BEFORE THE WAIMAKARIRI DISTRICT COUNCIL HEARINGS PANEL

IN THE MATTER of the Resource Management Act 1991

AND

IN THE MATTER of a submission by Survus (submission 250)

BRIEF OF EVIDENCE OF STUART FORD

Date 5 March 2024

QUALIFICATIONS AND EXPERIENCE

1. My full name is Stuart John Ford.
2. I am a Director of The AgriBusiness Group and work as an agricultural and resource economist based in Christchurch. I have a Diploma in Agriculture and a Bachelor of Agricultural Commerce from Lincoln University and have undertaken post graduate studies in Agricultural and Resource Economics at Massey University.
3. I am a member of the New Zealand Agriculture and Resource Economics Society and the Australia Agriculture and Resource Economics Society. I am also a member of the New Zealand Institute of Primary Industry Management.
4. I have spent over forty years as a consultant in the primary industries, with the last twenty five years specialising in agricultural and resource economics and business analysis.
5. I have given evidence to District and Regional Council hearings, Special Tribunals to consider Conservation Orders and the Environment Court in my capacity as an agricultural and resources economist.
6. My specific experience which relates to the capacity of soils and their value for productive uses and as relates to the National Policy Statement on Highly Productive Land (NPS-HPL) includes my working for both applicants and Councils. I have experience in relation to the productive capacity of elite / highly productive soils in the Auckland District which was gained from my role as a consultant resource economist for HortNZ.
7. My extensive experience which relates to the task required in this instance includes:
    - Evidence to the Auckland Council on their Proposed Auckland Unitary Plan for a number of parties.
    - Evidence given on behalf of Auckland Council to the Environment Court in relation to the appeal of the Self Family Trust in regard to a land zoning decision on elite soils.
    - Evidence given to an Auckland Council hearing as to the appropriate zoning of land at Clevedon.
    - Initial report on the productive potential of land owned by Strategic Land Holdings at Waiau Pa.
    - Support for Auckland Council in preparing a Section 42A report on a development proposal at Patumahoe South in relation to the productivity of the land.
    - Support for Auckland Council in preparing a Section 42A report on a development proposal at O'Hara Waiuku in relation to the productivity of the land. This case has subsequently been appealed to the Environment Court.
    - Provision of evidence to the Environment Court on the productive potential of the land known as Sticky Forest adjacent to Wanaka.

- Provision of a report on the commercial viability of Rangitane River Park - Kerikeri to be used in a re zoning application, subsequently prepared evidence to be used in an Environment Court hearing.
- Provision of a report on the agricultural productivity and commercial viability of land at Kairua Road Tauranga.
- Provision of a report on the agricultural productivity and commercial viability of land at Maungatautari Road Cambridge for the Arvida Group.
- Reports on the agricultural productivity and commercial viability of land and their status under the NPS-HPL for five different submitters to the Selwyn District Council.
- Support for the Waimakariri District Council in preparing a Section 42A report on a development proposal at Ohoka in relation to the productivity and the commercial viability of land.
- Provision of a brief of evidence for submission to the Environment Court in support of an appeal for the re zoning of land in Pokeno.
- Support for the Ashburton, Timaru and the Waikato Councils as a peer reviewer of NPS-HPL applications.
- Preparation of reports for various applicants in Auckland, Waikato, Bay of Plenty, Wellington, Waimakariri, Christchurch City, Selwyn, Timaru, Dunedin and Queenstown Lakes Councils.

8. I confirm that I have prepared this evidence in accordance with the Code of Conduct for Expert Witnesses Code of Conduct for Expert Witnesses contained in Part 9 of the Environment Court Practice Note 2023. The issues addressed in this statement of evidence are within my area of expertise except where I state that I am relying on the evidence or advice of another person. The data, information, facts and assumptions I have considered in forming my opinions are set out in the part of the evidence in which I express my opinions. I have not omitted to consider material facts known to me that might alter or detract from the opinions I have expressed.

