

Assessment of land at 6 Wroots Road and Lot 2-3 Deposited Plan 68573, Christchurch for its Potential to be Developed under 3.10 of the National Policy Statement for Highly Productive Land

1 Background

The AgriBusiness Group has been asked by Franco Farms Ltd to support the Fast Track application of land at 6 Wroots Road (PT LOT 1 DP 1537-BAL AT 23562-06900) and 101 Sabys Road (Lots 2-3 Deposited Plan 68573) by outlining how the site meets the criteria of Clause 3.10 Exemption for highly productive land subject to permanent or long-term constraints of the National Policy Statement for Highly Productive Land (NPS-HPL).

The site is made up of two titles which require an NPS-HPL assessment – 6 Wroots Road and 101 Sabys Road.

1.1 Description of Site

6 Wroots Road is shown in Yellow and 101 Sabys Road, Christchurch is shown in Red on Figure 1. To the North of the site are numerous lifestyle blocks. To the East and North East of the site is residential housing. To the South and West of the site is Halswell River and further lifestyle blocks.

The site holds no existing irrigation take and use consent and has no irrigation infrastructure.



Figure 1: The site (in red & yellow) and surrounding area

1.2 Land Use Capability

The data, which is available on Land Use Classification (LUC) in the New Zealand Land Resources Inventory Series (LRIS) portal,¹ is mapped at the 1:50,000 level and is shown in Figure 2. Figure 2 shows the site consists of 48 ha of LUC 2 and 1 ha of LUC 1 land.



Figure 1: LUC class of the site

In the NPS-HPL all land which is classified as LUC 1, 2 and 3 and which is zoned as Rural is automatically considered to be HPL. It is not land 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

1.3 Consideration of the NPS-HPL

Clause 3.10 in the NPS-HPL Exemption for highly productive land subject to permanent or long-term constraints states that:

- (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

¹ https://ourenvironment.scinfo.org.nz/maps-and-tools/app/Land%20Capability/lri_luc_hpl

- (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):
 - (b) 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.

In providing this report I have taken account of the “National Policy Statement for Highly Productive Land Guide to Implementation”² dated March 2023. I am aware that the information provided in the guidance document does not have any statutory weight, nevertheless it is helpful in understanding the approach taken in forming and wording the NPS-HPL.

I have adopted the three tests (1a, b & c above) which the proposal must meet to determine whether the site has permanent or long-term constraints for which exemptions apply, and I have analysed each of the tests set out in Clause 3.10 of the NPS-HPL.

I have evaluated test 1(a) in two steps

The first step requires an assessment of whether there is a permanent or long-term constraint on the land that will be present for at least 30 years. Having listed and analysed those factors I have then concluded what is the “highest and best” land use. This means that if this land use can be declared as not economically viable then all of the other possible land uses will also not be economically viable.

I have then assessed the second step which indicates that land-based primary production cannot be economically viable for at least 30 years.

The second test 1(b), requires an assessment of whether the granting of this consent would compromise the ability of other HPL land in the district to be used for land based primary production.

The third test 1(c) requires an assessment of whether the benefits of the proposed development outweigh the costs of the loss of highly productive land taking into account both tangible and intangible values. 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 Analysis³ carried out on the NPS-HPL.

In the guide to implementation⁴ it states that “..... *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 that can be weighed up against the full range of costs of the loss of HPL.

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, and that of my colleagues who are environmental consultants.

2 Test 1 (a) - Constraints and Economic Viability

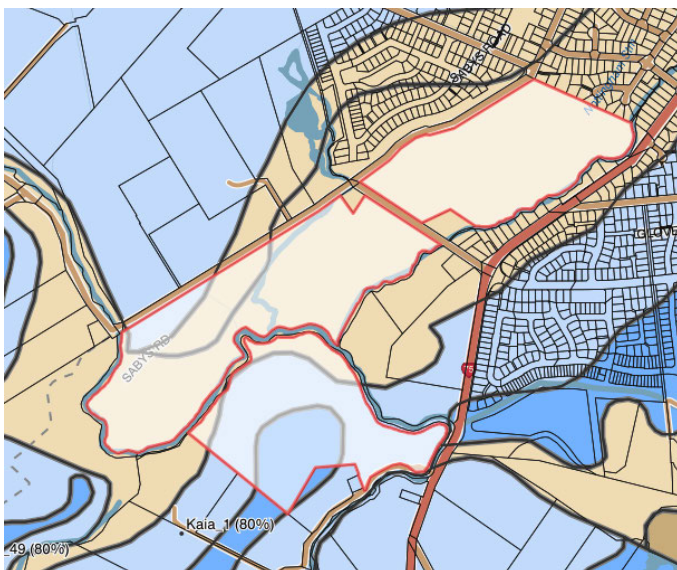
The site has several significant land use constraints.

