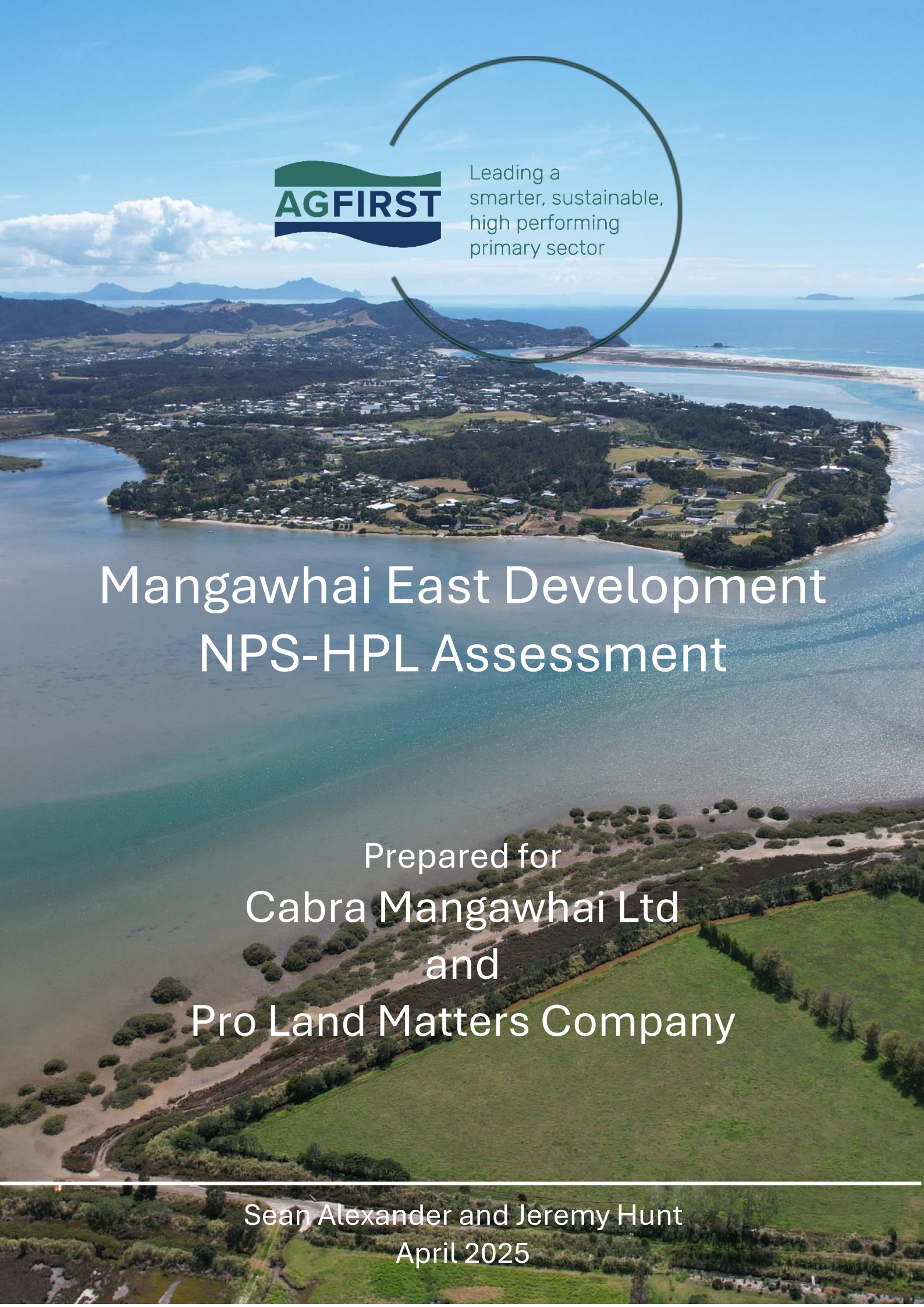

Mangawhai East Development NPS-HPL Assessment

Prepared for

Cabra Mangawhai Ltd

and

Pro Land Matters Company

Sean Alexander and Jeremy Hunt

April 2025

DOCUMENT QUALITY ASSURANCE

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Status:	Final	
Date:	17 April 2025	

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1.0 EXECUTIVE SUMMARY

Cabra Mangawhai Limited and Pro Land Matters Company Limited (**The Applicant**) is seeking a Plan Change (**PPC**) for an area of land to the southeast of Mangawhai Village on the southern side of Mangawhai Harbour with the land bordering Black Swamp Road and Raymond Bull Road. The PPC area encompasses approximately 94 hectares with multiple landowners.

The land is currently zoned Rural under the Operative Kaipara District Plan 2013.

As part of the PPC, the applicant wishes to rezone four properties, with a combined area of 14.92 ha to Rural Lifestyle Zone (**Subject Site**) as has been indicated in the Mangawhai Spatial Plan December 2020.

The Plan Change also seeks to rezone land identified as Highly Productive Land for urban land uses utilising the Clause 3.6 pathway.

AgFirst Waikato (2016) Ltd has assessed the PPC Site against the National Policy Statement – Highly Productive Land (**NPS-HPL**). This relates to an assessment of the Subject Site against the circumstances in which the rezoning may be undertaken as set out in the NPS-HPL.

The properties consist of three small residential lifestyle blocks between 0.72 – 2.53 ha, with a larger lifestyle block that is 10.6 ha. The larger property is utilised as a brewery with struggling viticulture orchard, while the other lifestyle blocks are limited to what appears to be an existing dwelling, curtilage and some lifestyle orchards. Also included in the Subject Site is a large coastal salt marsh area (marshland) that is subject to a protective covenant.

AgFirst has undertaken a productive and economic analysis of the area of the Subject Site which is suitable for land-based primary production using industry values and figures against the specific property liabilities. The analysis shows that the highest and best use for the Subject Site, given its permanent and long-term constraints and limitations, is a livestock grazing operation. However, the financial return based on a highest and best land use shows a significant deficit, with projected net losses for every individual property, regardless of them being amalgamated to generate better economies of scale. These substantial deficits indicate that the long-term viability of these operations is unsustainable and would not be viable today nor in 30 years.

Significant constraints for land-based primary production have been identified which affect the Subject Site, including:

- Non-reversable land fragmentation. Adjoining the Subject Site:
  - to the south is the Riverside Holiday Park
  - to the west is the Mangawhai harbour
  - to the north is a stream/drain flowing into the Mangawhai harbour
  - to the east is a large number of highly fragmented lifestyle blocks
- Soil conditions
  - Very poorly and poorly drained soils, causing reduced yields and limited carrying capacity.
  - Land unsuitable for alternative higher value land-based primary production.
  - Areas of high salinity from coastal inundation restricting pasture and crop establishment and yields.

- Limited expansion or improvement options
    - » Due to physical boundaries and lack of amalgamation opportunities.
- An indicative budget across the entire Subject Site under pastoral grazing and arable land use, using industry information shows this is not economically viable with a revised net individual property loss of between -$13,055 and -$34,371 or a Subject Site cumulative loss of -$80,906.
- The land has been valued not on the land-based primary production or quality of the soil and land, but the location of the property. This block will not be purchased for the purpose of land-based primary production nor will it ever be used as a commercial farming enterprise with the purpose of making a profit solely off the land.

Therefore, it is AgFirst's opinion that the proposal satisfies the exemption under clause 3.10 of the NPS-HPL which is understood to mean that the proposed development is not constrained by the NPS-HPL.

2.0 BACKGROUND AND PROPERTY DESCRIPTION

Cabra Mangawhai Limited and Pro Land Matters Company Limited (**The Applicant**) is seeking a Proposed Plan Change (**PPC**) for an area of land to the southeast of Mangawhai Village on the southern side of Mangawhai Harbour with the land bordering Black Swamp Road and Raymond Bull Road. The PPC area encompasses approximately 94 hectares with multiple landowners. This is located within the Rural Zone under the Kaipara District Council. The PPC location in relation to other land use zones and the Mangawhai township is presented in Figure 1.

The PPC request seeks to re-zone 94 hectares (approx.) of rural zoned land, within the Mangawhai Harbour overlay to a mix of residential and commercial zoned land:

(i) Rural Lifestyle zone
(ii) Large Lot Residential zone
(iii) Low Density Residential zone
(iv) Medium Density Residential zone
(v) Neighbourhood Centre zone
(vi) Mixed Use zone.

The purpose of the PPC is to:

- provide additional urban zoned land as a natural extension of Mangawhai Village, for residential and supporting business activities, and open up access to the eastern side of the harbour
- support the growth of Mangawhai and ensure that there is sufficient land supply to provide choices and maintain affordability.
- provide a coordinated and efficient use of the land resource for the Mangawhai East area where there are urban activities and extensive rural residential living activities establishing in an ad hoc manner.

Presented in Figure 2 is the proposed plan of the PPC area.

As part of the PPC, the applicant wishes to rezone four of the properties, with a combined area of 14.92 ha into Rural Lifestyle Zone (**Subject Site**). This is reflected in the application of the rural lifestyle zone within the area of coastal inundation adjacent to the Mangawhai Harbour edge. Clause 3.6 of the NPS-HPL only allows for urban rezoning. Therefore, as Clause 3.7 identifies, areas for rural lifestyle rezoning will need to be assessed against Clause 3.10. The land that is proposed to be rezoned urban (ii) – (vi) above will be covered by a separate assessment against Clause 3.6.

The soils mapped at the Subject Site are classified under the NZLRI as Land Use Classification (**LUC**) 3w14. Land that is zoned rural and LUC 1-3 qualifies as Highly Productive Land (**HPL**) and is subject to the National Policy Statement for Highly Productive Land (**NPS-HPL**).

AgFirst Waikato (2016) Ltd (**AgFirst**) has been engaged by the applicant to provide an assessment of the portion of the Subject Site that is proposed to be zoned Rural Lifestyle against the NPS-HPL. This relates to an assessment on whether it is considered the meets the exemptions set out in Section 3.10 of the NPS-HPL so that there is a pathway for rezoning the land as provided for under Clause 3.7 of the NPS.

AgFirst is a suitably qualified agribusiness consultancy that has a wealth of experience in assessments relating to productive capacity, primary production, economic analysis, soil versatility and assessments against the NPS-HPL. AgFirst visited the property on the 14th of March 2025 to undertake this assessment.

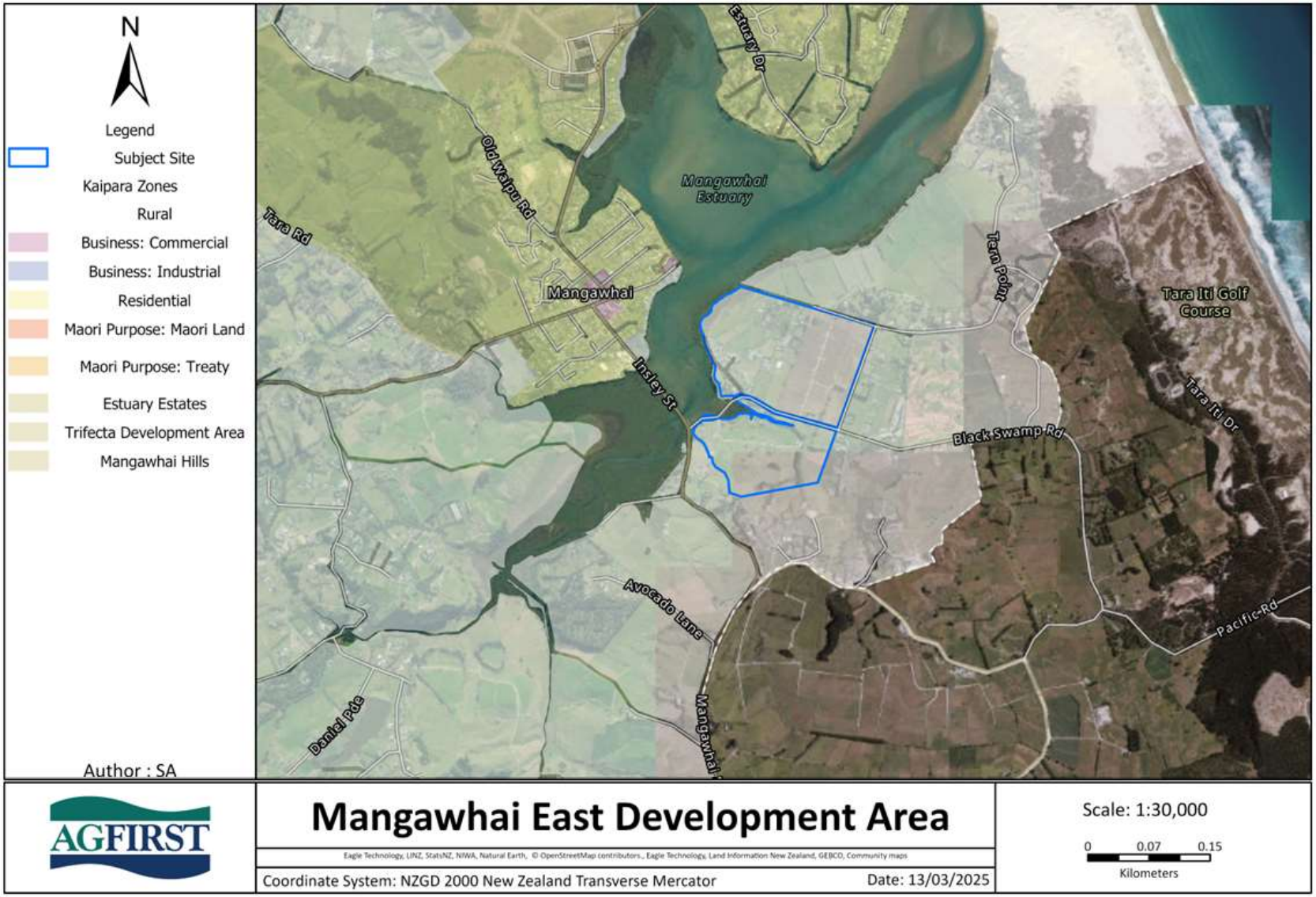


Figure 1: PPC area and District Planning Zones

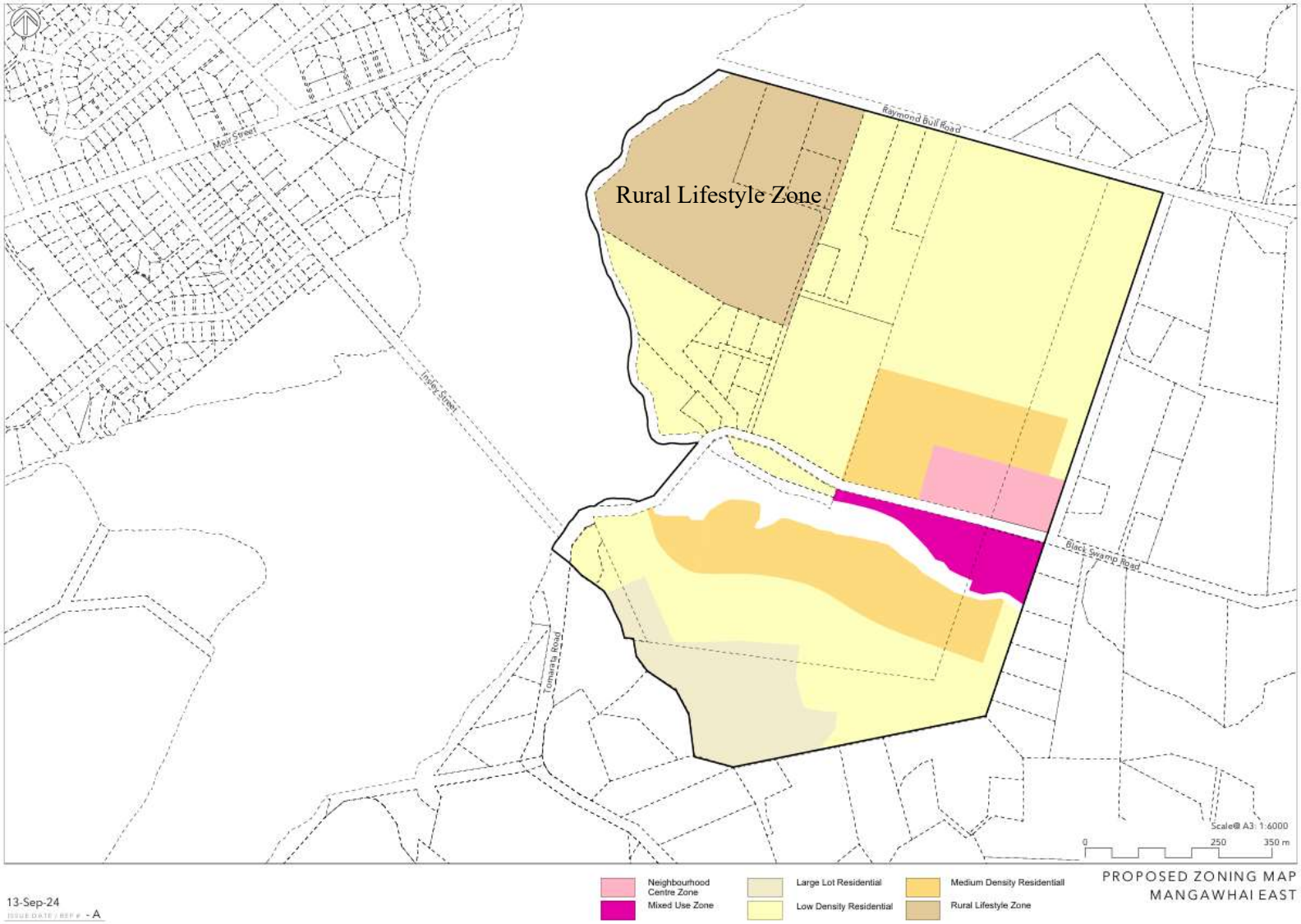


Figure 2: Proposed Plan of the PPC area

2.1 Site Description

The Subject Site consists of four rural zoned properties, with a combined area of 14.92 ha. The properties consist of three small residential lifestyle blocks between 0.72 – 2.53 ha, with a larger lifestyle block that is 10.6 ha. These details are summarised in Table 1. The location of these individual titles in relation to the PPC area is shown in Figure 3.

