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Productive Land Resource and Agricultural Productivity Assessment

Prepared for

Waikato Thoroughbred Racing Incorporated

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September 2026

Document Quality Assurance

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Status:	Final	
Date:	24.09.2026	

I am Jeremy Hunt, an Agribusiness Consultant with AgFirst. I hold a bachelor of Science and have 8 years of professional experience in agricultural productivity and resource assessments. My qualifications and relevant experience are set out in further detail in my curriculum vitae - Appendix C to this report.

While this report has not been prepared for an Environment Court proceeding, I confirm that I have read and understood the Code of Conduct for Expert Witnesses contained in the Environment Court Practice Note 2023, and I agree to comply with it.

I acknowledge that, as an expert, I have an overriding duty to assist the decision maker impartially on matters within my area of expertise. In preparing this report, I have exercised my independent professional judgement, and the opinions I express are my own. I understand that my duty as an expert is not to advocate for the interests of the applicant or any other party.

I confirm that the matters addressed in this report are within my area of expertise, except where I expressly state that I am relying on information or opinions provided by another person. I have not omitted to consider any material facts known to me that might alter or detract from the opinions expressed in this report.

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1.0 Executive Summary

AgFirst Waikato (2016) Limited (AgFirst) was engaged by Waikato Thoroughbred Racing Incorporated (WTRI) to undertake an assessment of the productive land resource associated with the proposed Waikato Thoroughbred Racing Greenfield Racing Hub at 636 Pencarrow Road, Tamahere (Subject Site). The assessment considers the productive characteristics of the Subject Site, its ability to support land-based primary production, the economic contribution of existing and potential productive uses, and the productive implications associated with the proposed development.

The Subject Site comprises approximately 163.9 hectares (ha) and is currently utilised as two separate operational dairy farms, together with an existing arable cropping block. The Site contains productive soils, established drainage and substantial agricultural infrastructure supporting ongoing land-based primary production.

The New Zealand Land Resource Inventory (NZLRI) identifies the Subject Site as comprising approximately 57.0 ha of Land Use Capability (LUC) Class 1 land, 93.8 ha of LUC Class 2 land and 13.1 ha of LUC Class 4 land. Accordingly, approximately 150.8 ha is mapped as LUC Class 1 or 2 land.

The productive capability and versatility of this land resource varies across the Subject Site. The better-drained LUC 1s1 and 2s3 land is highly versatile and capable of supporting intensive pastoral farming, arable cropping, commercial vegetable production and potentially horticultural production. In comparison, the LUC 2w7 land is subject to greater wetness and drainage limitations, while the LUC 4e4 land has greater slope and erosion limitations and is more naturally aligned with pastoral production.

The assessment identified that the Subject Site is capable of supporting a range of land-based primary production activities, including pastoral grazing, dairy support, dairy farming, arable production, commercial vegetable production and horticulture. Approximately 97.9 ha has been identified at a high level as potentially suitable for cultivation-based and horticultural production. This demonstrates that a substantial component of the Subject Site has productive versatility extending beyond pastoral farming.

The existing dairy farming system nevertheless represents the established productive benchmark for the Subject Site. The two operational dairy farming platforms are capable of utilising essentially the full effective productive area, including land subject to greater wetness limitations, and are supported by substantial existing productive infrastructure. This includes dairy sheds and associated yards, farm races, stock water systems, drainage infrastructure, farm dairy effluent collection, storage and land application systems, feed pads, fencing and stock handling facilities.

Based on the representative dairy farming system adopted for this assessment, the Subject Site is estimated to generate:

- approximately $1.54 million per annum in farm-gate revenue;
- approximately $531,000 per annum in EBITRm; and
- approximately 3 to 3.5 full-time equivalent (FTE) positions associated with the farming operation.

Alternative productive uses have also been assessed. Mixed arable production represents a physically and economically feasible use of the better-drained parts of the Subject Site but, on the representative assumptions adopted, generates lower operating earnings than the existing dairy farming system. Commercial Vegetable Production (CVP) is also biophysically feasible on suitable land but is materially constrained by the regulatory framework applying under Proposed Waikato Regional Plan Change 1.

Horticulture represents a credible potentially higher-value use of suitable parts of the better-drained land. The approximately 97.9 ha identified as potentially suitable substantially exceeds the land area required to accommodate a commercially relevant horticultural enterprise. Representative Gold kiwifruit production demonstrates the potential for materially higher productive returns per hectare than the existing pastoral system. However, establishing horticulture would require substantial new capital investment, a reliable irrigation water supply and detailed crop-specific feasibility assessment.

For context, the assessment identifies development expenditure of approximately $1.05 million/ha for representative Gold kiwifruit production, excluding the underlying land value and any requirement for bulk water storage. Using approximately 4 ha of productive canopy as an indicative minimum commercial owner-operated enterprise, orchard development expenditure alone would be approximately $4.2 million, before allowing for the underlying land requirement and any bulk water storage. Horticulture therefore represents a genuine future productive opportunity, but its potential economic return should be distinguished from the existing and demonstrated economic contribution of the operational dairy farming system.

The proposed development will result in the permanent removal of approximately 154.5 ha of land currently available for land-based primary production, including approximately 150.8 ha of LUC Class 1 and 2 land. The Proposal will therefore result in the loss of existing agricultural production and economic contribution, together with the permanent removal of future opportunities to utilise this land resource for alternative forms of primary production.

At the property level, the productive implications of the Proposal are substantive. The existing dairy farming operation and associated productive infrastructure will be displaced, and a substantial area of versatile LUC Class 1 and 2 land will no longer be available for land-based primary production.

In the wider context, however, the approximately 150.8 ha of LUC Class 1 and 2 land affected represents approximately 0.1% of the Waikato District's LUC Class 1–3 land

resource, while representative dairy production from the Subject Site is equivalent to approximately 0.2% of the milk production represented by the DairyNZ Waikato benchmarking dataset.

Overall, the Subject Site contains a highly productive and versatile rural land resource. Dairy farming represents its established and economically productive use, while the better-drained component provides opportunities for alternative and potentially higher-value production. Development of the Subject Site will permanently remove this productive capacity and foreclose these future agricultural production opportunities.

The productive loss is therefore permanent and material at the property level, although the land affected represents a relatively small proportion of the wider productive land resource within the Waikato District and Waikato Region. This assessment quantifies and describes that productive loss to provide an objective input into the broader planning, economic, social and environmental assessment of the Waikato Thoroughbred Racing Greenfield Racing Hub.

2.0 Introduction

2.1 Background

Waikato Thoroughbred Racing Incorporated is seeking approval for the Waikato Thoroughbred Racing Greenfield Racing Hub development located at 636 Pencarrow Road, Tamahere, Waikato (Subject Site).

The proposal comprises the development of a master-planned horse racing facilities and associated infrastructure on approximately 163.9 hectares (ha) of land situated within the Tamahere locality, approximately 6.7 kilometres (km) southeast of Hamilton City and approximately 3 km south of the Tamahere Country Club. The proposal includes four racing and training tracks, horse stabling and tie-up facilities, car parking and internal access infrastructure, lifestyle residential lots, a comprehensive residential precinct for senior living, commercial development, and open space areas incorporating bush tracks. The Schematic of the Development is provided in Appendix A.

AgFirst Waikato (2016) Limited (AgFirst) has been engaged to undertake an assessment of the productive land resource associated with the Subject Site and evaluate its ability to support land-based primary production.

The assessment considers:

- The productive characteristics of the land resource;
- Existing and potential agricultural production opportunities;
- The productive capacity of the Subject Site;
- The economic contribution of land-based primary production; and
- The productive implications associated with the proposed development.

This assessment has been prepared to inform the broader Fast Track approvals process and associated technical assessments.

2.2 Scope of Assessment

This assessment includes:

- Review of available land resource information;
- Review and assessment of available soil and land use capability information;
- Assessment of agricultural productivity;
- Assessment of the economic contribution of primary production;
- Consideration of Highly Productive Land; and
- Assessment of the productive implications associated with the development of the Subject Site.

3.0 Site Description and Existing Land Use

3.1 Site Location

The Subject Site is located at 636 Pencarrow Road, Tamahere, within the Waikato District as per Figure 1. The Subject Site comprises approximately 163.9 ha across five property titles described in Table 1[1] and Figure 2 below. The areas shown in Figure 2 may differ slightly from those presented in Table 1 due to rounding within the mapping software.

The Subject Site is situated immediately adjacent to the Waikato Expressway and is surrounded by a mixture of rural production, lifestyle and rural-residential land uses. Under both the Operative and Operative in Part Waikato District Plans[2], the Subject Site is zoned General Rural Zone (GRUZ). The surrounding area to the Subject Site is also zoned as GRUZ which can be seen in Figure 3.

The Subject Site is bound by the Waikato Expressway to the north, Duncan Road to the east, Hooker Road to the south and Pencarrow Road to the west. The Te Awa - The Great New Zealand River Ride runs along Pencarrow Road and Hooker Road. Within this road-bound area, five existing dwellings and the Tamahere Healing Centre will be surrounded by the proposed development.

The Subject Site is located within the Waikato-Waipā River catchment and extends across two of the Proposed Waikato Regional Plan Change 1 (PC1) sub-catchments: Sub-catchment 33 – Waikato at Narrows and Sub-catchment 31 – Mangaone.[3] These sub-catchments are relevant to the management of land-use activities under PC1, including provisions relating to the establishment and expansion of commercial vegetable production.

Table 1. Property titles within the Subject Site at 636 Pencarrow Road, Tamahere.

Zoning	Title Number	Legal Description	Current Use	Area (ha)
General Rural Zone	632409	Section 49 Survey Office Plan 457609	Dairy 1	37.6
	650205	Lot 1 DP 471383	Dairy 1	23.9
	650204	Lot 2 DP 471383	Dairy 1	18.5
	1027516	Section 2 Survey Office Plan 547526	Dairy 2	69.7
	SA383/181	Lot 2 DP 16925	Arable	14.2
Total				**163.9**

[1] LINZ Property Titles
[2] Waikato District Plan
[3] Waikato Regional Council, Proposed Waikato Regional Plan Change 1 – Waikato and Waipā River Catchments, Sub-catchment mapping and information.

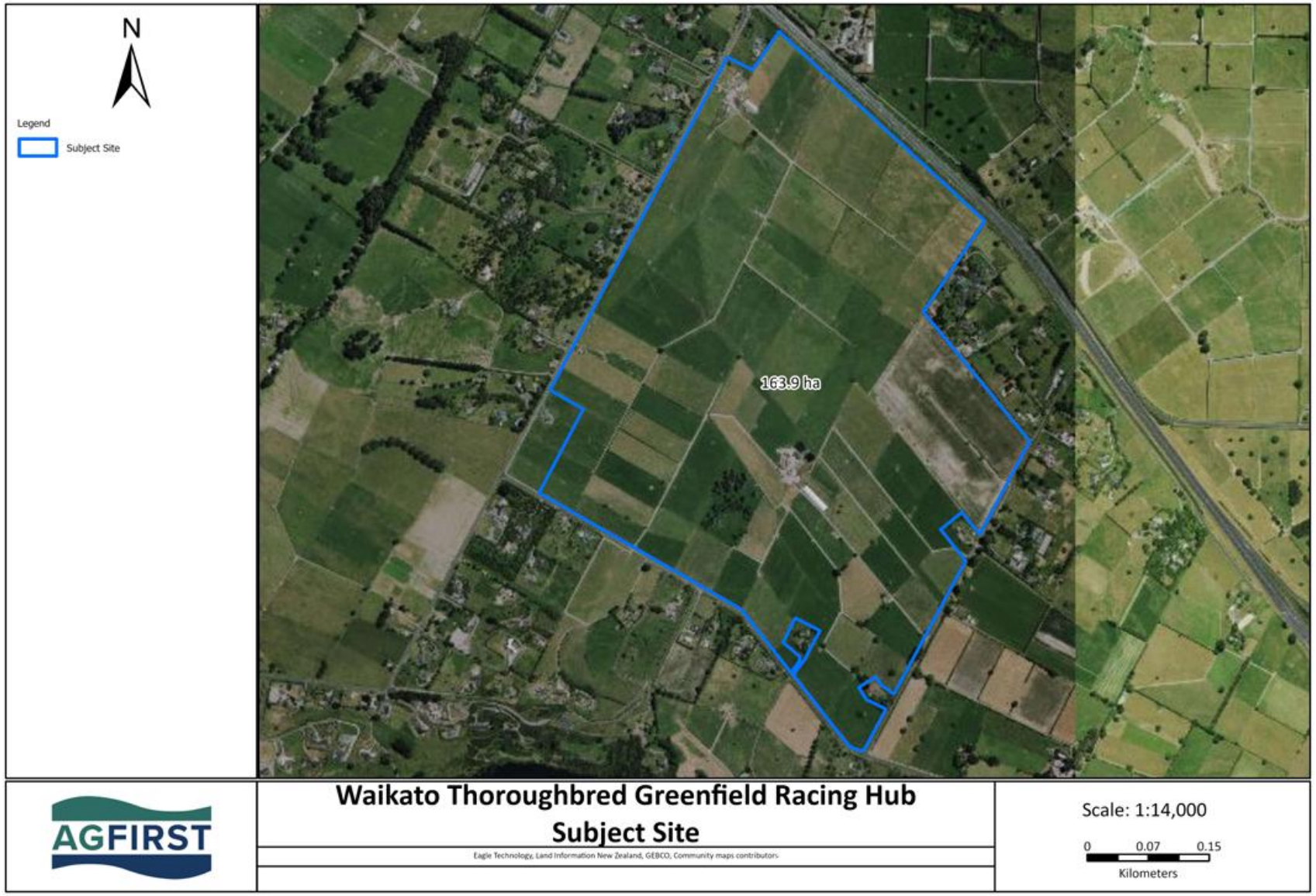


Figure 1. Subject Site at 636 Pencarrow Road, Tamahere.

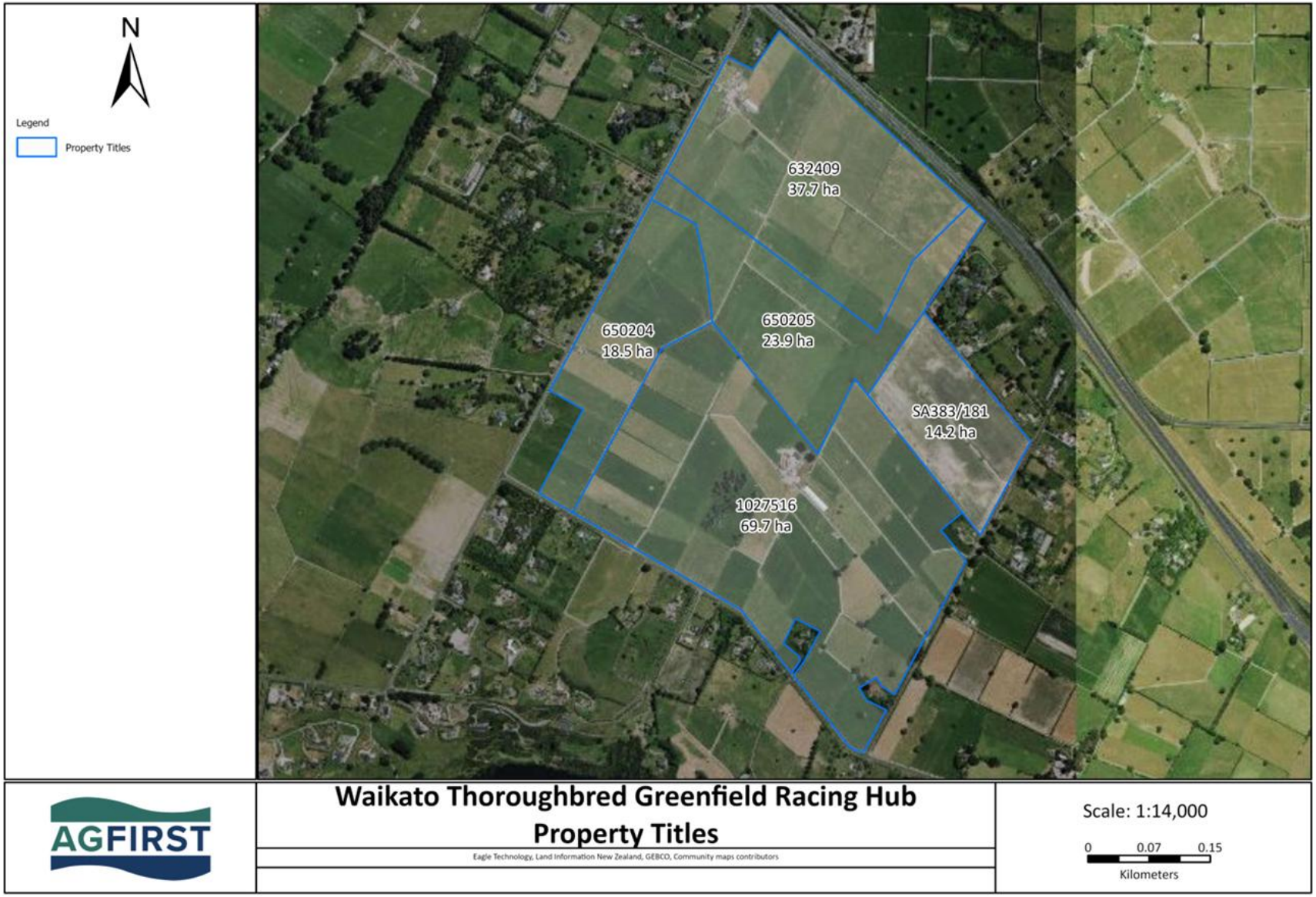


Figure 2. Property titles that make up the Subject Site at 636 Pencarrow Road, Tamahere.

