000, while a 120m² terrace house could be supplied for \$580,000. By comparison, an infill development in Kerikeri-Waipapa is estimated to supply these dwellings to the market for \$985,000 and \$710,000 respectively.
- Under the Large Unit scenario, a 180m² stand alone dwelling could be supplied to the market at approximately \$745,000, while a 130m² terrace house could be supplied for \$630,000. By comparison, an infill development in Kerikeri-Waipapa is estimated to supply these dwellings to the market for \$1,025,000 and \$755,000 respectively.
- Under the 1-Level Retiree Unit scenario, a 90m² stand alone dwelling could be supplied to the market at approximately \$440,000, while an 80m² terrace house could be supplied for \$430,000. By comparison, an infill development in Kerikeri-Waipapa is estimated to supply these dwellings to the market for \$720,000 and \$540,000 respectively.

In broad terms, greenfield developments enable developers to produce dwellings at a more affordable price than infill developments. This is due to the lower 'raw land cost' and the economies of scale which enable the developers to efficiently produce lots and dwellings. In the case of Kerikeri-Waipapa, stand alone greenfield houses can be supplied for \$634,000 on average, which is \$285,000 or 47% more affordable than infill stand alone houses. Greenfield terrace houses can be supplied for \$544,000 on average, which is \$125,000 or 23% more affordable than infill terrace houses.



Figure 62: Estimated Greenfield Development Dwellings Sale Prices

Unit Type	Unit Size	Raw Land Cost per Lot	Total Development Costs per Lot	Construction Costs (\$/m ²)	Sales Cost per Dwelling	Net Profit per Dwelling	Total Cost per Dwelling	Sale Price per Dwelling*	20% profit	
Stand Alone	Small	160	\$5,000	\$120,000	\$2,550	\$10,000	\$110,000	\$545,000	\$655,000	20%
	Medium	170	\$7,500	\$130,000	\$2,550	\$10,000	\$116,000	\$580,000	\$695,000	20%
	Large	180	\$10,000	\$140,000	\$2,550	\$10,000	\$124,000	\$620,000	\$745,000	20%
	1-Level Retiree	90	\$5,000	\$120,000	\$2,550	\$10,000	\$73,000	\$365,000	\$440,000	20%
Terrace	Small	110	\$5,000	\$120,000	\$2,800	\$10,000	\$89,000	\$445,000	\$535,000	20%
	Medium	120	\$7,500	\$130,000	\$2,800	\$10,000	\$97,000	\$485,000	\$580,000	20%
	Large	130	\$10,000	\$140,000	\$2,800	\$10,000	\$105,000	\$525,000	\$630,000	20%
	1-Level Retiree	80	\$5,000	\$120,000	\$2,800	\$10,000	\$72,000	\$360,000	\$430,000	20%

Source: Urban Economics, QV Costbuilder, Corelogic

* Required sale price for 20% profit margin

Figure 63: Estimated Greenfield vs Infill Development Dwellings Sale Prices

Unit Type	Unit Size	Sale Price per Dwelling				
		Greenfield	Infill	Additional Price for Infill \$	Additional Price for Infill %	
Stand Alone	Small	160	\$655,000	\$945,000	\$290,000	44%
	Medium	170	\$695,000	\$985,000	\$290,000	42%
	Large	180	\$745,000	\$1,025,000	\$280,000	38%
	1-Level Retiree	90	\$440,000	\$720,000	\$280,000	64%
	Average		\$634,000	\$919,000	\$285,000	47%
Terrace	Small	110	\$535,000	\$670,000	\$135,000	25%
	Medium	120	\$580,000	\$710,000	\$130,000	22%
	Large	130	\$630,000	\$755,000	\$125,000	20%
	1-Level Retiree	80	\$430,000	\$540,000	\$110,000	26%
	Average		\$544,000	\$669,000	\$125,000	23%

Source: Urban Economics, Corelogic



1828 & 1878 SH10, WAIPAPA SERVICING REPORT J16102/2

Report prepared by Johan Ehlers

14 October 2022

NO.	DATE	DESCRIPTION
Memo	17/09/2022	First draft
J16102/2	14/10/2022	For planning submission

Table of Contents

1	Scope.....	4
2	Basis for assessment	5
3	Existing servicing environment	6
3.1	Stormwater	6
3.2	Wastewater.....	7
3.3	Water supply.....	11

Table of Tables

Table 1 - Levels of development used to determine trigger points.....	5
Table 2 - Demand for services	5
Table 3 - Wastewater discharge units	8
Table 4 - GD06 - Soil categories	9
Table 5 – Treated wastewater discharge to land	9
Table 6 - Wastewater system trigger points	10
Table 7 - Potable water demand units.....	11
Table 8 - Estimated potable water demand	11

Table of Figures

Figure 1 – Submission area	4
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1 Scope

This report describes servicing options for a proposed residential development on 1828 & 1878 State Highway 10, Waipapa. The site is approximately 200 hectares in size. The servicing assessment has been based on a development will comprising:

- 1,500 to 2,000 dwellings. Approximately 30% retirement housing and 70% households
- One hectare retail
- One hectare office/commercial
- Three hectares other business

The development area is shown on Figure 1.

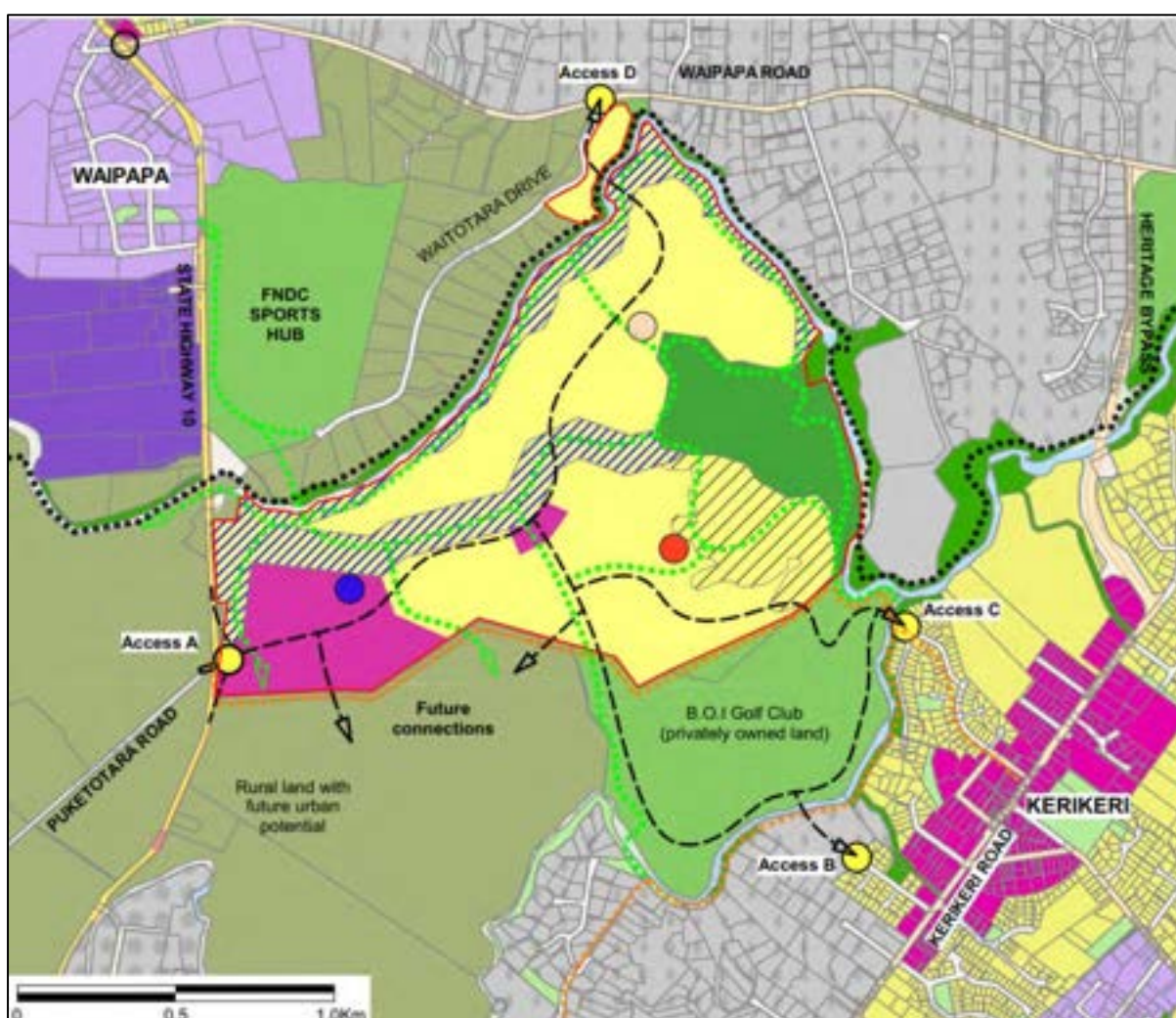


Figure 1 – Submission area

Development will occur incrementally over time. Trigger points must be identified for on-site and off-site servicing solutions.

2 Basis for assessment

The cumulative level of development that has been used for the assessment is shown on Table 1. Note that the timeline is only intended to show the level of demand for services that will be created at various levels of development.

Table 1 - Levels of development used to determine trigger points

Land use		Time 1	Time 2	Time 3	Time 4	Time 5	Time 6	Time 7	Time 8	Time 9	Time 10
Residential units	N.O.	150	300	450	600	750	900	1050	1200	1350	1500
Retirement village units	N.O.	60	120	180	240	300	360	420	480	540	600
Total number of households	N.O.	210	420	630	840	1050	1260	1470	1680	1890	2100
Retail (ha)	Hectare	1	1	1	1	1	1	1	1	1	1
Office/commercial (ha)	Hectare	1	1	1	1	1	1	1	1	1	1
Other business (ha)	Hectare	3	3	3	3	3	3	3	3	3	3

Soil characteristics assessments have been based on LDE report 149114 dated 17 June 2022 – Specific reference to appendices A, B and C.

E2 Environmental undertook a flood assessment of the wider area and formulated a stormwater drainage framework for the development to enable development to be undertaken without adversely affecting other properties.

Demand for services have been based on the unit rates shown on Table 2

Table 2 - Demand for services

Land use		Potable water demand	Wastewater discharge
Residential units	L/hh/day	1200	800
Retirement village units	L per retirement unit per day	600	400
Retail	L/50m ² retail per day	65	65
Office/commercial	L/15m ² offices per day	65	65
Other business	L/50m ² other business per day	65	65

Peak stormwater discharge rates must be limited to pre-development peak discharge rates and stormwater must be treated prior to discharge to the floodway and the river, to a level appropriate for the receiving environment. These matters are best addressed when resource consent applications for subdivisions are considered.

3 Existing servicing environment

3.1 Stormwater

Hydrology for the wider catchment has been addressed by E2 Environmental. This work produced a formalised floodway option (Figure 6 dated 5 July 2022), which is the preferred option. It primarily consists of a 100m wide channel and minor reshaping of the existing landscape.

It is noted that the impact of any earthworks inside flow paths, including roading embankments at the Waipapa Road / Waitotara Drive intersection, at river crossing points and floodway crossing points must be carefully assessed to ensure there are no adverse impacts on other properties. It is a reasonable assumption that earthworks and structures in flow paths and water bodies can be designed such that adverse effects on other properties can be avoided or mitigated. Such designs may require adjustment of other design elements.

The design concept developed by E2 Environmental will create an environment into which stormwater from the proposed development can be discharged. These discharges must be equivalent to the existing runoff from the area that is to be developed. The environment that will be created by E2 Environmental's concept does not allow for increases in the maximum rate at which stormwater is discharged from the site, but it does allow for the length of time at which stormwater is discharged at the current maximum flow rates to be extended.

Development will result in an increase in impermeable areas, and therefore an increase in runoff. The effect of development on stormwater runoff is twofold and should be mitigated as follows:

Effect	Runoff rate	Runoff volume	Quality
Description of effect	Increased peak runoff rate.	Increased runoff volume.	Potential for contamination.
Mitigation measure	Attenuation storage.	Discharge runoff for a longer length of time.	Treatment through a suite of industry standard measures including swales, rain gardens, filter strips and separators.
Result of mitigation	Reduce peak runoff rate to pre-development rate. This will avoid increased flood levels.	No change in flood levels, but water levels will stay at elevated levels for slightly longer lengths of time.	Stormwater discharge compliant with Regional Council rules.

It is expected that stormwater attenuation and treatment devices will occupy approximately 15% of the land area that will be developed.

3.2 Wastewater

The extent of the municipal wastewater network is shown on a map appended to this report. Northland Regional Council has provided funding in their 10-year capital plan for a significant wastewater network and wastewater treatment plant upgrade, including the Waipapa area. Planning work for the upgrades is in an early stage and no definitive upgrade options have been released. FNDC officers have indicated that the existing network and treatment plant do not have spare capacity, and that upgrade options at the existing treatment plant at Okura Drive (located 5km from the Structure Plan area as the crow flies and 8.5km via Waipapa Road and Twin Coast Discovery Highway) are constrained by the topography.

Treated wastewater discharges must be to land and not into water.

The approach to wastewater treatment and disposal for the proposed structure plan area must be twofold:

1. Integrate the wastewater system for the structure plan area with the Kerikeri / Waipapa system. It is noted that Waipapa is not currently reticulated, but that Council's 10-year capital plan provides for a system to be developed for the Waipapa area. The development of new wastewater treatment and disposal systems are notoriously difficult and time consuming. Whilst the developer should work closely with FNDC to develop an integrated wastewater treatment and disposal solution, and meet the proportional implementation cost, the time required for optioneering, consultation, consenting, land acquisition (if needed) and construction is much longer than the timeframe within which commencement of development of the structure plan area is envisaged to occur. Development of the structure plan area is driven by social and commercial factors. Development of a municipal wastewater system must be cognisant of a myriad of other factors which are beyond the control of any single entity.
2. Develop a standalone wastewater disposal system. This system will consist of a treatment plant, sludge processing facility and areas of land for disposal of treated wastewater. It is possible that land areas outside the structure plan area may become available for land disposal but for the purposes of this memorandum it has been assumed that the disposal areas will be inside the structure plan area. The standalone wastewater disposal system must be developed such that the following options are left open:
 - a. To redirect raw wastewater to a future wastewater treatment plant outside the structure plan area,
 - b. To redirect treated wastewater to a future disposal area outside the structure plan area.
 - c. A combination of the two options.

The geotechnical report shows that most of the land inside the structure plan area are cohesive and mostly clay. The rate at which treated wastewater can be applied to land is limited by hydraulic load and nutrient load. It will be possible to treat wastewater to a standard where the application rate will not be limited by nutrient load, so that the application rate will be constrained by the volume of wastewater. In other words, the area of land that is required for wastewater disposal will be determined by the volume of wastewater.

The volume for which the land disposal area must be designed for can be calculated by applying design standards. Far North District Council's draft engineering standards 2022 (FNDC ES22) requires:

Table 3 - Wastewater discharge units

Wastewater source	Units	Value
Domestic	Persons per household	4
Domestic	Litres wastewater per person per day	200
Domestic	Litres per household per day (average dry weather)	800
Retirement home	Litres wastewater per resident per day	220
Retirement home	Litres wastewater per day staff member per day	50
Hotels/Motels	Litres per guest and resident staff per day	200

FNDC ES22 requires a peak factor of five to be applied to the average dry weather flow rates shown above.

FNDC ES22 does not provide specific discharge rates for commercial activities. Auckland City Council uses the following rates:

- Retail, warehouses: 65 litres per 50m² per day
- Offices, restaurants: 65 litres per 15m² per day

The soil classification is predominantly clay, with basalt rock 4m to 6m deep. Table 35 from GD06 (which generally corresponds with other design standards) limits land application methods in clays to subsurface and surface irrigation, with some capacity for beds and trenches in light non-swelling clays. An application rate of 3mm per day has been adopted because it is likely to be achievable. However, to provide design margin it is recommended to provide reserve disposal area of 50% of the estimated area that will be required. The need for the reserve disposal area should be assessed at the defined trigger point to determine whether it is actually required. If the estimated area functions well, the reserve area could be utilised to support more development. The requirement for on-site disposal will cease when a wider Council wastewater system becomes available.

Table 4 - GD06 - Soil categories

ON-SITE WASTEWATER MANAGEMENT IN THE AUCKLAND REGION 104

Table 35: Soil categories and recommended maximum design loading rate (DLR) or design irrigation rate (DIR) for treated wastewater land application

Soil category [Note 1]	Soil texture	Soil structure	Indicative permeability K_{sat} (m/d)	Recommended maximum design loading rate (DLR) or design irrigation rate (DIR) – mm/day								
				Trenches [Note 7]		Beds [Note 8]		ETS beds and trenches	Subsurface and surface irrigation (e.g. PCD)	LPED irrigation	Mounds	Bottomless sand filter
				Primary treated effluent	Secondary treated effluent	Primary treated effluent	Secondary treated effluent					
1	Gravels and sands	Structureless (massive)	>3	20 [Note 1]	25 [Note 1]	16 [Note 1]	20 [Note 1]	Not advised	5 [Note 4]	Not advised	24	70
2	Sandy loams	Weakly structured	>3	20 [Note 1]	25 [Note 1]	16 [Note 1]	20 [Note 1]	Not advised	4 [Note 4]	4	24	Not advised
		Massive	1.4 – 3	15	30	12	24		4 [Note 4]	3.5	16	
3	Loams	High/moderate structured	1.5 – 3	15	30	12	24	15	4 [Note 3]	3.5	16	
		Weakly structured or massive	0.5 – 1.5	10	30	8	24	12	4 [Note 3]	3.5	16	
4	Clay loam	High/moderate structured	0.5 – 1.5	10	30	Not advised	Not advised	15	12	3	Not advised Note 2	
		Weakly structured	0.12 – 0.5	6	20			8	3.5 [Note 3]	3		
		Massive	0.06 – 0.12	4	10			5	3			
5	Light clays (non-swelling)	Strongly structured	0.12 – 0.5	5 [Note 2]	12 [Note 2]	Not advised	Not advised	8	3 [Note 3]	2.5 [Note 5]		
		Moderately structured	0.06 – 0.12	Not advised	10 [Note 2]			5		2.5 [Note 5]		
		Weakly structured or massive	<0.06	Not advised	8 [Notes 2 & 6]			5 [Note 6]		2.5 [Note 5]		
6	Medium to heavy clays. Swelling clays.	Strongly structured	0.06 – 0.5	Not advised	Not advised	Not advised	Not advised	Not advised	2 [Note 4]	Not advised		
		Moderately structured	<0.06									
		Weakly structured or massive	<0.06									

(Adapted from: AS/NZS 1547:2012)

The estimated land area that will be required for on-site wastewater disposal is shown below.

Table 5 – Treated wastewater discharge to land

Land use	Units	Time 1	Time 2	Time 3	Time 4	Time 5	Time 6	Time 7	Time 8	Time 9	Time 10
Retail	m ³ /day	13	13	13	13	13	13	13	13	13	13
Office/commercial	m ³ /day	13	13	13	13	13	13	13	13	13	13
Other business	m ³ /day	39	39	39	39	39	39	39	39	39	39
Retirement village units	m ³ /day	24	48	72	96	120	144	168	192	216	240
Residential units	m ³ /day	120	240	360	480	600	720	840	960	1080	1200

Land use	Units	Time 1	Time 2	Time 3	Time 4	Time 5	Time 6	Time 7	Time 8	Time 9	Time 10
Total	m ³ /day	209	353	497	641	785	929	1073	1217	1361	1505
Land application rate	mm/day	3	3	3	3	3	3	3	3	3	3
Land application area	hectare	7.0	12	17	21	26	31	36	41	45	50
Reserve land application area (50%)	hectare	3.5	5.9	8.3	10.7	13.1	15.5	17.9	20.3	22.7	25.1
Total area reserved for land application	hectare	10.5	17.7	24.9	32.1	39.3	46.5	53.7	60.9	68.1	75.3

A nominal area of two hectares will also be required for a wastewater treatment plant and for biosolids processing facilities.

Based on a 30-hectare area being set aside for on-site disposal the trigger points for wastewater disposal are as follows:

Table 6 - Wastewater system trigger points

Trigger point	Time step	Action
Commencement of development	Prior to Time 1	Obtain discharge consents
On site disposal with 50% reserve area	Development during Time 1 to Time 4	Monitor and report on performance of disposal field, to determine whether the 50% reserve area is required
On site disposal without reserve disposal area, if it is found that the estimated land application area performed well	Development during Time 5 and Time 6	No further development than shown for Time 6 without off-site disposal
Off-site disposal	All time steps	When off-site disposal becomes available, wastewater stops being a constraint and areas set aside for wastewater disposal can be used for other purposes.

3.3 Water supply

The Kerikeri Water Supply Strategy prepared by Jacobs in June 2021 describes the existing water supply and water source.

70% of Kerikeri's water supply is sourced from the Kerikeri Irrigation Company (KIC). The remaining 30% is sourced from Puketotara stream near the golf course. Puketotara stream is fully allocated.

Far North District Council's draft engineering standards 2022 (FNDC ES22) requires:

Table 7 - Potable water demand units

Water demand source	Units	Value
Domestic	Persons per household	4
Domestic	Litres water per person per day	300
Domestic	Litres per household per day (average dry weather)	1,200

Auckland City Council's demand figures were adopted for other uses. These are:

- Dry retail: 1.3L/m²/day
- Wet retail: 4.3L/m²/day

Estimated daily demand is shown on Table 8.

Table 8 - Estimated potable water demand

Land use	Units	Time 1	Time 2	Time 3	Time 4	Time 5	Time 6	Time 7	Time 8	Time 9	Time 10
Retail	m ³ /day	13	13	13	13	13	13	13	13	13	13
Office/commercial	m ³ /day	43	43	43	43	43	43	43	43	43	43
Other business	m ³ /day	39	39	39	39	39	39	39	39	39	39
Retirement village units	m ³ /day	36	72	108	144	180	216	252	288	324	360
Residential units	m ³ /day	180	360	540	720	900	1080	1260	1440	1620	1800
Total	m ³ /day	311	527	743	959	1175	1391	1607	1823	2039	2255
Source flow rate to replenish in 20-hour timeframe	L/s	4.3	7.3	10.3	13.3	16.3	19.3	22.3	25.3	28.3	31.3
Minimum source flow rate that must be available to overcome algal bloom issues	L/s	1.4	2.4	3.4	4.4	5.4	6.4	7.4	8.4	9.4	10.4

The water strategy shows that the existing system does not have spare capacity.

The Long Term Plan includes provision for a treatment plant and source water upgrade for Kerikeri. The timeframe for this work will not necessarily be compatible with commencement

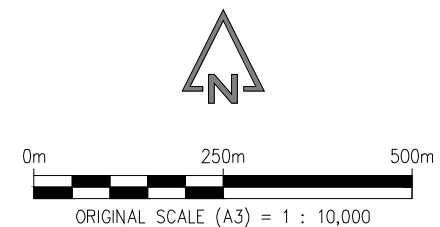
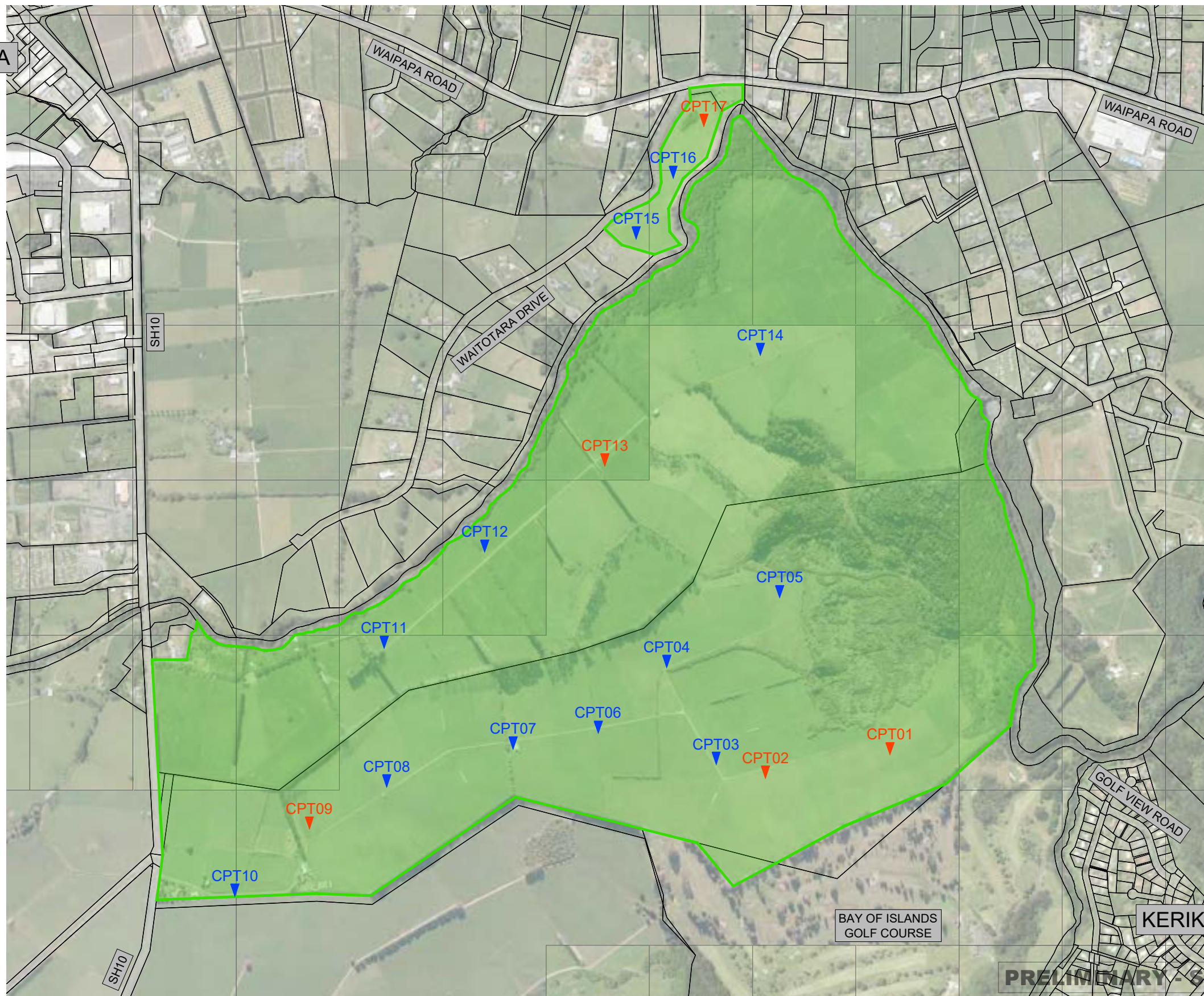
of development. An approach similar to the approach for wastewater is therefore proposed: Work as closely as possible with FNDC to develop and integrated system but be prepared to construct a dedicated bulk supply system if required, and ensure that it can be integrated with the wider municipal system at a later date, when that system becomes available.



KIC has indicated that they can supply raw water from their northern dam. The point of supply is approximately three kilometres from the structure plan area. A bulk water main extension, treatment plant with a buffer tank, treated water storage facility and distribution pump station will be required to reticulate the structure plan area. A nominal one-hectare area should be set aside for water treatment and water storage. The treatment plant should not be in a residential area, but its location is not as sensitive as a wastewater treatment plant.

The treatment process must be designed to be able to cope with algal blooms that occur in KIC's storage dams. The blooms are toxic and difficult to treat. Ideally an alternative water source will be developed, similar to the 30% of supply that Kerikeri sources from Puketotara stream. The only source that has been identified is groundwater, which is limited. It is understood that bore capacities in the Kerikeri area is limited and that a good bore produces 3 L/s. Field work should be undertaken prior to the hearing to confirm availability of groundwater.

Appendix A Maps

WAIPAPA



GEOLOGY MARKERS	
	CPT99 Sand / Silt
	CPT99 Clay

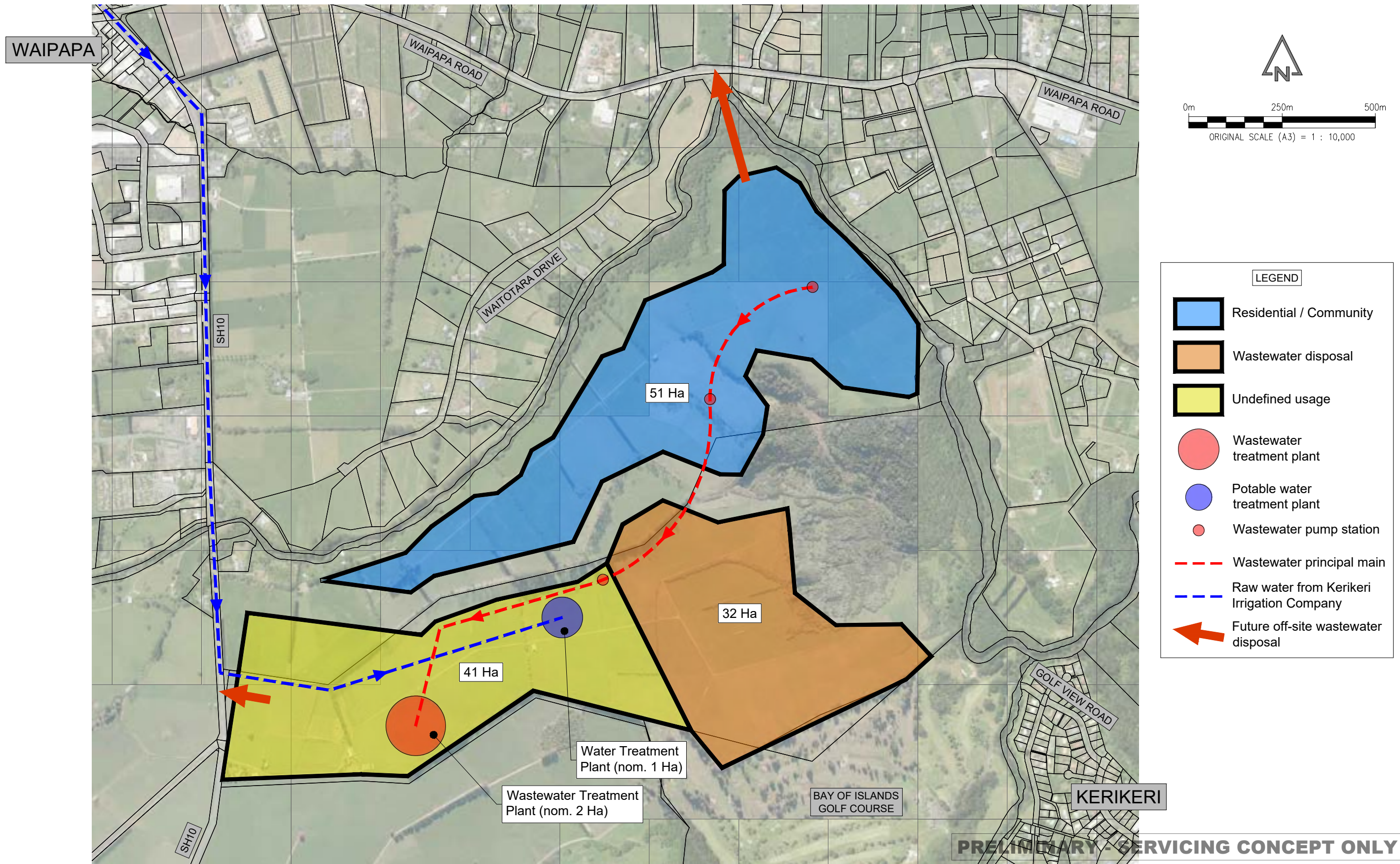
PRELIMINARY SERVICING CONCEPT ONLY

REV	DESCRIPTION TO REVISION	REV BY	DATE
0	PRELIMINARY CONCEPT – ISSUED FOR SERVICING REPORT ONLY	JB	20.09.2022

CLIENT	BROWNLIE BROTHERS LTD
PROJECT	1878 SH 10 KERIKERI

INFRASTRUCTURE SOLUTIONS PROJECT MANAGEMENT PO Box 7335, Taradale 4141 Phone : 06 650 5565 Email : admin@infir.nz				
DRAWING TITLE				
PRELIMINARY CONCEPT GEOTECHNICAL INFORMATION				
PROPOSAL CHECKED:	CAD CHECKED:	PROPOSAL APPROVED:	CLIENT APPROVED:	ENGINEER APPROVED:
-	-	-	-	-
DRAWN BY:	A3 DWG SCALE:	PROJ / DWG / SHEET:	J16102 / SK100	REV: 0
JB	1:10,000			





0	PRELIMINARY CONCEPT – ISSUED FOR SERVICING REPORT ONLY	JB	20.09.2022
REV	DESCRIPTION TO REVISION	REV BY	DATE

CLIENT
BROWNLIE BROTHERS LTD

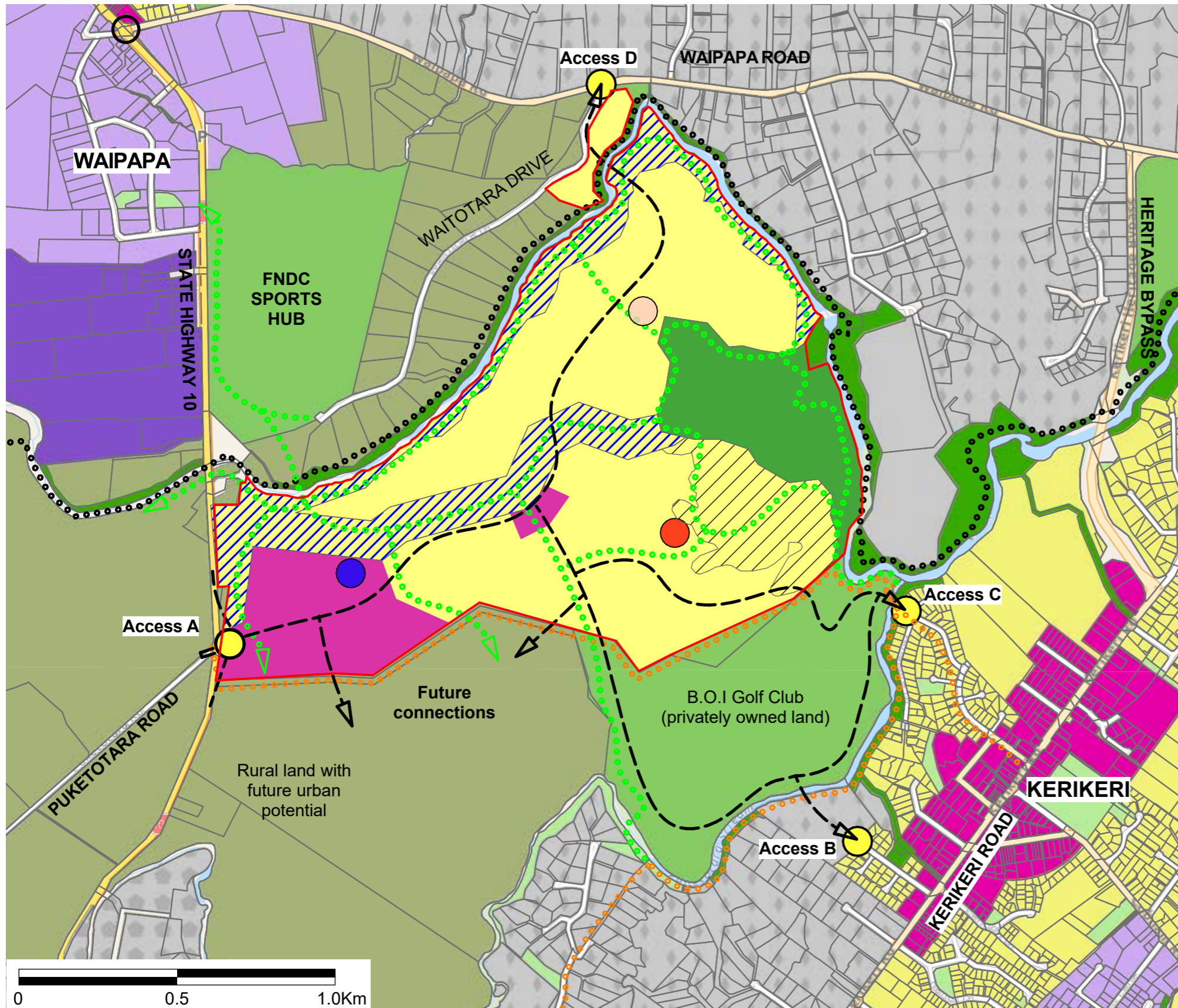
PROJECT
**1878 SH 10
KERIKERI**

INFRASTRUCTURE SOLUTIONS || PROJECT MANAGEMENT
PO Box 7335, Taradale 4141
Phone : 06 650 5565 Email : admin@infir.nz

DRAWING TITLE
**PRELIMINARY CONCEPT
WATER & WASTEWATER ZONING PLAN**

PROPOSAL CHECKED:	CAD CHECKED:	PROPOSAL APPROVED:	CLIENT APPROVED:	ENGINEER APPROVED:
-	-	-	-	-
DRAWN BY:	JB	A3 DWG SCALE:	1:10,000	PROJ / DWG / SHEET:
				J16102 / SK101
REV:				0



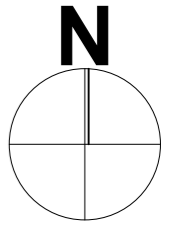


- Legend**
- Submission area
 - State Highways
 - Local roads
 - Waterways

- Zones**
- General Residential
 - Heavy Industrial
 - Light Industrial
 - Mixed Use
 - Natural Open Space
 - Open Space
 - Sport And Active Recreation
 - Rural Lifestyle
 - Rural Production

- Special Purpose Zones**
- Airport
 - Carrington Estate; Kauri Cliffs; Kororāreka Russell Township; Moturoa Island; Orongo Bay; Quail Ridge
 - Horticulture
 - Horticulture Processing Facilities
 - Rural Residential

- Features**
- Significant Natural Area
 - Proposed area of large lot residential
 - Key transport connections to existing roads
 - Proposed local centre
 - Potential school site with connection to FNDc sports hub
 - Potential hotel facility with connection to existing golf course
 - Proposed local roads with cycle ways
 - Potential future connections beyond submission area
 - Te Araroa Trail
 - Planned pathways (FNDc District Plan)
 - Proposed greenway pathways



Map notations (including zone boundaries, greenways etc) are indicative only and will be refined through later (more detailed) processes such as Plan Changes or Notices of Requirement.