EVIDENCE

9. I have prepared the attached report (**Appendix A**) dated 5th March 2024.

10. My analysis is under the National Policy Statement on Highly Productive Land (NPS-HPL) under Clause 3.6 Restricting urban rezoning of highly productive land under sub clause 1(c) requires that " *the environmental, social, cultural and economic benefits of rezoning 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.*"

11. This requires that the site should be evaluated to provide the full range of benefits of the proposed rezoned land (PRL) that can be weighed up against the full range of costs of the loss of HPL.
12. The area to the South and East of the site (south of Victoria Street) is zoned Large Lot Residential with a wide range of existing lot sizes and associated dwellings (1000m^2 up to 1 ha). There is also the existing Karadean Rest Care Home on the south side of Queens Street. Immediately to the North, North East and West there is a large area of lifestyle block development. Further to the West, East and South there are large scale intensive land uses of Dairy and Arable farming while further to the North there is extensive hill country farming and forestry.
13. The site as classified is approximately 35 ha LUC 2, approximately 14 ha is LUC 3 and approximately 1 ha is unclassified / other. In the NPS-HPL all land which is classified as LUC 1,2 and 3 is automatically considered to be HPL in the first instance which means that approximately 49 ha of the site is classified as HPL.
14. There are a number of significant constraints which have a bearing on the highest and best land use on the site. These constraints include the scale which is too small to achieve the economies of scale which are required in the modern farming, the drainage in that all of the soil types that have been identified as being on the site are classified as poorly drained which limits the range of land uses that can be carried out on the site, the location of the site which is immediately surrounded by urban and lifestyle development means that it is essentially isolated from being able to be incorporated into a larger farming operation and there is considerable opportunity from both the urban and the lifestyle block neighbours to create reverse sensitivity issues for any higher intensity land uses than those currently farmed on the site.
15. It is my opinion that because of the constraints on land use options on the site that the highest and best land use is Dairy Support which includes the making and sale of silage in the summer and the grazing of rising one and two year old heifers but not the winter grazing of dry Dairy cows.
16. The proposal is to develop around 80 lots ranging from 3,010m^2 to 1.21 ha with an average of 5,062m^2.
17. It is my opinion that the environmental, social, cultural and economic benefits of rezoning the site at 25 Ashley Gorge Road Oxford outweigh the long-term environmental, social, cultural and economic costs associated with the loss of highly productive land for land-based primary production and meets the requirements of Clause 3.6 (1) (c) of the NPS-HPL.

Appendix A: Assessment of land owned by Morgan McIntosh Ltd at 25 Ashley Gorge Road Oxford for its potential to be re zoned by meeting the requirements of the NPS-HPL.

Assessment of land owned by Morgan McIntosh Ltd at 25 Ashley Gorge Road Oxford for its potential to be re zoned by meeting the requirements of the NPS-HPL.

1 Background

We have been requested by Aston Consultants to assist them in preparing information which can be used in their submission for the land owned by Morgan McIntosh Ltd at 25 Ashley Gorge Road Oxford to be re zoned from General Rural to Large Lot Residential in the Waimakariri District Council area.

This analysis is under the National Policy Statement on Highly Productive Land (NPS-HPL) under Clause 3.6 Restricting urban rezoning of highly productive land under sub clause 1(c) requires that " *the environmental, social, cultural and economic benefits of rezoning 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.*"

In the guide to implementation[1] it states that "*Clause 3.6(1)(c) requires an assessment of the benefits and costs of rezoning. It is intended to ensure a more robust assessment of benefits and costs across the four wellbeings (environment, economic, social, cultural) is undertaken for all urban rezoning proposals on HPL and that this specifically considers long-term benefits and costs and tangible and intangible values*." And that "*Intangible values of HPL that should be considered as part of this assessment include:*

- *its value to future generations*
- *its finite characteristics and limited supply*
- *its ability to support community resilience*
- *the limited ability of other land to produce certain products*."

This requires that the site should be evaluated to provide the full range of benefits of the proposed rezoned land (PRL) that can be weighed up against the full range of costs of the loss of HPL.

The range of both tangible and non tangible costs and benefits that have been used in this assessment have been taken from the Cost Benefit Analysis[2] carried out on the NPS-HPL. They are as displayed in Table 1.

I am of the opinion that I have the expertise to carry out a qualitative assessment of the benefits of the proposed development as well as the costs of the loss of HPL land. In doing so I have drawn on my professional experience, that of my colleagues who are environmental consultants and of the developer.

[1] MFE (2023): National Policy Statement for Highly Productive Land: Guide to implementation.
[2] Market Economics (2020): National Policy Statement – Highly Productive Land. Cost-Benefit Analysis

Table 1: Costs and Benefits both tangible and non tangible assessed in this exercise.

