



## **Appendix T**

# Highly Productive Land Assessment



Leading a  
smarter, sustainable,  
high performing  
primary sector

# Assessment against the NPS-HPL

Prepared for  
Bell Road Limited Partnership

Wairakei South Fast Track Consent

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May 2026

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## 1.0 Executive summary

Bell Road Limited Partnership (BRLP) is seeking to develop 349.12 hectares (ha) of land in Western Bay of Plenty (the Wairakei South) for a mixed-use development. Wairakei South is located directly off the Tauranga Eastern Link and close to major centres of Tauranga, Mount Maunganui and Te Puke, other employment zones (such as Rangiora Business park and Papamoa), local beaches, parks and other recreation opportunities in the region.

Wairakei South is a proposed large-scale mixed-use development that seeks to address the Western Bay of Plenty sub region's significant shortage of residential and business land.

The soils mapped at Wairakei South are classified under the NZLRI as LUC 2w2. Based on the NZLRI, 346.05 ha of the 349.12 ha of the MRZ portion of Wairakei South is HPL (LUC 2).

AgFirst Waikato (2016) Ltd has assessed Wairakei South against the National Policy Statement – Highly Productive Land (NPS-HPL). This relates to an assessment of Wairakei South against the circumstances in which non-productive activities such as urban development can be undertaken where the criteria in either Clause 3.8, 3.9 or 3.10 of the NPS-HPL are satisfied.

Wairakei South is currently utilised as a dairy farm, arable maize grain farm, small scale beef/drystock/equine grazing, small lifestyle blocks and commercial properties. AgFirst has undertaken a productive and economic analysis of the area of Wairakei South which is suitable for land-based primary production using industry values and figures against the specific property liabilities. The analysis shows that the highest and best land-based primary production use for Wairakei South, given its permanent and long-term constraints and limitations, is dairy farming over 228.49 ha, arable over 87.0 ha and the remaining 33.61 ha has been assessed as being non-productive. The financial return based on that highest and best land use shows a significant deficit, with projected net losses for every individual property, and at a collective Site wide analysis. These substantial deficits indicate that the long-term economic viability of these operations is unsustainable and would not be viable today nor in 30 years.

Significant constraints for land-based primary production have been identified which affect Wairakei South, including:

- Soil conditions
  - » Very poorly and poorly drained, causing reduced yields and limited carrying capacity.
  - » Land unsuitable for alternative higher value land-based primary production.
- Limited improvement options
  - » Due to soil constraints and lack of amalgamation opportunities.

- An indicative budget across the entire Wairakei South under pastoral grazing and arable land use, using industry information shows this is not economically viable with a revised net individual property losses of between [REDACTED] and [REDACTED] or a Wairakei South cumulative loss of [REDACTED]

Currently there is no pathway through clause 3.8 of the NPS-HPL as highly productive land would be lost through the construction of Wairakei South. There is also no pathway through clause 3.9 of the NPS-HPL as Wairakei South does not meet any of the defined exceptions for 'appropriate use'. However, it is AgFirst's opinion that the proposal satisfies the exemption under clause 3.10 of the NPS-HPL which means that Wairakei South can be used for non-productive purposes such as urban development.

It is our conclusion that all the requirements under clause 3.10 of the NPS-HPL can be met. In particular, overall, AgFirst considers that, having regard to reasonably practicable available options (as required):

- As outlined above, there are permanent or long-term constraints which mean the land proposed for development cannot viably be used for land-based primary production for at least 30 years.
- The development would avoid significant loss of productive capacity of highly productive land in the Western Bay of Plenty District; the fragmentation of large areas of highly productive land; and any potential reverse sensitivity effects on surrounding land-based primary production.
- The environmental, social, cultural and economic benefits of the development outweigh the long-term environmental, social, cultural and economic costs associated with the loss of highly productive land for land-based primary production, taking into account both tangible and intangible values.

## 2.0 Background

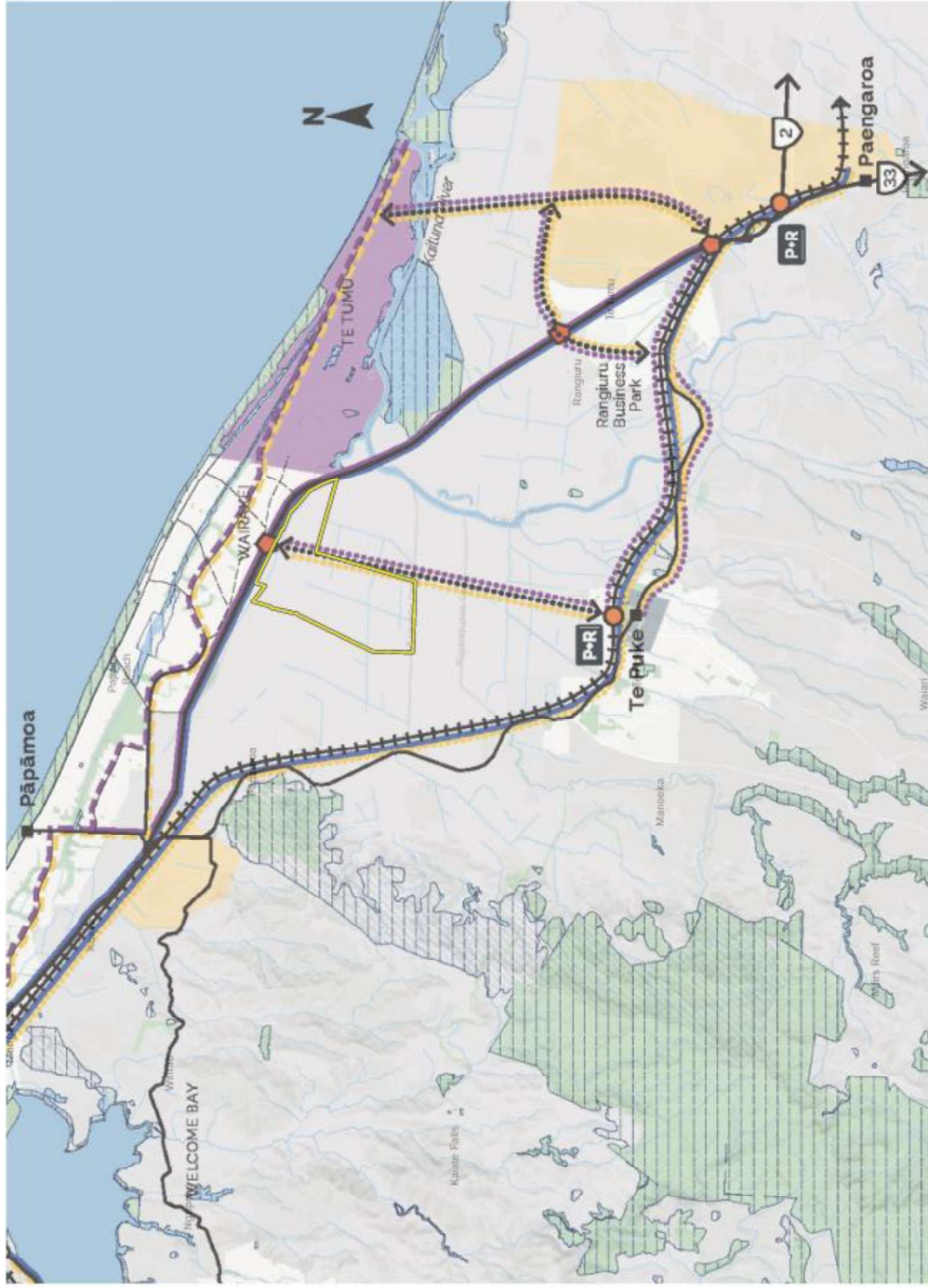
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Wairakei South is a proposed large scale 349.12 ha mixed use development that seeks to help address the Western Bay of Plenty sub-region's significant shortage of residential and business land. The site is strategically located directly off the Tauranga Eastern Link and minutes away from major centres of Tauranga, Mount Maunganui and Te Puke, other employment zones (such as Rangiuru Business Park), local beaches, parks and other recreation opportunities in the region.

Presented in Figure 1 is the outline of Wairakei South in relation to other land use zones in the immediate area. Adjoining Wairakei South to the north and east is the Tauranga Eastern Link, with the south and west zoned Mixed Rural Zone (MRZ). All of the areas within Wairakei South are within the Western Bay of Plenty District.

The Site is currently utilised for dairy farming, pastoral grazing, arable maize grain, lifestyle lots and commercial businesses.

AgFirst Waikato (2016) Ltd (AgFirst) has been engaged by BRLP to provide an assessment that considers the proposed Wairakei South Mixed-Use Development against the National Policy Statement – Highly Productive Land (NPS-HPL). This relates to an assessment of Wairakei South against the circumstances in which non HPL activities may be undertaken as set out in Section 3.10 of the NPS-HPL. AgFirst is a suitably qualified agribusiness consultancy with proven experience in completing assessments relating to productive capacity, primary production and soil versatility. Our assessment should be read in conjunction with the other assessments which accompany Wairakei South's consent application, including the planning and economic analyses.



- State highways
- Roads
- Railway
- Public transport
- Cycle
- Freight
- Ferry
- Park and ride
- Public transport hub
- Public transport interchange
- New or improved major intersection
- Existing urban areas
- Planned urban growth areas
- Envisioned growth area - 30+ years
- Potential intermodal areas
- Indicative area for multimodal crossing
- Waterways
- Parks, reserves, public conservation areas
- EEZ
- No go
- (ONE) Outstanding natural features and landscapes (PostAppraisals)
- Planned
- Envisioned



DATA SOURCES: Tauranga City Council, Western Bay of Plenty District Council, Ministry of Justice, Ministry of Primary Industries, Eagle Technology, LINZ, StatsNZ, NIWA, Natural Earth, © OpenStreetMap contributors, Eagle Technology, LINZ

Figure 1: Location of Wairakei South in relation to surrounding land uses and development

## 3.0 Property Summary and Existing Land Use

Wairakei South consists of multiple titles, which range from small residential, lifestyle, commercial industry and rural production farming blocks that are at the smallest 0.28 ha, to the largest title that is 113.76 ha.

The area and properties subject to this assessment are legally described in Table 1 and are presented in Figure 2 with the corresponding property ID.

Table 1: Description of Parcels within Site zoned MRZ

Map ID	Legal Description	Area (ha)
1	Lot 2 DPS 81677 & Lot 1 DPS 54113	24.32
2	Lot 1 DPS 81677	2.69
3	Lot 1 DPS 69524 & Section 26 SO 427562	21.46
4	Lot 2 DPS 69524	0.98
5	Lot 1 DP 537375	15.29
6	Lot 2 DP 537375	3.53
7	Section 1 SO 457222	4.18
9	Section 13 SO 458365 & Section 12 SO 458365	61.73
10	Part Lot 1 DP 29530	113.76
11	Lot 2 DP 553506	99.11
12	Lot 1 DP 553506	2.06
	<b>TOTAL</b>	<b>349.12</b>

AgFirst visited Wairakei South on the 16th of July 2025 to assess the productivity of Wairakei South.

Overall, Wairakei South has a range of soil types, drainage characteristics and property sizes. These physical characteristics within the site create permanent and long-term constraints and challenges for land-based primary production.

### 3.1 Current Land Use

The total size of Wairakei South area is 349.12 ha. Of the 349.12 ha of the site, AgFirst has estimated 33.61 ha of land to be unproductive due to housing, sheds, curtilage, modified soils including drains and other commercial uses. This is detailed further below in section 5.4 and shown in Figure 3.

Over the 12 properties there is only land-based primary production on 8 of these. The remaining 4 properties are less than 4.2 ha and currently have limited or no land-based primary production activities. The various productive land uses for the Subject Site are presented in Figure 4 and detailed within the following Sections.



