BEFORE THE INDEPENDENT HEARINGS PANEL

UNDER	the Resource Management Act 1991 (RMA)
IN THE MATTER	of the Far North Proposed District Plan - Hearing 15D: Rezoning Kerikeri-Waipapa

STATEMENT OF REBUTTAL EVIDENCE OF JEREMY HUNT ON BEHALF OF KIWI FRESH ORANGE COMPANY LIMITED

RURAL PRODUCTIVITY

24 September 2025

PO Box 2401 AUCKLAND 1140
Tel +64 9 300 2600
Fax +64 9 300 2609

Solicitor: M J Doesburg
(mike.doesburg@wynnwilliams.co.nz)

WYNN WILLIAMS

INTRODUCTION

1 My full name is Jeremy Bryce Hunt.

2 I have been engaged by Kiwi Fresh Orange Company Limited (**KFO**) to provide independent expert advice as part of its submission on the Proposed Far North District Plan (**FNPDP**).

3 This rebuttal evidence relates to the Council's section 42A report and the evidence of Dr Hill on rural productivity.

QUALIFICATIONS AND EXPERIENCE

4 I confirm I have the qualifications and experience set out at paragraphs 5 - 10 of my statement of evidence dated 16 June 2025 (**June evidence)**.

CODE OF CONDUCT

5 I repeat the confirmation provided in my June evidence that I have read and agree to comply with the Code of Conduct for Expert Witnesses contained in the Environment Court Practice Note 2023. This evidence has been prepared in accordance with that Code. I confirm that the issues addressed in this rebuttal evidence are within my area of expertise, and I have not omitted to consider material facts that might alter or detract from the opinions that I express.

SCOPE OF EVIDENCE

6 My evidence will cover:

(a) The productive capacity of the Subject Site

(b) Suitability of site specific soil survey for productive capacity assessment, including the updated mapping by Hanmore Land Management (HLM)

(c) Comparison analysis of alternative sites

(d) Providing development capacity through intensification

(e) In addition to the material that I considered, reviewed, took into account and relied on in my evidence dated 16 June 2025, in preparing this evidence I have reviewed:

(f) Section 42A Report - Hearing 15D: Rezoning Submissions – Kerikeri-Waipapa

(g) Statement of evidence of Dr Hill in support of s42A report for Hearing 15D – Rural Productivity, 10 September 2025

SUMMARY OF EVIDENCE

7 My evidence assesses the rezoning proposal against clause 3.6(b) and (c) of the NPS-HPL insofar as it relates to rural productivity, productive capacity, and the loss of highly productive land for land-based primary production. Mr Thompson has assessed the sufficiency limb of clause 3.6(a) of the NPS-HPL.

8 I have assessed the Subject Site against alternative sites, and it has a lower productive capacity than both the Southern Site and the Western Site. The Southeastern Site that Dr Hill identified has a similar productive capacity, with suitability for drystock only. While it might be a reasonable alternative from a productive capacity perspective, I understand that planning evidence identifies that the Southeastern Site does not provide for a well-functioning urban environment due to its dislocation from existing urban areas.

9 Ms O'Connor's planning evidence pulls together Adam Thompson's and my evidence to assess KFO's rezoning proposal (Proposal) against clause 3.6 of the NPS-HPL.

PRODUCTIVE CAPACITY OF THE SUBJECT SITE

10 As I stated in my primary evidence, I have assessed the productive capacity of the Subject Site as being suitable for pastoral grazing, specifically for drystock purposes. This is also the current land use.

11 Dr Hill suggests that the main reason for the absence of dairy farming is the lack of compliant infrastructure, rather than inherent soil and land limitations.[1]

12 While the Subject Site has historically been used for dairy farming, I maintain my view that this is not a reasonably practicable option for this land going forward. The infrastructure has become derelict, and the resource consents have lapsed. The capital costs involved to re-develop this land back into dairy farming would not be justified for soils that have rooting and wetness limitations within a floodplain.

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[1] Statement of Evidence of Dr Reece Hill at [7.6].

13 Dr Hill considers that parts of the site hold some potential for horticulture.[2] I do not consider that horticulture is a reasonably practicable option for the Site. Justification for this is outlined in this rebuttal evidence.

14 Parts of the Subject Site is also prone to flooding, with a flooding overlay provided in my primary evidence[3]. Investors in horticulture or other higher land uses that would require infrastructure will identify flooding as a risk, because it creates a potential for low crop survival rates or reduced yields for permanent or seasonal crops.

15 Further evidence of the wetness limitations was observed during the Site visit on 30 May 2025. I have included some additional drone photos below from areas that are mapped as LUC 3s2[4].

2 Statement of Evidence of Dr Reece Hill at [3.3].

3 AgFirst *Kerikeri-Waipapa Development NPS-HPL Assessment* (June 2025) at [Figure 10].

4 Mapped as LUC 3s2 by both HLM and the NZLRI.

16 These areas will have compromised/damaged/low yielding crops during wet seasons or periods of high water-table. While they are capable of growing crops (arable or horticulture), as the LUC unit specifies, there are moderate limitations. For high value horticultural systems, these could tip the balance for economic viability, and what would be considered attractive and desirable for a prospect grower.

17 The land value for the productive areas within the Subject Site is approximately $63,000 per ha. This land value is more reflective of the

very top performing dairy farmland in New Zealand, with highly versatile soils, excellent infrastructure and housing. The Subject Site contains none of these. Horticulture or other agricultural investors would therefore be buying land at a premium price while receiving none of the benefits of that premium in terms of economic output.

18 Dr Hill has identified that the soils may be suitable for horticulture, referencing the LUC 3s2 soils present on the Subject Site. While these soils are considered highly productive land in terms of the definition in the NPS HPL and highly versatile under the Northland Regional Policy Statement, they do have moderate limitations for arable use and horticulture.

19 The management practices referenced by Dr Hill[5] are more specific to commercial vegetable production (CVP) than horticulture, including minimum tillage and contour cultivation. Scanning the wider area on Google Earth satellite imagery and reviewing Agricultural production statistics, there is limited CVP in this locality with only 160 ha of outdoor vegetable production within the entire Northland Region.[6]

20 Another of the soil conservation and mitigation strategy for the LUC 3s2 soils under horticultural land use, is the seasonal requirement of irrigation[7].

21 I have looked into the availability and access for freshwater irrigation for the Subject Site. In doing so, I have spoken with the Kerikeri Irrigation Company, which operates irrigation storage infrastructure for commercial and horticultural purposes. They have previously looked at the feasibility of the Subject Site for irrigation and horticultural use, and it is not economically viable to do so. The main waterline, which has enough capacity, is located at the corner of Waimate North Road and Valencia Lane. A connecting pipe would need to be tunnelled approximately 3.5 km along Waimate North Road and north along State Highway 10 to convey water to the Subject Site.

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5 Statement of Evidence of Dr Reece Hill at [7.10].

6 Statistics New Zealand “Agricultural production statistics – June 2019” (May 2020) <www.stats.govt.nz>.

7 Garth R Harmsworth *Land Use Capability classification of the Northland region. A report to accompany the second edition New Zealand Land Resource Inventory* (Landcare Research Science Series 9, Manaaki Whenua Press, Lincoln, 1996).