The Subject Site is located across the harbour from Mangawhai township. Adjoining the Subject Site to the south is the River Site Holiday Park, to the west is the Mangawhai harbour, to the north is a stream/drain flowing into the Mangawhai harbour and to the east is a large number of highly fragmented lifestyle blocks. All of this surrounding area is zoned Rural.

Table 1. Description of Parcels within 3.10 Site

Zone	Map #	Parcel / Lot	Area (ha)
GRZ	15	Lot 2 Deposited Plan 545009	0.72
	16	Lot 1 Deposited Plan 545009	1.03
	21	Lot 3 Deposited Plan 545009	2.53
	26	Lot 8 Deposited Plan 565865	10.64
	Total		14.92

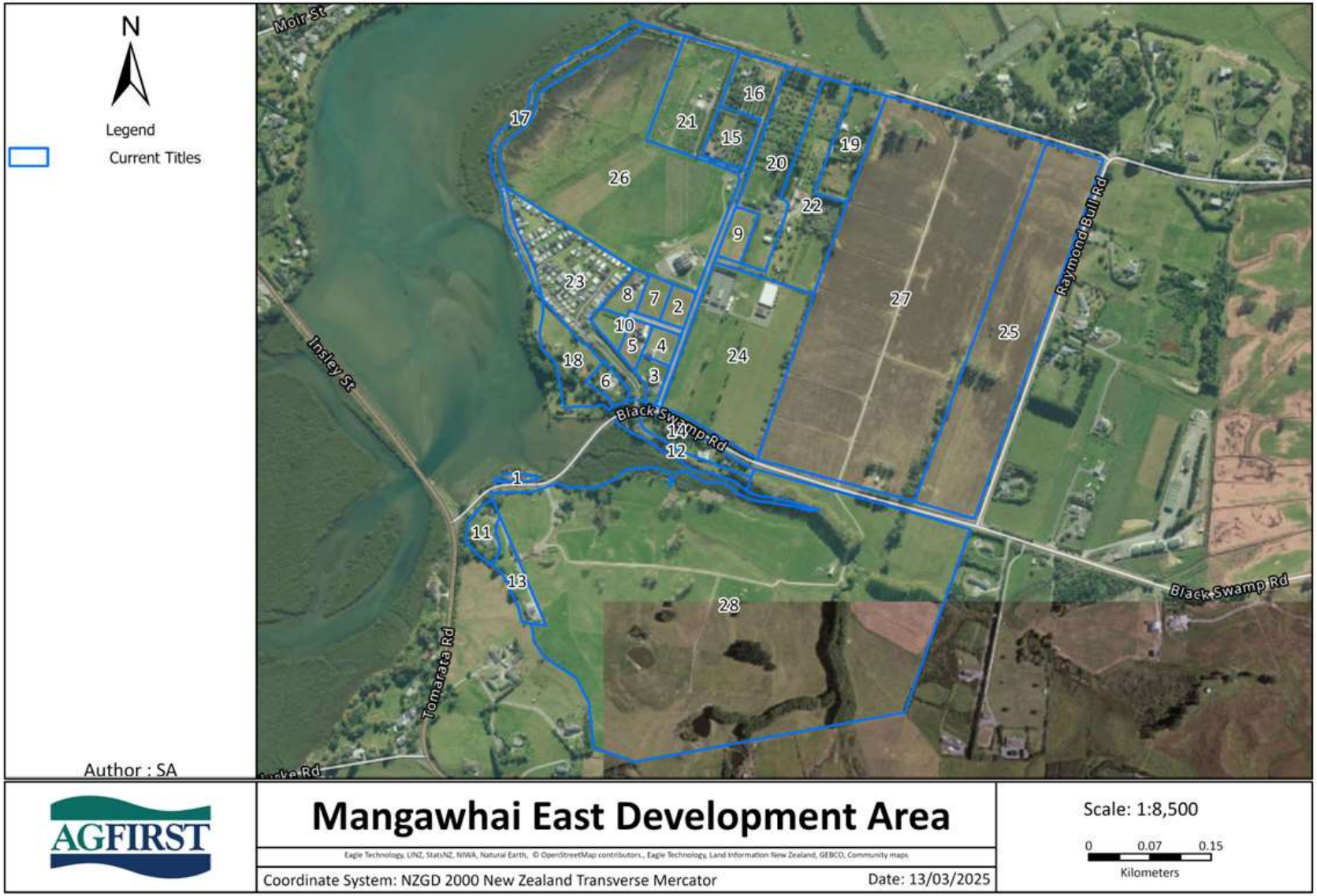


Figure 3: Property Titles and location of Subject Site within PPC area

2.2 Current Land Use

The Subject Site is currently utilised as a brewery and a number of small lifestyle blocks. There is currently no active land-based primary production on any of these properties, with a failed vine crop, a large proportion of area mown to waste, and small lifestyle orchards. Despite this, for the economic analysis required in the 3.10 assessment and a holistic approach, these areas have been given a weighted productive capacity, relative to the constraints and limitations.

It is important to note that some of the lifestyle blocks have considerable residential housing improvements established on these sites making it less likely to be used in the long-term for land-based primary production. Non-reversable fragmentation also restricts the use of these areas to be used at any reasonable scale.

2.3 Proposed Subject Site

A significant feature of the Subject Site is the coastal salt marsh area (marshland) on the harbour frontage. This covers a large area and is unproductive for any land use. The marshland is protected by way of covenant as this was a form of mitigation for the creation of lifestyle sites.

It is partly because of this feature, that the PPC is proposing to limit this land use to Rural Lifestyle Zone. Presented in Figure 4 is a Northland Regional Council Natural Hazards Overlay, with coastal and river flood hazards across the Subject Site.

The Subject Site is marginal land when considering opportunities for land-based primary production, due to the constraints and physical limitations that exist. The areas available for production (**productive area**) are defined by natural and physical parameters, with a boundary fence separating the pastoral areas from the marshland. It has been estimated that there is 8.04 ha of productive area. Following the completion of the PPC, there will be no land available for primary production, other than for lifestyle purposes if landowners wish to do so. The productive area and the proposed changes based on the proposal are shown in Table 2 below.

Table 2: Proposed Subject Site areas

Property ID	Productive area size (ha)	Total area (ha)
Existing		
15	0.58	0.72
16	0.97	1.03
21	1.84	2.53
26	4.66	10.64
Total area	**8.04**	**14.92**
Proposed Subject Site		
15	0.00	0.72
16	0.0.	1.03
21	0.0	2.53
26	0.00	10.64
Total area	**0.00**	**14.92**

The rezoning of the Subject Site will result in the loss of approximately 8.04 ha of effective area.

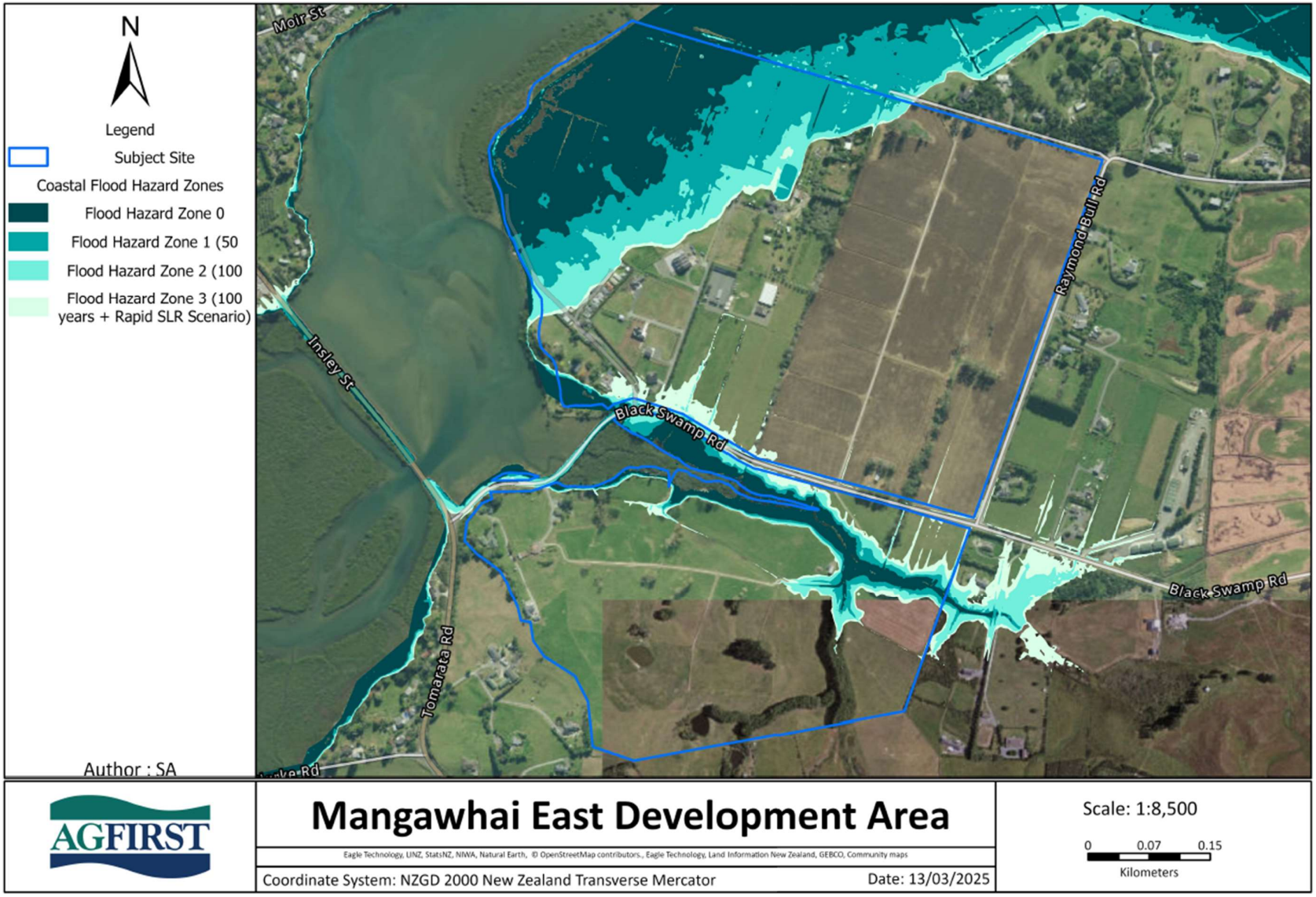


Figure 4: Northland Regional Council Natural Hazards GIS map, showing coastal and river flood hazards

3.0 NATIONAL POLICY STATEMENT

In September 2022, the Ministry for the Environment (MfE) and the Ministry for Primary Industries (MPI) released the National Policy Statement for Highly Productive Land (NPS-HPL). The objective of this document is "*highly productive land is protected for use in land-based primary production, both now and for future generations*."

Land-based primary production means *production, from agricultural, pastoral, horticultural, or forestry activities, that is reliant on the soil resource of the land*.

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.

In summary, the NPS-HPL document closely aligns with the KDP where it seeks to. Sustain the life supporting capacity of the soil and vegetation to provide for the on-going productive use of the land.

Clause 3.7 of the NPS-HPL states that "Territorial authorities must avoid rezoning of highly productive land as rural lifestyle, except as provided in clause 3.10".

Clause 3.10 sets out the exemptions for subdivision of highly productive land subject to permanent or long-term constraints. The exemptions are listed below:

3.10 Exemption for highly productive land subject to permanent or long-term constraints

(1) Territorial authorities may only allow highly productive land to be subdivided, used, or developed for activities not otherwise enabled under Clauses 3.7, 3.8, or 3.9 if satisfied that:

(a) There are permanent or long-term constraints on the land that mean the use of the highly productive land for land-based primary production is not able to be economically viable for at least 30 years; and

(b) The subdivision, use, or development:

(i) Avoids any significant loss (either individually or cumulatively) of productive capacity of highly productive land in the district; and

(ii) Avoids the fragmentation of large and geographically cohesive areas of highly productive land; and

(iii) Avoids if possible, or otherwise mitigates, any potential reverse sensitivity effects on surrounding land-based primary production from the subdivision, use, or development; and

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

(2) In order to satisfy a territorial authority as required by Subclause (1)(a), an applicant must demonstrate that the permanent or long-term constraints on economic viability cannot be addressed through any reasonably practicable options that would retain the productive capacity of the highly productive land, by evaluating options such as (without limitation):

- *(a) Alternate forms of land-based primary production*
- *(b) Improved land-management strategies*
- *(c) Alternative production strategies*
- *(d) Water efficiency or storage methods*
- *(e) Reallocation or transfer of water and nutrient allocations*
- *(f) Boundary adjustments (including amalgamations)*
- *(g) Lease arrangements*

(3) Any evaluation under Subclause (2) of reasonably practicable options:

- *(a) Must not take into account the potential economic benefit of using the highly productive land for purposes other than land-based primary production; and*
- *(b) Must consider the impact that the loss of the highly productive land would have on the land holding in which the highly productive land occurs; and*
- *(c) Must consider the future productive potential of land-based primary production on the highly productive land, not limited by its past or present uses.*

(4) The size of a landholding in which the highly productive land occurs is not of itself a determinant of a permanent or long-term constraint.

(5) In this clause:

Landholding has the meaning in the Resource Management (National Environmental Standards for Freshwater) Regulations 2020.

Long-term constraint means a constraint that is likely to last for at least 30 years.