	<h2>Wairakei South</h2>		Scale: 1:17,500 
	<small>           Eagle Technology, Ltd., Spatial, W.A., National Earth, © OpenStreetMap contributors, Eagle Technology, Land Information New Zealand, GEBCO, Community maps         </small>		Date: 26/08/2025
Coordinate System: NZGD 2000 New Zealand Transverse Mercator			

Figure 2: Wairakei South Subject Area Property ID

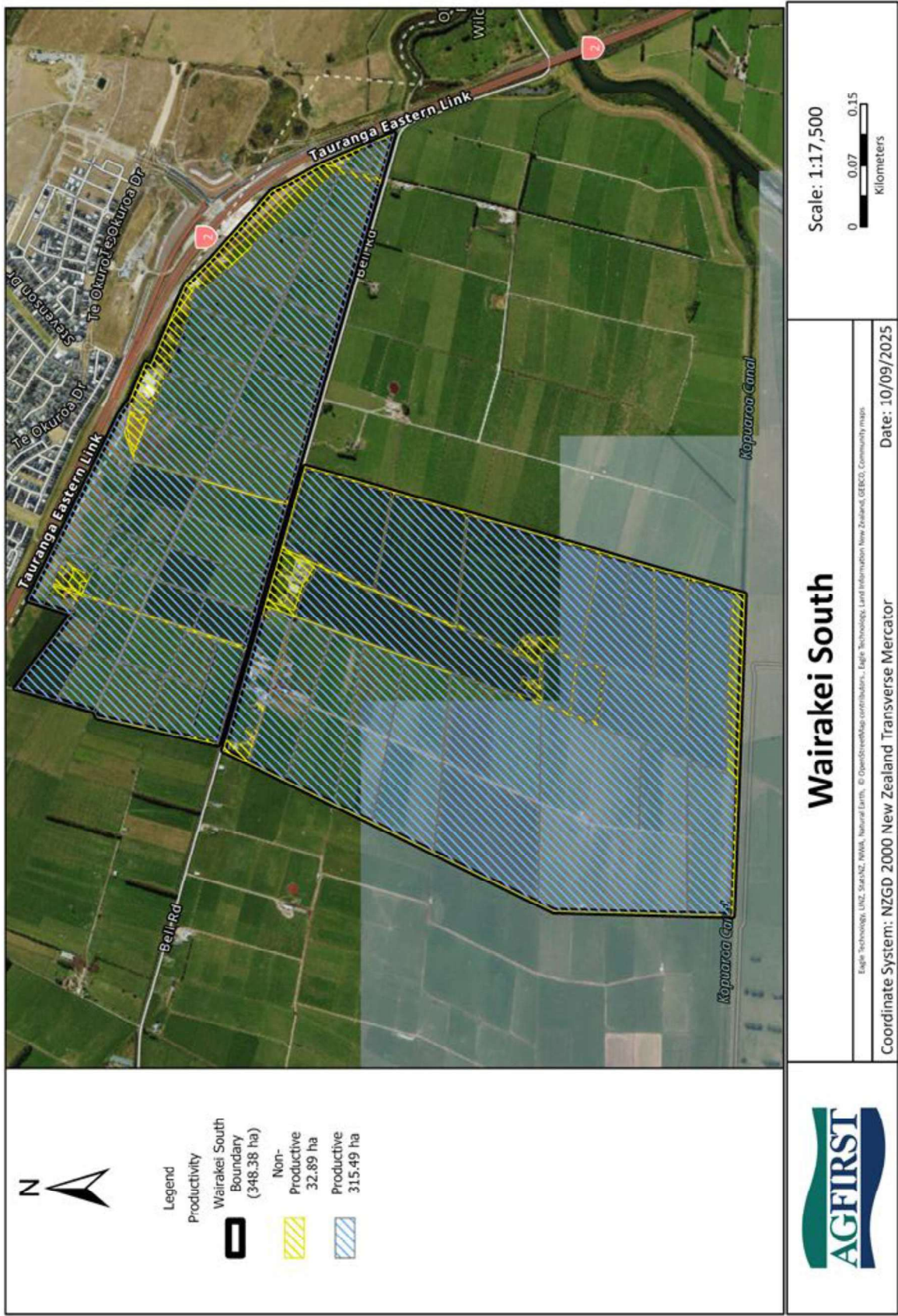


Figure 3: Productive and Non-Productive Areas



### 3.1.1 Dairy

The Wairakei South dairy farm comprises 228.49 ha of land currently used for dairy farming. This farm operates across multiple Titles, as shown on Figure 2 and 4. The dairy farm is supported by both home-grown and a large amount of imported supplementary feed, with a relatively consistent 31 ha of maize silage grown on farm annually. Calves are grazed off farm from November and don't return until they are in-calf heifers in June, approximately 400 cows are wintered off the platform each year for one month from May 25<sup>th</sup> to June 25<sup>th</sup>.

Pasture growth shows high variations with three analysed seasons showing pasture grown between [REDACTED] a (kilograms of dry matter per hectare) and [REDACTED]. The stocking rate has fluctuated between [REDACTED] per hectare.

The system has required significant imported supplementary feed inputs to support production largely due to it being a very wet farm with drainage/wetness issues. In 2022/23, a total of [REDACTED] (tonnes of dry matter) of imported feed was used, along with [REDACTED] of baleage made on farm. In 2023/24, imported feed reduced to [REDACTED], supported by [REDACTED] tDM of baleage and [REDACTED] of hay made on farm. In 2024/25, imported feed use was [REDACTED] tDM, with the same levels of [REDACTED] baleage and [REDACTED] hay made on farm. In 2022/23, the farm produced [REDACTED] (kilograms of milk solids). Production decreased to [REDACTED] in 2023/24 before increasing again to [REDACTED] in 2024/25. The three-year average production is approximately [REDACTED].

These results are not a true reflection of the properties inherent ability to support livestock, as they are heavily underpinned by the large volumes of imported supplementary feed brought into the system. A pasture and homegrown feed only system provides a more accurate indication of the property's productive capacity and highlights the soil and climate constraints that limit sustainable output. This is in line with the definition of land based primary production based on production reliant on the soil resources of the land.

### 3.1.2 Arable

An arable operation consisting of maize grain is undertaken on Property 11. The property has been a maize farming operation for many years. Property 11 has a total size of 99.11 ha, of which 87.0 ha is considered productive and used for growing maize grain.

Although maize is currently grown on this site, this does not confirm the land is suitable for long-term sustainable cropping. Arable farming requires free-draining soils without rooting barriers, combined with relatively flat topography to allow consistent cultivation, planting, and harvesting. Across Wairakei South, soils are predominantly poorly or very poorly drained, with significant wetness limitations. To combat this issue drains are cleaned annually which takes about a week to undertake. Without free-flowing drains, crops would be more greatly impacted by soil conditions restricting root development, increasing the risk of crop failure in wet seasons. The property's wetness limitations have restricted opportunities for crop rotation, resulting in winter fallow periods. Cropping rotations are a management tool commonly used in arable operations to manage soil fertility, reduce disease build-up, and control weeds. The wetness limitations have not allowed for crop rotation. The last winter crop, ryegrass silage, was grown in 2015. The property has also had an ongoing spray program designed to rid it of a noxious weed called Noogoora burr (*Xanthium strumarium*). Monoculture cropping may expose the operation to higher input

costs in fertiliser and chemical use and increases the risk of further noxious weed infestations.

The greater the wetness limitation, the more yield variability is observed, particularly in years of higher rainfall when waterlogging reduces plant survival. In 2018 the crop was damaged due to very heavy rainfall on Christmas Eve resulting in the crop only just covering operating expenses. Wet soils also restrict planting and harvesting windows. This can restrict the ability to optimise sowing dates and therefore impact crop establishment. Poor drainage significantly increases the risk of soil compaction and structural damage when heavy machinery is used, further degrading long-term soil health and reducing productivity over time. The paddocks headlands are deep ripped each year prior to planting in order to mitigate the impact on the worst areas of compaction.

While maize grain has historically been grown here, the soil and drainage limitations mean the land cannot be considered versatile or well-suited for ongoing, sustainable arable use. While an argument could be made that dairy farming could be a more sustainable land use for this property, the lack of infrastructure and challenging soils suggests otherwise. The neighbouring dairy farm does not have the infrastructure to support an additional 87 ha, therefore this property would be required to operate as a stand-alone dairy farm. This would require a significant investment in infrastructure (dairy shed, feedpad or off paddock stand-off facilities, staff housing, stock water reticulation, effluent storage and consent, fencing, race and farm tracks, calf rearing and implement sheds, etc.) and as the economic analysis later in this report indicates, this would not be a viable conversion. The presence of Noogoora bur on the property also poses as a risk to a potential livestock system as this invasive weed is difficult to control and is considered toxic to all livestock. However, for the purpose of identifying the highest and best use for this property for economic viability, given the long-term use of arable cropping, AgFirst has remained with this land use.

While back-to-back continuous arable cropping is not considered to be a long-term sustainable option on this site, rotational maize as part of a pastoral system, as is being undertaken on the dairy farm of Wairakei South is considered appropriate. In this context, maize is not grown as a continuous cropping operation, but rather as a short-term crop to aid pasture renewal. Growing maize for a single season allows the soil to be cultivated, compacted pastures to be broken up, and weeds or old swards to be removed. Following harvest, the paddock is then re-sown into permanent pasture with an improved pasture mix, supporting the long-term productivity of the dairy system. This practice can be justified where the goal is pasture establishment and improvement, rather than ongoing and continuous arable use. A single maize crop provides an opportunity to reset the pasture base without placing continuous pressure on soils that already have significant wetness and drainage limitations.

### *3.1.3 Lifestyle – Beef and Equine Grazing*

Some small lifestyle properties on Wairakei South area are used for small scale beef and equine grazing. These are constrained operations with limited scale. For the purposes of this assessment, those lifestyle parcels that contain full-sized paddocks and have access to the dairy platform have been assessed as part of the wider dairy operation.

### *3.1.4 Residential and non-productive*

A total of 33.61 ha has been assessed as non-productive. This classification reflects land that is not available for genuine agricultural use, as it is occupied by lifestyle blocks, residential dwellings and associated access ways and commercial business activities. These areas do not contribute to productive land use and cannot be reasonably considered part of the effective farming platform. This can be shown on Figure 3 and 4.

The inclusion of such land highlights areas of fragmentation across areas of the site. Competing non-agricultural activities reduce the overall productive use of the land and therefore cannot be classed as HPL. Lifestyle dwellings and commercial uses permanently remove land from production, while drains and associated setbacks have removed an agricultural capability from the land which these are on. The poorly and very poorly drained soils requires an artificial drainage network, removing greater areas from effective use than would typically be expected, and in some cases setbacks for cultivation activities. Together, these factors reduce the effective farming area.

### *3.1.5 Site Visit to determine current land use*

AgFirst undertook a site visit on 16<sup>th</sup> July 2025 to capture the current productive land uses across Wairakei South. Whilst the weather conditions were fine at the time, it was during the winter and following some heavy rain. This was deemed typical, and provided evidence of the challenged that the properties face during sustained wet periods.

As expected, the site visit confirmed a very high-water table, saturated soils, areas of surface flooding, pugging damage and compaction from machinery on the arable land. Supported by soil augur profiles, this confirmed the poor to very poor drainage of the Site. These conditions significantly reduce the range of suitable land uses and increase management requirements. These physical characteristics restrict the productive capacity and versatility of these soils. Evidence of these constraints are supported by the production systems and management practices for the farms:

- Wintering-off a large proportion of the dairy cows
- The in-calf heifers being off-farm for an additional month
- Off-paddock infrastructure for standing off the dairy cows
- Significant amount of imported feed purchased to supplement the dairy herd
- Large annual re-grassing programme for the dairy farm to replace damaged pastures
- No winter cropping for the arable farm
- Artificial drainage between paddocks to help convey surface water

Photos captured on the day of the farm visit show evidence of a very wet farm. These are presented in Figures 5 to 9 and clearly demonstrate areas of surface flooding, saturated soils, pugging/compaction and a high-water table.