Category
Environmental
Carbon sequestration
Support habitat
Water filtration
Flood mitigation
Nutrient
Climate regulation
Air and water quality
Biodiversity conservation
Social / Cultural
Sense of belonging and place
Social fabric
Food security
Spiritual value
Economic
Income
Employment
Flow on impacts to the wider community

1.1 Description of the Site

The site is made up of eleven different titles of varying sizes and has a site area of approximately 49.70 hectares. The site has frontages to Ashley Gorge Road (east) and Bay Road (west) and is situated on the Northern Boundary of Oxford township. The site has an existing dwelling and associated structures and the remnants of the old dairy milking shed located near the north -eastern corner of the site.

The remainder of the site is in pasture with some amenity planting around the existing buildings, along the bed of the creek and along some of the fence lines. The site is used for residential purposes and the growing and making of silage over the summer and some grazing of dairy heifers through the late summer autumn period with no stock grazed over the winter period. Under the Waimakariri Operative District Plan (ODP) the site is zoned

General Rural, and under the Waimakariri Proposed District Plan (PDP) the site is zoned Large Lot Residential Overlay (LLRO).

The site and its surrounds are shown in Figure 1. The area to the South and East of the site (south of Victoria Street) is zoned Large Lot Residential with a wide range of existing lot sizes and associated dwellings (1000m^2 up to 1 ha). There is also the existing Karadean Rest Care Home on the south side of Queens Street. Immediately to the North, North East and West there is a large area of lifestyle block development. Further to the West, East and South there are large scale intensive land uses of Dairy and Arable farming while further to the North there is extensive hill country farming and forestry.

Figure 1: The site (25 Ashley Gorge Road depicted in red outline) and the surrounding land uses.

1.2 Productive Capacity as HPL

The productivity of the site is determined by a number of factors including the nature of the soils, the climate and the scale of the operation.

1.2.1 Land Use Capability

The data which is available on Land Use Classification (LUC) in the New Zealand Land Resources Inventory Series (LRIS) portal[3] is mapped at the 1:50,000 level and it is shown in Figure 2. While I believe the information on the land use classification of properties at the scale as represented in the LRIS data is not generally suitable to determine the actual land use classification at the field, or the site, scale given the nature of the soils present on the

[3] https://ourenvironment.scinfo.org.nz/maps-and-tools/app/Land%20Capability/lri_luc_hpl

site I am comfortable with the classification of the site as approximately 35 ha is LUC 2, approximately 14 ha is LUC 3 and approximately 1 ha is unclassified / other.

Figure 2: LUC class of the site. (Green is Class 2, light Green is Class 3).

In the NPS-HPL all land which is classified as LUC 1,2 and 3 is automatically considered to be HPL in the first instance which means that approximately 49 ha of the site is classified as HPL.

1.2.2 Soils

In Figure 3 I have included a screen shot of the data held in Manaaki Whenua Landcare Research's SMap online portal of the soils of New Zealand[4] of the site.