22 As discussed, the LUC 3s2 soils have moderate limitations, and while they may be suitable for horticulture, they are lower down the versatility order of the optimum land class. High value horticultural operations are very costly to setup and operate, and while many are very profitable, this becomes eroded when farming/growing on marginal land. Combining the soil limitations with the significant constraint of access to water for irrigation, I do not consider that horticulture is a reasonably practicable land use option for the Subject Site.

23 Therefore, I refer back to my evidence, and report that the highest and best land use option for the Subject Site is pastoral grazing.

24 Consideration will also need to be given to off-site nuisance effects that are generated from horticultural and cropping operations (including reverse sensitivity). While I have not undertaken an off-site sensitivity analysis (this is covered by Ms O'Connor in her rebuttal evidence), horticultural and cropping operations involve practices, when not appropriately managed appropriately, can create spray drifts (chemical sprays), dust (during cultivation and harvesting) and noise pollution that can impact residential and other sensitive receptors.

SUITABILITY OF SITE-SPECIFIC SOIL SURVEY FOR PRODUCTIVE CAPACITY ASSESSMENT AND BROADER ANALYSIS OF PRODUCTIVE CAPACITY UNDER THE NPS-HPL

25 The s42A author and Dr Hill have questioned if the level of detail provided in the site-specific soil survey undertaken by HLM is of sufficient suitability and methodology to challenge the NZLRI LUC classification.

26 There is case law[8] that says that more detailed mapping of soils does not prevail over the identification of land as Land Use Capability Class 1, 2, or 3, as mapped by the New Zealand Land Resource Inventory (NZLRI), for the purposes of clause 3.5(7) of the NPS-HPL whether land is highly productive land. Therefore, I have not relied on the HLM soil mapping for this purpose (i.e., reclassification), but rather to help determine the productive capacity of the Subject Site (for clause 3.6(4)). As mentioned in the AgFirst report:

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8 *Blue Grass Ltd v Dunedin City Council* [2024] NZEnvC 83

> "When assessing the highest and best use of land-based primary production (or optimised land use) of a property, we take into account a range of considerations, these include but are not limited to: site physical analysis; economic viability; market analysis; environmental and sustainability; labour and skillset considerations and legal and regulatory compliance".

27 Other tools were used to support the productive capacity assessment, such as the Lidar imagery, drone flights and additional soil auger and land use considerations observations during the AgFirst site visit.

28 To understand the loss of productive capacity and economic cost associated with the loss of HPL, I have taken a broader approach. The LUC focuses on the biophysical capacity, not economics. For example, the LUC will tell you about the slope, soil characteristics, erosion risk, drainage and climate suitability, it does not tell us how much revenue or employment an area of land generates, or how valuable that production is to the economy.

29 Different tools (e.g. soil maps, historical imagery, land cover databases, farm performance and industry benchmarking) help quantify what is actually being produced. These allow us to connect the physical loss of HPL with changes in output, GDP contribution, export earnings and rural employment.

30 These outputs and information to identify the net change as a result of the urbanisation are used to determine the environmental, social, cultural and economic costs and benefits associated with the loss of highly productive land or land-based primary production.

31 Using these together is critical to understand the full cost of losing highly productive land, rather than a single metric of LUC classification.

32 To assist the panel and to ensure a conservative approach is undertaken, HLM was engaged again to soil map the Subject Site (Updated HLM Mapping)[9]. This site-specific soil survey was undertaken on 18 September 2025 in accordance with Milne et al., 1995, and Lynn et al., 2009[10]. This has been mapped at a scale of 1:10,000.

33 Key findings from Updated HLM Mapping include:

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9 HLM mapped the Subject site on 18 September 2025

10 Ian Lynn and others *Land Use Capability Survey Handbook – a New Zealand handbook for the classification of land* (3rd Edition, AgResearch, Lincoln, 2009).

(a) While the site is technically classified as containing 73% HPL, this overstates its practical value. Much of the mapped LUC 3 land is poorly or imperfectly drained, subject to high water tables, and prone to flooding. These constraints make it unsuitable for permanent horticultural crops and only marginally capable of supporting short-season or low-value cropping.

(b) The better-drained volcanic soils are patchy and interspersed with wetter hollows, meaning their utility is fragmented and inconsistent. Importantly, irrigation and artificial drainage would be required to unlock any horticultural potential, yet these measures involve prohibitive cost and infrastructure. Without them, the land is best suited to pastoral grazing (as identified, it is cost prohibitive for irrigation at the Subject Site).

34 Overall, while the report records a high proportion of HPL, in reality the combination of drainage, flooding and water supply limitations significantly undermines their productive capacity. The site does not present the qualities of genuinely versatile or high-value land, particularly from a horticultural or cropping perspective.

35 The Updated HLM Mapping does not change my opinion about the productive capacity of the site, which as I describe above is a product of several factors, not just LUC.

36 I have appended the revised HLM as **Appendix A**.

COMPARISON ANALYSIS OF ALTERNATIVE SITES

37 Clause 3.6(4)(b) requires consideration of "other reasonably practicable and feasible options for providing the required development capacity".

38 To compare the alternative sites, I have used the best information that has been available to me at the time. This information included the HLM report for the Subject Site and the NZLRI LUC classifications for the alternative sites. To improve the accuracy, I have also overlaid the Lidar information, which is at a 1 m resolution.

39 I believe that this is a fair and reasonable approach, and one that I have previously used for 3.6 assessments[11][12]. The alternative sites are not

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11 Plan Change 58 – Avenue Business Park (Matamata-Piako District Council).

12 Plan Change 20 – Airport Northern Precinct Extension (Waipa District Council).

owned by the applicant; therefore, access becomes an issue to survey these parcels.

40 Dr Hill has identified that the alternative location to the southeast will likely have a lower productive capacity than the Subject Site. Having reviewed some of the additional information that Dr Hill has provided, I would agree with this. However, I am not certain that it will provide the development capacity that meets the well-functioning urban environment given its location. This is outside my area of expertise and so I will leave this to be discussed further by the planning experts.

41 With regards to the Southern and Western alternative sites. Dr Hill has provided a comparative table of the alternative sites, based on the NZLRI LUC. While there is some merit in this comparison, the key metric is productive capacity.

42 Productive capacity is defined in the NPS HPL as:

> "**Productive capacity**, in relation to land, means the ability of the land to support land-based primary production over the long term, based on an assessment of:
>
> (a) physical characteristics (such as soil type, properties, and versatility); and
>
> (b) legal constraints (such as consent notices, local authority covenants, and easements); and
>
> (c) the size and shape of existing and proposed land parcels"

43 While soil type and properties are included in the physical characteristics, the LUC classification is not the entire test of the comparison of the alternative sites.

44 In my evidence and report, I have assessed the alternative sites based on their productive capacity, and their ability to support land-based primary production. Through this lens, the highest and best use of the:

(a) Subject Site is suited to pastoral grazing. The dairy infrastructure on the Subject Site is derelict, and significant capital expenses would be required to upgrade sheds, staff housing, effluent resource consents, and off-paddock standoff facilities. The neighbouring dairy farm to the south (Southern Site) does not have the infrastructure or capacity to amalgamate with the Subject Site, nor is there any off paddock infrastructure.