Title
Brownlie Land - Proposed Structure Plan: Land Use

Submission on FNDc District Plan

1828 & 1878 State Highway 10, Waipapa

Date
12/10/2022

Scale
As shown

Client
Kiwi Fresh Orange Company Ltd



P.O. Box 8807 Symonds St, Auckland, NZ
Ph (09)308-0070 Email: info@penz.co.nz

ref no.
22030

sheet no.
A007

revision
04



18 October 2022

Kiwi Fresh Orange Company Limited
C/- Burnette O'Connor - The Planning Collective

Attention: Burnette O'Connor
Email: burnette@thepec.co.nz

Dear Burnette

**J3985 - KIWI FRESH ORANGE COMPANY LIMITED
1828 STATE HIGHWAY 10, WAIPAPA – ON-SITE WATER AND WASTEWATER
MANAGEMENT PEER REVIEW**

As per our quotation (Q2968), GWE Consulting have been engaged to undertake a peer review of the report prepared by Johan Ehlers of Infir Ltd: *1828 & 1878 SH10, Waipapa Servicing Report* dated 14 October 2022. The Report provides an assessment of water and wastewater servicing to support Kiwi Fresh Orange Company Limited Submission on the Far North District Councils Proposed District Plan to rezone the land at 1828 and 1878 State Highway 10, Waipapa from rural to urban.

GWE have also been provided the following relevant documents to date:

1. *Demand Calcs*, dated 10 May 2022.
2. *Kerikeri Subdivision & Flood Scheme Investigations and Design*, prepared by E2 Environmental dated 5 July 2022.
3. *Geotechnical Suitability Report for District Plan Review*, prepared by LDE Consultants dated 17 June 2022
4. *Brownlie Land Subdivision, Structure Plan Pages 13–15*, prepared by Pacific Environments Architects, dated 11 July 2022.

In addition to this, we have been provided with a series of Far North District Council documents relating to future growth, long term plans and water supply strategy for reference.

1. BACKGROUND

The subject site comprises approximately 200 hectares of land bounded by the Kerikeri river to the north and east with State Highway 10 forming the western boundary. Bay of Islands Golf Club, Kerikeri shares the southern boundary with similar grass pasture land. The development is situated to the northwest of the thriving rural town of Kerikeri.

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Figure 1: Subject Site Location - 1828 State Highway 10, Kerikeri

The property is currently used as farm, with a number of dwellings and associated farm related buildings within the subject area. Topography at the site is in general relatively flat with a small area of bush along the eastern boundary. Within this area of bush the slopes are noted as being steep – between 25 and 60 degrees as outlined in the LDE Geotechnical Site Suitability Report.

Land development to the north of the site comprises a mixture of rural residential and lifestyle blocks. The Quail Ridge Country Club is located to the east across the Kerikeri River.

2. PROJECTED POPULATION AND STAGING OF THE DEVELOPMENT

It is understood that the project is to be:

- Designed to cater for approximately 2000 homes and a hotel development.
- Developed over a period of 10 or more years.

In our experience on projects of this nature it is typical that The Client’s vision is to extend the growth of this thriving community into a new area that:

- Provides quality housing.
- Partners with stakeholders to deliver community outcomes.
- Improves the quality of life of the residents and the wider community.
- Guardianship of the natural environment.
- Incorporates a sustainable development framework, efficiency in energy and resources and low carbon footprint.

We also understand that to support the proposed re-zoning of the land, the development must be shown to be self-sufficient in the provision of water and wastewater services, if possible.

The options for water and wastewater servicing of the site are limited to:

- Connection to the FNDC municipal treatment systems for water and wastewater.
- Third party bulk supply of raw water for treatment by the developer and supplemented by an alternative water source (e.g. groundwater (to be investigated further by others)).
- On site treatment of wastewater and either discharge to land or receiving water.

Currently, FNDC is unable to supply the development with water and wastewater. GWE understands that to support the proposed re-zoning of the land the site must be self-sufficient for water and wastewater treatment and disposal. We have provided an assessment of the proposed servicing plan below for water supply and wastewater treatment in the following sections. Further to this we have outlined a methodology that can be applied for developing the design of the wastewater treatment facility for the development.

3. WASTEWATER ASSESSMENT

3.1 Background

The site is not reticulated for wastewater. Whilst NRC have allocated funding in the 10-year capital plan, and this includes the Waipapa area, the existing wastewater network and treatment plant does not have sufficient spare capacity. There are therefore two options for servicing the site:

- a. Working with FNDC to develop a solution that allows connection to the existing municipal system, noting that the existing treatment facilities and the topography of the area mean that connection will be difficult and costly;
- b. Design and develop a standalone or decentralised wastewater treatment and disposal system. Variants of this could include temporary treatment and disposal and then longer-term connection to the municipal system (and conversion of existing infrastructure to a pump station). This would also allow the freeing up of extensive areas of land that would need to be used for irrigation of treated effluent (approximately 30 hectares for a primary disposal area PLUS a 50% reserve area will be required – 45 Hectares in total).

To support the proposed re-zoning of the land, the site will need to be self-sufficient for wastewater management.

The PEAK wastewater volume for the development has been determined to be 905 m³/day. The wastewater will need to be treated to a minimum of secondary quality prior to land application – likely via a PCDI irrigation system. The location of the plant would have to be sufficiently remote as not to cause odour and/or noise nuisance. It is noted that the soils are clays which correspond to a category of 5 under GD06 or category 6 under TP58 (2004).

3.2 Basis of Design

Infir have used the following standards as the basis for design:

- Far North District Council's Draft Engineering Standards (2022) (FNDS ES 22)
- Auckland Council GD-06 *On-site Wastewater Management in the Auckland Region January 2021*

3.3 Wastewater Treatment Conclusions

Infir have assessed two options for servicing the development for wastewater treatment for the proposed structure plan area.

1. Integration with a new Kerikeri/Waipapa System.
2. Develop an onsite system servicing the structure plan area.

The assessment provided of Option 1 above is something GWE are generally in accordance with. Typically, the development of a wastewater system for a municipal area can take an extended amount of time which is likely to be over and above the proposed build out period for the structure plan area.

Similarly, we generally agree with the assessment provided for development of a standalone wastewater system. Flow rates and occupancy for different types of premises presented in *Table 3 – Wastewater Discharge Units* are reasonable and have considered the relevant standards. Where no local standards were available, Watercare Services Ltd. code of practise has been applied (specifically for wet and dry retail) and this is noted in the report.

Land application of treated wastewater has been assessed in accordance with GD-06 as mentioned above, and the findings of the geotechnical reports prepared by LDE. A design loading rate (DLR) of 3 mm/day has been applied based on Clay soils using dripper irrigation. Pressure Compensating Dripper Irrigation (PCDI) is generally considered best practice for land application of treated wastewater. Further to this, an allocation of 50% reserve disposal field has been recommended which is in line with good practise for wastewater irrigation systems up until the design horizon *Time 5 and Time 6*. GWE recommend that the reserve area should be retained, but that this should be contingent on both the actual water use and the status of any municipal facility becoming available either for off-site treatment or off-site disposal of treated effluent. This is based on the reasoning that the long-term acceptance rate typically is what determines the need for additional disposal fields, rather than short or medium term water use. It is for this reason that we recommend the land is retained as allocated for onsite wastewater disposal.

Based on the design assumptions above, and the information provided to date, we consider the assessment provided by Infir to be sufficiently conservative such that the development of an onsite wastewater system can be achieved on the site to service the proposed structure plan, with the exception that the reserve area should be retained during design horizon *Time 5 and Time 6*.

Further to this we also note that while Infir have stated that *Treated wastewater must be to land and not into water* where treatment, disinfection and disposal have been adequately designed to mitigate the risk of adverse effects on the receiving environment disposal to surface water may be possible. Typically, consultation with Mana Whenua should be undertaken at an early stage to ensure this can be considered from a cultural perspective. GWE do however, consider it preferable to discharge to land as per Infir's report.

4. WATER SUPPLY ASSESSMENT

4.1 BACKGROUND

70% of Kerikeri's water is supplied by Kerikeri Irrigation Company Ltd (KIC) with the balance of water (30%) sourced from the Puketotara stream near the golf course. It is understood however that the Puketotara stream is fully allocated.

The estimated daily demand for the development will reach 1,355m³/day (Servicing Report, Infir). This is based on a domestic allowance of 1,200 litres/household/day and an estimate of commercial water for retail/office/commercial sectors.

There is insufficient capacity within the existing municipal system to supply the required water for the development. Whilst the FNDC Long Term Plan allows for future investment in Kerikeri for a water treatment plant upgrade, it cannot be relied on to meet the desired timeframe for site development.

A private water supply is therefore required. It is the intention for KIC to supply the site with raw water from their northern dam for treatment onsite. Following treatment, the water will be stored prior to supply within the proposed development via a conventional reticulation system. To provide a backup source of raw water, a groundwater source, with all relevant consents, will be developed to provide up to 30% of the supply volume via 2 bores that can produce 3 litres/second.

4.2 Basis of Design

Infir have used the following standards as the basis for design:

- Far North District Council's Draft Engineering Standards (2022) (FNDS ES 22)

This has been supplemented with standards from Watercare Services Ltd. code of practice where necessary.

4.3 Water Supply Conclusions

The water supply proposed for the structure plan is based on using available capacity within the current raw water supply from Kerikeri Irrigation Company (KIC) from the northern supply dam. It should be noted that this will require onsite treatment to potable standards, which must deal with algal blooms that occur during the summer months within the dam.

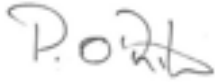
The volume of water available, however has not been determined so it is unclear that this will meet the demand volumes as set out in the timelines for servicing the development. It is noted that the groundwater supply has not been established to supplement the supply for the development, however it is estimated at 3 L/s. Further investigation of this should be undertaken to ensure a bore can be developed to supplement the required water supply for the proposed structure plan area.

To further confirm the actual water requirements for the proposed development, a full water supply assessment, including the use of top up roof water supply, should be investigated as the next stage of investigation to ensure security of supply.

We trust this meets with your requirements please contact the undersigned for any clarifications.

Sincerely

GWE Consulting Engineers



Patrick O'Riordan CPEng CMENZ

Technical Director

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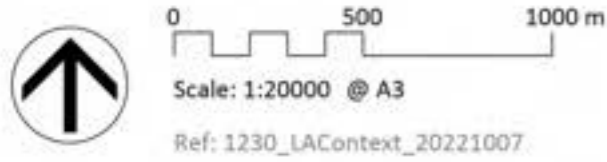
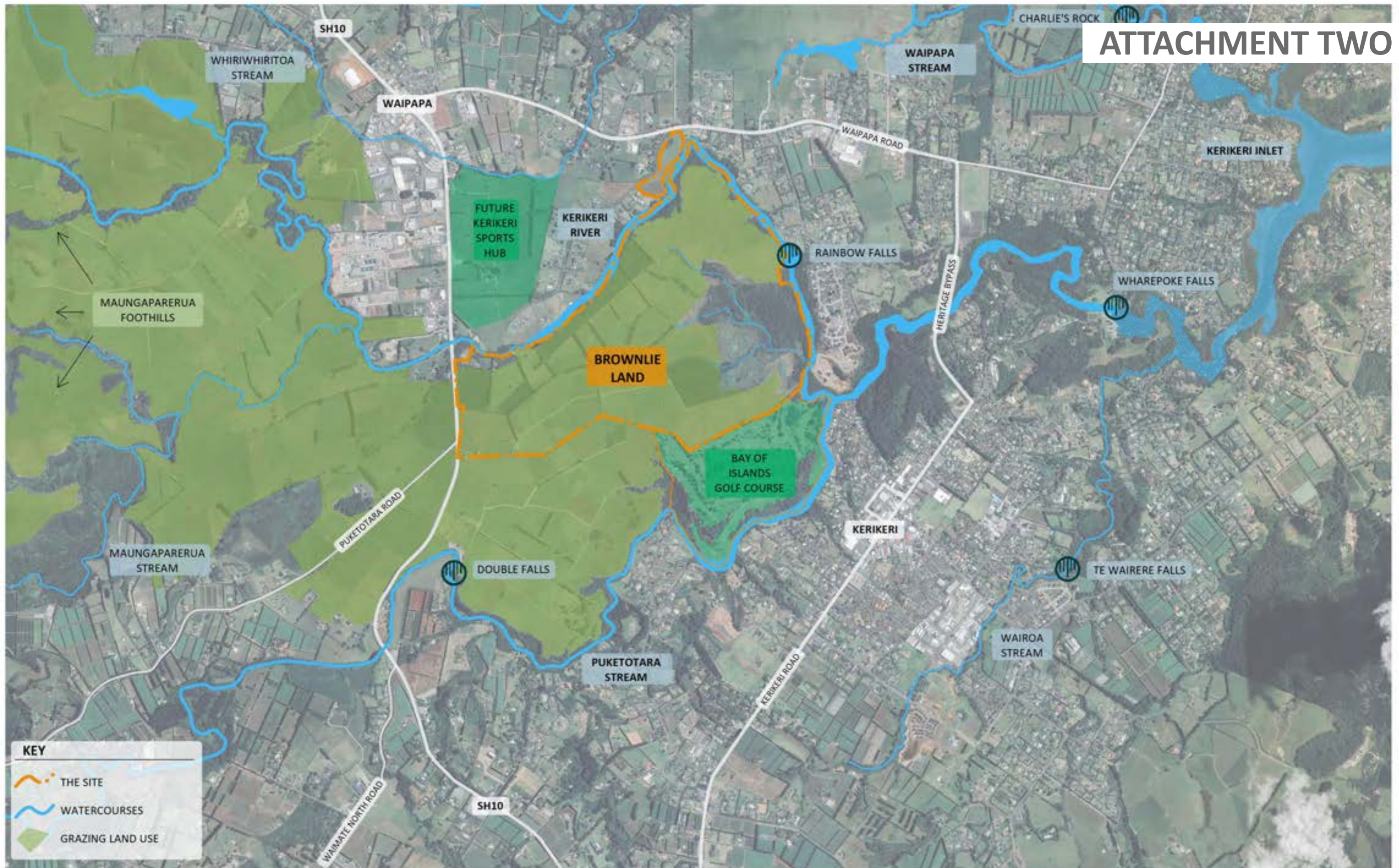
<https://gweconsult.sharepoint.com/Sites/Activeprojects/COM/1828 SH10 Waipapa-J3985/04-WW/04-Reports/L01v2-1828 SH 10 Waipapa-Wwtreatment+Disposal.Docx>

ATTACHMENTS

LANDSCAPE ASSESSMENT
BROWNLIE LAND STRUCTURE PLAN | KERIKERI

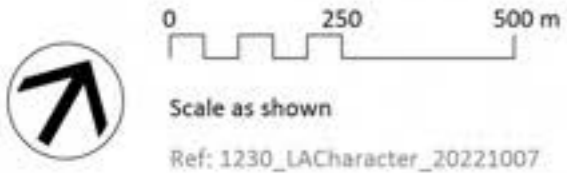
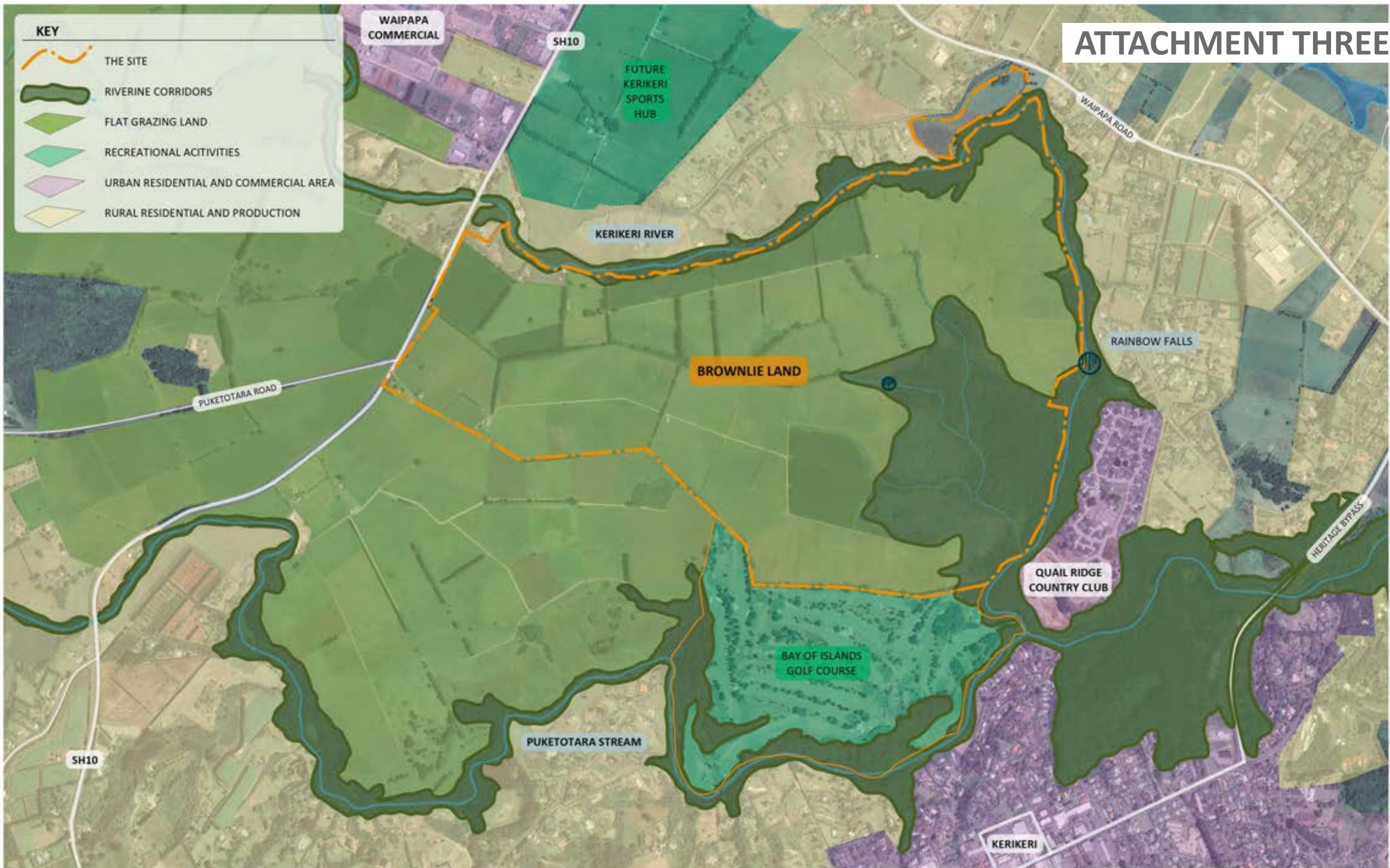
ATTACHMENT ONE OBLIQUE OVERVIEW





BROWNLIE LAND STRUCTURE PLAN | LANDSCAPE ASSESSMENT
LANDSCAPE CONTEXT

Prepared for Kiwi Fresh Orange Company Limited



ATTACHMENT FOUR VANTAGE POINT LOCATIONS



NOTE:

Date of photography 12/08/2022 12:00pm to 01:00pm

The panoramic photographs were digitally merged.
Original photographs with Nikon Z5 with approx. 33mm focal length lens setting, making the image magnification equivalent to a 50mm focal length lens on a full frame 35mm camera.

The field of view for each panorama varies in response to the relevant field of view for each of the vantage points.



ATTACHMENT FIVE SITE PHOTOGRAPHS



Panorama VP01:
Looking across Waitotara Reserve from Waipapa Road to the Waitotara Road portion of the Site - seen beyond the flax belt seen in the midground.



Panorama VP02:
A view over the Kerikeri Sports Hub site from the roadside of SH10, with the Site indicated by the belt of dark totara lining Kerikeri River in the distant background.



ATTACHMENT FIVE SITE PHOTOGRAPHS



Panorama VP03:
Sighting down the farm race from alongside SH10 and in the north west corner of the Site. Note the virtually flat terrain which continues east across almost all of the Site from this point.



Panorama VP04:
The easterly vista across the core of the Site from the Puketotara Road intersection. The belt of totara/kanuka seen to either side of the chevron sign line the southern edge of Kerikeri River.



ATTACHMENT FIVE SITE PHOTOGRAPHS



Panorama VP05:

A view from Access Road towards the grassed Waitotara River flank occupied by the farm to the south of the Site. The Site itself can be seen in the distance beyond the flat paddocks that run on from this slope.



Panorama VP06:

Looking across the south eastern portion of the Site from the golf club boundary.



ATTACHMENT FIVE SITE PHOTOGRAPHS



Panorama VP07:
The central portion of the Site looking north east.



Panorama VP08:
From the very close to VP07, but looking back towards SH10 in the south west.



ATTACHMENT FIVE SITE PHOTOGRAPHS



Panorama VP09:
The eastern basin associated with the small waterfall, wetland and Kerikeri River course to its east.



Panorama VP10:
Flats extending to the north east and most closely associated with Rainbow Falls.



ATTACHMENT FIVE SITE PHOTOGRAPHS



Panorama VP11:
Recently cropped land lying to the south of the Kerikeri River corridor, marked here by the belt of totara and kanuka seen continuing into the distance from upper left.



Panorama VP12:
The small elbow in the Waitotara Road block where a potential river crossing and northern road access to the Site is signalled.

ATTACHMENT SIX

FLOODWAY AMENITY CORRIDOR SCHEMATIC ILLUSTRATION

WATERSIDE RESERVE CORRIDOR



IMAGE 1

PRIVATE DWELLING OVERLOOKING CORRIDOR AND WETLAND



IMAGE 2

CONNECTING PATH NETWORK



IMAGE 3

COMMUNAL ORCHARD



IMAGE 4



LEVELLING SPILLWAY

DEFLATED WETLANDS SET INTO FLOODWAY FLOOR



IMAGE 5

BRIDGE OVER SMALL PERPETUAL WATERCOURSE



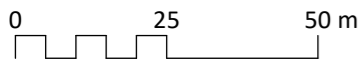
IMAGE 6

COMMUNAL ACTIVITIES



IMAGE 7

IMAGE SOURCES
IMAGE 1 : services.marborough.govt.nz/facilities/facility/taylor-river-reserve
IMAGE 2 : JANE USSHER/NZ HOUSE & GARDEN
IMAGE 3 : www.roundrocktexas.gov/city-departments/parks-and-recreation/parks-and-trails/
IMAGE 4 : www.weekendnotes.com/how-to-renovate-an-orchard-pete-the-permie
IMAGE 5 : www.alltrails.com/trail/new-zealand/auckland/barry-curtis-park-from-flat-bush-school-road/photos
IMAGE 6 : Illustration by Littoralis Landscape Architecture
IMAGE 7 : cornwallpark.co.nz/see-and-do/games-and-sports



Scale: 1:1250 @ A3

Ref: 1230_FloodwayIllustration_20221010



BROWNLIE LAND STRUCTURE PLAN | LANDSCAPE ASSESSMENT FLOODWAY AMENITY CORRIDOR | SCHEMATIC ILLUSTRATION

Prepared for Kiwi Fresh Orange Company Limited



**BROWNLIE LAND – WAIPAPA
STRUCTURE PLAN AND PROPOSED REZONING**

LANDSCAPE, RURAL AMENITY AND NATURAL CHARACTER ASSESSMENT



1 INTRODUCTION

This report has been commissioned by Kiwi Fresh Orange Company Ltd (the Submitter) to inform a structure plan (the Structure Plan) related to assessing potential for rezoning land spanning from close to Kerikeri township's western margin across to State Highway 10, just south of Waipapa commercial centre.

The land involved in this submission consists of titles at 1828 State Highway 10, described as Part Lot 2 DP41113 and Lot 2 DP76850, the adjoining 1878 State Highway 10, contained in Lot 2 DP89875 and Lot 1 DP 333643 (collectively the submission area, which will herein be referred to as the Site). These allotments fall within a much larger extent of land zoned as Rural Production under the Far North District Plan, which spans across the Site, westward beyond State Highway 10 and to the south of the Site.

As part of its Proposed District Plan process, North District Council (FNDC) has commenced the process of developing a Kerikeri-Waipapa Spatial Plan. It is the Proponent's desire that the Site be rezoned under the Proposed District Plan to cater for a range of urban uses that will provide for Kerikeri and Waipapa's continuing growth as settlements. Detailed discussions have been held with Council representatives to understand the potential directions of the Spatial Plan and related Proposed District Plan, and how the Site can constructively contribute to the future form of Kerikeri/Waipapa.

FNDC has been engaged in consultation with a range of key parties as part of its Spatial Plan process¹. Most of the emerging visions relating to protection of important landscape and natural elements, urban character and aspirations for off-road connectivity are embodied in the principles underpinning the Structure Plan.

The land use that would result from the proposed rezoning is a substantial shift from the Site's current, predominantly pastoral, purpose to some form of relatively intensive urbanisation. As the body of this report will describe, much of the Site has limited landscape sensitivity and amenity. It is largely a simple, grazing farm with only very subtle topographic variety and a spartan frame of exotic shelterbelts that contribute little to landscape identity.

Departing from this prevailing character are the northern and eastern margins of the Site. The Kerikeri River corridor margin has elevated landscape sensitivity and value, as does the bowl-like depression that extends into the Site below Wai Aniwaniwa /Rainbow Falls, with its containing landform, dramatic small waterfall, wetland and significant potential for restoration.

The Structure Plan presented in relation to the proposed rezoning is informed by the Site's close relationship with existing developed areas (albeit dissected by watercourses), the limitation and opportunity imposed by an identified area of flood susceptibility and natural riparian corridors, relatedness to existing and future transportation corridors, and a range of other factors that influence where best to cater for required urban growth.

¹ *Kerikeri-Waipapa Spatial Plan – Summary of Consultation: Community and Stakeholder Engagement. February 2022-August 2022. Far North District Council*

**BROWNLIE LAND - WAIPAPA
STRUCTURE PLAN AND PROPOSED REZONING**

LANDSCAPE, RURAL AMENITY AND NATURAL CHARACTER ASSESSMENT



Four potential local transport options are provided within the Structure Plan documentation, as documented in Pacific Environments Architects' Sheets A001, A002 and A003 (reference 22030). The greenways component providing for open space corridors and non-vehicular movement remains consistent across each of those.

Rather than assessing landscape and related effects of each potential transport network scenario individually, this report will provide a detailed description of the defining characteristics of the land and how the most valuable of them can be conserved and integrated, as demonstrated by the Structure Plan. That Plan can then serve as a framework and "statement of intent" that can be further resolved, – and likely expanded – into more detailed phases of master-planning and a subsequent development process.

In developing the Structure Plan and rezoning submission, the disciplines of planning, ecology, urban design, economics, traffic design, hydrological and civil engineering, survey and landscape architecture have contributed and interfaced. That spectrum of expertise is reflected in the carefully integrated framework expressed by the Structure Plan. The Structure Plan reporting prepared by The Planning Collective and Pacific Environments Architects provides a detailed overview of the structure plan options and related rezoning proposal, and it is anticipated that *this* assessment will be read in conjunction with that document and its related drawings.

This landscape-related assessment has been undertaken based on the following methodology:

- Review background documents that inform an understanding of the Site and wider setting in terms of both physical characteristics and the regulatory framework.
- Undertake an inspection of the Site and visit immediately adjacent, publicly accessible places, including the Bay of Islands Golf Club course.
- Photograph the Site – where visible – from these various locations and assemble the resulting images into accompanying attachments. Vantage-points were selected to capture the greatest exposure or "worst case" view from each locale.
- Describe and analyse the biophysical and land use characteristics of the Site.
- Broadly categorise the Site context based upon areas of contiguous landscape/urban character, with these areas being frequently determined by land use as the primary determinant.
- Assess the relationship between the Site and the various viewing audience groupings that are potentially affected by the outcomes of rezoning in order to report upon visual effects.
- Assess landscape effects in relation to the form of the Structure Plan and its compatibility or otherwise with established characteristics, patterns and general structure of both the Site and its wider context.
- Identify and quantify natural character effects that may be imposed upon adjacent river corridors.
- Provide some summarising conclusions that draw together the main body of findings.

SECTION A: DESCRIPTION OF THE SITE

2 EXTENT

The Site has an area of approximately 197ha of land that is currently zoned as Rural Production. It is bordered to the south by a combination of the Bay of Islands Golf Club and a neighbouring farm. To the north, the Kerikeri River defines the boundary (other than a small parcel associated with Waitotara Drive). The river takes a sharp bend as it nears the junction of Waitotara Drive and Waipapa Road to then form the eastern edge to the Site. A limited frontage with State Highway 10 marks the western edge of the Site as it narrows in that direction from its main body.



Figure 1: High oblique view with the Site indicatively highlighted with an orange line. SH10 arcs to upper left to run alongside the main body of Waipapa’s commercial area and the Bay of Islands Golf Club course is clearly seen to centre right. A larger version of this image forms Attachment One. Source Google Earth Imagery 2022

A small parcel of the Site lies on the opposite side Kerikeri River, where it abuts Waitotara Drive and has a small frontage to Waipapa Road. The relationship between these and other local features can be seen in Figure One above and, more particularly, in Attachments One, Two and Three.

3 EXISTING PHYSICAL CHARACTERISTICS

3.1 Geology

According to LDE’s geotechnical report ², the Site is almost entirely founded upon Kerikeri Volcanics, a material defined as *basalt lava, volcanic plugs and minor tuff*. LDE’s field survey indicates that this base lies at a depth of between 1 and 4m in the belt identified for the proposed floodway through the midst of the developable part of the Site.



Photograph 1: Volcanic, basaltic material exposed by the course of Kerikeri River, just above Rainbow Falls. The flats of the Site are not significantly elevated above the level of the river at this point.

² *Geotechnical Suitability Report for District Plan Review – Kerikeri Land Development Review* Land Development Engineering (LDE) June 17, 2022

**BROWNLIE LAND - WAIPAPA
STRUCTURE PLAN AND PROPOSED REZONING**

LANDSCAPE, RURAL AMENITY AND NATURAL CHARACTER ASSESSMENT



The sheer rock drops associated with Rainbow Falls and the smaller waterfall within the Site (see Photos 4 and 18) provide a graphic illustration of this volcanic heritage. Further evidence is expressed in the margins and bed of Kerikeri River upstream of the Falls, as seen in Photograph 1, above.

A minor portion of the south western corner of the Site is mapped as being alluvium, with a description of *partly consolidated mud, sand, gravel, peat or lignite of colluvial, lacustrine, swamp and estuarine origins*. This geology is indicated as extending a little over 100m into the Site, at most, in this corner.

3.2 Soils

The NZ Land Inventory mapping of the area on Sheet P04/05 of NZMS290 indicates that Site as having a cover of 3 soil types. Waipapa Clay (YF) is found on the northern and western margins of the land. Okaihau Gravelly Friable Clay (OK) occupies the balance of the flattest part of the Site. This soil type is derived from the area's volcanic origins and is known to be well drained, as its name suggests.

The steeper terrain associated with the eastern edge of the Site has a cover of Pungarere Gravelly Friable Clay (PG). According to Northland Regional Council's Soil Factsheet 8.1.3, these are also old basalt volcanic soils, so are susceptible to leaching. They fall within a drainage class of moderately drained.