4.0 ASSESSMENT OF LAND USE CAPABILITY

4.1 Regulatory Framework for Highly Productive Land

The NPS-HPL sets out a prescriptive approach for councils to identify and protect highly productive land. Until councils have given effect to the NPS-HPL, the interim is provided under Clause 3.5(7):

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

(a) Is:

(i) Zoned general rural or rural production; and

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

(b) Is not:

(i) Identified for future urban development; or

(ii) Subject to a Council initiated, or adopted, notified plan change to rezone it from general rural production to urban or Country Living Zone.

LUC 1, 2, or 3 land is defined as Land Use Capability Classification 1, 2, or 3, as mapped by the New Zealand Land Resource Inventory (NZLRI) or by any more detailed mapping that uses the Land Use Capability classification.

4.2 NZLRI Land Use Capability Classification

The LUC classification system has been used in New Zealand to help achieve sustainable land development and management on farms. The purpose of the LUC classification is to assess the suitability of the land for primary production. Determining the presence of HPL as defined under the LUC classification requires consideration of a range of characteristics. The LUC classification categorises land areas or polygons into classes, subclasses, and units according to the land's capability to sustain productive use. The LUC is based on an assessment of the physical factors (rock type, soil, slope, present type and severity of erosion, and vegetation), climate, the effects of past land use, and the potential for erosion. This is summarised in Figure 5 below.

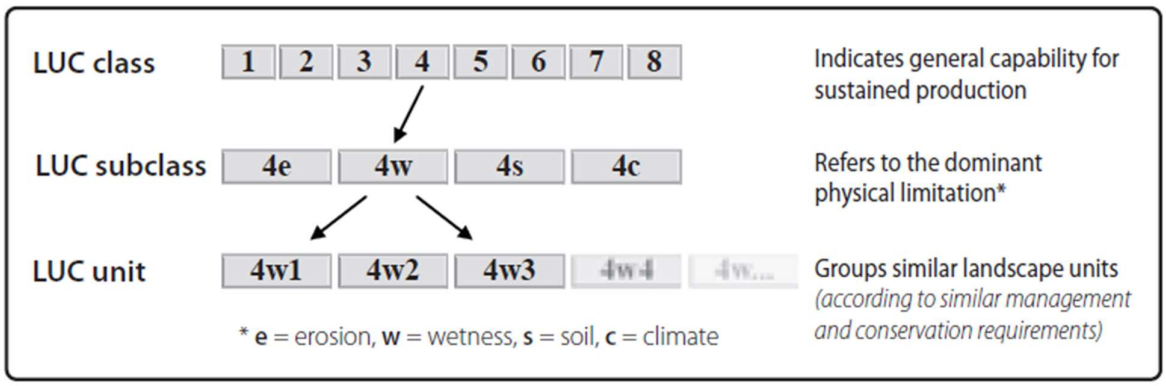


Figure 5: Components of the land use capability classification[1]

[1] Lynn, I.H, Manderson, A.K, Page, M.J, Harmsworth, G.R, Eyles, G.O, Douglas, G.B, Mackay, A.D, Newsome, P.J.F. (2009). Land Use Capability Survey Handbook – a New Zealand handbook for the classification of land 3rd ed. Hamilton, AgResearch; Lincoln, Landcare Research; Lower Hutt, New Zealand. GNS Science.

AgFirst has reviewed the NZLRI national database of physical land resource information for the Site. This database is based on a regional scale LUC rating of the ability of each polygon to sustain long-term agricultural production.

The NZLRI maps are designed for use at a 1:63,000. This means 1 cm^2 of published map covers 36.69 ha. Following the observation guidelines this equates to, at most, one observation per 36.69 ha and at the least one observation per 146.76 ha. Therefore, it should only be treated as an indicator for LUC at the site. The observation guidelines are in reference to one observation site per 1 cm^2 of published map, with a minimum acceptable limit of one site per 4 cm^2 of published map according to New Zealand soil mapping protocols and guidelines (Grealish 2019).

The soils mapped at the site are classified under the NZLRI as LUC 3w 14. Therefore, based on the NZLRI, the entirety of the 3.10 Subject Site is HPL (LUC 1, 2 or 3). The NZLRI LUC classifications for this area are presented in Figure 6.

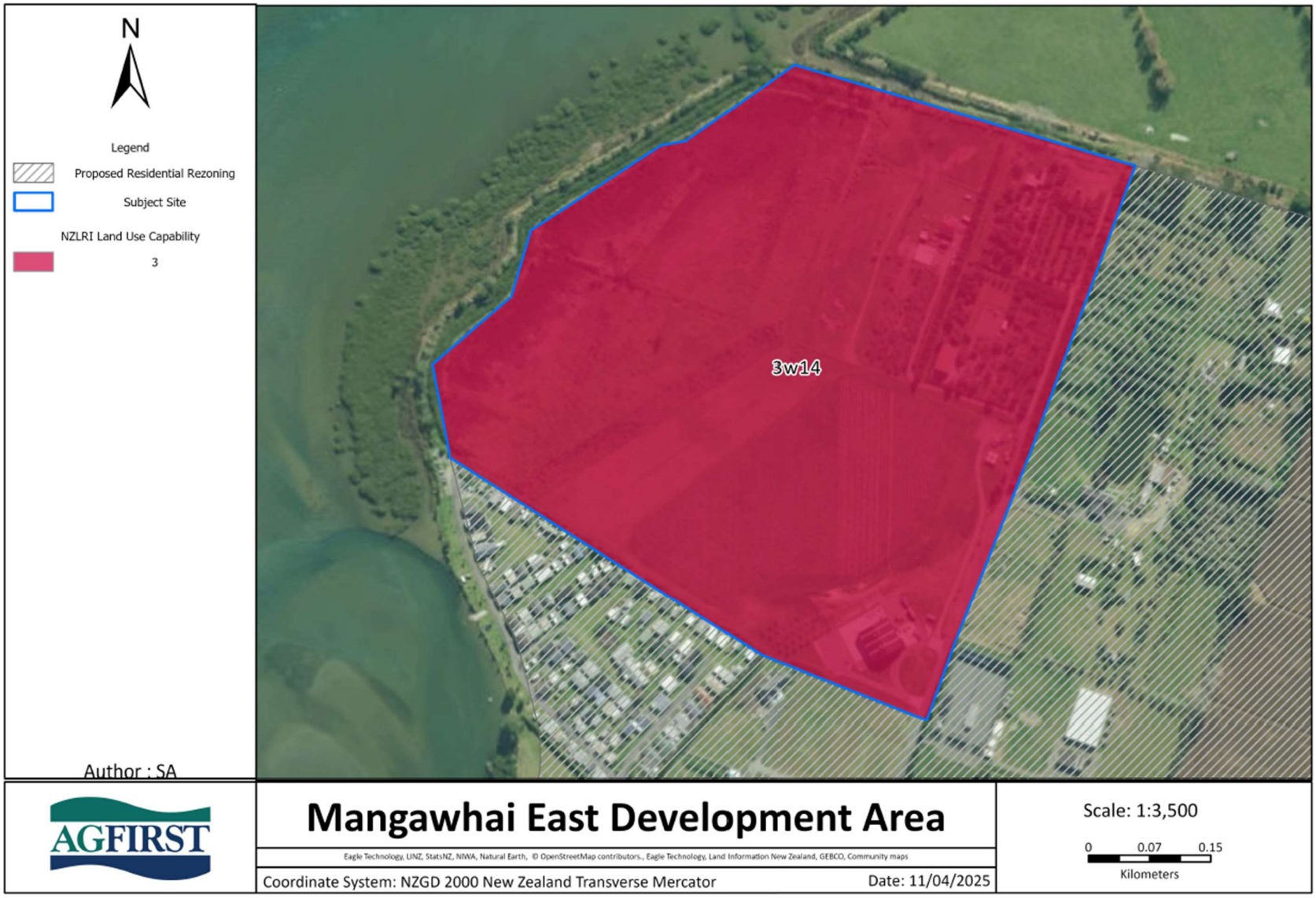


Figure 6: NZLRI Land Use Capability Classification Map for the Subject Site

4.3 Site Specific Mapping and LUC Assessment

The NZLRI LUC maps are not intended for farm scale interpretation. Therefore, soil expert Ian Hanmore (Hanmore land management) has been engaged by the applicant to undertake an assessment and review the LUC and soils of the Site. This section presents the results and outcomes from this report. This report is provided in Appendix A (Addendum Report for the Cabra Soil and Resource Report, Mangawhai.)

Key observations from these reports identify the following:

- The LUC assessment has been undertaken in accordance with accepted guidelines (Milne et al., 1995, and Lynn et al., 2009).
- The areas of LUC class 3 land across the Subject Site is significantly smaller than those mapped by the NZLRI.
- The HLM report found that the marshland area is Takahiwai Sand soil, which has been classified as a LUC 6w2 and is approximately 4.85 ha. This area is significantly constrained from wetness limitations and is part of the flood hazard zone (Figure 4). While a historical attempt has been made to drain some of this area with open artificial drainage, it has since regenerated back into its natural state, which is a marshland. This is fenced off and retired from land-based primary production with native plantings along the edge.
- The area of unit 6w 2 is located at the estuarine margins on the northwestern side of the site. The sand soils in this area have very little development, have saltwater intrusion and support minimal developed pasture with rushes and salt marsh plant species dominating the area. As it is this area of the site has minimal productive potential and would be suitable for retirement and environmental benefits.
- The balance of the Subject Site is LUC 3w4, being 10.06 ha. Wetness is the major limiting factor for production on the majority of this area. High water tables and poor drainage result in crop choices limited to annual crops and those that can tolerate wet soil conditions. Care needs to be taken when utilising these soils as over cultivation can cause a loss of soil carbon and soil structure and result in soil shrinkage and soil structure degradation.

The revised LUC classification and Soil classifications are shown in Figure 7 and Figure 8.

The soil expert concluded that “The most productive area of the site includes the peat and peaty sand flats represented within the Subject Site by the LUC units 3w 4. There are constraints to the use of the land due to fragmentation from the number of legal titles in the proposed area as well as the proximity to neighbours.”

The observations made by AgFirst during the site visit are consistent with the observations made by Ian Hanmore.

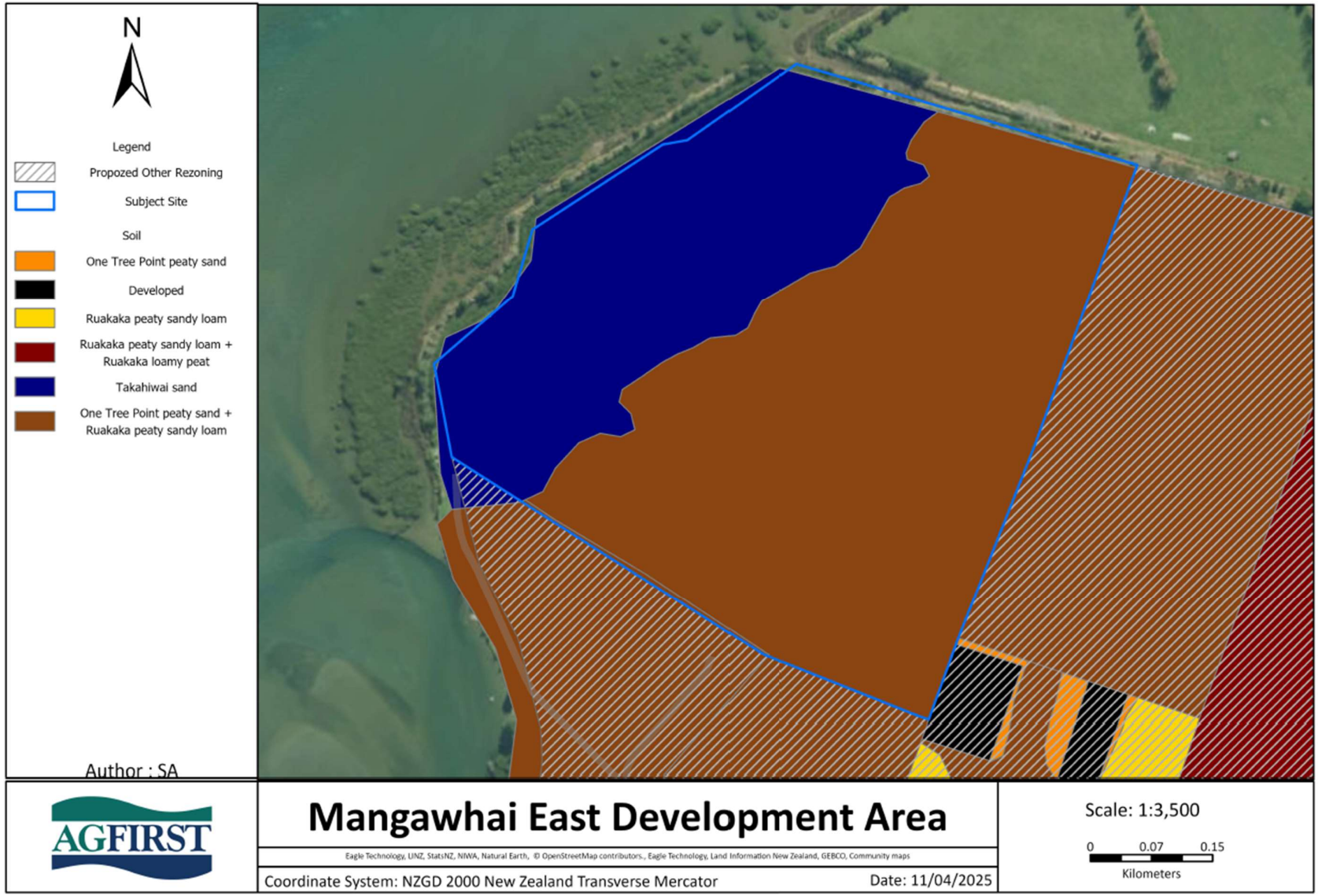


Figure 7: LUC classes mapped at property scale by Ian Hanmore for the Subject site.

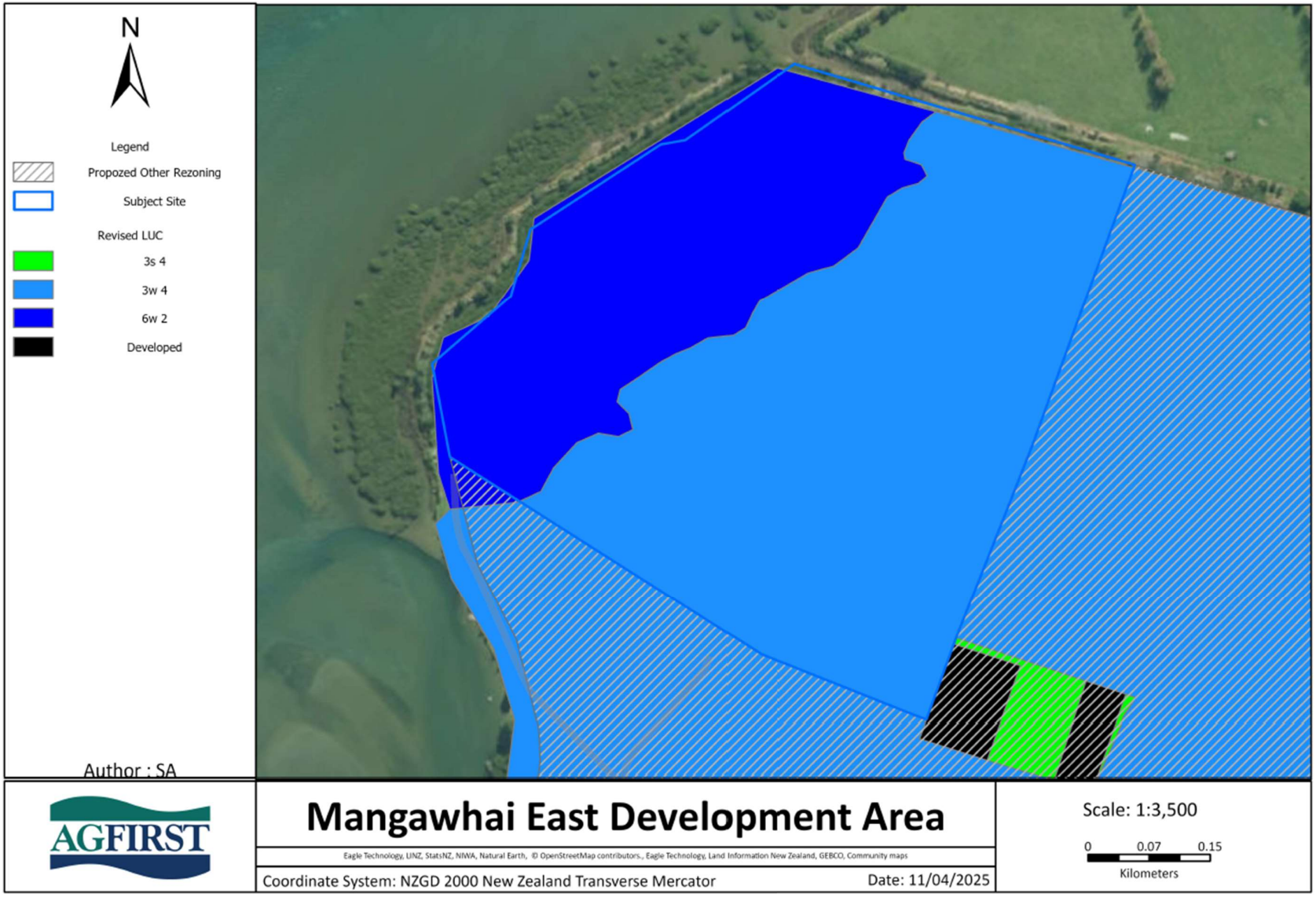


Figure 8: Soil Classification mapped at property scale by Ian Hanmore for the Subject site.