(b) Southern Site is a functioning dairy farm. It would also be suitable for rotational cropping, dairy support and drystock.

(c) Western Site is a mix of dairy farming (up to the Waipekakoura River), dairy support, rotational cropping and drystock farming. I also believe that with race extensions, some more of this Site could be used for dairy farming because of the large dairy operation adjoining it to the northwest. This neighbouring farm has suitable infrastructure, large effluent ponds and a feedpad.

(d) Southeastern Site is suitable for drystock. This was my conclusion within my evidence and report. However, I did identify the possibility that the western extent adjacent to a horticultural area as having some potential for horticulture. Having reviewed Dr Hills comments and more up to date s-mapping data, I agree that this is not likely.

45 In order of ranking for productive capacity, I believe that the highest productive capacity site is the Western Site, followed by the Southern Site, the Subject Site and the least productive would be the Southeastern Site.

46 However, both the Subject Site and the Southeastern Site have a similar productive capacity, which is drystock farming. The Southeastern Site does not have a flooding overlay but contains soils that have greater limitations and slope constraints.

47 I have outlined the productive capacity of the alternative sites, but the determination of where to zone land is a more complex analysis than just productive capacity. This is just one of the relevant factors. It is up to the planners and economists to determine the arguments for achieving a well-functioning environment and providing sufficient development capacity to meet the demand.

PROVIDING DEVELOPMENT CAPACITY THROUGH INTENSIFICATION

48 Dr Hill and the S42A author comment on the concept of providing development capacity through intensification. As I noted in my evidence, my assessment was to understand the productive capacity of the Subject Site and reasonable alternatives for land-based primary production for the purpose of clauses 3.6(4)(b) and (c).

49 I do not disagree with Dr Hill that zoning no greenfields land would mean no loss of productive capacity under any of the scenarios. However, the question of providing development capacity through intensification

appears to me to be a question for clause 3.6(4)(a) – whether the urban zoning is required to provide sufficient development capacity to meet expected demand for housing or business land in the district.

50 This is outside the area of my expertise, and I leave it to others to comment on.

CONCLUSION

51 The Subject Site is most suited to pastoral grazing, with significant soil, drainage, flooding, and infrastructure constraints (for example irrigation) rendering dairy or horticulture not reasonably practicable options.

52 In comparison to alternative sites, the Subject Site has lower productive capacity than the Southern and Western sites and only marginally higher than the Southeastern site, confirming its limited long-term primary production potential. Other limitations apply to that site as addressed by other experts.

53 The rezoning sought is consistent with clause 3.6 of the NPS-HPL, addressing a shortage of development capacity, ensuring the minimum extent of HPL loss, and supporting positive environmental, social, cultural, and economic outcomes.

54 On this basis, I consider the rezoning of the Subject Site for urban purposes to be both justified and appropriate.

……..

Jeremy Hunt
24 September 2025

Appendix A

Soil and Resource Report for 1828 SH10 Waipapa, Kerikeri.

Prepared By: Ian Hanmore

Prepared For: Kiwi Fresh Orange Company Ltd

23rd September 2025

Hanmore Land Management

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Disclaimer:

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1.0 INTRODUCTION

This report has been prepared at the request of the client to assess the Land Use Capability (LUC) classifications at a proposed rezoning site at State Highway 10 Waipapa, Kerikeri. The New Zealand Resource Inventory (NZLRI) maps have classified the majority of the site as LUC class 3. As such, it could potentially fall under the National Policy Statement for Highly Productive Land (NPS-HPL).

The purpose of the report is to map the site and identify any HPL as defined by the NPS-HPL. To achieve this a site visit was carried out to map the soils and land use capability units on this area and assess them in relation to the NPS-HPL.

This report presents the description of each of the soil types identified on the property as well as descriptions of each of the LUC units mapped. This information is then used to determine and quantify any highly productive land present. This information is accompanied by LUC, soil and soil classifications maps along with the relevant LUC unit and soil profile descriptions.

2.0 MAPPING METHOD

A site visit was carried out on the 18th of September 2025 to evaluate and describe the soil types and the LUC units present. The property was mapped at a scale of 1:10,000.

LUC mapping was carried out in accordance with the methods described in the 3rd Edition of the Land Use Capability Survey Handbook (Lynn et al 2009). This process involves making a land resource inventory (LRI) of the property in which soil types, soil parent materials, land slopes, erosion type and severity and land cover are recorded. Whenever any of these land features changes a new unit is made.

Specific field work activities include digging and describing soil profiles on each landform with supporting holes dug or profiles observed on bank/drain cuttings to establishing soil boundaries, measuring slopes with a clinometer, and gathering any other data that may be of assistance in assessing the suitability of the land for primary production such as erosion, susceptibility of the land to flooding, winter wetness and/or cold, high temperatures, exposure to salt winds, aspect, and accessibility. This information is then used to determine the specific LUC units, as described in the Land Use Capability Classifications of the Northland Region (Harmsworth, 1996) for the area. At times when mapping at a scale finer than Harmsworth (1996) of 1:50,000, new LUC units are recorded and are noted with an * in the LUC description table.

3.0 SITE DESCRIPTION

The site is located south of Waipapa on the eastern side of SH10 as shown in figure 1 below. The site covers approximately 199ha and is held in two legal titles. The site is mostly flat to undulating with some rolling to moderately steep hill slopes at the eastern end of the site. It is formed on an alluvial flood plain bordering SH10 with old basalt lava flow extending east across the rest of the site. Soils are a combination of poorly drained alluvial clay and peat soils to the west and well to poorly drained friable volcanic clays over the rest of the site. At the time of the site visit the site was being used to graze beef cattle and raise calves. The site includes all milking sheds, farm storage buildings and a number of residential dwellings.