[4] https://smap.landcareresearch.co.nz/maps-and-tools/app/

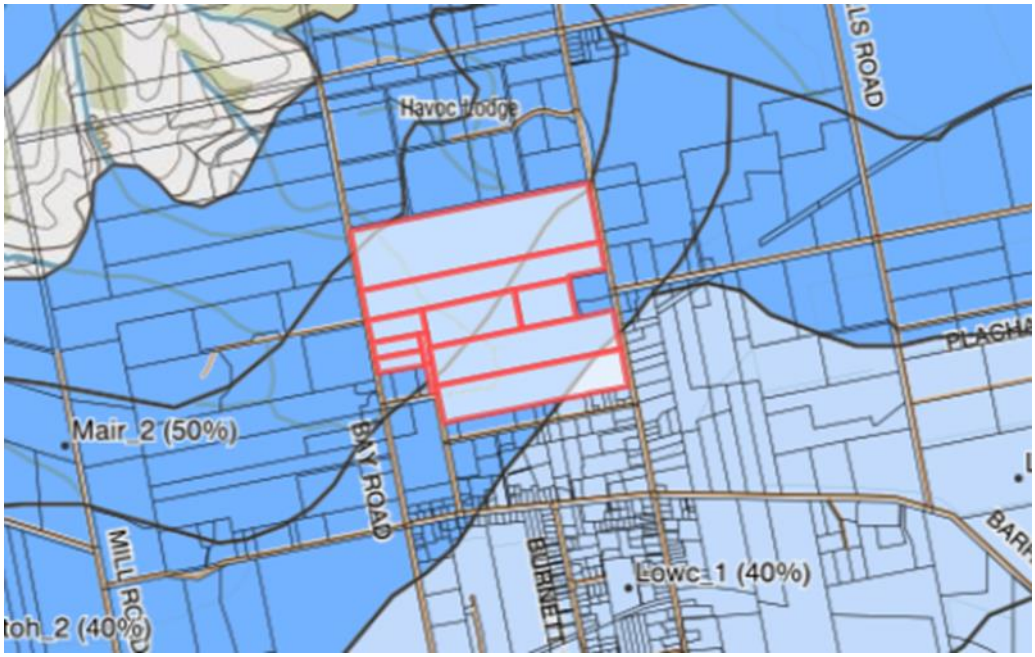

Figure 3: SMap record of the soils on the site. (SMap)

By reference to the SMap data the range of soil types on the site in terms of both the percentage and the area are shown in Table 2.

Table 2: Area and percentage of the soils on the site.

Soil Name	Area (ha)	Percentage
Mairaki_2a.1	13	25
Waitohi_2a.1	9	18
Claremont_1a.1	9	18
Longbeach_3a.1	7	13
Lowcliffe_2a.1	5	10
Pahau_3a.1	12	16

Definitions of the key soil physical properties that are listed in the SMap soils reports[5] are shown in Table 3.

Table 3: Physical properties of the soil types present as listed in SMap.

Soil Name	Mairaki	Waitohi	Claremont.	Longbeach	Lowcliffe	Pahau
SMap Name	Mairaki_2a.1	Waitohi_2a.1	Claremont_1a.1	Longbeach_3a.1	Lowcliffe_2a.1	Pahau_3a.1
Depth Class	Moderately deep	Moderately deep	Moderately deep	Deep (> 1 m)	Shallow	Deep (> 1 m)

[5] https://smap.landcareresearch.co.nz/maps-and-tools/factsheets/

	(45 - 80 cm)	(50 - 100 cm)	(40 - 80 cm)		(20 - 45 cm)	
Rooting Depth	50 - 80 (cm)	60 - 80 (cm)	40 - 85 (cm)	60 - 90 (cm)	Unlimited	Unlimited
Depth to stony layer	No significant stony layer.	Moderately deep	No significant stony layer.	No significant stony layer.	Shallow	No significant stony layer.
Texture profile	Silt over clay	Silt over clay	Silt	Silt over clay	Silt	Silt over clay
Topsoil stoniness	Stoneless	Stoneless	Stoneless	Stoneless	Slightly stony.	Stoneless
Drainage class	Poorly drained	Poorly drained	Poorly drained	Poorly drained	Imperfectly drained	Poorly drained
Profile Available Water (0 to 100 cm)	Moderate to low (82 mm)	Moderate (93 mm)	Moderate (96 mm)	Moderate to high (136 mm)	Moderate (107 mm)	Moderate (105 mm)

What we can determine from Table 3 is that the Mairaki, Waitohi and Claremont soils, which make up 61% of the site are moderately deep silts over clay which are all poorly drained with moderate Plant Available Water (PAW which is an indication of the soils ability to hold moisture). These soils are theoretically capable of some horticultural and arable land uses and pastoral land uses. The Longbeach and Pahau soils, which make up 29% of the site are deep silts over clay which are poorly drained and have a moderate to high PAW. These soils are theoretically capable of some horticultural, vegetable and arable land uses and pastoral land uses. The Lowcliffe soils, which make up 10% of the area are shallow silts which are imperfectly drained with a moderate PAW. These soils are theoretically capable of pastoral land uses.

1.2.3 Constraints on Land Use

There are a number of significant constraints which have a bearing on the highest and best land use on the site.

Scale

While the site is close to 50 ha this smaller scale limits the range of land uses possible. It is too small to be a dairy farm because there isn't the scale which is necessary to achieve the

economies of scale which are required in the modern Dairy farm. The average size of a dairy farm in the Waimakariri District is 206 ha with 673 cows[6]. The available land on the site is a quarter of the size of the average farm within the District.