The productivity of the site is determined by a number of factors including the nature of the soils and the potential scale of any primary production activity.

The site's economic viability⁵ depends on its ability to generate profits from primary production, providing the owners with a sufficient return over and above expenses.

2.1 Soils

In Figure 3 I have included a screenshot of the data held in Manaaki Whenua Landcare Research's SMap online portal of the soils of New Zealand² of the site.



² <https://smap.landcareresearch.co.nz/maps-and-tools/app/>

Figure 2: SMAP record of soils on site (SMAP)

Table 1 lists the soils on the site by sibling description, area and proportion

Table 1: Soils on the site by sibling description, area and proportion

Soil Name	Area (ha)	Proportion (%)
Waim_42a.2	22	46
Waim_40c.2	10	19
Kaia_1a.1	8	16
Tait_20a.1	4	8
Waim_1b.1	2	4
Matpi_4a.1	2	4
Waim_2a.1	1	2
Kaia_3a.1	<1	1

Definitions of the key soil physical properties that are listed in the SMAP fact sheet for the soils that are present on the site are shown in Table 2.

Table 2: Description of soils on the site

Soil Name	Waimakariri	Waimakariri	Kaipoi	Taitapu	Waimakariri	Matapihi
SMap Name	Waim_42a.2	Waim_40c.2	Kaia_1.a1	Tait_20a.1	Waim_1b.1	Matpi_4a.1
Depth Class	Deep (>1m)	Moderately Deep (45-90cm)	Deep (>1m)	Deep (>1m)	Deep (>1m)	Deep (>1m)
Rooting Depth	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited
Depth to Stony Layer	Moderately deep	Moderately Deep	No significant stony layer within	No significant stony layer within	No significant stony layer within	No significant stony layer with
Texture Profile	Loam over Sand	Silt	Silt	Silt over sand	Silt	Silt
Topsoil Stoniness	Stoneless	Stoneless	Stoneless	Stoneless	Stoneless	Stoneless
Draining Class	Well Drained	Well Drained	Imperfectly Drained	Poorly Drained	Well drained	Poorly Drained
Profile Available Water (0-100cm)	High (182mm)	Moderate to High (146mm)	High (227mm)	High (243mm)	High (235mm)	Very high (290mm)

Only soils that make up more than 4% of the site have been expressed in Table 2.

Waimakariri soils make up 71% of the site. These are deep loam over sand and silt soils that are stoneless, well drained and have a moderate to high profile available water (PAW). Kaipoi soils

make up 17% of the site. These are deep silt soils that are stoneless, imperfectly drained and have a high PAW. Taitapu soils make up 8% of the site. These are deep silt over sand soils that are stoneless, poorly drained and have a high PAW. Matapihi soils make up 4% of the site. These are deep silt soils that are stoneless, poorly drained and have a very high PAW.

These soils are theoretically suitable for horticultural, arable and pastoral land uses.

2.2 Scale

The scale of the site presents limitations. 6 Wroots Road is only 14 ha in scale which prevents it from achieving the economies of scale needed to achieve economic viability. 101 Sabys Road is 34 ha in scale of which only approximately 21 ha of the site are zoned rural, as can be seen in Figure 4 (Blue Residential, Yellow Rural).