3.3 Landform

A large portion of the Site is virtually flat, with limited topographic variation. The uniform grass cover, paddock arrangement, linear drains and equally linear farm races seen in Attachments One and Two are reflective of the plain-like nature of that land. The extent of the Site that is currently subject to flooding under a 1 in

100 year event, as seen in the Site Constraints drawing (Sheet A001) of the Structure Plan set prepared by Pacific Environments Architects, further illustrates the low-lying and very even level of the western bulk of the land.



Photograph 2: The virtually flat, open paddocks extending to the eastern part of the Site, near the golf course, which are typical of the terrain from this point west.

Slope analysis mapping seen in Structure Plan Sheet A001 graphically depicts the transition from the flat to the steep slopes dropping to the Kerikeri River in the east and a comparable escarpment that relates to the Puketotara Stream as it traverses the margin of Bay of Islands Golf Course. Coloured fills that have been used to highlight the relative steepness of the land on Sheet A001 highlights those parts of the topography that are broadly associated with the Site that depart from the prevailing gentle terrain. A yellow colouring denotes the steepest of slopes that lie at a grade of 20% or more and an orange fill indicated topography falling between that gradient and a 12.5% slope.



Photograph 3: The eastern basin associated with the small waterfall and wetland within the Site. This area has the potential for heightened amenity and habitat values with the benefit of extensive weed control and restorative planting.

The resulting areas of highlighted slope very effectively emphasise the contrast between most of the Site and the basin-like pocket of land (hereafter referred to as “the amphitheatre”) associated with a small waterfall that drops east to drain to the Kerikeri River, as seen in Attachment One and Photograph 3. Here, the sudden change in level and gradient suggest a dramatic disjunction in the underlying volcanic strata which appears to relate across to a similarly sheer face at Rainbow Falls. The sudden drop to this river valley only becomes evident when drawing close to it from within the body of the Site. The Structure Plan assigns a Natural Open Space zoning to this steep area associated with the river corridor in recognition of its topographic character and SNA status.

3.4 Hydrology

Arguably the most influential hydrological feature of the Site – particularly in relation to consideration of a structure plan – is an extensive area that has been modelled as being susceptible to flooding in a major rainfall event. The extent of that potentially flood-affected area in the land’s current state can be seen on Structure Plan Sheet A001 (Site Constraints). A critical component of the Structure Plan has been to incorporate a solution to this issue. Detailed analysis of the flooding situation is contained in a report by E² Environmental Consulting Engineers.³

The primary, legible watercourses associated with the Site are shown in Attachment Three (Character Areas) and comprise the Kerikeri River and Puketotara Stream. Despite a very close association, these rivers are not *within* the Site and are therefore addressed more fully later in this document.

A series of 3 minor tributaries to Kerikeri River originate in the eastern portion of the Site and discharge through the amphitheatre seen in Photograph 3. The northernmost of these has its channelised apex in a paddock near Rainbow Falls and drains through part of a wetland sequence as it descends through indigenous vegetation toward Kerikeri River.

A central minor stream drops over the dramatic waterfall seen in Photograph 4 before contributing to the riparian wetlands below. It is this course that has been identified to receive diverted flood waters under the Structure Plan.

³ *Kerikeri Subdivision and Flood Scheme Investigation and Proof-of-Concept Design.*
E² Environmental Consulting Civil Engineers. 11 September 2022

**BROWNLIE LAND - WAIPAPA
STRUCTURE PLAN AND PROPOSED REZONING**

LANDSCAPE, RURAL AMENITY AND NATURAL CHARACTER ASSESSMENT



Photograph 4: The small waterfall that plummets over the brink of the volcanic substrate into the amphitheatre. Note prominence of pampas and gorse. Image credit: E² Environmental



Photograph 5: A sequence of wetlands perched above Kerikeri River downstream of the small waterfall. Image credit: E² Environmental

A third watercourse appears to be ephemeral in its location a little further to the south. Its lower reach is marked by the line of young totara seen to mid/lower left in Photograph 3.

Periodic small farm drains that have been cut along the linear paddock margins of the main, grazed, body of the Site complete the hydrological elements present. In many cases, these drain lines serve dual purpose, with shelter trees planted along their crest, as seen in Photograph 6 which follows.

3.5 Vegetation

A continuous frame of native vegetation is a critical component of the northern and eastern edges of the Site (as seen in Photographs 15, 18 and 22 along with many of the images in Attachment Five) with a variable portion of that vegetation lying within the bounds of the Site and the rest beyond.

The two largest and most intact of these areas fall within a Significant Natural Area identified by the Department of Conservation⁴ identified as being site PO5/086, Kerikeri River Remnants. The importance of the totara/kahikatea associations found in this SNA is noted as being of particular importance, along with representative totara forest on riparian margin (particularly relevant to the Site) totara/kanuka forest, and manuka shrubland. The presence of invasive brush wattle and hakea is noted.

⁴ *Natural Areas of Kerikeri Ecological District.* Department of Conservation

**BROWNLIE LAND - WAIPAPA
STRUCTURE PLAN AND PROPOSED REZONING**

LANDSCAPE, RURAL AMENITY AND NATURAL CHARACTER ASSESSMENT



A memorandum prepared by Bioresearches⁵ examines potential constraints from an ecological perspective. It records the domination of prevalence of kahikatea (*Dacrycarpus dacrydioides*) in the northern head of the amphitheatre and a transition to totara (*Podocarpus totara*) and exotic pine species further down that slight gully. Totara, kahikatea and ponga (*Cyathea dealbata*) are noted on some parts of the western bank of the amphitheatre, with the upper balance having been recently sprayed for gorse.

A large rush-dominated wetland exists in the amphitheatre floor as part of a localised sequence that commences with a raupo wetland in the upper gully and ends with the inline wetlands associated with the stream that are seen in Photograph 5.

The memorandum records the dominance of totara in the riverside belts generally and common occurrence of kanuka (*Kunzea robusta*), mapou (*Myrsine australis*), kumarahou (*Pomaderris kumaraho*), ti kouka/cabbage tree (*Cordyline australis*) and karamu (*Coprosma robusta*).

Exotic vegetation found on the Site is predominantly in the form of shelterbelts of *Eucalyptus*, poplar (*Populus sp.*), bamboo (*Bambusa sp.*), cypress species and oaks (*Quercus palustris* and *robur*). Invasive species are widespread, including amongst the native vegetation, and include black wattle (*Acacia meamsii*), gorse (*Ulex europeaus*), woolly nightshade (*Solanum mauritianum*), tree privet (*Ligustrum lucidum*) and pampas (*Cortaderia sp.*) being particularly prevalent in ungrazed areas.

⁵ Memorandum: Kerikeri Plan Change – High level ecological constraints analysis. Reference 65528. Bioresearches. 26 April, 2022.



Photograph 6: A typical arrangement of a shelter belt, this one composed of *Eucalyptus sp.*, combined with a drain.

3.6 Land use

Almost all of the flat land within the Site is developed as grazed pastoral grassland, with seasonal paddocks of maize, as seen in Photographs 6, 7, and 8. Paddocks are arranged in a largely rectilinear pattern of varying sizes and orientation. These are accessed from a pair of well-formed races that reach south from the SH10 frontage. The more southern of these is seen in Photograph 7.

The eastern amphitheatre is undeveloped for farming use, allowing the indigenous vegetation areas there to endure. Past clearance of the more moderate slopes of this landform appears to have led to the establishment of a thicket of gorse and woolly nightshade (a particularly pernicious species on the well-drained volcanic soils of the Kerikeri area). This extensive area of weeds has been sprayed

**BROWNLIE LAND - WAIPAPA
STRUCTURE PLAN AND PROPOSED REZONING**

LANDSCAPE, RURAL AMENITY AND NATURAL CHARACTER ASSESSMENT



sometime in the past 12 months, as can be seen in Photograph 3, with poor results in controlling woolly nightshade.

The riparian margin of Kerikeri River appears to be largely or wholly fenced.

Two inhabited houses sit near SH10 on the western edge of the Site. The northern-most of these is a larger home with an accompany garage and features a small orchard with one- An older derelict house lies a short distance to the east, where it is accompanied by three small sheds / barns. The other house is in the opposing, south west corner of the Site. It also has small outbuildings and is near an old milking shed a little to the east. The remaining building is a half round barn set in approximately in the centre of the property. It is visible in Photograph 7, below.



Photograph 7: A low oblique view west across the main body of the Site, illustrating the predominance of flat, grazed paddocks and shelter belt arrangement. Image credit: E² Environmental



Photograph 8: The rather rank pasture found near the north west boundary of the Bay of Islands Golf Club course, looking toward the *Eucalyptus* shelter belt seen to right in Photograph 7.

SECTION B: CHARACTERISATION OF SETTING

4 DEFINING ELEMENTS / LANDSCAPE CHARACTER AREAS

The wider structure of Kerikeri and Waipapa's core and hinterland – as it relates to the Site - can be categorised into a series of defining elements and landscape character areas. Attachment Three illustrates the location and extent of these, being informed also by Attachments One and Two.

4.1 Urban residential and commercial areas

Kerikeri township has a distinctive character and identity, attributable in some measure to an effective mainstreet amenity development of approximately a

**BROWNLIE LAND - WAIPAPA
STRUCTURE PLAN AND PROPOSED REZONING**

LANDSCAPE, RURAL AMENITY AND NATURAL CHARACTER ASSESSMENT



decade ago. That enhancement brought a strong element of bold, subtropical vegetation, intermingled with volcanic stone elements. For those entering down Kerikeri Road from SH10, these elements reinforce themes found along that corridor.

Apart from the three storied John Butler Centre, all of the commercial buildings are either one or two storied, and this modest built scale of the town contributes to its spatial character of being comfortable and relatively intimate. The substantial *Eucalyptus* grove on the “Bing block” has endured to create a defining north east backdrop to the CBD, but will inevitably be removed when that property is developed.

Housing on north flank dropping to Puketotara Stream is a mix of ages and styles, but tends to be relatively small 2-3 bedroom dwellings on reasonably generous lots. Those nearer the base of the slope appear to be the oldest and are likely candidates for progressive renewal during coming decades. Most houses in this area have established gardens that combine with street tree planting to create a lush setting that is consistent with the favourable growing conditions provided by Kerikeri.

The Bing block mentioned earlier creates a “bookend” to the northern side of this flank, bringing with it a sense of containment and shelter. Development of that block will result in a shift in the character of this residential slope, particularly at the Fairway Drive / Golf View Road end.

Whilst physically quite close to the Site, the Kerikeri CBD and residential area just described are, largely, visually separated from it. In large measure the rising terrain

occupied by the Bay of Islands Golf Club creates a topographic block, and that is reinforced by a combination of the natural, streamside vegetation in the floor of the valley and the ranks of mature trees that define the fairways that run across the gentle hillside above. Attachment Four usefully illustrates this circumstance.



Photograph 9: A typical portion of residential development on the slope dropping from Kerikeri CBD to the Puketotara Stream. Note “exotic” theme of garden planting.

Quail Ridge Country Club is separated from Kerikeri CBD and the slope to its north by the course of the Kerikeri River, immediately after it has been joined by the Puketotara Stream. It is separately labelled in Attachment Three. This comprehensively planned and constructed development involves larger and more diverse houses than a typical “cookie cutter” retirement village. As a result, its character is more aligned to a conventional contemporary residential area, but with the advantage of being more cohesive as a result of its planning and implementation. In its position on the eastern margin of the Kerikeri River it lies

**BROWNLIE LAND - WAIPAPA
STRUCTURE PLAN AND PROPOSED REZONING**

LANDSCAPE, RURAL AMENITY AND NATURAL CHARACTER ASSESSMENT



near the eastern amphitheatre on the site, but is largely visually separated by the totara-dominant forest established on that northern flank of the river.

Buildings on the southern edge of the central part of Quail Ridge (seen in association with an earth-worked area in Attachment Four) have variable views west to the Site. Those buildings are visible in Panorama VP09 of Attachment Five. It appears that this end and edge of the Quail Ridge complex is more recent and that planted vegetation is of very modest scale. Further maturing of that planting and continued growth of the forest seen in this image is expected to considerably reduce the visual connection between Quail Ridge and the Site.



Photograph 10: Quail Ridge Country Club retirement village on the opposite side of the Kerikeri River valley.

Waipapa's rapidly expanding commercial centre brings a very different character to that of Kerikeri CBD to the southward approaching section of SH10. With the exception of some small, specialist, retail shops near the Waipapa Road

intersection, it consists of large format retail buildings and sizeable industrial premises. Many of the retailing businesses represent national chains and carry prominent branding that is familiar in most similarly-sized towns or their margins. These types of activities appear to now be progressing south across remaining vacant zoned lots, seen in Attachments Two and Four, to place it in increasingly closer relationship with the Site.



Photograph 11: Roadside commercial premises alongside SH10 on the approach to the core of Waipapa centre. The shelter belt seen to right conceals the Kerikeri Sports Hub site.

Some effort has been given to try to impart a distinctive signature to Waipapa, primarily through Corten steel sculptures installed in the roadside and the recently-completed roundabout at the Waipapa Road junction with SH10. Despite these initiatives and the distinctive presence of a large relic grove of kahikatea amid the commercial centre, Waipapa lacks a sense of local identity.

A close relationship with planned Sports Hub provides an opportunity for that civic project to impart an influence upon the commercial area, and potentially an

**BROWNLIE LAND - WAIPAPA
STRUCTURE PLAN AND PROPOSED REZONING**

LANDSCAPE, RURAL AMENITY AND NATURAL CHARACTER ASSESSMENT



impetus to review how more assertive treatments of public road corridors could be configured to bring a more unified, locally relevant, character.

4.2 Rural residential and production areas

This landscape character type lies beyond the Kerikeri River and Puketotara Stream corridors to spatially frame the Site and the adjoining farm to the south west and north east. It is generally in a process of transition from being formerly dominated by small orchards and areas of grazing to now being predominantly occupied by rural residential use.



Photograph 12: The neatly manicured road frontages of Waitotara Drive.

Whilst older titles commonly retain pockets of orchard, or are large enough to be fully devoted to commercial production, most of the more recently created lots are smaller and feature large houses surrounded by mown grass and tended amenity gardens. Rural residential neighbourhoods like Waitotara Drive (see Photograph

12), alongside Waipapa Road, and the northern end of Access Road, signal a prevailing shift towards uniform rural residential use of these areas on the fringe of Kerikeri and Waipapa’s urban centres.



Photograph 13: The older, long-established houses on large sites on upper Access Road.



Photograph 14: A small, residual pocket of citrus orchard and containing roadside hedge found alongside Access Road as it transitions from a horticultural area to being more dominated by large-lot housing.

**BROWNLIE LAND - WAIPAPA
STRUCTURE PLAN AND PROPOSED REZONING**

LANDSCAPE, RURAL AMENITY AND NATURAL CHARACTER ASSESSMENT



In many respects, the course of Access Road stands as a microcosm of these phases. At its south east end, properties contain older, established homes and related small horticulture enterprises. The mid-section of the corridor sees a greater density of modern homes set amongst remaining elements of older hedges and shelterbelts that retain some of the spatial character of an orcharding history. These two scenarios are represented by Photographs 13 and 14. The furthest end of the road conveys the less diverse rural residential character described above.

4.3 Riverine corridors

As Attachment Three illustrates, river channels and their related flanks of indigenous vegetative associations provide a defining margin to the Site which then continues out to the hinterland as a wider catchment system. Lying near the confluence of the Kerikeri River and Puketotara Stream, the area associated with the Site is influenced by the increasing downstream impetus – in terms of both their channel size and the way that they have shaped the terrain – before the final descent to discharge at the head of the estuarine Kerikeri Basin.

Each watercourse is somewhat incised into the landform and therefore not particularly expressive in wider perceptions of the landscape. It is the riverside belts of indigenous vegetation that act as a signal that the river until one is in very close proximity, as demonstrated by Photograph 15.

Wai Aniwaniwa or Rainbow Falls, seen in Photographs 17 and 18, is a spectacular natural highlight of the Kerikeri River’s course to the sea, being widely visited and known as one of Kerikeri’s primary tourism destinations. The nearby portion of the river retains signs of historic activities in the form of a weir (visible in Photograph 16) associated with an early hydro-electric power station and embankments that

formed the approach to a bridge crossing of the river by a tramway carrying kauri logs from the Puketi area down to Waipapa Landing⁶.



Photograph 15: The mixed belt of semi-mature totara and kanuka that signals the existing of the Kerikeri River from within the Site and, similarly, from the Waipapa Road side of the river.

Public access to the river corridors is presently somewhat limited. A fleeting bridge crossing on SH10 is how most experience the Kerikeri River, although the Kerikeri Falls lookout and related visitor facilities provide easy access to that feature. A formed path commencing at Kerikeri Basin runs upstream along the northern edge of the river as far as SH10, forming part of the national Te Araroa Trail.

Existing esplanade reserves provide a near continuous route along the edge of Puketotara Stream, providing the prospect of completing that corridor to develop a

⁶ *State Highway 10, Waipapa, Kerikeri – Proposed Urban Development: Preliminary Archaeological Appraisal.* Origin Archaeology. April 2022

**BROWNLIE LAND - WAIPAPA
STRUCTURE PLAN AND PROPOSED REZONING**

LANDSCAPE, RURAL AMENITY AND NATURAL CHARACTER ASSESSMENT



walking route along that connecting watercourse. A small road bridge on the drive to the Bay of Islands Golf Club premises currently provides the primary opportunity to experience the Puketotara Stream by the public.



Figure 16: A view upstream from just above Rainbow Falls towards the historic weir associated with an early Kerikeri hydro-electric scheme.

As previously alluded to, it is the riparian vegetation pattern that most strongly advertises the presence of the two watercourses. Earlier description notes the predominance of indigenous vegetation within those belts and the recognition provided to two of the larger, more intact portions by SNA status. The Structure Plan provides to fully conserve those portions of this indigenous, forested belt that falls within the Site and signals the scope to expand and buffer it, particularly in relation to the amphitheatre.



Photograph 17: Looking downstream over the brink of Rainbow Falls to the edge of the large receiving pool and basin of indigenous podocarp broadleaf association found there.



Photograph 18: A low oblique aerial showing the sequence of forest, Rainbow Falls and the totara/kanuka lined course of Kerikeri River extending west. The flat pastures of the Site are seen to upper left. Image credit: E2 Environmental

**BROWNLIE LAND - WAIPAPA
STRUCTURE PLAN AND PROPOSED REZONING**

LANDSCAPE, RURAL AMENITY AND NATURAL CHARACTER ASSESSMENT



Photograph 19: A view of Puketotara Stream upstream of Golf Drive bridge. Note abundance of tree privet, woolly nightshade and willow.



Photograph 21: The largely intact native vegetation associations found downstream of Kerikeri Falls, with a canopy reflecting a dominance of totara and mingling of kanuka, kahikatea, puriri, and kauri.



Photograph 20: The small rocky cascade and still pool beyond, immediately downstream of the Golf Drive bridge.



Photograph 22: Looking towards the slight elbow in the Kerikeri River's course from the portion of the Site that is associated with Waitotara Drive. It is in this area that the Structure Plan indicates a possible road connection to Waipapa Road.

**BROWNLIE LAND - WAIPAPA
STRUCTURE PLAN AND PROPOSED REZONING**

LANDSCAPE, RURAL AMENITY AND NATURAL CHARACTER ASSESSMENT



4.4 Flat grazing land

This area lying to the south and west of Waipapa commercial/industrial area and extending almost as far as the Waimate Road junction, almost to the eastern margin of the Site and its neighbouring farm to the south, along with lowlands associated with the eastern end of Puketotara Road, collectively fit within the description of being flat grazing land. The terrain incorporates minor variations and so is not strictly “flat”, but is perceived to be. Photographs 23, 24 and 25 below provide a sense of this character type, along with Panoramas VP02- VP04, VP06-VP08, VP10 and VP11.



Photograph 23: Looking across flat grazing land to the west of SH10 towards the Site and the adjoining farm to the south.

Themes evident within the Site predictably extend out to adjoining, intensively grazed lands to the south and west, including rectilinear paddocks, dividing exotic shelterbelts, periodic drains, occasional farmsteads and small agricultural buildings. These production-related rural patterns contrast starkly against the native tree associations and fluid paths of the Kerikeri River and Puketotara Stream that frame and bisect these farmed flats. That disjunction is particularly evident in Attachment Three.



Photograph 24: The southern apex of the neighbouring farm to the south, with the Puketotara Stream corridor closing in on the road to right, as indicated by the dark totara and kanuka seen above the fence.



Photograph 25: The Kerikeri Sports Hub site in its current, grazed, state.

Future development of the Sports Hub, which is spatially closely related to the Site, will see the character of that block shift from agricultural pasture land to more manicured mown sports turf, paths, parking areas, hard courts, recreational

**BROWNLIE LAND - WAIPAPA
STRUCTURE PLAN AND PROPOSED REZONING**

LANDSCAPE, RURAL AMENITY AND NATURAL CHARACTER ASSESSMENT



buildings, amenity planting and the other trappings typically associated active open space developments.

4.5 Bay of Islands Golf Club course

In its position to the north west of Kerikeri's most immediate residential area, the golf course occupies a gentle flank to the Puketotara Stream that rises to its highest point as it nears the elevated flats of the Site, as seen in Photograph 26 below and Panorama VP06.



Photograph 26: Viewing across the bunker and green of Hole 11, with the Site seen beyond the fence in the immediate background.

Road access is provided by an intimate drive that traverses the lower slope through dense vegetation associated with the Puketotara Stream corridor, which is crossed by a small bridge seen in Photographs 19 and 20 were captured from. A generous carpark, the clubroom facilities and maintenance area for the course are positioned at a mid-slope level in the south eastern part of the Club's land and the played course radiates from that point.

The course is traditional in having its mown fairways defined by ranks of trees (as can be seen in Attachments One and Four). Most of those plantings are exotic species, but there are areas – particularly in the southern and eastern parts of the course – where natural, riparian forest associated with the Puketotara Stream defines the edge of play areas, as illustrated in Photographs 28 and 29.



Photograph 27: Looking south east down the fairway of Hole 4 of Bay of Islands Golf Club course toward Puketotara Stream in the base of the valley. This is the part of the route indicated by Structure Plan sheets A002 and A003.

The course offers limited visual connection with the Site, with Holes 8, 11 and 12 having the closest proximity to its northern boundary and presently offering an outlook through the scattered trees that assist to define that edge. In many parts these trees are quite dense and in others, - such as near the Hole 11 green seen below – allow a much broader vista across the grazed flats of the Site. Existing tree planting along this boundary offers a ready anchor for supplementary planting which could rapidly create a visual division between the Site and the course.



Photograph 28: Looking across the Hole 14 green to the clubhouse beyond, showing the more heavily wooded nature of this northern end of the course.



Photograph 29: Quail Ridge Country Club seen to upper left, the totara-dominant valley vegetation of the Kerikeri River corridor and the substantial *Eucalyptus* established on the “Bing Block” running to the skyline. All as seen from the tee of Hole 13.

SECTION C: OPEN SPACE NETWORK

Land Use Plan A008 in the Structure Plan drawing volume illustrates land currently zoned as Natural Open Space, Sport and Active Recreation and more generic Open Space.

The Kerikeri Sports Hub site stands prominently amongst these public spaces in a position that virtually forms a spatial connection between the Site and the core of the Waipapa commercial area. The role of the Site as the predominant interface between the Sports Hub and central Kerikeri is particularly evident in Sheet A008, along with the spatial connections provided by a near-continuous strip of esplanade reserves lining Kerikeri River and Puketotara Stream. The stub of reserve containing the carpark at the end of Rainbow Falls Road highlights that well-established public access point to the northern edge of the river.

Close inspection of Sheet A008 reveals several small reserve corridors that drop to the watercourses from the Kerikeri Road flanks to the south, signalling the considerable potential for a well-integrated network that has yet to be realised.

The very popular reserve corridor that descends from the watercourse junction through Natural Open Space to the Kerikeri Basin can be seen to the right of Sheet A008. It is this appealing route that is followed by the Kerikeri segment of the national Te Araroa Trail. The relationship between that open space and Kerikeri’s existing active sports facility on the junction of the Kerikeri Heritage Bypass and Waipapa Road is also seen on this Sheet.

The significant potential role of the Site to integrate with these established reserve areas and, perhaps more importantly, to form a critical linking role that is only

weakly available at present, is graphically illustrated on Sheet A007 of the Structure Plan. A further role as an impetus to complete and implement potential related reserve corridors is implicit in this Land Use Plan. Those potentials are highlighted further in the following sections.

SECTION D: LANDSCAPE OPPORTUNITIES AND CONSTRAINTS

The preceding analysis of the characteristics of the Sites and its wider context imply a range of opportunities and constraints for the future development that inform the Structure Plan. Sheet A001 of the Structure Plan drawings documents the geographic elements shaping the potential of the Site. With due reference to that plan, the key landscape, urban amenity and habitat-driven imperatives that underpin the arrangement of the Structure Plan are as follows:

- A distinctive character and identity that infuses the wider context of the Site as a result of its soils, topography, catchment pattern and climate. This combination of geophysical qualities imbues Kerikeri with a rich history of growing food and, in the past century, a reputation for supporting subtropical plants for both fruit crop and amenity purposes. That established character can be distilled and expanded through future urban areas to give it further strength.
- Much of the Site is relatively featureless and virtually flat, so that large portion of the land is unconstrained within the scope of this assessment.
- Those parts which are not almost flat occupy steep flanks dropping to riparian areas, where care for habitat values, associated visual amenity and providing for off-road access can offer heightened value to

development on the “easy” part of the land and surrounding areas beyond the Site.

- Watercourses lining two edges of the Site as part of a clearly expressed catchment system that converges on the margin of the land. The combination of the Kerikeri River corridor and the Puketotara Stream, along with their indigenous riparian vegetation associations, create a frame to approximately 2/3 of the perimeter of the Site.
- A related network of existing Open Space – as outlined in the preceding section – that incorporates “destination” reserves as well as narrower access and waterside management strips.
- Frontage to SH10 and very close proximity to Kerikeri offers scope for unification of these currently separated urban hubs and residential areas.
- A significant flooding limitation across a large section of the land leads to a solution that opens considerable potential amenity and character opportunity through the development of a corridor to channel those floodwaters, as will be described more fully in Item 5.1.

SECTION E: SPATIAL PLANNING APPROACH

The preceding section sets out the primary characteristics of the Site and wider setting that have influenced the zoning pattern being proposed. Alongside those direct drivers has been a desire to configure the Structure Plan as a foundation for a future masterplan that optimises opportunities for high-quality urban environments, strong landscape identity and high levels of amenity.

A set of guiding principles have underpinned the development of the Structure Plan, with an awareness that whilst some of these ideals are beyond the high-level scope of a structure plan to directly express, they can inform the configuration and spatial arrangement at this initial planning phase to ensure that opportunities are not precluded from future, more detailed phases of design.

Landscape and urban design principles for the Structure Plan

1. Development is to provide a high level of living amenity that reflects and is respectful to the form and character of Kerikeri.
2. Achieve a compact and efficient urban form that responds to the physical characteristic and constraints of the site.
3. Provide a mix of residential living opportunities supported by an appropriate extent and mix of non-residential activity such as commercial and retail activities.
4. Use the open space zones as a framework that ties the development together. The use of the open space and natural open space zone is to be multifaceted (i.e., stormwater, wildlife, transport connections, amenity).
5. Promote non-vehicular modes of transport.
6. Minimise barriers between public and private spaces.
7. Support higher density development in close proximity to amenity, transport connections and access to open space.

It is very likely that development of the land would occur in a staged way, so the framework provided by the Structure Plan, a future masterplan and the guiding principles that have been adopted are of particular importance to ensure a well-integrated urban outcome that provides optimised amenity to its residents.

5 LANDSCAPE-RELATED STRUCTURE PLAN COMPONENTS

5.1 Riparian margins

Preceding descriptions of these waterside areas has described their vegetative composition and the spatial corridors that they offer. At an ecological level, there is considerable potential to conserve the valuable indigenous pattern that exists and to enhance that habitat through ongoing management and restoration. Comprehensive planning also provides a cue for comprehensive, legal protection of these areas that are currently largely without any form of formal conservation.

Weed species are common and, in some areas, dominant. Controlling those invasive competitors will strengthen the integrity and resilience of the native ecosystem that remains. Initiatives such as edge planting along what are currently pastoral margins can provide wind shelter and buffer light, temperature and soil moisture regimes to provide for heightened diversity to evolve.

Incorporating appropriate walking and, possibly cycling, routes - as is about to be described - allows the amenity of these special areas to be appreciated by a wider community. Those people can then emerge as advocates and care-givers, as is happening elsewhere around Kerikeri through groups such as Vision Kerikeri. Paths also enable weed and pest management to occur more efficiently.

5.2 Floodway

A central floodway route needs to be developed to address the potential flooding extent seen in Sheet A001, as outlined in E2 Environmental Engineering Consultant's reporting referenced earlier. Their recommendation is for a shallow,

+/- 100m wide overland flow corridor to be created through the midst of the Site to take the overflow of a 1 in 100 year event. That corridor would need to incorporate periodic weirs to maintain even coverage and flow.

At one level, such a substantial infrastructural element can be seen as dividing and fragmenting future urban form. Through another lens, the created corridor can be viewed as an opportunity to introduce open space amenity through the core of the future neighbourhood and to act as a unifying spine of reserve which can then be linked out to adjacent areas. It is the latter perspective that the Structure Plan has chosen to adopt.

Attachment Six is a schematic illustration of how this floodway could be developed to provide a multi-faceted resource that is primarily focussed upon providing amenity and lifestyle quality to surrounding urban areas. It just happens that it will, very rarely, fill the role of carrying surplus river flow. Along the way it can also act as part of a “low impact urban design” system to regularly receive stormwater generated by roofs and hard surfacing within surround areas, thereby minimising a conventional fully-piped system and contributing to groundwater recharge.

This schematic illustration indicates a small, perpetual stream carrying a small volume of water from an upstream river take as a central feature. In addition to this watercourse being an interesting focal point, it has utility as freshwater habitat, complemented by including inline wetlands that follow the cue of natural wetlands found in the floor of the amphitheatre.

A generously wide shared path weaving through the corridor would cater for walking, cycling, mobility scooters and other non-vehicular use. Side routes can

then feed in from adjacent urban enclaves and riparian corridors. Near the school site, the path could run alongside a sports field for the school that is set down in the floodway. Other parts of the floodway could be configured to act as informal outdoor venues for community events and entertainment.

Weirs of the required length are commonly heavily engineered, utilitarian structures. The schematic illustration suggests the potential for these structures to take on a more sculptural, interesting form that redefines them as appealing features.

In addition to offering heightened amenity to those who would move through or recreate within the corridor, it can also provide a pleasing outlook from adjacent houses which, in turn, would provide a surveillance function.

5.3 Non vehicular corridors

The preceding description outlines the role of a central shared path through the floodway corridor and the way that this “spine” can then connect out into surrounding future residential areas. When viewed at the scale of Sheet A003, the strategic value of the corridor is immediately obvious, showing its part in linking Kerikeri to Waipapa (particularly the Sports Hub there), its integration with lower-order routes and its role in connecting localised shops, a future school and a proposed Mixed Use centre to the west of the Site.

Sheet A003 highlights routes that have been identified by the Far North District Plan, along with the Te Araroa route along the northern side of Kerikeri River. The Structure Plan also proposes a comprehensive network of complementary routes that capitalise on the southern/western edge of the Kerikeri River, skirt the rim of

the amphitheatre and indicate how these broadscale routes can be integrated with a central shared path occupying the floodway. These dedicated paths can then be supplemented by the roading network and smaller linkages at a masterplan level to create a tight mesh of routes that are highly accessible and visible.

By creating a readily accessed, highly attractive and functional system that draws people to enjoy it, there is the opportunity to promote a first imperative to walk, cycle, or scooter to a local destination, rather than resort to a car. In this way, each household, school, and commercial area is efficiently linked to KK centre and Waipapa Sports Hub/commercial area, and within the Structure Plan area itself

This sort of initiative is fostered by the changing nature of non-vehicular transport, with electric bicycles and capable mobility scooters opening the way for the elderly, parents with young children and people with movement challenges to travel easily. With these sorts of modes, the 800m walkability radius seen on Sheet A002 can be dramatically expanded.

SECTION F: EFFECTS ASSESMENT

Preceding sections describe the characteristics of the Site and its setting. These are followed by a description of the proposed structure plan as an entity and its component parts. The purpose of *this* section of the report is to define the effects of the Structure Plan upon the Site and its setting, to consider how future urbanisation is likely to impact upon the experience of people viewing that development from outside of the site, and to comment upon the resulting level of

effect upon landscape character, visual amenity and natural character in the context of Kerikeri and Waipapa.

The following assessments have been based upon a worst-case scenario where the development associated with rezoning would occur in a singular sweep. In reality, it is likely that progress would be in a series of stages, allowing for some of the key intended mitigation and integration measures – such as the creation and enhancement of the central floodway corridor – to become established in advance of, or alongside, a large proportion of resulting future buildings and related infrastructure.

Adverse effects impact negatively on the landscape and result in landscape or visual amenity values being diminished. **Benign or neutral effects** are those in which a proposed change neither degrades nor enhances the landscape setting when considered in the whole. In circumstances where **positive effects** arise from a development, the changes that have been brought are deemed to be beneficial relative to the landscape state of the site prior to that change.

Effect ratings that will be used:

Very high: resulting in a dramatic or total loss of the defining landscape characteristics of the site/context, or visual amenity associated with that setting.

High: leading to a major change in the characteristics site or setting, or significantly diminishing key attributes, and/or comparable impacts upon visual amenity.

Moderate – high: an interim measure of effect in which impact of the development results in a change of some significance to the qualities or perception subject landscape.

Moderate: a self-explanatory magnitude in which effects sit midway between the extremes this spectrum of magnitude. Can also be considered as an “average” level.

Moderate – low: impacts on landscape characteristics and attributes are relatively contained. The threshold defining “minor” in relation to the S104D gateway test sits within this level of magnitude, typically towards the lower end of its spectrum.

Low: effects are generally very limited and do not result in compromising the characteristics of a landscape or perceptions of it in a more than subtle way.

Very low: negligible or imperceptible effects result upon the landscape and/ or perceptions of it.

7 VISUAL AMENITY EFFECTS

Viewing audiences / affected parties

To assist with predicting the level of visual and landscape effect that the proposal would generate, publicly accessible vantage points in the area were selected to be broadly representative of each of the following identified audience groups, selecting worst-case views wherever possible. Photographs for each vantage point are found in Attachment Five. These will be referred to in the following commentary. Their location is marked in the aerial photograph comprising Attachment Four.

The degree of adverse visual / landscape effect generated by a proposed change or development depends upon the character of the surrounding landscape (the context), existing levels of development on the application site, the contour of the land, the presence or absence of screening and/or backdrop vegetation, and the characteristics of the proposed development.

Despite its considerable size and close location, the Site has a remarkably limited “presence” in perceptions of the Kerikeri/Waipapa area. In large part this is due to its limited existing road frontage, a barrier of riverside vegetation on its northern edge, its low-lying topography and its topographic division from central Kerikeri by the slope occupied by the Bay of Islands Golf Club course.