Figure 5: Surface flooding and pasture damage over Dairy Farm - Property ID 10

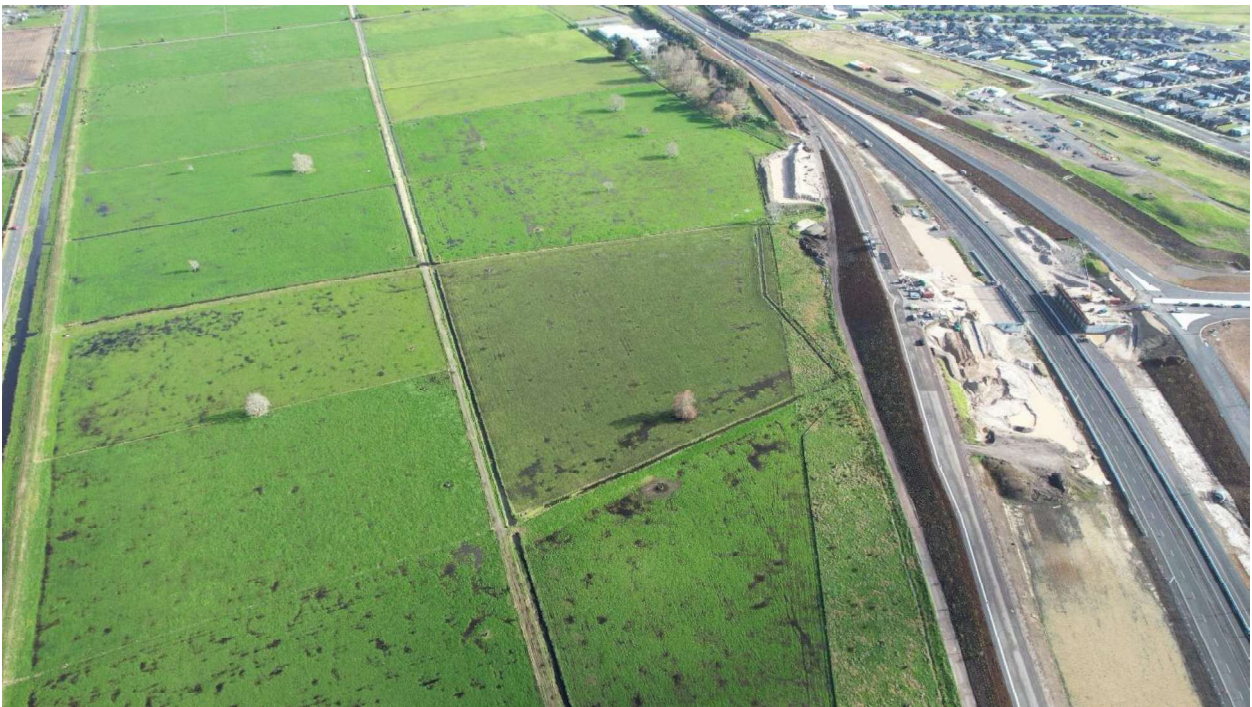


Figure 6: Surface flooding and pasture damage over Dairy Farm - Property ID 9



Figure 7: Dairy farm infrastructure to overcome wetness limitations – Property ID 10



Figure 8: Surface flooding and soil compaction over Arable Block - Property ID 11



Figure 9: High water-table (approximately 20 cm below the surface) indicating very poor draining soils and restricted plant rooting depth

## 4.0 National Policy Statement

In September 2022, the Ministry for the Environment (MfE) and the Ministry for Primary Industries (MPI) released the NPS-HPL. This policy statement has one objective, being that “highly productive land is protected for use in land-based primary production, both now and for future generations.” The NPS-HPL was later updated in August 2024 these updates specifically seek to enable specified infrastructure, including renewable energy projects, and indoor primary production such as indoor poultry farms, piggeries and greenhouses, on HPL. None of the updates introduced in August 2024 are relevant to, or impact on, this application.

The NPS-HPL was further amended in January 2026. These amendments primarily refined the transitional provisions relating to the identification of HPL, including amendments to clause 3.5(7) and the treatment of LUC 3 land. In particular, the amendments clarified the use of more detailed LUC mapping that existed at the commencement date of the NPS-HPL and introduced provisions excluding certain LUC 3 land subject to resource consent applications for non-rural lifestyle activities from being treated as HPL during the transitional period. These amendments do not materially alter the assessment outcome for Wairakei South, as the Site is almost entirely mapped by the NZLRI as LUC 2 land and therefore continues to meet the transitional definition of HPL irrespective of the amendments relating to LUC 3 land. Accordingly, the conclusions of this assessment remain unchanged.

Under the NPS-HPL:

- Highly productive land currently means (in accordance with clause 1.3) “land that has been mapped in accordance with clause 3.4 and is included in an operative regional policy statement as required by clause 3.5”. However, that definition goes on to provide that until such maps have been included in an operative regional policy statement (which applies in the Bay of Plenty), highly productive land is to be defined as per clause 3.5(7). Under that clause, Land Use Capability Class 1, 2 or 3 land that is zoned general rural or rural production is defined as highly productive, unless:
  - » As at 17 October 2022, it was either identified for urban development or subject to a council initiated, plan change to rezone it from rural to urban use; or
  - » On or since 17 October 2022, it has been (or is) subject to a resource consent application for subdivision, use or development on LUC 3 land for any activity other than rural lifestyle.
- Land-based primary production means *production, from agricultural, pastoral, horticultural, or forestry activities, that is reliant on the soil resource of the land.*
- Productive capacity, in relation to land, means *the ability of the land to support land-based primary production over the long term, based on an assessment of:*
  - (a) *Physical characteristics (such as soil type, properties, and versatility); and*
  - (b) *Legal constraints (such as consent notices, local authority covenants, and easements); and*
  - (c) *The size and shape of existing and proposed land parcels.*

Clause 3.7 of the NPS-HPL states '*Territorial authorities must avoid rezoning of highly productive land as rural lifestyle, except as provided in clause 3.10*'. The application is not seeking rural lifestyle rezoning and therefore pathway 3.7 is not applicable.

Clause 3.8 of the NPS-HPL states '*Territorial authorities must avoid the subdivision of highly productive land as unless... the applicant demonstrates that the proposed lots will retain the overall productive capacity of the subject land over the long term*'. The Wairakei South proposal will remove the rural productive potential of the land. This will result in a loss of the availability and productive capacity of highly productive land for rural productivity purposes. Furthermore, the proposed urban use of the subject land will not retain the overall productive capacity of the land over the long term. Clause 3.8 applies to subdivision of highly productive land and states that subdivision must be avoided unless the above criteria (plus the other criteria set out in clause 3.8) can be met. Therefore, the pathway provided by clause 3.8 has not been used to support the proposed urban use of Wairakei South.

Clause 3.9 of the NPS-HPL states '*Territorial authorities must avoid the inappropriate use of highly productive land that is not land based primary production*'. The proposed development does not meet any of the exceptions specified in clause 3.9 and therefore clause 3.9 has not been used to support the proposed urban use at Wairakei South.

Clause 3.10 sets out the exemptions for subdivision, use or development of highly productive land subject to permanent or long-term constraints to be used for non-productive purposes. The criteria that must be met to enable this exemption are listed below:

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

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

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

*(b) The subdivision, use, or development:*

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

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

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

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

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

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

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

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

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

(5) *In this clause:*

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

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

The criteria of Clause 3.10 are assessed in detail in the following sections of this assessment.

## 5.0 Assessment of Land Use Capability

### 5.1 Regulatory Framework for Highly Productive Land

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

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

*(a) Is:*

- (i) Zoned general rural or rural production; and*
- (ii) LUC 1, 2, or 3 land; but*

*(b) Is not:*

- (i) Identified for future urban development; or*
- (ii) Subject to a Council initiated, or adopted, notified plan change to rezone it from general rural production to urban or Country Living Zone.*
- (iii) Subject to a resource consent application for subdivision, use or development on LUC 3 land for any activity other than rural lifestyle, where that consent has been lodged at or after the commencement date.*

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

### 5.2 NZLRI Land Use Capability Classification

The LUC classification system has been used in New Zealand to help achieve sustainable land development and management of farms. The purpose of the LUC classification is to assess the suitability of the land for primary production. Determining the presence of HPL as defined under the LUC classification requires consideration of a range of characteristics. The LUC classification categorises land areas or polygons into classes, subclasses, and units according to the land's capability to sustain productive use. The LUC is based on an assessment of the physical factors (rock type, soil, slope, present type and severity of erosion, and vegetation), climate, the effects of past land use, and the potential for erosion. This is summarised in Figure 10 below.

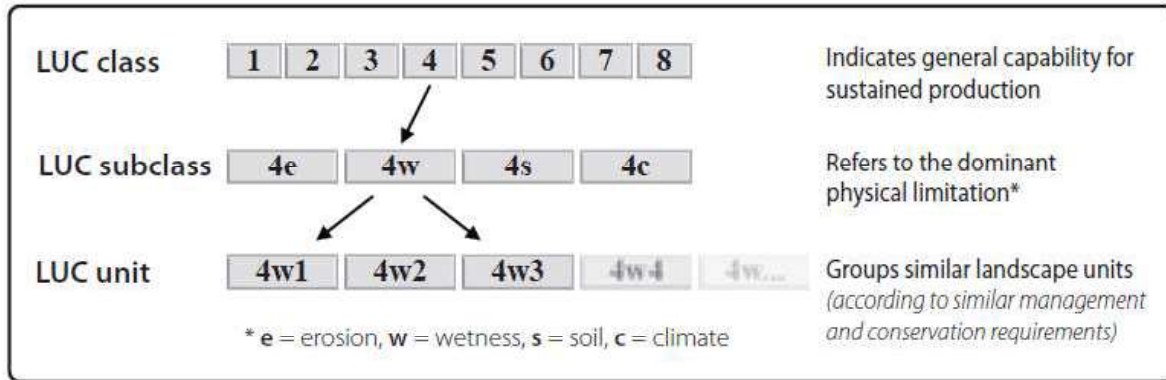


Figure 10: Components of the land use capability classification<sup>1</sup>

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

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

Of the 349.12 ha of soils mapped at Wairakei South 345.33 ha are classified under the NZLRI as LUC 2w2 with 3.07 ha on the northern boundary near the Tauranga Eastern link mapped as 6s26. Therefore, based on the NZLRI, with the exception of 3.07 ha, the remaining soil is HPL. The NZLRI LUC classifications for this area are presented in Figure 11.

Soils which are LUC 2w2 are flat to undulating river terraces near sea level which have recent, gley recent or organic soils developed on water-sorted tephra in moderate (1400-1600 mm) rainfall areas, susceptible to occasional surface flooding and moderately high-water table levels that limit cropping versatility.

A Lidar depiction of the Site is presented in Figure 12. This shows the majority of the area is very flat, with much of the arable block and the eastern part of the farm less than 1 m above mean sea level. The remainder of the Wairakei South area typically has an elevation of between 1-2 m. This provides evidence of the very low lying nature of the site, and emphasises the high water table and drainage issues that limit versatility and production.

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





## Wairakei South

Scale: 1:17,500



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Coordinate System: NZGD 2000 New Zealand Transverse Mercator

Date: 26/08/2025

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Esri Technology, LINZ, Spatial NZ, Natural Earth, © OpenStreetMap contributors, Esri Technology, Land Information New Zealand, OBEKO, Community maps