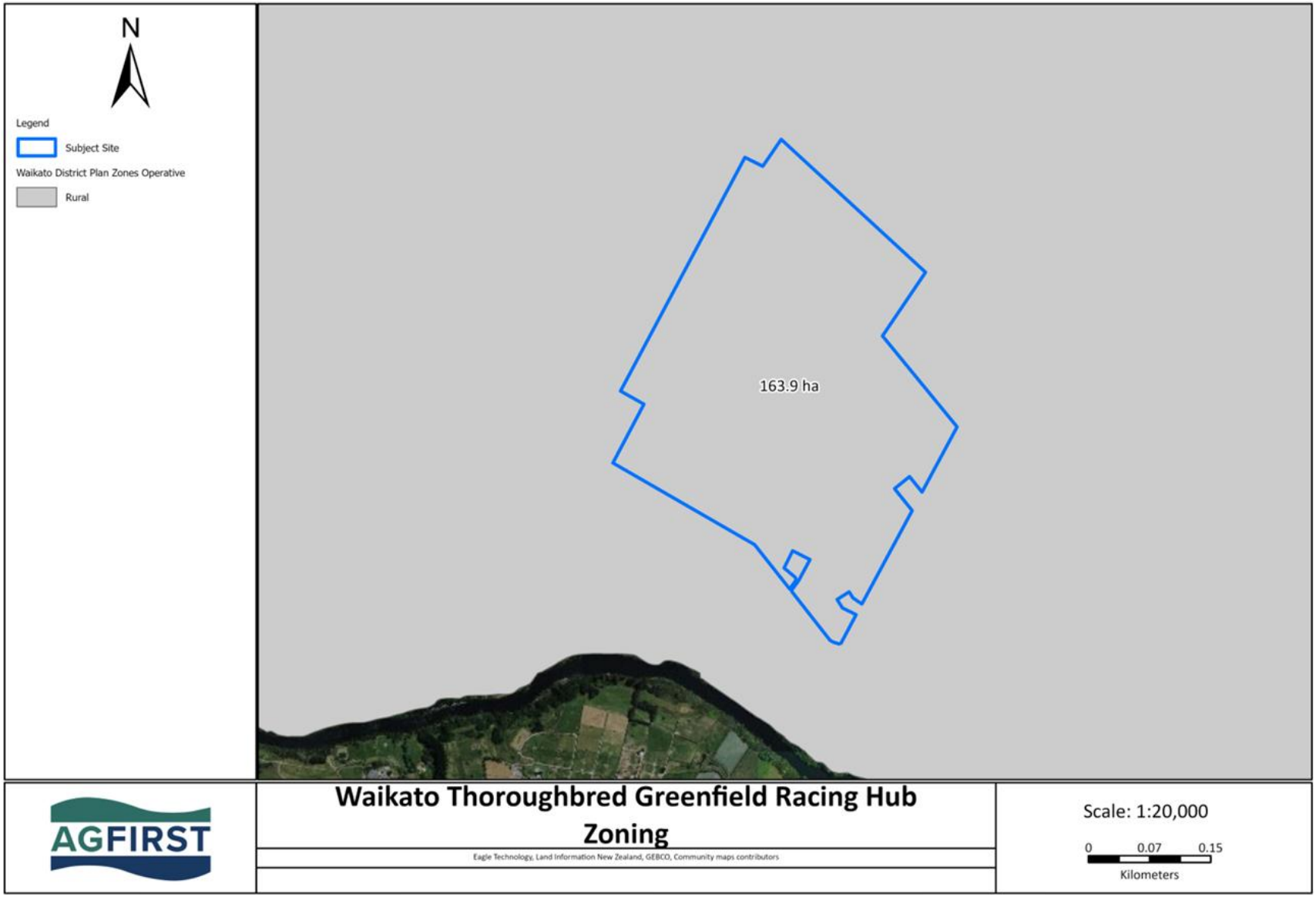


Figure 3. Zoning at 636 Pencarrow Road, Tamahere.

3.2 Existing Land Use

At the time of assessment in August 2026, the Subject Site was utilised predominantly for dairy farming. Two separate dairy farms are operated across four of the five property titles, comprising approximately 80.0 ha and 69.7 ha respectively. A further 14.2 ha arable cropping block is located in the northeastern corner of the Subject Site. Historical aerial imagery indicates that dairy farming has been the predominant land use across the wider Subject Site for more than 20 years. Figure 4 shows the spatial arrangement of the existing productive land uses, which are also summarised in Table 1.

The Subject Site predominantly comprises pastoral land and associated dairy farming infrastructure. Existing improvements include dairy sheds and associated yards, feed pads, farm races, stock water reticulation, drainage infrastructure, fencing, and farm dairy effluent collection, storage and land application systems. This infrastructure supports the operation of the two established dairy farming platforms.

There are 17 recorded groundwater bores within the Subject Site. However, the presence of these bores does not in itself confirm the volume, reliability or consented availability of groundwater for alternative higher-demand land uses. The existing groundwater supply and its potential availability for alternative productive uses are considered further in Section 6.

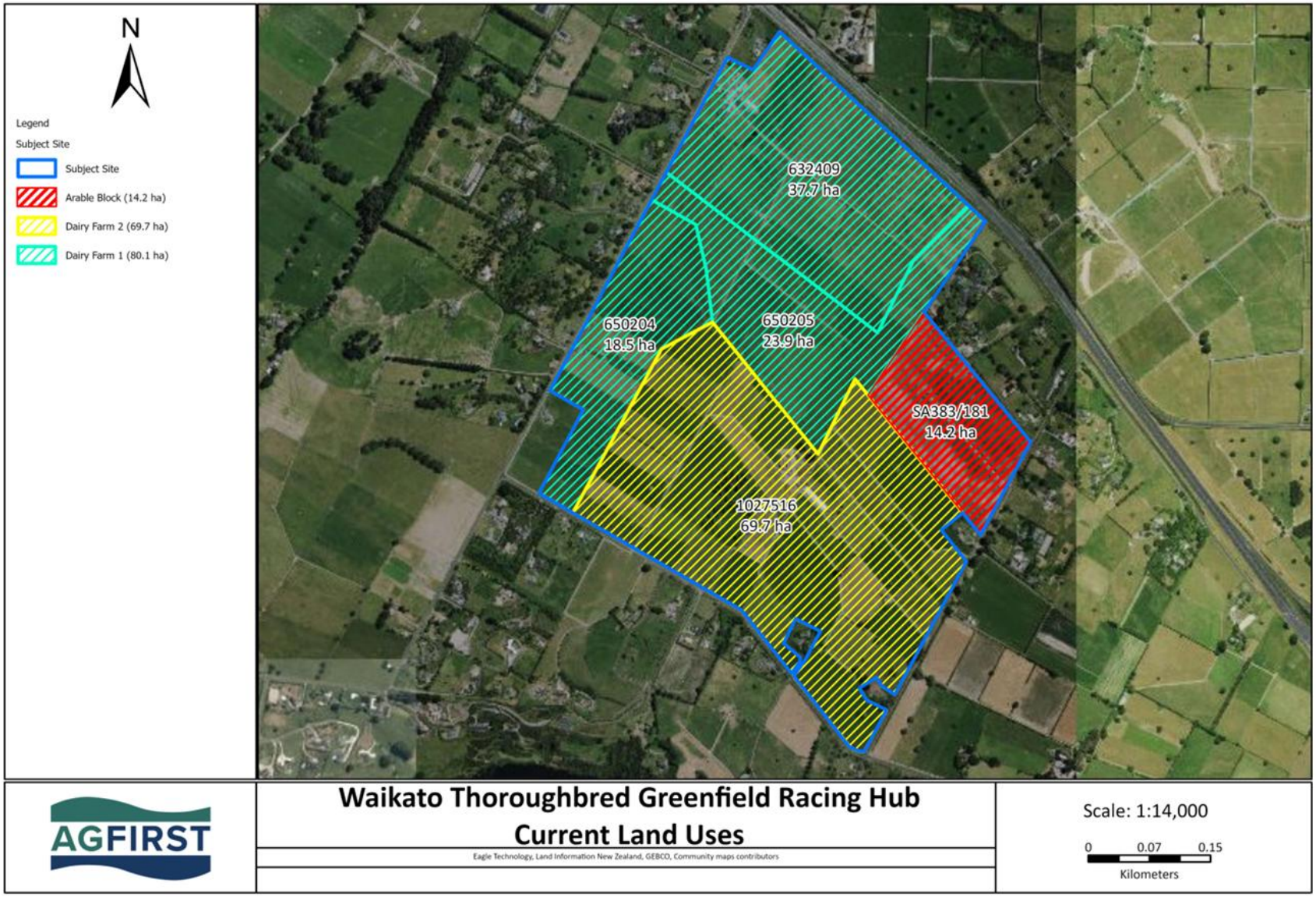


Figure 4. Current land uses on the Subject Site at 636 Pencarrow Road, Tamahere.

3.3 Surrounding Land Use

The Subject Site is entirely surrounded by roads, with the Waikato Expressway along the northern boundary, Pencarrow Road to the west, Hooker Road to the south and Duncan Road to the east. The Te Awa - The Great New Zealand River Ride utilises the southern and western boundaries.

Much of the surrounding land use is lifestyle and rural residential blocks, with clusters on Duncan Road and Te Awa River Ride.

Adjoining the Subject Site in the northeastern corner is Rupa Ki Rua Institute, which is a private training institute as well as the Tamahere Hospital and Healing Centre.

Beyond Pencarrow Road to the southwest of the Subject Site is a sheep and beef finishing block and a dairy farm alongside rural residential and lifestyle blocks. East of Duncan Road, the predominant land use is dairy farming and mixed cropping.

These surrounding land uses can be seen below in Figure 5.

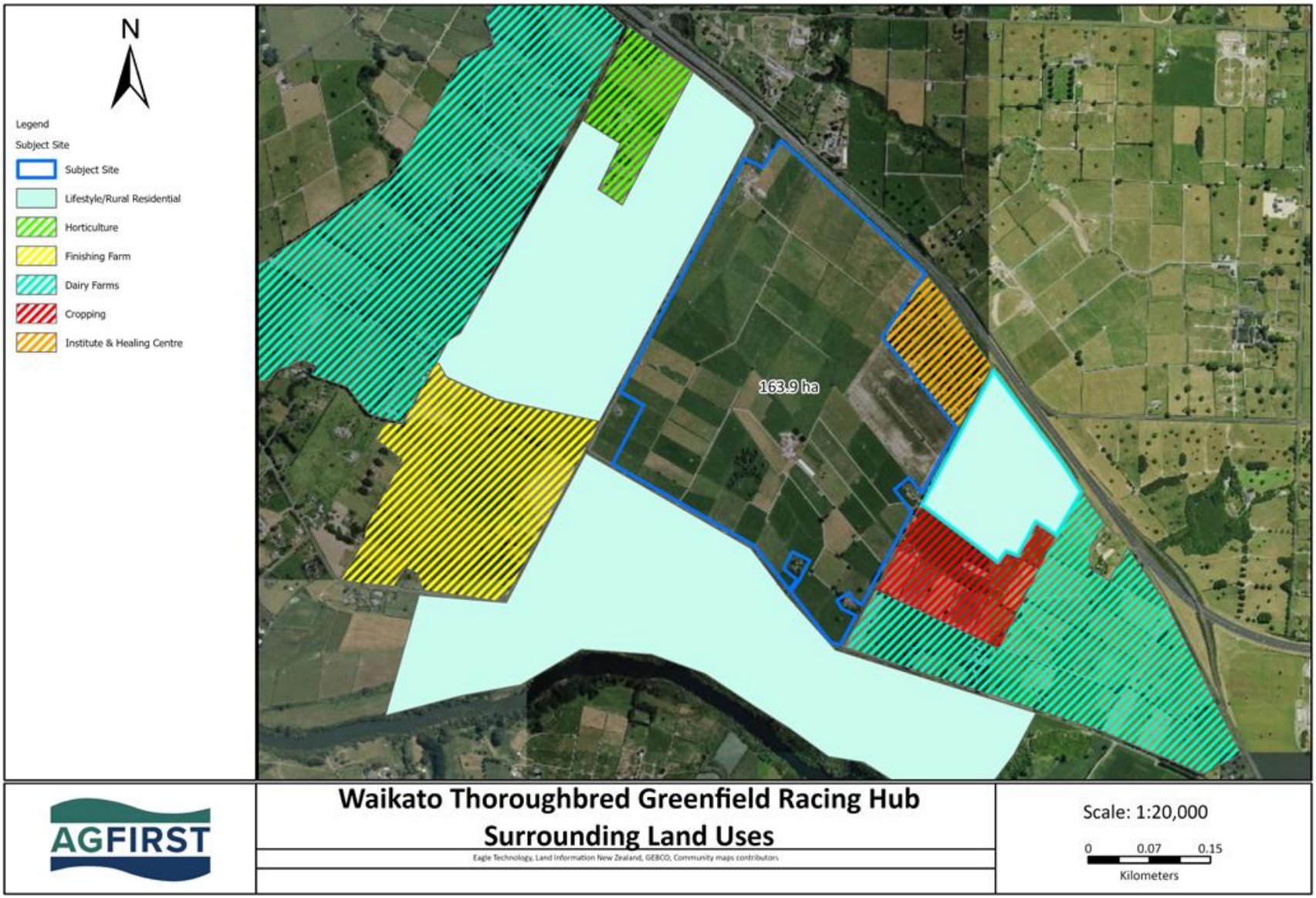


Figure 5. Land uses surrounding the Subject Site at 636 Pencarrow Road, Tamahere.

4.0 Legislative and Policy Context

4.1 National Policy Statement for Highly Productive Land

The National Policy Statement for Highly Productive Land (NPS-HPL) came into effect on 17 October 2022 and establishes a nationally consistent framework for the identification and management of Highly Productive Land (HPL). The NPS-HPL was amended in December 2025, with the amendments taking effect on 15 January 2026. These amendments introduced a more flexible approach to the management of LUC Class 3 land, while retaining protections for land with the highest productive potential.

The purpose of the NPS-HPL is to protect Highly Productive Land for use in land-based primary production, both now and for future generations.

Under the amended NPS-HPL, the application of the policy to LUC Class 3 land depends on the relevant provisions of the policy, with the December 2025 amendments exempting certain urban developments and urban rezoning proposals on LUC Class 3 land from a number of NPS-HPL restrictions. LUC Class 1 and 2 land continues to receive the highest level of protection.

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

Productive capacity refers to the ability of land to support land-based primary production over the long term.

4.2 Relevance to this Assessment

The Subject Site contains approximately 150.8 ha of land identified as HPL under the NPS-HPL framework.

The purpose of this assessment is not to undertake a planning assessment of the proposal. Rather, it is to objectively characterise the productive land resource associated with the Subject Site and assess its ability to support land-based primary production.

The productive implications associated with the development of the Subject Site are discussed throughout this report and are intended to inform the broader planning and economic assessments being undertaken for the proposal.

5.0 Productive Land Resource Assessment

5.1 Role and Limitations of Land Use Capability Mapping

The NZLRI provides a nationally consistent assessment of land capability and is widely used throughout New Zealand to inform strategic land use planning and resource management decisions.

LUC mapping framework classifies land according to its long-term capability for sustained productive use. The classification system considers a range of factors, including soils, slope, erosion risk, wetness and climate.

While NZLRI LUC mapping provides a useful indication of land versatility and productive potential, it is primarily intended for regional and district-scale planning purposes and has limitations when applied at an individual property scale.

The NZLRI LUC mapping does not account for:

- Site-specific soil variability;
- Historic land modification;
- Existing infrastructure;
- Internal fragmentation;
- Drainage improvements;
- Farm management practices; or
- Economic and operational considerations.

Accordingly, LUC mapping should be considered alongside more detailed soil investigations and site-specific assessments where available.

5.2 Land Use Capability

The New Zealand Land Resource Inventory (NZLRI) Maps are designed for use at a 1:63,000 scale. This means that 1 cm^2 of published maps cover 36.69 ha. Following the observation guidelines, this equates to, at most, one observation per 36.69 ha and at least one observation per 146.76 ha. Therefore, it should only be treated as an indicator for Land Use Capability (LUC) Classes 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[4]. The NZLRI identifies the Subject Site as comprising of four LUC units: LUC 1s 1, LUC 2s 3, LUC 2w 7 and LUC 4e 4. The approximate 13 ha of land classed as LUC 4e 4 is the only part of the General Rural zoned land in 163.9 ha Subject Site that will not meet the definition of Highly Productive Land under the National Policy Statement for Highly Productive Land.

[4] Grealish, 2019

LUC 1s 1 comprises approximately 35% of the Subject Site (approx. 57.0 ha). This unit is characterised by well-drained allophanic soils and flat to easy contour, with minimal erosion risk when cultivated[5]. It is suitable for a range of productive uses, including intensive grazing, dairy farming, cropping and horticulture.

LUC 2s 3 accounts for approximately 34% of the Subject Site (approx. 55.1 ha). This unit also comprises well-drained allophanic soils with minimal erosion risk under cultivation, reflecting the flat topography. Common productive uses include intensive grazing, dairy farming, cropping and horticulture.

LUC 2w 7 comprises approximately 24% of the Subject Site (approx. 38.7 ha) and is predominantly located within the central area of the eastern portion of the site. This unit is characterised by poorly drained soils with wetness limitations; however, the flat topography supports its use for intensive grazing and dairy farming.

The remaining 8% of the Subject Site (approx. 13.1 ha), located along the Pencarrow Road frontage, is classified as LUC 4e 4. This unit comprises strongly rolling to rolling slopes on moderately well-drained granular soils with a moderate to severe erosion risk when cultivated. It is generally suited to dairy farming and intensive grazing.

The distribution of the above LUC units across the Subject Site is shown in Figure 6 below. Figure 7 and Figure 8 respectively show the soil type and drainage across the Subject Site sourced from S-Map[6].