Travellers on State Highway 10 and the eastern end of Puketotara Road

A considerable number of vehicles pass along the 550m stretch of State Highway 10 frontage that defines the western edge of the Site. The experience of viewing the Site from the highway when travelling south is represented by Panorama VP03 in Attachment 4.

In its present form, the Site forms part of a wider array of unified flat land that includes the farm to the south, similar grazed land to the west that is associated with Puketotara Road (with viewing from that direction seen in Panorama VP04) and the large, grazed area that is to become the Kerikeri Sports Hub (Panorama VP02).

Whilst the overall impression of the Sports Hub will probably remain as being predominantly open and grassed, it will take on a far more urban character that will relate as much to the built fabric of Waipapa commercial area as to nearby

**BROWNLIE LAND - WAIPAPA
STRUCTURE PLAN AND PROPOSED REZONING**

LANDSCAPE, RURAL AMENITY AND NATURAL CHARACTER ASSESSMENT



farmland. In effect, the development of the Sports Hub will shift the perceived urban margin of Waipapa into close physical proximity with the Site. The Sports Hub will become a destination and will, therefore, attract considerable numbers of users when complete. The dividing barrier of vegetation that currently visually isolates the Sports Hub from the Site would remain to continue that role.

The zoning sought for the western portion of the Site is set out on Structure Plan sheet A007 (Land Use Plan), which indicates a Mixed Use zone occupying the small portion of frontage between the Puketotara Road junction and the southern boundary of the Site; a segment in the order of 100m in length. A major road intersection would need to also be incorporated within the stretch.

The remaining 450m of highway frontage is proposed to be zoned General Residential, but with a Flood Prone overlay that is likely to preclude built development. It is probable that this area would be developed as grassed amenity open space, containing walkways, specimen tree planting and, possibly, areas of wetland as seen in Attachment Six. These elements are not dissimilar to the likely components of the Kerikeri Sports Hub and would therefore be perceived as a continuation (or precursor for north-bound travellers) of the Hub's recreational open space. Commercial activities within the Mixed Use zone would stand in contrast with adjacent farmland would, effectively, be perceived as sliding the gateway to Waipapa's existing commercial signature to the south by almost 1km.

For those looking over the Sports Hub land, the proposal would come with almost no tangible effect. For motorists travelling those parts of SH10 and lower Puketotara Road, the change provided for by the proposed zoning would be a clear departure from the grazed pastoral character that currently prevails. The

development of the flood prone belt alongside the highway in some form of open space would go some way towards offsetting that impact, particularly if future vegetation were of a scale to substantially buffer buildings in the sought Mixed Use zone. In balancing the magnitude of the potential land use change with the likely mitigating role of a developed open space in the flood prone land, it is concluded that initial adverse visual amenity effects upon the audiences represented by Panoramas VP03 and VP04, would be *moderate-low*.

Users of Bay of Islands Golf Club course

The earlier description of the golf course establishes that it is Holes 8, 11 and 12, as seen in Photographs 8 and 26, and VP06, that are potentially influenced by the Site. The proposed rezoning would lead to a significant shift from the current rural outlook from this portion of the course, bringing heightened adverse visual effects upon those playing these three holes.

Future development under the guidance of a masterplan would almost certainly make provision to create a visual screen between the two properties, founded upon the established trees that exist near the boundary. This scenario would replicate the vegetated margins that occur along several holes. Such screening would serve to internalise the course more fully and isolate it from future development to the north. In light of this predictable scenario, it is assessed that the rezoning would result in low adverse visual effects upon this audience.

Residents and road users on Kerikeri's northern flank

This area of established housing is almost entirely blocked from views to the Site by the flank occupied by the golf course. It is further reinforced by the ranks of tree planting that defines the fairways that run across the slope and largely define the

**BROWNLIE LAND - WAIPAPA
STRUCTURE PLAN AND PROPOSED REZONING**

LANDSCAPE, RURAL AMENITY AND NATURAL CHARACTER ASSESSMENT



northern boundary between the Site and the course. Likely supplementary planting along this margin of the Site would serve to prevent future buildings being witnessed as set upon the skyline or peering over the brink of the course when seen from further to the south east.

A scattering of homes to the north east of upper Fairway Drive (seen to the right of Panorama VP09) provide views toward the Site from between large trees. It is likely that these residents will be able to see future development positioned in the south eastern apex of the Site through a depression carved by the course of Kerikeri River. The age and scale of intervening trees -most in nearby residential gardens and roadsides - suggests that their continued growth will compromise many of the currently available outlooks over coming years.

Structure Plan A007 indicates this south eastern portion of the land being an area of large lot residential use, suggesting widely spaced buildings and, if following the general trend around Kerikeri for this type of settlement, reasonably generous planted areas. That form of development will result in a small number of homes to the south east being exposed to a measure of built development in place of what is currently a weed dominated bank. Simultaneously, likely restorative plantings on undeveloped portions of this slope would add amenity to that part of views from the south east.

For the majority of those living within this defined area, the visual amenity effects of rezoning are assessed as being very low, due to a lack of visibility. For the limited number of homes that have a view to the Site, those affects are predicted to be *moderate-low* initially, reducing to *low* once buildings and planting are fully established.

Residents on the Waipapa Road side of Kerikeri River

The semi-mature, totara dominant riparian belts that line both sides of the river create an almost entire visual separation between the Site and terrain to north of the river, ensuring that the majority of those living in or moving through that area will be unaffected by any visual impact arising from the rezoning.

The only exception to that situation is the south eastern portion Quail Ridge Country Club, as described earlier in item 4.1 and seen in Panorama VP09. These buildings provide views across to the Site from the brink of the northern riverside slope, with the central focus of that view being the amphitheatre. Newer houses currently under construction on a lower tier to the south appear to lie entirely within the “visual lee” of established totara on the nearby river flank.

Like the preceding viewing audience, these Quail Ridge buildings would be most exposed to future the large lot residential development indicated for the slopes to on the southern part of the amphitheatre. Preceding comments about the likely nature of that development, and the restoration of the amphitheatre more generally, apply equally here. Potential adverse effects are tempered by the predicted continued growth of the forest seen in VP09. Whilst currently well below these visible dwellings, the totara are expected to conceal views to the Site within a decade. They will be assisted in that role by planting within Quail Ridge, which currently appears to be of limited scale but composed of species that are likely to either block or substantially limit views to the Site within 5 years.

When informed by the preceding observations, adverse visual amenity effects are assessed as being *moderate-low* initially, reducing to *low* following further growth of intervening vegetation and the restoration of the amphitheatre.

Farming neighbour to the south of the Site

When witnessed from this property bordering to the south, the implementation of the Structure Plan will represent a dramatic change from current state as contiguous grazed pasture that creates a sense of the two properties being a singular landscape entity.

The Structure Plan signals the potential for this neighbouring farm by annotating it as *rural land with future urban potential*. Under a scenario where that potential is realised, both properties would transition to urban use and the effects interface between them loses prominence. Until that time, visual amenity effects arising from the future development of the Site upon this likely very small audience of the few people who work on the farm is assessed as being High. There is potential to mitigate that effect through the use of screening vegetation – rather as described in relation to the golf course – along the intervening boundary. This measure would result in effects reducing to Moderate-low, following a measure of maturity occurring.

8 LANDSCAPE EFFECTS

Landscape effects are those impacts upon the structure, pattern and character of landscape that result from a development or change in land use.

Shifting land use from an open, rural pastoral land use to one that has at least a moderately high density of urban use inevitably brings heightened levels of landscape and rural character effect, notwithstanding that the Site is not identified as an outstanding landscape. The flat parts of the Site are assessed as having limited landscape value as a result of a lack of topographic diversity and limited

spatial variety. These areas expressively reflect the farm's focus upon production grazing rather than the added values that much of the District's rural landscape offer through stronger patterns of native vegetation, association with the coast or a more varied and interesting terrain. Correspondingly, rural character can be regarded as a rather featureless and unremarkable peri-urban countryside.

The consideration of landscape effects associated with the rezoning therefore needs to focus primarily upon whether the fundamental topographic and biotic characteristics of the area's landscape are to be conserved/enhanced (or not), rather than the assessment being based upon the area's current, predominantly grazed state. Section A of this report describes the physical characteristics of the Site and its immediate setting. Subsequent Section C then sets out the planning and design rationale underpinning the Structure Plan and related rezoning, commencing with a list of principles that the proposal seeks to satisfy.

Key considerations in terms of potential landscape effects are that the enframing riparian corridor is to be perpetuated and likely strengthened through restorative efforts. This measure would serve to perpetuate the principal element of landscape value in relation to the Site.

Accordingly, landscape effects are assessed as being of a *moderate - low* level of magnitude in recognition more of the *change* of landscape identity from rural to urban, rather than a reflection of a loss of landscape value. Such change needs to be considered within the context informed by the established Waipapa and Kerikeri urban areas and with proposed riparian initiatives, including accessibility, contributing a positive effect of modest level.

9 NATURAL CHARACTER EFFECTS

Section 6(a) of the Resource Management Act (1991) states that the following matter of national importance shall be recognised and provided for:

“The preservation of the natural character of the coastal environment (including the coastal marine area), wetlands, and lakes and rivers and their margins and the protection of them from inappropriate subdivision, use and development.”

A working definition of natural character is derived from research undertaken for the Ministry of the Environment in relation to Environmental Performance Indicators (Boffa Miskell Ltd 2002). This states that:

“The degree or level of natural character within an area depends on the extent to which natural elements, patterns and processes occur; and the nature and extent of modifications to the ecosystems and landscape / seascape. The highest degree of natural character (greatest naturalness) occurs where there is least modification. The effect of different types of modification upon the natural character of an area varies with the context and may be perceived differently by different parts of the community.”

As the preceding extract indicates, natural character exists on a continuum that spans from totally modified at one extreme, to entirely natural at the other.

The elements of, or associated with, the Site that fall under the ambit of s6(a) of the RMA are the Kerikeri River and Puketotara Stream, along with the wetland sequence associated with the minor stream that feeds the waterfall within the Site. As a result of their inherent naturalness and typical setting/association with indigenous riparian vegetation, these elements each have heightened natural character, albeit that the naturalness of much of that vegetation is compromised by

the incursion of exotic weed species. Two large portions of the riparian environment are identified as being an SNA (site PO5086, Kerikeri River Remnants) by the Department of Conservation⁷, but are only partially protected within reserves. The Structure Plan provides to fully conserve those portions that fall within the Site and to expand and buffer them, particularly in relation to the amphitheatre.

A 20m esplanade reserve would apply to riverside areas through future subdivision. In almost all areas the Structure Plan provides for a greater level of protection through the flood hazard offsets seen on Sheets A002 and A003. In addition, the basin associated with the waterfall within the Site which contains a wetland sequence is intended to remain free of built development (other than walkways and related small structures) and conserved in alignment with its SNA status.

The widespread presence of weeds, particularly in the waterfall basin area, compromises existing levels of natural character. It is very likely that future development of the Site will incorporate some form of landscape and ecological management plan that would provide for managing those weed species and for ecological restoration of reserved areas currently lacking an indigenous vegetation cover. Such an initiative would heighten natural character.

Provision for walking and cycling routes through or alongside these riparian areas would allow a wide spectrum and number of people to access and appreciate these special areas. Care will need to be conveyed through future detailed design and management provisions to avoid access corridors diminishing the natural character values of those places.

⁷ *Natural Areas of Kerikeri Ecological District.* Department of Conservation

**BROWNLIE LAND - WAIPAPA
STRUCTURE PLAN AND PROPOSED REZONING**

LANDSCAPE, RURAL AMENITY AND NATURAL CHARACTER ASSESSMENT



Whilst introducing urban development into the proximity of the rivers and wetlands provided for under s6(a) of the Act, the Structure plan imposes generous offsets that would conserve these areas and provide for an enhanced buffer. A process of more detailed planning for urbanisation carries with it an implicit expectation that the compromising elements found in these most natural areas will be controlled and managed, thereby heightening natural character values. In this context, the natural character effects of the rezoning are predicted to be positive in the order of a *moderate-low* magnitude.

SECTION G: CONCLUSIONS

Kerikeri is a distinctive settlement, with a subtropical feel, spatial containment, and a scale of commercial buildings that creates a unique village character.

Waipapa has a less place-specific identity and is experienced as being more “aggressively” commercial, with its large format retail facilities and range of industrial activities.

Far North District Council’s Kerikeri Sports Hub site is of a substantial area and strategically positioned relative to both Waipapa commercial area and the Site. Its development will shape the character of the area and the Structure Plan is poised to create a very constructive interface with that focus for the wider community.

The Site’s spatial relationship with Kerikeri to one side and Waipapa to the other, combined with virtually flat topography, suggests that it is optimally positioned to accommodate future growth. This is particularly clear when the Site is compared

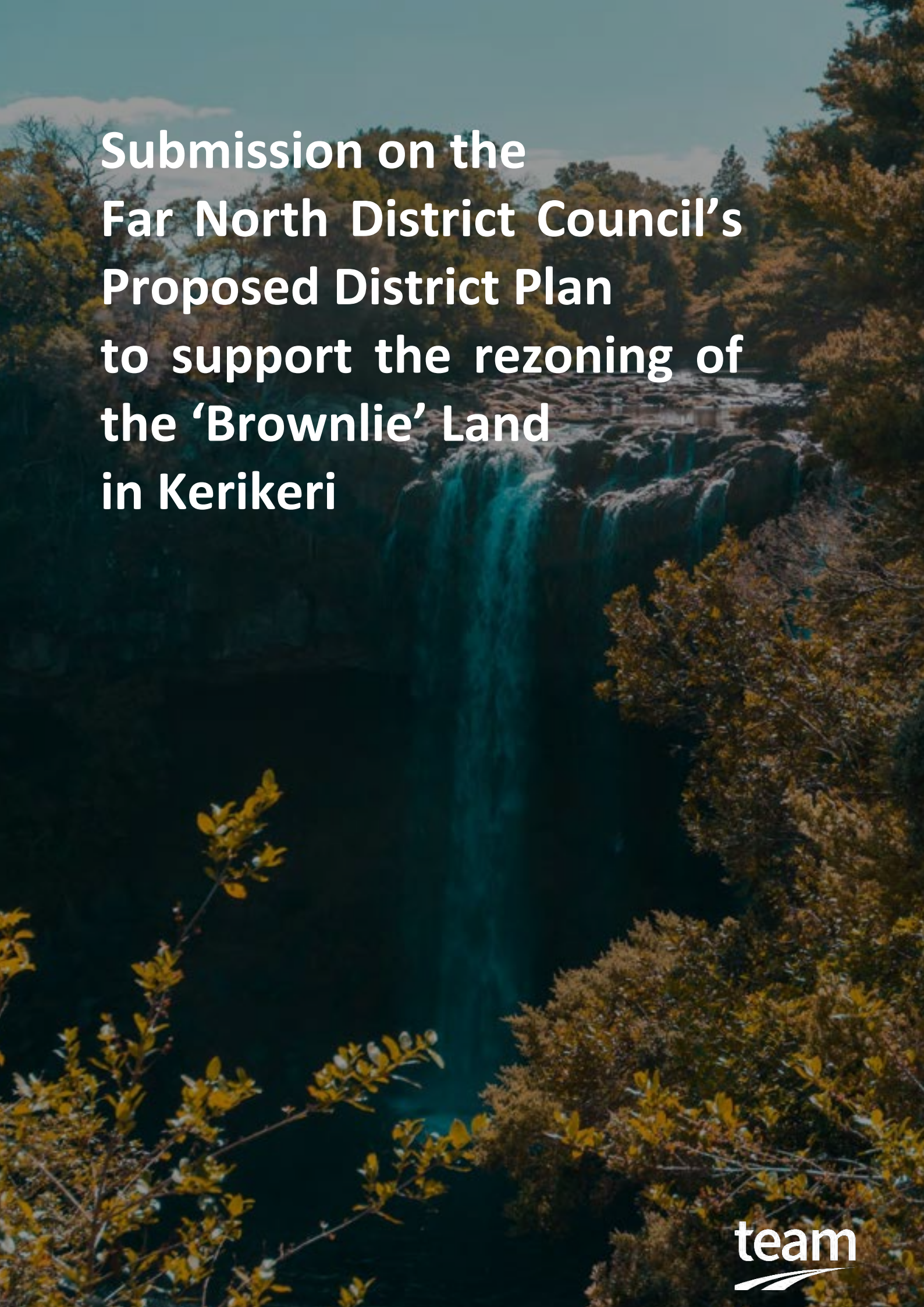
with the characteristics of other parts of Kerikeri’s margin, which typically carry much stronger rural character and higher landscape sensitivity.

The Structure Plan provides a strong framework for further resolution through future master-planning by conserving key features, tying in with off road networks, and providing a central open space spine catering for overland flood flow and providing for “arms” of multi-use stormwater management/open space to reach out into the core of residential areas nearby. It also forms the core for a comprehensive system of off-road paths.

The Structure Plan responds to landform and natural patterns whilst also addressing the range of other spatial relationship, movement, economic and topographic drivers that need to be accommodated. Conserving riparian corridors and related vegetation patterns has been an anchoring requirement of the Structure Plan from its outset and informs a series of identified cross-connections to draw those natural themes into the body of the Site.

Whilst any urban land use applied over the Site will unavoidably bring with it a significant shift in character and resultant adverse visual and landscape effects, the Structure Plan is considered to avoid and minimise fundamental impacts, whilst providing for a locally relevant character to be woven through a new land use scenario. A likely process of staged development of the Site is not anticipated to heighten potential adverse effects and offers scope to reduce impacts through the timing of integrating and mitigation initiatives, particularly in relation to the central floodway corridor.

Mike Farrow Principal landscape architect



**Submission on the
Far North District Council's
Proposed District Plan
to support the rezoning of
the 'Brownlie' Land
in Kerikeri**

Address 1878 & 1828 SH10, Waipapa and Lot 1 DP333643 Waitotara Drive Waipapa

Prepared By: P.R.Brown



Revisions:

Date	Revision Number	Prepared by	Initials
23/09/2022	Draft-v1	PB	P.R.Brown
4/10/2022	Draft – v2	PB	P.R.Brown
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TABLE OF CONTENTS

1	INTRODUCTION	1
2	SITE LOCATION	2
3	EXISTING TRANSPORT ENVIRONMENT	3
3.1	Existing Road Network	3
3.2	Speed Environment.....	8
3.3	Traffic Generation Rates	9
3.4	Crash Analysis	10
4	ACCESSIBILITY.....	12
4.1	Private Vehicle Access.....	12
4.2	Walking and Cycling Network	13
4.3	Passenger Transport	14
5	PROPOSED FUTURE ENVIRONMENT.....	14
5.1	Transport Upgrades	14
5.2	Future Speed Environment	16
5.3	Passenger Transport	16
5.4	Over Dimensional (OD) & 50MAX Vehicle Route.....	17
5.5	Proposed Waipapa Sports Hub	17
5.6	One Network Framework	18
6	THE SUBMISSION	20
6.1	Street and Off-Road Path Design	28
6.2	Potential Yield	29
6.3	Staging.....	31
6.4	Traffic Generation & Distribution	31
6.5	Access Options	33
6.6	Intersection Design	37
6.7	Road Safety	39
6.8	Parking	39
6.9	Active Modes and Passenger Transport	40
6.10	Emergency Access & Servicing.....	42
7	TRANSPORT PLANNING POLICY	42
7.1	National Policy Statement on Urban Development 2020 (NPS-UD).....	42
7.2	Government Policy Statement on Land Transport 2021/2022–2030/31.....	43
7.3	Northland Regional Land Transport Plan 2021-2027.....	44
7.4	Far North District Council District Plan	44
8	CONCLUSION.....	45

LIST OF FIGURES

Figure 1: Structure Plan Details.....	1
Figure 2: Surrounding Road and Wider Network.....	2
Figure 3: Surrounding Road Network	3
Figure 4: Existing Traffic Counts on Surrounding Road Network.....	5
Figure 5: Existing Traffic Counts at Key Intersections	7
Figure 6: Speed Distribution Profiles	9
Figure 7: Residential Traffic Generation Rates	9
Figure 8: CAS Search Area	10
Figure 9: DSI Crashes - Location and Type	11
Figure 10: Te Araroa Trail alignment.....	13
Figure 11: Excerpts from FNDC’s Long Term Plan 2021-31	15
Figure 12: Over-dimension and 50MAX routes	17
Figure 13: Proposed Waipapa Sports Hub	18
Figure 14: One Network Framework Relationships.....	19
Figure 15: One Network Framework Summary	19
Figure 16: One Network Framework – Street Categories (Rural and Urban)	19
Figure 17: Area of Submission	20
Figure 18: Anticipated Development Yield for the Brownlie Land Structure Plan	21
Figure 19: Proposed Zoning	21
Figure 20: Proposed Zoning Overlays	22
Figure 21: Structure Plan Option 1.....	24
Figure 22: Structure Plan Option 2.....	25
Figure 23: Structure Plan Option 3.....	26
Figure 24: Structure Plan Option 4.....	27
Figure 25: Council’s Policy on Connectivity in Parks & Reserves	29
Figure 26: Commuter Workplace Travel (Kerikeri Central)	33
Figure 27: Education Travel (Kerikeri Central)	33
Figure 28: SH10 Concept Roundabout Design	38
Figure 29: Active Mode Connectivity	41

LIST OF TABLES

Table 1: Potential Yield	29
Table 2: Anticipated Yield	29
Table 3: Overall Estimated External Traffic Movements To & From the Subject Site	32

1 INTRODUCTION

Kiwi Fresh Orange Company Limited (**Submitter**) seeks a rezoning of their land at 1878 and 1838 State Highway 10 Waipapa, and also Lot 1 DO 333643 Waitotara Drive Waipapa (**Subject Site**) in the Kerikeri area.

This area is generally located between the developed areas of Waipapa and Kerikeri and borders the northern edge of the Bay of Islands Golf Course.

The submission seeks a rezoning of the subject site's 197ha area to allow a combination of residential, commercial (employment), community and educational land uses, with these being supported by a comprehensive and connected network of main public roads and off-road pedestrian and cycle paths.

Complementing this is the provision of significant areas of land for the management of flood events. The details of this are contained in separate reports.

This draft Integrated Transport Assessment (**ITA**) provides a supporting high level transportation commentary on the Structure Plan options that have been prepared in support of the submitter's submission on the Far North District Council's (**FNDC**) Proposed District Plan (**PDP**).

The proposed rezoning would provide a total of circa 112ha of land for the proposed land uses as detailed in the table below:

Proposed Zones	Type	Total Land (Gross Ha)	Total Land (Net Ha)	Low	Medium	High
Mixed Use	Commercial and Employment	22.0	15.4	33,400	44,500	55,600
Mixed Use	Local Centre	1.5	1.1	1,500	2,000	2,500
Hotel & Tourism	Accommodation	1.0	0.7	5,600	7,500	9,400
Local Centre	Local Centre	0.5	0.4	400	500	600
Sub Total		25.0	17.6	40,900	54,500	68,100
Residential	Dwellings	87.0	60.9	1,220	1,830	2,440
Total		112.0	78.5			

Source: Urban Economics, Pacific Environments Architects

Figure 1: Structure Plan Details

This report considers:

- The existing traffic environment and anticipated changes to the receiving environment.
- Commentary on the potential development yield and site configuration including anticipated street and intersection design.
- The suitability of the proposed primary road connection in the site.
- Ability of the submission to align with key national and regional transport planning and policies.
- An assessment of the potential transport effects including the effects on safety, active modes, public transport, parking and emergency access servicing.

These and other matters are addressed in the detail of this report.

2 SITE LOCATION

The location of the subject site in relation to the surrounding road network and properties is shown in the following illustrations.

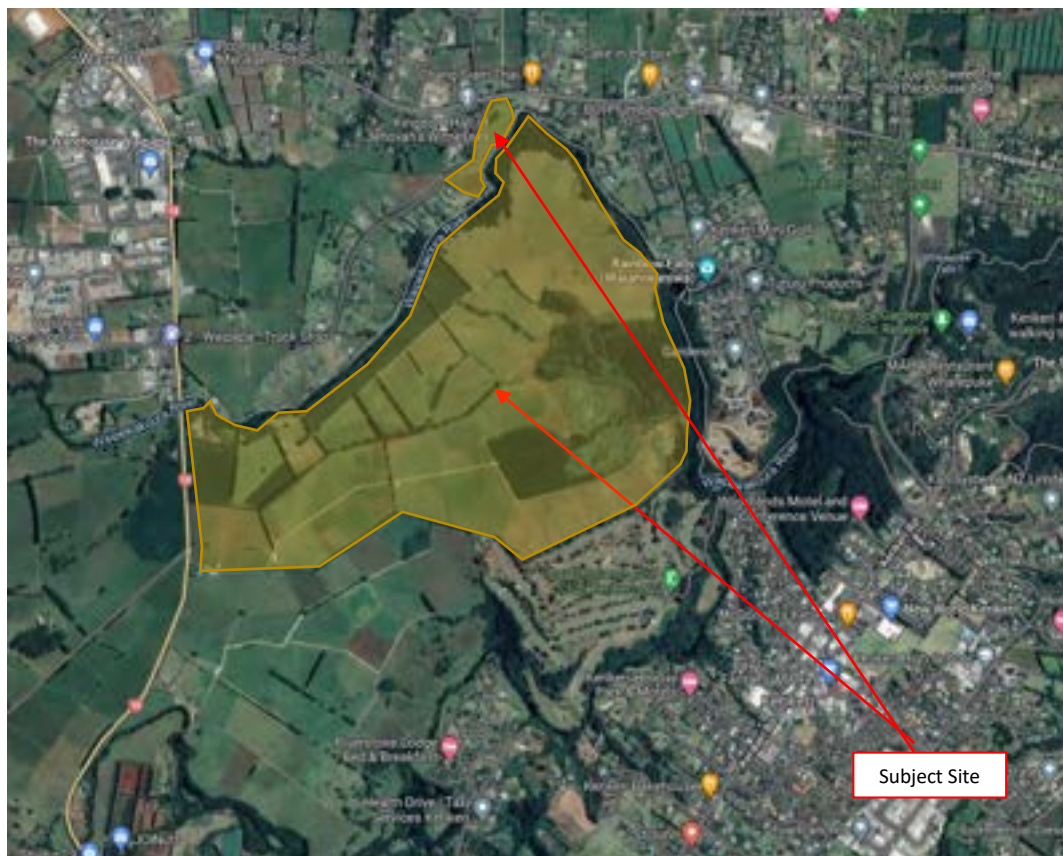


Figure 2: Surrounding Road and Wider Network

According to the FNDC Operative and Proposed District Plans, the subject site is zoned as Rural Production.

Access to and from the site is currently possible from Waitotara Road (for the small part of the subject site north of the Waipekakoura/Kerikeri River (**River**) and SH10 for the main part of the site between the River and the golf course.

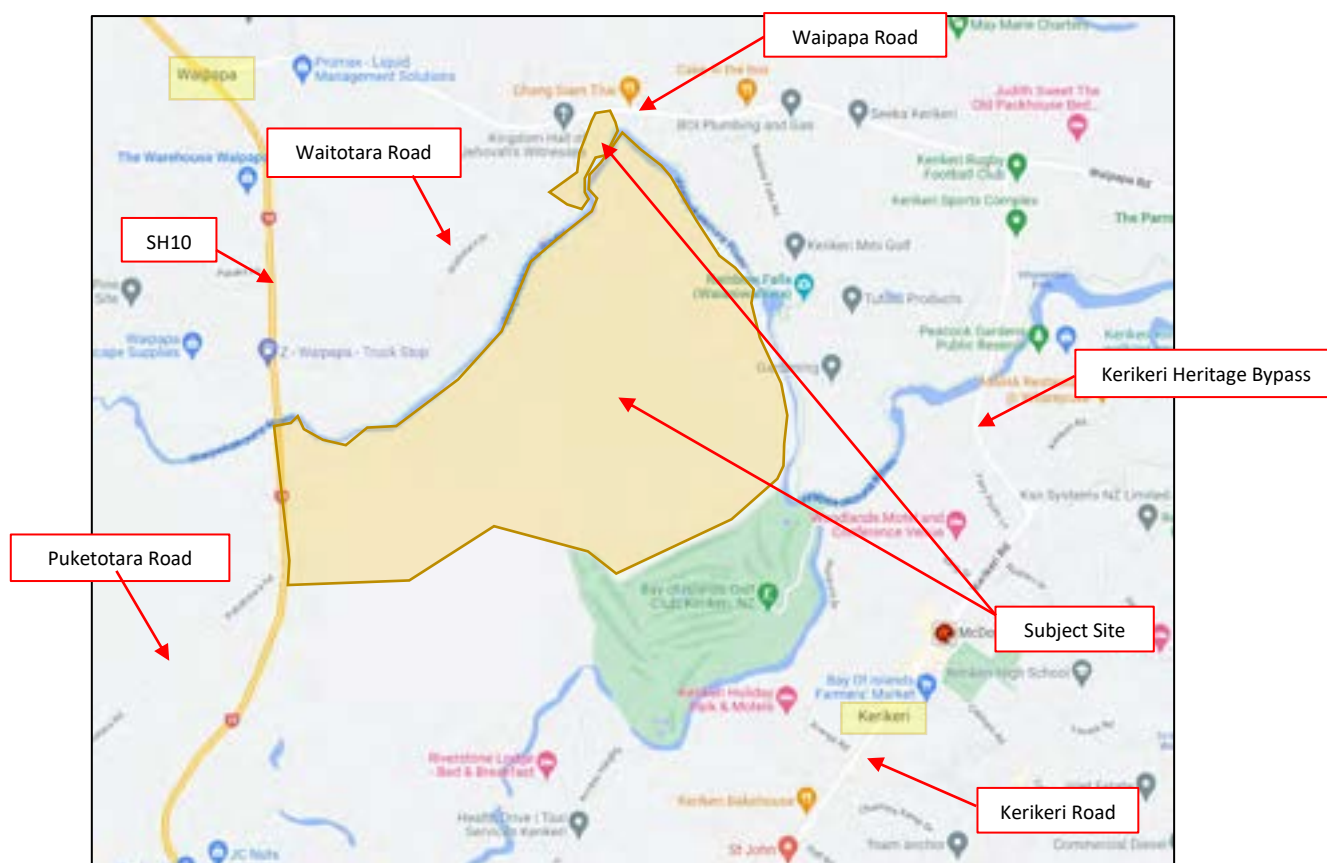


Figure 3: Surrounding Road Network

3 EXISTING TRANSPORT ENVIRONMENT

The following sections provide details of the existing transport environment in the immediate area.

3.1 Existing Road Network

The local roading network is dominated by, and is dependent on, State Highway 10 (**SH10**) for primary access to and from the wider area, with connections to and from the Kerikeri and Waipapa urban areas being provided by Kerikeri Road and Waipapa Road.

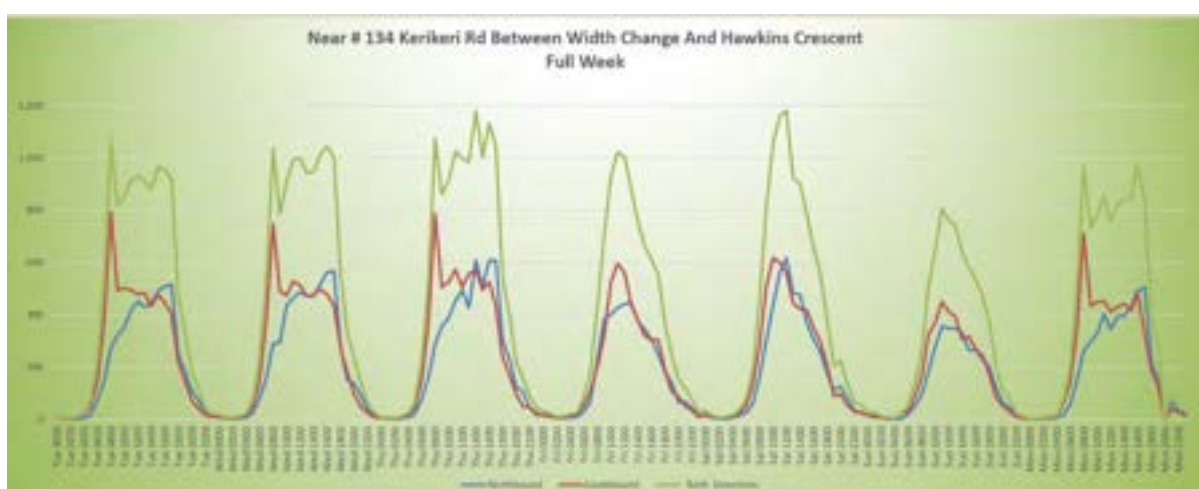
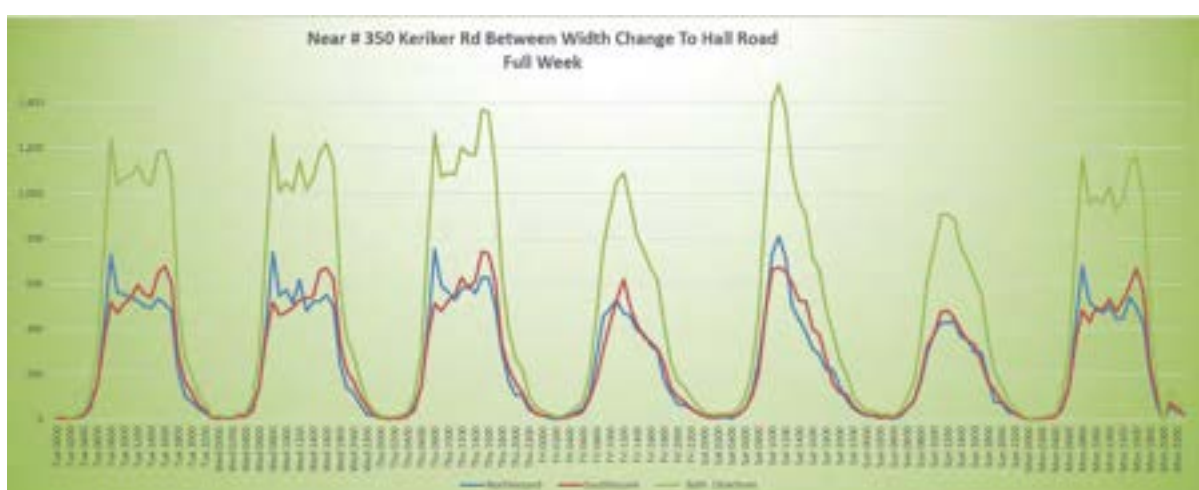
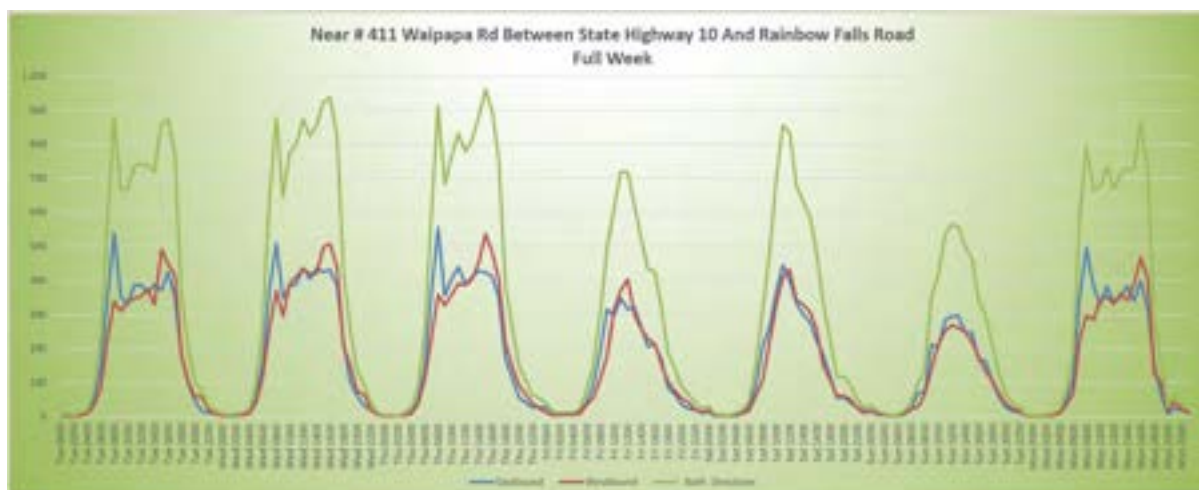
To provide connectivity between these two roads without relying on SH10, the Kerikeri Heritage Bypass, sometimes referred to as the Twin Coast Discovery Highway, was opened in 2008.

