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Agricultural Productivity Assessment

517 Hamptons Road, Rolleston

Prepared for Deg Tegh Fateh Sikh Society Incorporated

September 2024

This document serves as an update to the Agricultural Productivity Assessment conducted by Agri Intel for this site in November 2023. The findings and conclusions of the previous assessment should be disregarded.

Contents

The information contained in this report has been diligently prepared by the consultants on behalf of Deg Tegh Fateh Sikh Society Incorporated to the best of their knowledge and belief. Every reasonable effort has been made to ensure its accuracy and completeness. However, it is important to note that neither the consultants or Deg Tegh Fateh Sikh Society Incorporated accept any liability, whether contractual, tortious, or otherwise, for any direct, indirect, or consequential loss, damage, injury, or expenses that may arise from the use of the information provided in this report.

1. Executive Summary

The Deg Tegh Fateh Sikh Society Incorporated, the applicant, is seeking approval for resource consent contrust a community hall, along with an entrance road and carparking on Lot 2 DP 580320 & SEC 1 SO 559834 at 517 Hamptons Road, Rolleston. The applicant has owned this land since 2022.

The site is within the Inner Plains zone (Rural Zone) and according to NZLRI, possesses a Land Use Capability (LUC) of 3s-33, classifying it as high productivity under the National Policy Statement for Highly Productive Land (NPS-HPL). For a territorial authority to allow HPL to be subdivided, used, or developed for activities not otherwise enabled under clauses 3.7, 3.8, or 3.9, it must be satisfied that the exemptions in 3.10 of the NPS-HPL apply.

This report was prepared by Charlotte Senior, an Agriculture Consultant with experience conducting Agricultural Productivity assessments in the Selwyn District. The report includes addresses the potential fragmentation of the rural area and the loss primary production land, assessing both the current and potential productive capability of the site in relation to the NPS-HPL, particularly Clause 3.10. The assessment draws on on-site observations, an examination of historic satellite imagery and notable features in Canterbury Maps, as well as knowledge of the agricultural productivity and landscapes prevalent in the surrounding region.

In my view, the proposal satisfies the three tests outlined in Clause 3.10(1) of the NPS-HPL:

- Clause 3.10 (1a) - While there are some reasonably practicable options for improved land management, permanent constraints, such as land fragmentation and reverse sensitivity, make the use of this site economically unviable for at least 30 years, despite its HPL classification. A financial assessment of the most probable land use, cattle grazing and baleage production, shows this is economically unviable. As a standalone unit, the site cannot generate enough income to cover interest, taxes, and a return for management. Consequently, this site is unable to be commercially viable, both now and for the next 30 years.
- Clause 3.10 (1bi) – The land is unable to support economically viable production, therefore there is no significant loss of productive capacity in the district. The proposed 1ha reduction in land for primary production due to the proposed development is insignificant, representing a 0.0007% and 0.0001% loss of HPL in the district and region, respectively. The magnitude of change from the current state is minimal and insignificant.
- Clause 3.10 (1bii) – The surrounding landscape is already highly fragmented, with few large, geographically cohesive land parcels remaining. The site is bounded by busy roads, reducing its operational connectivity with other areas of HPL. Additionally, this proposal does not involve subdivision, maintaining its current configuration without exacerbating fragmentation.
- Clause 3.10 (biii) – The nearby Southern Motorway already imposes reverse sensitivity effects on the surrounding land, meaning the proposed development is unlikely to create additional reverse sensitivity issues for neighbouring primary production.
- Clause 3.10 (1c) - The combined environmental, social, cultural, and economic benefits outweigh the negligible loss of HPL (0.0007% in the district, 0.0001% in the region). The proposed community garden, while not considered to be a highly productive land use, would foster community engagement with food production and emphasise the value of HPL.

In summary, the proposal would result in the loss of negligible amount of HPL land which, while it classified as “highly productive” by the NPS-HPL definition, is constrained by factors that significant limit its productive potential over the long term. It is my conclusion that the proposal on this 6.15 ha site meets all the subclauses of 3.10 test, allowing for non-primary production activities as outlined in the NPS-HPL. Furthermore, it is worth considering that the site's actual productive capacity may be lower than its LUC3 classification suggests. The land, particularly the portion affected by the Southern Motorway development, could potentially be reclassified as LUC 4, meaning the proposal would not impact HPL, and an Agricultural Productivity Assessment might be unnecessary.

2. Site Description

The site is 6.15 ha on Lot 2 DP 580320 & SEC 1 SO 559834 situated at 517 Hamptons Road, Rolleston (**Appendix 1**). The site is split Waterholes Road. **Figure 1** shows the site area.

Figure 1: Property Boundary

The subject area is within the General Rural Zone (**Appendix 2**) of the Partially Operative Selwyn District Plan – Appeals Version (POSDP) which is past the point of challenge in respect of this site. As the NZLRI Land Use Capability maps indicate that the site has a Land Use Capability (LUC) of 3s-33 (**Appendix 3** and **4**) and the site is zoned General Rural under the POSDP, it currently constitutes HPL under the transitional provisions of the NPS-HPL.