[5] Land use capability extended legend - Waikato Region
[6] https://smap.landcareresearch.co.nz/

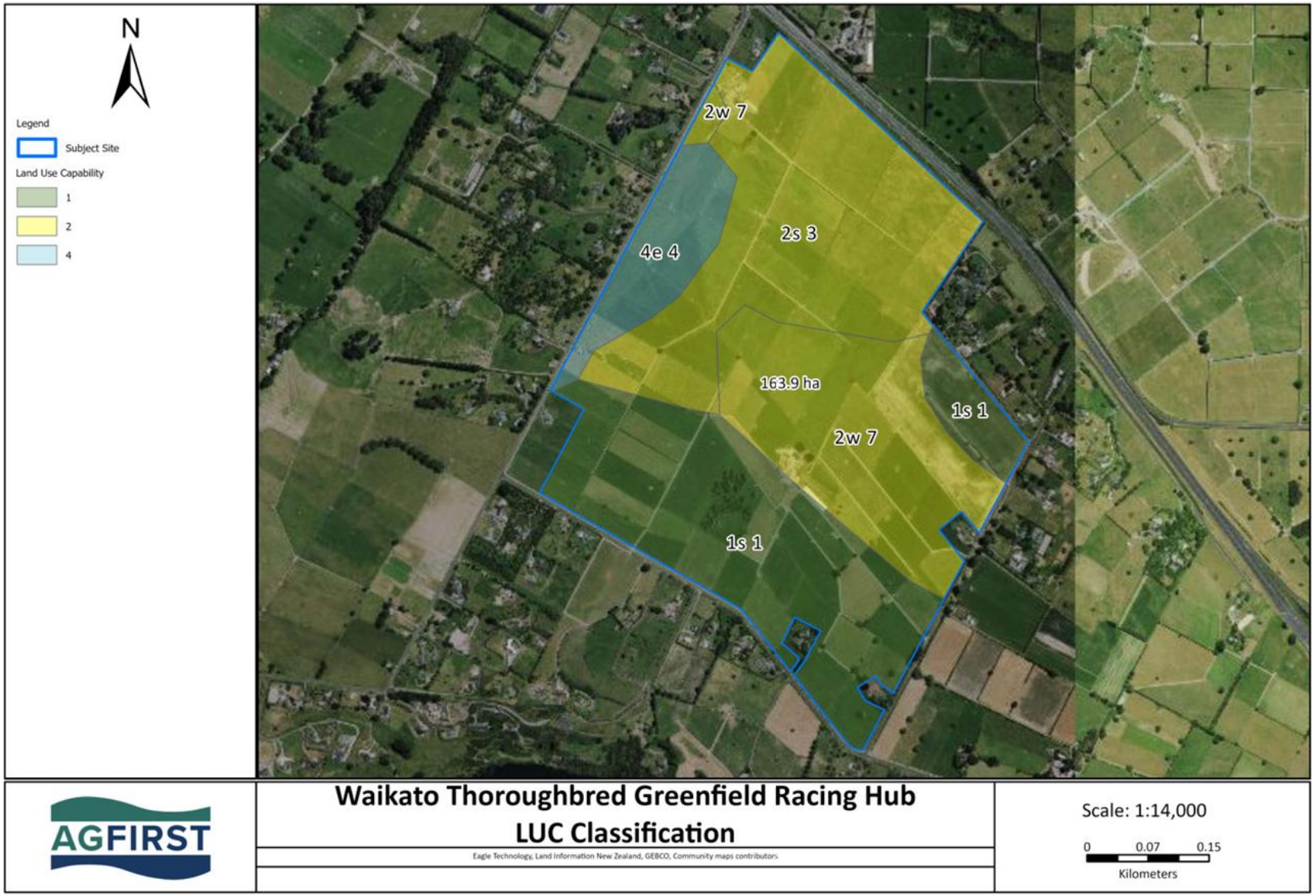


Figure 6. NZLRI LUC units across the Subject Site at 636 Pencarrow Road, Tamahere.

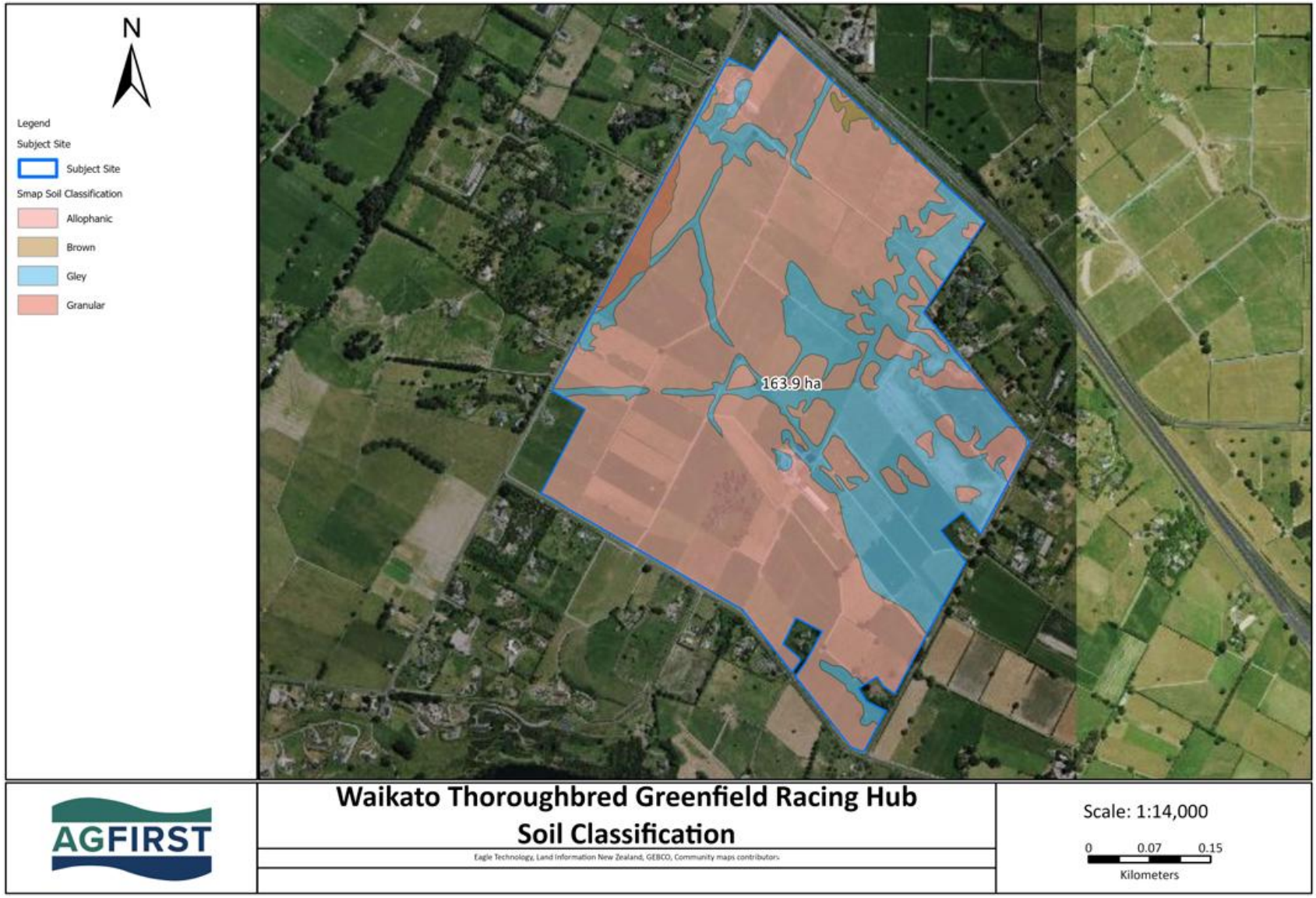


Figure 7. S-Map soil classifications for the Subject Site at 636 Pencarrow Road, Tamahere.

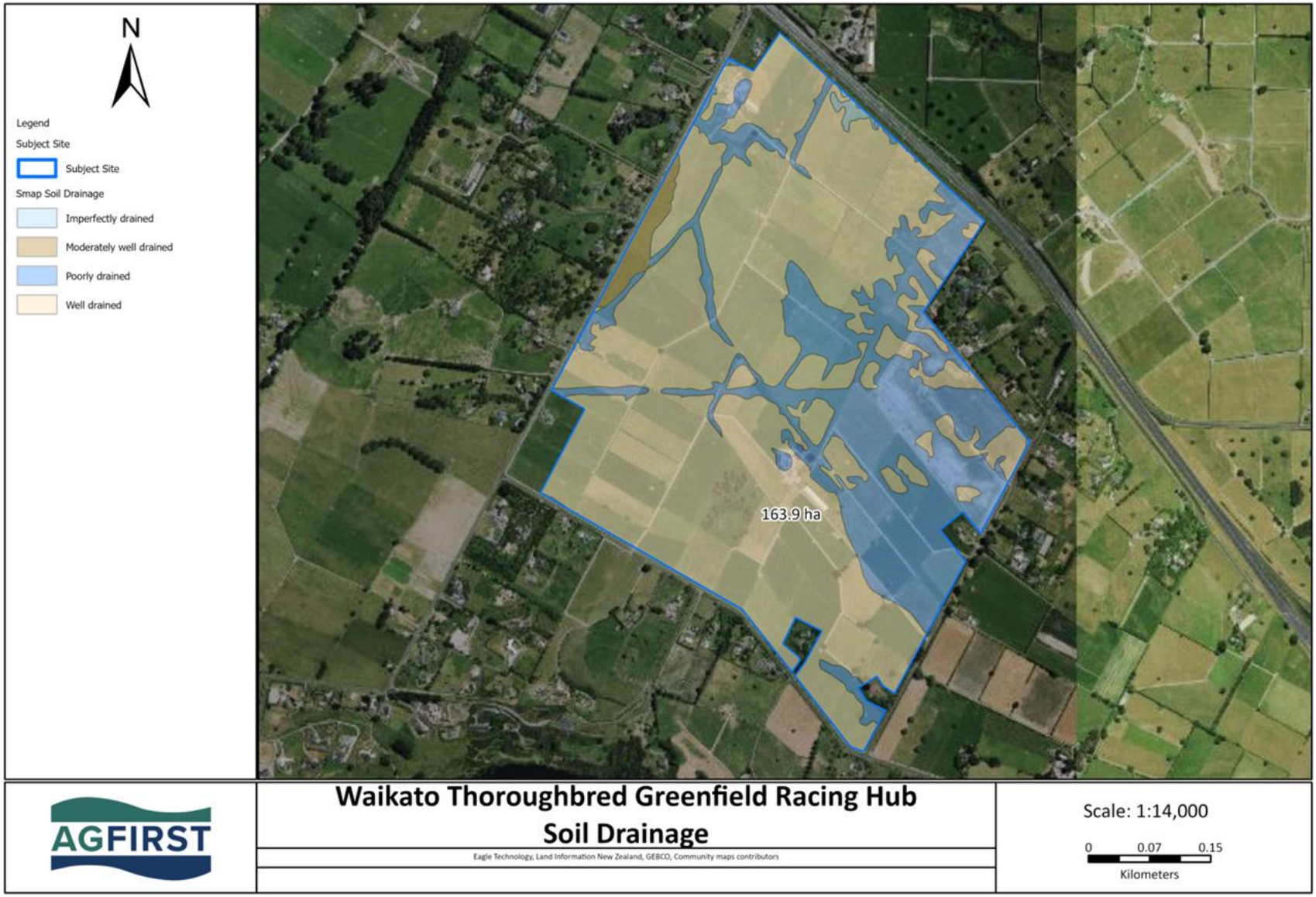


Figure 8. S-Map soil drainage for the Subject Site at 636 Pencarrow Road, Tamahere.

5.3 Land Available for Primary Production

The assessment of productive capacity considers not only the soil and LUC resource present on the Subject Site, but also the extent of land that is practically available for land-based primary production. Areas occupied by existing dwellings and curtilage, farm infrastructure, races, drains, waterways, vegetation and other modified or non-productive areas are not available for primary production and therefore do not contribute to the effective productive area of the Subject Site.

AgFirst reviewed the Subject Site to identify and quantify areas unavailable for primary production. This assessment identified approximately 9.4 ha of non-productive land associated with existing infrastructure, modified areas and other features that preclude productive use. These areas are shown in Figure 9.

After excluding these areas, the effective area available for land-based primary production is approximately 154.5 ha. This area comprises the range of soil and LUC units described in preceding sections and represents the realistic land resource available for pastoral farming, cropping, horticulture and other primary production activities. The Subject Site is generally flat with gently undulating land along Pencarrow Road, as shown on the LiDAR map in Figure 10.

Accordingly, while the Subject Site has a total area of 163.9 ha, the productive capacity assessment is more appropriately based on the estimated 154.5 ha of land that remains available for primary production.

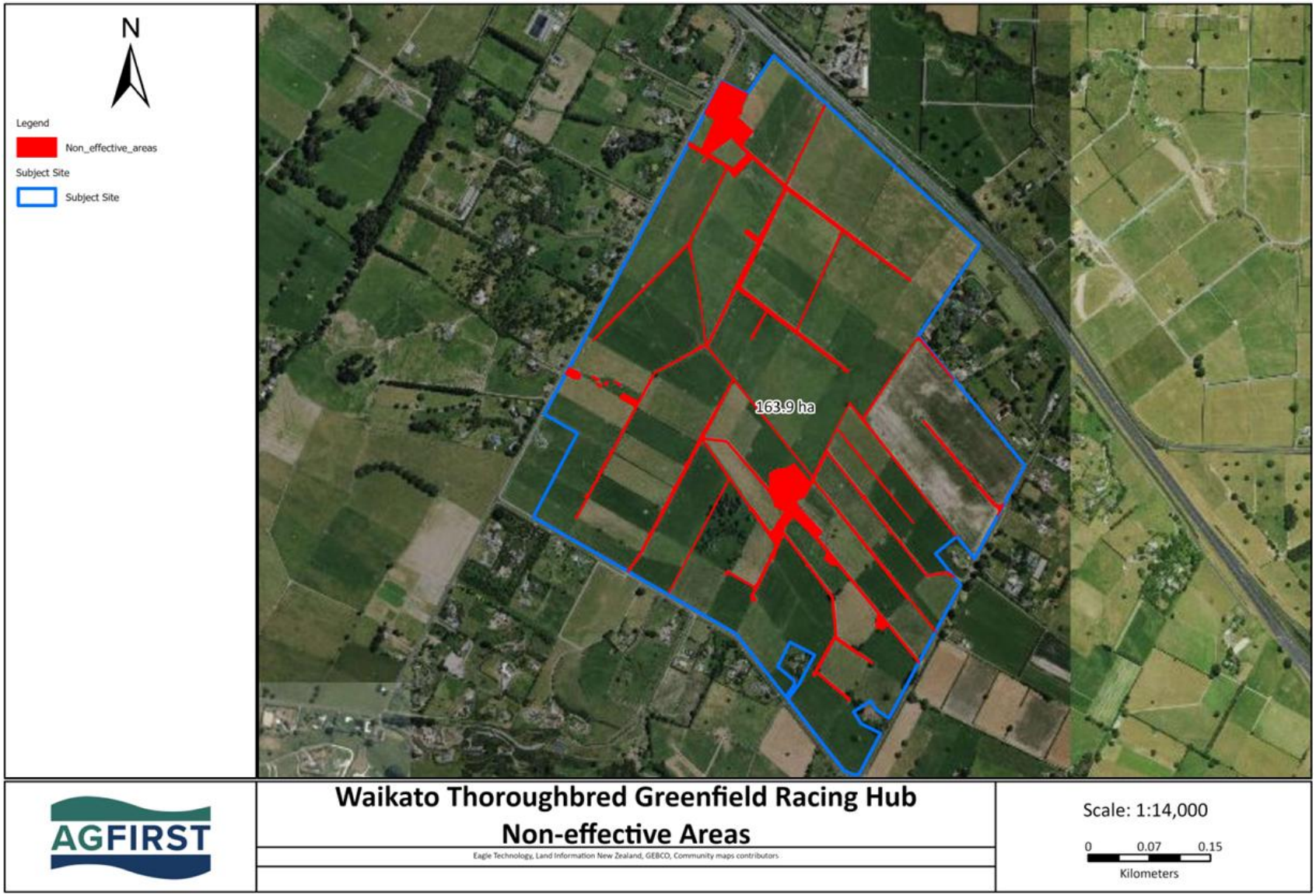


Figure 9. Non-effective areas for land-based primary production for the Subject Site at 636 Pencarrow Road, Tamahere.

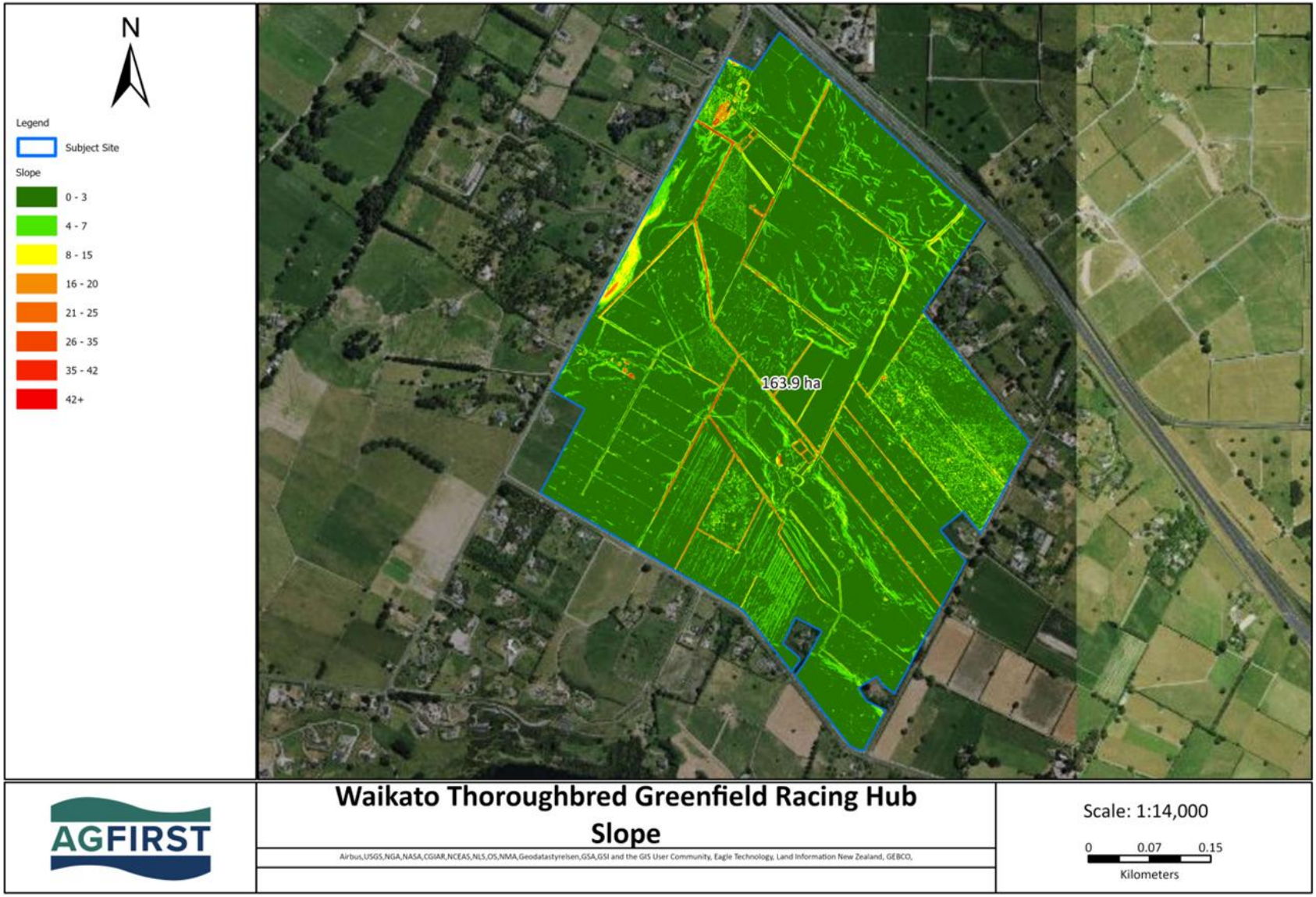


Figure 10. LiDAR mapping on the Subject Site at 636 Pencarrow Road, Tamahere.