Figure 11: NZLRI Land Use Capability Classification Map for the Site

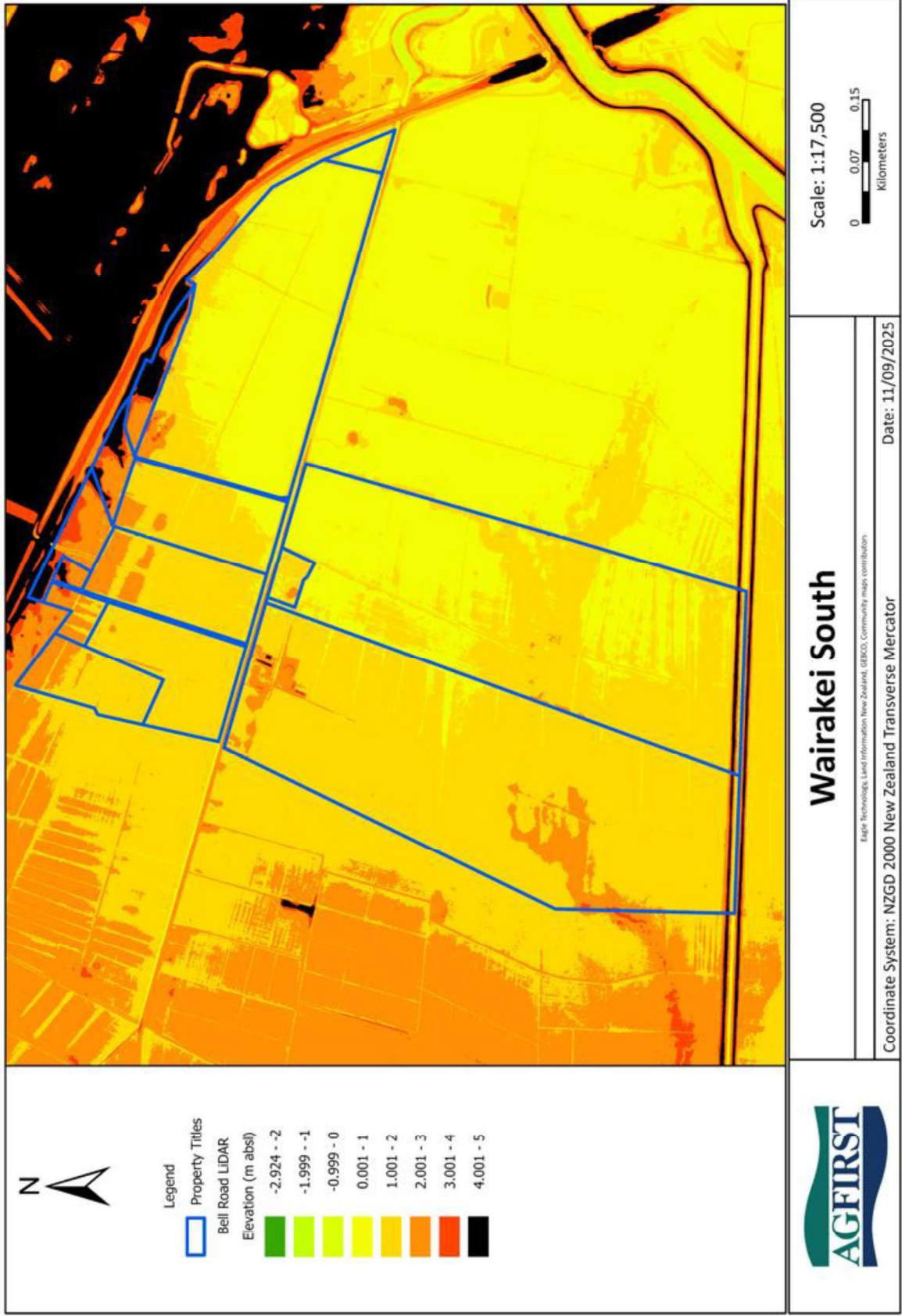


Figure 12: LIDAR Elevation

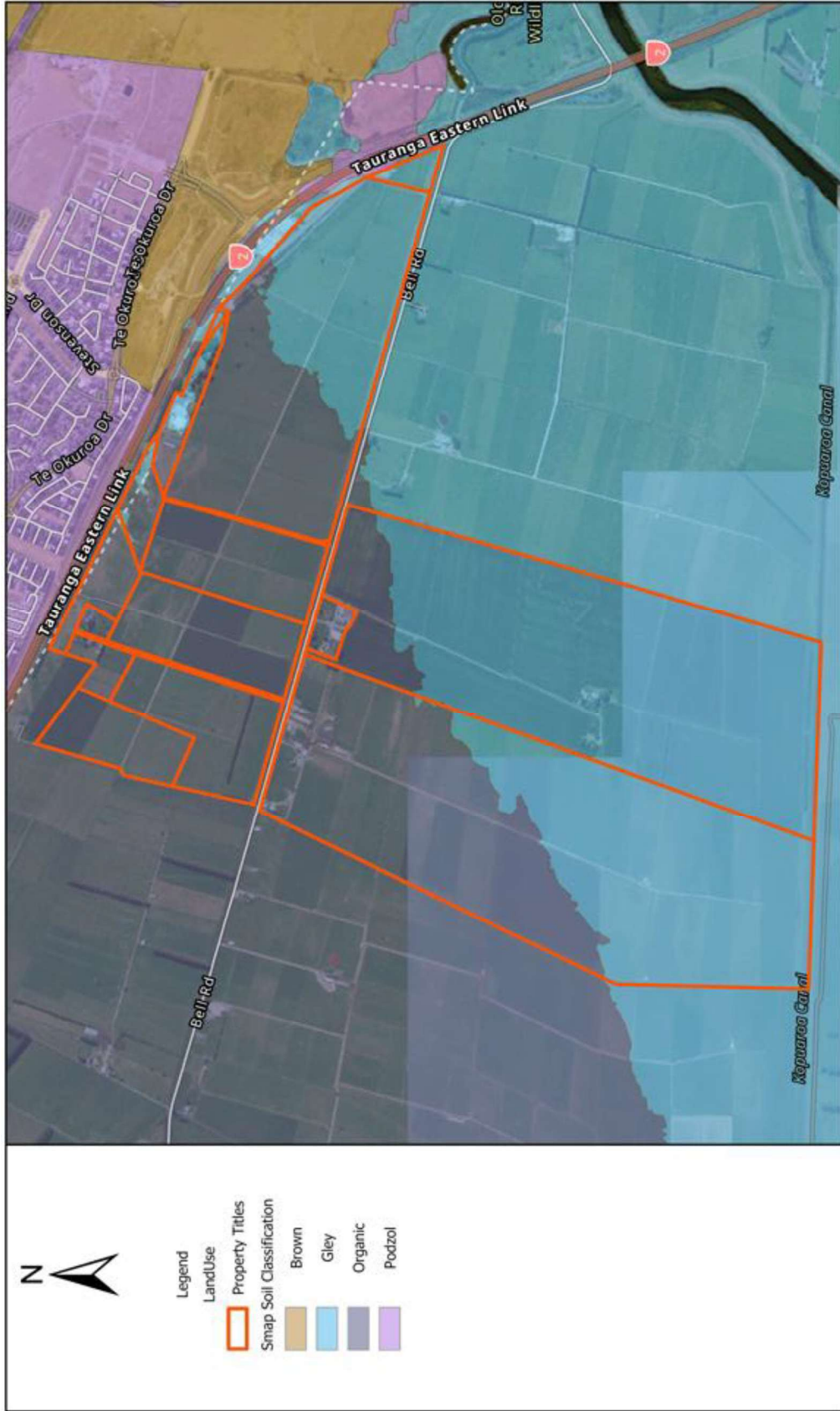
## 5.3 Manaaki Whenua – Landcare Research S-Map and Our Environment Database

To further understand the soils present across the property with regards to productive capacity, AgFirst has reviewed the Manaaki Whenua – Landcare Research S-Map and Land Information New Zealand (LINZ) database. While not sufficient to reclassify the soils as per the NPS-HPL, these maps, also designed for use at a 1:50,000 scale, have a finer resolution achieved by incorporating the best available spatial information from soil surveys or new mapping, and has a much wider range of soil properties<sup>2</sup>.

The distribution of the soils as mapped by S-Maps is presented in Figure 13 and Figure 14. This depicts the presence of Gley and Organic soils across the entire Site. The S-Maps align with what was evident when visiting Wairakei South, in particular the large area of poorly and very poorly drained soils and a very high water table. While these soils are still likely to be considered HPL, the significant wetness limitations will impact the versatility and productive capacity of these areas.

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<sup>2</sup> [S-map Online FAQ](#) | [S-Map Online](#) | [Manaaki Whenua - Landcare Research](#)



- Legend**
- LandUse
  - Property Titles
  - Smap Soil Classification
  - Brown
  - Gley
  - Organic
  - Podzol



## Wairakei South

Scale: 1:17,500



Coordinate System: NZGD 2000 New Zealand Transverse Mercator Date: 26/08/2025

Figure 13: Soil classification representation of Wairakei South



	<h2 style="margin: 0;">Wairakei South</h2>		<p>Scale: 1:17,500</p> 
	<p>Coordinate System: NZGD 2000 New Zealand Transverse Mercator</p>		<p>Date: 26/08/2025</p>

Figure 14: Soil drainage representation of Wairakei South

## 5.4 Land Use Capability - Summary

The NZLRI maps identify the areas of HPL (LUC 2), with 3.07 ha of non HPL identified by the NZLRI maps on the site. Having undertaken a site visit and considering factors such as residential areas, modified and anthropic soils, slope and areas occupied by streams and bush, it is considered that the area of HPL is smaller than that represented by the NZLRI maps. Based on the NZLRI mapping it is estimated that the area that is HPL on the site is approximately 346.05 ha. AgFirst has assessed productive and non-productive areas of the site (Figure 3), a revised classification of HPL areas is presented in Table 2. 312.44 ha is found to be HPL, with 3.07 ha being LUC 6 and 33.61 ha found to be non-productive (as detailed in Section 3.1).

Figures 8 and 9 identify the poor draining nature of the soils presenting significant productive limitations which limit the long-term viability and versatility of the site for productive use. These constraints are considered permanent and long-term, and with increasing sea-level predictions and more frequent significant weather events, these farms are likely to become further challenged in the future.

Presented in Table 2 is the HPL as mapped by the NZLRI and the revised classification area.

Table 2: HPL areas within the Site

	<b>NZLRI Classification area (ha)</b>	<b>Revised Classification area (ha)</b>
HPL	346.05	312.44
Non-HPL (6s16)	3.07	3.07
Non-Productive	0	33.61
<b>Total Site</b>	<b>349.12</b>	<b>349.12</b>

## 6.0 Land Use Potential

Properties that contain HPL require assessment against the NPS-HPL. However, for completeness, where there are productive areas available on non-HPL land (LUC 6), these areas have been assigned to an optimum land use as shown on Figure 15. This is because they may contribute to the economic viability of the property. This is discussed in the NPS-HPL Guide to implementation, where a holistic approach is to be used for non-HPL areas.

In theory, the existence of Class 2 soils mean that the Wairakei South development area has potential for a wide range of agricultural and horticultural activities. However, in practice, some of the constraints, characteristics and limitations reduce the overall versatility of Wairakei South.

As discussed in Section 3, the majority of Wairakei South is currently used for land-based primary production, largely as a mix of dairy and arable.

### Dairy

The dairy farming areas are heavily constrained by the physical environment, particularly due to poorly and very poorly drained soils. These create wetness issues that impact land use on the site. Pasture growth is impacted because of wetness and drainage issues, and high water-table impedes root growth because plant roots require oxygen, which is displaced by water, leading to waterlogging and root stress or death. In wet years, pasture production has dropped to as low as [REDACTED], while the three-season average has been estimated at [REDACTED]. Such variability reduces the reliability of pasture supply and means the farm is reliant on large volumes of imported supplements to sustain its herd.

Poor drainage also increases pugging risk, reduces grazing flexibility, and places greater pressure on pasture renewal. These factors constrain the productive capacity of the land and narrow the range of land use options available. While the soils limit versatility compared with more resilient farming areas, the current use of the land as a dairy platform is considered the most effective and productive land use over the [REDACTED] of Wairakei South.

### Arable – Maize grain

Arable maize grain is considered as the optimal productive land use on [REDACTED] of property 11. This is because even though maize is being grown in less-than-optimal conditions on this property, the conversion of this land to dairy would result in significant financial costs including dairy shed construction or upgrades, staff accommodation, installation of a stock water system, feeding infrastructure and fencing.

### Beef/Drystock

Property ID 6 is a [REDACTED] block used for beef/drystock/equine grazing. Due to this property's location to the neighbouring dairy farm, the optimum productive land use for the effective area [REDACTED] of this property has been classed as dairy, due to a more favourable economic viability and stronger returns.

## Summary

The key limitations for land-based primary production and versatility on Wairakei South are:

- Poor and very poor draining soils across the site.
- Limited optimal land available that is suitable for arable
- No land available for horticulture or commercial vegetable production
- Non-reversible land fragmentation to the north, with the expressway.

The soil types across the Wairakei South do not lend themselves to any horticultural or commercial vegetable production land uses. AgFirst does not consider that horticulture is a reasonably practicable option for Wairakei South. The poor and very poorly drained soils will likely have an impact with some crops not surviving, while others will have reduced yields.

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

Figure 15 presents the optimal productive land use across Wairakei South, this is based on AgFirst's opinion of land use versatility based on the constraints presented in this report.