Canterbury Maps indicates the presence of a single groundwater well (M36/5125), positioned in between the house and the farm shed. The well measures 58 meters deep and was drilled in 1996 for irrigation and household use. A search of Canterbury Maps for all active Environment Canterbury resource consents shows that there are one active resource consents, for Irrigation Use, as detailed in **Section 3.2**.

The site has flat topography. There are no waterways or wetlands within or surrounding the property.

The site is located between the townships of Rolleston and Prebbleton. Both towns are experiencing rapid growth, marked by new subdivisions and developments that offer a range of amenities and opportunities for residents in the area. Land use in the surrounding area is a mix of semi-rural living, including residential dwellings and lifestyle blocks used for cut and carry, drystock grazing, horse grazing and nurseries. Most of the rural land is low-density small blocks, four-hectare allotments are common. There are about 73

households within 1km of the block, over half of these are from the Devine Acres subdivision which is located 450 metres north-east of the property boundary. Templeton township is about 1.7km northeast of the property. As shown through historic satellite imagery, fragmentation has occurred at and in the surrounding environment of the site over many years, and the built environment has then occurred following fragmentation such as houses, rural lifestyle development and other commercial uses.

2.1. Site Observations

On 9 October 2023, Charlotte Senior (consultant from Agri Intel), conducted a site inspection.

The property is comprised of about 12 small paddocks ranging from about 0.1 to 1.0 ha in size. At present, the site is uses for horse grazing (**Figure 2**) and it includes a single household dwelling, driveway lined with trees, basic cattle yards (**Figure 3**), a sand horse arena, and a farm utility shed. This non-productive area is approximately 1.1 ha, meaning the effective area is approximately 5 hectares.

Figure 2: Current horse grazing. Sand arena in background. Farm shed. Photo taken 9 October 2023, on eastern side of property near the house.

Figure 3: Basic cattle yards located off Hamptons Road

The property features various vegetation, including scrubs and trees within the garden area, and native plantings between two paddocks. An established pine hedge borders the eastern boundary. The fencing, equipped with wooden posts and a few electric wires, is suitable for horse and cattle containment. It requires maintanence (i.e. wire straining). The absence of bottom wires and gaps between wires in some areas makes it currently unsuitable for smaller livestock like sheep (**Figure 4**).

Figure 4: Existing fencing, see no bottom wires. Photo taken 9 October 2023, looking east.

Water troughs are present in the paddocks, however most of these were dry (**Figure 5**), suggesting that these are disconnected to the water supply. It is also unknown if the small paddock on the northern side of Waterholes Road has a reticulated water source from the main block following the Christchurch Southern Motorway development. It is unlikely there is piping under the road, and the water source is connected to the main property. A stock water source would need to be established for reliable livestock grazing.

Figure 5: Water trough needs to be connected. Fencing maintenance needed to tighten wires. Photo taken 9 October 2023.

Pasture is lacking in vigour, possibly indicating acidic soil fertility and old pastures. The soil fertility appears suboptimal, shown by the positive pasture response to nutrients within stock urine patches (**Figure 6**). The removal of alkaline minerals such as calcium, and magnesium, through hay or baleage making, or absorption by grazing animals over time, without using fertiliser to optimise soil fertility, could have contributed to this condition. There have been no recent fertiliser applications.