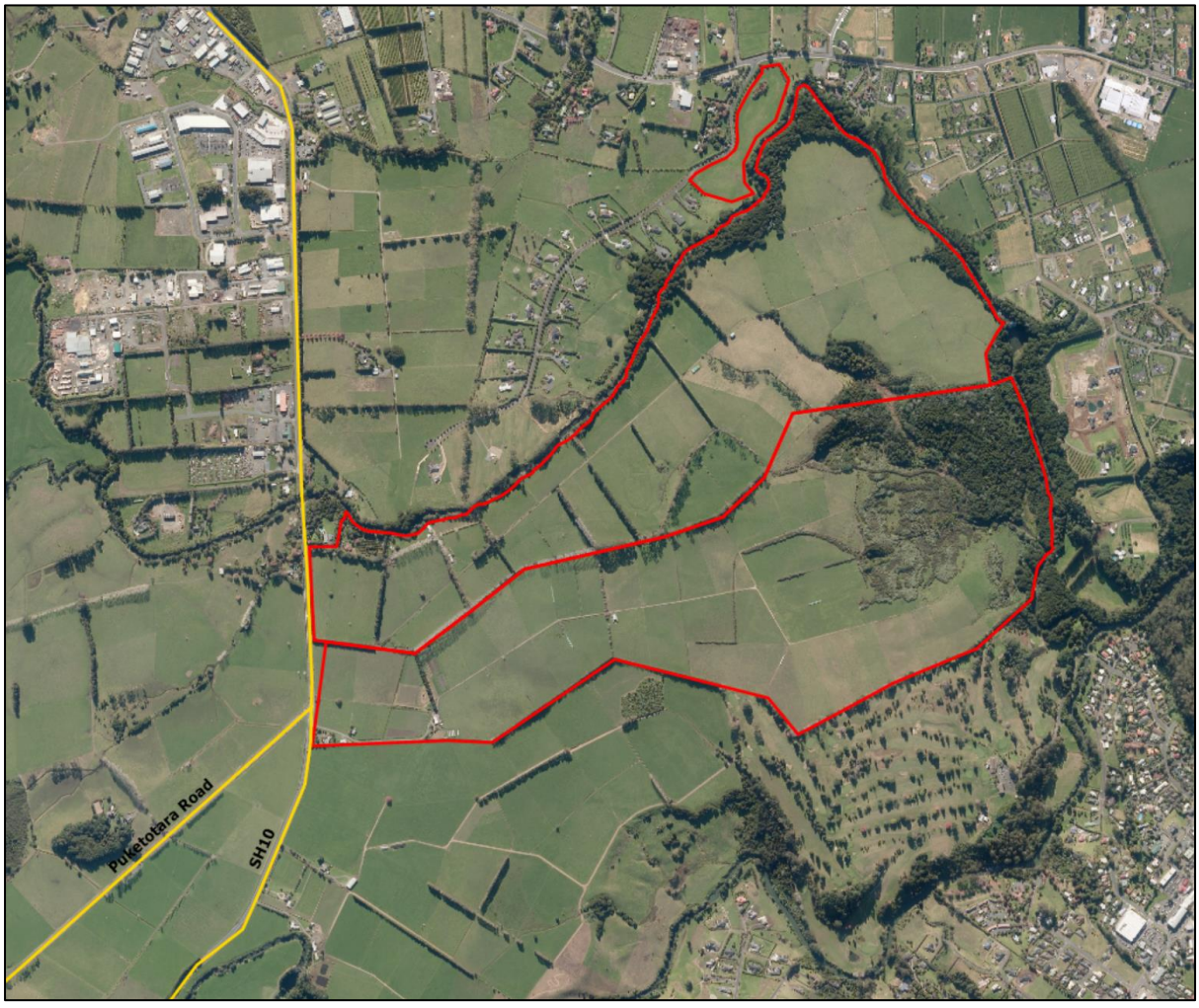


Figure 1. The site surveyed for this report shown outlined in red, with SH10 running north to south and Puketotara Road coming from the southwest.

3.1 Soil Profiles and Descriptions

The soils identified at the site are described in the table below with their distribution shown in the soil map in Section 7. Soil identification has been made using the Northland Soil Legend.

Soil Profile	Soil Profile Description
	**Soil Name:** Waipapa clay (YF) **Soil classification:** Gleyed soils from the Waipapa suite. **Parent material:** Terrace alluvium mainly from basaltic rocks. **Soil description:** 0-220mm: Friable, strongly developed, 2-5mm nut, sticky, plastic, very dark grey (10yr 3/1) clay 220-500mm: Massive deforms under pressure, sticky, plastic , greyish brown (10yr 5/2) clay with 20% yellowish brown (10yr 5/8) mottling. 500mm: Water table **Overall drainage:** Poorly drained
	**Soil Name:** Otaha gravelly clay loam (ODg) **Soil classification:** Strongly to very strongly leached brown loams **Parent material:** Basalt flows and ash from the Kiripaka suite **Soil description:** 0-150mm: Friable, moderately to strongly developed, 1-3mm nut, slightly sticky, slightly plastic, very dark grey (10yr 3/1) clay loam. 150-800mm: Friable, moderately developed, 1-2mm nut, sticky, plastic, very dark grey (10yr 3/1) to grey (2.5y 5/1) gravelly clay. **Overall drainage:** Poorly to imperfectly drained

	**Soil Name:** Otaha clay (OD) **Soil classification:** Strongly to very strongly leached brown loams **Parent material:** Basalt flows and ash from the Kiripaka suite **Soil description:** 0-200mm: Friable, moderately to strongly developed, 1-3mm nut, slightly sticky, slightly plastic, very dark grey (10yr 3/1) clay loam. 200-800mm: Friable, moderately developed, 1-2mm nut, sticky, plastic, very dark grey (10yr 3/1) to grey (2.5y 5/1) clay. **Overall drainage:** Poorly to imperfectly drained
	**Soil name:** Pungaere gravelly friable clay (PG) **Soil classification**: Rolling hill soils that are moderately to strongly leached brown loams and well, to moderately well drained. **Parent material:** Basalt flows and ash from the Kiripaka suite. **Soil description:** 0-140mm: Friable, strongly developed, 2-5mm nut, sticky, plastic, dark brown (10yr 3/3) clay to clay loam 140-800mm: Friable, moderately developed, 1-3mm nut, sticky, plastic, strong brown (7.5yr 4/6 to 7.5yr 5/8) clay. **Overall drainage:** Well drained.

	**Soil Name:** Kamo peaty silt loam (KOy) **Soil classification:** Gleyed soils from the Waipapa suite. **Parent material:** Terrace alluvium mainly from basaltic rocks. **Soil description:** 0-170mm: Friable, moderately developed, 1-3mm nut, non-sticky, slightly plastic, very dark grey (10yr 3/1) peaty silt loam 230-700mm: Very friable, moderately developed, 2-4mm crumb, slightly sticky, non-plastic, very dark brown (5Yr 2.5/2) silt loam. Water table varies from 300-500mm with peat content also varying. **Overall drainage:** Poorly drained.
	**Soil Name:** Okaihau gravelly friable clay (OK) **Soil classification:** Strongly to very strongly leached brown loams **Parent material:** Basalt flows and ash from the Kiripaka suite **Soil description:** 0-180mm: Friable, moderately to strongly developed, 1-3mm nut, slightly sticky, slightly plastic, very dark brown (10yr 2/2) silt loam. 180-750mm: Very friable, moderately developed, 1-2mm nut, sticky, plastic, dark yellowish brown (10yr 3/4) gravelly clay. 750mm: Weathered basalt **Overall drainage:** Well drained

3.2 Land Use Capability Descriptions

LUC classifications categorize land into eight classes according to its long-term capability to sustain one or more productive uses.

- Classes 1-4 have arable potential with limitations to this land use moving from class one being the most versatile, multi-use land with minimal physical limitations for arable use and increasing to severe limitations under class four land. These classes are also suitable to viticulture, berry production, pastoralism, tree crops and production forestry.
- Classes 5-7 are suitable for pastoral farming and production forestry.
- Class 8 land has no productive use and is rather managed for catchment protection and conservation purposes.

The LUC units mapped on the proposed site are presented in the table below. An LUC map showing the distribution of the mapped units is contained in Section 7.