The rotations which are required in the vegetable and arable land uses which are necessary to combat the build up of pests and diseases and to provide for both depletive and restorative crops mean that there is practically not enough scale to operate a complete rotation on the site. For example the MPI Farm Monitoring Arable model, which is representative of that class of land is 300 ha.

While the scale of the site is sufficient for it to run livestock land uses it is not of sufficient scale to be a standalone operation. For example, the representative Sheep and Beef Monitoring farm for the Canterbury Breeding and Finishing Model is 385 ha. For livestock to be a viable operation the site would have to be farmed in conjunction with additional land.

Drainage

All of the soil types that have been identified as being on the site are classified as poorly drained. The three soils that make up 61% of the site are classified as moderately deep with a corresponding depth of a pan which limits the potential for root penetration. This means that horticulture, that is permanent crops, and many of the vegetable cropping options are either not available or are limited to the summer months when the limitations which are caused by the wet nature of the soils are not as prevalent as they are in the winter months.

Autumn sown arable crops would not be practical which would limit the potential range of arable crops to spring sown crops.

Location

The location of the site which is immediately surrounded by urban and lifestyle development means that it is essentially isolated from being able to be incorporated into a larger farming operation by both the distance required for a larger farming operation to access the land and the fact that it would have to be accessed via an urban environment which would mean that travelling through with livestock or large machinery would not be an attractive proposition for a larger farmer.

Reverse Sensitivity

There is considerable opportunity from both the urban and the lifestyle block neighbours to create reverse sensitivity issues for any higher intensity land uses than those currently farmed on the site.

It is my opinion that because of the constraints on land use options on the site that the highest and best land use is Dairy Support which includes the making and sale of silage in the summer and the grazing of rising one and two year old heifers but not the winter grazing of dry Dairy cows.

1.3 Proposed use of the site if it were to be rezoned.

I understand that the proposed use of the site if it were to be rezoned would be for urban development as shown in Figure 4.

[6] LIC – DairyNZ (2023): New Zealand Dairy Statistics 2022 - 23

Figure 4: The proposed urban development of the site (concept only).

The proposal is to develop around 80 lots ranging from 3,010m^2 to 1.21 ha with an average of 5,062m^2.

The Outline Development Plan which is shown in Figure 5 shows the principal subdivision features (roading, waterways, access points etc).

Figure 5: Outline Development Plan.

2 Assessment of the benefits of the Proposed Rezoning Land (PRL) and the Cost of the loss of HPL.

In all cases where it is necessary to calculate the area of the site the total area (49.7 ha) has been used

2.1 Environmental

Our assessment of the benefits of the PRL and the costs of the loss of HPL from an environmental perspective are shown in Table 4.

Table 4: Assessment of the benefits of PRL and the costs of the loss of HPL from an environmental perspective.

Assessment Category	Benefits of PRL	Costs of the loss of HPL
Carbon sequestration	It is proposed that the riparian margins of the two creeks will be planted in native plant species and that some of the area of the total green network will also be planted in native species. This planting will add considerably to the potential for the site to contribute to carbon sequestration. The conversion from HPL land to urban will remove the carbon emitted from any animals present.	
Support habitat	The planting of the stream margins and the establishment of a green network will considerably enhance the site's ability to support habitat as will the individual curtilages of the urban sections which will all have some degree of permanent habitat development. The planting of the riparian margins will improve the habitat for native species.	
Water filtration	Water filtration will be enhanced by the fencing off and planting of the riparian margins which will benefit the environment by filtering sediment and nutrients before they enter waterways. Protected riparian planting will also help prevent stream bank erosion.	

Flood mitigation	The provision of the riparian strip will have the benefit of contributing to flood mitigation as will the diversion of run off water from the sections into appropriate sized water channels which will then run into the three designated stormwater management areas which will be a significant benefit for flood mitigation.	
Nutrient	The change from rural to urban will have the benefit of the removal of animals from the site which will mean that there will be the reduction of Nitrogen leaching into waterways and the complete reduction of the runoff of Phosphate applied as fertiliser into waterways.	
Climate regulation	The plantings which will occur in the urban development will enhance the site's ability to assist climate regulation by both carbon sequestration and providing a degree of mitigating the impacts of severe flooding and wind shear.	
Air and water quality	Water quality will benefit from the proposed urban development by the riparian planting, the establishment of the green network and the diversion of runoff of water from the sections.	Air quality will be diminished by the conversion from rural land uses to large lot urban development slightly because there will be more urban activity which has the potential to diminish air quality.
Biodiversity conservation.	Biodiversity and conservation will benefit from the riparian planting, establishment of the green network and from the plantings that will occur in the curtilages of the sections.	