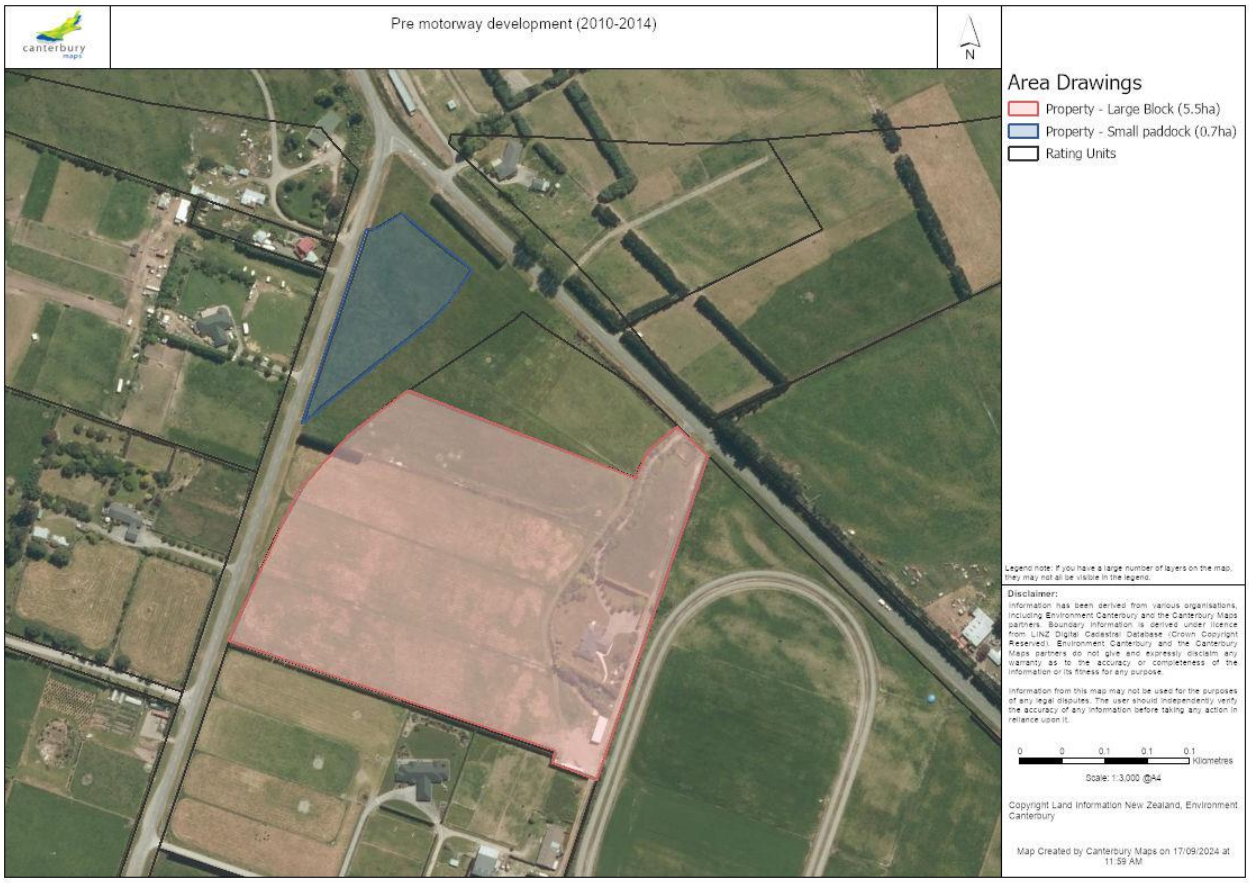
Figure 6: A paddock showing positive respond to stock urine patches. Photo taken 9 October 2023, looking west.

2.2. Historic Land Use

We have reviewed the historic satellite images on Canterbury Maps and Google Earth to validate previous land use. The block appears to have always been pastoral land use, primarily stock grazing and baleage making. Notably, there is no obvious signs of cropping activities, or moderate to high stock grazing intensity. Between 1940 and 1980, the property had two paddocks. In the early 1980s, the household dwelling was constructed, and since 2004, the number of paddocks has increased, primarily for stock grazing, likely cattle. Baleage is produced during late spring and summer and stored to be fed to livestock, especially during winter. Developments include establishment of a cattle yard and a farm shed in 2008 and the development of a sand horse arena and small horse paddocks with an internal laneway in 2020. Despite the presence of an irrigation consent, there are no apparent signs of irrigation usage. Notably, during the summers of 2017 and 2019, the property and its surrounding areas appeared notably dry relative to irrigated areas of other nearby properties.

From 2016 to 2019, the Christchurch Southern Motorway development occurred, which resulted in Waterholes Road splitting the property into two portions (**Figure 6**). The block near the motorway was used to store soil or substrate, as indicated by the large mounds and machinery present on historic satellite images.

Since the property was purchased in 2022 it has been used for grazing horses.