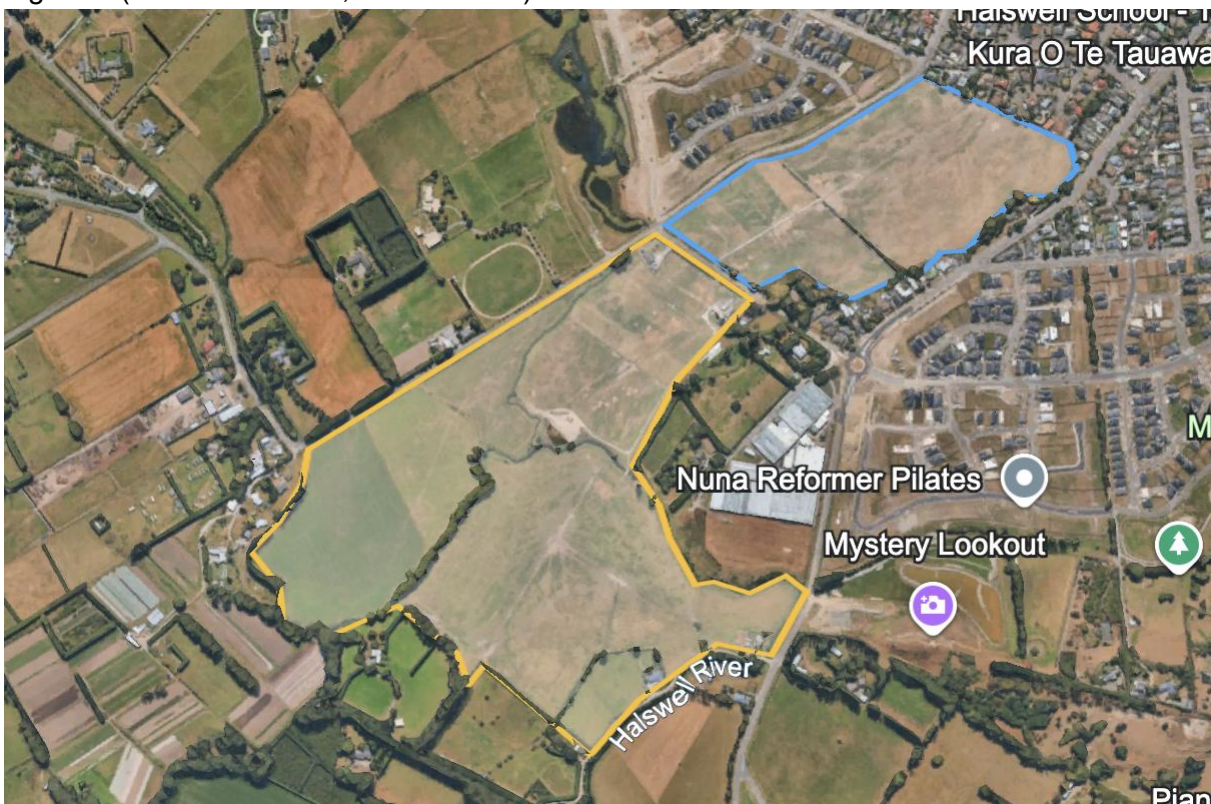


Figure 4: Area Zones Rural (Yellow) and Residential (Blue)

The scale of 21 ha prevents it from achieving the economies of scale needed to achieve economic viability. This scale is insufficient for farm system types such as arable and dairy systems

2.3 Lack of Irrigation Capacity

The site does not currently have the consent required for irrigation capability. The site is within the Selwyn- Waimakariri ground water allocation zone which is currently over allocated for takes to extract irrigation water. This means that for those sites that do not have existing rights in place to access and use irrigation water. It is not possible to gain access to irrigation water unless it is possible to transfer an existing consent onto the property.

Environment Canterbury's (Ecan's) Land and Water Regional Plan section Transfer of Water Permits 4.71 (d) states that;

In an over allocated surface water catchment or groundwater zone, a proportion of the allocated water is surrendered and is not re-allocated, unless there is a method and defined timeframe to phase out over-allocation set out in an applicable sub region Section of this Plan.

In the Christchurch Selwyn- Waimakariri section it states that;

If the transfer is within the Selwyn- Waimakariri Combined Surface and Groundwater Allocation Zones

50 percent of the volume of transferred water is to be surrendered unless:

- (a) The transferred water is to be used for a community water supply; or*
- (b) The transferred water is used, or following transfer will be used, for an industrial or trade process and result in a neutral or positive water balance.*

Even if it were possible to gain access to additional irrigation water by securing the ability to transfer a consent, drilling a well would be required to secure water access, incurring an estimated cost of \$55,260. This does not account for the additional expenses associated with paying for access to half of an existing irrigation consent to be transferred and setting up the infrastructure required to apply the water. It is our opinion that the total cost of achieving access to irrigation water would preclude it from being an economically viable option for the site.

The scale and location of the site is restrictive, meaning the economic advantage of gaining irrigation capacity is limited. A prudent operator would find it more feasible to consider establishing operations on a larger land area. By doing so, the expenses that are incurred in establishing water access and infrastructure could be spread across a greater area of land, ultimately making the cost per hectare more viable.