Resource information	Luc unit	Total area (ha)	Parent material	Dominant soil type	Slope (degree)	Land Cover	Erosion degree & severity		Landuse suitability	Stock carrying capacity (su/ha) Forestry site index (FSI)
							Actual	Potential		
3e 1 Undulating to rolling slopes on young basaltic lava flows, basaltic scoria, and ash.		See areas in the table in section 4.2	Basaltic lavas, basaltic scoria older ashes or tephras	Brown and red loams	4-15^{0}	Pasture	Nil	Slight sheet, rill, and gully. Moderate rill, sheet, wind, and gully when cultivated.	Horticulture. Root and green fodder crops. Viticulture. Intensive grazing Forestry	Average: 21 Top: 26 Potential:30 With irrigation FSI: 30-33 **Revised** Average: 18 Top: 20 Potential:22 No irrigation
3w 2 Poorly drained flat areas within floodplains, valley plains on low terraces with gley, fertile soils developed on sedimentary and volcanic alluvium			Fine alluvium	Gley soils on estuarine clays, sands, and alluvium	0-3º	Pasture	Nil	Slight streambank and deposition	Horticulture Vegetables Intensive Grazing Forestry	Average: 17 Top: 20 Potential:24 FSI: 18-21 **Revised** Average: 15 Top: 20 Potential:22

Resource information	Luc unit	Total area (ha)	Parent material	Dominant soil type	Slope (degree)	Land Cover	Erosion degree & severity		Landuse suitability	Stock carrying capacity (su/ha) Forestry site index (FSI)
							Actual	Potential		
3s 2 Flat to undulating slopes on deeply weathered basalt rocks and occasional ash.		See areas in the table in section 4.2	Lavas and scoria, older ashes or tephras	Brown and red loams.	0-7^{0}	Pasture	Nil	Slight wind, sheet and rill when cultivated.	Horticulture. Root and green fodder crops. Intensive grazing Forestry	Average: 13 Top: 15 Potential:18 FSI: 33-36
4e 2 Rolling to strong rolling slopes on young basaltic rock and ash. Soils subject to moisture deficiencies.			Basaltic lava.	Brown and red loams.	8-20º	Pasture	Nil	Slight to moderate sheet, soil slip, rill, gully, and wind. Moderate to severe sheet, rill, wind, and gully when cultivated.	Root green fodder crops. Horticulture. Intensive grazing. Forestry	Average: 17 Top: 20 Potential:24 FSI:28-30 **Revised** Average: 13 Top: 15 Potential:18
4w 1 Flat to undulating areas on floodplains, valley plains and low terraces with severe continuing wetness or flooding limitation.			Fine alluvium.	Recent soils on sedimentary and volcanic alluvium.	0-7^{0}	Pasture, rushes	Nil.	Moderate streambank and deposition.	Intensive grazing Root and green fodder crops. Forestry	Average: 17 Top: 20 Potential:24 FSI: 20-23 **Revised** Average: 13 Top: 15 Potential:18
4s 2 Flat to undulating slopes on old deeply weathered basalt rock with low fertility and areas of poor drainage			Lavas and scoria	Strongly to very strongly leached brown loams	0-7^{0}	Pasture, rushes	Nil	Slight to moderate rill and sheet when cultivated.	Pasture Root and green fodder crops. Horticulture Forestry	Average: 13 Top: 15 Potential:18 FSI: 26-28

Resource information	Luc unit	Total area (ha)	Parent material	Dominant soil type	Slope (degree)	Land Cover	Erosion degree & severity		Landuse suitability	Stock carrying capacity (su/ha) Forestry site index (FSI)
							Actual	Potential		
6e 4 Strong rolling to steep slopes on basalt flows and basaltic scoria.		See areas in the table in section 4.2	Lava, scoria	Brown and red loam hill soils	16-25º	Pasture, scrub	Slight sheet	Slight to moderate soil slip and sheet. Slight gully	Semi intensive to intensive grazing Forestry	Average: 13 Top: 15 Potential: 18 FSI: 27-30 **Revised** Average: 8 Top: 10 Potential:12
6w 6* Flat to undulating valley bottoms, often containing wet muddy material which cannot be classed as soil. Boggy during most of the year and subject to periodic flooding.			Organic material and alluvium	Swampy material not yet classed as soil	0-7^{0}	Wetland plants	Nil	Susceptible to severe gully erosion if drains are constructed on steep grades	Retirement	Data not available

Land use capability unit descriptions are taken from the author's field work, and the Land use capability classification of the Northland region (Harmsworth, 1996).

Revised stock carry capacities are taken from a review of Harmsworth (1996) stock carry capacities by Bob Cathcart in 2017

4.0 SOIL CLASSIFICATION

4.1 Highly Productive Land

The NPS-HPL came into effect on 17th October 2022 and was updated in August 2024 with the amendments taking effect from 14th September 2024. This policy seeks to protect highly productive land for use in land-based primary production, both now and for future generations. The policy statement defines highly productive land as land that has been mapped in accordance with clause 3.4 of the NPS-HPL and is included in an operative regional policy statement as required by clause 3.5. There is an interim regime for identifying highly productive land prior to a regional policy statement containing maps of highly productive land in the region is operative. Under clause 3.5(7) of the NPS-HPL, highly productive land in the interim period includes land that is: (i) zoned general rural or rural production; and (ii) LUC 1, 2, or 3 land; but is not: (i) identified for future urban development; or (ii) subject to a Council initiated, or an adopted, notified plan change to rezone it from general rural or rural production to urban or rural lifestyle.

The following definition of LUC 1, 2, or 3 land is taken from section 1.3, page 4 of the NPS-HPL:

> *LUC 1, 2, or 3 land means land identified as Land Use Capability Class 1, 2, or 3, as mapped by the New Zealand Land Resource Inventory or by any more detailed mapping that uses the Land Use Capability classification.*

A recent Environment Court ruling (Blue Glass Limited vs Dunedin City Council) concluded that during the interim period the mapping by the NZLRI is the means by which LUC classes 1-3 are defined and more detailed mapping carried out since the NPS-HPL came into effect cannot be used to redefine those classifications.

4.2 Site Classifications

The table below shows the LUC area breakdown for the proposed site as well as the percentage of highly productive land.

LUC Unit	Area (ha)	HPL Classification	% of total Area
3e 1	9.4	HPL	4.7
3w 2	22.9	HPL	11.5
3w 2+4w 1	8.8	HPL	4.4
3s 2	104.4	HPL	52.6
4e 2	0.8	Not HPL	0.4
4w 1	2.6	Not HPL	1.3
4s 2	5.7	Not HPL	2.9
6e 4	7.9	Not HPL	4.0
6w 6*	0.5	Not HPL	0.3
Unproductive	35.5	Not HPL	17.9
Total area	**198.5**		
Area HPL	**145.5**	**Total % HPL**	**73.2**
Total area non-HPL	**53.0**	**Total % non-HPL**	**26.8**

4.3 NZLRI Mapping

The NZLRI is based on an LUC assessment of the whole of New Zealand and has been carried out at a scale of 1:50,000. It is intended for regional use and planning and is not meant to be used at a farm scale. The 3rd Edition of The Land Use Capability Survey Handbook (Lynn et al 2009) cautions against enlarging LUC data beyond the scale at which it was gathered as it can produce unreliable and misleading results and at time results that are nonsense.
At a scale of 1:50,000, on average one mapping observation is made every 25ha but could be a little as one every 100ha (Hewitt and Lilburne 2003, Grealish 2019). As such, it is likely that very little data has been gathered from the site. For the purpose of this report, with a site covering 199ha the appropriate scale of mapping is 1:10,000 or approximately one observation per hectare (Lynn et al 2009).