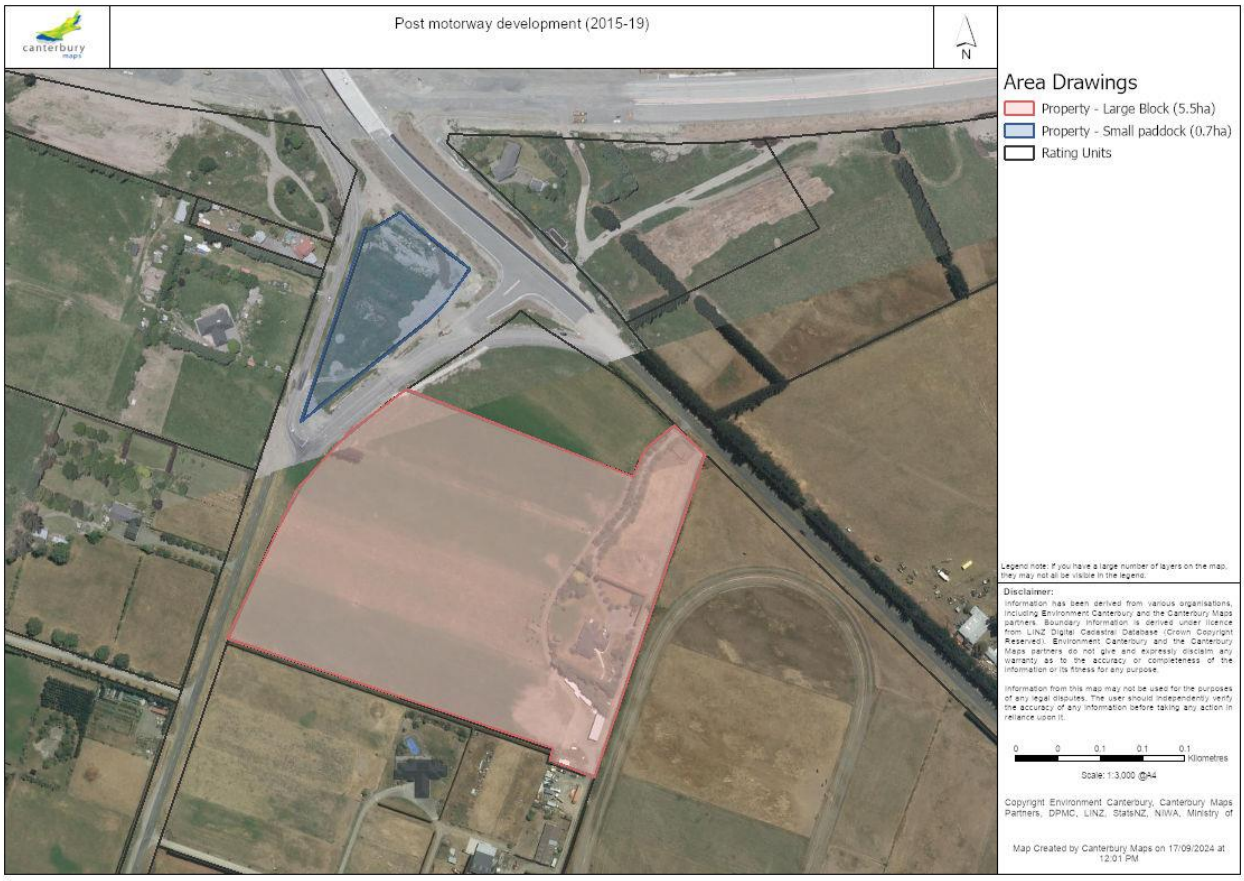


Figure 6: Pre and post Christchurch Southern Motorway development. Source: Canterbury Maps.

3. Productivity and Physical Constraints of the Land

Productive capacity, in relation to land, is defined in Clause 1.3 of the NPS-HPL as:
…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

3.1. Physical Characteristics - Soils and Land Use Capability

According to S-Maps, the site features a shallow Eyre soil characterised by shallow depth, an extremely gravelly root barrier, and well-drained characteristics making it susceptible to dry soil moisture conditions, particularly during summer. The soils have a high nitrogen leaching vulnerability. **Table 1** provides more details on the dominant soil type. In accordance with the LUC classification (3s-33), *the soil properties in the rooting zone (shallowness, stoniness, low moisture holding capacity and low fertility)* are the dominant limitation to on the sites productive capacity, thereby influencing its suitability for specific land uses.

Table 1: Dominant Soil type. Source: S-Maps Database

Dominant Soil (S-Maps Ref)	Sibling Name	Texture	Depth	Drainage	Nitrogen leaching risk	Profile Available Water (0-60cm)
Eyre_2a.1	Eyre	Shallow loam	Shallow (20-40cm), extremely gravelly root barrier	Well drained	Medium	119

While an independent Land Use Capability Assessment was not conducted, the groundwater well (M36/5125) drilling log indicates grey sandy gravel soil from depths of 30cm to 35m. A search of the drilling logs of nearby bores shows the limited topsoil depth is typical for bores in the local area. This suggests that the land would have limited suitability for moderate to deep rooted horticulture and arable crops.

As mentioned in **Section 2.2**, the Christchurch Southern Motorway development resulted in Waterholes Road splitting the property into two portions. The small paddock (0.7ha) near the motorway was used to store soil or substrate, meaning the productive capacity of this paddock may be lower than what its default LUC classification suggests.

3.2. Legal and Land Use Constraints

The property's average annual rainfall is about 550 mm, insufficient for sustaining high-yield crops. Further, the soil is characterised by shallow depth, an extremely gravelly root barrier, and well-drained characteristics, which means the land is subject to periods of moisture stress. Therefore, without irrigation, the base stocking rate of the soil is relatively low.

An active irrigation consent (CRC241508) is in place, valid until 2030, allowing a maximum take of 10 litres per second, not exceeding 3,456 cubic metres in any 10 consecutive days and 34,800 cubic metres per annum. However, the current owner has not utilised this consent, and no irrigation infrastructure, such as an irrigation system, exists on the property. It is also likely that irrigation was either not used or not

effectively applied by the previous owner, as historic satellite imagery from the summers of 2017 and 2019 shows the pasture is notably dry compared to adjacent irrigated areas. Establishing irrigation capability would necessitate irrigation system infrastructure, estimated at $3,000 to $15,000 per hectare ($15,000 to $75,000 total across the effective area (5ha)) (depending on the type of infrastructure chosen[1]). While the lack of existing infrastructure and the associated costs pose a challenge, developing an irrigation system remains feasible. Implementing such a system would alleviate moisture stress and improve the productive potential of the land but would require financial investment.