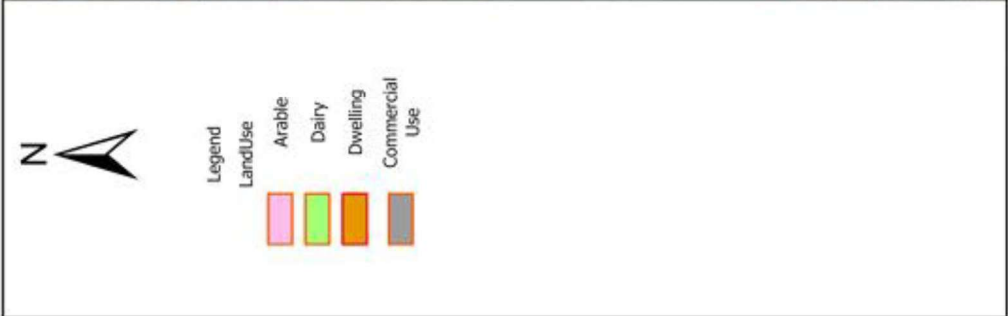
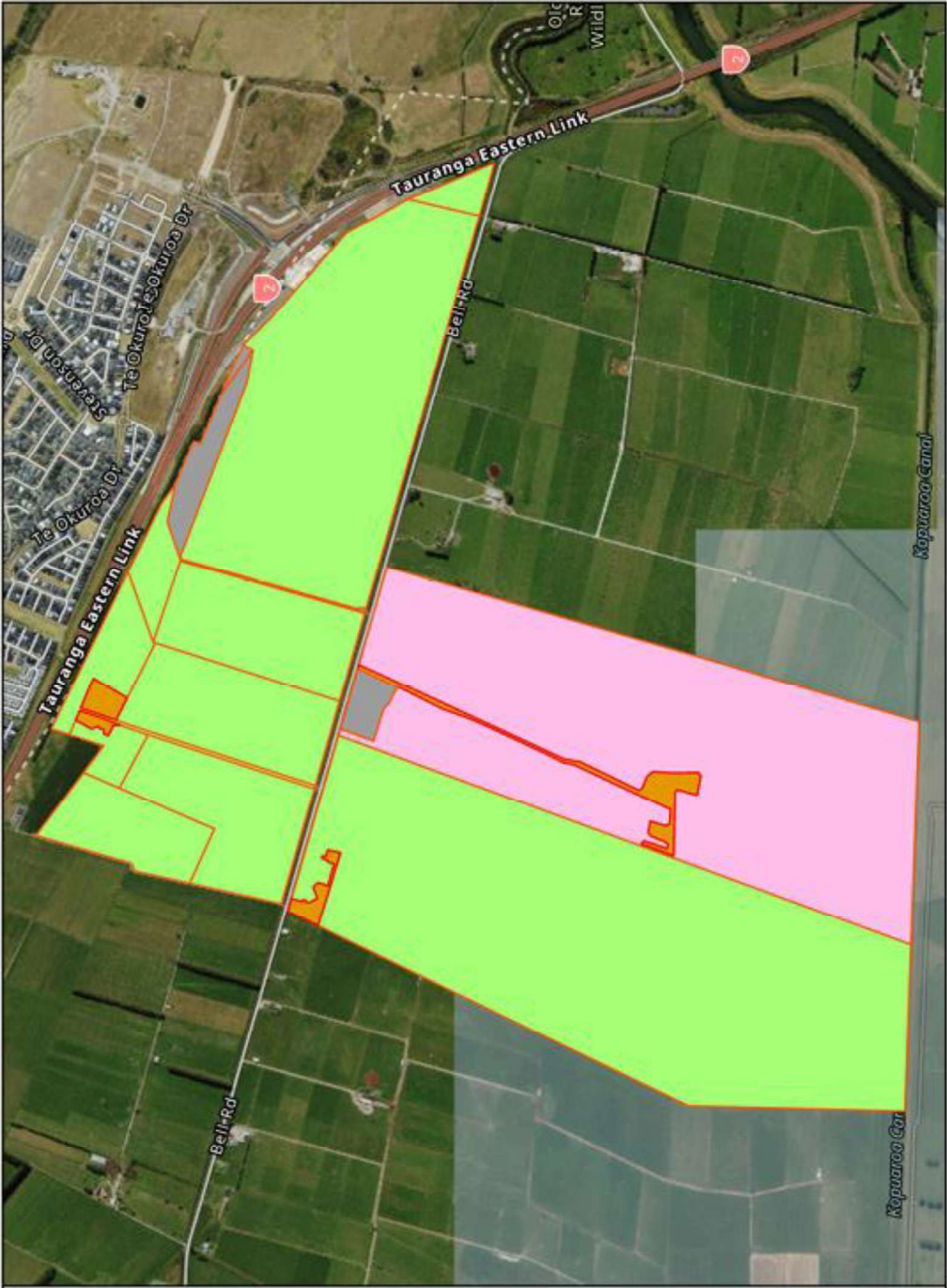


Figure 15: Wairakei South Optimum Productive Land Use

## 6.1 Farm Economic Performance

To assess the economic viability of the various operations, AgFirst has estimated the profitability of the following optimal land-based primary production operations as shown on Figure 15. This is based on the highest and best productive land use for the various land classes to ensure sustainable long-term production and viability.

For Wairakei South, there were only two land-based primary production operations identified as being reasonably practicable. Beef finishing and equine grazing does occur on small lifestyle-sized areas within the site; however, apart from Property 11 as the arable unit, these areas have been assessed as dairy. Although not without its challenges, dairy farming was determined to be the optimal productive land use for the wider site. The two land-based primary production operations identified are:

- Dairy farming
- Arable – maize grain

An analysis of the dairy farm operation being undertaken currently on Wairakei South has been undertaken. This system is not a highly profitable unit, and has a high reliance on imported feeds, largely due to the wetness limitations of the soils.

Dairy farming is a land use that offers versatility across a range of sizes, soil types and contour. Management practices can be applied for poorly drained soils, such as on-off grazing. As the optimised form of land-based primary production across Wairakei South currently involves some form of grazing system, the economic modelling has assumed no additional capital investment into this land use. i.e. stock drinking reticulation, fencing, power, off-paddock infrastructure, stock yards etc.

Arable operations are more limited and require better soils and gentle contours. While there has been evidence of rotational arable cropping across Wairakei South's dairy land and a back-to-back cropping regime over 87 ha, this does not necessarily determine that this land is suitable or sustainable for this land use long-term. Rotational cropping is often a singular event and used for pasture renewal and providing feed buffers. In general terms, AgFirst considers that permanent arable cropping has the following physical land and soil requirements: gentle or flat contour, well drained to imperfectly drained soils to prevent water logging, and loamy soils which provide good drainage and nutrient retention. There is no land that fits this category within the Site. However, as the conversion of this land from arable into dairy would require significant up-front capital investment and as maize grain has been occurring consecutively for a long time, AgFirst has maintained this as the optimal productive land use of property 11.

### Dairy Farming

As detailed, 228.49 ha of Wairakei South is currently used for Dairy Farming. The performance of the Dairy system located at 252 Bell Road has been assessed and modelled using Farmax Analysis. This modelled the farms financial performance based on the inherent state of the physical resources. This was based on the best knowledge and assumptions of previous performance based on input use, production results and actual financial data as available.

Four modelled systems in the analysis including 2022/23 actuals, 2023/2024 actuals, 2024/25 actuals and a long-term moderated system utilising only pasture and home-grown supplements which assessed the true capability of the soil resources. The Farmax results for these models are summarised in Tables 3 and 4 and detailed below. Further operational detail is provided in Annexure A.

With no reliable data available to show the actual pasture performance of the property this had to be back calculated utilising Farmax. The Fonterra farm insights report for the corresponding years, with Farm Source farm dairy records used for the 2024/2025 season was used to assess imported supplementary feed into the system. These reports were also utilised to provide total nitrogen use and total milk production. Maize results for the 2024/25 had actual weigh bridge data of [REDACTED] produced with the same area of 31 hectares grown every year, this was assumed to have occurred each season. The farm sends all calves off to grazing on November 1<sup>st</sup> which return June 1<sup>st</sup> as in-calf heifers. [REDACTED] cows are wintered off farm over 1 month typically from May 25<sup>th</sup> to June 25<sup>th</sup>, to return for calving.

Herd data including total numbers including replacements have been sourced from recorded Minda data. Assumptions have been made as necessary based on exact timings with farmer knowledge utilised where possible. A herd Breeding Worth (BW) of 254 (May 2025 values) is used as displayed by the farms LIC data. This displays a very good BW herd, if average herd values had been used, we would see a drop in per cow performance. This was not adjusted for and the actual BW numbers of the herd on the property were used across the analysis.

An exact breakdown of feed timings based on imported feed was used for the 2024/25 year, with this replicated as suitable over the previous two seasons with inputs adjusted as necessary. The models follow this assumption that total feed purchased in that season is utilised in the same year to meet production outcomes.

AgFirst has assessed the financial net milk sales on a 5-year average milk price of [REDACTED] across all modelled seasons.

### **2022/23 Season**

2022/23 was a wet season for the property with low pasture growth at an estimated [REDACTED] with nitrogen use at [REDACTED] (nitrogen per hectare used) which is inclusive of maize/cropping areas of the farm. The farm ran a high stocking rate of [REDACTED] cows per ha, this combination of low pasture growth and a high stocking rate meant a high volume of imported supplementary feed was used totalling [REDACTED] of baleage was also made on the platform. Total production modelled [REDACTED] (actual production recorded [REDACTED]). The wetness limitations of the property have been demonstrated to result in financial volatility and uncertainty with pasture growth. Based on provided expenses for the 2022/23 season, a negative farm profit before tax was calculated with a result of [REDACTED] per ha.

### **2023/24 Season**

The 2023/24 season saw a decrease in stocking rate to [REDACTED] cows per hectare. Pasture grown was estimated to increase to [REDACTED] with nitrogen use at [REDACTED] inclusive of the maize/cropping area of the farm. This pasture growth was estimated based on production of [REDACTED] (actual production recorded [REDACTED] produced). This

season [REDACTED] of imported feed was used, plus [REDACTED] of hay which was made on farm. Based on provided expenses for the 2023/24 season, farm profit per ha before tax totalled [REDACTED].

### **2024/25 Season**

The 2024/25 season showed a stocking rate of [REDACTED] cows per hectare. Pasture grown was estimated to be [REDACTED] with nitrogen use at [REDACTED] used which is inclusive of maize/cropping area of the farm. Modelled production was [REDACTED] (actual production recorded [REDACTED]). The season saw [REDACTED] of imported feed fed plus [REDACTED] of hay which was made on farm. Actual expenses were not available for this season. Accordingly, expenses were estimated using either a per cow average, the previous season's actuals, or a per-hectare average from the previous season. These estimates were based on the farm's historical trends and did not reflect the recent rise in input costs observed across the industry. As a result, actual expenses for this season are likely to be higher than those presented. The underlying assumptions are outlined in the Appendix A. The modelled 2024/25 season farm profit per ha before tax totalled [REDACTED].

### **Three Season Summary**

A three-year summary of the property has found that on average it is estimated that the farm is growing [REDACTED]. The average EBIT of the property is just [REDACTED]/ha.

### **Pasture Only Long-Term Average System**

The three seasons which have been modelled also reflect a high rate of imported feed. To see what the farm is truly capable of, the imported feed component of the farm has been removed for this model. The objective of this model is to establish a dairy system that is both sustainable in the long term and reflective of the farm's productive capacity, without reliance on imported feed. This approach provides a more accurate assessment of the land resource, as per the evaluations in subclause 3.10(2)(a) and the definition of land-based primary production. High levels of imported feed do not represent the true performance of the farm in relation to its land use capability. For consistency the same BW's have been used as the other models. The production figures from this farm are therefore placed at the upper end of what is likely. Based on previous grazing patterns for the farm it is found that [REDACTED] cows can be wintered on farm with the remainder sent off for grazing. All young stock grazing has remained consistent with the previous system.

The model is based on the three-year average for pasture growth, home-grown supplementary feed and nitrogen use. As a long-term system, it begins and ends with a pasture cover of [REDACTED] maintaining covers at levels that ensure pasture quality is controlled while remaining a feasible system.

The system maintains the same pasture eaten of [REDACTED]. To make this system feasible the stocking rate was reduced to [REDACTED]. These changes have reduced milk solids produced to a total of [REDACTED] a reduction of [REDACTED] from the previous three season average. Farm profit per hectare before tax in this long-term home-grown feed only system is found to be [REDACTED]. Whilst this is lower than some of the years, it is higher than the three year average, indicating a less volatile system.

Table 3: Farmax Physical Summary

FARMAX		Compare Physical Summary			
		Jun 22 - May 23			
		2022/23 (Actuals - Main File) 2	2023/24 (Actuals - Main File) - Updated	2024/25 (Actuals - Main File) - Updated	Pasture Only Long Term Average System
Farm	Effective Area				ha
	Stocking Rate				cows/ha
	Comparative Stocking Rate				kg Lwt/t DM eaten
	Potential Pasture Growth				t DM/ha
	Nitrogen Use per total ha				kg N/ha
	Feed Conversion Efficiency (eaten)				kg DM eaten/kg MS
Herd	Cow Numbers (1st July)				cows
	Peak Cows Milked				cows
	Days in Milk				days
	Avg. BCS at calving				BCS
	Liveweight per total ha				kg/ha
Production (to Factory)	Milk Solids total				kg
	Milk Solids per total ha				kg/ha
	Milk Solids per cow				kg/cow
	Peak Milk Solids production				kg/cow/day
	Milk Solids as % of live weight				%
Feeding	Pasture Eaten per cow *				t DM/cow
	Supplements Eaten per cow *				t DM/cow
	Off-farm Grazing Eaten per cow *				t DM/cow
	Total Feed Eaten per cow *				t DM/cow
	Pasture Eaten per total ha				t DM/ha
	Supplements Eaten per total ha				t DM/ha
	Off-farm Grazing Eaten per total ha				t DM/ha
	Total Feed Eaten per total ha				t DM/ha
	Supplements and Grazing / Feed Eaten *				%
	Bought Feed / Feed Eaten *				%

(\* feed eaten by females > 20 months old / peak cows milked)

Farmax Dairy 8.3.5.28

Table 4: Profit and Loss

FARMAX		Compare Forecast Profit and Loss			
		Jun 22 - May 23			
		2022/23 (Actuals - Main File) 2	2023/24 (Actuals - Main File) - Updated	2024/25 (Actuals - Main File) - Updated	Pasture Only Long Term Average System
Revenue	Stock	Net Milk Sales - this season			
		Net Livestock Sales			
		Change in Livestock Value			
		Total			
	Crop & Feed	Surplus Feeds			
Capital Value Change					
Total					
<b>Total Revenue</b>					
Expenses	Wages	Wages			
	Stock	Animal Health			
		Breeding			
		Farm Dairy			
		Electricity			
	Feed/Crop	Pasture Conserved			
		Bought Feed			
		Calf Feed			
	Grazing	Grazing			
	Other Farm Working	Fertiliser (Excl. N)			
		Nitrogen			
		Regrassing			
		Weed & Pest Control			
		Vehicle Expenses			
		Fuel			
R&M Land/Buildings					
R&M Plant/Equipment					
Freight & Cartage					
Other Expenses					
<b>Total Farm Working Expenses</b>					
Depreciation					
<b>Total Farm Expenses</b>					
<b>Economic Farm Surplus (EFS)</b>					
<b>Farm Profit before Tax</b>					
<b>Farm Profit per ha before Tax</b>					

EFS is a measure of farm business profitability independent of ownership or funding, used to compare performance between farms.