5.4 Climate

The Subject Site is located within the central Hamilton Basin[7], experiencing a temperate climate characterised by warm summers, mild winters and rainfall distributed throughout the year.

The Ruakura NIWA weather station indicates an average annual rainfall of approximately 1,100 mm, with a distinct winter rainfall maximum and drier conditions occurring during summer and early autumn[8]. Rainfall is generally sufficient to support productive pastoral farming without irrigation.

Mean annual temperatures are approximately 13-14°C, with average summer highs of 23-24°C and average winter lows of 4-5°C[9]. These conditions provide a favourable growing environment for a range of pastoral, arable and horticultural land uses.

A notable climatic characteristic of the Hamilton Basin is the frequency of frost events. The Ruakura NIWA station records approximately 45-46 ground frost days per year based off records from 1991-2020[10]. Frosts are most common during winter and early spring and are a consequence of the inland basin setting, which promotes cold air ponding and fog formation during calm conditions. While frost occurrence does not generally constrain pastoral farming, it can strongly influence the suitability and management requirements of frost-sensitive horticultural crops.

Wind is not considered to be a significant constraint for the Subject Site due to the inland location and sheltered basin setting, which is common for much of the Hamilton Basin area.

Overall, the climate of the Subject Site is well suited to land-based primary production and supports a broad range of agricultural land uses. However, site suitability is not uniform across the Subject Site. In areas affected by poorly drained soils, seasonal wetness, higher winter rainfall and frequent frost events, there may be greater limitations for intensive year-round cropping and frost-sensitive horticultural production.

5.5 Land Resource Summary

The Subject Site comprises a productive rural land resource capable of supporting a range of land-based primary production activities. The NZLRI mapping identifies substantial areas of LUC Class 1 and 2 land with relatively few physical limitations, together with areas subject to greater wetness, drainage, slope and erosion limitations.

The principal limitation is associated with the LUC 2w7 land, comprising approximately 38 ha, where poor drainage and seasonal wetness reduce versatility for regular

[7] Lowe, 2021
[8] Annual rainfall across selected New Zealand locations 1991 - 2020 - Figure.NZ
[9] The Climate and Weather of Waikato, 2nd Edition.
[10] Annual days of ground frost across selected New Zealand locations 1991-2020 - Figure.NZ

cultivation and permanent horticultural production. The LUC 4e4 land is subject to greater slope and erosion limitations. Notwithstanding these constraints, the Subject Site retains substantial productive capacity and provides the basis for the agricultural productivity assessment presented in Section 6.

6.0 Agricultural Productivity Assessment

6.1 Introduction

This section assesses the agricultural productivity of the Subject Site having regard to the physical characteristics of the land resource, existing land use and infrastructure, and the range of land-based primary production activities that could reasonably be undertaken.

The assessment considers both the biophysical capability of the land and the practical requirements associated with establishing and operating alternative production systems. This distinction is important, as the physical capability of land to support a particular activity does not necessarily mean that the activity represents a practical, legally permissible or economically feasible long-term land use.

The assessment considers the productive capacity of the Subject Site, potential alternative agricultural land uses and the highest and best rural use of the land resource. The economic performance of representative production systems is subsequently considered in Section 7.

6.2 Existing Agricultural Production

The Subject Site is currently utilised for land-based primary production and comprises two operational dairy farms together with an existing arable cropping block. The existing productive land uses and their general spatial distribution are shown in Figure 4.

The two dairy farms utilise the majority of the effective productive area of the Subject Site and are supported by substantial existing infrastructure specifically developed for intensive dairy production. This includes dairy sheds and associated yards, farm races, stock water systems, drainage infrastructure, farm dairy effluent collection, storage and land application systems, feed pads and associated feed infrastructure, fencing, stock handling facilities and other farm improvements.

The extent of this infrastructure is an important component of the existing productive capacity of the Subject Site. The dairy farms represent established and operational farming platforms rather than undeveloped rural land capable of being readily converted between productive uses. Continued dairy farming is therefore able to utilise existing improvements and infrastructure, whereas conversion to a materially different production system would require additional development expenditure and may result in some existing dairy-specific infrastructure becoming redundant.

The established dairy farming system is also capable of utilising the range of land resources present across the Subject Site. This includes the more versatile LUC 1s1 and 2s3 land, together with the wetter LUC 2w7 areas that are less suited to regular cultivation or permanent horticultural production.

The existing arable block demonstrates that cultivation-based production can also be undertaken on suitable parts of the Subject Site. However, its existing extent is relatively limited compared with the dairy farming operations and does not alter the predominantly pastoral character or established productive use of the wider Subject Site.

Accordingly, the existing land-use configuration and substantial investment in dairy-specific infrastructure provide an important benchmark when considering the practicality and economic implications of alternative productive land uses in the following sections.

6.3 Potential Agricultural Land Uses

The Subject Site is capable of supporting a range of land-based primary production activities. However, productive suitability is not uniform across the Site and varies according to land use capability, soil drainage, contour and the specific physical and operational requirements of individual production systems.

As outlined in Section 5, the Subject Site contains substantial areas of LUC Class 1 and 2 land. The LUC 1s1 and LUC 2s3 units comprise generally well-drained Allophanic soils with relatively few physical limitations and are capable of supporting a broad range of productive uses, including intensive pastoral farming, arable cropping, commercial vegetable production and horticulture.

In comparison, the LUC 2w7 land is subject to greater wetness and drainage limitations, while the LUC 4e4 land has increased slope and erosion constraints. These areas remain productive but are more naturally aligned with pastoral farming and have reduced versatility for regular cultivation or permanent horticultural production.

The productive potential of the Subject Site has therefore been considered according to the different land resources present, rather than assuming that a single production system could be applied uniformly across the entire Site. A summary is provided in Table 2.

Table 2. Indicative Productive Potential by Land Use Capability.

LUC unit	Approx. area (ha)	Key characteristics / limitation	Indicative productive potential
1s1	~57	Well-drained Allophanic soils; minimal physical limitations	High versatility – commercial vegetable production, horticulture, arable cropping and intensive pastoral production
2s3	~56	Well-drained Allophanic soils; minor soil limitations	High versatility – commercial vegetable production, horticulture, arable cropping and intensive pastoral production
2w7	~38	Wetness and drainage limitations	Moderate versatility – well suited to pastoral production, with cropping opportunities more dependent on drainage and seasonal conditions
4e4	~13	Slope and erosion limitations	Moderate to lower versatility – predominantly suited to pastoral production, with more limited cultivation potential

Note: Areas are approximate and based on the NZLRI LUC mapping described in Section 5.

The distribution of these land resources is also important when considering the practical establishment of alternative productive land uses. Figure 11 identifies the indicative areas considered potentially available for cultivation-based and horticultural production, having regard to the NZLRI LUC mapping, wetness and slope limitations, waterways, existing vegetation and non-effective areas.

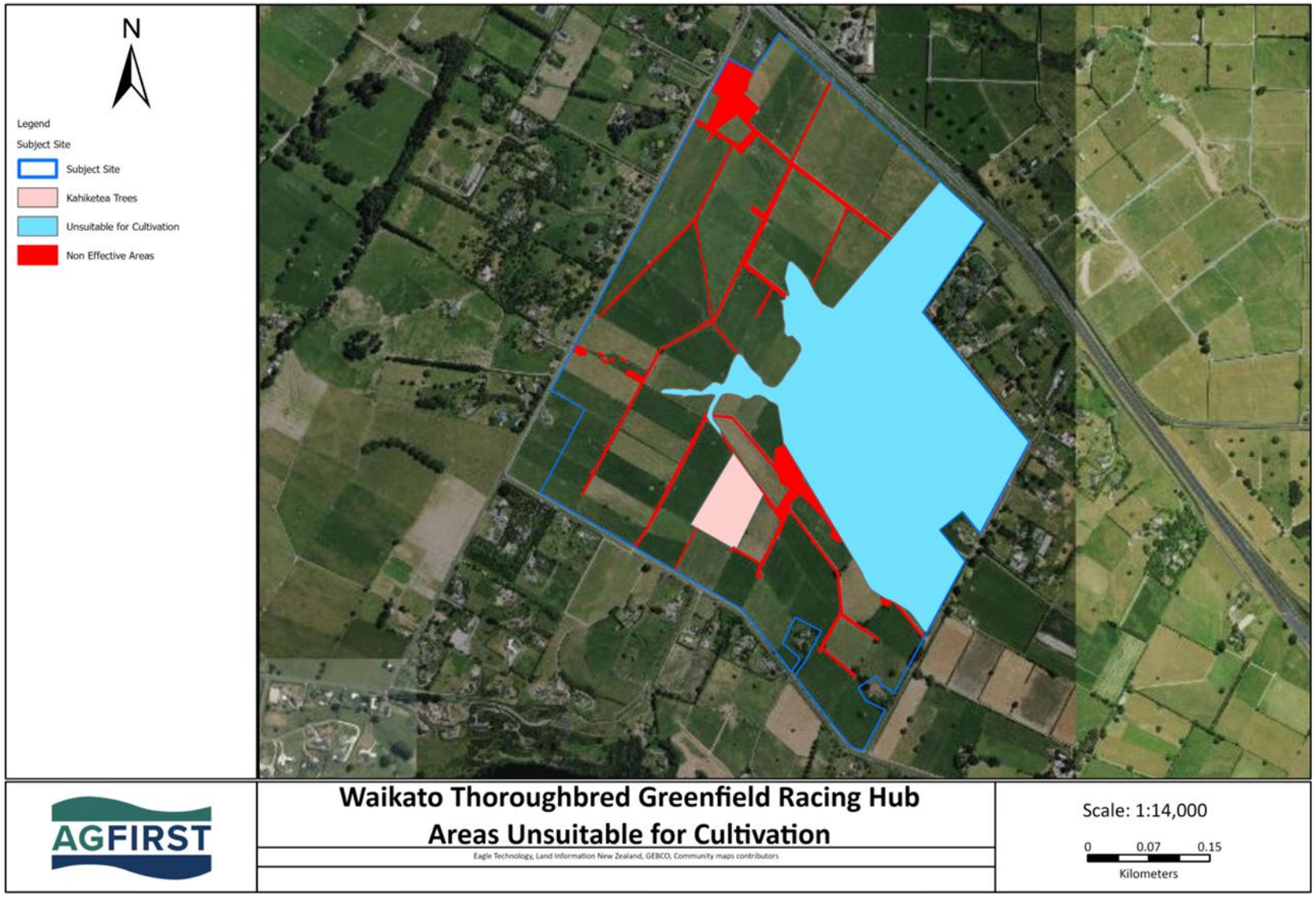


Figure 11. Indicative area potentially suitable for cultivation-based and horticultural land uses within the Subject Site at 636 Pencarrow Road, Tamahere.

On this basis, approximately 97.9 ha has been identified as an indicative area potentially available for cultivation-based or horticultural production. This represents a high-level land capability assessment and should not be interpreted as confirming that the entire area would be practically developable or commercially suitable for any specific crop.

The following sections consider the principal productive land-use alternatives that could reasonably be undertaken on the Subject Site, including mixed arable cropping, pastoral and dairy support systems, dairy farming, commercial vegetable production and horticulture.

6.3.1 Mixed arable cropping

Arable production generally requires:

- Flat to gently undulating topography;
- Good soil drainage and accessibility;
- Suitable soil structure and workability;
- Reliable access for cultivation and harvesting machinery; and
- Sufficient contiguous areas to support efficient cultivation and crop rotation.

The Subject Site contains substantial areas capable of supporting arable production. The most versatile land resource is associated with the LUC 1s1 and 2s3 units, which collectively comprise approximately 113 ha of the Site. These areas are generally well drained, have favourable contour and are capable of supporting a wide range of productive uses, including arable cropping, commercial vegetable production, horticulture and intensive pastoral farming.

As shown in Figure 11, the majority of this higher capability land forms a relatively contiguous area across the Subject Site. After allowing for areas affected by greater wetness and slope limitations, existing vegetation and non-effective land, approximately 97.9 ha has been identified as an indicative area potentially available for cultivation-based production. This represents a high-level assessment of the land resource rather than confirmation that the entire area could be cultivated at any one time.

The LUC 2w7 land is also capable of supporting some arable production; however, its suitability is reduced by poor drainage and seasonal wetness. Cultivation opportunities across these areas are more dependent on favourable soil moisture conditions during the drier parts of the year. During wetter periods, elevated water tables, restricted machinery access and increased susceptibility to soil structural damage can constrain cultivation and harvesting activities.

Potential soil and environmental limitations include:

- Seasonal wetness associated with LUC 2w7 land;
- Restricted cultivation windows across wetter areas due to elevated groundwater levels and reduced machinery access;
- Increased risk of soil structural damage, compaction and rutting where cultivation occurs under unsuitable soil moisture conditions;

- Waterways, drainage features, established vegetation and areas of lower capability land that locally reduce the extent and configuration of cultivable land;
- Moderate erosion limitations associated with LUC 4e4 land, where pastoral farming is generally considered a more sustainable long-term use; and
- Waterway setbacks, drainage features and associated management requirements that reduce the extent of land practically available for cultivation under PC1.

Overall, the LUC 1s1 and 2s3 areas have high suitability for arable production, reflecting their generally favourable soil characteristics, drainage, contour and scale. The LUC 2w7 land has lower and more seasonally dependent suitability due to wetness and drainage limitations, while the LUC 4e4 land is less suited to regular cultivation due to slope and erosion risk.

Accordingly, arable cropping represents a realistic productive use of a substantial proportion of the Subject Site. A mixed arable system could utilise the better-drained LUC 1s1 and 2s3 land for regular crop rotations, while the more constrained LUC 2w7 and LUC 4e4 areas could remain in pastoral production or provide supporting land within a wider mixed farming system.

6.3.2 Pastoral Grazing and Dairy Support

Pastoral farming systems, including beef, sheep and dairy support enterprises, generally require productive pasture growth, reliable stock access, water availability and soils capable of supporting intensive grazing and, where appropriate, supplementary feed production.

The Subject Site exhibits the key characteristics typically associated with productive pastoral farming land, including:

- Generally flat to gently undulating topography;
- Highly productive pasture-growing soils;
- Existing drainage infrastructure to manage wetness-prone soils;
- Established stock water, fencing, races and stock handling infrastructure;
- Existing feed pads and associated feed infrastructure;
- Proximity to surrounding pastoral and dairy farming operations; and
- A long history of pastoral farming within both the Subject Site and surrounding landscape.

The Subject Site contains a range of LUC units that are well suited to pastoral farming activities. The dominant LUC units (1s1, 2s3, 2w7 and 4e4) are identified within the NZLRI as being suitable for intensive grazing, high-producing pasture and, in some instances, supplementary fodder cropping. The LUC 1s1 and 2s3 land provides additional versatility and is capable of supporting seasonal cropping, pasture renewal and supplementary feed production.

Unlike cultivation-based land uses, pastoral farming is also capable of productively utilising the wetter and more constrained parts of the Subject Site. The LUC 2w7 land

remains suitable for intensive grazing where drainage and grazing management are maintained, while the LUC 4e4 land can continue to contribute to the pastoral enterprise without requiring regular cultivation. Pastoral systems can therefore utilise a greater proportion of the effective productive area than the cultivation-based alternatives identified in Figure 11.

Collectively, these characteristics support a range of pastoral farming enterprises, including:

- Beef finishing;
- Bull beef production;
- Dairy-beef production;
- Replacement heifer and young stock grazing;
- Dairy support operations;
- Winter grazing;
- Pasture conservation; and
- General intensive grazing systems.

Potential soil and environmental limitations include:

- Seasonal wetness associated with the LUC 2w7 land;
- Reduced stock and machinery access during wet periods;
- Soil structural damage, pugging and compaction where grazing is not appropriately managed under wet conditions;
- Ongoing reliance on drainage infrastructure to maintain productive use across parts of the Subject Site; and
- Stock exclusion and riparian management requirements associated with waterways, critical source areas and drains.

The substantial existing pastoral and dairy infrastructure across the Subject Site is also relevant. Farm races, fencing, stock water systems, drainage, feed pads and stock handling facilities can continue to support pastoral and dairy support enterprises with comparatively limited land-use conversion requirements. This provides an operational advantage over alternative intensive land uses requiring substantial new infrastructure and land development.

Overall, the Subject Site is considered to have high suitability for pastoral farming, including dairy support enterprises. The Site possesses the physical characteristics and established infrastructure associated with productive grazing land and is capable of supporting a wide range of intensive pastoral systems. While seasonal wetness influences management requirements across parts of the Subject Site, these limitations are generally manageable through established farming practices and do not materially constrain its long-term productive capacity for pastoral farming.

6.3.3 Dairy Farming

Dairy farming is one of the dominant land uses throughout the Waikato Region and typically occurs on flat to gently undulating land capable of supporting high pasture

production, with appropriate drainage, reliable stock access and supporting farm infrastructure.