2.4 Exclusion of Horticulture

The potential for intensive horticultural land use has been considered and it has been rejected for several important reasons including:

- The very high cost of establishment of an intensive horticultural operation on a relatively small site.
- The lack of irrigation capability which is essential for horticultural crops.
- The cold winters limit the potential range of horticultural crops.

2.5 Limitations of Arable

The ability to maximise the productivity of any of the potential arable land uses would require that the land was farmed as part of a larger farming entity and that irrigation capability was available to promote certainty of crop yields.

The block of land would have to be incorporated into a bigger growing operation in order to achieve sufficient scale to enable the landowner to maximise productivity. Additionally, there are no large-scale arable operations in direct proximity, meaning that machinery and equipment would need to be transported through high traffic areas. This makes the site unappealing for existing arable operators.

The site's small scale, lack of irrigation and location makes it an unattractive option for integration into a larger farming operation.

2.6 Pastoral Land Use

It would be theoretically possible for the land to be used for pastoral grazing (sheep and beef and dairy support) however there are several significant constraints on that land use being achieved. The constraints include:

- The costs associated with intensifying the productivity of the site e.g. providing for winter crops, and providing additional supplementary feed from off site, are all too expensive to be justified on such a small scale.
- The fact that the site is unable to be irrigated means that in most years, it would lack sufficient moisture over the summer months to maintain the stocking rate, so there would need to be less livestock during that period.
- The location of the site being so close to residential housing may cause some reverse sensitivity issues if farmed too intensively and cause issues moving stock etc
- The scale of the site is too small to offer a prospective farmer any real advantage in farming the site

In my opinion, the site would not be an appealing option for a farmer looking to expand their pastoral productive land due to its size, location, and absence of irrigation.

2.7 Conclusion

It is my opinion that the highest and best land use would be for small scale lifestyle grazing.

3 Economic Viability

Considering the constraints limiting the site's potential for primary production, the highest and best land use is small scale lifestyle grazing. In order to evaluate the site's economic viability, I've assumed this land use is possible on the 48 ha across the 2 titles which is theoretically available for primary production.

I have used data from B+LNZ's Farm Monitoring, specifically their Class 6 Breeding and Finishing model. This model reflects the range of farming systems typically found on dryland farms in the Canterbury Region that receive 650 mm of rainfall annually. The average size of a Class 6 model farm is 490 hectares.

Table 3 outlines the key financial metrics for this model. The Earnings Before Interest and Tax (EBIT) measure shows the surplus generated from farming activities, which is available to cover interest and taxation and provide a surplus for an owner.

Table 3: Key Financial Metrics of small scale lifestyle grazing (\$/ha)

Lifestyle grazing	
Gross Farm Revenue	1,184
Farm Operating Expenses	716
Earnings Before Interest and Tax	467

If the total 48 ha were available for production, the financial performance would be as shown in Table 4.

Table 4: Financial performance of the 48 ha site. (Total \$)

	Lifestyle grazing
Gross Farm Revenue	56,812
Farm Operating Expenses	34,380
Earnings Before Interest and Tax	22,432

Determining the required amount to achieve a sufficient return and to be economically viable is very subjective. However, a sense check using a return for management of 1.5% of Gross Revenue and interest payments on 40% of the property's capital value at 7% can be used.

The total required to cover these costs would be \$447,732 for the 48 ha site. In comparison, the site can only generate \$22,342, resulting in a shortfall of \$425,300. It's also worth noting that, based on these assumptions, there would be no tax liability, as the site would have a net loss.

It is my opinion that pastoral land use that could potentially be established on the 48 ha site is unable to provide sufficient income to provide for interest, taxation and a return for management as a stand-alone unit therefore, it cannot be considered to be economically viable.

I conclude that the site has permanent and long-term constraints which make it unable to be economically viable under primary production for at least 30 years.

In coming to this conclusion, I have considered 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:

- 1 The alternate forms of land-based primary production are severely constrained by the scale of the site, the sites location and lack of irrigation on the site.
- 2 The economic viability test has been carried out by using the most advanced land-management strategy that is available on the site.
- 3 Alternative production strategies have been rejected because of the severe constraints on the site that limit the ability to adopt them.
- 4 Water efficiency or storage methods are not appropriate to this site because the very small scale would preclude the ability to return the costs of the investment in that infrastructure.
- 5 Reallocation or transfer of water and nutrient allocations is not a viable factor on this site.
- 6 Boundary adjustments, including amalgamations, are not possible because the site is land locked from other economically viable HPL land.
- 7 The scale of the site precludes the block from being leased to another larger farming operation.