EFS should include an adjustment for unpaid family labour and management. This can be added to the expense database as management wage.

Farmax Dairy 8.3.5.28

**Arable – Maize Grain**

Arable operations, such as a maize grain businesses require good soil resources (free draining soils), easy access for machinery and easy contour. Arable grain has been used for the analysis, on the assumption that this is an independent business rather than a rotational maize silage operation growing supplementary feed. The total area within Wairakei South that AgFirst believes has the optimum land use for arable cropping is 87.0 ha.

To assess the potential arable operations, AgFirst has calculated the typical maize grain operation at Wairakei South. The maize grain yields are assumed to be an average of [REDACTED], as provided by the land owner. To help determine the grain sales cost, AgFirst has reviewed the average price received on farm for 2022-23 and 2023-24 seasons which showed an average price of [REDACTED]. This is consistent with the 5 year average in Waikato.

Table 5: Maize Grain Average Prices

2022-23	[REDACTED]
2023-24	[REDACTED]
2024-25	[REDACTED]
<b>Average</b>	[REDACTED]

The Pioneer gross margin has been used to determine the likely input costs (Annexure B). The financial budget for the arable model, represented as a per ha EBITRm is presented in Table 6.

The budget assumes that the arable blocks are capable of yielding [REDACTED] of maize grain at an average price of [REDACTED] per tonne. The forecast total EBITRm per ha (not including fixed property costs such as rates) is [REDACTED] per ha.

Table 6: Arable EBITRm

Maize grain	\$ Total	Source: Pioneer Gross Margin and 3 year average yields
Area (ha)	1	Effective arable block
<b>Revenue</b>		
Maize Grain Yield		3 year average grain yield (tDM/ha)
Contracted Price		3 year average grain contract price (\$/tDM)
Maize Grain Income		11.7 tDM yields sold at [REDACTED]
<b>Total Revenue</b>		
Maize Seed		Maize seed, poncho and FAR levy
Maize Establishment		Cultivation and planting
Maize Herbicide		Contractor and spraying
Maize Fertiliser		Soil testing, lime and nutrient replacement costs - based on the 8% crude protein and current fertiliser prices
Harvest		Combine harvest contractor costs
Cart and Dry		Cartage and drying cost
Wages		Assume 8 hrs per year/ha [REDACTED]
Repairs & Maintenance		Lincoln farm manual - Arable 2017 data per ha
<b>Total Operating Expenses</b>		
<b>Fixed Expenses</b>		
Administration Expenses		Lincoln farm manual - Arable 2017 data per ha
Rates		Calculated at a property level
<b>Total Fixed Expenses</b>		
Depreciation		Minimum equipment or plant to depreciate
<b>Total Expenses</b>		
<b>EBITRm per ha</b>	<b>\$</b>	Total Earnings Before Interest, Tax, Rent, and Management Wage

## 6.2 Economic Viability

The productive income for each property has been assessed at an individual property level. This is based on an assessment of the quality of soils and land, effective area available within each parcel and suitability for reasonably practicable alternative land uses. The highest and best (or optimised) productive system has been identified for each property along with the effective area available for each land use (in the case where there are multiple land classes, slopes and soils, there has been variety of land-based primary production options proposed). The areas suited to each land use have been multiplied by the respective gross margins or EBIT, to provide a pro-rated estimated income for each property.

The definition and methodology to determine economic viability has been presented at the NZ Agricultural and Resource Economics Society Conference in 2024<sup>3</sup> and published in the New Zealand Institute of Primary Industry Management (NZIPIM) journal. The term “economically viable” is used to describe a project that provides an overall positive net economic contribution to society after all costs and benefits have been accounted for. When researching commercial viability, the Cambridge dictionary defines it as “the ability of a business, product, or service to compete effectively and to make a profit.” “Compete effectively and make profit” identifies the need to cover real-world and genuine costs. Only then can it be determined if an operation is economically viable. This is different to having a positive gross margin, EFS or EBITRm.

To be economically viable, AgFirst suggests that the income from the farm needs to be sufficient to cover:

- i. Operating costs, e.g. wages, animal health, fertiliser, repairs and maintenance, etc
- ii. Fixed costs such as rates, insurance, administration.
- iii. Depreciation cost
- iv. A surplus then available that is sufficient for:
  - a) debt servicing and debt repayment or an appropriate return on the capital investment if there is little or no debt, or the lease cost if the property is not owned by the operator;
  - b) ongoing maintenance and development of the farm and the business.

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

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

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<sup>3</sup> [Journeaux - Definition of Farm Economic Viability.pdf](#)

In assessing the debt servicing required, the land value has been used rather than the improvement and capital value, to understand the profitability required for an agricultural business to service the relevant level of debt. For this assessment the debt loading has been assessed at 40%, which is a typical level of farm lending for dairy and arable. Interest rates have been assumed as a long-term average of 7%<sup>4</sup>. Note that principal repayments have not been included in the liabilities. The property information was obtained from Western Bay of Plenty District Council and Bay of Plenty Regional Council, which is presented in Table 7. This includes the capital value and rates for each property. These individual property fixed costs were then subtracted off the combined operational profit to provide a total return for each property.

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

*“(3) Any evaluation of subclause (2) of reasonably practicable options:*

*(a) must not take into account the **potential** economic benefit of using highly productive land for purposes other than land-based primary production; ...”*

The word ‘potential’ is emphasised as this is defined as: ‘*able to develop into something in the future when the necessary conditions exist*<sup>5</sup>’. The current and existing state of the properties without change is that they are mostly lifestyle properties, and have a land valuation which is assessed by the local authority. As the Council does not come out and inspect properties in person, these values are calculated using the data and information that the Council has access to. This information includes analysing:

- Property type
- Location
- Land size and topography
- Zoning regulations
- Floor area
- Consented work (renovations, new build, subdivisions etc)
- Data from comparable sales in the area

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

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<sup>4</sup> Exchange rates and Wholesale interest rates - Reserve Bank of New Zealand - Te Pūtea Matua (rbnz.govt.nz) 1993-2023 years with a 2.2% bank margin applied to the 90 bank bill monthly average yield

<sup>5</sup> <https://dictionary.cambridge.org/dictionary/english/potential>

valuations is a true and accurate reflection of the real world to help determine economic viability.

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

There are no more profitable alternative options for these land parcels that are reasonably practicable. This is supported by Table 7 which shows none of the properties within Wairakei South are economically viable. An assessment to understand if the long-term constraints and economic viability can be overcome through reasonably practicable options is detailed in Section 6.6.



## 6.3 Permanent or Long-Term Constraints

The various landholdings within Wairakei South form several categories with regard to the highest and best use when regarding land-based primary production.

- Lifestyle and residential blocks
- Dairy
- Arable

### Lifestyle and residential blocks

These properties are realistically only able to be used for residential purposes. There are production constraints due to the size of the properties, complicated further by the extent of existing residential development, the location of that development within the properties, and the proximity of dwellings to any potentially productive land. These properties are purchased for personal enjoyment and are unlikely to be used for any commercial rural production.

The key constraint for these properties is non-reversible land use fragmentation. The areas are not economically viable due to the lack of land available for land-based rural production and marginal returns with small-scale operations. Off-site effects and sensitivity impacts will also deter these properties from being used for any higher and better land use. The land around the dwellings are used as a buffer for aesthetic purposes, and often not setup or suitable for amalgamation with larger properties.

However, if lifestyle properties contain paddocks and suitable dairy areas with access to the platform and infrastructure, then for the purposes of this assessment, AgFirst has identified these productive areas with an optimal use as dairy farming. For example, 2.2 ha of Property 2 has been assessed as dairy on this basis.

### Dairy

These properties are constrained against productive use largely due to the poorly and very poorly drained soils across the site. Wet soils also increase the risk of pugging, restrict grazing flexibility, and create ongoing pressure for pasture renewal. Off paddock infrastructure and intensive imported feeding systems are used to substitute to poor pasture utilisation. These constraints diminish the long-term productive capacity of the land and restrict alternative land use options. Despite these limitations, the use of the land as a dairy platform remains the most effective and viable use for 228.49 ha of Wairakei South.

Environmental considerations for the dairy farm are also related to the poorly drained soils. This includes with stock exclusion required for waterways, cultivation setbacks for the rotational maize cropping, risk of discharge of effluent into drains adjacent to races and tracks and irrigation of effluent on saturated soils. These all place increased pressure on the farming system and incur costs and changes in management practices to control.

## Arable

There is currently 87.0 ha of land where the optimal use has been assessed as arable cropping for maize grain. Although maize cropping has been undertaken on this land, the poorly and very poorly drained soils present constraints to this land use. As discussed in this report, continuous and back-to-back arable cropping requires favourable geophysical characteristics, including flat to undulating land and imperfect to well-drained soils. While arable operations require little infrastructure, parcel sizes still need to be attractive to contract growers, contractors, or lessees, and would generally be no smaller than 4 ha on suitably flat and well-drained land. Based on these criteria, there are no areas within Wairakei South considered physically suitable for arable cropping. However, despite these limitations, continuous arable cropping has long been carried out across 87.0 ha of the site. Given the high costs of converting this land to dairy and the limitations also impacting other land uses, it is assessed that arable cropping remains the optimal and best primary land use of this area, located on Property 11, despite the wetness limitations of the soils.

All other areas are constrained by size, or wetness. These constraints would result in an unsustainable land use, crop survival issues (high seasonal water-table), narrow cultivation and harvesting windows due to soil wetness, compaction and access challenges with heavy machinery and overall reduced yields.

Due to the number of open drains present across the arable areas, this poses regulatory and environmental constraints. Cultivation setback distances of greater than 5 m are required for good farming practices, which will result in unproductive areas, and additionally exacerbating the problem with evasive weeds.

Another issue for arable crops near residential settings is the attraction of rodents and vermin. These populations can be prolific, and post-harvest they are forced to go in search for food. Due to the proximity of residences to the north of Wairakei South, in this case the likely target will be households.

## Summary

Wairakei South has remained typically as a dairy system over 228.49 ha and arable over 87.0 ha as the highest productive land use with 33.61 ha of non-productive land. Land based primary production is economically unviable on Wairakei South because of the following long-term and permanent constraints:

- Soil constraints
  - » Wairakei South has poorly and very poorly drained soils across the Site. While these soils are still likely to be considered HPL, the significant wetness limitations will impact the versatility and productive capacity of these areas.
  - » The poorly and very poorly drained soils across Wairakei South are also a limitation for horticulture and CVP, where year-round and permanent cropping is undertaken.
- Environmental constraints
  - » Cultivation setbacks from waterways
  - » Stock exclusion from waterways

- » Effluent application rules relating to storage, irrigation and saturated soils (no ponding)
- » Requirement to stand cows off the paddocks during wet conditions
- » Heavy reliance on imported feed, which increases the Greenhouse Gas (GHG) emissions on farm

## 6.4 Avoidance of Significant Loss, Fragmentation and Reverse Sensitivity

Based on the NZLRI, 346.05 ha out of 349.12 ha of Wairakei South that is zoned Rural is HPL. However, this does not translate to a significant loss, due to the constraints outlined in Section 6.3 and the fact none of the properties (individual or aggregated) are economically viable. While defined as HPL under the transitional definition, due to the constraints identified, these areas have limited versatility and are challenging to farm. Of this total area, 312.44 ha has been assessed as containing or have some suitability for pastoral grazing activity. While only one of the properties are currently arable operations, AgFirst has estimated that even though this remains the most optimal primary production land use for that property this does not mean that it has a long-term suitability for this land use. The total area of non-effective land is estimated as 33.61 ha including dwellings, curtilage, driveways, modified and anthropic soils, slope and areas occupied by streams and bush (see Figure 3).

Productive capacity (see Section 4.0) means the ability of the land to support land-based primary production over the long-term. The significant constraints of the HPL reduces the productive capacity due to the poor and very poor draining soils significantly reducing the properties economic potential. Enabling subdivision will not result in any significant loss of productive capacity within the district, both individually and cumulatively. Due to the significant permanent and long-term constraints for Wairakei South, the land cannot function or perform to HPL standards and has limited productive capacity. From a land-based primary production and productive capacity perspective, it would be a far better option to develop this Site compared to alternative greenfield sites with fewer constraints and higher production potential. What is clear for this site is that none of the land would be attractive to a grower for arable, horticulture or commercial vegetable production.