The irrigation consent requires that water be taken exclusively from bore M36/5125. The Christchurch Southern Motorway development in 2017-2019 resulted in Hamptons Road splitting the property into two portions. To the knowledge of the property owner, no piping was installed from this bore beneath the new road during or after the motorway construction. Therefore, it is highly likely that the small paddock (0.7ha) on the northern side of Waterholes Road cannot be irrigated.

Given that the Selwyn-Waimakariri groundwater catchment is overallocated, if the irrigation consent is not used over the next six years, there is a risk of losing part of the consented volume if evidence of its use and necessity is insufficient. When the irrigation consent is due for renewal in six years, Environment Canterbury will assess the actual historic water usage. Therefore, consistent use of the consent will be important to retain the full allocation.

3.3. Land Use Constraints – Fragmentation

The site itself has been fragmented in recent years by the development of the Christchurch Southern Motorway, which has split the property into two portions via Hamptons Road. This division creates additional challenges for efficient land management and productive use, such as the ability of the small paddock to access the bore water, stock crossings and machinery operating in a small triangular paddock.

The site is situated within a highly fragmented landscape, with few large, contiguous land parcels (**Appendix 5**). The immediately neighbouring parcels are no larger than 14 hectares, and the predominant land use is rural lifestyle blocks rather than farms, limiting the efficiency of primary production. The prospect of consolidating surrounding parcels into a large, contiguous farming unit is highly improbable. Doing so would require negotiations for land sales or lease agreements with multiple owners, coupled with potential reverse sensitivity issues. The high capital value of the surrounding land ($90,000 to $275,000 per hectare) makes agricultural use even less feasible from a commercial standpoint of a potential lease, as discussed in **Section 5**. Additionally, the Christchurch Southern Motorway permanently restricts the integration of the subject site with northern land, further limiting the possibility of achieving the economies of scale needed for an efficient farming operation.

The existing fragmentation significantly hinders the productivity potential of the land; the more fragmented the High-Productive Land (HPL) is, the more challenging it is to implement land-based primary production. As outlined in the Section 32 report for the NPS-HPL[2], *While the fragmentation of land ownership is legally reversible, in practice this is not common as a property's value generally increases when it is converted to a rural lifestyle property. As a consequence, fragmentation of HPL generally results in the permanent loss of that*

[1] Systems with low development costs, such as k-line sprinklers, have more limitations, such as longer return periods, higher labour intensity and potential damage to crops when moving them.
[2] Page 29, National Policy Statement for Highly Productive Land: Evaluation report under section 32 of the Resource Management Act

land for land-based primary production. Fragmented ownership is well documented as a hindrance for intensive land use productivity.

In summary, the site's productive capacity may be lower than what its default LUC classification suggests, due to the highly fragmented landscape.

3.4. Land Use Constraints - Reverse Sensitivity

The agricultural productivity of the site is affected by reverse sensitivity issues due to its proximity to growing residential areas. The site is located between Rolleston and Prebbleton, both of which are expanding with new subdivisions and amenities. Approximately 73 households are within 1 km of the site, with over half in the Devine Acres subdivision, just 450 metres northeast of the property. Templeton is about 1.7 km away. This proximity to residential developments amplifies the reverse sensitivity issues, as nearby residents are more likely to raise complaints about standard farming activities, such as noise, odour, and dust.

Normal farming operations, such as the use of machinery, spraying, fertilisation, and burning, generate noise (especially outside typical residential hours), odours from livestock and agricultural activities, and air pollution, such as dust and smoke, which residents may find objectionable. This pressure can lead to farmers modifying or reducing these activities, limiting the land's productivity.

The surrounding area consists of small blocks of 2.8 to 14 hectares, which are typically farmed to a low intensity using a conservative farm system, avoiding the potential for reverse sensitivity conflicts. However, adapting farming schedules to avoid disturbing residents creates inefficiencies, limiting both current productivity and profitability.

While mitigation efforts like landscaped buffers could help, they would further reduce the land available for farming. As a result, the site's current and future productive capacity is constrained, and its long-term viability as a farming unit is increasingly at risk due to urban expansion.

4. Land Use Productivity Assessment

Several potential land use options were assessed, including dairy farming, arable and horticulture, baleage production, and drystock grazing. The current land use, horse grazing, is not considered to have agricultural productivity, as their primary purpose is recreational, sporting, and entertainment-related, particularly in horse racing. They are not raised for food production or traditional agricultural purposes. Therefore, they have been excluded from this productivity assessment.

Reasonably practicable options that could result in the HPL being retained for land-based primary production were assessed for each land use, by evaluating the options listed in Clause 3.10(2)(a) – (g).

4.1. Land Use Options

4.1.1. Dairy Farming

This land has never been used for dairy farming and several factors make it extremely improbable for such use:

- Lack of economies of scale - The land's size could only support only around 18 dairy cows (at an optimistic 3.6 cows/ha on the effective 5 hectares), severely lacking the efficiency scale required. The

costs associated with building a cowshed, effluent infrastructure, constructing a stock underpass under Waterholes Road, and compliance for a smaller property, would be prohibitively expensive.