These roads provide primary and strategically important transport connections within as well as to/from the area and are designed to provide a single lane in each direction, with corridor management in the form of parking controls, turning facilities and flush medians provided in areas of need.

Their use through the year varies, with an elevated use occurring in the summer due to the seasonal recreational activity in the local and wider area. Outside these times their use is more moderate.

As part of a separate detailed transport modelling project commissioned by FNDC in parallel with the development of this Structure Plan, comprehensive traffic surveys were undertaken on the network.

Graphical summaries¹ of the hourly traffic flows in each direction over the course of a week-long period in June 2022 on Waipapa Road (close to SH10), Kerikeri Road (close to Hall Road, and south of the Heritage Bypass), SH10 (south of the Kerikeri Road roundabout) and the Heritage Bypass are provided below.



¹ Used with FNDC permission

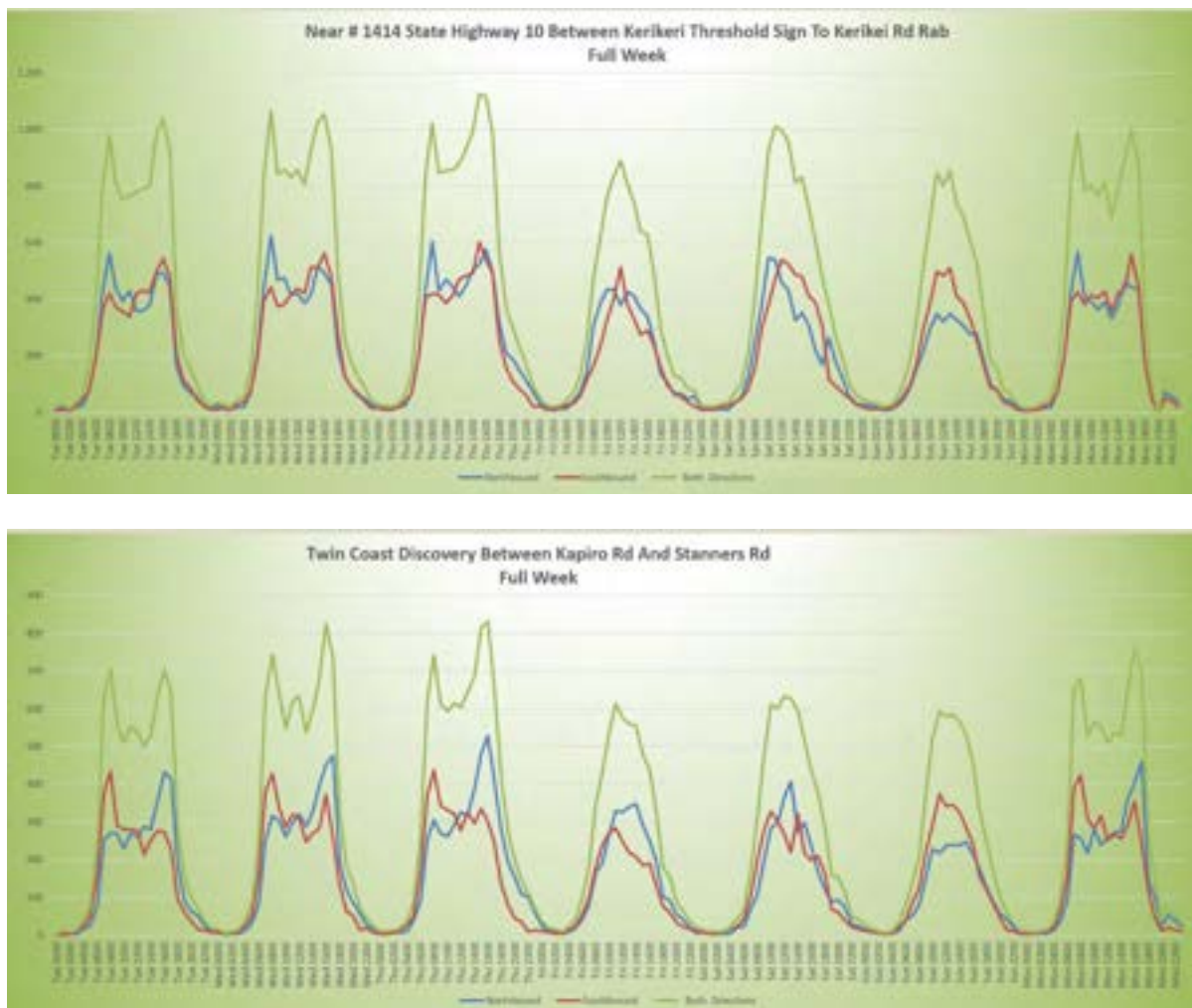
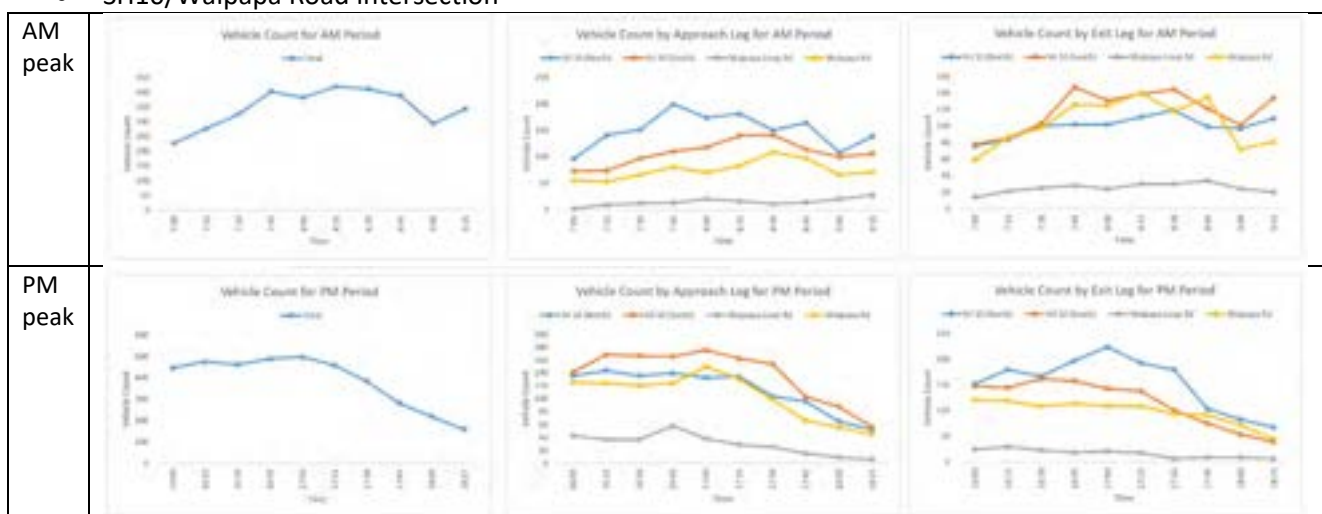


Figure 4: Existing Traffic Counts on Surrounding Road Network

Turning movement counts have also been undertaken at a number of intersections, with a summary provided below of the volumes in the morning and evening commuter peak periods at the following key intersections relevant to the Structure Plan.

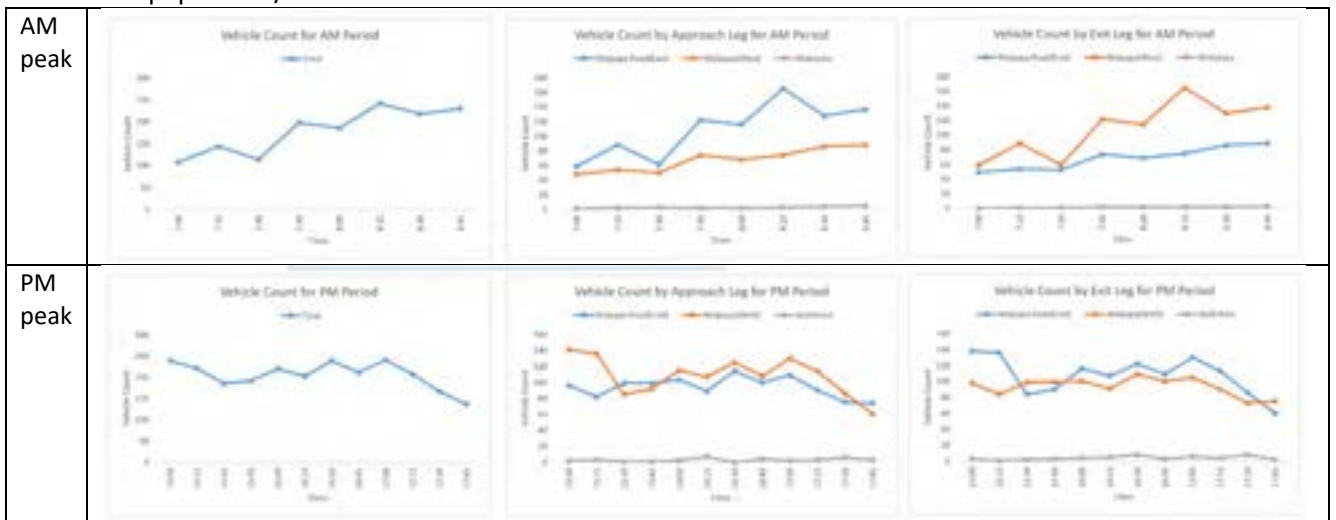
- SH10/Waipapa Road intersection



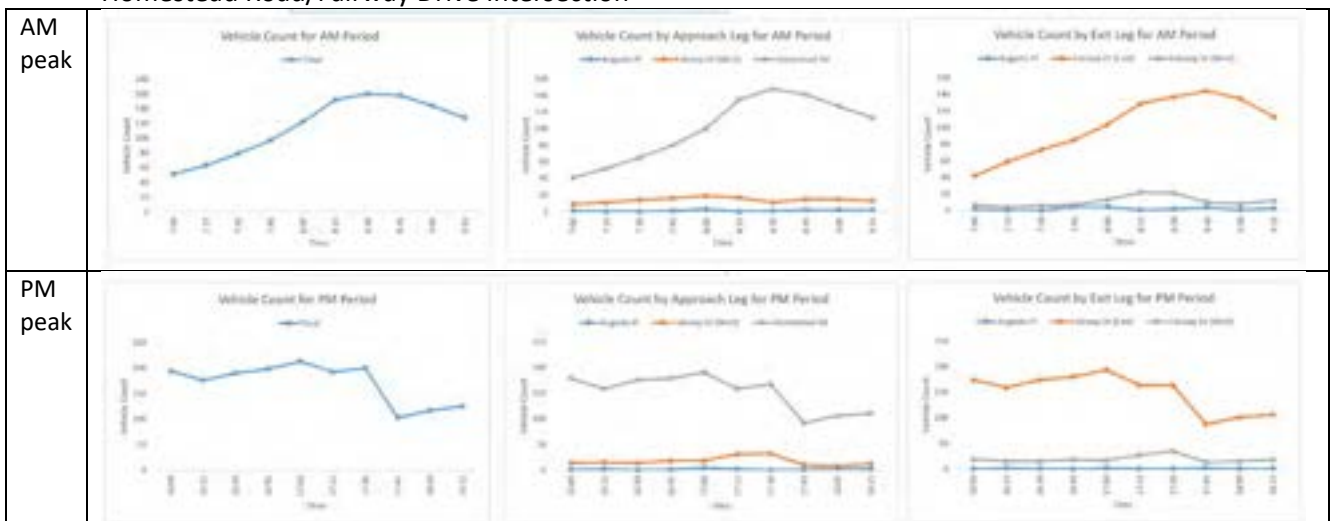
- SH10/Puketotara Road intersection



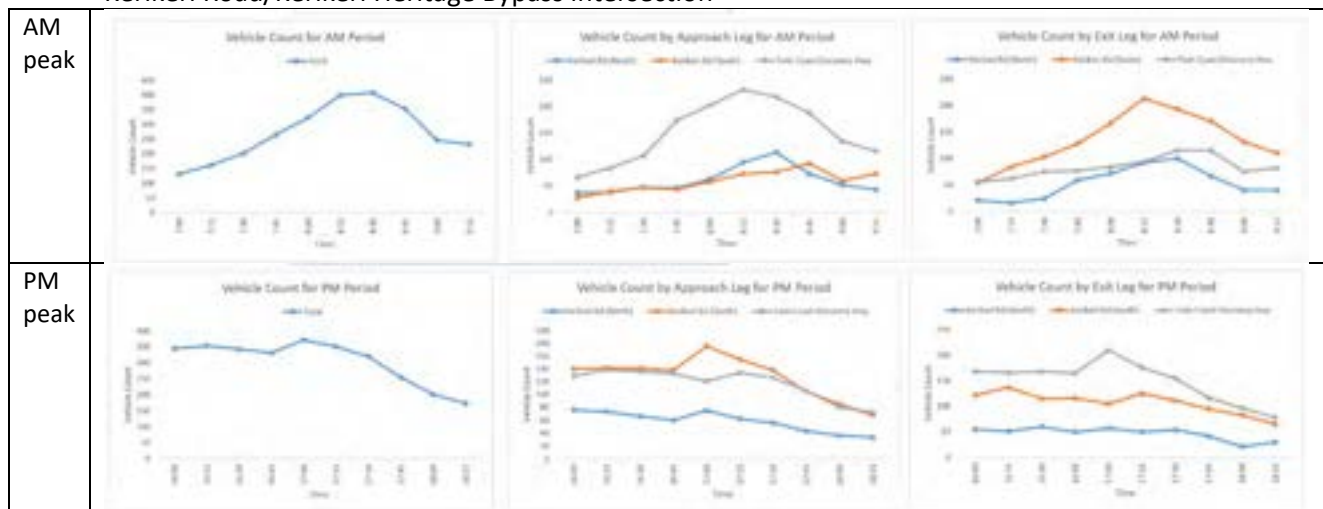
- Waipapa Road/Waitotara Road intersection



- Homestead Road/Fairway Drive intersection



- Kerikeri Road/Kerikeri Heritage Bypass intersection



- Waipapa Road/Kerikeri Heritage Bypass intersection

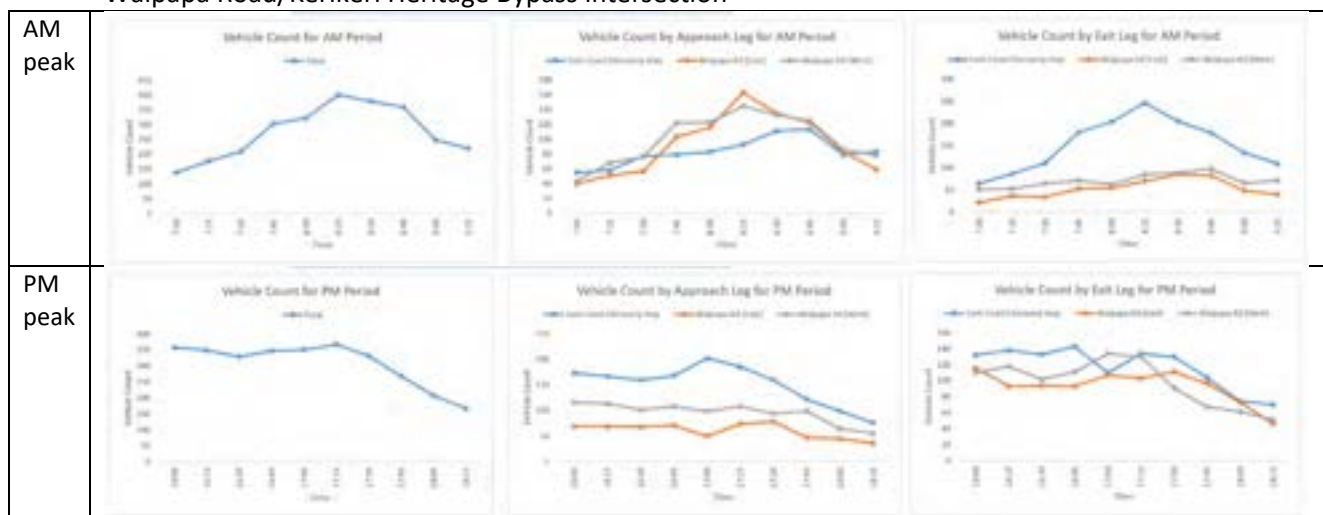


Figure 5: Existing Traffic Counts at Key Intersections

Collectively, these traffic counts show a dominant peaking in the AM commuter peak period on the roads other than SH10, and a relatively flat profile leading into and through the afternoon peak period before it drops off steadily at the end of the general business hours of the day,

Knowledge of the local Kerikeri business district shows some intersections operating at capacity with queuing occurring over relatively short time period occurring during the periods of peak demand.

Other less significant roads removed from the urbanised area (such as Puketotara Road and Waitotara Road) show much lower traffic volumes.

Overall, it is considered that these volumes are reflective of the existing traffic demands but will increase over time as development continues to occur in the local and wider areas.

Given these existing demands and those in the future from the ongoing development of the Kerikeri and Waipapa areas, Council has commissioned a separate investigation that will build a comprehensive computer-based transport model for the local and wider area.

From discussions with the company engaged to undertake this work, it is expected that this model will draw on substantive and detailed data - including that underpinning the concise summaries provided above. This will provide an integrated assessment to be undertaken for the proposed wider spatial planning of the Kerikeri-Waipapa area for future years and identified time horizons.

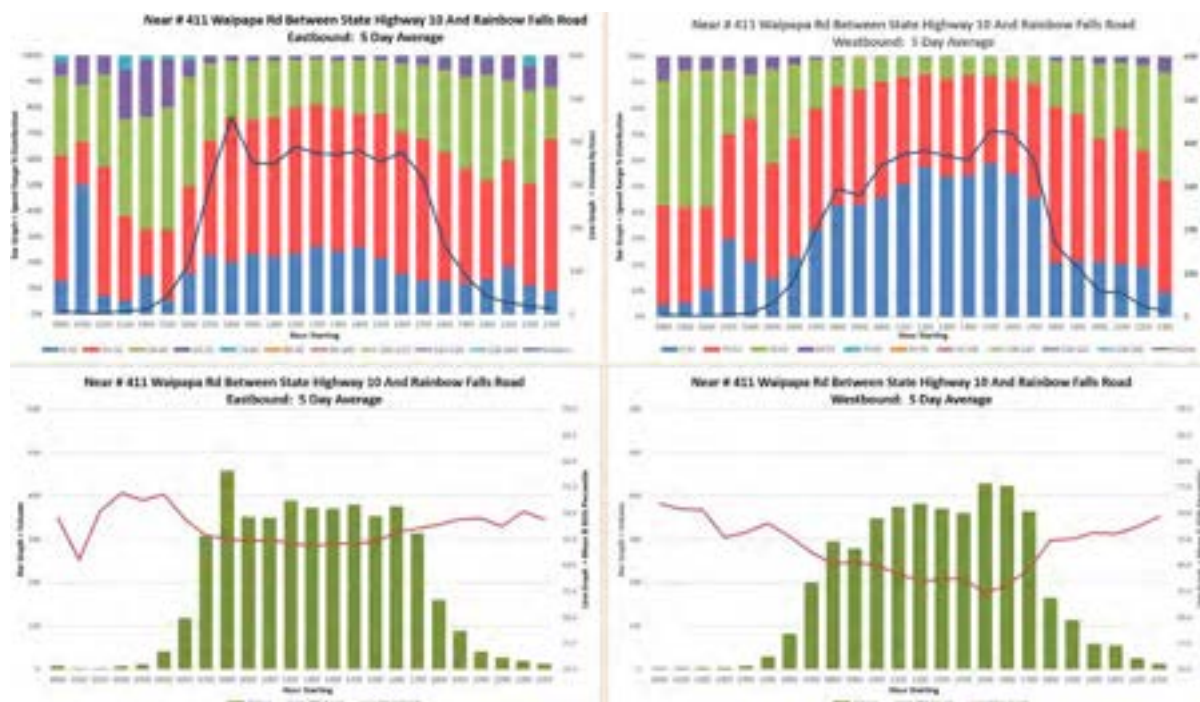
3.2 Speed Environment

The posted speed environment in the local and surrounding area is as follows:

- SH10 away from the Waipapa area: 100km/h
- SH10 close to and within the Waipapa area: 70km/h
- Waipapa Road away from the Waipapa area: 80km/h
- Waipapa Road close to the Waipapa area: 70km/h
- Urban roads: 50km/h

The following traffic count information shows the speed distribution profile related to the volume through the day in an averaged 5-day week for Waipapa Road and SH10 close to Waipapa – being the higher speed and higher volume primary roads in the immediate area.

- Waipapa Road close to the SH10 roundabout



- Kerikeri Heritage Bypass

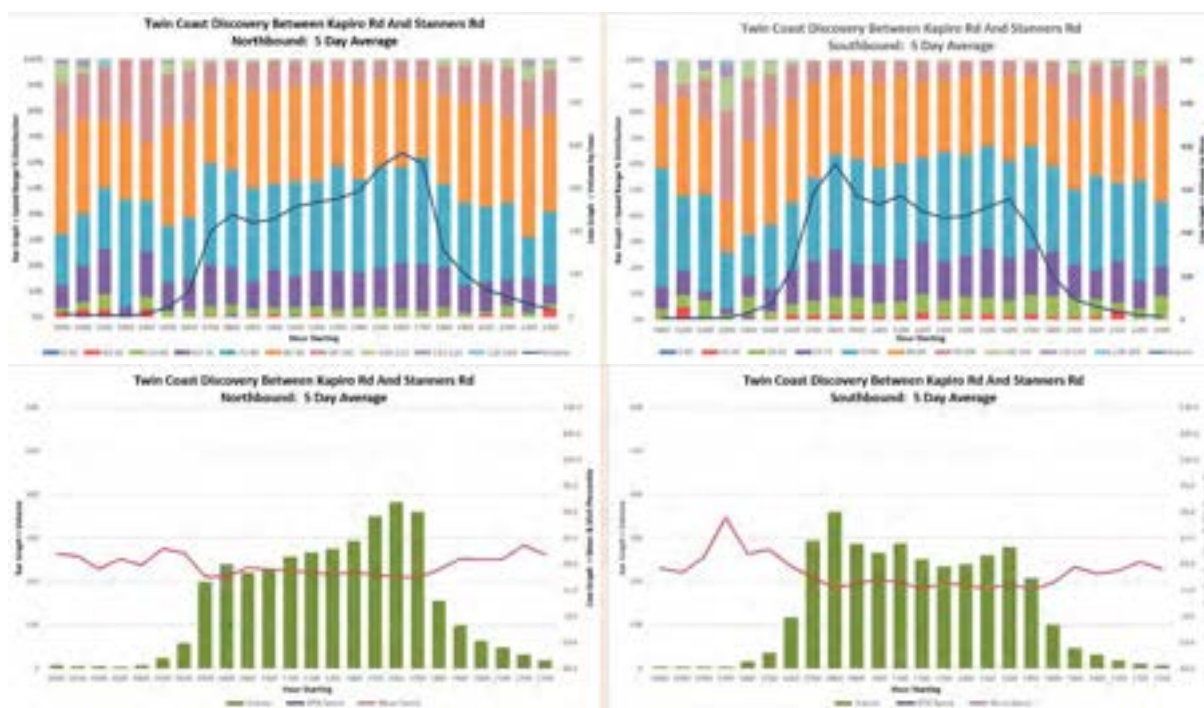


Figure 6: Speed Distribution Profiles

This speed management framework is considered appropriate for the current environment but is expected to change to in the Waipapa area to a lower speed limit as this area continues to develop.

3.3 Traffic Generation Rates

Given the quantum of land in the Structure Plan for residential purposes, separate traffic surveys have been undertaken to establish the existing traffic generation profiles in the morning and afternoon commuter peak periods at clearly defined residential areas in the vicinity of the subject site.

From this work, the following table summarises the range of the rolling hourly weekday traffic generation rates, as well as the inbound vs. outbound distribution patterns, in the morning and afternoon commuter periods for the identified residential areas.

Waitotara Road

AM commuter period	0.166 and 0.375 trips/dwelling/hr between 0715-0900, 37% inbound 63% outbound
PM commuter period	0.375 and 0.916 trips/dwelling/hr between 1500-1800, 59% inbound 41% outbound

Aranga Road (and side roads)

AM commuter period	0.230 and 0.290 trips/dwelling/hr between 0715-0930, 48% inbound 52% outbound
PM commuter period	0.247 and 0.418 trips/dwelling/hr between 1600-1830, 48% inbound 52% outbound

Access Road (and side roads)

AM commuter period	0.128 and 0.376 trips/dwelling/hr between 0715-0930, 35% inbound 65% outbound
PM commuter period	0.316 and 0.495 trips/dwelling/hr between 1600-1830, 60% inbound 40% outbound

Figure 7: Residential Traffic Generation Rates

Although additional data has been collected for Fairway Drive (including Golf View Road) to inform the transport modelling, it includes data associated with the movement of vehicles to and from the golf course and any parking overflow from the adjacent commercial land uses.

These influences will significantly distort the generation rates when averaged over the number of dwellings within the catchment, and for this reason this location is not considered representative of the residential patterns in the area.

Although the summary data shows varying traffic generation rates per dwelling, the following conclusions have been reached about them:

- The generation rates in the morning commuter peak period are all lower than that in the afternoon and are very modest.
- The rates for the Waitotara Road site will be influenced more significantly by the smaller residential catchment of the surveyed area
- All of the generation rates are very modest when compared to industry-accepted standard generation rates.

For these reasons it is considered that this data is representative of the existing traffic generation patterns of residential land uses in the local Kerikeri urban area and reflect the very low use of walking and cycling modes (**active modes**) that have been observed.

For the purposes of this report, the higher rates from the Aranga Road site are considered reasonable for the purposes of any prediction of future traffic flows without the more significant use of active modes or future local passenger transport services (that may be provided in the future) as an alternative to private-vehicle-based travel.

3.4 Crash Analysis

To determine if there are any existing significant operational issues on the primary roads in the vicinity of the site, a study of the crash record maintained by the NZTA has been undertaken for the 5-year period 2017-2021 inclusive for deaths and serious injuries (**DSI**). Crashes that occurred and were reported during 2022 were also included.

The roading network that was searched is that shown in blue in the following illustration, with this illustration also showing a summary of the location and the severity² of reported crashes.

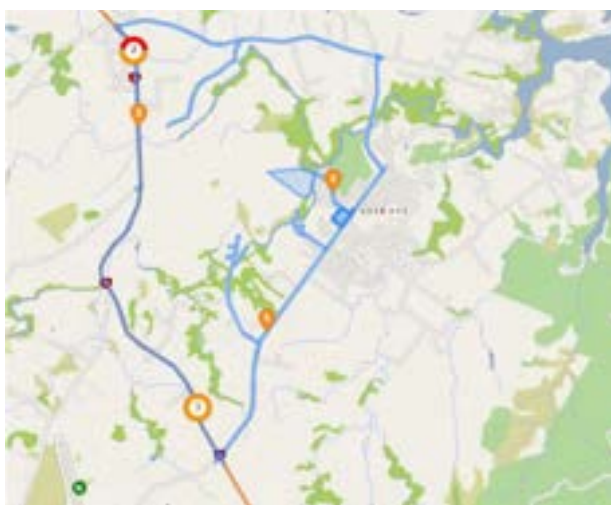


Figure 8: CAS Search Area

² Red=fatal, Orange = serious injury

Closer examination of these crashes shows the following more precise locations and type of crashes.

In total there were eight crashes reported within the searched area and examined 5+ year time frame.

Based on the above analysis, the crash history does not highlight any patterns that would indicate that there are any inherent safety or operational issues in the vicinity of the site that could be a cause for concern from a traffic engineering perspective.

However, along the examined SH10 corridor, the cumulative prevalence of crashes involving turning/crossing movements results in the opinion being formed that access to SH10 needs to be a good standard. Furthermore, it is considered that alternatives to pedestrian connectivity along SH10 would be avoided in favour of more appropriate off-road alternatives.

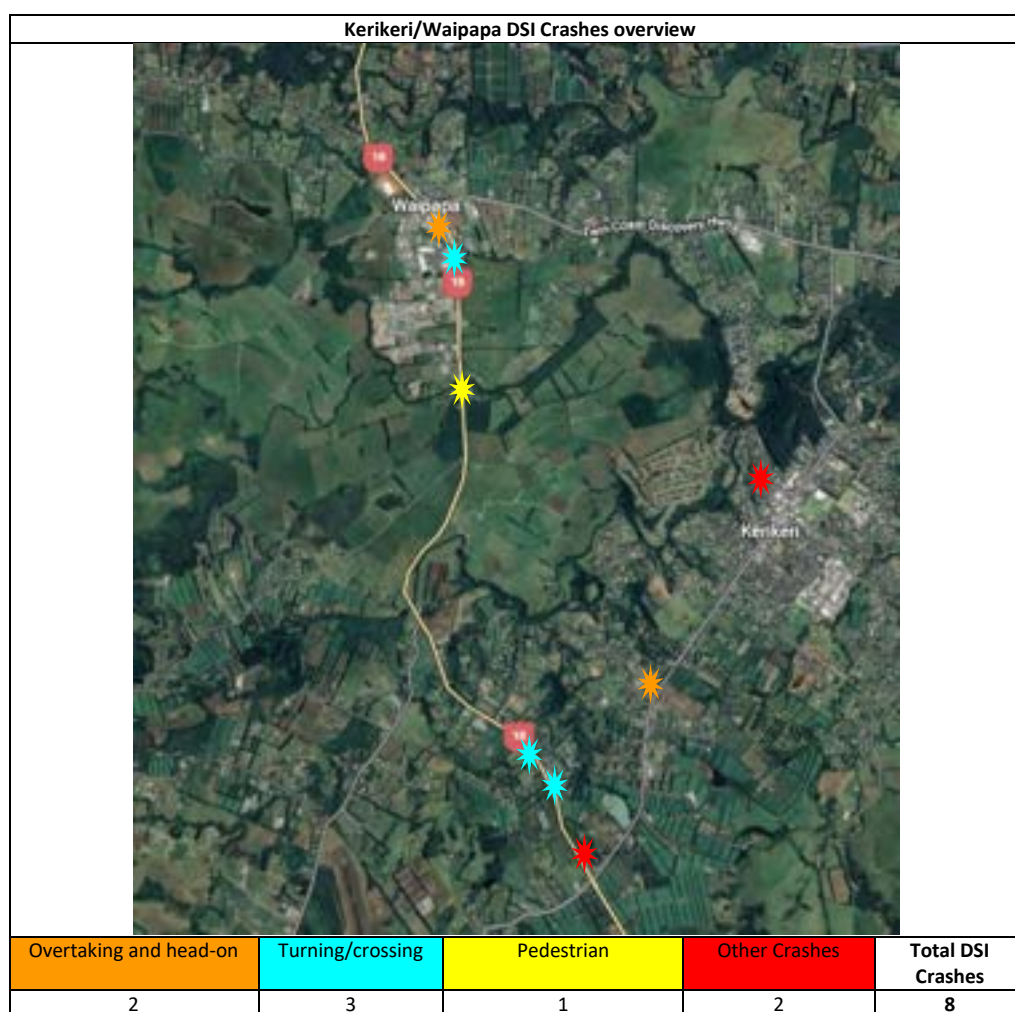


Figure 9: DSI Crashes - Location and Type

4 ACCESSIBILITY

4.1 Private Vehicle Access

The subject site has good vehicular accessibility to the surrounding road network. This currently includes, and could also potentially include:

- SH10, onto which the bulk of the site can presently take access.
- Waitotara Road, onto which the smaller part of the subject site fronts. Through this, and a bridge over the river, the balance of the land can be accessed
- Through neighbouring properties, including the golf course to roads such as Golf View Road and Access Road.

SH10 is a strategically important national roading corridor in the area and provides regional connectivity between and through neighbouring towns, whilst also fulfilling local access functions. Because of the important role it plays in the local, regional, and national roading network, access must be provided to a high standard and be limited to appropriate locations.

It is also known that SH10 in the vicinity of the site and the bridging for the river is susceptible to flooding during major rain events, with this forcing the closure of SH10 at this location for safety reasons on occasions.

Waitotara Road presently serves a localised residential area and joins Waipapa Road at an uncontrolled priority intersection. The location of this intersection is well placed for the provision of access to the smaller part of the subject site, as well as the larger balance of the site with the provision of a bridge over the river.

No other roading connections are presently available in the area due to the undeveloped rural nature of the subject site. This results in the need for Waipapa Road and/or SH10 to be used to access the Kerikeri urban area, which is a rather circuitous and lengthy route that relies on the Kerikeri Heritage Bypass or Kerikeri Road.

Google travel information resources indicates that travel in the mid-afternoon period of a weekday from Waitotara Road to the Kerikeri Road/Hobson Avenue intersection³ in Kerikeri as being:

- A 6 minute, 4.5km, trip via Kerikeri Heritage Bypass or
- A 12 minute, 11km, trip via SH10 via Waipapa and Kerikeri Road.

On this basis, the subject site has vehicular connectivity to the wider road networks but will significantly benefit from local future connections to the Kerikeri urban area.