Using the NZLRI for site specific information is outside of its intended purpose and outside of its parameters of reliability. At best it can only provide an indication of the possible LUC units present. The correct process for mapping soil types and LUC at a site of this size is to carry out a site survey at the correct scale by a suitably qualified person as has been done for this report. The LUC units mapped at the site by the NZLRI are shown in Figure 2 below.

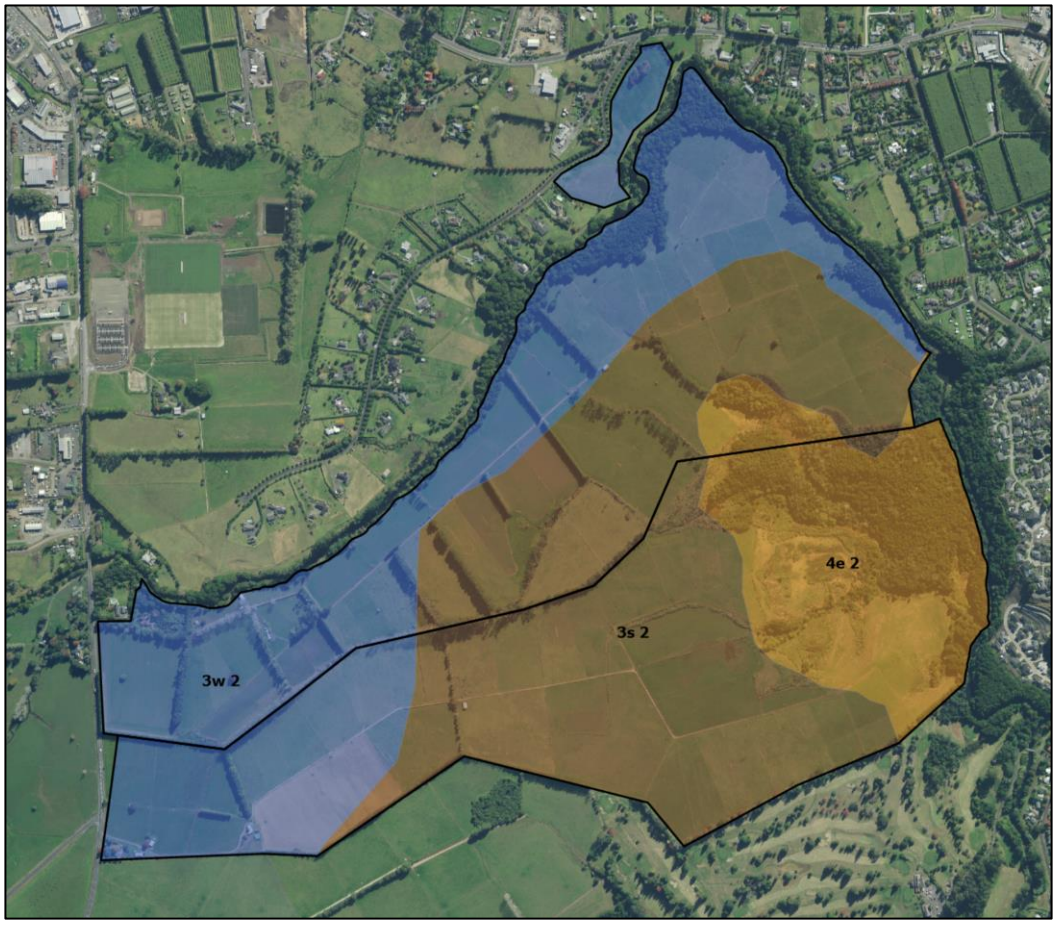


Figure 2. LUC classification of the site mapped by the NZLRI.

4.4 Reclassified LUC Units

Due to the coarseness of the NZLRI mapping farm scale changes in physical features such as soil type, soil drainage and slope as well as site development are not identified. The detailed survey carried out for this report has identified the changes in these physical features at the site. This more detailed information has resulted in the reclassification of the LUC units mapped by the NZLRI and the addition of unproductive areas. The LUC units are described in the LUC table in Section 3.2 with their distribution shown the LUC map in Section 7. Discussion of the reclassified units is included below.

The NZLRI has mapped LUC unit 3w 2 and it associated Waipapa clay soil much more extensively than it is. This unit is mostly confined to the western end of the site with only a narrow band adjacent to the river extending around the northern and eastern boundary of the site. This narrow band has not been shown in this report as it forms the treed riparian zone and is classified as unproductive.

The site survey also identified peat soils within the area of 3w 2 which have been classified as 3w2+4w 1 and 4w 1. The class 4 unit has been included as there is a greater wetness limitation in those areas with water tables within 300-400mm of the soil surface.

The area mapped by the NZLRI as 3s 2 with Okaihau gravelly friable clay soil has largely been kept, though the soil type has been corrected to include Otaha clay, Otaha gravelly clay and Pungaere gravelly friable clay. There are a number of areas identified within the 3s 2 classification that have poorer drainage associated with soil characteristics and potentially shallow sheet basalt. These areas have been classified as 4s 2. A number of small areas with slightly increased slope classes were also identified and mapped as LUC unit 3e 1.

The area mapped by the NZLRI as LUC unit 4e 2 with Kerikeri friable clay with large boulders has been retained with the addition of 3e 1 and 6e 4 units which reflect the different slope classes at the site.

Areas at the site mapped as unproductive include the residential dwellings, associated buildings and gardens, site accessway and treed riparian zones. These areas cannot be used productively and as such have not been given an LUC classification.

5.0 SITE ASSESSMENT

5.1 Highly Productive Land

An assessment of the site has been made based on the definition of HPL under the NPS-HPL. It is acknowledged that for technical purposes based on the Blue Grass ruling referred to in Section 4.1 of this report that the majority of the site is classified as HPL. However, for the

reasons outlined in Section 4.3 of this report the findings of this report are relevant to the productive use of the site and its potential use in a highly productive capacity.

5.2 Productivity Assessment

Highly productive land covers 73.2% or 145.5ha at the site spread over its two legal titles. The HPL includes three LUC class 3 units, 3s 2, 3e 1 and 3w 2. The former two units include volcanic soils that vary in drainage from well drained to impeded drainage while the later unit includes alluvial soil that is poorly drained. The LUC descriptions (Harmsworth 1996) include grazing, horticulture and forestry as a land use options for all three LUC units as well as root and green fodder crops, cereals and vegetables for unit 3w 2 and root and green fodder crops for unit 3s 2.

Due to the poor drainage of the 3w 2 soils these areas would not be suitable for crops such as kiwifruit or avocados. It is more suited to annual crops and vegetables that can be grown in a shorter growing season once soils have dried sufficiently in spring to allow for cultivation and before soils become too wet for crop harvest and pasture establishment prior to winter.

Drainage across the areas mapped as 3s 2 and 3e 1 is variable with some areas being well drained while others have impeded drainage. They are suitable for horticulture but would need a more detailed soil survey to determine specific areas for crops requiring deep, well drained soils and areas that require drainage. In his LUC unit descriptions Harmsworth (1996) notes that irrigation is needed for these units under horticulture.