- Lack of supply - Fonterra and other large milk producers would not allow a farm of this small scale to supply, necessitating operation in a bouquet town supply setting, which would require considerable marketing.
- Reverse sensitivity - The noise and odour from milking early mornings and effluent management would lead to reverse sensitivity effects in the surrounding areas, with over 70 households located within 1km of the property.

I consider these constraints to be significant and permanent, with no reasonably practicable options to overcome them to allow dairy farming on this land. Dairy farming would also require significant capital development, such as efficient irrigation infrastructure, capital fertiliser and reticulated water supply maintenance, however this is not considered a permanent constraint.

4.1.2. Horticultural and Arable Land Use

There is no historical evidence horticulture or arable land use on this property, and several significant, permanent limitations exist:

- High establishment costs and reverse sensitivity issues: Establishing a small-scale horticultural or arable operation is costly. To maximise productivity and efficiency, the block would need to be part of a larger operation, which is unlikely due to the challenges of the fragmented landscape and negotiating land sales or leases with multiple owners. Additionally, reverse sensitivity from rural lifestyle neighbours could limit farming activities, making investors more likely to seek alternative locations.
- Small size and inefficiency: Arable and horticulture rotations involve alternating the types of crops grown on land from season to season. This practice is important for maintaining soil health, reducing pest and disease buildup, and optimising nutrient use. Effective crop rotations require larger land areas for sustainability, however the fragmented surrounding landscape makes this impractical. Small-scale operations struggle with the economics of machinery ownership, and due to the small size, contractor timing can be very inconsistent or the establishment fees (cost of the contractor to turn up) make intensive land practices prohibitively expensive.
- Cold winters: The region's cold winters restricts the range of crops that can be grown, limiting horticultural potential.

I also consider the site's soil type to have moderate permanent limitations, as the dominant LUC Class 3 suggests (**Appendix 4**). The ideal soil type for horticulture and arable land use is a deep, fertile loam with moderate to high water holding capacity. However, the shallow, well-drained soil on this property is prone to soil moisture deficits, hindering crop growth, especially during summers. While investment in irrigation infrastructure would alleviate some issues, it doesn't overcome the constraints posed by shallow topsoil (30cm), which limits deep-rooted crops and cultivation methods.

The remoteness of the site to processing facilities also adds to a logistical and financial burden. Transporting large machinery and equipment through a developed area with heavy traffic to manage a small site is also challenging and inconvenient. However, I consider these factors a minor limitation.

In summary, in my opinion, the small size, fragmented landscape, reverse sensitivity and environmental limitations present significant and permanent constraints, making horticulture and arable land use inefficient and economically unviable on this site for the next 30 years, even with irrigation investment.

4.1.3. Pastoral Land Use - Drystock Grazing and Cut and Carry

The property has been historically used to graze beef cattle and making baleage. Cattle yards were built in 2008 for ease of transporting cattle to and from the property. The paddocks are well-sized grazing management, but there are permanent limitations to pastoral land use at full productivity, as follows:

- Busy roads: Livestock prefer to graze busy roadside boundaries for short durations and are likely to rest further away from the road. Crossing the busy Waterholes Road to access the small paddocks poses safety concerns, and constructing a stock underpass would be cost-prohibitive. This is a permanent constraint.
- Uneconomical machinery ownership: Machinery ownership on this small block is uneconomical, however the lack of critical infrastructure limits the efficiency of the pastoral land use. Relying on contractors for tasks like fertiliser application and baleage production may impact production, as contractor timing can be very inconsistent or the establishment fees can make intensive land practices prohibitively expensive. Further, without a tractor or feeder for distributing baleage to livestock, managing the stock becomes labour-intensive and inefficient. Sharing resources with neighbouring properties is unlikely due to the existing rural lifestyle land use and significant fragmentation of neighbouring properties. These properties are small-scale, focusing on lifestyle rather than commercial agriculture, and typically lack the necessary infrastructure for efficient farming operations. Additionally, their small scale and low return on investment further limit their capacity to invest in essential farming infrastructure, often resulting in a "make do" approach with minimal resources. This restricts their ability to engage in more efficient and productive farming practices, reducing the feasibility of any collaborative efforts to enhance agricultural operations in the area.
- Regulatory constraints: NES-F regulations prohibit the site from increasing (introducing in this instance) intensive winter grazing of forage crops or introducing dairy support stock (e.g dairy heifers) without consent from Regional Council. This is particularly important for this site which does not have high baseline nutrient losses, limiting the site's ability to support high-productivity pastoral land uses. Further, without winter forage crops, maintaining livestock through the winter would require significant supplementary feed, adding further challenges.

In my opinion, the property is not currently operating at its maximum productive potential for pastoral land use and substantial development would improve productivity. This includes installing irrigation systems, establishing new pastures, ensuring there is a reticulated stock water system to all paddocks, and applying significant amounts of capital fertiliser. The existing fencing and handling facilities would need to be upgraded to be suitable for grazing small livestock, such as sheep. However, while these improvements are possible, the busy roads, uneconomical machinery ownership, and regulatory constraints will remain permanent limitations to achieving full pastoral productivity.