4.4 Land Use Capability - Summary

The NZLRI maps identify the areas of HPL (LUC 3w14), with no areas of non HPL within the Subject Site. The LUC 6w2 are identified by Ian Hanmore is not suitable for pastural grazing. This area is subject to inundation as it is a marshland area and has significant wetness limitations and likely highly saline soils. The area was extensively wet during the site visit, and considering the site was visited during a medium severity drought in the region, this further illustrates how wet this area is. A drone image of this area is shown in Figure 9.

Having undertaken a site visit and considering factors such as the marshland, residential areas, modified and anthropic soils, it is considered that the area of HPL is much smaller than represented by the NZLRI maps. When overlaying the non-productive areas, such as dwellings, curtilage, and areas unsuitable for land-based primary production, AgFirst has identified a revised productive area of approximately 8.04 ha. This is presented in the productive overlay map (Figure 10).

Drone photo of the marshland area

Figure 9: Non-Effective marshland within the Subject Site

As Figure 10 demonstrates, the Subject Site is significantly fragmented, with extensive rural lifestyle-sized lots and non-HPL areas preventing any large contiguous areas from being consolidated (through boundary adjustments or amalgamation) to enable it to be viable for productive use. Presented in Table 3 is a summary of the HPL areas.

Table 3: HPL areas within the Site

	NZLRI Classification area (ha)	Revised Classification area (ha)
HPL	14.9	8.04
Non-HPL	0	6.86
Total Site	14.9	14.9

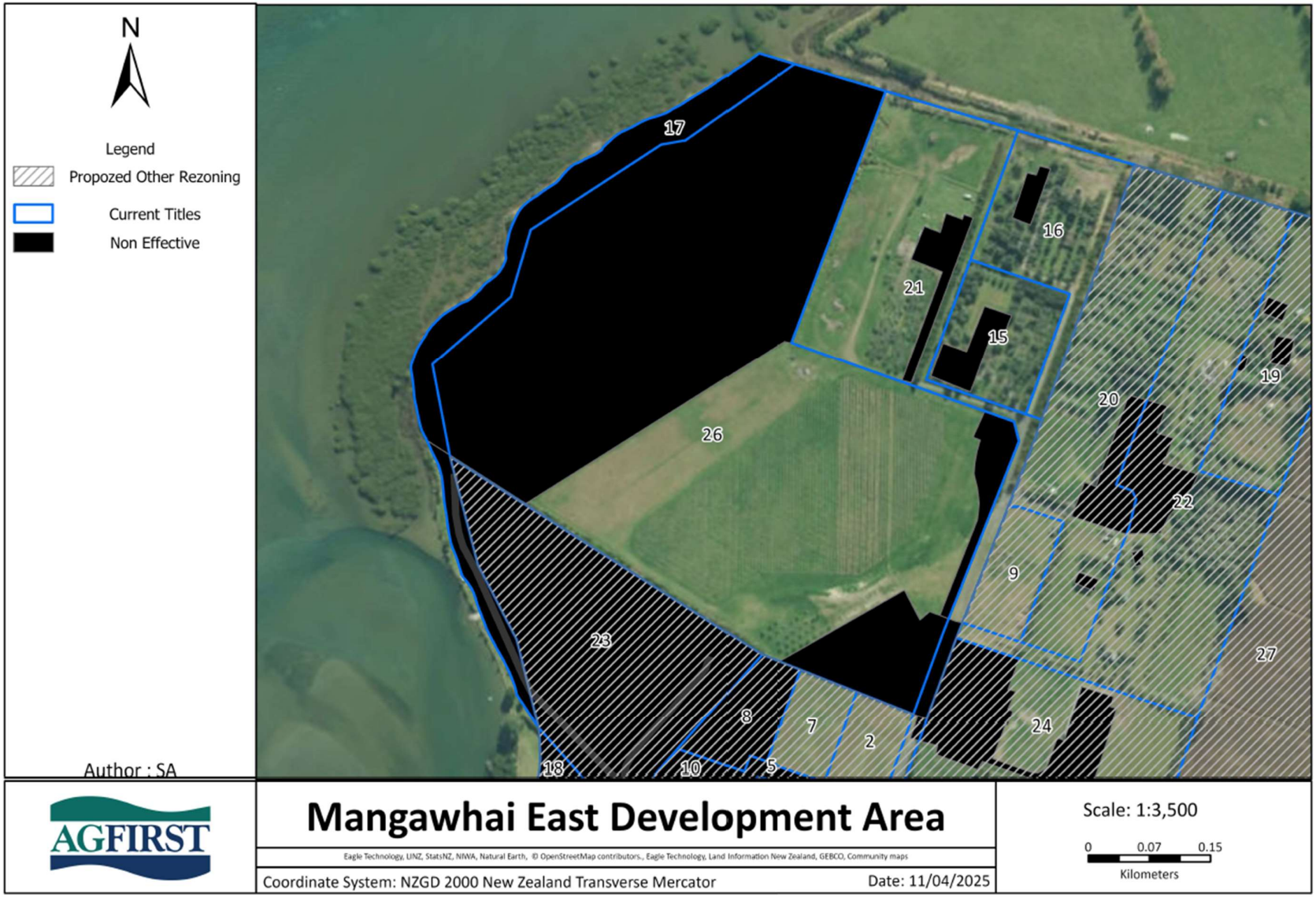


Figure 10: Effective area within the Subject Site

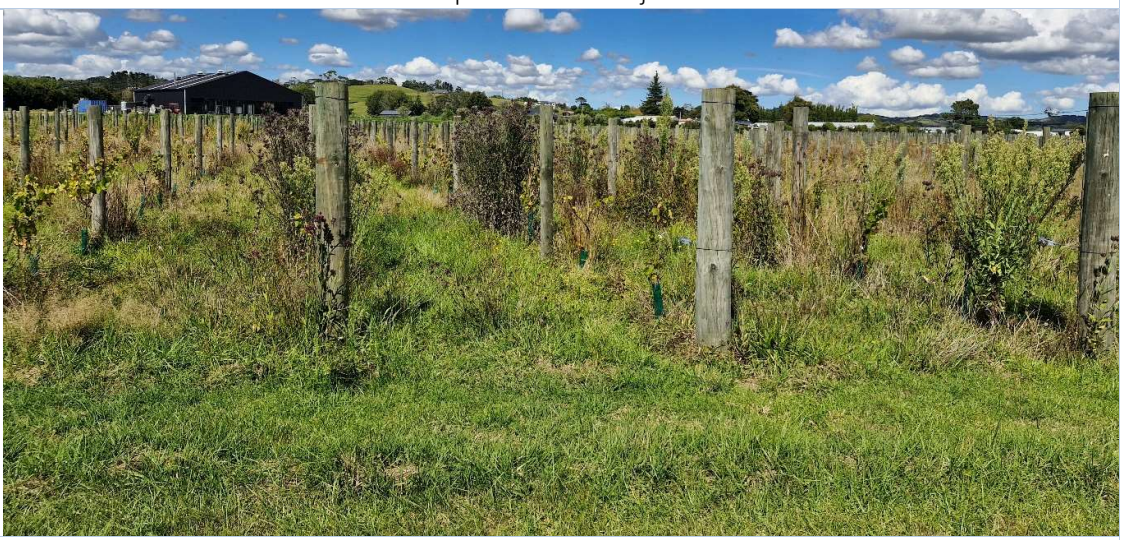
5.0 ASSESSMENT AGAINST THE NPS-HPL

5.1 Land-Based Primary Production

The Subject Site is currently unproductive other than a failed vine crop (which is used for aesthetic purposes) and would not be suitable for any productive and commercial use beyond a small number of beef cattle or sheep grazing. When assessing this block to identify the optimum land-based primary production, the constraints for this block outweigh any realistic and feasible opportunity.

The larger property (#26) was previously used for grazing livestock prior to an attempt to develop a vineyard. While there is no stock water reticulation, cattle yards or loading ramps, the boundary fencing around the effective areas are still largely in-tact. Photos of the Subject Site and the effective areas are provided in Figure 11.

Drone photo of the Subject Site



Failed vine crop

Photo of marshland area

Lifestyle orchards

Pastures mown to waste

Figure 11: Images of Subject Site showing limitations and constraints for productive use

Regardless of the current land use, rezoning of rural land that contains LUC 1-3 requires assessment against the NPS-HPL. For completeness, where marginal land has been identified within the site-specific LUC map, these areas have been assigned to an optimum land use as they may contribute to the economic viability of the property. This is discussed in the NPS-HPL Guide to implementation, where a holistic approach is to be used for non-HPL areas. As the Subject Site is owned by two different owners, the total effective area has been used to assess production systems and economic viability. This would not be the case if all four properties were under separate ownership.

In theory, the existence of Class 3 soils means that the Subject Site has potential for a wide range of productive activities. However, in practice, (as is the case for the Subject Site), some of the constraints, characteristics and limitations reduce the overall versatility of the Site.

These properties would be considered very challenging to farm during the winter and following any wet weather event, due to the underlying soils being poor and very poorly drained. Operators will need to consider the pugging vulnerability for heavier stock classes. Therefore, this area will be limited in land use versatility, with production types only suited to pastural grazing systems.

It is the opinion of AgFirst that the highest and best use for the productive areas within the Subject Site is grazing of livestock. The pastoral areas are not of large enough size and scale to be considered to be a potential economic unit, with the average class 5 finishing farm within the northern North Island being approximately 255 ha. Additionally, there are limited amalgamation opportunities for the properties, being surrounded by the Mangawhai Harbour, lifestyles blocks, a holiday park, a coastal inlet and shared accessways.

When considering a longer-term outlook (30+ years), while our assessment identifies pastoral grazing as the optimum land use, it is unlikely that these properties could be used in any commercial enterprise, due to escalating farm working expenses, fixed costs and the location of the property in relation to urban development. Continued losses at a farm level will not be economically sustainable, with the land likely being subdivided, purchased and used for non-productive and lifestyle purposes. The average land valuation for the properties across the Subject Site is $265,972 per ha, which is a magnitude more expensive than a commercial drystock farm. As a comparison, a small-scale beef finishing block with easy contour would be valued at $30,000 - $40,000 per ha. The land has been valued not on the land-based primary production or quality of the soil and land, but the location of the property for speculators and development opportunities. Economic and Property Research have highlighted this in their report[2], with significant property increases since 2013. This is reflected with Kaipara District Council valuing the property in the same light, reflecting inflated rates and land values. With rapidly rising input costs, the returns for marginal farming operations will be reduced, therefore the long-term viability for these farms in untenable.

The key limitations for land-based primary production and versatility on the Subject Site are:

- Very saline soils on the Mangawhai Harbour boundary.

[2] Economic and Property Research, Evaluation of Economic Costs and Benefits for Cabra Mangawhai Limited, September 2024.

- Coastal inundation on the Mangawhai Harbour boundary.
- Poor and very poor draining soils across the Subject Site.
- Limited optimal land available that is suitable for land-based primary production other than pastoral grazing of livestock.
- Non-reversable land fragmentation
- Neighbouring lifestyle blocks and housing developments creating reverse sensitivity effects.

While the Subject Site is identified as HPL, the constraints identified above deem the site unsuitable for arable, horticultural or Commercial Vegetable Production (CVP) purposes.

Essentially, more intensive and higher land uses (such as arable, horticulture and commercial vegetable operations) require free draining (or soils without rooting barriers) and relatively flat land. The greater the wetness limitation, the more impact on yield and crop survival. Free draining soils are not present across the Subject Site, therefore the versatility is vastly reduced. The likely saline soils from coastal exposure will; also have a negative impact on the yields and crop survival.

It is in AgFirst's opinion that the productive areas of the Subject Site are limited to pastural grazing.

5.2 Highest and best land use

Pastural grazing is a land use that while not necessarily profitable, does occur across a range of sizes, soil types and contour. Management practices can be applied for poorly drained soils and areas with soil constraints, such as the use of lighter stock classes and on-off grazing. As the majority of the effective areas within the Subject Site has some form of fencing, the economic modelling has assumed that the Site has basic infrastructure.

As identified in Figure 10, there has been 8.04 ha identified that is suitable for livestock grazing. A small 8 ha block without the input of supplements would likely be only capable of running 24 cattle, with a Revised Stocking Rate (RSU) per ha of 12. This would include purchasing 12 rising one-year-olds (R1) (assumed 50% steers and 50% heifers) at the end of spring at approximately 100 kg liveweight. These would be carried through a single winter and sold as rising two-year-olds prior to their second winter. This is provided in Table 4.

Table 4: Revised Stock Units (RSU) for Subject Site

Farm Name	Waikato Farm	Total RSU on Farm	Total RSU/ha on Farm
Farm Size (ha)	14.9		
Effective Area (ha)	8.04	95	12

Stock class	SU/ha	Animal performance definition	Number of Stock Class Across Farm
			8.04 ha
Steer 1-2 years age	5.8	WF steer 203kg to 478kg slaughter weight	6
Heifer 1-2 years age	5.7	WF heifer 208kg to 420kg slaughter weight	6
Steer calf< 1 year (weaned)	2.7	WF steer 100kg to 203kg Dec to Jun	6
Heifer calf< 1 year (weaned)	1.6	WF heifer 90kg to 208kg Dec to Jun	6
Total Animals on Farm / Block			24

5.3 Operating profit

The RSU provided in Table 4 is a low to moderate stocking rate, but reflects the poor-quality soils and limitations of the Subject Site. As the block is so small, any additional animals would likely push the system too hard particularly during a dry summer or a wet winter without feed reserves. There is no infrastructure or machinery on the property for feeding supplementary feed in the instance of a feed pinch, with the budget reflecting this.

To assess the proposed livestock operation and return, AgFirst have used the Class 5 northern North Island Intensive Finishing operation from the Sheep and Beef Farm Survey presented by Beef and Lamb New Zealand (B+LNZ)[3]. The B+LNZ data shows that the average farm size is 255 ha (average for last 5 years). AgFirst has collectively assessed a total area within the Subject Site that is suited for pastural grazing as 8.04 ha. The operations within the Site will be as profitable as the economic data presented in the B+LNZ, therefore the income and expense data has been adjusted.