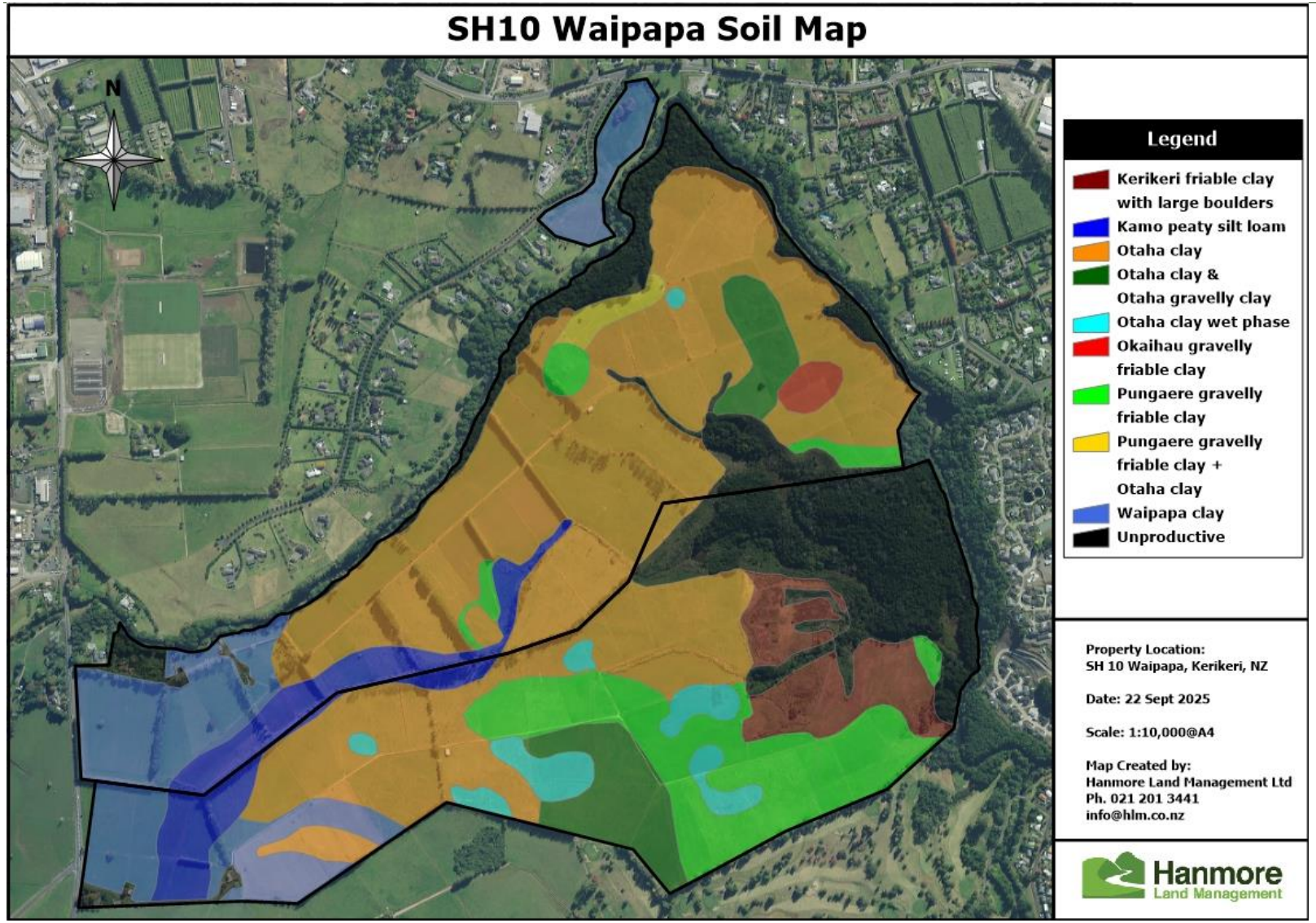
The wettest areas at the site within the volcanic soils are found in low-lying depressions and hollows which have poor drainage and high water tables due to the soil characteristics. These areas have been mapped a 4s 2 and have severe limitations to arable use. These areas are large enough that they could be avoided, if necessary, during cropping.

The area mapped as 3w 2+4w 1 includes poorly drained peat soils. This area is dominated by the 3w 2 unit but has small areas of low-lying peat that has poor drainage and high water tables. These factors along with its proximity to the waterway mean that the practical use of this area for horticulture is limited.