4 Test 1 (b) - Compromise the ability of other HPL land in the district to be used for land based primary production

Concerning 1(b) (i), I am of the opinion that the loss of 48 ha of HPL is not significant in the Selwyn District which has been assessed by MPI in 2019 as having:

- 6,522 ha of LUC 1
- 46,111 ha of LUC 2
- 87,927 ha of LUC 3

This gives a total of 140,560 ha of LUC Classes 1-3 (HPL) soils within the Selwyn District. The 48 ha accounts for only 0.03% of the HPL land in the Selwyn District.

There is also 16,856 ha of HPL land in the Christchurch City District, of which the site equates to 0.2% of the total HPL land in the district, which is far from a significant proportion.

In relation to 1(b) (ii), I am of the opinion that the proposal avoids fragmenting large and geographically cohesive areas of HPL. The scale of the area to be lost, comprising 48 ha, is not significant in the context of the surrounding HPL land and will not contribute to additional fragmentation.

In relation to 1(b) (iii), I believe the proposal mitigates potential reverse sensitivity effects on surrounding land-based primary production. This is because much of the surrounding land comprises rural lifestyle blocks, which are unlikely to be the source of concerns relating to reverse sensitivity effects.

5 The Proposal

Figure 5 shows the proposed subdivision. The yellow area shows the medium density housing and grey shows proposed roading connections. The blue area on the proposed plan shows the stormwater reserve and the light blue shows the waterway that will run through the subdivision.



Figure 5: Proposed Subdivision

6 The Benefits Outweigh the Costs

In relation to 1(c) our assessment of the costs and benefits of the proposal is shown in Table 5

Table 5: Costs and Benefits of the Proposal

Category	Costs of the loss of HPL	Benefits of the proposal
Environmental		
Carbon sequestration		Insignificant Change
Support Habitat		Insignificant Change
Water filtration		Insignificant Change
Flood mitigation		Insignificant Change
Nutrient		Insignificant Change
Climate regulation		Insignificant Change
Air and water quality	Insignificant Change	
Biodiversity conservation	Insignificant Change	
Social/ Cultural		
Sense of belonging and place		Insignificant Change
Social fabric		Insignificant Change
Food security	Insignificant Change	
Spiritual value	Insignificant Change	
Economic		
Income		Considerably Higher
Employment		Enhanced
Flow on impacts to a wider community		Enhanced

The net environmental benefits of the proposed subdivision are positive due to a reduction in two adverse effects resulting from land-based primary production: nutrient loss and emissions of greenhouse gases. The reduction of livestock and fertiliser use on the property, likely to occur with the subdivision and creation of the 500 lots. This will reduce nutrient loss and GHG emissions, aligning with climate regulation objectives regionally, nationally and international agreements. Given the small scale of the property, these effects are expected to be minor. There is a likely increase in carbon sequestration caused by vegetation around the individual curtilage areas on each of the 500 sections. This increased vegetation shall also increase habitat support on the site.

Social impacts of the proposed subdivision will likely to be positive. The subdivision is unlikely to impact food security due to the size and limited output that the site would be capable of producing. The subdivision will contribute to increased activity on the site, and additional local expenditure will contribute to increased vibrancy in the community surrounding the site. No spiritual values have been identified on the site. The addition of 500 households on the site will create an increased sense of belonging and community.

The economic impact is positive because, as previously explained, the site's highest and best use for primary production is not economically viable. Effectively transitioning to another economically viable land use will bring positive economic benefits. The subdivision will likely enhance employment in the area as infrastructure is being built and in maintaining the infrastructure long

term. This will likely have positive flow economic benefits to the wider community through additional money being spent in the community.

This leads to the conclusion that the proposed development would result in economic, social and environmental benefits that outweigh the costs associated with the loss of HPL.

7 Conclusion

It is my conclusion that the proposed subdivision of the site meets all of the limbs in the clause 3.10 test and therefore the district councils should be satisfied that this HPL can be subdivided, used or developed for activities not otherwise enabled under clauses 3.7, 3.8 or 3.9.