The Subject Site possesses the key physical and operational characteristics associated with productive dairy farming land, including:

- Generally flat to gently undulating topography across the majority of the Site;
- Productive and versatile soil resources, with the majority of the Subject Site mapped by the NZLRI as LUC Class 1 and 2 land well suited to intensive pastoral production;
- Existing drainage infrastructure to assist with the management of wetness-prone soils;
- Good internal race access throughout much of the Subject Site;
- Existing stock water and water supply infrastructure;
- Established dairy sheds, yards and stock handling facilities;
- Farm dairy effluent collection, storage and land application systems;
- Feed pads and associated feed infrastructure; and
- A long history of dairy and pastoral farming that extends into the surrounding landscape.

As shown in Figure 4, the Subject Site currently supports two operational dairy farms. This existing land use provides direct practical evidence of the suitability of the land resource for dairy production and demonstrates that the physical limitations identified across parts of the Site can be managed within an established intensive pastoral farming system.

Importantly, dairy farming is capable of productively utilising essentially the full effective productive area of the Subject Site, including the LUC 2w7 land that has greater wetness limitations and is less suited to regular cultivation or permanent horticultural production. The more versatile LUC 1s1 and 2s3 land supports high-producing pasture and supplementary feed production, while the wetter areas can remain integrated within the wider grazing platform through appropriate drainage and grazing management.

Potential soil and environmental limitations include:

- Wetness limitations associated with the LUC 2w7 land;
- Seasonal constraints on grazing, fodder cropping, stock movement and machinery access during wetter periods;
- Soil structural damage, including pugging and compaction, where grazing is not appropriately managed under wet conditions;
- Continued reliance on drainage infrastructure to maintain productive use across parts of the Site; and
- Stock exclusion requirements associated with waterways and drains under the National Environmental Standards for Freshwater (NES-F), which may marginally reduce the effective grazing area through fencing and riparian management.

A further consideration is the extent of existing dairy-specific infrastructure. The two dairy units represent established farming platforms with significant investment already made in dairy sheds, effluent systems, feed pads, races, stock water, drainage, fencing and stock handling infrastructure. Continued dairy production enables these existing improvements to remain productively utilised and avoids the substantial establishment and conversion costs that would be associated with developing the Subject Site for a fundamentally different intensive land use.

Overall, the Subject Site is considered to have high biophysical and operational suitability for dairy farming. The soil resource, topography, effective area and existing infrastructure are well suited to intensive dairy production. While seasonal wetness requires appropriate stock and soil management, these limitations are currently managed within the existing farming systems and do not materially constrain the long-term suitability of the Subject Site for dairy production.

6.3.4 Commercial Vegetable Production

Commercial Vegetable Production (CVP) generally requires highly versatile soils, favourable soil structure and workability, good drainage, reliable access for cultivation and harvesting machinery, and sufficient contiguous land area to support efficient crop rotations and production systems. Higher-value vegetable crops also generally require access to a reliable freshwater supply for irrigation.

A significant constraint to establishing CVP on the Subject Site is the regulatory framework applying to the expansion of CVP under PC1. As outlined in Section 3.1, the Subject Site extends across Sub-catchment 33 – Waikato at Narrows and Sub-catchment 31 – Mangaone.

Rule 3.11.4.8 provides a discretionary activity pathway for additional CVP within specified sub-catchments and subject to the area limits identified in Table 1 of that rule. Neither Sub-catchment 31 nor Sub-catchment 33 is included within the sub-catchments identified in Table 1. Accordingly, additional CVP on the Subject Site does not meet the location requirements of Rule 3.11.4.8 and is therefore unable to access the discretionary activity pathway provided by that rule. Under Rule 3.11.4.9, a change in land use to CVP that is not regulated by Rule 3.11.4.5 and does not meet the conditions of Rule 3.11.4.8 is a non-complying activity.[11] The establishment of new CVP on the Subject Site would therefore require resource consent as a non-complying activity under PC1, representing a significant regulatory constraint to establishing a new CVP enterprise.

Notwithstanding this regulatory constraint, the physical land resource has also been considered. The Subject Site contains substantial areas capable of supporting CVP, particularly within the LUC 1s1 and 2s3 units. Collectively, these units comprise approximately 113 ha and form a largely contiguous land resource. The NZLRI identifies

[11] Waikato Regional Council, *Proposed Waikato Regional Plan Change 1 – Waikato and Waipā River Catchments*, Rule 3.11.4.9 and Table 1.

these areas as generally comprising well-drained Allophanic soils on flat to gently undulating land capable of supporting intensive cropping, horticulture and other highly productive land uses.

As shown in Figure 11, approximately 97.9 ha has been identified as an indicative area potentially available for cultivation-based and horticultural production after allowing for the principal physical constraints and non-effective areas. This represents an indicative maximum area based on the land resource and does not imply that the entire area could be continuously utilised for CVP.

Additional areas of LUC 2w7 land may also be capable of supporting some cropping activities. However, these soils are subject to greater wetness limitations associated with poor drainage. While cultivation may be undertaken during favourable soil moisture conditions, seasonal wetness can restrict cultivation and harvesting windows, reduce soil trafficability and increase the risk of soil structural damage where cultivation occurs under unsuitable conditions.

CVP also requires appropriate crop rotations to maintain soil condition and manage pest and disease pressures. It would therefore be inappropriate to assume that the entire suitable area could be continuously planted in a single vegetable crop. Commercial production would typically involve rotations between vegetable crops and other land uses, which may include arable crops and pasture phases. The productive potential of CVP therefore needs to be considered as part of a wider rotational cropping system, rather than on the basis of continuous production of a single high-value crop across the full potentially suitable area.

In addition to the regulatory constraints identified above, potential soil, operational and environmental limitations include:

- Wetness limitations associated with LUC 2w7 land;
- Restricted cultivation and harvesting windows across wetter areas;
- Increased susceptibility to soil structural degradation, compaction and rutting under intensive cultivation;
- Erosion and sediment control requirements associated with cultivated land, particularly within LUC 4e4 areas;
- The availability and reliability of freshwater for irrigation;
- The requirement for appropriate crop rotations to maintain soil condition and manage pest and disease pressures;
- Waterway setbacks, drainage features and associated management requirements that reduce the extent of land practically available for cultivation;
- Capital investment and specialist infrastructure associated with irrigation, machinery, crop storage and handling; and
- Potential cross-boundary effects associated with intensive cropping activities, including noise, dust and agrichemical spray drift.

Conversion to CVP would also represent a material change from the existing productive system. While some general farm infrastructure may retain utility, much of the existing

dairy-specific infrastructure, including the dairy sheds, farm dairy effluent systems, feed pads and elements of the stock race and handling network, would have limited application to a CVP enterprise. Establishment would therefore require investment in a new production system while reducing the productive utility of infrastructure already established on the Subject Site.

Overall, the better-drained LUC 1s1 and 2s3 land is considered to have moderate to high biophysical suitability for CVP. The soils, contour, scale and largely contiguous nature of this land resource mean that CVP cannot reasonably be discounted on biophysical grounds alone.

However, while substantial parts of the Subject Site are biophysically suitable for CVP, AgFirst does not consider CVP to represent an appropriate alternative long-term land use given the regulatory constraints applying to its establishment and expansion under PC1. These regulatory constraints, together with irrigation requirements, rotational cropping requirements, specialist infrastructure and the conversion from an established dairy farming platform, materially constrain the practical establishment of a new commercial vegetable enterprise on the Subject Site. Accordingly, CVP has not been identified as an appropriate long-term productive land use for the purposes of this assessment.

6.3.5 Horticulture

Given the extent of versatile land within the Subject Site, horticulture represents a potential higher-value productive land use that warrants consideration. While the Subject Site has historically been used predominantly for pastoral and dairy farming, the presence of a substantial area of NZLRI-mapped LUC Class 1 and 2 land means that its productive capability is not limited to pastoral uses.

Horticultural production can generate high productive returns from relatively small land areas but is generally more dependent than pastoral farming on specific soil, climate, water, scale and infrastructure requirements. Establishment also typically involves significant upfront capital investment and a period of development before mature production is achieved. Consequently, the physical capability of the soil is only one consideration when assessing whether horticulture represents a practical alternative land use.

Horticultural production generally requires:

- Well-drained soils with suitable rooting depth and soil structure;
- Flat to gently undulating contour;
- Reliable access to freshwater for irrigation;
- Suitable climatic conditions, including consideration of frost risk;
- Shelter and access to supporting infrastructure; and
- Sufficient contiguous land area to support an efficient commercial enterprise.

The Subject Site contains substantial areas that, based on the available land resource information, have favourable characteristics for horticultural production. In particular,

the NZLRI-mapped LUC 1s1 and 2s3 land comprises approximately 113 ha and is generally associated with well-drained Allophanic soils and flat to gently undulating contour. These LUC units are identified within the NZLRI as being capable of supporting horticultural cropping and orcharding and form a largely contiguous land resource.

As shown in Figure 11, approximately 97.9 ha has been identified as an indicative area potentially available for cultivation-based and horticultural production after allowing for the principal physical constraints and non-effective areas. This represents a high-level indication of the potentially suitable land resource and should not be interpreted as confirming that the entire area could practically be developed as orchard.

The scale of the potentially suitable land resource is nevertheless relevant. Venture Taranaki's Kiwifruit Opportunities assessment identifies a minimum canopy area of approximately 4 ha for a commercially viable owner-operated kiwifruit enterprise.[12] This provides a useful indication of the minimum scale at which permanent kiwifruit production may reasonably be considered as a standalone commercial land use.

The approximately 97.9 ha identified as potentially suitable within the Subject Site therefore substantially exceeds this minimum scale. However, this does not imply that development of the entire area as a single horticultural enterprise would be necessary or commercially realistic. A more appropriate consideration is whether suitably configured areas of at least approximately 4 ha of productive canopy could be established within the higher-capability land resource.

This distinction is particularly relevant to the subsequent economic assessment. Rather than assuming that a single operator would convert the entire 97.9 ha to Gold kiwifruit production, the economic practicality of horticultural development is assessed initially on the basis of a representative 4 ha commercial orchard, consistent with the minimum owner-operated scale identified by Venture Taranaki. Larger-scale development would remain physically possible where suitable land, water and capital were available, but would involve correspondingly greater capital requirements.

In comparison, the LUC 2w7 land has greater wetness and drainage limitations. Seasonal wetness and elevated groundwater levels may restrict rooting depth and machinery access and reduce the range of horticultural crops that could practically be established. The approximately 13 ha of LUC 4e4 land is also less suited to horticulture due to its greater slope and erosion limitations.

Importantly, the approximately 97.9 ha indicative area does not represent a confirmed net plantable area. Detailed soil and drainage investigations would be required before permanent horticultural development could proceed. Localised areas may prove unsuitable or less suitable due to soil variability, drainage, groundwater conditions or other site-specific factors. Land would also be required for access, headlands, shelter, buildings and supporting infrastructure.

[12] https://www.venture.org.nz/assets/Uploads/Kiwifruit-Blueprint-Final-v2.pdf

Access to a secure and reliable irrigation water supply represents a further significant practical constraint. Permanent horticultural crops generally require reliable irrigation through summer moisture deficits, particularly given the significant capital investment associated with orchard establishment.

There are existing groundwater bores within the Subject Site associated with the established farming operations. However, AgFirst has not undertaken a detailed water availability investigation and has not confirmed the sustainable yield, allocation or reliability of these bores for horticultural irrigation. While groundwater is present, there is presently insufficient information to demonstrate that the existing water supply could meet the irrigation demand associated with commercial horticultural development.

In the absence of a sufficiently large and reliable direct water supply, above-ground water storage may be required. The scale of storage would depend on the crop, developed area, irrigation demand, available water-take rate and required supply reliability. Water storage would require additional land and potentially significant capital investment in earthworks, engineering, consenting, pumping, filtration and distribution infrastructure.

The requirement for water storage is particularly relevant to smaller horticultural developments. While development of a 4 ha orchard materially reduces the absolute water requirement compared with a large-scale conversion of the Subject Site, the fixed costs associated with establishing a secure water source, storage and supporting infrastructure would be spread across a smaller productive area and therefore remain important to commercial viability.

Climatic conditions are also relevant. The inland Hamilton Basin is subject to frost, and the suitability of individual horticultural crops would depend on their frost sensitivity and the frequency and severity of frost at the Subject Site. Depending on the crop selected, shelter and frost-protection infrastructure may be required, adding further establishment and operational costs.

The existing productive infrastructure is also relevant when considering conversion to horticulture. As described in Section 6.2, the Subject Site comprises two established dairy farming platforms containing substantial dairy-specific infrastructure, including dairy sheds, farm dairy effluent systems, feed pads, races, stock water systems, drainage and stock handling facilities. Much of this infrastructure would have limited utility within a permanent horticultural enterprise.

Conversion of part of the Subject Site to horticulture would not necessarily require abandonment of the entire dairy farming operation. A smaller horticultural development could potentially occur on suitable higher-capability land while the balance remained in pastoral production. However, depending on its location and configuration, subdivision of the existing dairy platform for horticulture could affect paddock configuration, races, drainage, effluent application areas and the operational efficiency of the remaining dairy land.

Potential limitations to horticultural development therefore include:

- Uncertainty regarding the availability and reliability of groundwater for irrigation;
- The potential requirement for substantial water storage and associated infrastructure;
- Significant capital investment associated with orchard establishment and Plant Variety Rights (PVR) licence acquisition;
- The requirement for sufficient contiguous and suitably configured land to establish a commercially viable orchard;
- Potential effects on the configuration and efficiency of the existing dairy farming platforms;
- A development period before permanent horticultural crops achieve mature production;
- Localised soil and drainage variability within the broader indicative suitable area;
- Seasonal wetness and elevated groundwater levels associated with LUC 2w7 land;
- Frost risk and the potential requirement for frost protection; and
- Land required for shelter, access, headlands, water storage and other supporting infrastructure, reducing the net productive canopy area.

Overall, the better-drained LUC 1s1 and 2s3 land is considered to have moderate to high biophysical suitability for horticultural production. The quality, scale and largely contiguous nature of this land mean that horticulture cannot reasonably be discounted on soil capability or scale grounds alone. The indicative area potentially suitable for horticulture also substantially exceeds the approximately 4 ha minimum commercial canopy area identified by Venture Taranaki for an owner-operated kiwifruit enterprise.

However, biophysical suitability and sufficient land area do not establish economic viability. A secure water supply has not been demonstrated, substantial capital investment would be required, and detailed soil, drainage and orchard design investigations would be necessary to determine the net area practically capable of supporting productive orchard.

Accordingly, horticulture remains a credible potential higher-value use of suitable parts of the Subject Site. For the purposes of the economic assessment in Section 7, AgFirst has therefore adopted a representative 4 ha Gold kiwifruit orchard as the initial commercial development scenario, rather than assuming wholesale conversion of the approximately 97.9 ha potentially suitable land resource. This provides a more realistic basis for considering the capital requirements and economic practicality of establishing horticulture on the Subject Site.

6.4 Productive Capacity

The Subject Site contains a significant productive rural land resource capable of supporting a range of land-based primary production activities. The combination of productive soils, generally favourable topography, established drainage and farm

infrastructure, and a long history of agricultural use demonstrates that the Subject Site retains substantial productive capacity.

The level and versatility of that productive capacity varies across the Subject Site. The NZLRI-mapped LUC 1s1 and 2s3 land comprises approximately 113 ha and represents the most versatile component of the land resource. These areas are generally well drained and capable of supporting intensive pastoral production, arable cropping, commercial vegetable production and potentially horticultural production. In comparison, the LUC 2w7 land has greater wetness and drainage limitations, while the LUC 4e4 land has greater slope and erosion limitations. These areas remain productive but are more naturally aligned with pastoral production.

The productive capacity of the Subject Site should not, however, be assessed solely by reference to the theoretical range of land uses that could be established on the most versatile soils. Productive capacity also reflects the scale and configuration of suitable land and the ability of the land and supporting infrastructure to sustain commercially practical primary production.

In this regard, the Subject Site currently supports two operational dairy farms and contains substantial infrastructure specifically developed to support intensive dairy production. This includes dairy sheds and associated yards, farm races, stock water systems, drainage infrastructure, farm dairy effluent collection, storage and land application systems, feed pads and associated feed infrastructure, fencing and stock handling facilities. Collectively, this represents a significant existing investment in the productive use of the Subject Site.

The established dairy farming system is capable of utilising essentially the full effective productive area, including areas subject to wetness limitations that have lower suitability for regular cultivation or permanent horticultural production. Alternative higher-intensity uses would generally be concentrated on the better-drained LUC 1s1 and 2s3 land, with the more constrained parts of the Subject Site remaining better suited to pastoral production.

The scale of the versatile land resource nevertheless provides opportunity for alternative productive uses. After reviewing soil drainage, slope limitations, waterways, existing vegetation and non-effective areas, approximately 97.9 ha has been identified as potentially suitable for cultivation-based and horticultural production. This substantially exceeds the minimum land area required for a range of commercial enterprises. In the case of kiwifruit, the Venture Taranaki assessment identifies approximately 4 ha of productive canopy as a minimum scale for a commercially viable owner-operated enterprise. The Subject Site therefore contains sufficient higher-capability land to accommodate commercially relevant horticultural development without requiring conversion of the entire versatile land resource.

The approximately 97.9 ha should not, however, be interpreted as a confirmed net plantable horticultural area. Detailed soil, drainage, water and development

investigations may identify areas that are unsuitable or less suitable, while shelter, access, headlands, water storage and supporting infrastructure would further reduce the area available for productive canopy.

Accordingly, the Subject Site is considered to have high productive capacity and versatility. The existing dairy farming system represents an established productive use capable of utilising essentially the full effective area, while the better-drained LUC 1s1 and 2s3 land provides potential for higher-intensity cropping and horticultural production. The practical realisation of those alternative uses is dependent on the scale of development, regulatory requirements, water availability, capital requirements and other crop-specific development considerations.

6.5 Highest and Best Rural Use

For the purposes of this assessment, highest and best rural use refers to the productive land use that is physically possible, legally permissible, operationally practical and economically feasible, having regard to the underlying land resource, existing productive use and infrastructure, and the investment required to establish an alternative production system.