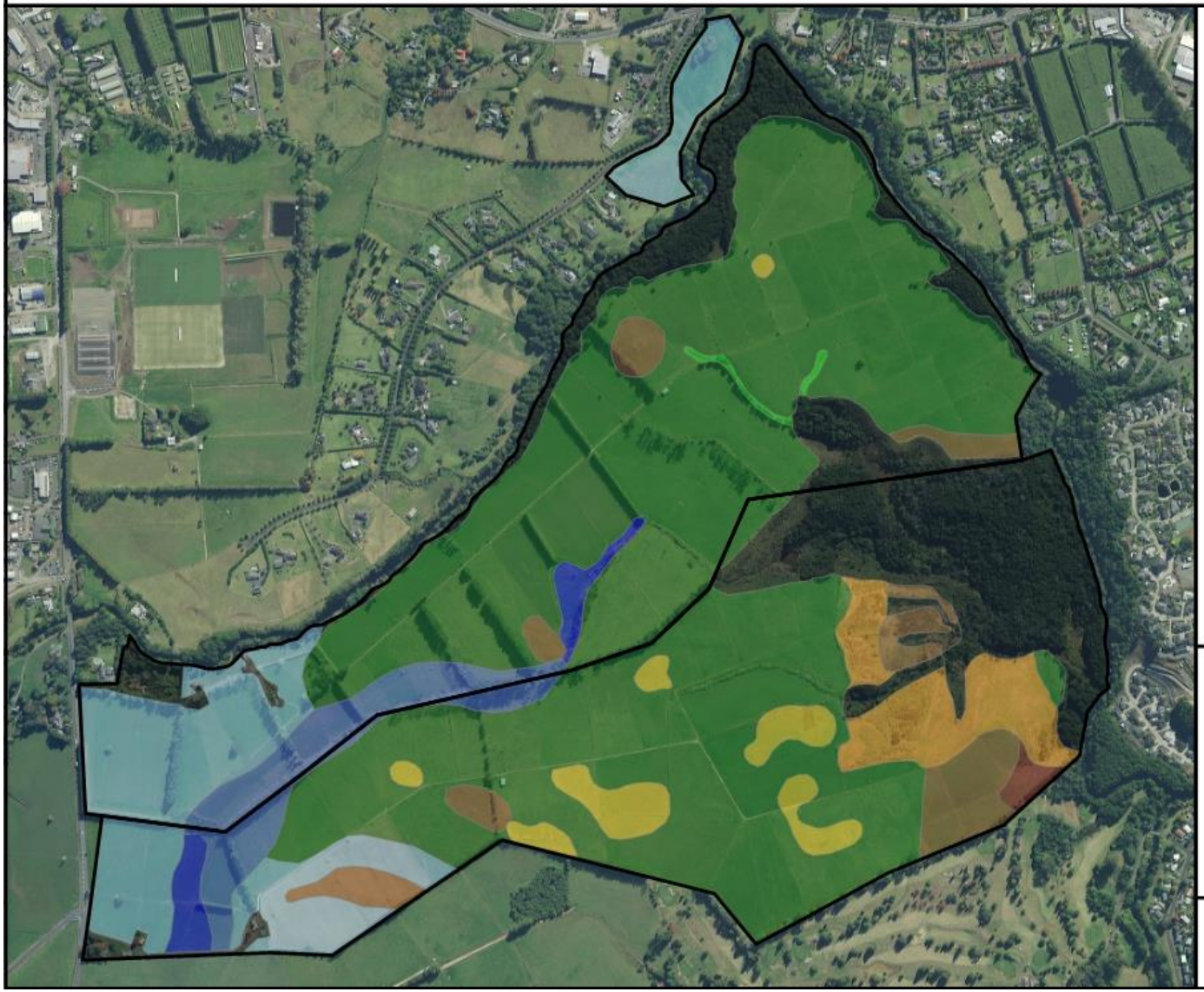
6.0 CONCLUSIONS

- Under the interim NPS-HPL definition the site is largely classified as HPL.
- Based on the site survey 73.2% or 145.5ha of the combined legal titles at the site is classified as HPL.
- The site is suitable for cropping, horticulture, grazing and forestry.
- Irrigation is required to fulfil the horticultural potential of the site.

7.0 MAPS


SH10 Waipapa Soil Map
N
Legend
Kerikeri friable clay with large boulders
Kamo peaty silt loam
Otaha clay
Otaha clay & Otaha gravelly clay
Otaha clay wet phase
Okaihau gravelly friable clay
Pungaere gravelly friable clay
Pungaere gravelly friable clay + Otaha clay
Waipapa clay
Unproductive
Property Location:
SH 10 Waipapa, Kerikeri, NZ
Date: 22 Sept 2025
Scale: 1:10,000@A4
Map Created by:
Hanmore Land Management Ltd
Ph. 021 201 3441
info@hlm.co.nz
Hanmore
Land Management

SH10 Waipapa Land Use Capability Classifications



N

Legend

- 3e 1
- 3s 2
- 3w 2
- 3w 2+4w 1
- 4e 2
- 4s 2
- 4w 1
- 6e 4
- 6w 6*
- Unproductive

Property Location:
SH 10 Waipapa, Kerikeri, NZ

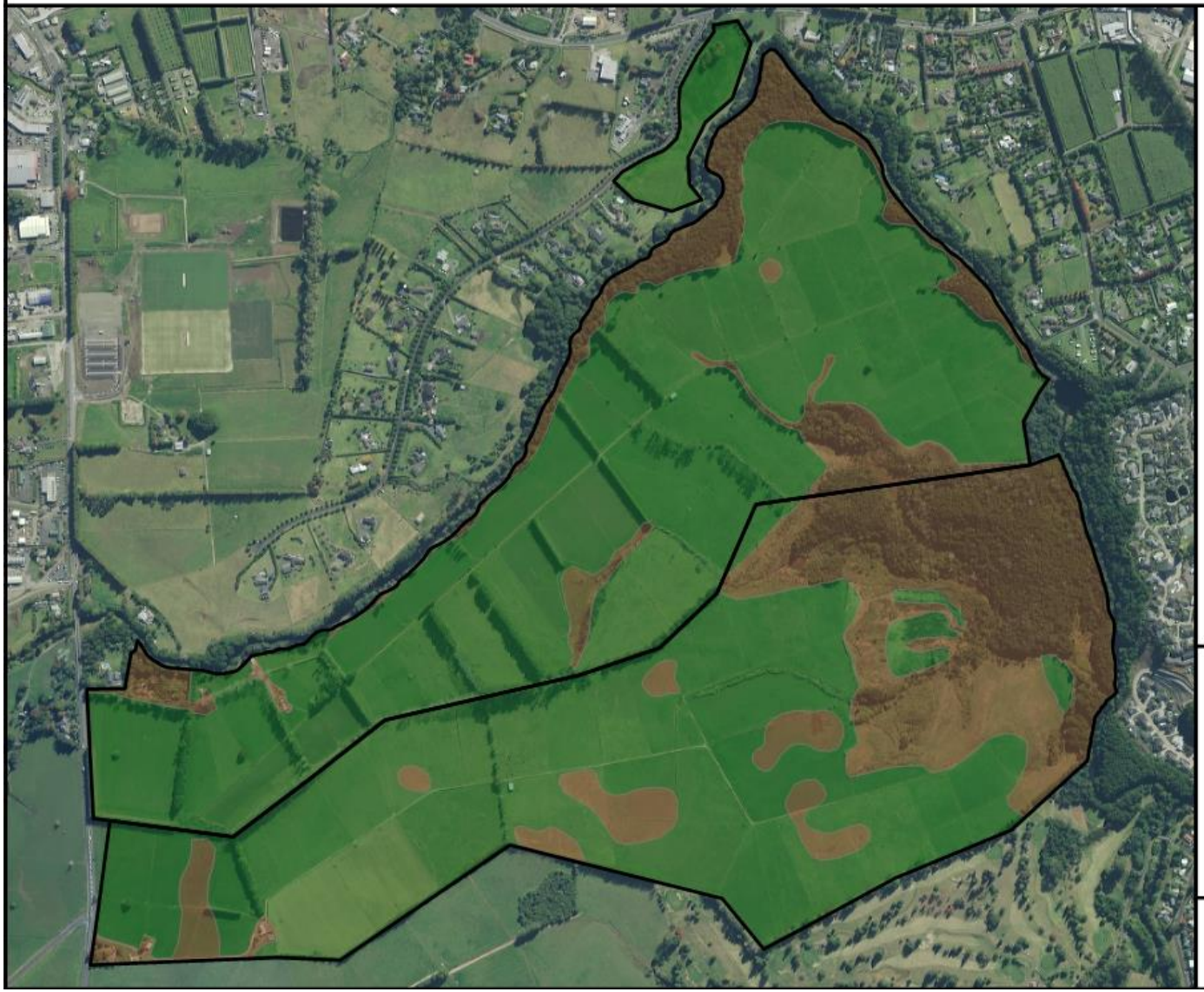
Date: 22 Sept 2025

Scale: 1:10,000@A4

Map Created by:
Hanmore Land Management Ltd
Ph. 021 201 3441
info@hlm.co.nz

Hanmore Land Management

SH10 Waipapa Highly Productive Land Classifications



N

Legend

- Not highly productive land
- Highly productive land

Property Location:
SH 10 Waipapa, Kerikeri, NZ

Date: 22 Sept 2025

Scale: 1:10,000@A4

Map Created by:
Hanmore Land Management Ltd
Ph. 021 201 3441
info@hlm.co.nz

Hanmore Land Management

8.0 REFERENCES

[2024] NZEnvC 083 Blue Glass Limited v Dunedin City Council

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Lynn IH, Manderson AK, Page MJ, Harmsworth GR, Eyles GO, Douglas GB, Mackay AD, Newsome PJF 2009. NZ Land Use Capability Survey Handbook – a New Zealand handbook for the classification of land 3rd Edition. Hamilton, AgResearch; Lincoln, Landcare Research; Lower Hutt, GNS Science.

Hanmore
Land Management

P. 021 201 3441 E. ian@hlm.co.nz

hanmorelandmanagement.co.nz