With regards to LUC classes within the Western Bay of Plenty District, there is an estimated 44,387 ha of HPL<sup>6</sup>, which is 20.96% of the total area in that district. The LUC breakdown for the district is presented in Figure 16. The area of HPL across Wairakei South is 346.05 ha, which is 0.78% of the available HPL within the district. This would not be considered as a significant proportion of loss within the Region. And while the LUC Class 2 land within the Site is geographically cohesive, relatively this would not represent the loss or fragmentation of a “large” area of land.

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<sup>6</sup> Manaaki Whenua – Landcare Research. Our Environment, Territorial Authorities, Western Bay of Plenty District LUC map.

## Land Use Capability

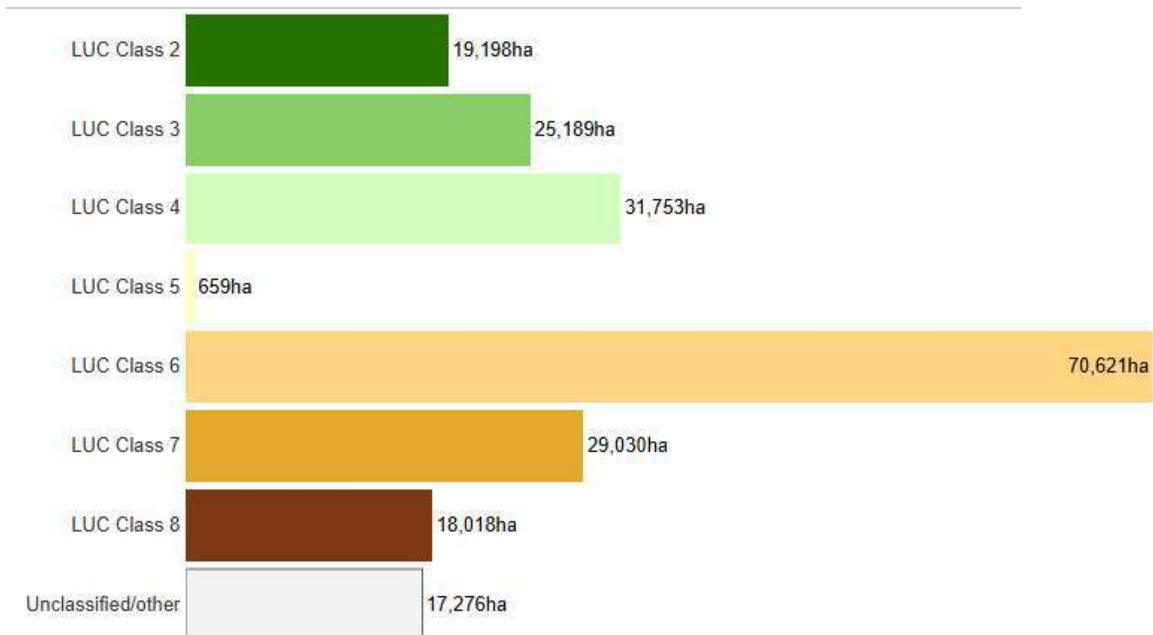


Figure 1616: Summary of Land Use Classification within the Western Bay of Plenty District

No sensitive activities are proposed as part of the application which might give rise to reverse sensitivity effects. Any issues in this regard can also be appropriately managed as outlined in the assessment undertaken by Hegley Acoustics. The surrounding farmland is also very wet, and not suited for intensive land uses, and will likely remain in pastoral grazing. This land use activity (pastoral grazing) has a low impact on neighbouring receptors and will form as a buffer between horticultural or other intensive operations and the Subject Site and Papamoa settlement.

## 6.5 There is a Net Benefit from the Urban Development proposed on the Site

### *Environmental*

As the productive capacity is severely constrained across the Site, with significant drainage and soil limitations preventing more intensive or higher-value land uses, the net change in overall production will be minimal. However, nutrient and sediment losses to ground and surface water are expected to improve slightly following the proposed development.

The removal of dairy operations from this land will reduce the potential for nitrogen losses to the shallow groundwater system. It will also mitigate pugging damage on the poorly drained soils, lowering the risk of sediment and nutrient transfer to surface waterways. Nutrient losses under dairy systems arise from nitrogen leaching associated with animal urine patches, effluent application, and nitrogen fertiliser use. On poorly drained soils, these losses are often compounded by surface runoff during wet periods, increasing the likelihood of contaminants reaching surface water. While drainage improvements can enhance pasture utilisation, they may also accelerate nutrient transfer pathways. Overall, dairy systems on these soils are likely to sustain relatively high nutrient losses compared with less constrained land.

Arable crops generally have much higher fertiliser requirements, with typical nitrogen leaching rates often exceeding [REDACTED]. Arable systems can also generate a large nitrogen spike at cultivation, as heavy fertiliser applications coincide with soil mineralisation once the soil is aerated. Without a cover crop to capture these nutrients, leaching losses can be significant. In addition, cultivation increases the risk of sediment and phosphate runoff. For the dairy platform, approximately 31 hectares is typically used for maize cropping. As part of this rotation and pasture renewal process, soils are frequently left fallow, further increasing the risk of nutrient leaching.

Considering that there is a large proportion of the Wairakei South Site that has been classified as peat soils, AgFirst has referred to some literature by Manaaki Whenua – Landcare Research Peatland / peat subsidence control<sup>7</sup> to discuss the environmental impacts associated with farming on peat. A summary of this is provided below.

### **Peatland Formation & Importance**

- Peat soils are major carbon stores, formed under wetland conditions where decomposition is slow.
- Drainage for agriculture lowers water tables, leading to subsidence and CO<sub>2</sub> emissions.

### **Extent & Impact in New Zealand**

- Drained peatlands contribute up to 8% of NZ's net greenhouse gas emissions.
- Subsidence persists until peat is lost, creating mineralised soils.

### **Historical & Future Trends**

- Large-scale drainage began in the early 1900s, accelerating with mechanisation in mid-century.
- No further expansion expected due to policy, but subsidence on drained land will continue.

### **Impact of Intensive Farming & Cultivation**

- Intensive farming practices, especially cultivation for cropping and pasture renewal, greatly accelerate peat decomposition and subsidence.
- Limiting cultivation is critical for slowing peat loss and maintaining soil structure.

### **Subsidence & Recovery Rates**

- Subsidence occurs at ~20 mm/year, while peat regrowth is ~1 mm/year – recovery takes centuries to millennia.

### **Mitigation Potential**

- Rewetting peatlands can halt subsidence within a generation, though GHG benefits remain uncertain due to possible CH<sub>4</sub> and N<sub>2</sub>O increases.

### **Management Challenges & Needs**

- Areas such as Hikurangi and Hauraki face economic pressures as farming becomes less viable due to high soil moisture.

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<sup>7</sup> Pronger, J. (2024). Peatland/peat soils subsidence control. In: Lohrer, D., et al.

- Lack of a national strategy; decision-support tools and policy incentives are needed to guide land-use change.

#### *Social*

With most of the current land-based primary production being either dairy farming or arable cropping, employment opportunities are limited to property owners and a small number of workers needed for stock management and milking. The proposed urban development will provide for additional houses, with improved employment generated, recreational areas created, therefore resulting in an improvement in social outcomes.

#### *Cultural*

There are no sites of cultural significance within the proposed development area. While this is not a 'benefit', there are no adverse cultural effects either. The minor environmental improvements, such as reduction in nutrient leaching could also contribute towards cultural improvements, for example mahinga kai sites. There are also large areas within the Site that are proposed to be reinstated back to wetlands.

#### *Economic*

The estimated economic benefits of the proposed development will significantly improve the economic viability of the Site as addressed in Sections 6.1 and 6.2 in this report. Currently none of the properties are economically viable with regard to land-based primary production. As assessed by Urban Economics, in its current use the Site has an estimated economic value of approximately [REDACTED]. By contrast, as proposed by way of the present fast-track application, the development would generate a total GDP contribution during construction of [REDACTED] and [REDACTED] full time equivalent [REDACTED] jobs, and an ongoing GDP contribution on completion of [REDACTED] and [REDACTED] jobs.

#### *Will benefits outweigh the costs?*

Yes, the property is currently operating at an economic loss. It is considered that this will change into an overall gain in all areas as a result of the proposed urban development of the site. The proposed urban development will provide for an improvement in social outcomes, including a significant increase in the supply of residential accommodation and associated retail, commercial and service activities, additional local employment opportunities, a local school and a high quality, connected open space and transport network. The proposed development will also result in environmental improvements, such as reduction in nutrient leaching, restoration of native vegetation and ecological habitats and stormwater/flooding mitigation measures. These environmental, social, cultural and economic benefits from the proposed urban use of Wairakei South are considered to be positive.

Overall, it is considered that the benefits of enabling the urban development of the site will outweigh the costs associated with the loss of highly productive land, by a significant margin..

## **6.6 Reasonably Practicable Options to Overcome Constraints and Economic Viability**

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

### *6.6.1 Alternative Options to Retain Productive Capacity*

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

AgFirst has assessed Wairakei South for the highest and best land productive use, based on reasonably practicable options for alternative production systems and suitability of these operations based on physical characteristics of the land and requirements of the various productive systems. To overcome some of the fragmentation constraints due to property boundaries and small scale of some lots, AgFirst has reviewed if amalgamation and boundary adjustments would overcome the constraints. The optimal land use maps are presented in Figure 15. The following section discusses the alternative forms of land-based primary production and whether they will overcome the constraints. The economic viability of these optimised productive land uses for each of the individual properties are presented in Table 7.

Despite the alternative land-based primary production systems, these optimised productive systems do not overcome the economic viability of Wairakei South, with all of the individual properties showing a loss in profitability when looking at economic viability. To demonstrate the economic viability, the effective areas suitable for the various land uses within each individual property have been multiplied by the estimated returns (Section 6.2).

#### *Dairy farming or dairy support*

Dairy farming or Dairy Support is not a reasonably practicable option as an alternative to retain productive capacity over the non-dairy areas (87 ha) of the site due to:

- The poor and very poor draining soils are not ideal for high stocking rates. While this can be overcome with off-paddock infrastructure, it is a substantial investment.
- High investment requirements into fencing, stock water, drainage, dairy shed construction or upgrades.
- The high value of the land also makes it unattractive for leasing or purchasing, with farmers opting to purchase dairy farms that have better drainage properties, existing dairy farms, more distant from urban areas and at affordable land values.
- Conversions of non-dairy land into dairy is sought on lower value land, to account for the capital investment required.
- Regardless, even with this area amalgamated with the current dairy farm, it has been assessed as a negative return.

#### *Arable*

There is currently minimal area that is suited for arable cropping due to the soil constraints. AgFirst has identified 87.0 ha within Wairakei South that Arable is the best

agricultural use for this land (largely on a basis that it is currently operating). However, AgFirst does not consider that Arable is a reasonably practicable option for the Site. The poor and very poorly drained soils will likely have an impact with some crops not surviving, while others will have reduced yields. No areas over the site have well drained soils, flat contour and reasonable scale (> 4.0 ha) that would potentially be viable for a contractor.

Whilst these areas could be considered for arable cropping, it does not overcome the constraints and economic viability with the properties making a loss. The return from the arable farm is lower than the dairy farm.

Additional areas are not a reasonably practicable option for arable land use, primarily because:

- This option would not be considered an attractive prospect for contractors due to machinery access and unsuitable soils; and.
- The fact that this alternative land based primary production does not overcome the economic viability.

#### *Commercial Vegetable Production*

There are currently no properties that are in vegetable production land use. As discussed in Section 6.3, the soil types across Wairakei South do not lend themselves to any horticultural or commercial vegetable production land uses. AgFirst does not consider that horticulture is a reasonably practicable option for the Site. The poor and very poorly drained soils will likely have an impact with some crops not surviving, while others will have reduced yields.

Essentially, more intensive and higher land uses (such as arable, horticulture and commercial vegetable operations) require free draining (or soils without rooting barriers) and relatively flat land. The greater the wetness limitation, the more impact on yield and crop survival. There are no free draining soils on Wairakei South, therefore the versatility is vastly reduced.

Converting areas of the Site to commercial vegetable production is accordingly not considered a reasonably practical option due to:

- Land with poor and very poorly drained soils, which is unattractive to contractors and lessees; and.
- The capital investment requirements (machinery, water irrigation and cool stores) for land that does not have the physical attributes required.

#### *Horticulture*

AgFirst does not consider high value horticulture as a reasonably practicable option to overcome the economic or constraints within Wairakei South due to:

- Land with poorly drained and very poorly drained soils.
- The development costs involved for establishing a horticulture operation such as kiwifruit, which is a well-established option within this district, is estimated as

██████████ per ha (including irrigation, plants, frost protection, trellis infrastructure and shelter) in addition to license fees. Other horticulture options such as pip fruit are not readily established in this area. It would be impractical to make this level of investment on this land that is not suitable.