The Subject Site is currently configured as two operational dairy farming platforms. Dairy farming is well suited to the physical characteristics of the Subject Site and is capable of productively utilising essentially the full effective area, including both the highly versatile LUC 1s1 and 2s3 land and the LUC 2w7 land subject to greater wetness limitations.

The existing dairy farming system is also supported by substantial productive infrastructure. This includes dairy sheds and associated yards, farm races, stock water systems, drainage infrastructure, farm dairy effluent collection, storage and land application systems, feed pads and associated feed infrastructure, fencing, stock handling facilities and other farm improvements.

Continued dairy farming allows these improvements to remain productively utilised. In contrast, conversion to a materially different land use would require new investment and may result in some existing dairy-specific infrastructure becoming redundant or having reduced productive utility.

The Subject Site is also physically capable of supporting alternative pastoral and arable uses. Beef finishing, dairy support, replacement stock grazing and mixed arable production could be established across appropriate parts of the Site. These uses could utilise some of the existing infrastructure but would generally make less intensive use of the dairy-specific improvements already established. Mixed arable production would also principally utilise the better-drained component of the Subject Site, with the wetter and more erosion-prone areas remaining better suited to pastoral production.

As discussed in Section 6.3, the better-drained LUC 1s1 and 2s3 land also has moderate to high biophysical suitability for CVP and horticultural production. The quality, scale

and largely contiguous nature of this land resource mean that potentially higher-value productive uses cannot reasonably be discounted from consideration.

CVP is materially constrained by the regulatory framework applying to its establishment and expansion under PC1. This reduces the practicality of establishing a new CVP enterprise notwithstanding the physical suitability of substantial parts of the Subject Site.

Horticulture is less clear-cut. The better-drained land provides a potentially suitable physical platform for horticultural development and the scale of this land resource substantially exceeds the minimum area required for a commercial enterprise. As discussed in Section 6.3, the Venture Taranaki assessment identifies approximately 4 ha of productive canopy as a minimum scale for a commercially viable owner-operated kiwifruit enterprise. It is therefore not necessary to assume wholesale conversion of the approximately 97.9 ha potentially suitable area for horticulture to represent a credible alternative productive use.

A smaller horticultural enterprise could potentially be established on suitable higher-capability land while the balance of the Subject Site remained in pastoral production. However, the practicality of such a development would depend on its location and configuration and the extent to which it affected the operation of the remaining dairy platform, including paddock configuration, races, drainage and farm dairy effluent application areas.

Horticultural development would also require substantial new capital investment. As considered further in Section 7, establishment of representative Gold kiwifruit production is estimated to require approximately $1.05 million/ha in development expenditure, excluding the underlying land value and any requirement for bulk water storage. The proportionate underlying land value is approximately $93,000/ha, resulting in identified land and development capital of approximately $1.14 million/ha before bulk water storage.

This capital requirement is particularly relevant when distinguishing between the physical capability of the land and the practical establishment of a horticultural enterprise. Higher mature returns may potentially be generated from Gold kiwifruit production, but those returns require substantial upfront investment in PVR licensing, orchard structures, planting, land preparation, irrigation, frost protection and other orchard infrastructure.

Access to a sufficiently reliable irrigation water supply also remains unresolved. Existing groundwater bores are present within the Subject Site, but their ability to provide the volume and reliability required for commercial horticultural production has not been demonstrated. If bulk water storage is required, this would represent a further significant capital requirement in addition to the approximately $1.05 million/ha development expenditure identified above.

Permanent horticultural crops also involve a development period before reaching mature production. Capital is committed upfront while productive returns develop over time, with the enterprise subsequently exposed to crop, market, climatic, water-supply and operational risks. These considerations do not preclude horticultural development, but are relevant when comparing its potential productive return with an established dairy farming system that is already operational and generating returns.

Accordingly, no single alternative productive use can be identified solely from the physical capability of the land as demonstrably superior to the existing dairy farming system. Dairy farming represents the established productive benchmark for the Subject Site, utilising essentially the full effective productive area and the substantial existing investment in dairy infrastructure.

Horticulture nevertheless represents a credible potentially higher-value use of suitable parts of the better-drained land and cannot reasonably be discounted. Its establishment is not constrained by an absence of sufficient land area, but its practical and economic feasibility is dependent on significant additional capital investment, confirmation of a reliable irrigation water supply, detailed site-specific suitability assessment and the scale and configuration of any proposed development.

Section 7 therefore assesses the economic contribution of the existing dairy farming system and the principal alternative productive uses, together with the indicative capital requirements associated with establishing representative horticultural production. This provides the basis for assessing the productive opportunity cost associated with the permanent removal of the Subject Site from land-based primary production.

7.0 Economic Contribution of Primary Production

7.1 Introduction

This section assesses the economic contribution and productive value associated with the existing and potential land-based primary production activities identified in Section 6.

The Subject Site currently comprises two operational dairy farms together with an existing arable cropping block. As outlined in Section 6, the Subject Site contains a substantial productive land resource, including approximately 113 ha of NZLRI-mapped LUC 1s1 and 2s3 land with the physical versatility to support a range of intensive pastoral, cultivation-based and potentially horticultural land uses.

The purpose of the economic assessment is not limited to determining whether alternative productive activities are physically possible. Rather, it considers the economic contribution of the existing dairy farming system and the indicative economic performance and establishment requirements associated with the principal alternative productive uses that could reasonably be considered for the Subject Site.

The assessment considers:

- The existing dairy farming system;
- Mixed arable cropping;
- Commercial Vegetable Production (CVP); and
- Horticultural production.

As discussed in Section 6.3, CVP is materially constrained by the regulatory framework applying under Proposed Waikato Regional Plan Change 1 (PC1).

Horticulture warrants more detailed consideration. The better-drained LUC 1s1 and 2s3 land has moderate to high biophysical suitability for horticultural production and could potentially generate substantially higher mature returns per hectare than pastoral farming. The scale of the potentially suitable land resource also substantially exceeds the minimum area required for a commercial horticultural enterprise. Accordingly, it is not necessary to assume wholesale conversion of the higher-capability land to recognise horticulture as a credible alternative productive use.

For the purposes of the economic assessment, a representative Gold kiwifruit production system is used to illustrate both the potential productive returns and the scale of investment required to establish a higher-value horticultural enterprise. Particular consideration is given to the approximately 4 ha minimum productive canopy area identified by Venture Taranaki for a commercially viable owner-operated kiwifruit enterprise, together with the indicative capital requirement on a per-hectare basis.

This approach allows the potentially higher mature productive returns associated with horticulture to be considered alongside the substantial capital requirements associated with PVR licensing, orchard establishment, irrigation and frost-protection infrastructure, and other supporting development. The potential requirement for bulk water storage is considered separately, as this represents an additional and presently unquantified capital requirement.

The assessment does not attempt to undertake a detailed long-term investment or financial feasibility analysis of horticultural development. Such an assessment would require more detailed information regarding the scale and staging of development, net plantable area, water availability and storage, orchard layout, establishment profile, operating costs and other commercial assumptions than is presently available. Instead, the assessment provides an indication of the productive economic potential and capital requirements associated with alternative land uses relative to the established dairy farming system.

The assessment ultimately provides a basis for identifying the current economic contribution of primary production, recognising the potential for higher-value productive use of suitable parts of the Subject Site, and assessing the productive opportunity cost associated with the permanent removal of the Subject Site from land-based primary production.

7.2 Assessment Methodology

The economic assessment has been undertaken using representative production systems and industry benchmark information relevant to the Waikato Region. Where available, site-specific information relating to the existing dairy farming operations has been used in preference to regional benchmarks.

Benchmark and supporting information includes:

- DairyNZ industry information[13];
- Ministry for Primary Industries (MPI) farm monitoring[14]
- Zespri production, revenue and expenditure information[15];
- AgFirst benchmarking information; and
- Other relevant industry information identified within the respective assessments.

The economic assessment is undertaken in two stages.

The first stage assesses the indicative annual operating performance of the existing dairy farming system and the principal alternative productive uses. This provides an indication of the productive earnings capable of being generated from the land resource

[13] https://www.dairynz.co.nz/resources/tools/dairynz-econ-tracker-tool/
[14] https://www.mpi.govt.nz/resources-and-forms/economic-intelligence/farm-monitoring#kiwif
[15] https://canopy.zespri.com/content/dam/new-canopy/nz/en/documents/public/about/annual-report/Annual-Report-2025-26.pdf

once each production system is operational. The principal measure used for comparison is Earnings Before Interest, Tax, Rent and management (EBITRm), together with farm-gate production value and employment contribution where relevant.

The second stage considers the practical and capital requirements associated with establishing alternative productive uses. This is particularly relevant to horticulture, where potentially higher mature returns are dependent on substantial upfront investment and the establishment of an entirely different production system.

The assessment therefore considers, where relevant:

- The scale of land required to support a commercially relevant enterprise;
- Existing productive infrastructure and its ongoing utility;
- Land-use conversion and establishment costs;
- PVR licence costs where applicable;
- Irrigation, water storage and other supporting infrastructure requirements;
- Establishment periods before mature production is achieved;
- The potential for existing dairy-specific infrastructure to become redundant or have reduced productive utility following conversion; and
- Indicative annual operating performance once established.

For horticulture, the assessment considers both the per-hectare capital requirement and a representative minimum commercial development scale. As outlined in Section 6.3, approximately 4 ha of productive canopy has been adopted as the initial representative scale for an owner-operated Gold kiwifruit enterprise, based on the minimum commercial scale identified by Venture Taranaki. This avoids assuming that the entire area identified as potentially suitable for horticulture would necessarily be developed as a single enterprise.

This approach recognises that a land use capable of generating a higher mature annual return does not necessarily represent a readily realisable alternative use of an existing operational farming asset. The potential productive return needs to be considered alongside the scale of capital required to establish the alternative enterprise, water and infrastructure requirements, the period before mature production is achieved, and the productive infrastructure displaced or affected through conversion.

The assessment is intended to provide a comparative indication of productive economic performance and the economic practicality of alternative productive uses, rather than a detailed investment feasibility assessment for any particular enterprise. No detailed crop-specific design, orchard layout, irrigation feasibility assessment or groundwater availability investigation has been undertaken for the Subject Site. Similarly, no detailed discounted cashflow, financing or long-term investment analysis has been undertaken for the representative horticultural scenario.

Assumptions adopted for the alternative production systems are identified within the relevant sections. The resulting assessment provides a basis for considering the existing

economic contribution of primary production, the potential for higher-value productive use, and the productive opportunity cost associated with the Proposal.

7.3 Current Production System

The Subject Site currently comprises two separate operational dairy farms, together with an existing arable cropping block. To assess the economic contribution associated with the existing land use, an indicative enterprise-level analysis has been undertaken using representative Waikato dairy production assumptions and current industry cost structures.

For the purposes of assessing the economic contribution of the predominant existing land use, the two dairy farms have been modelled as a single representative dairy enterprise across an effective productive area of approximately 154.5 ha. Based on representative Waikato dairy farm performance and DairyNZ statistics, the Subject Site is estimated to produce approximately 164,900 kgMS per annum, equivalent to approximately 1,067 kgMS/ha. [16]

A particular advantage of dairy farming is its ability to utilise essentially the full effective productive area of the Subject Site. The dairy system is not restricted to the better-drained LUC 1s1 and 2s3 land and can also productively utilise the wetter LUC 2w7 areas through the existing drainage network and appropriate grazing management. This contrasts with cultivation-based and permanent horticultural systems, for which the wetter and more constrained parts of the Site have lower productive suitability.

The existing dairy farming system is also supported by substantial infrastructure already established across the two farming platforms. This includes dairy sheds and associated yards, farm races, stock water systems, drainage infrastructure, farm dairy effluent collection, storage and land application systems, feed pads and associated feed infrastructure, fencing and stock handling facilities. The economic assessment of the existing dairy system therefore represents an established and operational production system, rather than a new enterprise requiring significant initial development expenditure.

The revenue and cost assumptions adopted in the analysis were derived from DairyNZ Econ Tracker data. Five-year averages were calculated from the five completed dairy seasons from 2020/21 to 2024/25 and applied to the representative production system presented in Table 3. [17]

Table 3 indicates that the representative dairy farming system is capable of generating annual farm-gate revenue of approximately $1.54 million. After operating and fixed farm expenses and depreciation, the enterprise generates an indicative EBITRm of approximately $530,819 per annum, equivalent to approximately $3,436/ha.

[16] Dairy NZ & LIC: New Zealand Dairy Statistics 2024-2025
[17] Dairy NZ Econ Tracker Tool

Table 3. Indicative annual operating performance of a representative dairy enterprise at 636 Pencarrow Road, Tamahere.

	Per hectare	Total
Effective area (ha)		154.5
Income		
Milk production (kgMS)	1,067	164,900
Milk sales	9,424	1,456,067
Other income	561	86,675
Total farm-gate revenue	**9,985**	**1,542,742**
Expenses		
Wages	736	113,774
Farm dairy and electricity	250	38,625
Animal health and breeding	566	87,478
Feed and crops	2,266	350,066
Fertiliser & freight	640	98,942
Vehicles & R&M	849	131,109
Other	142	21,877
Total operating expenses	**5,449**	**841,871**
Admin	216	33,372
Insurance	118	18,231
Rates	305	47,193
Total fixed expenses	**639**	**98,796**
Depreciation	461	71,255
Total expenses	**6,550**	**1,011,922**
Enterprise EBITRm	**$**	**530,819**
EBITRm/ha	**$**	**3,436**

The existing dairy farming system therefore provides a substantial ongoing economic contribution from the Subject Site. The principal components of this contribution, including farm-gate production value, operating performance and employment, are summarised in the following sections.

The operating performance of the existing dairy farming system also provides the benchmark against which alternative productive land uses are assessed. Comparison of annual EBITRm alone, however, does not account for the capital expenditure, establishment periods, infrastructure requirements or changes in the productive utility of existing improvements associated with conversion to an alternative land use. These matters are considered in the subsequent assessment of alternative productive systems, including the capital requirements and economic practicality associated with horticultural development.

7.3.1 Farm Gate Production Value

The representative dairy farming system is estimated to generate annual farm-gate revenue of approximately $1.54 million. As outlined in Table 3, this comprises approximately $1.46 million in milk sales, together with approximately $87,000 in other

farm income, based on the representative production and five-year average assumptions adopted for the assessment.

This represents the gross value of agricultural production generated annually from the Subject Site before consideration of farm operating costs. Farm-gate revenue provides an indication of the direct productive economic activity associated with the existing primary production use of the Subject Site and provides an input for the wider assessment of the economic effects of the Proposal.

7.3.2 Operating Performance

As outlined in Table 3, the representative dairy farming system is estimated to generate:

Annual farm-gate revenue of approximately $1.54 million; and
Annual EBITRm of approximately $531,000.

These values provide an indication of the direct productive economic contribution associated with the existing dairy farming use of the Subject Site.

EBITRm represents the operating earnings generated by the productive enterprise after allowing for operating expenses, administration, insurance, rates and depreciation, but before interest, tax, rent and an allowance for management. It therefore provides an appropriate measure of the underlying operating performance of the productive land use and a benchmark for comparison with alternative production systems.

7.3.3 Employment Contribution

The existing dairy farming operations also contribute to employment both directly on the Subject Site and indirectly through the wider agricultural supply and service sectors.

Based on representative DairyNZ labour benchmarks and an indicative stocking rate of approximately 2.75 cows/ha, the Subject Site has the productive capacity to support approximately 3 to 3.5 full-time equivalent (FTE) positions associated with a dairy farming system of approximately 425 cows across the 154.5 ha effective productive area.[18]

In addition to direct on-farm employment, the dairy farming operation supports expenditure and employment across the wider rural economy through the use of:

- Agricultural contractors;
- Fertiliser, feed and agrichemical suppliers;
- Veterinarians and animal health services;
- Transport operators;
- Rural service providers and professional advisers; and
- Dairy processing and associated supply-chain activities.

[18] Dairy NZ Workplace Productivity Survey 2023 Report

The indirect employment contribution attributable specifically to the Subject Site has not been quantified as part of this assessment. However, the approximately $1.54 million in annual farm-gate revenue, together with the associated expenditure required to operate the dairy farming enterprises, demonstrates that productive use of the Subject Site generates economic activity extending beyond the direct employment occurring on the two dairy farms.

7.4 Mixed arable production system

As outlined in Section 6.3, the Subject Site contains substantial areas capable of supporting mixed arable production. The generally flat topography, productive soils, proximity to Hamilton and access to established agricultural contracting services provide favourable operational conditions for cultivation-based land uses.

Arable production would not, however, utilise the full effective productive area of the Subject Site to the same extent as the existing dairy farming system. The wetter LUC 2w7 land has greater drainage and seasonal trafficability limitations, while the LUC 4e4 land has greater slope and erosion constraints. For the purposes of this assessment, approximately 97.9 ha has therefore been adopted as an indicative area potentially suitable for cultivation-based production, consistent with the land resource assessment in Section 6.

A representative maize silage and annual ryegrass silage system has been modelled across this area. This reflects a practical intensive cropping system capable of utilising the better-drained and more readily cultivable parts of the Subject Site while maintaining productive use through successive summer and winter crops.

The indicative annual operating performance is presented in Table 4. Under the assumptions adopted, the representative mixed arable system generates approximately $634,391 in annual farm-gate revenue and an EBITRm of approximately $160,068 per annum, equivalent to approximately $1,635/ha across the 97.9 ha cropping area.

Table 4. Indicative annual operating performance of a representative mixed arable production system at 636 Pencarrow Road, Tamahere

	Per hectare	Total
Effective area (ha)		97.9
Income		
Maize silage sold	5,600	548,240
Annual pasture silage sold	880	86,151
Total farm-gate revenue	**6,480**	634,391
Operating expenses		
Maize seed	745	72,935
Maize establishment	749	73,328
Maize herbicide	287	28,146
Maize fertiliser	1,512	148,026
Annual grass seed	120	11,749
Annual grass establishment	150	14,685
Annual grass fertiliser	250	24,475
Wages	375	36,713
R&M	174	17,034
Total operating expenses	**4,363**	**427,091**
Admin	72	7,048
Rates	305	29,904
Total fixed expenses	**377**	**36,953**
Depreciation	105	10,280
Total expenses	**4,845**	**474,323**
EBITRm	**$**	**160,068**
EBITRm/ha	**$**	**1,635**

7.5 Horticultural Production

7.5.1 Representative Gold Kiwifruit Production System

As outlined in Section 6.3, approximately 97.9 ha of the Subject Site has been identified at a high level as potentially suitable for cultivation-based and horticultural production. This area predominantly comprises the better-drained LUC 1s1 and 2s3 land and has moderate to high biophysical suitability for horticultural production.