2.2 Social / Cultural

Our assessment of the benefits of the PRL and the costs of the loss of HPL from a social and cultural perspective are shown in Table 5.

Table 5: Assessment of the benefits of PRL and the costs of the loss of HPL from a social and cultural perspective.

Assessment	Benefits of PRL	Costs of the loss of HPL

Category		
Sense of belonging and place	There will be an increase in the positive effect of the sense of belonging and place on the site with the conversion from the rural use which just has one household to that of multiple house holds which will house multiple people per household which will all have a positive sense of belonging and place.	
Social fabric	The social fabric of the site and the wider Oxford township will be enhanced by the additional population that this site will provide which will provide a wider range of social aspects to the community.	
Food security		There will be a very small loss of food security from the loss of HPL land but as the site is assessed as only being suitable for dairy support activities the loss of this capacity is considered to be minimal.
Spiritual value	As far as we are aware there are no cultural heritage sites on or near the site therefore this category is judged as having no impact on either of the considerations.	

2.3 Economic

Our assessment of the benefits of the proposed LLR development enabled by LLR rezoning and the costs of the loss of HPL from an economic perspective are shown in Table 6.

The income data that is presented is shown as the Net Present Value which is the net income stream over the next 30 years which has been discounted at 4%. The data in the Benefits of LLRZ should be considered as indicative as they have been taken from the report prepared by Urban Economics[7] and they use common development costing data and the data in the Costs of the loss of HPL has been provided by myself and the assumptions and workings of that are attached as Appendix A.

Table 6: Assessment of the benefits of LLRZ and the costs of the loss of HPL from an economic perspective.

[7] Urban Economics (2023): Economic Cost-Benefit Analysis of proposed Plan Change at 7 Munro Road Pokeno.

Assessment Category	Benefits of LLRZ	Costs of the loss of HPL
Income		
Construction	47.7 m	
Income ongoing	58.1 m	$1.186 m
Employment (FTE)Construction	113	
Employment ongoing.	20	0.44
Flow on impacts to the wider community	Because the Income generated is much higher from the LLRZ than from the HPL the resultant flow on impacts will be the same order of magnitude, higher for the District, Regional and National economies which is a significant benefit for the LLRZ.	

2.4 Summary

It is my opinion that the environmental, social, cultural and economic benefits of rezoning the site at 25 Ashley Gorge Road Oxford outweigh the long-term environmental, social, cultural and economic costs associated with the loss of highly productive land for land-based primary production and meets the requirements of Clause 3.6 (1) (c) of the NPS-HPL.

Appendix A: Calculation of economic factors as regards to the loss of HPL.

Income

I have assessed that the highest and best land use is dairy support. In calculating the income possible I have used The AgriBusiness Groups dairy support model which reflects the average economic performance of a dairy support operation within the Waikato District. A summary of that performance on a per ha basis is shown in Table 7. I have then multiplied the per ha data by 4.8 ha to show the annual income possible from the HPL land on the site which is shown in Table 7.

Table 7: Calculation of the income for the loss of HPL.

	Per ha	For the whole 4.8 ha
Gross Farm Revenue	3,860	191,842
Farm Working Expenses	2,126	105,662
Earnings Before Interest and Tax	1,733	86,130

I then populated the EBIT across a 30 year lifespan and discounted it at a discount rate of 4% to get a Net Present Value of $1.186m.

Employment

I have assumed that the owner of the dairy support property is one FTE and then that the wages paid ($4,747) are divided by the weighted average incomes in the dairy sector[8] ($67,251) mean that an additional 0.07 FTE is employed giving a total annual employment of 1.07 FTE's. If we then divide that figure by the size of the representative property (120Ha) to get FTE's / ha which is then multiplied by 49.7 ha to give the figure that 0.44 of an FTE would be lost if the HPL was lost.

[8] https://www.fedfarm.org.nz/FFPublic/FFPublic/Media-Releases/2022/Federated_Farmers_-_Rabobank_survey_shows_continued_strong_growth_in_farm_staff_pay.aspx