### 6.6.2 *Improved land management strategies:*

- The constraints of significant drainage limitations cannot be overcome by land management strategies, as these are already in place, with a vast network of artificial drains.
- While further artificial drainage would be possible, there are also additional considerations, due to the low variation in slope across the properties, AgFirst does not believe subsurface drainage would be practical or effective. To achieve a 0.5%-1.0% drainage gradient, this would need a fall of 0.5 to 1.0 m for every 100 m distance. With the high water-table at the Site during drainage events and winter, it would be a challenge to ensure the drainage coil at the outflow will remain above the drains/stream/waterway surface water height. Therefore, it is unlikely that subsurface drainage would be effective.
- Due to the poorly and very poorly drained soils, artificial drainage will have to be designed with tight spacing and laterals to remove water from the root zone. This becomes very costly considering the land use options available.
- There are further issues with the development of open surface drains. Good farming practices and some regulations include and recommend cultivation setbacks. Examples of this are 5 m setbacks within the Waikato Regional Proposed Plan Change 1 minimum standards. This would remove additional productive land with additional capital development costs that will not be recovered.
- Subsurface drains also increase the preferential drainage pathways for nitrogen leaching. This poses a problem for effluent irrigation areas, where concentrated nitrogen is applied in a highly mobile form.
- The highest and best production use across Wairakei South has been evaluated. While small improvements would be feasible, there are no alternative options that would be significant enough to lift profitability to an economic level.

### 6.6.3 *Alternative production strategies*

- The constraints of significant drainage limitations cannot be overcome by alternative production strategies. There are also no feasible or suitable options for alternative production strategies.
- The highest and best production use across Wairakei South has been evaluated. There are no proven alternative cropping options or strategies that would be significant enough to lift profitability to an economic level.

### 6.6.4 *Water efficiency or storage methods*

- While water efficiency or storage methods is a requirement for horticulture and vegetable production, conversion to these land uses are unlikely to be practicable, therefore not a relevant solution. Pastoral grazing and arable land use do not require freshwater irrigation.

A feasibility study for water availability has not been undertaken. Water is required for stock drinking, however this is already assumed to be available for the farms with animals.

### 6.6.5 *Boundary adjustments (including amalgamations)*

- This assessment has reviewed the contiguous HPL areas within Wairakei South which are suitable for primary production.
- All the productive areas available for pastoral grazing have been assessed as being amalgamated with the dairy farm. Whether this is a likely scenario in the future remains to be seen, with amenity purpose rather than a productive purpose placed on lifestyle properties.
- Wairakei South is bound to the North and East by non-rural and non-land based primary production.

### 6.6.6 *Lease arrangements*

- With regard to lease opportunities, all the areas available for use as land-based primary production have been assessed as an owner operator model. This has a higher return than a lease situation. Realistically the profits would not be shared equally with the smaller parcels that have been assumed to be amalgamated with the dairy farm. Rather a lease fee would be paid. This is a conservative approach, as these properties would be much less viable. Therefore, leasing the properties within the Site would also return net losses based on existing and realistic economic returns and does not overcome the permanent or long-term constraints on economic viability. A lease model needs to viable both ways to be considered economically viable.

## 6.7 **Evaluation of reasonably practical options:**

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

Consideration needs to be given to the deliberate inclusion of “reasonably practicable options”. When assessing if an alternative option would overcome the economic viability, the assessor must ask if this is what a reasonable person would do. Additionally, the land within the subject site is of limited versatility, and modelled under a stable long-term system is not economically viable. This land will continue to have constraints, particularly as regulations and farm working expenditure continue to tighten. Over time the property owners will struggle to cover operating costs, let alone the fixed property costs.

Pursuant to Clause 3.10(3)(b), AgFirst has considered the impact that the loss of HPL would have on the landholding in which the HPL occurs. AgFirst concludes that the

major constraints for Wairakei South is poor and very poorly drained soils offering limited versatility. The loss of the HPL within Wairakei South does not exacerbate this constraint because it is significantly constrained already. The impact of the proposed urban development of the site will have on the remaining HPL is negligible. It is already operating at a loss, as indicated by the economic analysis compared to unconstrained farms.

With respect to Clause 3.10(3)(c), AgFirst has considered the future productive potential of land-based primary production on the Site, without being limited by its past or present uses. In conclusion, the highest and best land-based primary productive use for the Site, both now and the future, is dairy farming over 228.49 ha, arable cropping over 87.0 ha with the remaining land 33.61 ha class as non-productive. This is based on the limitations and long-term constraints. There are no additional reasonable and practicable land management strategies for improving the productive capacity of the block.

## 7.0 Summary

The 12 individual properties that make up Wairakei South are a mix of dairy, arable, lifestyle blocks, and commercial businesses. Property sizes range from 0.98 ha through to 113.76 ha, with the total land area assessed being 349.12 ha. Of this, [REDACTED] is used for dairy farming, [REDACTED] is used for arable maize grain, and [REDACTED] has been classified as non-productive due to lifestyle blocks, residential dwellings, commercial activities, curtilage, and drains.

Overall, while much of the site is categorised as highly productive land under the NPS-HPL (being LUC 2), the practical potential for any sustained or intensified agricultural operation is severely constrained due to:

- Soil conditions.
  - » Large areas of poorly and very poorly drained soils, creating wetness issues and limiting productive capacity.
  - » Soils that are unsuitable for horticulture or CVP operations.
  - » High water tables and surface flooding as also observed during site visits.
  - » Wetness constraints leading to reduced crop survival, yield variability, and pasture growth limitations.
- Limited potential for expansion or alternative land-based primary production.
  - » Only one property (with 2.5 effective ha) meets minimum requirements for alternative production which is beef/drystock to dairy, therefore has been assessed as dairy.
  - » Dairy farming is the most effective use across [REDACTED] but is constrained by poorly drained soils and reliant on imported supplementary feed.
- Economic viability and operational constraints.
  - » No properties were found to be economically viable.
  - » Arable maize grain reliant on drainage for crop performance.
  - » Dairy farming constrained and impacted from poor and very poorly drained soils and reliant on drains.
  - » High land values due to neighbouring non-agricultural land, rather than their average production capabilities.

Given the constraints identified above, AgFirst believes that the proposed urban use of Wairakei South meets the NPS-HPL exemption tests in Clause 3.10 and therefore can be subdivided, used or developed for urban activities and does not need to be preserved for productive purposes.

In particular:

- Based on the assessment of Wairakei South, there are permanent and long-term constraints on the land that mean the use of the highly productive land for land-based primary production is not able to be economically viable for at least 30 years.
- Removing Wairakei South from productive use will cause no significant loss in the district of productive capacity of highly productive land, due to the severe limitations and long-term constraints outlined above and throughout this assessment.

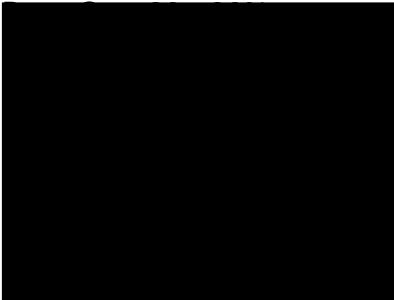
- The urban use of Wairakei South will not cause any fragmentation of large and geographically cohesive highly productive land, as it is already bordered by the Tauranga Expressway.
- The assessment has considered all reasonably practicable options that would retain the productive capacity of the highly productive land.

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


From an agricultural perspective, it would be a better option to develop this site for urban activities, compared to alternative sites that have more versatility and suitability for alternative land uses.

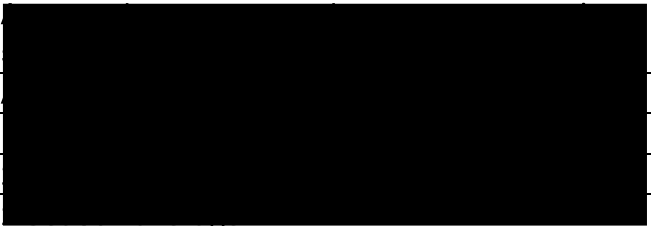
# ANNEXURE A: Dairy Farm Operational Economic Analysis

## Farmax Inputs

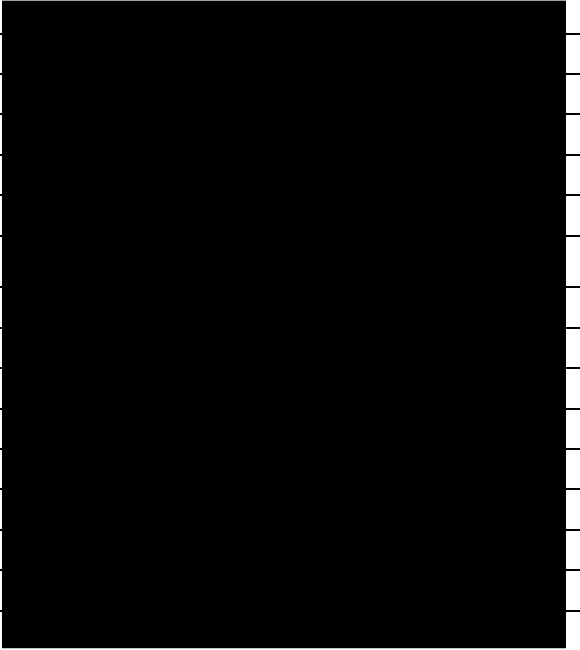
Variable	Source
Peak Cows (Maximum Cow Numbers)	Minda Data
Production	Farm Insights Report
Nitrogen Fertiliser Applied Per Hectare	Farm Insights Report
Imported Supplementary Feed Fed	Farm Insights Report. Farmer provided information.
Maize Data	Assumed Consistent with 2024/25 Results. JORDAAN CONTRACTING LIMITED - MAIZE WEIGHBRIDGE DATA 9 - 10/3/2025
Utilisation Rates	

## 2024/25 Budget Assumptions

Animal Health	
Breeding Expenses	
Farm Dairy	
Electricity	
Wages	
Pasture Conserved	
Bought Feed	
Grazing	
Fertiliser / Nitrogen	
Regrassing	
Weed and Pest	
Vehicle Expenses	

Fuel	
Other	
freight	
R&M Land & buildings	
R&M plant & equipment	

**Pasture Only**

Wages	
Animal Health	
Breeding	
Farm Dairy	
Electricity	
Pasture Conserved	
Bought Feed	
Fertiliser	
Regrassing	
Weed and Pest	
Vehicles	
Fuel	
freight	
R&M Land & buildings	
R&M plant & equipment	
Other expenses	

# ANNEXURE B: Arable Operational Economic Analysis

GROSS MARGIN 2022-23										
Example: North Island Maize Grain										
Maize - Grain										
Harvest Year:	2023			Area:	1 ha					
Date prepared:	9-Jun-23									
INCOME per hectare										
Product				Yield	Unit	Cost/Unit	Income/hc	Sub-total	Total	
<b>Grain</b>										
EXPENSES per hectare										
Category	Date	Operation	Product	Rate	Unit	Cost/Unit	Cost/ha	Sub-total	Total	
<b>Seed</b>		Seed	Maize seed	1.15						
			Poncho							
			FAR levy	\$1.00						
<b>Establishment</b>		Herbicide	Glyphosate360	3.0						
		Herbicide	Pulse	0.1						
		Herbicide applic	Sprayer (contractor)	1						
		Cultivation	Contractor							
		Planting	Maize planter (contractor)	1						
<b>Herbicide</b>	Pre-em	Herbicide	Roustabout	3.0						
	Pre-em	Herbicide	Atrazine500	3.0						
	V3	Herbicide	Primiera	0.2						
	V3	Herbicide	Latro	80						
		Herbicide applic	Sprayer (contractor)	2						
<b>Fertiliser</b>		Soil test	Nutrient test*	1						
		Soil test	Mineral-N (Deep N)*	1						
		Fertiliser	Lime (cart & spread)	1000						
	Base	Fertiliser	Muriate of Potash	300						
	Planting	Fertiliser	DAP (18:20)	250						
	V4	Fertiliser	Urea	250						
	Base	Fertiliser applic	Contractor (cart and spread	1						
	V4	Fertiliser applic	Contractor (sidedress)	1						
*One test per 5 ha										
<b>Harvest</b>		Harvest	Combine	1.00						
<b>Cart and Dry</b>			Cartage (per wet tonne, 50k	15.27						
			Drying (22 -18% per wet ton	15.27						

# OUR WHAT

Leading a  
smarter,  
sustainable,  
high performing  
primary sector

# OUR HOW

Using the best  
people and greatest  
ideas for the benefit  
of our clients

# OUR WHY

We believe in  
creating a vibrant  
future for the  
primary sector



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