AgFirst has prepared an indicative budget using expertise and industry values when necessary (Table 5). The full detail is provided in Appendix B. The Economic Farm Surplus (**EFS**) has been calculated providing a surplus of $6,086 over the Subject Site. Note that this does not include any fixed property costs, such as Council rates, lease fees or paying any interest on the debt. These are calculated at a property level.

Table 5: Indicative budget for pastural grazing livestock

Operational Items		**$ Total**
Area (ha)		8.04
Revenue	Beef Sales	$ 19,488
	Beef Purchases	$ 6,600
Total Revenue		**$ 12,888**
Operating Expenses	Wages	$ 1,294
	Animal Health	$ 506
	Fertiliser & Lime	$ 2,509
	Weeds, Seed and Contracting	$ 918
	Vehicle Expenses	$ -
	Repairs & Maintenance	$ 1,030
	Electricity	$ 101
Total Operating Expenses		**$ 6,358**
Fixed Expenses	Administration & ACC	$ 444
	Insurance	$ -
	Rates	$ -
Total Fixed Expenses		**$ 444**
Depreciation		$ -
Total Expenses		**$ 6,802**
Economic Farm Surplus for Subject Site		**$ 6,086**
Economic Farm Surplus per ha		**$ 756**

[3] Sheep & beef farm survey | Beef + Lamb New Zealand (beeflambnz.com)

5.4 Economic Viability for land-based primary production

The previous Section identifies that the highest and best or optimum land use is a pastural grazing operation. As the indicative budgets shows, the operating profit, assuming a single amalgamated enterprise, would generate $6,802 or $756 per ha. To understand if the productive system is economically viable, the following analysis has been undertaken.

The productive income has been assessed at an individual property level. This is based on an assessment of the effective area available within each parcel and the suitability for land-based primary production. The areas available for productive use has been multiplied by the respective EFS, to provide a pro-rated estimated income for each property.

For conservatism, lifestyle areas have been given a pastoral grazing EFS, on the assumption that a small number of sheep or cattle can be run. The land fenced off and retired as the marshland area has been classed as non-effective as it is unsuitable for any productive land use as seen in the Site photos (Figure 6).

The property information was obtained from Kaipara District council, which is presented in Table 6. The rates have been calculated for the estimated portion of the land that is not occupied by the house and curtilage (being the rates effective area). This is a standard methodology for tax deductibility purposes for assessing rates. The property rates were then subtracted off the operational profit to provide a total return for each property. At this level of economic assessment, none of the properties within the Subject Site are considered economically viable. This return is shown in the EFS/EBITRm column for each property.

Table 6: Economic viability for land-based primary production

Map Ref	Property ID	Zone	Effective Rates	Optimised Land Use Areas			EFS / EBITRm for each Property	Economic Viability Test ($)		
				Grazing	Non-Effective	Total Effective		Ratable Land Value	Total Property Liabilities	Economic Viability
15	Lot 2 Deposited Plan 545009	Rural	$ 2,735	0.58	0.1	0.6	-$ 2,299	$ 780,000	$ 13,181	-$ 15,479
16	Lot 1 Deposited Plan 545009	Rural	$ 3,211	0.97	0.1	1.0	-$ 2,479	$ 785,000	$ 15,521	-$ 18,001
21	Lot 3 Deposited Plan 545009	Rural	$ 2,994	1.84	0.7	1.8	-$ 1,604	$ 750,000	$ 11,452	-$ 13,055
26	Lot 8 Deposited Plan 565865	Rural	$ 7,703	4.66	6.0	4.7	-$ 2,653	$ 1,650,000	$ 31,718	-$ 34,371
				8.04	**6.86**	**8.04**	**-$ 9,035**	**$ 3,965,000**	**$ 71,872**	**-$ 80,906**

The definition and methodology to determine economic viability has been presented at the NZ Agricultural and Resource Economics Society Conference in 2024[4] and published in the New Zealand Institute of Primary Industry Management (NZIPIM) journal. The term "economically viable" is used to describe a project that provides an overall positive net economic contribution to society after all costs and benefits have been accounted for. When researching commercial viability, the Cambridge dictionary defines it as "*the ability of a business, product, or service to compete effectively and to make a profit.*" Compete effectively and make profit identifies that we need to cover real-world and genuine costs. Only then can we determine if an operation is economically viable. This is different to having a positive gross margin, EFS or EBITRm.

To be economically viable, I would suggest that the income from the farm needs to be sufficient to cover:

i. Operating costs, e.g. wages, animal health, fertiliser, repairs and maintenance, etc
ii. Fixed costs such as rates, insurance, administration.
iii. Depreciation cost
iv. A surplus then available that is sufficient for:

[4] Journeaux - Definition of Farm Economic Viability.pdf

a) debt servicing and debt repayment or an appropriate return on the capital investment if there is little or no debt, or the lease cost if the property is not owned by the operator;
b) ongoing maintenance and development of the farm and the business.

Land value is not zero. Essentially, the farming business needs to produce a return on investment and/or adequate debt servicing, or the cost of leasing the property. At least one of these will be an essential requirement of any economically viable enterprise. A viable farming operation in the real world must be one that an objectively reasonable person would choose to undertake.

To remove subjectiveness, for this assessment I have used (i) to (iv) (a) above, adopting a debt servicing allowance, to understand the economic return and viability from the land-based primary production for the various properties and the overall viability for the Site.

In assessing the debt servicing required, the land value has been used rather than the improvement and capital value, to understand the profitability required for an agricultural business to service the relevant level of debt. For this assessment the debt loading has been assessed at 30%, which is a typical level of farm lending. Interest rates have been assumed as a long-term average of 7%[5]. Note that principal repayments have not been included in the liabilities. In a similar calculation to the adjusted rates (As described above), AgFirst has pro-rated the land value by removing the proportion of land that is used for the dwelling and curtilage. This financial analysis, including individual property rates and land valuations are presented in Table 6.

There appears to be differences of views with regard to the interpretation of economic viability and the application of subclause 3.10(3)(a). This subclause states:

> "(3) Any evaluation of subclause (2) if reasonably practicable options*:*
>
> *(a) must not take into account the* ***potential*** *economic benefit of using highly productive land for purposes other than land-based primary production; ..."*

I have emphasised the word potential, as this is defined as: the possibility of something happening or being developed or used and potential for change. The current and existing state of the properties without change is that they are mostly lifestyle properties, and have a land valuation which is assessed by the local authority. As the Council does not come out and inspect properties in person, these values are calculated using the data and information that the Council has access to. This information includes analysing:

- Property type
- Location
- Land size and topography
- Zoning regulations
- Floor area

[5] Exchange rates and Wholesale interest rates - Reserve Bank of New Zealand - Te Pūtea Matua (rbnz.govt.nz) 1993-2023 years with a 2.2% bank margin applied to the 90 bank bill monthly average yield

- Consented work (renovations, new build, subdivisions etc)
- Data from comparable sales in the area

It also estimates the Land Value (RV). Which is the most likely selling price of the land if it was vacant (had no buildings etc. on it).

These valuations would not be considered potential, as they are an estimate of the actual value. Therefore, using the council land valuation as a proxy for debt loading or as a return on investment would not contravene Subclause 3.10(3)(a). The property rates are also a metric of the property valuations and are a true cost that are incurred by the landowners. These rates are not discounted by councils because the properties are used for land-based primary production, therefore I believe that the use of the land valuations are a fair and reasonable reflection of the real world to help determine economic viability.

The land value in this area has been positively distorted due to developed areas bordering and within the Subject Site. Due to this, and the limited productive capacity and effective areas available for land-based primary production, the productive land uses for the Subject Site do not return enough income to service typical debt levels. This is particularly important, as the analysis shows that none of the properties would be considered an attractive proposition for any investor or farmer to purchase any of the land for the sole purpose of land-based primary production. This strengthens the argument that there are no reasonably practicable options to overcome economic viability. The properties across the Subject Site are still not economically viable in their current operation or highest and best use for land-based primary production for at least 30 years.

There are no more profitable alternative options for these land parcels that are reasonably practicable. This is supported by the total profit column in Table 6, which shows none of the properties within the Subject Site are economically viable. An assessment to understand if the long-term constraints and economic viability can be overcome through reasonably practicable options is detailed in Section 5.7. Therefore, the properties across the Subject Site meet the economically viability test under the NPS-HPL 3.10(1)(a).

5.5 Permanent or Long-Term Constraints

The various landholdings within the Subject Site would be best described as lifestyle blocks. This is where there would be an opportunity to use parts of the properties in a productive way, but the income to support these uses are derived from "off-farm" rather than production gained from the operation that relies on the soil resources. While there are opportunities for land-based primary production, they do not translate into one that is economically viable. When considering the highest and best use, the properties have significant constraints to realise any form of potential.

3.10(4) identifies that "*the size of a landholding in which the highly productive land occurs is not of* ***itself*** *a determinant of a permanent or long-term constraint.* AgFirst has emphasised the word itself in the test, as this is just one of many components that prevent the Subject Site from being economically viable. For the Subject Site, size is a consideration, along with soil constraints, non-reversable land fragmentation, opportunity for amalgamation and coastal inundation.

There are production constraints due to the size of the properties, complicated further by the extent of existing residential development, the location of that development within the properties, the proximity of dwellings to any potentially productive land and the inevitable constraint that these properties simply will not in practical terms ever be used for any rural productive activity.

The key constraint for these properties is non-reversable land use fragmentation. The areas are not economically viable due to the lack of land available for land-based rural production and marginal returns with small scale operations. Off-site effects and sensitivity impacts will also deter these properties from being used for any higher and better land use.

The optimal pastural grazing land use has been considered as a 'holistic' scenario with an amalgamated area suitable for pastural grazing of 8.04 ha. It needs to be noted that this is across four separate properties, with the largest effective area of being 4.66 ha. On their own or amalgamated, these areas are not of a viable size to be considered an economic unit. This is shown in Section 5.3. Realistically the returns to each individual landowner will be much lower than that presented in the economic analysis due to the lack of land available and marginal returns with small scale operations.

The prospects of amalgamation of any of the undeveloped, potentially productive land is very low. These properties are used to maintain open space and a rural aspect, without the added complications of stock management, maintenance, investment in horticulture, dust, noise and other effects that conflict with rural residential lifestyle and amenity.

Land based primary production is economically unviable on the Subject Site because of the following long-term and permanent constraints:

- Non-reversable land fragmentation
    - This is due to the significantly fractured site and surrounding areas that prevents any amalgamation or lease opportunities to form a larger productive land unit.
    - The size of the properties do not lend themselves to any viable operations, with the effective areas within the properties being 0.58, 0.97, 1.84 and 4.66 ha.
- Soil

- The Subject Site consists of poorly and very poorly drained soils. While some of these soils are still likely to be considered HPL, the wetness limitations will impact the versatility and productive capacity of these areas.
- Horticulture, CVP and arable operations require deep, flat and free draining soils. None of which are present within the Subject Site.
- The poor drainage of the soils and high water-table will likely have an impact with some crops not surviving, while others will have reduced yields.
- The effect of coastal inundation and likely high salinity are also limitations for horticulture, arable and CVP

5.6 Avoidance of Significant Loss, Fragmentation and Reverse Sensitivity

As the productive area of the Subject Site extends across 4 different properties, the majority of the land is not currently capable of being utilised for any viable land-based primary production. The largest effective area of a title suitable for primary production is 4.66 ha. Based on the NZLRI, the entirety of the Subject Site that is zoned rural is HPL (14.9 ha). However, this does not translate to a significant loss, due to the constraints outlined and the conclusion that none of the properties (individual or amalgamated) are economically viable. While defined as HPL under the transitional definition, due to the constraints identified, small scale of the properties and non-reversable land fragmentation, many of these areas would unlikely be considered HPL when remapped at a more suitable scale. Of this total area, 8.04 ha has been assessed as containing or have some suitability for pastoral grazing activity. The total area of non-effective land is estimated as 6.86 ha. This includes the marshland, dwellings, curtilage, driveways and sheds (see Figure 10).

Productive capacity means the ability of the land to support land-based primary production over the long-term. The significant constraints and isolation of the HPL reduces the productive capacity due to the existing rural lifestyle, subdivisions and surrounding developed areas. Enabling further subdivision as sought by the applicant will not result in any significant loss of productive capacity within the district, both individually and cumulatively. From a land-based primary production and productive capacity perspective, it would be a far better option to develop this Site compared to alternative sites with few constraints and higher production potential.

With regards to LUC classes within the Kaipara district, there is an estimated 33,257 ha of HPL[6], which is 10.6 % of the total area. The LUC breakdown for the district is presented in Figure 12. The area of HPL that is able to be farmed is 8.04 ha, which is 0.024% of the available HPL within the district. While mapped by the NZLRI, this 14.9 ha of HPL, which is 0.044% of the district HPL. Neither of these would be considered as a significant proportion of loss within the district.

[6] Manaaki Whenua – Landcare Research. Our Environment, Territorial Authorities, Waikato District LUC map.

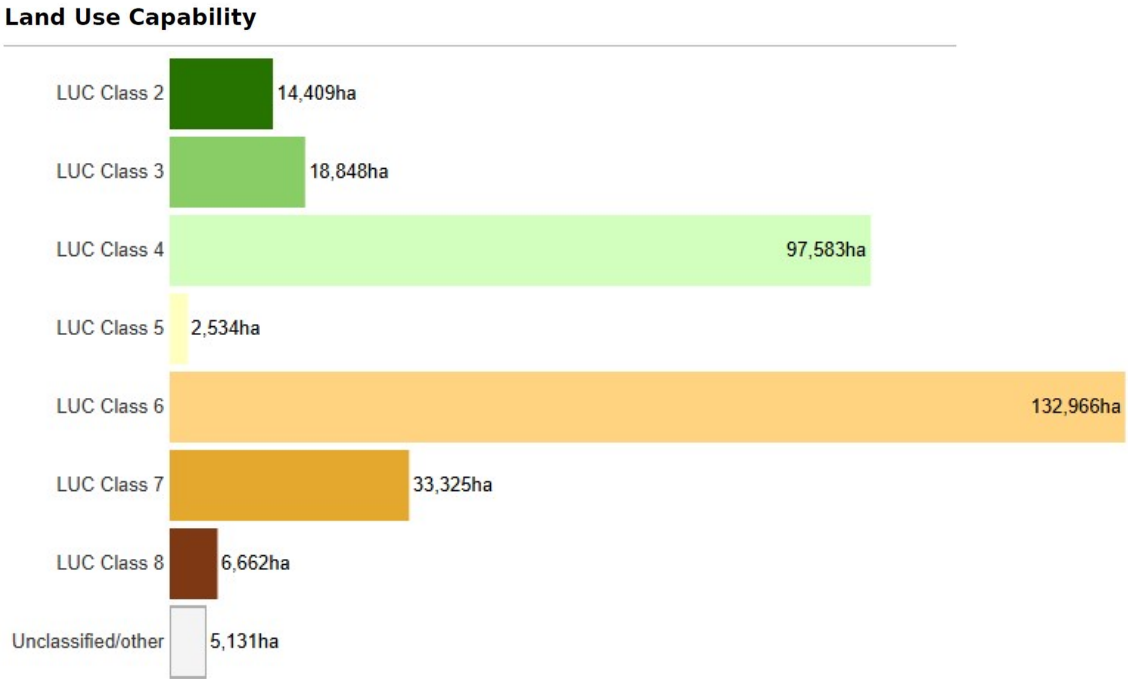


Figure 12: Summary of Land Use Classification within the Auckland District

With regard to avoiding fragmentation of large geographically cohesive HPL areas, the Subject Site is already significantly fragmented, and as discussed large contiguous HPL areas do not exist. This is due to the extensive rural lifestyle subdivisions, developed areas and the separation of contiguous areas due to physical separation and isolation.

No sensitive activities are proposed as part of the application which might give rise to effects on relevant and existing "effect generating activities". The proximity to neighbouring receptors within the Subject Site already has an impact on the versatility of primary productive uses. There will be limited reverse sensitivity effects on the surrounding land-based primary production, as the surrounding land is already primarily lifestyle blocks

5.7 There is a Net Benefit from the Additional Subdivision enabled within the Site

The assessment of actual or potential effects on the environment has been discussed in detail within the planning application[7] These highlight the cultural, social, economic and environmental effects as a result of the Subject Site.