The 97.9 ha area represents an indicative land resource envelope rather than a confirmed net plantable orchard area. Detailed soil, drainage, water-supply and orchard-design investigations would be required to determine the area practically capable of supporting any particular horticultural crop. Shelter, headlands, access, buildings, water storage and other supporting infrastructure would also reduce the area ultimately available for productive canopy.

For the purposes of assessing the potential economic contribution of horticulture, AgFirst does not consider it necessary or appropriate to assume that the entire 97.9 ha would be converted to a single horticultural enterprise. The scale of the available land

resource substantially exceeds the minimum area required to establish a commercially relevant horticultural operation.

Venture Taranaki's assessment of kiwifruit opportunities identifies approximately 4 ha of productive canopy as a minimum scale for a commercially viable owner-operated kiwifruit enterprise. Accordingly, a representative 4 ha Gold kiwifruit canopy has been adopted for the economic assessment. This provides a commercially relevant basis for considering the potential higher-value productive use of the Subject Site without assuming wholesale conversion of the available horticultural land resource.

Gold kiwifruit has been selected as a representative higher-value horticultural enterprise rather than as a conclusion that Gold kiwifruit would necessarily be the preferred horticultural crop for the Subject Site. Establishment of a commercial orchard would require more detailed crop-specific feasibility assessment, including confirmation of soil suitability, water availability, frost risk, orchard layout and commercial considerations.

Production assumptions are based on Zespri Waikato actual average production data for the 2022 to 2025 harvest seasons. Orchard expenditure has been based on Zespri Bay of Plenty Gold kiwifruit orchard averages, which provide the best available expenditure benchmark in the absence of equivalent Waikato-specific information.

Based on the four seasons assessed, the representative Gold kiwifruit system produces approximately 10,775 trays/ha at an average Orchard Gate Return of approximately $11.55/tray. Average annual Orchard Gate Revenue across the four seasons assessed is approximately $125,800/ha once mature. Applied to a 4 ha productive canopy, this equates to approximately 43,100 trays and $503,000 in average annual Orchard Gate Revenue.

Table 5. Representative mature Gold kiwifruit production and Orchard Gate Revenue.

Harvest season	Expected trays/ha	Price ($/tray)	Orchard Gate Revenue ($/ha)
2022	10,754	$11.51	$123,780
2023	8,415	$9.97	$83,899
2024	11,591	$12.92	$149,757
2025	12,342	$11.81	$145,779
Average	**10,775**	**$11.55**	**~$125,800**

The results in Table 5 demonstrate the substantially higher gross productive value per hectare that could potentially be generated from suitable parts of the Subject Site under mature Gold kiwifruit production. However, Orchard Gate Revenue represents gross revenue rather than operating profitability and does not account for the substantial capital investment required to establish the orchard.

The indicative establishment costs adopted for the representative Gold kiwifruit system are summarised in Table 6. These costs are presented principally on a per-hectare basis, together with the equivalent cost for the representative 4 ha productive canopy.

Table 6. Indicative capital requirements for representative Gold kiwifruit production.

Cost component	Indicative cost/ha	Representative 4 ha canopy
Orchard development, excluding land	$1,051,305/ha	$4,205,220
Indicative underlying land value*	$93,281/ha	$373,124*
Identified capital requirement	$1,144,586/ha	$4,578,344*
Bulk water storage	Additional	Additional

**The land value shown for the 4 ha scenario is indicative only. A 4 ha productive canopy would require a greater gross land area once shelter, headlands, access, buildings, water storage and other supporting infrastructure are allowed for.*

The indicative orchard development cost includes PVR licensing, orchard structures, planting and establishment, irrigation and frost-protection infrastructure and other orchard development costs. Bulk water storage is not included and would represent an additional capital requirement where necessary.

The representative assessment therefore indicates that establishment of a 4 ha productive Gold kiwifruit canopy would require approximately $4.21 million in orchard development expenditure before land and any bulk water storage requirement are considered.

This is a significant distinction between the existing and potential productive uses of the Subject Site. Gold kiwifruit may be capable of generating substantially higher mature gross returns per hectare than the existing pastoral system; however, those returns require establishment of an entirely new and highly capital-intensive production system.

The analysis does not demonstrate that Gold kiwifruit production would be economically viable on the Subject Site, nor does it assume that only 4 ha could ultimately be developed. Rather, the representative 4 ha scenario demonstrates the minimum scale and indicative capital commitment associated with establishing a commercially relevant higher-value horticultural enterprise. The 97.9 ha mapped area demonstrates that land area itself is unlikely to be the principal constraint, while the practical extent of horticultural development would instead depend on matters including detailed soil suitability, water availability, development capital, orchard configuration and commercial feasibility.

7.5.2 Water Requirements

Reliable access to irrigation water would be a fundamental requirement for establishing Gold kiwifruit production on the Subject Site. While groundwater bores are present, the availability of a sufficiently reliable and sustainable water supply for commercial horticultural irrigation has not been established as part of this assessment.

Waikato Regional Council mapping identifies 17 recorded bores within the Subject Site. Available bore information indicates that a number of these bores are relatively shallow, with the deepest recorded bore identified in the available information extending to

approximately 64 m. [19] However, the presence and depth of existing bores does not establish the sustainable groundwater yield available for horticultural irrigation.

A more detailed water availability investigation would therefore be required to determine the aquifer or aquifers available beneath the Subject Site, sustainable groundwater yield, existing allocation and consenting constraints, seasonal reliability, practical abstraction rates, crop irrigation demand and any associated water-storage requirement.

For the representative 4 ha Gold kiwifruit enterprise, the absolute water requirement would be materially lower than for wholesale horticultural conversion of the 97.9 ha land resource. Nevertheless, a reliable irrigation and frost-protection supply would still be required and may require groundwater abstraction, storage and associated pumping, filtration and distribution infrastructure.

The scale and cost of any required storage cannot be reliably determined without further investigation of groundwater availability, abstraction rates, crop demand and required supply reliability. Any bulk water storage would also require additional land and capital and is not included in the orchard development costs presented in Table 6.

Accordingly, the assessment demonstrates that the Subject Site contains sufficient potentially suitable land to accommodate a commercially relevant horticultural enterprise, but does not demonstrate that horticultural development is presently feasible. Water availability remains a significant unresolved requirement, together with the substantial capital investment required to establish the production system.

7.6 Economic Practicality of Alternative Productive Uses

The annual operating assessments presented above demonstrate that the Subject Site is capable of supporting a range of productive land uses with materially different levels of economic output. The existing dairy farming system generates an indicative EBITRm of approximately $531,000 per annum, while the representative mixed arable system generates approximately $160,000 per annum across the 97.9 ha assessed cropping area. Horticultural production has the potential to generate substantially higher mature productive returns per hectare from suitable parts of the better-drained land.

Comparison of annual operating returns alone does not, however, provide a complete assessment of the practicality of alternative productive land uses. The Subject Site is not an undeveloped rural property. It currently comprises two operational dairy farming platforms supported by substantial existing productive infrastructure. Conversion to a materially different production system would require additional investment and may also reduce the productive utility of infrastructure already established for dairy farming.

[19] Waikato Well and Bore Locations

Mixed arable production represents a physically and economically feasible alternative use of the better-drained parts of the Subject Site. However, the representative mixed arable system generates an indicative EBITRm of approximately $160,000 per annum compared with approximately $531,000 per annum from the existing dairy farming system. It would also utilise a smaller proportion of the productive land resource for intensive production and would make less direct use of the existing dairy-specific infrastructure. On the representative assumptions adopted, mixed arable production does not demonstrate a greater economic contribution than the established dairy farming system.

Commercial Vegetable Production (CVP) has not been assessed as a detailed alternative enterprise. While the better-drained land has moderate to high biophysical suitability for CVP and some vegetable production systems can generate comparatively high returns per hectare, establishment of additional CVP is materially constrained by the regulatory framework applying under Proposed Waikato Regional Plan Change 1 (PC1). As discussed in Section 6.3, additional CVP on the Subject Site would require resource consent as a non-complying activity under Rule 3.11.4.9. This represents a significant regulatory constraint to establishing a new CVP enterprise.

Horticultural production warrants greater consideration. Approximately 97.9 ha has been identified at a high level as potentially suitable for cultivation-based and horticultural production. This demonstrates that the Subject Site contains a substantial higher-capability land resource and that the availability of sufficient land area is unlikely, in itself, to prevent establishment of a commercially relevant horticultural enterprise.

The 97.9 ha area should not, however, be interpreted as a confirmed net plantable orchard area or as a reasonable assumption that the entire area would be converted to a single horticultural enterprise. Detailed soil, drainage, water-supply and orchard-design investigations would be required to determine the area practically capable of supporting any particular horticultural crop. Shelter, headlands, access, buildings, water storage and other supporting infrastructure would further reduce the area available for productive canopy.

For this reason, the horticultural assessment has been undertaken using a representative 4 ha productive Gold kiwifruit canopy, consistent with the minimum commercial scale identified by Venture Taranaki for an owner-operated kiwifruit enterprise. The 4 ha scenario provides a commercially relevant basis for considering the potential economic productivity and establishment requirements of horticulture without assuming wholesale conversion of the 97.9 ha potentially suitable land resource.

As outlined in Section 7.5, representative mature Gold kiwifruit production could generate substantially greater gross revenue per hectare than the existing dairy farming system. However, achieving those returns requires establishment of an entirely new and highly capital-intensive production system.

The representative capital assessment indicates orchard development expenditure of approximately $1.05 million/ha, excluding the underlying land value and any additional requirement for bulk water storage. On this basis, establishment of a representative 4 ha productive canopy would require approximately $4.21 million in orchard development expenditure, before consideration of the land required to accommodate the orchard and supporting infrastructure or any bulk water storage requirement.

This level of capital investment is significant relative to the existing dairy farming system, which is already established and operational. Continued dairy farming allows the existing dairy sheds and yards, farm races, stock water systems, drainage infrastructure, farm dairy effluent collection, storage and land application systems, feed pads, fencing and stock handling facilities to remain in productive use.

A partial conversion to horticulture would not necessarily result in all of this infrastructure becoming redundant. However, the location and configuration of horticultural development could affect paddock configuration, farm races, drainage, farm dairy effluent application areas and the overall efficiency of the remaining dairy platform. These effects would depend on the scale and location of any horticultural development and cannot be reliably quantified without a specific development proposal.

Water availability also remains an important unresolved requirement. Existing groundwater bores are present within the Subject Site, but their ability to provide the volume and reliability of water required for commercial horticultural production has not been demonstrated. Additional abstraction, storage and associated irrigation infrastructure may therefore be required. The scale and cost of these requirements cannot presently be determined and are not included in the representative orchard development cost.

Permanent horticultural production would also involve an establishment period before mature production is achieved. Capital would therefore be committed upfront while productive returns develop over time, with the resulting enterprise subsequently exposed to crop, market, climatic, water-supply and operational risks.

These considerations do not demonstrate that horticultural production would be uneconomic or impractical on the Subject Site. Rather, they demonstrate an important distinction between the productive capability of the land resource and the economic practicality of establishing an alternative production system. The better-drained component of the Subject Site has genuine potential to support higher-value horticultural production, but realising that potential would require substantial additional capital investment, confirmation of a reliable water supply and more detailed crop-specific feasibility assessment.

Accordingly, the existing dairy farming system provides the most appropriate benchmark for the current economic contribution of the Subject Site. It is an

established and operational production system capable of utilising essentially the full effective productive area and generates an indicative annual EBITRm of approximately $531,000.

The horticultural assessment demonstrates that suitable parts of the Subject Site also have the potential to support materially higher-value production. This represents a genuine component of the productive opportunity associated with the land resource, but it should not be treated as an existing economic return or quantified by assuming wholesale horticultural conversion of the 97.9 ha potentially suitable area.

These findings are considered in the following section when assessing the productive opportunity cost associated with the permanent removal of the Subject Site from land-based primary production.

8.0 Productive Implications in the Context of the NPS-HPL

8.1 Introduction

The proposed Waikato Thoroughbred Racing Greenfield Racing Hub will result in the conversion of land currently available for land-based primary production to racing facilities, residential development, supporting infrastructure, open space and associated activities. Under the transitional provisions of the NPS-HPL, the majority of the Subject Site is identified as HPL and is therefore recognised as a productive land resource capable of supporting ongoing land-based primary production.

As discussed throughout Sections 5 to 7 of this assessment, the productive characteristics of the Subject Site are influenced by a combination of soil resources, drainage characteristics, land use capability, climate, existing infrastructure and historical land use. The Subject Site contains substantial areas of highly versatile LUC Class 1 and 2 land, together with areas subject to greater wetness, drainage, slope and erosion limitations.

The Subject Site nevertheless retains substantial productive capacity and is capable of supporting a range of land-based primary production activities. The existing dairy farming system represents an established productive use capable of utilising essentially the full effective productive area, while approximately 97.9 ha of the better-drained land has been identified at a high level as potentially suitable for cultivation-based and horticultural production.

Development of the Subject Site will result in the permanent removal of productive land from agricultural use and the associated loss of productive capacity. The extent of productive land affected, together with the associated agricultural production, economic contribution and future productive opportunities foregone, has been assessed throughout this report.

The following sections consider these productive implications in the context of the NPS-HPL, including the productive land resource affected, agricultural production and economic contribution foregone, long-term productive opportunities, and the relative significance of these effects within the wider Waikato District and regional primary production context.

8.2 Productive Land Affected

The proposed development footprint encompasses approximately 163.9 ha of land, of which approximately 154.5 ha is currently available for land-based primary production.

Under the NZLRI mapping applicable for the purposes of the NPS-HPL transitional provisions, the Subject Site contains approximately 57.0 ha of LUC Class 1 land and 93.8 ha of LUC Class 2 land, providing a combined area of approximately 150.8 ha of

LUC Class 1 and 2 land. The remaining approximately 13.1 ha is classified as LUC Class 4 land.

The productive capability of this land is not uniform. The LUC 1s1 and 2s3 land comprises the most versatile component of the land resource and is generally capable of supporting intensive pastoral farming, arable cropping and potentially horticultural production. In comparison, the LUC 2w7 land is subject to greater wetness and drainage limitations, while the LUC 4e4 land has greater slope and erosion limitations and is more naturally aligned with pastoral production.

The existing dairy farming system is capable of productively utilising essentially the full effective area of the Subject Site, including land subject to wetness limitations. The Site currently comprises two operational dairy farming platforms supported by substantial productive infrastructure, together with an existing arable cropping block.

The assessment has also identified approximately 97.9 ha as an indicative area potentially suitable for cultivation-based and horticultural production. This area represents a high-level land capability envelope rather than a confirmed net plantable or cultivable area. Nevertheless, it demonstrates that a substantial component of the Subject Site has versatility extending beyond pastoral farming.

Accordingly, the productive land affected by the Proposal comprises both an established pastoral farming resource and a substantial area of higher-capability land capable of supporting a wider range of land-based primary production activities.

8.3 Agricultural Production Foregone

If retained in rural production, the Subject Site could continue to support the existing dairy farming system and associated pastoral and cropping activities.

Based on the representative dairy production system adopted in Section 7, development of the Subject Site would result in the loss of approximately:

- $1.54 million per annum in farm-gate revenue;
- $531,000 per annum in EBITRm; and
- 3 to 3.5 FTE positions associated with the dairy farming operation.

These values provide an indication of the existing and readily realisable productive economic contribution of the Subject Site. They do not include the wider indirect economic activity generated through expenditure on agricultural contractors, feed and fertiliser suppliers, veterinarians, transport operators, professional advisers and other rural service providers.

The dairy farming system provides the most appropriate benchmark for quantifying production foregone because it represents an established and operational productive use of the Subject Site. The land resource is already configured and developed for dairy production and contains substantial infrastructure supporting that use.

The productive opportunity foregone is not, however, limited to continuation of the existing dairy farming system. As identified in Sections 6 and 7, the Subject Site is capable of supporting alternative productive uses, including mixed arable production and potentially higher-value horticultural production on suitable parts of the better-drained land.

Accordingly, the productive implications of the Proposal include both the loss of the existing agricultural production and economic contribution generated from the Subject Site and the permanent removal of the opportunity to utilise the higher-capability component of the land resource for alternative productive uses in the future.

8.4 Long-Term Productive Value

Land-based primary production generates value over extended periods, and the productive implications of development therefore extend beyond the loss of current agricultural production.

The Subject Site contains a substantial productive rural land resource that has supported primary production over an extended period and possesses the physical characteristics and infrastructure necessary to continue supporting productive agricultural use into the foreseeable future.

The existing dairy farming system represents an established productive benchmark. It is capable of utilising essentially the full effective productive area and generates an indicative EBITRm of approximately $531,000 per annum. Continued dairy farming would also retain the productive utility of the substantial dairy-specific infrastructure already established across the Subject Site.

The higher-capability component of the land resource also provides opportunities for alternative productive uses. Approximately 97.9 ha has been identified at a high level as potentially suitable for cultivation-based and horticultural production. As discussed in Section 7, this area is substantially greater than the land area required to accommodate a commercially relevant horticultural enterprise.

The horticultural assessment demonstrates that suitable parts of the Subject Site have the potential to support higher-value production. However, realisation of this potential would require substantial additional capital investment, confirmation of a reliable irrigation water supply, detailed crop-specific feasibility assessment and establishment of the necessary production infrastructure. It is therefore appropriate to distinguish between the existing and demonstrated economic contribution of the dairy farming system and the potential future productive opportunity represented by the more versatile component of the land resource.

Development of the Subject Site would permanently remove both forms of productive value. It would foreclose continuation of the established farming operations and remove the ability for future landowners to respond to changing agricultural markets,

technologies and production opportunities by adopting alternative productive land uses suited to the land resource.

Once developed for the proposed activities, reinstatement of the affected land to productive agricultural use would be unlikely to be practicable. The loss of productive capacity should therefore be regarded as permanent.