³ For the sake of identifying a central destination for reference purposes

4.2 Walking and Cycling Network

Provision for pedestrians and cyclists is limited in the vicinity of the subject site. At present there are no facilities on SH10, with marked on-road cycle facilities provided on Waipapa Road.

A separate pedestrian footpath is also provided on the southern side of Waipapa Road.

Urban footpath infrastructure is also provided on other roads such as Golf View Road/Fairway Drive and Aranga Road should connectivity be provided to these streets in the future.

The Te Araroa Trail for active modes (predominantly walking, with cycling possible in some areas) is present in the immediate area, with this crossing SH10 and following the river on its northern edge. The alignment of this trail in the vicinity of the subject site is shown highlighted in the following illustration.

With the alignment of this trail being on the northern side of the river, its usefulness to the bulk of the subject site can only be realised through the provision of connections across the river.

On this basis, the subject site presently has negligible facilities for walking and cycling and will significantly benefit from future connections to the local Kerikeri urban area as well as internal connections across the river.



Figure 10: Te Araroa Trail alignment

4.3 Passenger Transport

The Kerikeri and Waipapa urban areas presently do not have passenger transport (bus) services providing local and frequent timetabled connections within the area. For this reason, there is a need for the local area to be reliant on the use of private vehicles, ride sharing and walking and cycling modes of transport.

The Northland Regional Council provides two passenger transport services to help people move around the Northland region, with the services passing through Kerikeri providing connections between:

- Waipapa and Kaikohe via SH10 and SH11 to service Waitangi, Paihia, Kerikeri and Kawakawa (amongst others)
- A more direct route between Waipapa and Kaikohe via Sh15

In each case the service stops at the Cobham Road bus stop at 1030 and 1330 (for the direct service), and 1145 and 1400 for the service via Waitangi.

As the Kerikeri and Waipapa areas continue to develop, it is expected that there will be need for a more localised service in the future with potential for route variations.

To provide connectivity and integration, it is considered essential that the Structure Plan provides integrated public roading connections for any future passenger transport service(s).

5 PROPOSED FUTURE ENVIRONMENT

5.1 Transport Upgrades

FNDC's Long Term Plan 2021-31 provides an outline and overview of its intentions for a wide range of community and infrastructure works.

Those related to transport matters are specifically referred to in several sections and are summarised by the following excerpts from this Plan regarding the work anticipated, its timing and anticipated costs.

Issue	Options	Implications
Development in and around Kerikeri, in addition to the use of Kerikeri and Waipapa as major service hubs, has placed pressure on the transport network, resulting in increased congestion and reduced safety.	Option 1: Do nothing	Lack of strategic connection to growing areas limits efficient movement of people and vehicles and could result in on-going safety concerns.
	Option 2: Improvements to the network capacity in response to growth in and around Kerikeri	This option involves improving the transport network to better service growth in and around Kerikeri and Waipapa, reducing congestion, improving safety and enabling more efficient transport that is better integrated with land use planning.
<p>Anticipated response - Option 2 Kerikeri and Waipapa are expected to account for most of the District's population growth over the next 30 years. Research suggests that the road network in and around Kerikeri will need investment over the next 20 years to improve its capacity and to support growth. Improvements are likely to be staged to match growth. Implementation of these transport improvements will be staged between years 4 and 24 of this strategy and are estimated to cost \$80M. Specific improvements will be subject to business case development and further community consultation on the preferred options.</p>		

Issue	Options	Implications
Urban Far North communities lack sustainable transport choices, limiting the efficiency of the network and creating safety issues.	Option 1: Do nothing	For our main urban areas, this option would result in a lack of strategic connections with alternative transport modes. This means our transport network
	Option 2: Initiate an on-going programme of work to improve the condition of existing cycle paths and provided new facilities	Council's preferred option will result in better provision for active modes in terms of footpath and cycle lane quality and connections which improves network safety and efficiency experienced by these users.
Anticipated response - Option 2 Council plans to invest \$140M on cycleways over the next 30 years to fund its preferred option. This will more efficient and safer connectivity to strategic facilities (e.g. schools, sporting facilities, main centres).		

Issue	Options	Implications
The Far North district has a poor safety record and there is an increasing trend of fatal and serious injury crashes on the local road network have over the last 10 years.	Option 1: Do nothing	This option will offer no improvements in the Far North's safety record and may result in the current trend on increasing fatal and serious crash frequency increasing.
	Option 2: Non-engineering solutions	This option includes education campaigns to improve driver awareness of the far north's challenging roads in a bid to change driver behaviour. This option has merits but is not the preferred option because Council considers significant investment in physical safety improvements will bring about a greater benefit to the community.
	Option 3: Initiate an on-going programme of safety improvements.	Council's preferred option involves the implementation of an on-going programme of work targeting speed management, delineation improvements such as audible tactile profile, and signage, traction seals as well as hazard protection through the Safe Network Programme.
Anticipated response - Option 3 Council's preferred option involves the implementation of an on-going programme of work to improve safety over the term of this strategy. Council estimates the expenditure required to implement this programme is \$140 Million of the next 30 years. The benefit of this investment is expected to be a reduction in the frequency of fatal and serious crashes and a reversal of the increasing trend of this issue.		

Figure 11: Excerpts from FNDC's Long Term Plan 2021-31

Of particular significance in this package of forward works is:

- The greater emphasis on walking and cycling measures, which aligns with Government policy
- The focus on improving the Kerikeri and Waipapa roading networks so that it has greater capacity and is better able to support the future growth.

With respect to the second point, it is understood that Council has been proactively purchasing properties to allow for the construction of what is generally known as the Kerikeri Western (or CBD) Bypass and understood to be promoted by Vision Kerikeri.

It is understood that the bypass would divert vehicles into Butler Rd at the 'Countdown' roundabout and a new section of road would be constructed on Council land to Homestead Rd, before connecting with Clark Rd and returning to Kerikeri Rd at the 'New World' roundabout.

The bypass would provide for two-way traffic movement, unlike the present one-way system, which results in all west-bound traffic remaining on Kerikeri Road.

It is expected that the effects and benefits of this bypass are likely to be considered as part of the current transportation modelling work that has recently commissioned.

Council's Long Term Plan (2021-31) also notes the following⁴ as a result of public consultation:

"..... accelerating the project to meet public expectation will likely require Council to fully fund it with no help from the Government Council responds positively to community submissions on this and commits to considering all options for advancing the project".

The Council's Integrated Transport Strategy goes further and states in its Recommended Programme (10-year implementation period) that there will be a review undertaken of the Kerikeri Strategic Road Network Plan and development of either an Indicative Business Case and/or Detailed Business Case to confirm the top priority Kerikeri transport projects for the next 10 years.

This strategy also lists a number of schemes to be considered, with these including the Kerikeri CBD Bypass.

It is also understood that there is the potential for the bypass to be extended further to the north through privately owned land beyond the area being considered by Council so that it connects with the Kerikeri Heritage Bypass.

It is expected that the transport modelling that has recently been commissioned by Council will have an important role in understanding the benefits and effects of the Council's future plans, including the Kerikeri CBD bypass, whilst also informing the Business Cases.

5.2 Future Speed Environment

No changes to the existing posted speed limits are understood to be proposed or planned.

However, as the Waipapa area continues to be developed, it is expected that the gateway to Waipapa on SH10 could move further south, with the potential for a reduced speed limit on the affected section of road.

Similarly, the speed limits on Waipapa Road and the Kerikeri Heritage Bypass are also expected to be reviewed as ongoing development occurs in this area.

5.3 Passenger Transport

Although no specific changes are understood to have been committed to for passenger transport services, the Council's Integrated Transport Strategy does identify a range of future measures that will be considered, with these including, but not limited to PT/ride sharing to address changing land use, potential connections to facilitate employee movement between towns, loop services linking key local areas (e.g. Kerikeri/Waipapa/Puketona) and absorbing the Kerikeri school transport operation into a public bus service.

It is considered that as the local and surrounding area continues to be developed, the provision of some of the services such as those being considered could well be realised due to the increased demand.

⁴ Far North District Council, Long Term Plan 2021-31 (page 14)



Figure 13: Proposed Waipapa Sports Hub

5.6 One Network Framework

The One Network Framework (ONF) is a transport framework developed by NZTA and adopted by all Road Controlling Authorities that builds on the previous One Network Road Classification system (ONRC).

In the past, the ONRC has classified the road transport network based on vehicle traffic volumes, strategic corridors, and places of significance such as ports, airports and hospitals. It also reflected current travel demand and how communities were interconnected.

This has now been replaced by the ONF which introduces the importance of adjacent land use and place functions in defining how the network should look and feel at any location.

The following illustrations provide a graphical summary of this framework.

It is understood that during the 2021-2024 period, Northland's Road Controlling Authorities will advance their current ONRC network classifications and transition them into the One Network Framework in time for the 2024-2027 Regional Land Transport Plan planning process.

The ONF will therefore be used to define the local and transport system in the future so that it better aligns with not only the transport demands (both vehicles and active modes) but also the land uses.

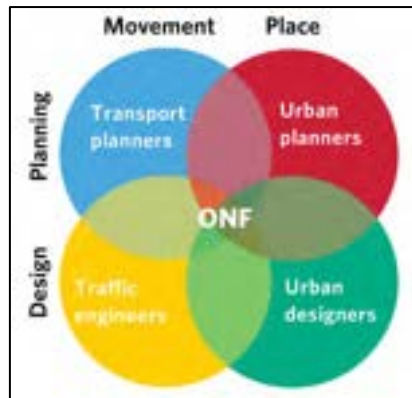


Figure 14: One Network Framework Relationships

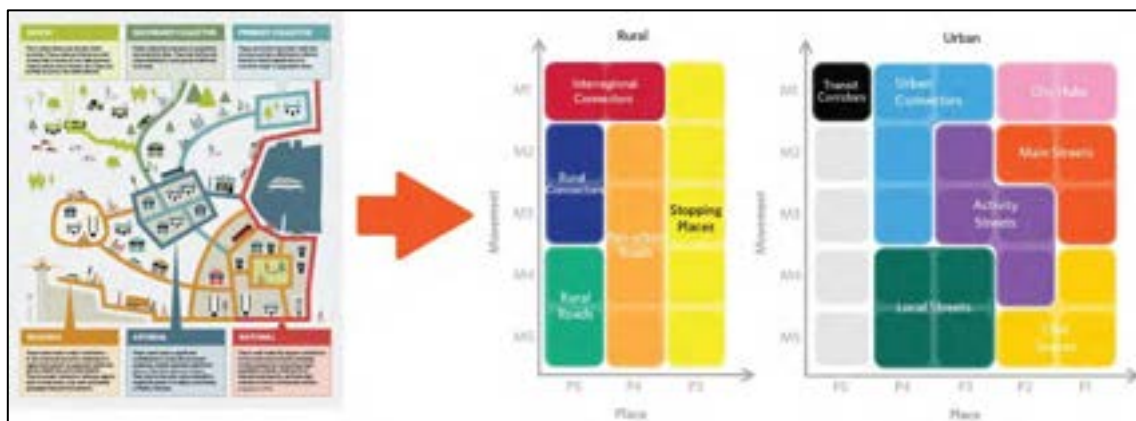


Figure 15: One Network Framework Summary



Figure 16: One Network Framework – Street Categories (Rural and Urban)

6 THE SUBMISSION

The submission to the Proposed District Plan seeks a rezoning of the land located at 1878 and 1838 State Highway 10 Waipapa, and also Lot 1 DO 333643 Waitotara Drive Waipapa in the Kerikeri area.

This area is generally located between the developed areas of Waipapa and Kerikeri and borders the northern edge of the Bay of Islands Golf Course.

It is shown in the following illustration.

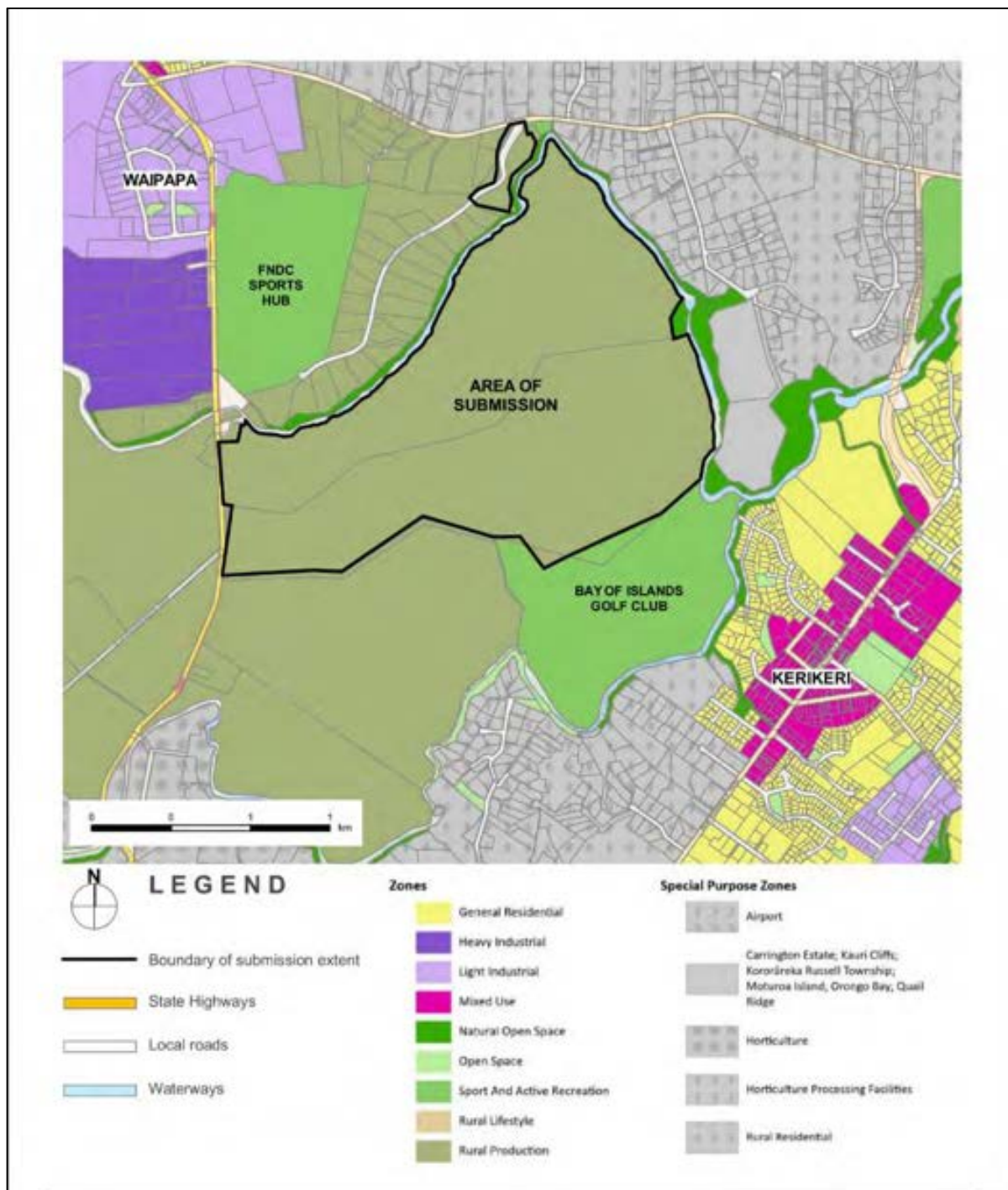


Figure 17: Area of Submission

Specifically:

- All options have the same pedestrian and cyclist connectivity from the submission area around the periphery of the golf course to Golf View Road.
- Option 1 has a roading connection around the western perimeter of the golf course and two roading connections to the Kerikeri area via Golf View Road (Access C) and Aranga Road (Access B).
- Option 2 has a roading connection on the eastern perimeter of the golf course and a single roading connection to the Kerikeri area via Golf View Road (Access C).
- Option 3 has a roading connection that avoids the golf course and then connects into King Street - a road to the west of the Kerikeri CBD (Access E).
- Option 4 has no roading connection to the Kerikeri urban area for vehicles and relies on the connections to SH10 and Waitotara Road. It still includes the pedestrian and cycle connections common to all options, and a future connection provided by others through land that is outside the scope of the submission.

A high-level appraisal of each option shows that the following strategically important regional transportation benefits are realised by all four options:

- Network resilience provided for SH10 can be realised for this critical section of the nation's primary roading infrastructure.
- The provision of a comprehensive network of more direct active mode (walking and cycling) connections that will provide significantly better connections that presently exist between the Kerikeri urban area, the expanding Waipapa area and the Council's Sports Hub.
- Development potential located centrally between the two recognised growth nodes of the region.

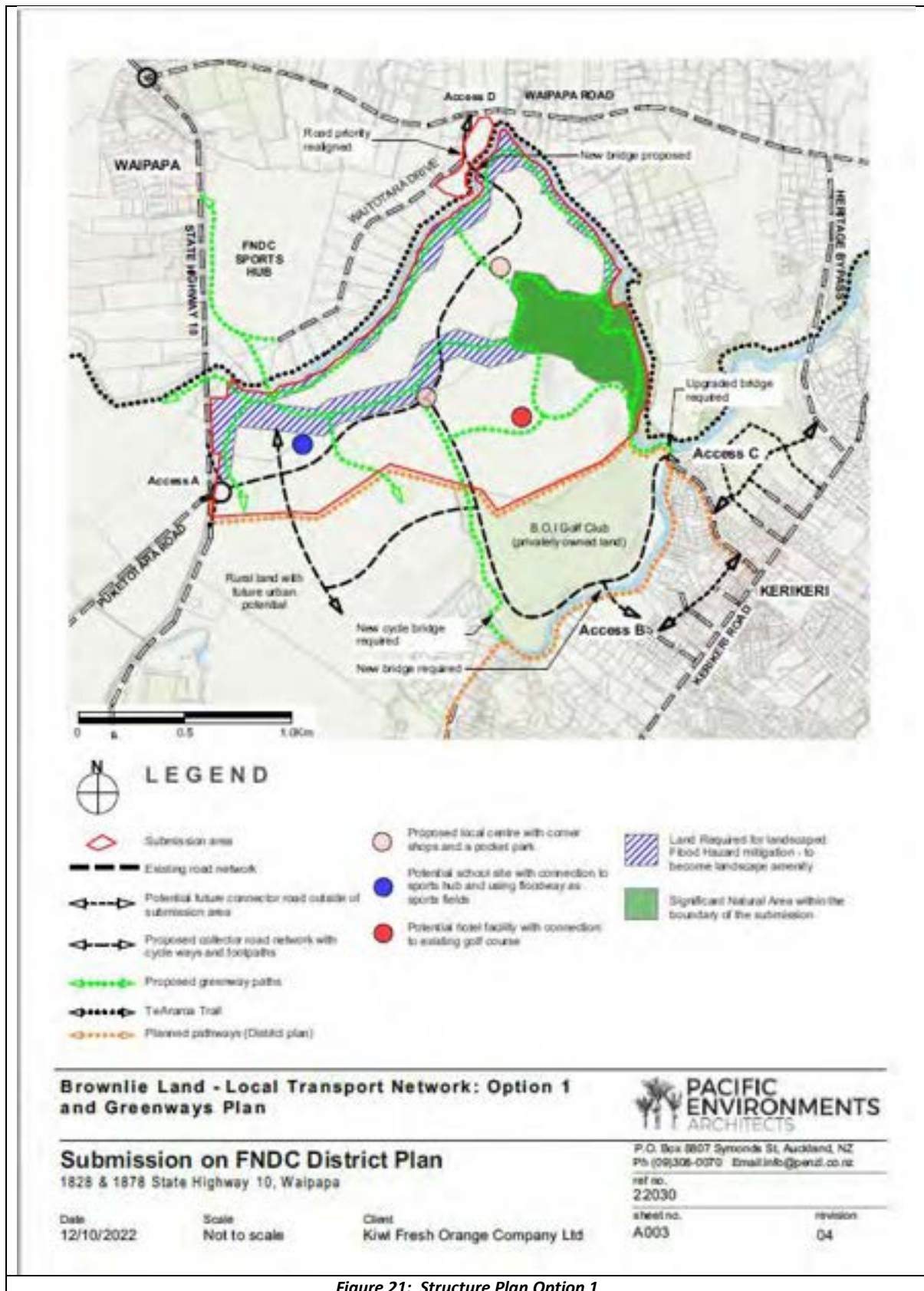


Figure 21: Structure Plan Option 1

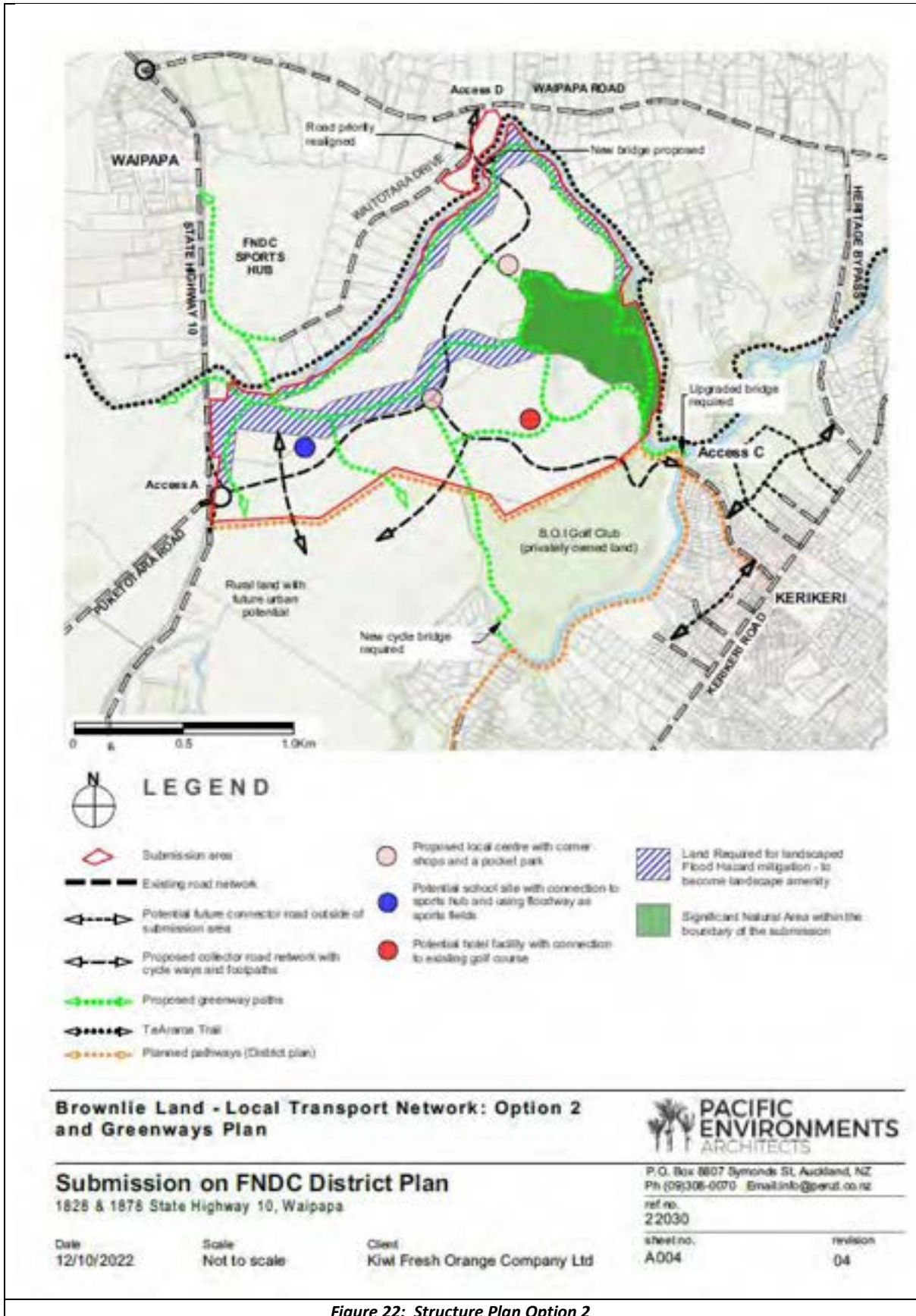


Figure 22: Structure Plan Option 2

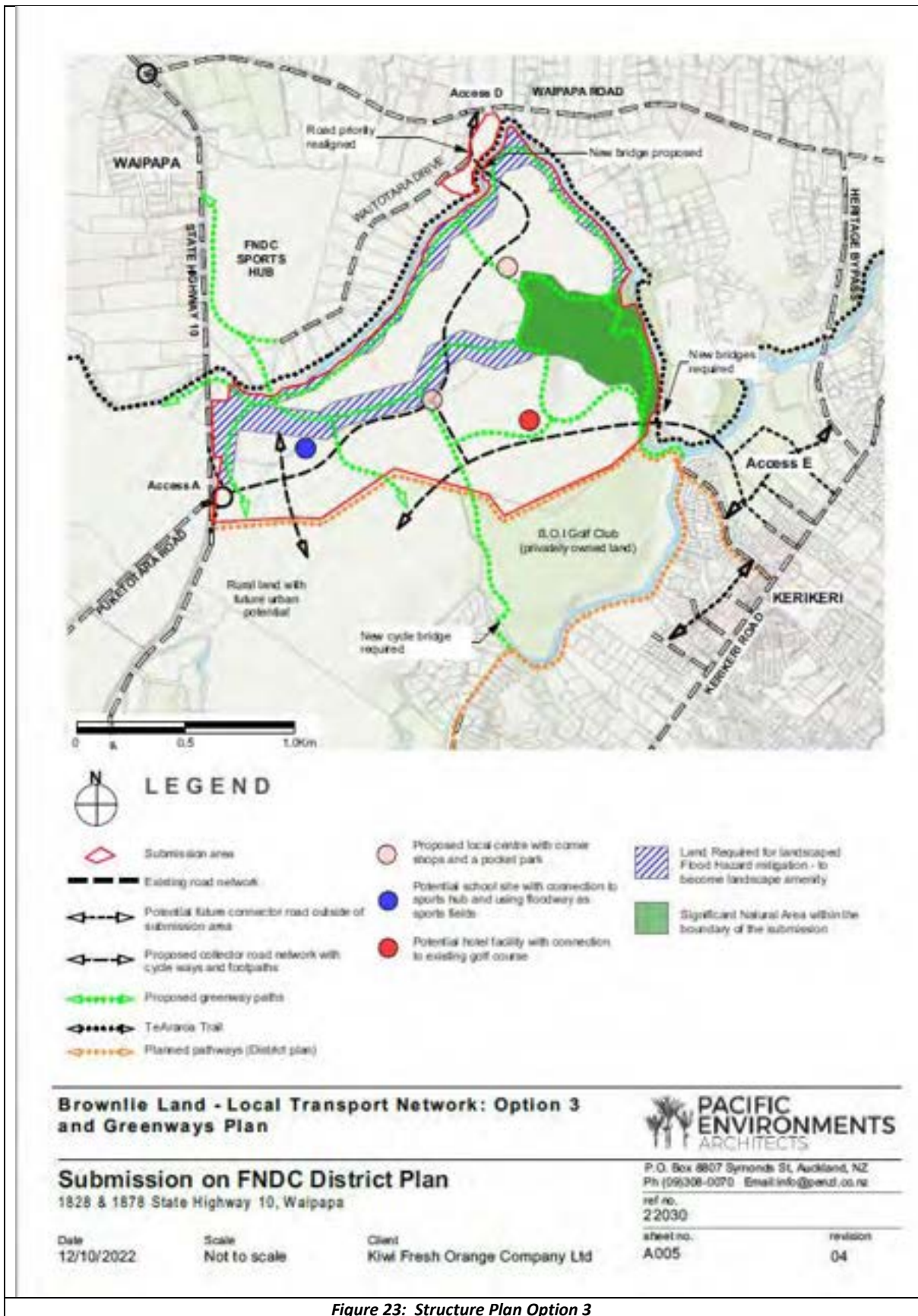


Figure 23: Structure Plan Option 3

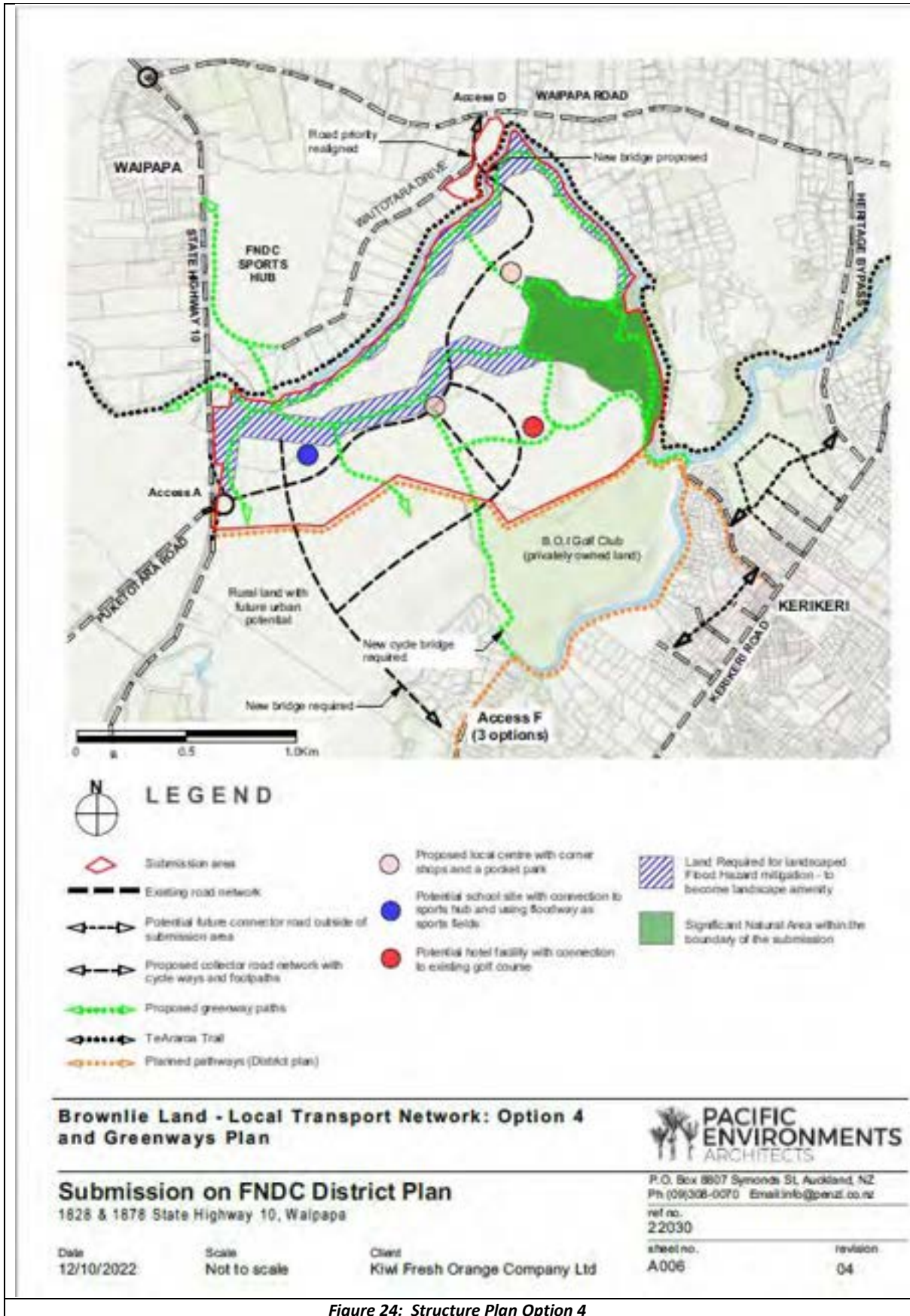


Figure 24: Structure Plan Option 4

6.1 Street and Off-Road Path Design

The alignment of the internal primary roading network has considered the opportunities and challenges of the site's topography and the constraints imposed by the management of the stormwater for flood events.

It is expected that Council's latest roading standards (currently in draft form) can be accommodated, with the design of the streets to follow the usual rigorous process of engineering detail under the auspices of the agreed classification of each road using Waka Kotahi/NZTA's ONF framework.

Using the ONF details and recognising the characteristics of the area, it is expected that none of the primary roads within the submission area will be identified as Arterial Roads, and instead are expected to either be a Primary Collector road (link between SH10 and Waitotara Road) or a Secondary Collector road (link to Kerikeri), each with a high Place rating.

This design and assessment process is also expected to involve reviews by Council and safety audits to ensure Council's requirements and operational outcomes are realised for the needs of the area.

This same design and ONF assessment process is also expected to apply to the lower order roads that provide the necessary finer-grained connectivity to the developable land areas and individual lots.

As noted above, with the link between SH10 and Waipapa Road providing essential network resilience when SH10 is closed at the river by significant flood events, its roading standard will be considered in detail given the more significant role it will play during these low frequency and high consequence occasions.

Although the matters associated with flooding are reported separately by other experts, it cannot be emphasised enough that the network resilience provided for SH10 by this connection through the subject site has strategically important benefits for this critical section of the primary roading infrastructure in the region and for the nation.

Furthermore, the availability of this alternative route when SH10 is closed due to flooding avoids the need to use the lengthy and disruptive alternative route presently available via Kerikeri Road through the CBD, Kerikeri Heritage Bypass and Waipapa Road.

The comprehensive network of on-road and off-road paths for walking and cycling will provide the 'missing link' in terms of connectivity for the active modes between Waipapa and Kerikeri, whilst also providing a connection between Kerikeri and the Council's new sports hub.

As the details in each Option show, these connections are also provided in the off-road environments of flood plains.

Again, the strategic local and regional transport benefits of this non-vehicular connectivity via the proposed roading network and the off-road shared paths cannot be overstated.

Once constructed, it is expected that all of the on-road and off-road infrastructure will be vested in Council. This strategy is consistent with Council's approach outlined in Section 4 of its Parks and Reserves Policy⁵ (adopted in June 2022), which states:

Section 4 – Connectivity	
Policies	
1.	The Council will actively seek to acquire land that creates connectivity between public spaces and provides significant public benefit.
2.	The Council will acquire or engage developers to vest land or funds to provide connectivity to and between parks, reserves, waterways, subdivisions, nature areas, neighbourhoods and communities to create better spaces and corridors for walking, cycling and passive recreation.

Figure 25: Council's Policy on Connectivity in Parks & Reserves

6.2 Potential Yield

The proposed rezoning would provide a total of circa 112ha of land for the proposed land uses, as described in Figure 18.

The spatial planning of these areas has resulted in the expectation that the following yields could be achieved for a low, medium and high development scenario.

Potential Yields			
	Low Scenario	Medium Scenario	High Scenario
Commercial and employment	33,400m ²	44,500m ²	55,600 m ²
Hotel and Tourism-Accommodation	5,600m ²	7,500m ²	9,400m ²
Neighbourhood centre	1,500m ²	2,000m ²	2,500m ²
Local centre	400m ²	500m ²	600m ²
Residential	1220 dwellings	1830 dwellings	2440 dwellings

Table 1: Potential Yield

Having considered these details, the Economic and Planning opinion is that the most likely yield sits between the Low and Medium scenarios, with the following activity yields expected to occur.