Environmental

Due to the limitations of productive capacity on the Subject Site, the environmental impacts are expected to be minor. For an extensive livestock grazing operation, as there is no fallow soil, and fertiliser is applied in smaller quantities as required, the nitrogen losses are minimal and expected to be low impacting. With the boundary fencing, it is expected that stock will be excluded from waterways and the marshland area. However, there are enhancements that are proposed which will add environmental benefit, which are detailed in the planning application. Therefore, it is anticipated that there will be a positive benefit.

[7] The Planning Collective: Private Plan Change Request to Kaipara District Council, Cabra Mangawhai Limited and Pro Land Matters Company Limited, December 2024

Social

With the optimum land-based primary production being lifestyle blocks and livestock grazing, there is very little employment other than the requirement of property owners to shift and manage their own stock. Overall, the social effects of this proposal are positive and are detailed within the planning assessment:

> *"The PPC includes the upgrading of the existing road infrastructure to provide new pedestrian and cycling networks within the PPC area and connected to the existing and planned network across Mangawhai. The subdivision process will result in the completion of the coastal esplanade reserve network around the estuarine inlet in the southern portion of the site. These reserves have the ability to form part of an off-road greenway connection.*
>
> *In addition to the social infrastructure proposed in the PPC, the area is in close proximity to existing and proposed social infrastructure such as:*
> - *Mangawhai Beach School and Kindergarten*
> - *Mangawhai Public Library*
> - *Kaipara District Council Offices*
> - *Mangawhai Domain Sports Grounds*
> - *Local Beaches*
> - *Facilities within the Mangawhai Township.*
>
> *The proposed rezoning will provide for additional houses, with improved employment generated, recreational areas created, therefore resulting in an improvement in social outcomes."*

Cultural

A cultural impact assessment has been undertaken, this is included in Appendix 5 of the planning application. The summary of the report states that

> *"There are three archaeological sites that have been identified and recorded within the PPC area. A review of the NZ Archaeological Association (NZAA) ArchSite database and Archaeological report prepared by Geometria (10 June 2024) confirms these as shown at Figure 17:*
> - *R08/258 Historic era midden, glass, ceramic, building material eroding out of bank in the coastal reserve (Recorded by Carpenter June 2024).*
> - *R08/256 Shell midden site (Carpenter August 2022).*
> - *R08/259 Evidence of a gum store on the western side of ProLand Matters Site (section 25 Block IV Mangawhai SD).*
>
> *Shell Midden (He ahu otaota) or Ancient Māori middens (rubbish dumps) can be found where old Māori settlements were located. Middens are places where food remains, such as shellfish, animal and bird bones, ash, stone, and charcoal from fires, were thrown away. Middens are located mainly near the coast and can be uncovered due to erosion exposing layers of shell and other materials. On occasions, human remains or "koiwi" and tools can also be found"*

Economic

The loss of highly productive land (class LUC3) for land-based rural production is unlikely to

impede the primary production activities of the wider Kaipara Region, given the small and constrained area of HPL that has been identified. Currently none of the properties are economically viable with regard to land-based primary production. Rezoning into lifestyle will enable the properties to subdivide and reduce the sunk costs of operating their lifestyle properties.

The Economic Assessment summarises the economic benefits of the proposed plan change:

- *The proposal would enable a more efficient housing market.*
- *The proposed plan change will increase the supply of residential dwellings in Mangawhai which has a shortage of dwellings over the medium to long term. It will offer a mix of housing types, from large lot residential to medium-density housing.*
- *The plan change would not only add more homes to the housing market but also leads to competitive land and development markets.*
- *The construction of the proposal would generate 1,795 additional construction sector FTE jobs and generate $238.4 million in GDP per annum.*

Overall, the economic effects of this proposal are positive.

Will benefits outweigh the costs?

The Subject Site is already operating in a similar manner to a rural lifestyle zone. Overall, there will be environmental, social, cultural and economic benefits from rezoning to rural lifestyle.

5.8 Reasonably Practicable Options to Overcome Constraints and Economic Viability

AgFirst has assessed all reasonably practicable options to demonstrate that the permanent or long-term constraints on economic viability cannot be addressed to retain productive capacity.

5.8.1 Alternative Options to Retain Productive Capacity

This assessment includes addressing alternative forms of land-based primary production in order to overcome the permanent long-term constraints on economic viability. These alternative options include: dairy farming or dairy support; arable; CVP and horticulture.

AgFirst has mapped the Subject Site for the highest and best land use, based on reasonably practicable options for alternative production systems and suitability of these operations based on physical characteristics of the land and requirements of the various productive systems. To overcome some of the fragmentation constraints due to property boundaries and small scale, AgFirst has reviewed if amalgamation and boundary adjustments would overcome the constraints. The effective areas available for production as identified in Figure 10. The following section discusses the alternative forms of land-based primary production and whether they will overcome the constraints. The economic viability of the optimised land uses for each of the individual properties are presented in Table 6.

Dairy farming or dairy support

Dairy farming or Dairy Support is not a reasonably practicable option due to:

- No adjacent dairy or dairy support farms for amalgamation.
- The small area limits the number of animals able to be grazed to below what would be required from a standard sized farm.

- The high value of the land also makes it unattractive for leasing or purchasing.

Arable

It is not a reasonably practicable option for arable land use due to:

- There is currently no area that is suited for arable cropping due to the soil constraints.
- The proximity to neighbouring receptors would be an elevated risk of causing off-site nuisance rodent problems, dust, spray drift and noise effects.
- Not considered an attractive prospect for contractors due to machinery access or unsuitable soils.
- The fragmented and small size will not attract lessee or contractors.
- This alternative land based primary production does not overcome the economic viability.

Commercial Vegetable Production or Horticulture

There are currently no properties that are in CVP, with an attempt to grow grapes on one of the properties. As discussed in Section 5.1, the soil types across the Subject Site do not lend themselves to any arable, horticultural or commercial vegetable production land uses. AgFirst does not consider that horticulture is a reasonably practicable option for the Site. The poor and very poorly drained soils will likely have an impact with some crops not surviving, while others will have reduced yields. This is clearly evident when looking at the performance of the crops grown on-site.

Essentially, more intensive and higher land uses (such as arable, horticulture and commercial vegetable operations) require free draining (or soils without rooting barriers) and relatively flat land. The greater the wetness limitation, the more impact on yield and crop survival. Free draining soils are not present across the Subject Site, therefore the versatility is vastly reduced.

CVP and horticulture are not a reasonably practicable option land use due to:

- Land with and very poor, poor or imperfectly drained soils in addition to saline soils.
- The proximity to neighbouring receptors would be an elevated risk of causing off-site nuisance dust, noise and spray drift effects.
- Not considered an attractive prospect due to capital investment requirements (machinery, water irrigation and cool stores) for small scale operations.
- Unattractive for contractors or leases due to machinery access, small scale or unsuitable soils.
- The fragmented and small size will not attract lessee or contractors.
- None of the properties would be sought after for established CVP operations.
- The development costs involved for establishing a horticulture operation such as kiwifruit, which is an emerging horticulture option within this district, is estimated as $150,000 - $250,0000 per ha (including irrigation, plants, frost protection, trellis infrastructure and shelter) in addition to license fees. Other horticulture options such as pip fruit are not readily established in this area. It would be impractical to make this level of investment on the small areas that are in close proximity to sensitive receptors.

Summary

Despite any alternative land-based primary production systems, the optimised productive systems do not overcome the economic viability of the Site, with all of the individual properties showing a loss in profitability when looking at economic viability. To demonstrate the economic viability, the effective areas suitable for the various land uses within each individual property have been multiplied by the estimated returns (Section 5.2).

5.8.2 Improved land management strategies:

- The constraints of irreversible land fragmentation and small scale cannot be overcome by land management strategies. Areas of the marshland have previously been drained in an attempt to make them more productive, however, this has since been retired and has now naturally regenerated back into a marshland.
- The highest and best production use across the Subject Site has been evaluated. While small improvements would be feasible, there are no alternative options that would be significant enough to lift profitability to an economic level.

5.8.3 Alternative production strategies

- The constraints of irreversible land fragmentation and small scale cannot be overcome by alternative production strategies. There are also no feasible or suitable options for alternative production strategies.
- The highest and best production use across the Subject Site has been evaluated. There are no proven alternative cropping options or strategies that would be significant enough to lift profitability to an economic level.
- None of the properties have cattle yards, therefore alternative production strategies and more intensive finishing systems are unlikely to occur. Investment into sufficient yards for the low returns and very small scale would not make economic sense.

5.8.4 Water efficiency or storage methods

- While water efficiency or storage methods is a requirement for horticulture and CVP, conversion of these land uses is unlikely to be practicable, therefore not a relevant solution. Pastoral grazing and arable land use do not require freshwater irrigation.
- A feasibility study for water availability has not been undertaken. Water is required for stock drinking, investment into this infrastructure has not been accounted for in the economic viability, it would likely have a further negative effect.

5.8.5 Boundary adjustments (including amalgamations)

- This assessment has reviewed the contiguous HPL areas within the Subject Site suitable for primary production.
- These areas are not large enough for an economic pastoral grazing block, and given that the surrounding parcels are also lifestyle properties, boundary adjustments and amalgamations would not achieve the scale required to operate this type of activity.
- These blocks do not lend themselves to long-term productive use due to the significance of the non-reversable land fragmentation.

5.8.6 Lease arrangements

- With regard to lease opportunities, all the areas available for use as land-based primary production return net losses based on existing and realistic economic returns. Therefore, leasing does not overcome the permanent or long-term constraints.
- If an operator were to lease any of the properties, there is not enough income from the productive system to pay a lease rental, even based on a conservative productive lease value.
- From a lessor perspective, a typical drystock lease rate would not be enough to cover fixed land costs including the rates. Therefore, it would not be a viable proposition for the landowners.

5.8.7 Additional evaluations:

- The surrounding locality is largely made up of rural lifestyle blocks and hobby farms and constrained by the developed area to the south and harbour to the west. Therefore, the value in the land within the Subject Site is reflective in land used for non-primary productive purposes. Combining the inflated land price and small scale of the effective areas, there are no reasonably practicable options that would overcome the economic long-term constraints for this Site.

5.9 Evaluation of reasonably practicable options:

Pursuant to Clause 3.10(3)(a), the alternative forms of land based primary production, improved land management strategies, alternative production strategies, water efficiency or storage methods, reallocation or transfer of water and nutrient allocations, boundary adjustments including amalgamations, and lease arrangements assessed above have been considered independent of any potential economic benefit of using the HPL for purposes other than land-based primary production.

Consideration needs to be given to the deliberate inclusion of "reasonably practicable options". When assessing if an alternative option would overcome the economic viability, the assessor must ask if this is what a reasonable person would do. If the context is to amalgamate 10 properties to increase the landholding to something slightly larger, but still very small compared to the 255 ha average, I don't believe this is reasonable. Furthermore, as a result of the NPS-HPL, there is likely to be a shortage of lifestyle properties, due to higher demand and short supply, therefore these land prices will over the long-term likely go up.

Pursuant to Clause 3.10(3)(b), AgFirst has considered the impact that the loss of HPL would have on the landholding in which the HPL occurs. I conclude that the major constraint for the Subject Site is fragmentation and soil quality, historical subdivision, isolation from other viable land-based primary production and the small non-contiguous HPL areas that are impacted. The loss of the HPL within the Subject Site does not exacerbate this constraint because it is significantly constrained already. The impact of the proposed rezoning will have on the remaining HPL is negligible; it is already at a small and insufficient scale to be economic, with very high property liabilities, as indicated by the gross margin analysis compared to typical unfragmented farms.

With respect to Clause 3.10(3)(c), AgFirst has considered the future productive potential of land-based primary production on the Site, without being limited by its past or present uses. In conclusion, the highest and best land-based primary productive use for the Site, both now and the future, is pastoral grazing at a sustainable stocking rate. This is based on the limitations and long-term constraints, being non-reversable land fragmentation, small scale of operation and poor-quality soils. There are no additional reasonable and practicable land management strategies for improving the productive capacity of the block.

6.0 SUMMARY

The four individual properties included within the Subject Site are predominantly lifestyle blocks and do not rely on land based primary production as a primary income source. The four rural properties range in size from 0.72 ha to 10.64 ha and an average size of 3.7 ha.

Overall, while the land and soils within Subject Site is categorised as highly productive land under the NPS-HPL (LUC 3), the practical likelihood of any sustained existing or intensive agricultural operation is severely constrained due to:

- Non-reversable land fragmentation of the Subject Site and surrounding land uses
  - Adjacent developed area, including sensitive receptors
  - Fragmentation throughout the Site
  - Lanes, roads and existing development
  - Ineffective areas including the marshland

- Soil conditions
  - Large areas of poorly and very poorly draining soils that limit the productive capacity and versatility
  - Poor quality soils, limiting areas that would be suitable for arable, CVP or horticulture

- Lack of expansion or alternative forms of land-based primary production options
  - No opportunity for improved or alternative land management and production strategies
  - Small fragmented productive areas limiting operational scale
  - Separate ownership of properties
  - Physical boundaries and amalgamation opportunities
  - Existing developments and unproductive lifestyle blocks

- Reliance on contractors and lease agreements
  - Low appeal for these restricted land holdings due to disruptions and complaints - which is likely to be exacerbated with continued development to the south of the Site

Given the constraints identified above, I believe that the rezoning of the Subject Site meets the NPS-HPL tests in Clause 3.10 and therefore the Clause 3.7 pathway to enable the land to be zoned Rural Lifestyle.

In particular:

- Based on the assessment of the Subject Site, there are permanent and long-term constraints on the land that mean the use of the HPL for land-based primary production is not able to be economically viable for at least 30 years.
- Removing the Subject Site from productive use will not cause significant loss in the district of productive capacity of highly productive land, due to the severe limitations and long-term constraints outlined above and throughout this assessment.
- Due to the existing fragmentation of the Site, the rezoning of the Subject Site will not cause any fragmentation of large and geographically cohesive highly productive land.
- The assessment has considered all reasonably practicable options that would retain the productive capacity of the highly productive land.

Due to the limitations of the Site, and with rapidly rising input costs, the returns from marginal yields will continue to be reduced, and consideration will need to be given regarding the optimum land use for the Site. When discussing the long-term productivity of the Subject Site, the properties will not be economically viable for agricultural use during the next 30 years. Furthermore, while some properties could have scope to increase their productive use and income, these do not overcome the constraints and economic viability. For the remainder of the properties, there does not appear to be any higher and better primary land use for the Site through further development or amalgamation given the existing and future land use constraints.

From an agricultural perspective, it would be a better option to develop this Site, compared to alternative sites with few constraints and higher productive potential.

APPENDIX A: ADDENDUM REPORT FOR THE CABRA SOIL AND RESOURCE REPORT, MANGAWHAI. – IAN HANMORE

Addendum Report for the Cabra Soil and Resource Report, Mangawhai.

Prepared By: Ian Hanmore

Prepared For: Cabra

19th July 2024

Hanmore Land Management

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1.0 INTRODUCTION

An initial Soil and Resource Report (HLM report) was completed for the land located on Black Swamp and Raymond Bull Roads, Mangawhai that is the subject of a re-zoning request. That report mapped the soils and Land Use Capability (LUC) classifications at the site (see Figure 1 below) and classified them in relation to the National Policy Statement for Highly Productive Land (NPS-HPL).

Since that report was completed an Environment Court ruling (*Blue Grass Limited v Dunedin City Council*) has stated that more recent and more detailed mapping does not affect the land use classifications by the New Zealand Resource Inventory (NZLRI) with respect to the definition of Highly Productive Land (HPL) specified in the NPS HPL.