8.5 Relative Significance

The productive implications associated with development should also be considered within the context of the wider productive land resource available within the Waikato District and Waikato Region.

The approximately 150.8 ha of LUC Class 1 and 2 land affected by the Proposal therefore represents a relatively small proportion of the wider Waikato District HPL resource. Similarly, the representative dairy production generated from the Subject Site represents a relatively small component of dairy production within the wider Waikato context.[20] This is provided in Appendix B.

Under the representative dairy farming system adopted for this assessment, the Subject Site is estimated to produce approximately 164,900 kgMS per annum, equivalent to approximately 1,067 kgMS/ha/year.

For comparative purposes, applying this production rate to the approximately 74,604 ha of effective dairy platform area represented in the DairyNZ Waikato benchmarking dataset equates to approximately 79.6 million kgMS per annum. On this basis, the Subject Site's representative production is equivalent to approximately 0.2% of the milk production represented by that benchmarked dairy platform area.

The approximately 150.8 ha of LUC Class 1 and 2 land affected by the Proposal therefore represents a relatively small proportion of the wider Waikato District HPL resource. Similarly, the agricultural production generated from the Subject Site represents a relatively small component of the wider Waikato dairy sector.

This does not alter the fact that development would result in the permanent loss of a productive land resource. In particular, the Subject Site contains a substantial contiguous area of higher-capability land, with approximately 97.9 ha identified as potentially suitable for cultivation-based and horticultural production in addition to its established pastoral productive use.

The significance of the productive loss should therefore be considered having regard to both its absolute productive value and its relative contribution to the wider productive land resource. The Proposal would permanently remove an established and economically productive farming resource and foreclose alternative future productive opportunities, while the land and production affected represent a relatively small

[20] Land Use Capability » Maps » Our Environment

proportion of the productive land resource and agricultural output available across the wider Waikato District and Region.

These productive implications can then be considered alongside the broader planning, economic, social and environmental effects and benefits associated with the Proposal.

8.6 Summary

Development of the Subject Site will result in the permanent removal of approximately 154.5 ha of land currently available for primary production, including approximately 150.8 ha of LUC Class 1 and 2 land identified as HPL under the transitional provisions of the NPS-HPL.

The Subject Site has substantial productive capacity. The existing dairy farming system is capable of utilising essentially the full effective productive area and is supported by substantial existing productive infrastructure. Based on the representative dairy farming system adopted for this assessment, the Subject Site is capable of generating approximately $1.54 million per annum in farm-gate revenue, $531,000 per annum in EBITRm and supporting approximately 3 to 3.5 FTE positions associated with the farming operation.

The productive versatility of the Subject Site extends beyond pastoral farming. Approximately 97.9 ha of the better-drained land has been identified at a high level as potentially suitable for cultivation-based and horticultural production. This represents a substantial higher-capability land resource and is sufficient to accommodate commercially relevant alternative productive enterprises.

Mixed arable production represents a feasible alternative productive use but, on the representative assumptions adopted, generates lower operating earnings than the existing dairy farming system. Horticultural production has the potential to generate materially higher productive returns per hectare from suitable parts of the Subject Site, although realisation of that potential would require substantial additional capital investment, confirmation of a reliable irrigation water supply and more detailed crop-specific feasibility assessment.

The productive implications of the Proposal therefore extend beyond the loss of the existing dairy farming operation. Development would permanently remove the current agricultural production and economic contribution of the Subject Site and would also foreclose the future opportunity to utilise the more versatile component of the land resource for alternative and potentially higher-value forms of primary production.

In the wider context, the approximately 150.8 ha of LUC Class 1 and 2 land represents approximately 0.1% of the Waikato District's LUC Class 1–3 land resource, while representative dairy production from the Subject Site is equivalent to approximately 0.2% of the milk production represented by the DairyNZ Waikato benchmarking dataset.

Accordingly, the Proposal would result in a permanent loss of productive capacity and future agricultural production opportunities. While the land resource affected is highly productive and the loss is permanent, its scale represents a relatively small proportion of the wider productive land resource and agricultural production base within the Waikato District and Waikato Region. These productive effects should be considered alongside the broader planning, economic, social and environmental effects and benefits associated with the Proposal.

9.0 Conclusions

AgFirst Waikato (2016) Ltd has undertaken an assessment of the productive land resource associated with the proposed Waikato Thoroughbred Racing Greenfield Racing Hub and evaluated the ability of the Subject Site at 636 Pencarrow Road, Tamahere, to support land-based primary production.

The Subject Site comprises approximately 163.9 ha of land located southeast of the Tamahere Country Club. It is currently utilised as two separate operational dairy farms, together with an existing arable cropping block, and contains productive soils, established drainage and substantial agricultural infrastructure supporting ongoing primary production.

Review of the available land resource information, including NZLRI Land Use Capability (LUC) mapping, indicates that the Subject Site contains approximately 57.0 ha of LUC Class 1 land and 93.8 ha of LUC Class 2 land, providing a combined area of approximately 150.8 ha of LUC Class 1 and 2 land. Approximately 13.1 ha is mapped as LUC Class 4.

The productive capability of this land resource varies across the Subject Site. The better-drained LUC 1s1 and 2s3 land is highly versatile and capable of supporting intensive pastoral farming, arable cropping, commercial vegetable production and potentially horticultural production. In comparison, the LUC 2w7 land is subject to greater wetness and drainage limitations, while the LUC 4e4 land has greater slope and erosion limitations and is more naturally aligned with pastoral production.

The assessment identified that the Subject Site is capable of supporting a range of land-based primary production activities, including pastoral grazing, dairy support, dairy farming, arable production, commercial vegetable production and horticulture. Approximately 97.9 ha has been identified at a high level as potentially suitable for cultivation-based and horticultural production, demonstrating that a substantial component of the Subject Site has productive versatility extending beyond pastoral farming.

Dairy farming nevertheless represents the established productive benchmark for the Subject Site. The two existing dairy farming platforms are capable of utilising essentially the full effective productive area, including land subject to greater wetness limitations, and are supported by substantial existing productive infrastructure. This includes dairy sheds and associated yards, farm races, stock water systems, drainage infrastructure, farm dairy effluent collection, storage and land application systems, feed pads, fencing and stock handling facilities.

Based on the representative dairy farming system adopted for this assessment, the Subject Site is estimated to generate:

- approximately $1.54 million per annum in farm-gate revenue;
- approximately $531,000 per annum in EBITRm; and

- approximately 3 to 3.5 full-time equivalent positions associated with the farming operation.

Alternative productive uses have also been considered. Mixed arable production represents a physically and economically feasible use of the better-drained parts of the Subject Site but, on the representative assumptions adopted, generates lower operating earnings than the existing dairy farming system. Commercial Vegetable Production is biophysically feasible on suitable land but is materially constrained by the regulatory framework applying under Proposed Waikato Regional Plan Change 1.

Horticultural production represents a credible potentially higher-value use of suitable parts of the better-drained land. The approximately 97.9 ha identified as potentially suitable substantially exceeds the land area required to accommodate a commercially relevant horticultural enterprise. Representative Gold kiwifruit production demonstrates the potential for materially higher productive returns per hectare; however, realisation of this potential would require substantial additional capital investment, confirmation of a reliable irrigation water supply and detailed crop-specific feasibility assessment. The horticultural potential of the Subject Site should therefore be recognised as a genuine future productive opportunity rather than an existing or demonstrated economic return.

Development of the Subject Site will result in the permanent removal of approximately 154.5 ha of land currently available for primary production, including approximately 150.8 ha of LUC Class 1 and 2 land. As a consequence, the Proposal will result in the loss of existing agricultural production and economic contribution, together with the permanent removal of future opportunities to utilise the land resource for alternative forms of primary production.

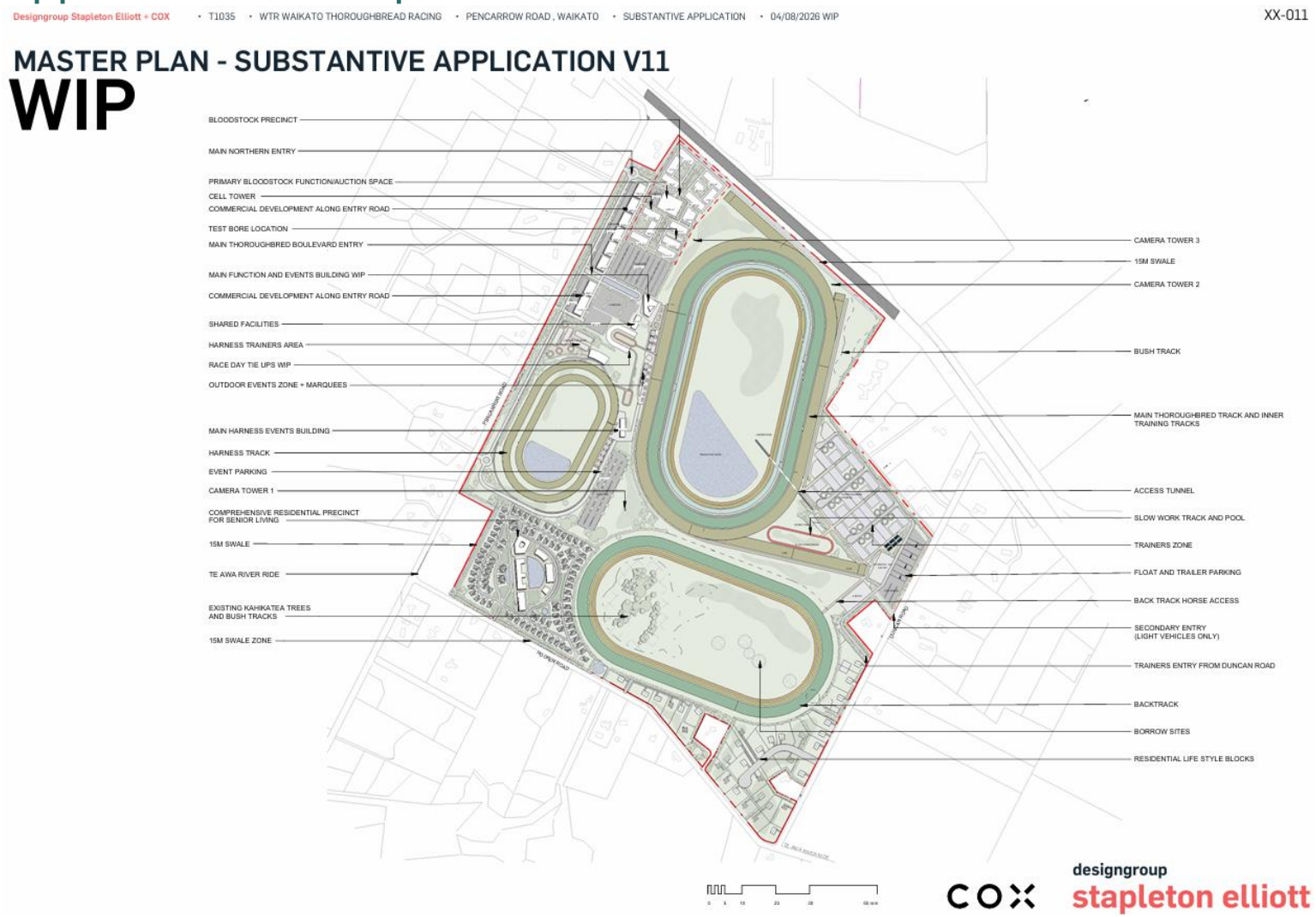
The productive implications associated with the Proposal are therefore substantive at the property level. However, the approximately 150.8 ha of LUC Class 1 and 2 land represents approximately 0.1% of the Waikato District's LUC Class 1–3 land resource, while representative dairy production from the Subject Site is equivalent to approximately 0.2% of the milk production represented by the DairyNZ Waikato benchmarking dataset.

In summary, the Subject Site contains a highly productive and versatile rural land resource capable of supporting ongoing land-based primary production. The existing dairy farming system represents an established and economically productive use of the land, while the better-drained component provides genuine opportunities for alternative and potentially higher-value forms of production. Development of the Subject Site will permanently remove this productive capacity and foreclose these future agricultural production opportunities.

While the productive loss is permanent, the land resource affected represents a relatively small proportion of the wider productive land resource available within the Waikato District and Waikato Region. The findings of this assessment provide an

objective assessment of that productive loss and an input into the broader planning, economic, social and environmental assessment of the proposed Waikato Thoroughbred Racing Greenfield Racing Hub.

Appendix A: Development Plan



Appendix B: Waikato District Land Use Capability Classification

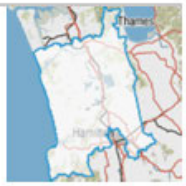
Waikato District

Report prepared by Our Environment, 3:50:01 am 27/07/2026 Manaaki Whenua - Landcare Research

Waikato District

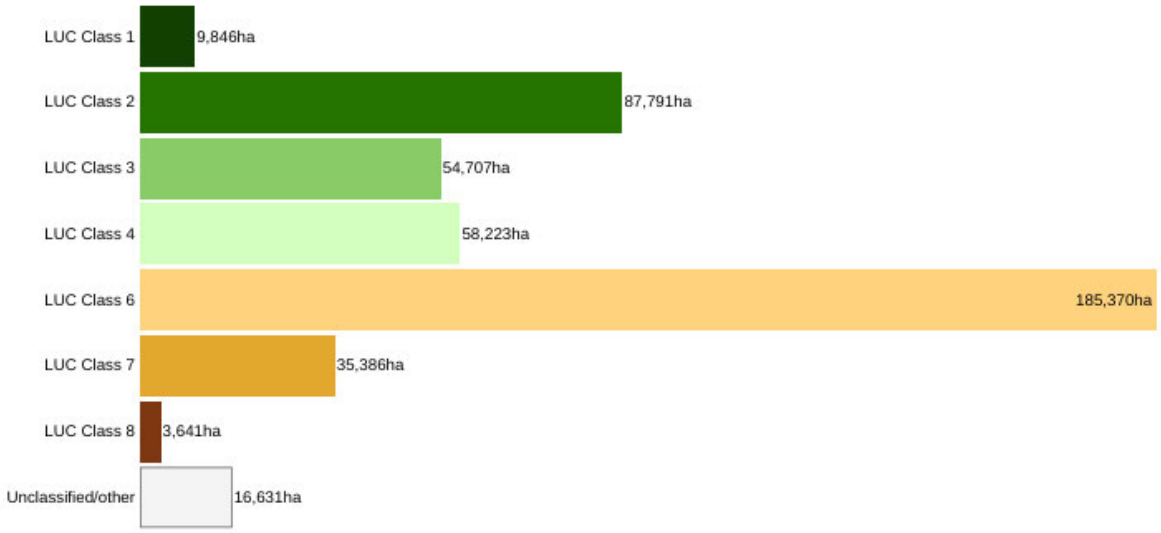
Approximate area

451,596ha



Land Capability

Land Use Capability



Data source: Land Use Capability

The Land Use Capability system categorizes land into eight classes according to its long-term capability to sustain one or more productive uses based on physical limitations and site specific management needs. Productive capacity depends on physical qualities of the land, soil and environment. Differences between ideal and actual land qualities may be regarded as limitations which will affect productivity and land management options. Limitations considered in the LUC include: susceptibility to erosion, steepness of slope, climate, susceptibility to flooding, liability to wetness or drought, salinity, and depth, texture, structure and nutrient supply of the soil. Note that complex map units containing two LUC units may occur. In this case reports provided will describe the dominant LUC unit only.

Appendix C: Qualifications and Experience

Jeremy Hunt

- Director | Agribusiness & Environmental Consultant
- BSc (Environmental Science)
- Member – New Zealand Institute of Rural Professionals (NZIRP)

Professional Profile

Jeremy Hunt is a Director and Agribusiness and Environmental Consultant with AgFirst Waikato, specialising in rural land resource assessment, agricultural productivity, farm systems and agricultural economic analysis.

Jeremy regularly undertakes assessments of the productive capacity and economic viability of rural land to support resource consent, subdivision and land use change applications. This includes assessments under the NPS-HPL, where he evaluates soil and land capability, property scale and configuration, topography, drainage, surrounding land use and other factors to identify permanent or long-term constraints affecting land-based primary production.

Drawing on his agricultural and farm systems expertise, Jeremy identifies production systems that are realistically suited to the land resource and practicable within its physical and operational constraints. He then applies an economic lens to assess the performance of those systems and determine whether the land is capable of supporting an economically viable primary production enterprise.

Jeremy has experience across pastoral, dairy and dairy support, arable and forage cropping, and horticultural systems. He also undertakes soil and land resource assessments, including interpretation of NZLRI LUC mapping, S-Map soil information and site-specific land resource information, supported by GIS and spatial analysis.

Jeremy has extensive experience providing technical advice and evidence through statutory planning processes, including numerous Council hearings and Environment Court proceedings. More recently, he has prepared a range of technical assessments for substantive applications under the Fast-track Approvals Act, including assessments of productive land resources, agricultural productivity and economic viability.

His broader work includes farm system analysis, nutrient management, farm environment planning, wastewater and effluent management, and technical assessments supporting resource consent and planning processes.

Prior to joining AgFirst in 2018, Jeremy worked for NIWA and subsequently in environmental consulting and project management roles with URS and AECOM. He also spent two years operating a System 3–4 dairy farm as a contract milker, providing practical experience in the operation and management of a commercial farming enterprise. Jeremy became a Director of AgFirst Waikato in 2020.

Areas of Expertise

- NPS-HPL productive capacity and economic viability assessments
- Rural productivity and land use assessments
- Agricultural and horticultural enterprise economic analysis
- Farm systems analysis
- Land Use Capability and soil resource assessments
- Assessment of constraints affecting land-based primary production
- GIS and spatial land resource analysis
- Resource consent and AEE technical support
- Technical evidence, Council hearings, Environment Court and Fast-track processes

Qualifications

- Bachelor of Environmental Science – University of Canterbury
- Advanced Certificate in Sustainable Nutrient Management – Massey University
- Advanced Soil Conservation Course – Massey University
- Land Use Capability Certification – Simon Stokes Consulting
- NZ Certificate in Agriculture (Dairy Farming), Level 4 – DairyNZ
- Project Management Certification – AECOM
- Certified Dairy Effluent Warrant of Fitness Assessor – DairyNZ



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