4.1.4. Most Suitable Land Use

Considering various elements, it is my opinion that the most probable agricultural use for this property is small-scale pastoral land use (livestock grazing and baleage making). Given the small scale of the site impeding the ability to graze a considerable number of livestock and act as an external grazier (for example third-party dairy grazing of replacement heifers or dry cows), I consider beef steer finishing the most probable livestock enterprise.

5. Financial Viability

Considering various elements, the most probable use for the land parcels aligns with its historic utilisation, specifically cattle grazing and baleage making.

In terms of financial returns, the economic survey by Beef + Lamb New Zealand (B+LNZ) indicates that the average seven-year (2017-2024) average earnings before interest and tax (EBIT) per hectare for mixed cropping and finishing farms in South Island is $428 per hectare (**Appendix 6**). This farm class is typical to the Canterbury Plains, where a significant part of revenue comes from grain and small seed production, as well as livestock finishing or grazing. However, this Beef & Lamb model farm is 386 ha, while the site is about 5.0 ha effective, lacking economies of scale. If the 5.0 hectares is used for production, then the site will return as estimated $2,140 (**Table 2**).

I have also estimated a gross margin return of $1,060/hectare from baleage making (**Table 3**)

Table 2: Beef + Lamb Class 8 South Island Mixed Finishing Average Farm Profit Before Tax (average 2017-2022 + provisional 22-23 and forecast 23-24). Source: Beef & New Zealand (B+LNZ)

Land Use	EBIT/ha/yr	Total (5.0 ha)
Mixed cropping and finishing	$428	$2,140

Table 3: Baleage Gross Margin.

Baleage Gross Margin	$/ha	Total (5.0ha)	Assumptions
Revenue			
Baleage sold	$2,700	$13,500	$90/bale; 150 bales made (@250kgDMea)[3]
Expenses			
Fertiliser and applications	$738	$3,690	200kg/ha Cropmaster 15 ($1105/t) after each cut x3. Applications $25/ha
Contractor harvest	$902	$4,510	$50/bale, includes cut and wrapping
Net Margin	**$1,060**	**$4,300**	

I have used the most profitable enterprise, baleage making, for the following financial analysis, on the net return after the cost of capital. The gross margin figures shown above offer an estimate of potential profitability, but do not consider the cost of capital. Any prudent investor must consider capital cost, which could either be in the form of debt or equity. In theory, the cost of equity should be higher than the cost of

[3] 150 bales made assumes a total of 7.5tDM/ha/yr was cut from the effective pasture area (5 hectares), amounting to about 13.6 stock units per hectare, and no stock are grazed

debt. Currently, most banks utilise a long-term debt financing rate of 6.5% annually for planning. Additionally, in 2023, banks applied an 8% annual rate for 'stress-testing' the feasibility of loans. This analysis uses a debt cost of 6.5% and an equity cost of 8% annually. With an assumed typical debt burden of 30%, this results in an average capital cost of 6.95% per year. As of September 2021, the rating value for the land was $900,000 ($146,341 per hectare) (**Table 4**).

Table 4: Property Ratable Value

	Ha	Total Land Value	Land Value – Per ha	Total Improvement Value	CV - Total Value
Lot 2 DP 580320 & SEC 1 SO 559834	6.15	$900,000	$146,341	$850,000	$1,750,000

After deducting an annual capital cost of $10,171/hectare ($146,341/hectare x 6.95%), it becomes evident that the land is not economically viable in the long term, as shown in **Table 5**. As a standalone unit, the site cannot generate enough income to cover interest, taxes, and a return for management. Rural enterprises are currently enduring stringent financial pressures, dealing with reduced revenues, increased operating expenses, and rising interest rates. Consequently, I conclude that the site is unable to be commercially viable, both now and in the next 30 years.

Table 5: Estimated returns per hectare over the proposed block after deducting a cost of capital.

	Per hectare	Total	
Total EBIT (per annum)	$1,060	$5,300	5.0 ha effective existing
Cost of Capital	$10,171	$62,550	6.15 ha total
Net return after cost of capital	-$9,111	-$57,250	

6. Consideration of the NPS-HPL

6.1. Clause 3.10(1)

Clause 3.10(1) sets out three tests that must be met for an activity not otherwise provided for under Clauses 3.7, 3.8 or 3.9 to occur on HPL. A proposal must meet all parts of all three tests to be allowed on HPL. The following provides an assessment of these tests. These findings should satisfy Selwyn District Council that HPL Policy 3.10 is met, and therefore the HPL can be used for activities not otherwise enabled under clauses 3.7, 3.8, or 3.9 of the NPS-HPL.