This addendum report has been prepared to provide further assessment of the effects of the proposed plan change on HPL following the Environment Court ruling. The report focusses on the potential productivity of the soils and LUC classification at the site in order to enable an assessment in terms of Clause 3.6 (4) of the NPS HPL.

Figure 1. The area outlined in black referred to in this report as "the site" and covered by the HLM report.

2.0 HIGHLY PRODUCTIVE LAND CLASSIFICATION

The NPS-HPL requires regional councils to map the HPL in their regions and include it in their operative regional policy statement. Until this work has been completed the interim definition of HPL includes land that is:

a) is

(i) zoned general rural or rural production; and

(ii) is predominantly LUC 1, 2, or 3 land;

b) 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.

With LUC 1, 2, or 3 land being defined as land identified as "Land Use Capability Class 1, 2, or 3, as mapped by the NZLRI or by any more detailed mapping that uses the Land Use Capability classification".

The recent Environment Court ruling (*Blue Grass Limited v Dunedin City Council*) however stated that during the interim period only the New Zealand Resource Inventory could be used to define LUC classes 1-3 and that more detailed mapping carried out since the NPS-HPL came into effect could not be used to refine or clarify those classifications.

If the land is identified as HPL then more detailed assessments can inform whether there are any pathways as provided in Clauses 3.6, 3.8, 3.9 and 3.10 of the NPS to enable rezoning, subdivision or development on HPL.

2.1 HPL on the Cabra Properties

The NZLRI mapped the majority of the land at the site as LUC units 3w 4 and 3s 4 with a smaller area of 4e 5 (see Figure 2 below). Soils on the class 3 area are dominated by One Tree Point peaty sandy with smaller areas of Tangitiki sandy loam and sand and Ruakaka peaty sandy loam. Based on these LUC classifications these areas are classed as HPL under the NPS-HPL. The rest of the site is mapped by the NZLRI as LUC unit 4e 5. Soils on the class 4 area are dominated by Mahurangi fine sandy silt loam but also include Warkworth clay and sandy clay loam. In our opinion, the HLM report remains highly relevant from an effects perspective in terms of the actual productive capacity of the land, the constraints on the land for primary production, and the economic viability of primary production on the land.

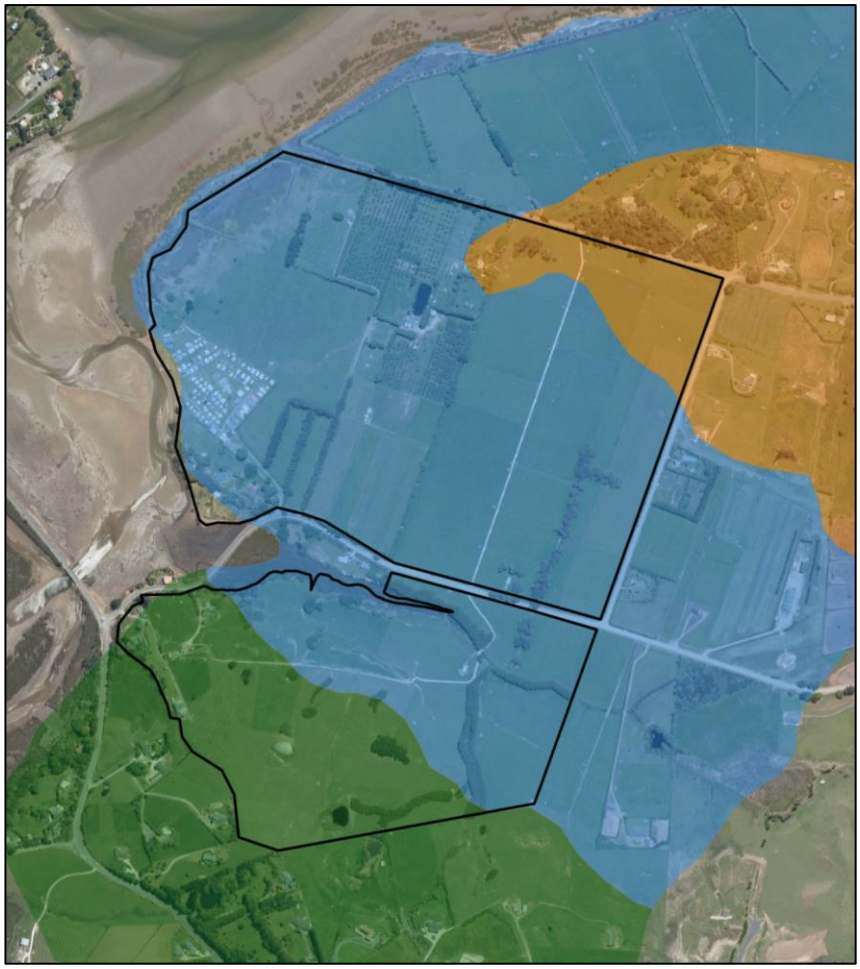

Figure 2. LUC mapping by the NZLRI. Blue shading 3w 4, orange shading 3s 4, green shading 4e 5

3.0 MAPPING SCALE AND DATA RELIABILITY

The LUC system can be used at many different scales and for many different purposes. From a very detailed scale over a small area such as a horticulture activity on less than one hectare to regional planning covering many thousands of hectares. As such, it is vital that the scale of mapping used is fit for the purpose it was intended (Hewlett & Lilburne 2003, Lynn et al 2009). When this protocol is not followed the output information can be unreliable and misleading or result in information that is at best nonsense (Hewlett & Lilburne 2003, Lynn et al 2009).

It is generally recommended that for any given mapping scale there is on average, one observation site per square centimetre of published map, with a minimum acceptable limit of one site per four square centimetres of published map (Grealish 2019).

- At a 1:50,000 scale, 1cm^2 of published map covers 25ha. Following the observation guidelines this equates to, at most, one observation per 25ha and at the least one observation per 100ha.
- At a scale of 1:5,000 a 1cm^2 area of published map covers 0.25ha. Following the observations guidelines outlined above this equates to, at most, one observation per 0.25ha and at the least one observation per hectare of land.

- At 1:10,000 it equates to at most one observation per hectare and at the least one observation per four hectares.

Historically the information that could be contained in a map was constrained by the limitations of producing and publishing the hard copy maps. At any particular map layout size only so much information could be recorded and published. Thus, the larger the area being mapped, the less site-specific information that could be recorded and published. For example, at a scale of 1:50,000 a 20cmx20cm square map would cover 10,000ha and would on average have at most 400 mapping observations and at the least 100. As the map was a fixed hard copy there was no way of manipulating it to try and extract more detailed information. The scale to information relationship was fixed (Hewlett & Lilburne 2003).

With the development of computerised Geographic Information Systems (GIS), the scale to information relationship is no longer fixed. The GIS allows the user to increase the scale of the map by zooming in to any point on the map to derive information for that specific location. This however is the process that Lynn et al 2009, Hewlett & Lilburne 2003, Grealish 2019 state should be avoided as it can yield unreliable information that can be misleading and at times total nonsense, the reason being that the scale of input data is not appropriate to the detailed scale of information acquisition (Hewlett & Lilburne 2003) and is specifically warned against in the LUC survey handbook.

This, however, is exactly what is being done when the NZLRI data is used to determine LUC classifications and therefore HPL classifications at a farm scale. The NZLRI is mapped at a scale of 1:50,000. It was never intended for farm scale use, and as such sufficient data was not gathered for that purpose. It is therefore inappropriate to use the LUC classifications in this way because it can yield unreliable results at the farm or site-specific level.

At 1:50,000 it is likely, that at best, there has been one observation made at the Paddison Rural Land for the NZLRI mapping and possibly no observations at all. The HLM report however has followed the correct mapping protocols set out in the LUC survey handbook (Lynn et al 2009) and the NZ soil mapping protocols and guidelines (Grealish 2019) and is therefore highly relevant in terms of the actual productive potential of the property and commensurate with the definition of LUC 1, 2, 3 land in the NPS HPL that will apply once the regional mapping process is complete.

The following section will discuss the potential productive capacity of the Paddison Rural Land based on the soil and LUC mapping carried out at the site and presented in the HLM report.

4.0 POTENTIAL PRODUCTIVE CAPACITY

4.1 The LUC System

The LUC system has been used in New Zealand since 1952 and helps achieve sustainable land development and management at farm, catchment, district, regional and nation scales (Lynn et al 2009). The system uses physical information recorded in a Land Resource Inventory (**LRI**) that includes soil type, parent material, landform and slope angle, erosion type and severity and vegetation cover to classify the land into one of eight LUC classes. This information is supplemented with information on climate, flooding risk, erosion history and the effects of past management practices.

The LUC categories are set out in section 3.2 of the HLM report dated 5th April 2024.

The four arable classes of land are further described as follows:

- Class 1 land is classified as the most versatile multi-use land with minimal limitations to arable use that is highly suitable for cultivation and can support many different crop types.
- Class 2 land is classified as very good land with only slight physical limitations to arable use that can readily be controlled by management and soil conservation practices and suitable for many cultivated crops.
- Class 3 land has moderate limitations to arable use which restrict the choice of crops that can be grown and the intensity of cultivation.
- Class 4 land has severe physical limitations to arable use that substantially reduce the range of crops that can be grown and make intensive soil conservation and management necessary with only occasional cropping possible.

4.2 The HLM Report

The HLM report found that after undertaking a site-specific assessment that the areas of LUC class 3 land were significantly smaller than those mapped by the NZLRI. The NZLRI has mapped all of the area on the northern side of Black Swamp Road, which covers 61.8ha, and 16.1ha of land on the southern side of Black Swamp Road as LUC class 3. The HLM report found that a total of 55.6ha of land was LUC class 3 with the balance comprised of LUC units 4e 5, 4e12, 4w 3, 4s 4, 6w 1, 6w 2, 7w 1, and developed areas and estuarine margins that could not be used productivity.

The HLM report found that the area of LUC class 3 land on the northern side of Black Swamp Road formed one large area but was fragmented by legal titles which range in size from 0.3ha to 19.8ha (see Figure 3 below). The four largest areas available for productive use cover 19.8, 7.2, 6.0 and 4.3 hectares. The remaining area is made up of smaller lots ranging from in size from 0.3ha to 2.9ha and often include a residential dwelling and other associated development

and buildings. The LUC class 3 area on the southern side of Black Swamp Road is fragmented into two areas by estuarine margins and a waterway and cover 2.3ha and 2.7ha.
Each of the three LUC class 3 units mapped by the HLM report at the site are listed in Harmsworth's (1996) LUC description as being suitable for horticulture, cereals for unit 3w 4, root and green fodder cropping and grazing. Average stock carrying capacity is listed as 13su/ha for units 3e 5 and 3s 4 and 17su/ha for unit 3w 4 that covers 52.4ha of the area.

Figure 3. LUC class 3 land mapped in the HLM report shown in green with all with LUC class 4, 5, 6 and 7 land and developed areas shown in brown. Legal title boundaries are shown by black outlines.

Wetness is the major limiting factor for production on the majority of this area. High water tables and poor drainage result in crop choices limited to annual crops and those that can tolerate wet soil conditions. Care needs to be taken when utilising these soils as over cultivation can cause a loss of soil carbon and soil structure and result in soil shrinkage and soil structure degradation.

The remaining area suitable for productive use, based on the site-specific assessment at the site is comprised of LUC units - 4e 5, 4e12, 4w 3, 4s 4,5e 2*, 6w 1, 6w 2, 7w 1. The productive potential of the class 4 units is discussed below (the HLM LUC map of the site is show in Figure 4 below).

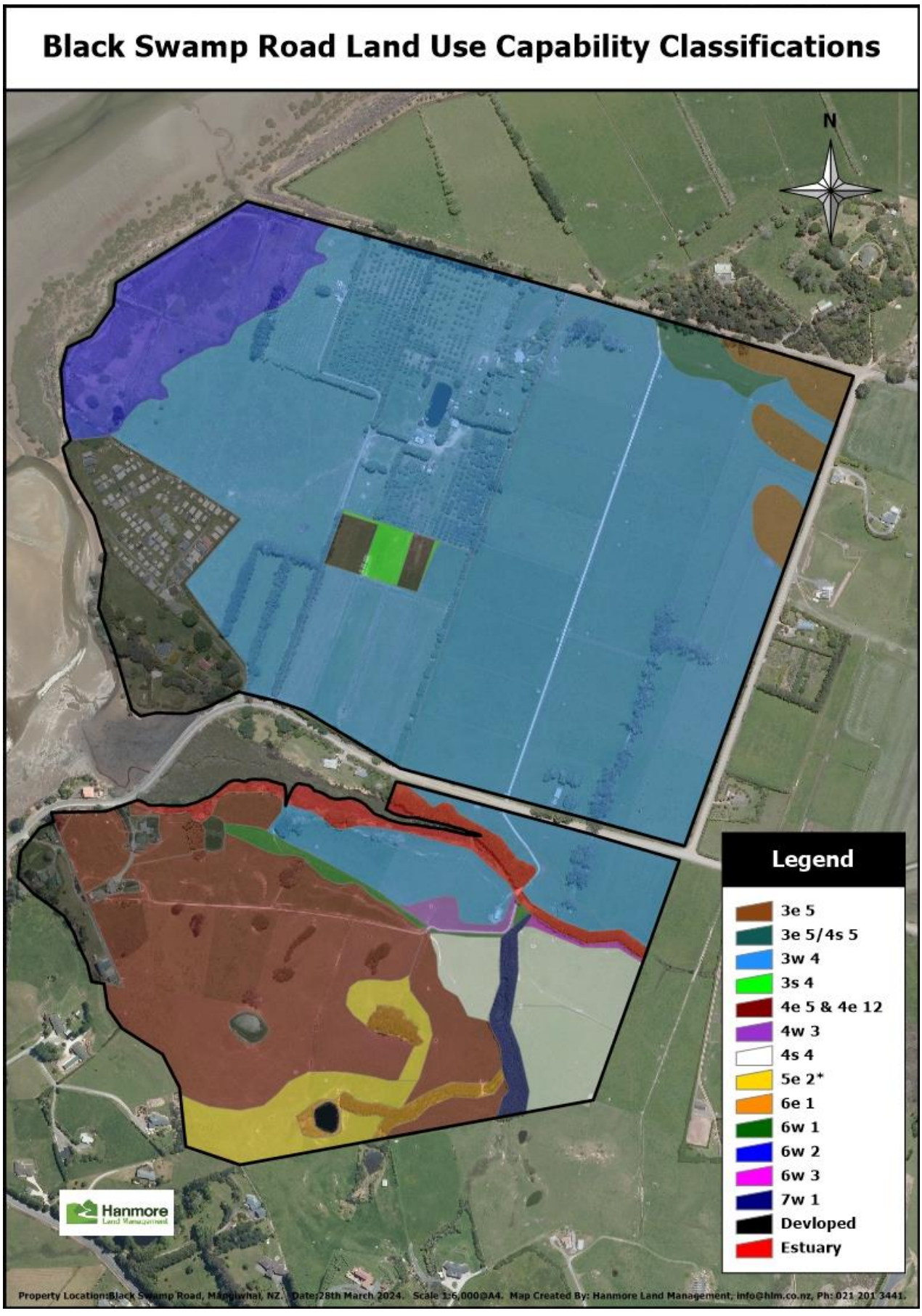

Figure 4. HLM LUC map

4s 4.

These units are dominated by weakly to moderately podzolised Mahurangi fine sandy loam and Hukerenui fine sandy loam soils. These soils are characterised by a formation of a white silica pan below the topsoil (visible in the Hukerenui soil profile picture in the HLM report) having poor drainage, poor structure, low pH, natural low fertility, they dry out quickly over the summer and become waterlogged over the winter. On the flat to undulating slopes at the site these soil characteristics present the major limitation to arable use. Cropping is limited to root and green fodder crops that are grown in rotation with pasture. They cannot support highly productive uses such as horticulture or regular arable cropping.