Anticipated yield	
Commercial and employment use	44,500sqm
Hotel- Accommodation	7,500sqm
Neighbourhood centre	2,000sqm
Local Centre	500 sqm
Residential	1500-2000 dwellings

Table 2: Anticipated Yield

The traffic generation estimates assessed within this report are based on the medium to high scenarios. In the event that the low end of the development potential for the residential yield is realised, the assessment of the potential traffic generation is expected to be conservatively high.

⁵ [final-parks-and-reserves-policy-for-adoption.pdf \(fndc.govt.nz\)](#)

It is understood from the Economics assessment that the composition of these spaces is as follows.

The Neighbourhood Centre will be in the form of a cluster of local convenience shops in the middle of the site, with the main commercial land located at the western end close SH10.

This larger centre is expected to have a small circa 2000-3000sqm supermarket that will have a catchment of at least circa 50% from within the submission area due to the presence of existing supermarket offerings in Waipapa and Kerikeri.

In addition to this, the Neighbourhood Centre is expected to also provide for finer-grained activities such as a cafe/restaurant, childcare, real estate, liquor, hairdresser, flower, boutique clothing type of uses.

These will serve the catchment within the submission area and the immediate environs respectively with the expectation that the catchment for this fine-grained retail activity could be in the order of circa 70% from the new internal catchment and 30% from the local external catchment.

The office space could be provided in the western Mixed-Use area is expected to provide for uses such as local accountants/lawyers, possibly a small medical centre, a fitness gym/yoga facility etc, and therefore will also serve the internal and immediate environs.

Collectively, this will result in the non-residential land uses having a dominant local function associated with the submission area, with the external influences being significantly less than the existing more regional effects of Waipapa and Kerikeri.

This has a beneficial effect on the potential traffic generation on the wider roading network, and results in a significant proportion of the generation being 'internalised' and more confined to the local area.

The residential yield is expected to reflect the anticipated future demographic characteristics of the greater Kerikeri area and therefore is expected to have the following general composition:

- 'Empty Nesters' and retirees: 40%
- Families with children: 30%
- Younger singles and couples: 20%
- Other/mixed: 10%

With respect to the demographic profile of the residential area, the significant proportion of empty nesters and retirees will have a significant and suppressing effect on the traffic generation of the submission area during the important commuter peak periods.

Collectively these 'local-influence' factors will have a beneficial impact on the transport environment surrounding the site compared to other potential alternatives located further afield that are not as well integrated and strategically connected between significant growth areas.

6.3 Staging

It is understood that the Infrastructure investigation has concluded that until works have been completed to provide an area-wide external wastewater network, it is necessary for an on-site wastewater treatment and disposal system to be provided. This is estimated to require circa 2ha and 30ha respectively.

The use of the land for a wastewater treatment and disposal system will have a consequential effect on the potential development yield and will effectively impose a staging limitation on the developable areas until such time as this land is no longer needed for the treatment and disposal of wastewater.

Depending on design detail, it is expected that the provision of the disposal field(s) will not have a significant effect on the access options, and the pedestrian/cyclist and roading connections should be able to pass through the disposal field(s).

This level of detail can be assessed and confirmed at the time of applying for a resource consent.

At each of the respective stages (to be determined), a Transport Assessment will be required to determine the appropriate level of transport infrastructure required to ensure that the Site is adequately serviced for both private and public transport options and active transport modes.

6.4 Traffic Generation & Distribution

From the composition of the anticipated land uses described above, a high-level estimate has been carried out using the traffic generation rates and distribution details obtained from the surveys of local residential areas and other smaller-scale retail/business/office developments.

Where data has been used from activities in large provincial cities or Auckland, consideration has then been given to its context in the future built environment of the local area and the proximity to other land uses in the local Kerikeri and Waipapa areas.

Several other assumptions have also been made in a conservative manner to recognise the following relevant factors:

- The trip profiles for the main activity classes are different in the morning and evening commuter peak periods.
- The peak periods of each activity may not occur at the same time (but have conservatively been assumed to be) and have a cumulative and compounding effect.
- Assumptions, including the advice provided by the project's Economist, of the trips generated by the land uses that remain internal to the study area (e.g. local shopping trips) compared to those that will move between the internal and external areas.
- A modest allowance for combined pass-by and shared-purpose trips to recognise that not all trips are made for a single purpose.
- The anticipated range in the number of dwellings

This analysis has also applied a 'classical' prediction methodology that has drawn on existing/recent verified generation patterns and a considerable reliance on the use of private motor vehicles.

In other words, this methodology estimates traffic generation patterns that continue to maintain the current and past transport practices and do not have a focus on the need for change to occur for some of the trips using private motor vehicles to other transport modes.

With the central and local Government's desire to move away from a heavy reliance on private vehicles, the use of active modes in the short to medium term is expected to increase. In the longer term, an update in the use of local passenger transport services will occur when they become available.

Applying these factors to the anticipated development yields results in the following first order estimates for the overall quantum of traffic moving between the subject site and all external locations in the morning and evening commuter peak hours.

For the avoidance of doubt, the arrival and departure of one vehicle generates two movements or trips, namely the arrival trip and the departure trip.

Table 3: Overall Estimated External Traffic Movements To & From the Subject Site

External Traffic Movements (trips/hour)		
	Inbound	Outbound
<i>AM Peak</i>		
Residential (medium scenario)	444	515
Residential (upper scenario)	514	645
<i>PM Peak</i>		
Residential (medium scenario)	752	713
Residential (upper scenario)	872	793

When considered over the course of the peak hour, these preliminary estimates for the total number of trips into and out of the study area are equivalent to an average of some 12 to 15 movements per minute in each direction across all points of access to the surrounding road network in the busiest PM peak hour.

When consideration is given to the fact that these movements will be distributed over at least two, and more likely three, points of access, the magnitude of the volumes at each point of access will be much less than the total. The directions of approach and departure of these trips at each location will also be influenced by the origins and destinations of the journeys being undertaken and the prevailing network operating conditions.

This assignment of traffic to the network will be the subject of analysis, investigation and review as part of the transport modelling that has been commissioned by Council and will have regard to numerous influencing factors including spatial planning options, local/regional effects, travel time profiles and the relief provided by mitigation or transportation/traffic engineering interventions.

Despite this, travel information obtained from the 2018 Census shows the following recent general travel patterns for work and education-based trips for the Kerikeri Central area.

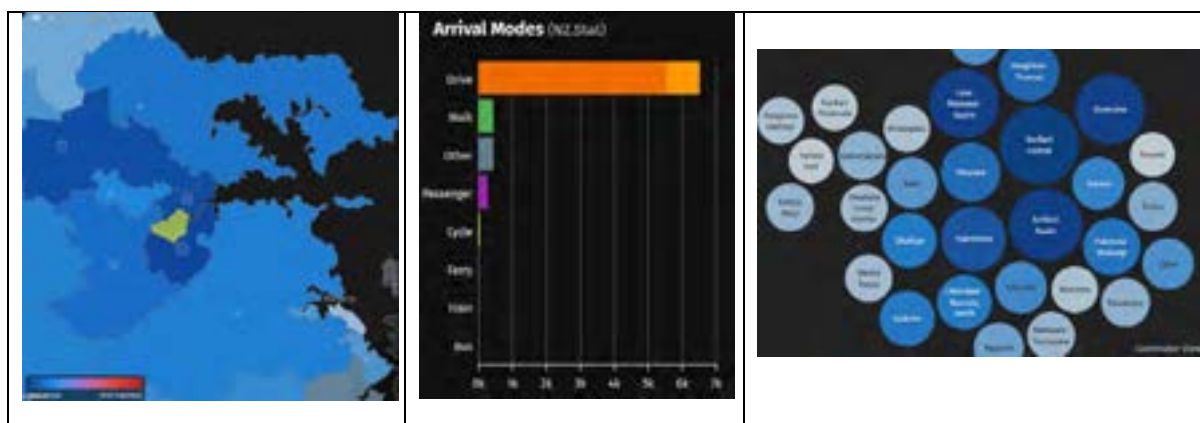


Figure 26: Commuter Workplace Travel (Kerikeri Central)

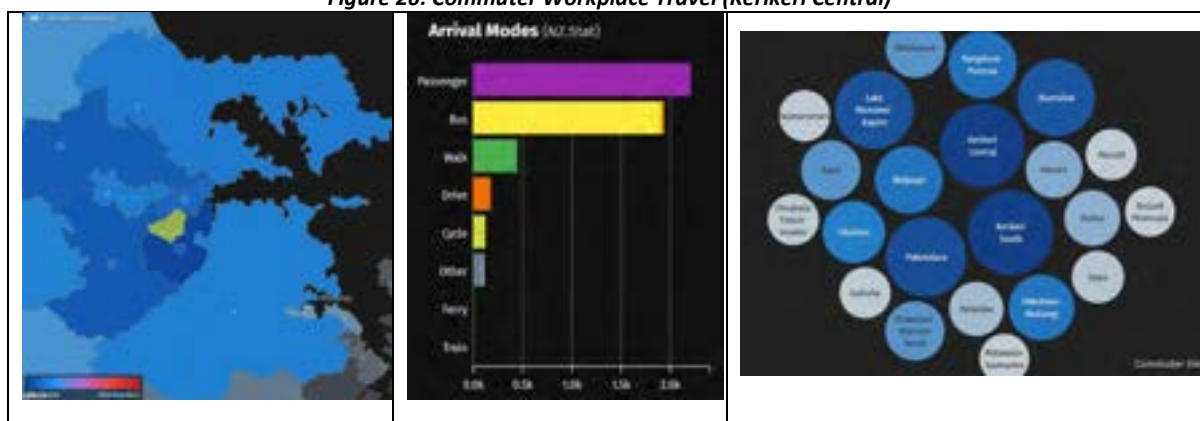


Figure 27: Education Travel (Kerikeri Central)

Whilst this information is helpful to inform existing patterns, it should be noted that with the anticipated growth in the Kerikeri and Waipapa areas the prevalence of more localised trips is expected to occur in the future.

6.5 Access Options

As discussed above, there is a lot of commonality between the four Structure Plan options with the connection and alignment between SH10 and Waitotara Road, as well as the pedestrian and cycleway connections through the property. The differences in the options are confined to the nature, form and location of the connections to the Kerikeri urban area.

Specifically:

- All options have the same pedestrian and cyclist connectivity from the submission area around the periphery of the golf course to Golf View Road.
- All options have an access to SH10 and Waitotara Road.
- Option 1 has a roading connection around the western perimeter of the golf course and then two roading connections to the Kerikeri area via Golf View Road (Access C) and Aranga Road (Access B).
- Option 2 has a roading connection on the eastern perimeter of the golf course and then a single roading connection to the Kerikeri area via Golf View Road (Access C).
- Option 3 has a roading connection that avoids the golf course and then connects into King Street - a road well to the west of the Kerikeri CBD (Access E).
- Option 4 has no roading connection to the Kerikeri urban area for vehicles, and instead relies on the pedestrian and cycle connection common to all options.

A discussion on the higher-level transportation benefits and potential issues of each is provided below.

Common to all options is the provision of a connection between State Highway 10 and Waitotara Road. This link provides essential network resilience when SH10 is closed at the river by the 1-in-100 year AEP flood events. The new connection to the Site from SH10 will therefore have a significant role in the connectivity through the area during these low frequency and high consequence occasions and thus provides strategically important benefits for the primary roading infrastructure in the region and for the nation, whilst also avoiding the need to use the lengthy and disruptive alternative route presently available via Kerikeri Road through the CBD, Kerikeri Heritage Bypass and Waipapa Road.



Option 1

Connections: Two roading connections to the Kerikeri area via Golf View Road (Access C) and Aranga Road (Access B)

The primary connection to Golf View Drive will provide good connectivity directly into the Kerikeri CBD but has the potential to introduce additional vehicular demands on the ring-road system and the intersection of Fairway Drive and Kerikeri Road until such time as the Kerikeri CBD bypass is constructed. This connection provides very good integration for active modes into the CBD area and will require replacement and upgrading of the existing bridge and roading infrastructure to the golf course.

The secondary connection to Aranga Road provides network resilience for the primary connection whilst also providing an additional connection to the southern part of the Kerikeri urban area.

This additional connection will help to distribute the traffic demands over a wider area but will also require a substantial bridge over the river.

Should the expense of a bridge for vehicular traffic be considered too great, the provision of a light-weight bridge for pedestrian and cyclist use will still retain the connectivity benefits for these users and reduce the reliance on, and deviation to, the Golf View Road connection.

From a high-level transportation perspective, this Option is considered to provide the greatest transportation opportunities for the Kerikeri CBD and local regional area.



Browlie Land - Local Transport Network: Option 2 and Greenways Plan
 Submission on FNDC District Plan
 1825 & 1875 State Highway 16, Waikanae
 Date: 12/19/2022 Scale: Not to scale Client: New Fresh Orange Company Ltd
 PACIFIC ENVIRONMENTS
 P.O. Box 9077, Spruce St, Auckland 102
 PH: 09-276-0070 Email: info@pe.co.nz
 22/03/2023
 AUSA

Option 2

Connections: A single roading connection to the Kerikeri area via Golf View Road (Access C)

The sole connection to the Kerikeri area for this option is provided by a connection to Golf View Drive. This will provide good connectivity into the Kerikeri CBD and has the potential to introduce additional vehicular demands on the ring-road system and the intersection of Fairway Drive and Kerikeri Road until such time as the Kerikeri CBD bypass is constructed. This connection provides very good integration for active modes into the CBD area and will require replacement and upgrading of the existing bridge and roading infrastructure to the golf course.

This scenario does, though, prevent connectivity being provided to other parts of the Kerikeri urban area for vehicular and active modes, and thus will require greater travel to access the sole connection point.



Browlie Land - Local Transport Network: Option 3 and Greenways Plan
 Submission on FNDC District Plan
 1825 & 1875 State Highway 16, Waikanae
 Date: 12/19/2022 Scale: Not to scale Client: New Fresh Orange Company Ltd
 PACIFIC ENVIRONMENTS
 P.O. Box 9077, Spruce St, Auckland 102
 PH: 09-276-0070 Email: info@pe.co.nz
 22/03/2023
 AUSA

Option 3

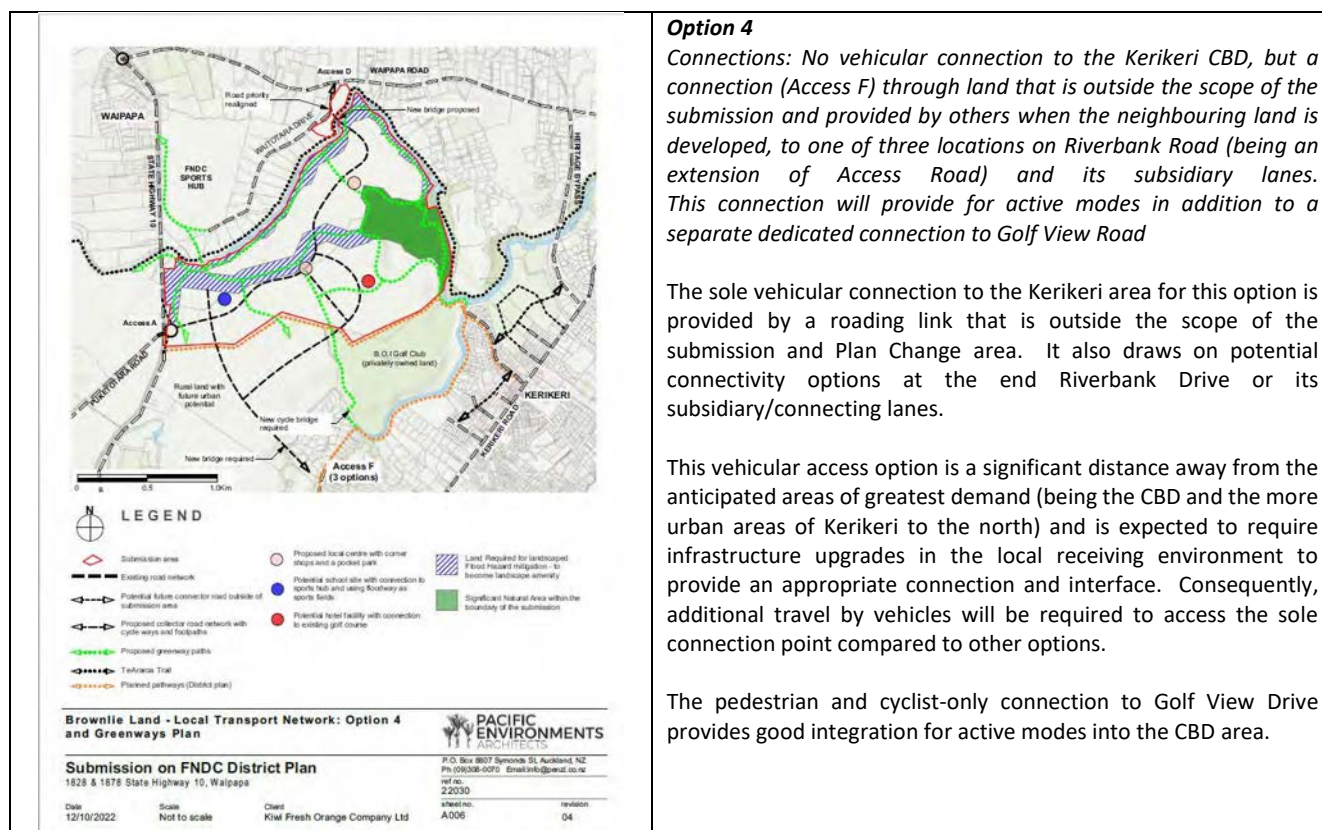
Connections: A single roading connection to the Kerikeri area via King Street (Access E). Connections for active modes provided with the roading connection and a separate dedicated connection to Golf View Road

The sole connection to the Kerikeri area for this option is provided by a connection to King Street, which is a relatively short cul-de-sac located north of the northern edge of the Kerikeri CBD.

This link will therefore not provide direct connectivity for vehicles into the Kerikeri CBD until the Kerikeri CBD bypass has been constructed. Nor will it provide connectivity to the land uses south of the CBD.

Consequently, additional travel by vehicles will be required to access the sole connection point.

Although this option provides good integration for active modes into the CBD area, appropriate infrastructure for active modes will be required on King Street.



It should be noted that in considering the connectivity shown in Option 4, other access options were investigated. These included locations further to the south on Access Road and from Blue Gum Lane (accessed off SH10). These were all eliminated due to the substantial engineering challenges associated with the topographical characteristics of the land.

Despite some apparent preferences and disadvantages from this appraisal, each of these Options is expected to be tested in the transportation model currently being developed by Council. This will provide guidance on their relative benefits and disadvantages in the context of the Council's broader spatial planning and growth details anticipated for future time horizons.

This assessment methodology is considered to be the best way for the assessment of the cumulative effects to be understood and the preferred option(s) identified.

6.6 Intersection Design

Stage Highway 10

The proposed re-zoning of the land supported by the indicative roading network within the Structure Plan will require the construction of a new intersection on SH10.

To provide a high-quality access on SH10, a significant roundabout is proposed, with this being located at the intersection of SH10 and Puketotara Road.

To ensure that the required management of the approach speeds and other design requirements are met, the alignment of SH10 on the northern and southern legs needs to be shifted into the subject site.

The concept design provided below shows this alignment and demonstrates that this can be achieved within the land available in the existing road reserve and within the subject site.

The design principles of this roundabout have been guided by the recently constructed roundabout on SH10 in Waipapa as well as the roundabout located at the intersection of SH10 with Kerikeri Road. Both of these roundabouts are able to accommodate a significant quantum of traffic, which is expected to be greater than what is expected at the proposed roundabout.

The construction of a roundabout at this location can also have secondary benefits for access to neighbouring properties and the management of speed through the area.

This, in conjunction with the proposed access arrangements for the Sports Hub, could provide an opportunity to reduce the speed limit on both approaches of SH10 to the new roundabout, whilst also defining a 'gateway' opportunity to the developing Waipapa area to the north.

The principle of providing a roundabout at this location, and the benefits to the network resilience/connectivity that this provides through the internal roading network to Waitotara Road and Waipapa Road, has been discussed with the Northland office of Waka Kotahi/NZTA by the author and is supported by them.

Separate discussions have also taken place with Waka Kotahi/NZTA as part of the spatial planning assessment work, and this has also indicated support for the roundabout. A record of Waka Kotahi/NZTA's views in this regard is contained in **Appendix 1**.



Figure 28: SH10 Concept Roundabout Design

Waipapa Road and Waitotara Road Intersection

The intersection of Waipapa Road and Waitotara Road is presently a Stop-controlled priority intersection with no dedicated turning facilities on Waipapa Road.

The proposed re-zoning and the roading connection into the subject site is expected to result in the need to upgrade this intersection on all of its approaches. Specifically, it is expected that there will be the need for left turn and right turning lanes on Waipapa Road (depending on demands), and a realignment of the northern section of Waitotara Road from the bend a short distance south of the intersection to the intersection.

This realignment of the northern end of Waitotara Road is necessary and will result in the realigned section becoming an extension of the new road into the subject site. This will be facilitated by a new bridge over the River. The balance of the existing Waitotara Road will join the realigned corridor at a new T-shaped priority-controlled intersection.

The transport modelling is expected to inform the design details at each of these intersections.

This process will therefore inform scenario testing of future transport scenarios and spatial planning/land use/development patterns in the local, wider and regional area so that operational constraints can be understood, and mitigation measures identified, on the network.

This integrated process for the design of the key intersections is therefore considered to be the most appropriate strategy from a traffic engineering and a transportation planning perspective.

6.7 Road Safety

The detailed design and assessment work that will inform the new transport infrastructure and its connections to existing infrastructure for both motorised and active modes will be done using the latest design standards of Council as well as best-practice procedures from engineering and urban design perspectives.

This will result in the design and road safety measures being the most appropriate for the urban context within which each sits.

On this basis it is expected that

- All visibility requirements will be satisfied.
- CPTED issues will be addressed along on-road and off-road shared paths for active modes.
- The proposed new intersections, and any changes need to existing intersections will be built to current standards.
- The proposed Structure Plan will provide an integrated off-road shared path for active modes in addition to the facilities incorporated into the roading infrastructure.
- Speed limits and operating speeds will be set at appropriate levels, including that on SH10.
- All roading design and safety details will be considered in the context of the agreed Movement & Place function for each road under the ONF assessment framework.

6.8 Parking

Although it is Council's intention through Government Policy to reduce parking supply for both residential and non-residential activities to achieve mode change outcomes, in the context of the subject site a severe reduction in the provision of parking is not considered to be an ideal design outcome for the following reasons:

- The intention of these measures is to intensify development in areas that are well integrated from a public transport perspective. In the situation being considered, a substantial reduction in the parking provisions could not be supported by existing passenger transport measures – due to the absence of them. Despite this it is considered that a suppressed level of parking would help to support the provision of future services as the demands from the local and wider area increase with ongoing development and intensification.
- Although good walking and cycling integration will be provided, some of the external work/education trips associated with the subject area will likely require longer commutes. Therefore, the use of active modes for this travel is not expected to be realised, and instead the active modes are more likely to be used for localised work, education, and recreational trips.

6.9 Active Modes and Passenger Transport

The submission and Structure Plans for the subject site will allow for the construction of a comprehensive and connected network of on-road and off-road paths for active modes.

As discussed above, these will provide more direct connections for walking and cycling between the, the expanding Kerikeri and Waipapa areas, as well as to the Council's Sports Hub.

This connectivity is demonstrated in the following illustration that shows the site's opportunities and in particular 800 metre radius walkability circles from Kerikeri and Waipapa. The walkability circles do not consider the topography of the site and the locations of the connections. Further analysis of the Walkability of these circles taking into account terrain and connections can be provided at a later date.

As these circles show, connectivity is provided:

- Within a substantial part of the rezoned area.
- Between the edge of the main commercial area in the subject site and the edge of the existing Waipapa area (using the shared path network proposed within the subject site and that proposed in the Sports Hub).
- From within the rezoned area to the Kerikeri business area.

The provision of this Council-owned infrastructure therefore provides the 'missing link' that presently exists between these areas in terms of connectivity for the active modes.

This approach will be consistent with the future opportunities identified in the Northland Walking and Cycling Strategy⁶ prepared by the Northland Regional Council, and in particular the provision of:

"... off-road and enhanced on-road walking and cycling routes ... to better connect communities, particularly those with growing populations in relatively close proximity."

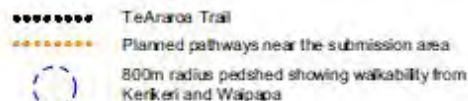
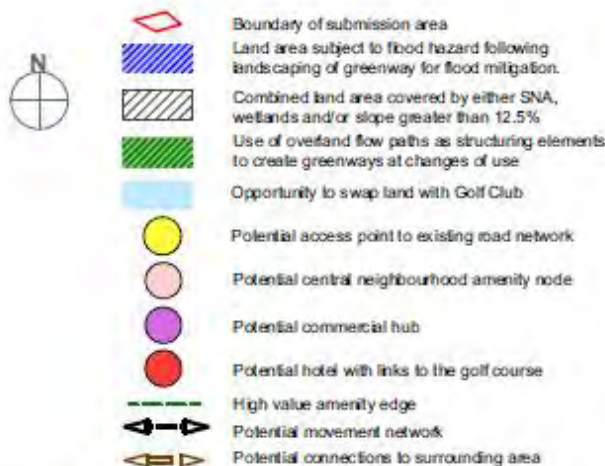
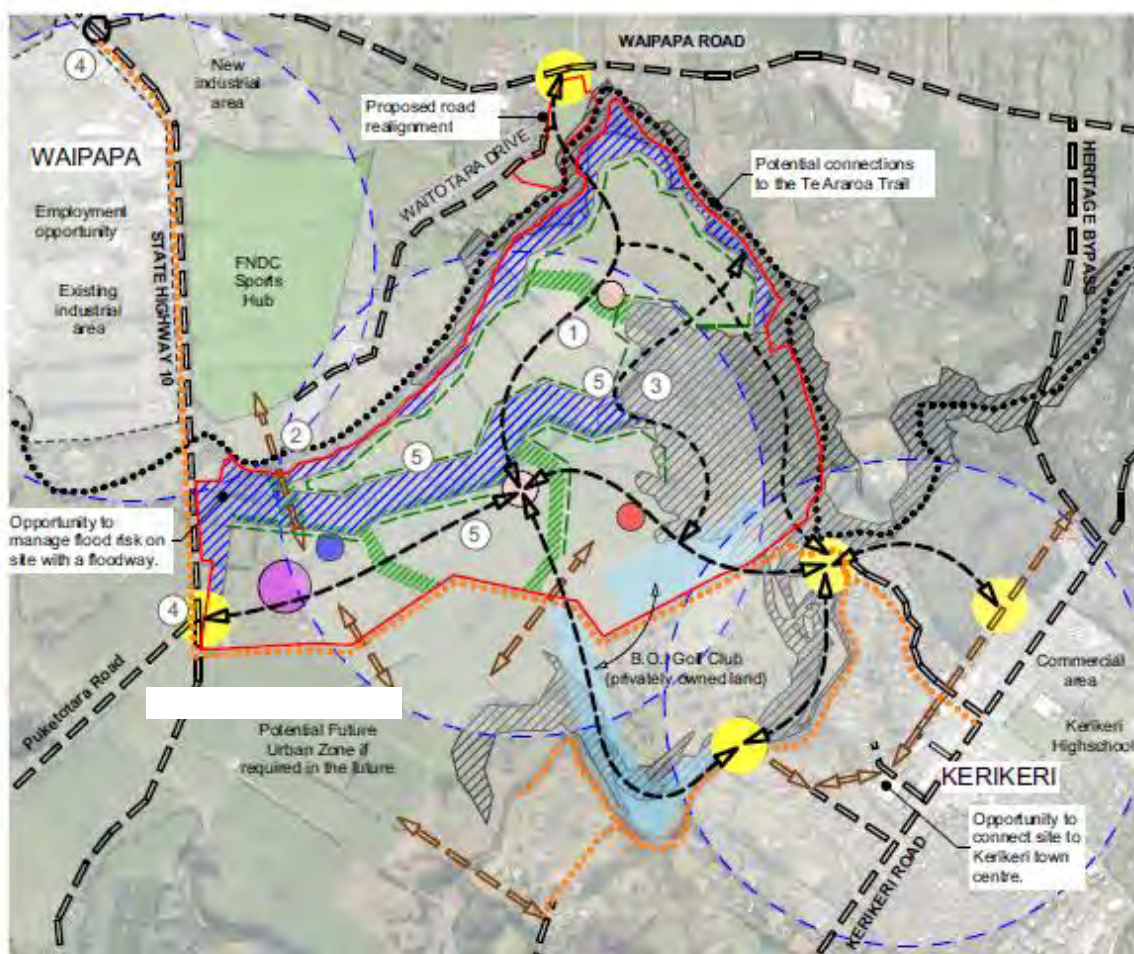
It is also consistent with Policy 1(a)(c) of the National Policy Statement on Urban Development, which seeks to realise a well-functioning urban environment that has:

"... good accessibility for all people between housing, jobs, community services, natural spaces and open spaces, including by way of public or active transport".

Accordingly:

- The strategic local and regional transport benefits of this non-vehicular connectivity via the proposed roading network and the off-road shared paths are significant.
- The ongoing ownership and maintenance of these facilities will be protected through the vesting of this infrastructure with Council in accordance with Council's Parks and Reserves Policy.

⁶ [Northland Walking and Cycling Strategy \(nrc.govt.nz\)](http://nrc.govt.nz)



The site has significant areas of land with less than 12.5% slope; meaning road direction is unconstrained providing excellent development potential.

1. Opportunity to provide a shorter State Highway 10 temporary bypass in the event of flooding.
2. Opportunity for a pedestrian connection to FNDC Sports Hub.
3. Opportunity to protect and enhance waterfalls and bush, and provide public access to these natural amenities.
4. Opportunity to demarcate the urban Waipapa commercial area from north and south directions with roundabouts.
5. Opportunity for increased residential density adjacent to high value amenity edges.

Brownlie Land - Site Opportunities



Submission on FNDC District Plan
1828 & 1878 State Highway 10, Waipapa

P.O. Box 8807 Symonds St, Auckland, NZ
Ph (09)308-0070 Email: info@penz.co.nz

ref no.
22030

Date
12/10/2022

Scale
Not to scale

Client
Kiwi Fresh Orange Company Ltd

sheet no.
A002

revision
04

Figure 29: Active Mode Connectivity

Although only very limited regional passenger transport services are currently provided between Kerikeri and neighbouring towns, in time, it is expected that the demand for these services will grow.

This has been recognised in the Council's Integrated Transport Strategy through acknowledgement of the need to identify and consider a range of future measures such as passenger transport ride sharing to address changing land use, potential connections to facilitate employee movement between towns, loop services linking key local areas (e.g. Kerikeri/Waipapa/Puketona) and absorbing the Kerikeri school transport operation into a public bus service.

On this basis it is considered essential for vehicular connectivity to be provided between Kerikeri, SH10 and Waipapa Road so that any future services can be provided through this area for integration with the wider network.

At the time of concept and detailed design, consideration will also need to be provided for the adequacy of the road widths and the possible locations for bus stops along the primary roading corridors to ensure that these can be provided without the need to carry out retrospective physical works.

6.10 Emergency Access & Servicing

The provision of a primary roading network that connects Kerikeri urban area, SH10 and Waipapa Road in the Structure Plan, together with the hierarchy of lower-level local roads, will provide the connectivity required to ensure an integrated network is available for the provision of access for service vehicles and emergency services.

7 TRANSPORT PLANNING POLICY

The relevant planning and policy documents have been considered and the proposed rezoning is expected to assist in satisfying and delivering the range of the Objectives or Policies relevant to the strategic transport and planning integration of the area.

7.1 National Policy Statement on Urban Development 2020 (NPS-UD)

The National Policy Statement on Urban Development (**NPS-UD**) (May 2022 update) recognises the national significance of:

- Having well-functioning urban environments that enable all people and communities to provide for their social, economic, and cultural wellbeing, and for their health and safety, now and into the future
- Providing sufficient development capacity to meet the different needs of people and communities.

The NPS-UD identifies Kerikeri as a Tier 3 Urban Environment, as the population is part of a housing and labour market that is of at least 10,000 people.

According to the Urban Economics Assessment that accompanies the Submission, the population of Kerikeri in 2018 was 12,300 persons. Therefore, Kerikeri meets the definition of an 'Urban Environment' under the NPS-UD and should be assessed as such.

Of particular relevance to transport, is Policy 11, which states that:

- The District Plans of Tier 1, 2, and 3 territorial authorities do not set minimum car parking rate requirements, other than for accessible car parks; and
- Tier 1, 2, and 3 local authorities are strongly encouraged to manage effects associated with the supply and demand of car parking through comprehensive parking management plans.

With regard to the changes to minimum parking rates, it is anticipated that these changes will be in effect well before any development occurs on the subject site. Therefore, the parking objectives of the NPS-UD would need to be considered at a Resource Consent (RC) stage.

7.2 Government Policy Statement on Land Transport 2021/2022–2030/31

The Government Policy Statement on Land Transport (**GPS**) sets out how money from the National Land Transport Fund is allocated towards achieving the Government's transport priorities. It sets out ranges for funding for activities such as public transport, state highway improvements, local and regional roads, and road safety. Each GPS sets out the priorities for the following 10-year period and is reviewed and updated every 3 years.

The current GPS places focus on the following key outcomes:

- Inclusive Access - Enabling all people to participate in society through access to social and economic opportunities, such as work, education, and healthcare.
- Economic prosperity - Supporting economic activity via local, regional, and international connections, with efficient movements of people and products.
- Resilience and security - Minimising and managing the risks from natural and human-made hazards, anticipating and adapting to emerging threats, and recovering effectively from disruptive events.
- Environmental sustainability - Transitioning to net zero carbon emissions, and maintaining or improving biodiversity, water quality, and air quality.
- Healthy and safe people - Protecting people from transport-related injuries and harmful pollution and making active travel an attractive option.

With the subject site being located between, and effectively becoming part of, the two key growth areas in the wider area, consideration of the key outcomes has been considered at a high level as part of the development of the Plan Change and Structure Plan, and will continue to be considered in more detailed design stages.

7.3 Northland Regional Land Transport Plan 2021-2027

The Northland Regional Land Transport Plan⁷ has a number of Objectives and Priorities.

In summary, the key ones relevant to the subject land and Structure Plan are:

- Provide a resilient transport network that strengthens all parts of the transport system and enables economic and social development in Northland in a timely and sustainable manner
- Provide transport choices to access jobs and amenities
- Design and build for human vulnerability and encourage and promote safer choices and safer behaviour on the roads.
- Improve integration of transport needs in land use planning

It is considered that the rezoning and proposed Structure Planning achieve all of these, with particular benefits being achieved by:

- The resilience provided to SH10 in the event of it being closed due to flooding
- The provision of strong connections for active modes
- The integration of recognised growth areas.

7.4 Far North District Council District Plan

Given the transitional state of the District Plan, reference has been made to the Objectives of the Proposed District Plan as this Plan represents the future direction of growth within the Far North. .

Each of these Objectives, together with how they affect or relate to the rezoning and Structure Plan is discussed below.

- *TRAN-O1: The State Highways, transport networks and cycleways of strategic significance are recognised and managed as regionally significant infrastructure to support the economic, cultural, environmental and social wellbeing of current and future generations.*
The development of the land and transport infrastructure in the manner described by the rezoning and Structure Plan will achieve this Objective and will enhance the provision and connectivity of the existing infrastructure.
- *TRAN-O2: The transport network is designed and located to minimise adverse effects on historical, cultural and natural values.*
The development of the land and transport infrastructure in the manner described by the rezoning and Structure Plan will achieve this Objective and provide significant infrastructure that recognises the significant natural and cultural context of the subject site.
- *TRAN-O3: Land use and all modes of transport are integrated so that the transport network is safe, efficient and well-connected.*
This objective is satisfied and will provide significant enhancement of the integration and connectivity of the local area.

⁷ [Regional Land Transport Plan 2021-2027 \(nrc.govt.nz\)](https://nrc.govt.nz)

- *TRAN-O4: Parking, loading and access provisions support the needs of land use and subdivision activities, and ensure safe and efficient operation for users.*
This objective will be satisfied in subsequent design stages, with the connectivity provided by the primary roading network that has been identified considered to be ideal for the land use within and adjacent to the subject site
- *TRAN-O5: The safe and efficient movement of vehicular, cycle and pedestrian traffic that also meets the needs of persons with a disability or limited mobility*
This objective will be satisfied in subsequent design and assessment stages through the application of local, regional and national design standards as well as best practice procedures.
- *TRAN-O6: The transport network is resilient to the likely current and future effects of climate change, and supports urban environments designed to reduce greenhouse gas emissions*
The development of the transport infrastructure in the manner described by the rezoning and Structure Plan will achieve this Objective and will not only provide significant resilience for SH10, but also connectivity within/to/through the subject site for active modes – thus allowing connectivity with and between identified areas of growth.

8 CONCLUSION

This draft Integrated Transport Assessment for the submission to the Proposed District Plan has considered the proposed details, including the Structure Plan options.

From this work, it has been established that there are significant advantages to the local and regional area in having the proposed details due to the:

- Integration of the currently separated and distinct growth areas of Waipapa and Kerikeri for active modes.
- Integration of active modes of the Council's Sports Hub to Kerikeri.
- Network resilience provided to SH10 by a key part of the internal primary roading network when SH10 is closed due to flooding.

Although four access options have been identified in the Structure Plans and some stand out as being preferable to others, it is considered sensible and appropriate for their detailed consideration to be done as part of Council's transportation modelling work currently being done for its spatial planning and assessment of growth. Further refinement of each option and a preferred option will be determined prior to the Hearing of the FNDC PDP once the transport modelling is complete.

This will allow a holistic approach to be taken to the assessment and allow the influences of all of the details to be considered in totality, rather than in isolation to achieve a more informed and inclusive outcome.

On this basis, the submission to the Proposed District Plan for the rezoning of the land within the subject site is supported from a transport planning perspective in the knowledge that modelling will consider the holistic situation whilst having regard to the other spatial planning matters being considered by Council.

APPENDIX 1 – Waka Kotahi/NZTA Consultation

NZTA File Ref: 2020-0881

10/08/2021

Bay of Islands Planning
Via email -Jeff Kemp
jeff@bayplan.co.nz

Dear Jeff

FEEDBACK - PROPOSED SPECIAL AREA ZONE -WAIPAPA (LOT 1 DP 333643, PT LOT 2 DP 89875, PT LOT 2 DP 76850) -

Further to our recent discussions regarding your request for Waka Kotahi NZ Transport Agency (Waka Kotahi) feedback on a proposed mixed residential and recreational Special Area Zone West of Kerikeri- including alternate access from SH10 to Kerikeri.

The Proposal

The intent is to introduce a Special Area Zone into the Far North District Council (FNDC) Proposed District Plan by submission. It will absorb the present golf course and will cater for the mixed density residential, recreational and neighbourhood commercial activities anticipated by the developer for this 200ha greenfield site situated between Kerikeri and Waipapa. It features:

- An additional linkage to Kerikeri from SH10 via a new roundabout with the potential to reduce congestion on Kerikeri and Waipapa road.
- Walking and cycling links to Kerikeri and the new Sports Hub adjacent to SH10 to encourage a shift in transport mode away from private vehicles
- A self-contained approach to infrastructure provision (stormwater, potable water supply, waste-water disposal) with the only connection to Council services being roading links.

Limited Access Road (LAR)

In terms of the Government Rounding Powers Act 1989, no person can lawfully drive or move a vehicle onto or from a LAR except at a road intersection that existed prior to the State Highway being declared a LAR, a road intersection with a LAR that has been authorised by Waka Kotahi.

Access to the site would be via a roundabout from State Highway 10, a Limited Access Road in this location, with a connection through to Kerikeri from the proposed special area zone.

Discussion

This proposal was submitted to FNDC in response to a call for submissions on their draft District Plan. Jeff Kemp, for the applicant, sought feedback from Waka Kotahi on the proposal. Initial reactions to it, and on the level of supporting information required for Waka Kotahi to properly assess in the context of hearing proceedings / submissions around the Proposed District Plan.

A meeting was held 08/07/2021 with Jeff Kemp and Consortium Members for the Project. Key internal stakeholders attending: Ranjan Pant (Network efficiency) Tim Elliot (Safety) myself and Hannah Thompson (Principal Environment Planner). Brian Waddell (Policy) was unable to attend. Jeff Kemp attended via teams with Dennis Corbett and Neville Dennis attending in person for the applicant.

Further internal stakeholder consultation was taken within Waka Kotahi and with FNDC.

Waka Kotahi Feedback

1. In network efficiency terms WK is receptive to the creation of new links from SH10 to relieve the pressure on current routes from SH10 to Kerikeri via Waipapa Road and Kerikeri Road.

2. Such an initiative could also yield safety benefits by integrating with current Safety improvement plans for SH 10 by providing a turnaround facility for a proposed divided road treatment on SH 10 (wire road barrier).
3. Proposed walking and cycling routes to and from Kerikeri township and the link through to the proposed FNDC Sports Hub off State Highway 10 align with WK modal shift objectives by encouraging walking and cycling journeys.
4. A number of the road infrastructure components to this scheme would be expensive and would need to be funded by the developer (for example, the road bridge across the Kerikeri Stream and the SH10 Roundabout).
5. In particular, from the Waka Kotahi perspective the roundabout intersection design and construction would be at the developer's cost in consultation with WK on design parameters.
6. It is noted the proposed FNDC Sports Hub is in the same vicinity of SH 10 and that both parties will need to work together on intersection arrangements along this corridor.
7. It is noted that there is a willingness to commit to fund infrastructure, but it would be good to understand the specifics of this outside the existing commitments (roundabout, Shared Use Path etc).
8. Waka Kotahi also need to understand resultant journey patterns and wider trip generation effects on the network arising from the proposal.

Feedback received from FNDC- (informal staff comment received by email not official policy)

9. FNDC had no fixed opinion on this proposal; and it is not something they have investigated. The proposal is in its early stages with not enough supporting data presented to Council to fully evaluate (For example no traffic modelling or detailed argument around wider public benefits)
10. At present the proposal does not fit with Council's wider zoning strategy or structure planning intent with adequate residential land supply already provided for with the shortfall in business land provided around Waipapa.
11. The site was retained as rural production land in the existing Kerikeri / Waipapa structure plan though signalled as an area with potential for future growth
12. The proposal would need to be viewed in the wider planning context which at this stage of proceedings has the subject site as a Rural Production zone under the draft district plan.
13. A wider consideration of the infrastructure planning context in FNDC is needed. The applicant would need to address this wider context in any application to FNDC.
14. Work is underway testing the recommendations made in the Kerikeri / Waipapa strategic road network plan developed in support of the above structure plan but is not yet complete.
15. Council has started a district wide strategy called FN2100 and as part of that project "area planning" will occur for Waipapa / Kerikeri.
16. As things currently stand, if accepted, the Special Area zone would generate a significant shift in how the settlements of Waipapa & Kerikeri are presently anticipated to evolve.
17. However, given the evolving situation in the Waipapa area (e.g. the potential sports hub off SH 10), there is potential for a shift towards a rural residential zone at some time in the future.

18. Given the work necessary to establish a case for any shift from the current rural zoning, it is unlikely to make it into consideration for The Proposed District Plan scheduled for notification before the end of 2021.

I trust this letter clearly outlines the current position of Waka Kotahi with respect to your client's proposal. If you have any queries, please do not hesitate to contact Bruce Hawkins on 09 969 9858 (or email Bruce.Hawkins2@nzta.govt.nz

This response is the current Waka Kotahi view of the situation. Please note that if this application is put on hold for any length of time and resubmitted at a later date, Waka Kotahi may need to review its comments in the light of any traffic, safety, planning, or policy change.

Yours faithfully,



Bruce Hawkins
Senior Planner
Consents and Approvals
System Design and Development

Enclosed:

- Attachment 1: Plan Outlining Proposed Special Area Zone

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THE PLANNING
COLLECTIVE

Brownlie Land Structure Plan: Communications Summary Report

Applicant Name: Kiwi Fresh Orange Company Limited


Date: 21 October 2022



This report has been prepared by:

Claire Booth
Senior Planner
The Planning Collective Limited

Dated: 20/10/2022



This report has been peer reviewed by:

Burnette O'Connor
Planner/Director
The Planning Collective Limited

Dated: 20/10/2022

"The curves within the circle symbol of our logo are a depiction of the shape the Mahurangi River takes as it weaves its way through Warkworth. This was chosen to illustrate the whenua and landscape of the town that The Planning Collective works so closely with."

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THE PLANNING
COLLECTIVE



Table of Contents

1. Introduction and purpose	1
2. Summary of Engagement.....	2
3. Key points raised through communications.....	6
4. Conclusion.....	10

Appendices

Appendix 1: Letter from Waka Kotahi

Appendix 2: Letter from Bay of Islands Golf Club

1. Introduction and Purpose

Kiwi Fresh Orange Company Limited is seeking to re-zone 197ha of rural production zoned land to urban zoned land via a submission on the FNDC Proposed District Plan.

The purpose of this report is to summarise the consultation and communication the Project Team have had to date with the Far North District Council (FNDC), Ngāti Rēhia, Northland Regional Council (NRC), Vision Kerikeri, and the wider community regarding the proposed submission on the FNDC Proposed District Plan by Kiwi Fresh Orange Company Limited.

Open, honest, and meaningful engagement is key to the success and implementation of the Proposal. The purpose of early engagement with the key persons/groups listed above is:

- To share information with stakeholders, Council and Iwi about the Structure Plan;
- Understand the views of stakeholders including Council and Iwi;
- Build new relationships, and strengthen existing relationships with stakeholders, Council and Iwi;
- To create understanding of an emerging or existing problem or opportunity and its consequences or potential regarding the development of the Structure Plan.

2. Summary of Engagement

2.1 Engagement with Council

The Brownlie Land project team have developed a working relationship with the FNDC Spatial Planning Team and the Infrastructure Team. The working relationship and information sharing has assisted the Project Team with the development of the Structure Plan in a positive way.

The table below outlines the key meetings with Council and who attended. This list also includes a helpful meeting with the Northland Regional Council Rivers Team in relation to flood hazard issues.

Date	FNDC team	Brownlie Land Team
Council Spatial Planning Team- 29th April 2022 and site visit.	Roger Ackers - FNDC Strategic Planning Team Ree Anderson - FNDC Strategic Planning Team Celia Witihera - FNDC Strategic Planning Team and Ngāti Rēhia.	Burnette O'Connor - Planning Collective - Planner, Claire Booth - Planning Collective - Planner, Dennis Corbett - Client Representative, Neville Dennis - Client, Steve Brownlie - Client, Adam Thompson - Urban Economics
Council Infrastructure Team meeting- 10th May 2022	Greg Wilson - District Plan Manager, Blair King - Chief Executive; Darren Edwards - General Manager Policy; Calum Cub - Infrastructure Asset Management; Roger Ackers - Strategic Planning Team; Ree Anderson - Strategic Planning Team; Kelvin Kapp - Team Lead Infrastructure; Cushla Jordan - Roading Asset Manager; Helen Ronaldson - Manager Infrastructure and Asset Management; Jamie Cullick - Infrastructure Planner; Dawn Spence, Kim Cottle, Mark Keehan	Burnette O'Connor - Planning Collective - Planner, Claire Booth - Planning Collective - Planner, Dennis Corbett - Client Representative, Neville Dennis - Client, Steve Brownlie - Client, Johan Ehlers - Infir, Laddie Kuta - E2
Northland Regional Council- Rivers Team 7th July 2022	Victoria Rowe (Northland Regional Council- Rivers Engineer), Sher Khan (Northland Regional Council)	Claire Booth (The Planning Collective), Laddie Kuta (E2), Daniel Mc Mullen (E2), Johan Ehlers (Infir), James Burk (Infir), Neville Dennis (Landowner), Dennis Corbett (Landowner advisor)
Council Spatial Planning Team- 13th July 2022	Roger Ackers - FNDC Spatial Planning Team, Ree Anderson - FNDC Spatial Planning Team, Celia Witehira - FNDC Spatial Planning Team and Ngāti Rēhia,	Burnette O'Connor - Planning Collective - Planner, Claire Booth - Planning Collective - Planner, Dennis Corbett - Client Representative,

Date	FNDC team	Brownlie Land Team
	Kim Cottle - FNDC Team Leader Infrastructure Planning, Keith Kent - Transport Planner.	Neville Dennis - Applicant, Adam Thompson - Urban Economics, Johan Ehlers - Infir, Phillip Brown - TEAM Traffic, Laddie Kuta - E2, Grant Neill - Pacific Environments, David Nutsford - Pacific Environments
Council Infrastructure Team three waters meeting- 26th July 2022.	Kim Cottle - FNDC Team Leader Infrastructure Planning, Jaye Michalick - Three Waters Infrastructure Planning, Tanya Proctor - Infrastructure Delivery Manager	Burnette O'Connor - Planning Collective - Planner, Claire Booth - Planning Collective - Planner, Johan Ehlers - Infir.
Population- growth projections and capacity – 4th August 2022	Roger Ackers - FNDC Spatial Planning Team, Ree Anderson - FNDC Spatial Planning Team.	Burnette O'Connor - Planning Collective - Planner, Claire Booth - Planning Collective - Planner, Dennis Corbett - Client Representative, Neville Dennis - Client, Steve Brownlie - Client, Adam Thompson - Urban Economics.
Infrastructure and servicing 30th August 2022.	Roger Ackers - FNDC Spatial Planning Team, Ree Anderson - FNDC Spatial Planning Team, Keith Kent - Transport Planner.	Burnette O'Connor- Planning Collective-Planner, Claire Booth- Planning Collective- Planner, Dennis Corbett- Client Representative, Johan Ehlers- Infir, Phillip Brown- TEAM Traffic, Grant Neill- Pacific Environments, Mike Farrow- LLA.

2.2 Engagement with Iwi

Date	Ngāti Rēhia	Brownlie Land Team
Meeting with Ngāti Rēhia- 19th March 2021 Introduction to Project	Nora Rameka Kipa Munro	Dennis Corbett - Client Representative,
Meeting 9th April 2021 Purpose- to introduce client team and the overall development intentions	Nora Rameka Kipa Munro	Dennis Corbett - Client Representative, Neville Dennis - Client, Steve Brownlie - Client
Email correspondence- 26 May 2021 Ngāti Rēhia sent the Environmental Management Plan	Nora Rameka	Dennis Corbett - Client Representative
Meeting with Ngāti Rēhia- 28 July 2021 Purpose- to discuss employment opportunities for proposed hotel	Nora Rameka Kipa Munro	Dennis Corbett - Client Representative

Date	Ngāti Rēhia	Brownlie Land Team
Meeting with Ngāti Rēhia and wider community groups- 03 August 2021 Purpose- to outline to the wider community groups what the Structure Plan aimed to achieve.	Nora Rameka Vision Kerikeri, Bay of Islands Gold Club, Our Kerikeri (Approx 20 people)	Dennis Corbett - Client Representative
Meeting with Ngāti Rēhia- 28th March 2022 Purpose- to introduce Project Team to Ngāti Rēhia.	Nora Rameka Kipa Munro	Burnette O'Connor - Planning Collective-Planner, Claire Booth - Planning Collective-Planner, Dennis Corbett - Client Representative, Neville Dennis - Client, Steve Brownlie - Client
Meeting with Ngāti Rēhia- 14th October 2022 Purpose: to provide a progress update on the preparation of the submission documentation for the re-zoning of the Brownlie Land. The Structure Plan and supporting maps were shared.	Nora Rameka Kipa Munro	Dennis Corbett - Client Representative, Neville Dennis - Client, Steve Brownlie - Client

2.3 Engagement with Waka Kotahi

Discussions regarding a future crossing place on to State Highway 10 have been conducted with Waka Kotahi. A formal letter from Waka Kotahi was received on 10 August 2021 regarding the proposed use of the Brownlie land for mixed residential and commercial purposes. The description of the proposed development has changed since the letter was received however the content remains relevant to the extent it relates to creation of an access point onto State Highway 10.

A meeting between the then project team, Waka Kotahi Personnel (Ranjan Pant, Tim Elliot, Hannah Thompson, Bruce Hawkins) and Dennis Corbett and Neville Dennis was held on 8 July 2021.

2.4 Engagement with the wider community

Date	Community Members	Brownlie Land Team
Meeting with Ngāti Rēhia and wider community groups- 03 August 2021 Purpose- to outline to the wider community groups what the Structure Plan aimed to achieve.	Nora Rameka Vision Kerikeri, Bay of Islands Gold Club, Our Kerikeri (Approx 20 people)	Dennis Corbett- Client Representative
Meeting with Kerikeri Rotary 8/11/2021- 6:30pm	Circa 40 members of the Rotary Club	Dennis Corbett- Client Representative,

Date	Community Members	Brownlie Land Team
Purpose- to present what was proposed at within the Structure Plan and answering questions		
Meeting with Waipapa Rotary 09/02/2022- 6:30pm Purpose- to present what was proposed at within the Structure Plan and answering questions	Circa 30 members of the Rotary Club	Dennis Corbett- Client Representative
The Men's Group (ex-Probuss) 7/06/2022 Purpose- to present what was proposed at within the Structure Plan and answering questions	Circa 30 members	Dennis Corbett- Client Representative
Meeting with the Bay of Islands Golf Club 14/10/2022 Purpose: to provide a progress update on the preparation of the submission documentation for the re-zoning of the Brownlie Land. The Structure Plan and supporting maps were shared. Documentation to be shared to current President who was unable to attend.	Bill Hunter- Former President.	Dennis Corbett- Client Representative, Neville Dennis- Client, Steve Brownlie- Client.
Email correspondence: Vision Kerikeri Purpose: to provide a progress update on the preparation of the submission documentation for the re-zoning of the Brownlie Land. The Structure Plan and supporting maps were shared via email.	Formal meeting to be arranged in the last week of October 2022.	Dennis Corbett- Client Representative,

3. Key points raised through communications

3.1 Key Points raised through communications with FNDC

The meetings held with FNDC, and the conversations had, were on a non-prejudiced basis. The principle of the meetings was building on the positive relationship to date with the FNDC Council teams, including the Spatial Planning Team and to share information on the work that both the FNDC Spatial Plan team and the Project Team for the Brownlie Land are preparing in the lead up to the notification and close of submissions of the FNDC District Plan.

Spatial Plan

- Discussions held with the Spatial Planning Team were based on information sharing. The meetings held were to provide an update to the Spatial Planning Team on where the Project Team was at with producing the technical reports and if there was anything that the Council was working on or other publicly available reports that could be of assistance.
- Conversations focused on population growth data and the need for additional urban land.
- The Spatial Plan team noted that housing affordability is a critical part of this assessment.
- The Spatial Plan team noted that the submission document will need to have a closer look at the Plan Enablement Report and Population Projections Section 32 Reports which have informed the plan and compare and contrast the conclusions with our technical assessment.
- Spatial Planning Team need to see the final submission and rationale to support the re-zoning prior to making any formal commitments or comments.
- The intension is to live zone all the land within the Structure Plan Area.

District Plan

- The Project Team noted that we don't think that the PDP's approach to providing 100% of urban growth within the existing urban areas through infill housing is realistic as it expects that everyone who can subdivide, will subdivide.
- The issue of population growth and demand will be addressed in the submission documentation.
- The project Team emphasised that the proposed zoning option will enable housing and commercial activities to be developed at scale which will result in an overall more affordable offering.

Transport and public amenities

- The Spatial Plan team were interested in the transport links from the site into Kerikeri and asked if the Project Team were open to having more than one connection. As shown on the transport options plans, more than one access point has been considered. Each option is a work in progress, the black lines are to inform us at the moment.
- Four transport options will be presented within the Submission on the Brownlie Land.
- There is a substantial opportunity to provide an exposure and opportunity along the river front. Networks around river system.

- Road infrastructure funding needs to be considered as to who will pay for what.
- Vision for the flood way is to include walkways and other amenity spaces/wetlands for the wider community to enjoy.
- There is no funding for additional parks, funding arrangements for new parks will need to be discussed.
- There is a need for spaces, to stop, pause and rest. If terraced houses are proposed, public amenity spaces are even more important

Three Waters

- FNDC noted that the Long-Term Plan includes the following funding:
 - \$35M in the LTP is dedicated towards expansions to the existing Kerikeri wastewater treatment plant and the upgrade to include another module to the existing plant. The upgrade would increase capacity by 1,000m³. The current capacity is 1,500m³. This proposed upgrade will provide for the current growth anticipated within Kerikeri- which is signalled to be delivered through infill development.
 - \$96M is air marked to service Waipapa, providing wastewater connections to the existing urban area. This upgrade could also include a new treatment plant.
 - The \$20M for water supply is not well defined but is based on recommendations in the 2021 Water Strategy.
 - FNDC are unable to provide the background documents to the LTP as these documents are not in a consolidated form.
- Other key points
 - There is no capacity in the existing reticulated wastewater system to connect to the Brownlie Land.
 - FNDC are seeking a Discharge permit from Northland Regional Council to discharge treated wastewater to a wetland (Waitangi Wetland) as the current discharge is getting close to capacity.
 - The Project Team noted that discharge of treated wastewater to water is not an option that we are considering as this would be culturally unacceptable to mana whenua.
 - FNDC have a Hydraulic Model for the wastewater network.
 - All future upgrades to the network are to be gravity fed. No new low-pressure systems are desired in Kerikeri.
 - There is a 2021 report on the Water supply Capacity.
 - In regard to water supply- 75% of supply is from the Kerikeri Irrigation Scheme. 25% is from the Puketotara Stream. FNDC have not commenced further investigations for increasing water supply. There is no capacity in the Puketotara Stream take. A back up supply will be needed to site to service the additional 25%.
 - In regard to stormwater, attenuation and treatment will be provided for within the Structure Plan Area.

3.2 Key points raised through communications with Northland Regional Council

- There are no current plans to manage the flood risk in this area.
- There are currently no plans to do any works downstream of the Brownlie Land
- The plans for a floodway across this site, developed in 2015 have not been progressed

- When detailed design is progressed, the whole catchment model should be used to develop a feasible solution and that the model should be peer reviewed.
- The meeting ended noting that it would be important to keep an open flow of conversation between NRC and the project team to work towards solutions that both benefit the Brownlie Land and mitigate flood hazard Risks for the wider Kerikeri/Waipapa area.
- NRC noted that it is difficult to reduce upstream flood hazards without doing any works downstream. A fine balance of mitigation will need to be struck.

3.3 Key points raised through communications with Ngāti Rēhia

- Discussions with Dennis Corbett regarding the Structure Plan intentions and how we could work with them as it is intention to include employment opportunities for their people and for the development to have a significant local cultural theme. This was received well and Ngāti Rēhia agreed to support what we broadly talked about.
- Ngāti Rēhia are willing to work with the project team to deliver good outcomes for Kerikeri and Waipapa
- Dennis discussed how the development could create circa 300 permanent jobs. A 130 to 150 room hotel was on the planning table which we would ideally like to see local culturally themed with Ngāpuhi and Ngāti Rēhia involved. This was positively supported.
- Acknowledged that affordable housing provision in the Far North was a key concern of Ngāti Rēhia's and wanted to work together to provide more solutions to addressing this issue.
- Housing options for iwi and in particular the elders are a key concern that could be addressed through the re-zoning of the land.
- Supportive of looking for opportunities to upskill iwi/hapu in a range of trades or other subsequent employment opportunities generated through the Structure Plan
- Acknowledge their overall support (in general) for the proposed Structure Plan and the outcomes it would achieve.
- Following the meeting on the 14th of October 2022, Ngāti Rēhia is going to organise a Hui to give the project an identity/name.
- Ngāti Rēhia have also agreed to provide a Cultural Impact Assessment.

3.4 Key points raised through communications with Waka Kotahi

- In network efficiency terms, Waka Kotahi is receptive to the creation of new links from SH10 to relieve the pressure on current routes from SH10 to Kerikeri and Waipapa.
- Such an initiative could also yield safety benefits by integrating with the currently safety improvements plan's for SH10
- Walking and cycling routes to and from Kerikeri township and the link through to the proposed FNDC Sports Hub align with the Waka Kotahi modal shift objectives
- A number of road infrastructure components to this scheme would be extensive and would require developer funding- i.e. bridge to Kerikeri and the Roundabout
- Need to work with the FNDC sports hub on intersection arrangements along SH10
- There is a willingness to commit to fund infrastructure, but Waka Kotahi needs to understand the project specifics

- Waka Kotahi needs to understand the resultant journey patterns and wider trip generation effects on the network arising from the proposal.

3.5 Key points raised through communications with wider community groups

- Overall- general support for what the proposed Structure Plan was aiming to achieve from all community groups.
- General support from the Kerikeri Rotarians
- Mixed support from the Waipapa Rotarians. Those expressing opposition were concerned with growth and did not want to see more growth in the area.
- General support from the Local Men's Club
- No formal feedback from the Bay of Islands Golf Club. Golf Club President to respond to project team upon reviewing the provided information on 14 October 2022. A phone call was received on 19 October 2022 from a past president Bill Hunter stating that the Golf Club does not want their land shown on the structure plan. Burnette O'Connor from The Planning Collective advised their land was shown because it was directly adjacent and could not be ignored. It was agreed further communications would be undertaken and Bill said he would email Burnette setting out the Golf Club views.

A letter from the Bay of Islands Golf Club is attached in **Appendix 2**. Letter outlines that the Bay of Islands Golf Clubs position regarding the proposed Submission by KFO is neutral and the Club requests that potential local road options are removed from the Transport Assessment and the proposed Structure Plan. KFO have committed to undertaking full engagement with the Bay of Islands Golf Club to clearly outline the development intent for the Site. The Bay of Islands Golf Club will be sent the submission documents and will have the opportunity to provide a further submission on the Proposed Structure Plan.

4. Conclusion

Engagement with the stakeholders and Iwi identified above will be on-going throughout post the submission on the FNDC Proposed District Plan, leading up to the Hearing.

Overall, engagement has been generally positive to date.

Appendix 1:

Letter from Waka Kotahi

NZTA File Ref: 2020-0881

10/08/2021

Bay of Islands Planning
Via email -Jeff Kemp
Jeff@bayplan.co.nz

Dear Jeff

FEEDBACK – PROPOSED SPECIAL AREA ZONE –WAIPAPA (LOT 1 DP 333643, PT LOT 2 DP 89875, PT LOT 2 DP 76850) –

Further to our recent discussions regarding your request for Waka Kotahi NZ Transport Agency (Waka Kotahi) feedback on a proposed mixed residential and recreational Special Area Zone West of Kerikeri- including alternate access from SH10 to Kerikeri.

The Proposal

The intent is to introduce a Special Area Zone into the Far North District Council (FNDC) Proposed District Plan by submission. It will absorb the present golf course and will cater for the mixed density residential, recreational and neighbourhood commercial activities anticipated by the developer for this 200ha greenfield site situated between Kerikeri and Waipapa. It features:

- An additional linkage to Kerikeri from SH10 via a new roundabout with the potential to reduce congestion on Kerikeri and Waipapa road.
- Walking and cycling links to Kerikeri and the new Sports Hub adjacent to SH10 to encourage a shift in transport mode away from private vehicles
- A self-contained approach to infrastructure provision (stormwater, potable water supply, waste-water disposal) with the only connection to Council services being roading links.

Limited Access Road (LAR)

In terms of the Government Roding Powers Act 1989, no person can lawfully drive or move a vehicle onto or from a LAR except at a road intersection that existed prior to the State Highway being declared a LAR, a road intersection with a LAR that has been authorised by Waka Kotahi.

Access to the site would be via a roundabout from State Highway 10, a Limited Access Road in this location, with a connection through to Kerikeri from the proposed special area zone.

Discussion

This proposal was submitted to FNDC in response to a call for submissions on their draft District Plan. Jeff Kemp, for the applicant, sought feedback from Waka Kotahi on the proposal. Initial reactions to it, and on the level of supporting information required for Waka Kotahi to properly assess in the context of hearing proceedings / submissions around the Proposed District Plan.

A meeting was held 08/07/2021 with Jeff Kemp and Consortium Members for the Project. Key internal stakeholders attending: Ranjan Pant (Network efficiency) Tim Elliot (Safety) myself and Hannah Thompson (Principal Environment Planner). Brian Waddell (Policy) was unable to attend. Jeff Kemp attended via teams with Dennis Corbett and Neville Dennis attending in person for the applicant.

Further internal stakeholder consultation was taken within Waka Kotahi and with FNDC.

Waka Kotahi Feedback

1. In network efficiency terms WK is receptive to the creation of new links from SH10 to relieve the pressure on current routes from SH10 to Kerikeri via Waipapa Road and Kerikeri Road.

2. Such an initiative could also yield safety benefits by integrating with current Safety improvement plans for SH 10 by providing a turnaround facility for a proposed divided road treatment on SH 10 (wire road barrier).
3. Proposed walking and cycling routes to and from Kerikeri township and the link through to the proposed FNDC Sports Hub off State Highway 10 align with WK modal shift objectives by encouraging walking and cycling journeys.
4. A number of the road infrastructure components to this scheme would be expensive and would need to be funded by the developer (for example, the road bridge across the Kerikeri Stream and the SH10 Roundabout).
5. In particular, from the Waka Kotahi perspective the roundabout intersection design and construction would be at the developer's cost in consultation with WK on design parameters.
6. It is noted the proposed FNDC Sports Hub is in the same vicinity of SH 10 and that both parties will need to work together on intersection arrangements along this corridor.
7. It is noted that there is a willingness to commit to fund infrastructure, but it would be good to understand the specifics of this outside the existing commitments (roundabout, Shared Use Path etc).
8. Waka Kotahi also need to understand resultant journey patterns and wider trip generation effects on the network arising from the proposal.

Feedback received from FNDC- (informal staff comment received by email not official policy)

9. FNDC had no fixed opinion on this proposal; and it is not something they have investigated. The proposal is in its early stages with not enough supporting data presented to Council to fully evaluate (For example no traffic modelling or detailed argument around wider public benefits)
10. At present the proposal does not fit with Council's wider zoning strategy or structure planning intent with adequate residential land supply already provided for with the shortfall in business land provided around Waipapa.
11. The site was retained as rural production land in the existing Kerikeri / Waipapa structure plan though signalled as an area with potential for future growth
12. The proposal would need to be viewed in the wider planning context which at this stage of proceedings has the subject site as a Rural Production zone under the draft district plan.
13. A wider consideration of the infrastructure planning context in FNDC is needed. The applicant would need to address this wider context in any application to FNDC.
14. Work is underway testing the recommendations made in the Kerikeri / Waipapa strategic road network plan developed in support of the above structure plan but is not yet complete.
15. Council has started a district wide strategy called FN2100 and as part of that project "area planning" will occur for Waipapa / Kerikeri.
16. As things currently stand, if accepted, the Special Area zone would generate a significant shift in how the settlements of Waipapa & Kerikeri are presently anticipated to evolve.
17. However, given the evolving situation in the Waipapa area (e.g. the potential sports hub off SH 10), there is potential for a shift towards a rural residential zone at some time in the future.

18. Given the work necessary to establish a case for any shift from the current rural zoning, it is unlikely to make it into consideration for The Proposed District Plan scheduled for notification before the end of 2021.

I trust this letter clearly outlines the current position of Waka Kotahi with respect to your client's proposal. If you have any queries, please do not hesitate to contact Bruce Hawkins on 09 969 9858 (or email Bruce.Hawkins2@nzta.govt.nz

This response is the current Waka Kotahi view of the situation. Please note that if this application is put on hold for any length of time and resubmitted at a later date, Waka Kotahi may need to review its comments in the light of any traffic, safety, planning, or policy change.

Yours faithfully,

A handwritten signature in blue ink, appearing to read 'B. Hawkins', is positioned above the printed name and title.

Bruce Hawkins
Senior Planner
Consents and Approvals
System Design and Development

Enclosed:

- Attachment 1: Plan Outlining Proposed Special Area Zone

Appendix 2:

Letter from Bay Of Islands Golf Club

20 October 2022.

The Planning Collective
Warkworth

Attention: Burnette O'Connor

Reference: Brownlie Development – Rezoning Submission to Far North District Council

Burnette

We acknowledge receipt of your letter dated 14 October 2022 - we note we received it on 16 October 2022.

The purpose of this letter is to confirm the subsequent discussions Bill Hunter had with you by telephone and to ensure the Bay of Islands Golf Club's position is clearly understood.

The club is neutral in opinion on your client's submission to FNDC on rezoning of the land at 1828 and 1878 State Highway 10. However it strongly objects to the inclusion of the Local Transport Network Option documents in any submission to FNDC.

We specifically request the removal of these documents.

We note:

- All of the Transport Network Options appear to include proposed roads / paths over land owned by BOIKK Golf Club;
- None of the Options has been discussed with BOIKK Golf Club;
- All the Transport Network Options include aspects which would require significant change to the playing of golf on the current course. One of the options appears to preclude the operation of the club in its current form;
- You have given us less the 5 working days to digest / respond to these documents – as Bill advised the club feels ambushed;

We note you have offered to:

- Send us a copy of the final submission after 21 October for ease of reference – Yes please;
- Brief us on the detail of the rezoning submission – until we have sighted the final submission we see little point in this but would like to keep this option open.

Bill Hunter
Immediate Past President
Bay of Islands Kerikeri Golf Club

Graeme Brown
President
Bay of Islands Kerikeri Golf Club

End of Report

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