These units are most suited to grazing and forestry having an average stock carrying capacity of 13 stock units per hectare (where one stock unit equates to one 55kg ewe raising one lamb to weaning) and a radiata pine forestry site index (the mean height of the tallest 100 trees per hectare at 20 years of age) of between 26-32m. A 13 su/ha carrying capacity is classed as medium with FSI classed as medium to high by Harmsworth (1996) (full carrying capacity and FSI tables are contained in Appendix 1 and 2).

4e 5 and 4e12

These units include Mahurangi fine sandy loam and Warkworth clay and sandy clay loam soil with rolling to strong rolling (8-20^0) slopes. These soils are strongly leached to moderately podzolised and are not well suited to horticulture.

The greatest limitation on these units is the steepness of the slopes and subsequent erosion potential that preclude regular cropping. These units can be used for root and green fodder cropping in rotation with pasture, grazing and production forestry. They have a medium stock carrying capacity of 13 su/ha and a medium to high FSI of 28-32m.

4w 3

This unit is small covering only 0.39ha. It includes a wet transition zone between the rolling to strong rolling 4e 5 and 4e12 slopes and the 3w 4 flats. It receives runoff from the slopes above and has a severe wetness limitation to arable use. It also includes a surface drain which leaves little in the way of productive area. The wetness limitation precludes any regular cropping and making it suitable for root and green fodder cropping in rotation with pasture, grazing with a moderately high stock carrying capacity of 17su/ha and a very low FSI of <18m.

5e 2 and 6e 1

These units are steeper versions of the 4e 5 unit. The steepness of the slopes precludes any form of cropping with the units being suitable for grazing and forestry. Stock carrying capacity is low at 8su/ha with a high FSI of 31-34m.

6w 1, 6w 2 and 7w 1

These three units have wetness imitations that preclude any form of cropping, are to wet for production forestry and only suitable for low to medium level grazing. Unit 6w 1 and 7w 1 cover only small areas (0.5 and 0.7ha respectively) and form the riparian buffer zones adjacent to waterways. Due to their location these areas are suited to retirement for waterway protection and currently do not contribute significantly to the overall productive capacity of the site.

The area of unit 6w 2 is located at the estuarine margins on the northwestern side of the site. The sand soils in this area have very little development, have saltwater intrusion and support minimal developed pasture with rushes and salt marsh plant species dominating the area. As it is this area of the site has minimal productive potential and would be suitable for retirement and environmental benefits.

4.3 Overall Site Productivity Assessment

The most productive area of the site includes the peat and peaty sand flats represented by the LUC units 3w 4 and 3e 5 shown in Figure 4 above. These units can support horticulture, cereal cropping, root and green fodder cropping and a moderately high stock carrying capacity. There are however constraints to the use of the land due to fragmentation from the number of legal titles in the proposed area as well as the proximity to neighbours. The two largest titles (NA736/23 and NA726/14) at the site are located on the eastern side and cover 19.0ha and 8.1ha respectively (see Figure 5 below). These titles have sufficient size to potentially be used in a productive horticultural capacity and to buffer themselves from potential reverse sensitivity issues. The remaining two larger sites NA109B/157 that covers 5.3ha and 1011542 that covers 10.6ha (6.0ha of which is potentially productive) have challenges to their productive use due to the proximity and number of neighbours. Lot NA109B/157 has a six small lots on two of its boundaries while Lot 1011542 has seven smaller lots and the campground on three of its boundaries. Though the smaller lots on the boundaries of the potentially productive larger lots won't necessarily legally prevent their productive use they will likely cause some reverse sensitivity issues. Activities such as spraying and fertiliser application may well generate some opposition from residential neighbours. The remaining area of LUC class 3 land is fragmented within the smaller legal titles ranging in size from 0.3ha to 2.9ha and unlikely to be used in a productive way beyond residential and hobby gardens/orchards.

Figure 5. LUC class 3 land shown in green with legal title boundaries

5.0 RURAL LAND ON THE EDGES OF MANGAWHAI

Six areas bordering Managwhai have been examined to determine their LUC classes and productivity potential to compare with that of the proposed zone change site at Black Swamp Road. The data for this analysis is sourced solely from the NZLRI. A map showing the areas investigated and the LUC classes present is shown on the following page in Figure 6 with the Proposed Plan Change (PPC) area outlined in red.

5.1 Area 1 - Bream Tail

This area to the north of Mangawhai is made up of LUC class 4, 6 and 7 land. It is typically rolling to steep with strongly leached to podzolised soils. Productivity on the steeper areas is limited to grazing and forestry while the rolling to strong rolling slopes area suitable for grazing, forestry and root and green fodder cropping. There is no HPL in this are as defined by the NPS-HPL. This area has less productive potential than the PPC area at Black Swamp Road.

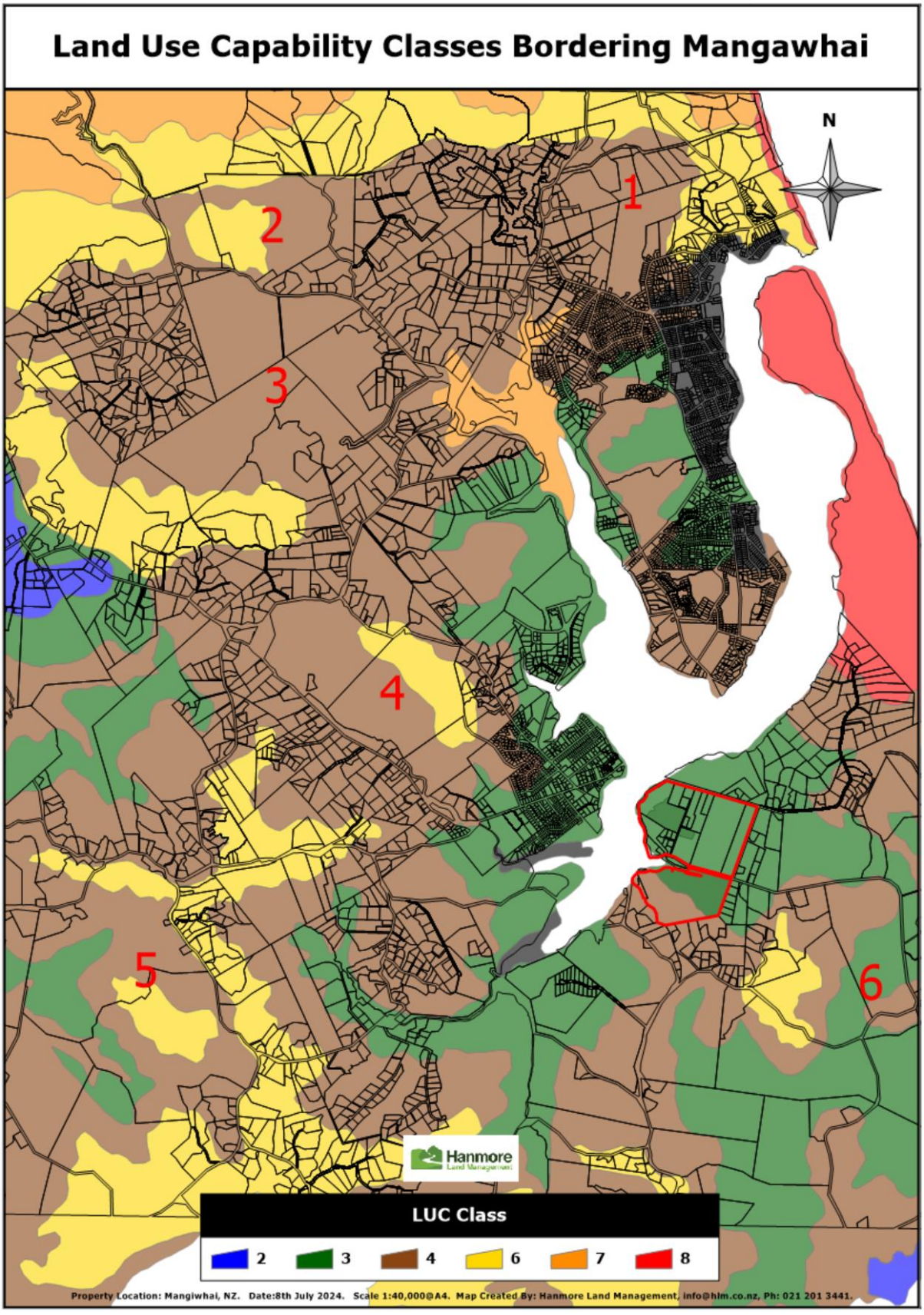

Figure 6. Areas bordering Mangawhai investigated as part of this report with the Proposed Plan Change area outlined in red.

5.2 Area 2 - Kapawiti Road

This area to the northwest of Mangawhai is dominated by LUC class 4 land with a smaller area of LUC class 6. Topography on the class 4 land ranges from flat to strong rolling while the class 6 land is typically moderately steep. Class 4 soils are wet alluvium through to weakly podzolised to podzolised. Class 6 land has strongly leached to weakly podzolised volcanic soils.

Productivity on the steeper class 6 areas is limited to grazing and forestry while the flat to strong rolling slopes of the class 4 areas are suitable for grazing, forestry and root and green fodder cropping. There is no HPL in this area as defined by the NPS-HPL. This area has less productive potential than the PPC area at Black Swamp Road with no class 3 land present.

5.3 Area 3 - Cove Road West

This area to the west of Mangawhai is similar to the area around Kapawiti Road with mostly LUC class 4 land and a small area of LUC class 6 land. Class 4 land is made up of flat topography with podzolised soils through to rolling slopes with strongly leached to weakly podzolised sandstone soils. Due to the slopes, poor soils and wetness limitation the areas of class 4 land can support, grazing, root and green fodder cropping and forestry. The area of class 6 land is suitable for grazing and forestry. There is no HPL at this site with overall productive potential being lower than that of the PPC area at Black Swamp Road.

5.4 Area 4 - Frecklington Farm – Tara Road East

This site is located west of Mangawhai and is dominated by LUC class 4 land with small areas of LUC class 6 and 3. As with the previous two sites the LUC class 4 land on Frecklington Farm is suitable for grazing, root and green fodder crops and forestry while the LUC class 6 land is suitable for grazing and forestry. There is a small area of HPL at the south-eastern end of this site that is similar to the proposed site at Black Swamp Road being flat with poorly drained peaty sand soils. Overall, the productivity potential at this site is lower than at the PPC area at Black Swamp Road site due to much smaller area of LUC class 3 land.

5.5 Area 5 - Kaiwaka Mangawhai Road

This site is located to the southwest of Mangawhai and is dominated by LUC class 4 land with lesser areas of LUC class 3 and 6. Class 4 land is suitable for grazing, root and green fodder cropping and forestry while the class 6 land is suitable for grazing a forestry. The area of class 3, HPL has a different soil type to the PPC area at Black Swamp Road but has similar land use options being suitable for grazing, root and green fodder cropping, cereals, horticulture and vegetables and production forestry. Potential productivity will be slightly higher in this area than the PPC area due to the size of the unfragmented HPL with a significant amount being contained within one legal title.

5.6 Area 6 - Mangawhai East – Rural

This site is located southeast of Mangawhai and is dominated by LUC class 3, HPL with lesser areas of class 4 and 6. Soil types across this site are different to the other five sites discussed. The soils at this location are sand based with class 4 and 6 area having similar productivity potential as the other areas of class 4 and 6 land with class 4 being suitable for grazing, root and green fodder cropping and forestry and class 6 land being suitable for grazing and forestry. The area of HPL at the site is the same as that of the PPC area at Black Swamp Road having peat and peaty sand soils and flat topography. Overall productivity potential will be greater at this site as the legal titles are larger than those at the PPC area and contain larger areas of unfragmented HPL.

6.0 CONCLUSION

Of the six areas bordering Mangawhai that have been examined using the NZLRI mapping data areas five and six are considered to have greater productivity potential than the PPC area. These locations have larger contiguous areas of HPL that are not fragmented by legal parcel boundaries as they are in the PPC area.

The remaining four areas generally have steep topography and poorer soils than those in areas five and six and at the PPC area and have little or no HPL. As such, these four areas have a lower productivity potential than that of the PPC area.

7.0 APPENDICES

7.1 Appendix 1 – Stock Carrying Capacity Rankings.

Stock carrying capacity ranking	Stock units per hectare
very high	>25
high	21–25
moderately high	16–20
medium	11–15
low	6–10
very low	1–5
sparse	<1

Taken from Harmsworth (1996)

7.2 Appendix 2 – *Pinus radiata* Site Index Ranking.

Site index ranking	Site index in metres
very high	>35
high	30–35
medium	25–29
low	20–24
very low	<20

Taken from Harmsworth (1996)

8.0 REFERENCES

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APPENDIX B: ECONOMIC ANALYSIS

Operational Items		$ Total	Source
Area (ha)		8.04	
Revenue	Beef Sales	$ 19,488	12 prime beast sold at an assumed weight of 280kg carcass weight, at $5.80/kg average schedule
	Beef Purchases	$ 6,600	12 calves purchased at $550/hd (100 kg R1 weiner)
Total Revenue		**$ 12,888**	**Revenue from stock**
Operating Expenses	Wages	$ 1,294	Based on B+LNZ Economic Survey, NNI Class 5 finishing land 5 year average (2019-2024) of $160.80/ha
	Animal Health	$ 506	Based on B+LNZ Economic Survey, NNI Class 5 finishing land 5 year average (2019-2024) of $62.89/ha
	Fertiliser & Lime	$ 2,509	Based on B+LNZ Economic Survey, NNI Class 5 finishing land 5 year average (2019-2024) of $311.84/ha
	Weeds, Seed and Contracting	$ 918	Based on B+LNZ Economic Survey, NNI Class 5 finishing land 5 year average (2019-2024) of $114.11/ha
	Vehicle Expenses	$ -	Assume no vehicles are required for a block of this size
	Repairs & Maintenance	$ 1,030	Based on B+LNZ Economic Survey, NNI Class 5 finishing land 5 year average (2019-2024) of $128.06/ha
	Electricity	$ 101	Based on B+LNZ Economic Survey, NNI Class 5 finishing land 5 year average (2019-2024) of $12.60/ha
Total Operating Expenses		**$ 6,358**	
Fixed Expenses	Administration & ACC	$ 444	Based on B+LNZ Economic Survey, NNI Class 5 finishing land 5 year average (2019-2024) of $55.26/ha
	Insurance	$ -	Based on B+LNZ Economic Survey, NNI Class 5 finishing land 5 year average (2019-2024) of $26.35/ha
	Rates	$ -	Applied at a per property scale
Total Fixed Expenses		**$ 444**	
Depreciation		$ -	Assumed depreciation on tools, equipment and machinery
Total Expenses		**$ 6,802**	
EFS		**$ 6,086**	**Economic Farm Surplus for Subject Site**
EFS per ha		**$ 756**	**Economic Farm Surplus for Subject Site per ha**

Map Ref	Property ID	Zone	Effective Rates	Optimised Land Use Areas			EFS / EBITRm for each Property	Economic Viability Test ($)		
				Grazing	Non-Effective	Total Effective		Ratable Land Value	Total Property Liabilities	Economic Viability
15	Lot 2 Deposited Plan 545009	Rural	$ 2,735	0.58	0.1	0.6	-$ 2,299	$ 780,000	$ 13,181	-$ 15,479
16	Lot 1 Deposited Plan 545009	Rural	$ 3,211	0.97	0.1	1.0	-$ 2,479	$ 785,000	$ 15,521	-$ 18,001
21	Lot 3 Deposited Plan 545009	Rural	$ 2,994	1.84	0.7	1.8	-$ 1,604	$ 750,000	$ 11,452	-$ 13,055
26	Lot 8 Deposited Plan 565865	Rural	$ 7,703	4.66	6.0	4.7	-$ 2,653	$ 1,650,000	$ 31,718	-$ 34,371
				8.04	**6.86**	**8.04**	**-$ 9,035**	**$ 3,965,000**	**$ 71,872**	**-$ 80,906**

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