Clause 3.10 (1a) - 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

Section 4 evaluates various land uses and all reasonably practicable options for retaining the HPL for land-based primary production. A combination of permanent constraints affecting the land's potential productivity have been pinpointed. The site is limited by the highly fragmented nature of the surrounding area, where

land parcels are predominantly small, providing very limited opportunities for the economies of scale needed to overcome the economic and physical challenges identified. While improvements in land management and development is possible, I consider this fragmentation, combined with potential reverse sensitivity issues from neighbouring properties, unable to be mitigated against and to have a permanence for at least the next 30 years. Therefore, the productive potential of the LUC Class 3 soil will never be realised, even if other barriers, such as the lack of irrigation infrastructure, are addressed.

Section 5 concluded that the most probable land use, cattle grazing and baleage making, is unable to be commercially viable, as this option fails to meet a positive net return after the cost of capital. This was a conservative assessment based on a typical Canterbury farm system (386ha); economic returns are likely to be lower due to the severe inefficiencies from the small scale.

Consequently, I conclude that this standalone 6.15 ha site will remain economically unviable, both now and for the next 30 years, despite the land to classed as HPL by NZLRI.

Clause 3.10 (1b) 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

As explained above (Clause 3.10(1a)), although the land is classed as HPL, in my opinion, this 6.15 ha site is unable to support economically viable production. Consequently, there is no significant loss of productive capacity within the district, satisfying Clause 3.10(1b)(i).

As discussed in **Section 3**, the site's productive capacity may be lower than its default LUC classification suggests. The subject area falls under LUC 3, situated on the fringes of HPL. The land used for the motorway development may have altered its natural productive capacity. It is possible that an independent LUC could classify this land as LUC 4, meaning then this proposal would not result in any loss of HPL.

The proposed development includes the construction of a community hall, entrance road, and carparking (refer to **Appendix 7**). This will reduce the effective area of the site by approximately 1 ha. While this reduction translates to a net loss of productive space, the impact is minimal in the broader context of the total LUC soils in the Selwyn District and Canterbury region. Specifically, the loss of 1 ha of HPL represents a 0.0007% loss in HPL within the district and a 0.0001% loss in the region[4].This loss can be offset by ongoing improvements in agricultural technology across the wider region, which will help maintain or enhance overall productivity.

In summary, I conclude the proposed loss of 1 ha of land classified as HPL to not have a significant adverse on the versatile soil resource or primary production of the district or regions soil resource. The magnitude of change from the current state is minimal and insignificant.

[4] This uses area of Canterbury and Selwyn HPL, 836,700ha and 140,560ha respectively, in the Statement of Evidence of Victor Mthamo for a hearing on Plan Change 79 to the Operative Selwyn District Plan (page 19).

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

As discussed in **Section 3.3**, the surrounding landscape is already highly fragmented, with few large, geographically cohesive land parcels remaining. This fragmentation has been further intensified by infrastructure developments such as the Southern Motorway and the proximity of townships like Templeton, Rolleston, and Prebbleton. The site is bounded by roads, which have effectively reduced its operational connectivity with other areas of HPL. Furthermore, this proposal does not involve subdividing the land into smaller lots, which helps maintain the current land configuration without exacerbating fragmentation. Therefore, in my view, this proposal will not contribute significantly to any additional fragmentation of 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

The Southern Motorway on the northern boundary already introduces reverse sensitivity concerns related to land-based primary production, including noise, visual, and odour effects. Given the existing impact of the motorway, this proposal is unlikely to exacerbate these concerns. In my opinion, the development will not introduce any additional reverse sensitivity effects that would negatively impact surrounding land-based primary production.

Clause 3.10 (1c) - 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.

This assessment uses a cost-benefit analysis framework for HPL to identify the full range of values associated with HPL, using a Total Economic Value framework as outlined on page 37 of the NPS-HPL.

Environmental Effects

The proposal is expected to result in a slight improvement in water quality, as it would reduce the potential nutrient loss to groundwater from potential agricultural activities. This aligns with the water quality targets of the Selwyn Te Waihora zone implementation plan and supports the objectives of the National Policy Statement for Freshwater Management. Additionally, the proposal is anticipated to lower potential greenhouse gas emissions due to a marginal reduction in the potential stocking capacity.

Moreover, the reduction in agricultural activity could decrease the likelihood of the allocated irrigation water being used, which may result in the active irrigation consent not being renewed. This would provide a benefit to the overallocated Selwyn-Waimakariri groundwater catchment.

While these positive effects are relatively small—given the 1 ha reduction in primary production land—they nonetheless contribute to meeting Clause 3.9(2f) of the NPS-HPL (*providing for the retirement of land from land-based primary production for the purpose of improving water quality*)

Social and Cultural Effects

The proposal will increase human activity on the site, having a net positive impact on social and cultural aspects. The Sikh Society warmly invites all members of society to enjoy their property.

Additionally, the Sikh Society are exploring the concept of establishing a community garden (**Appendix 7**), to support their tradition of offering daily vegetarian meals. Several members of the Sikh Society are former farmers with agricultural expertise, which could contribute to the practices. However, due to the productive constraints of the land, this initiative would differ from a typical commercial horticultural operation. Instead, it would be more aligned with a small-scale, non-commercial garden, utilising substantial compost inputs, planter boxes, and possibly glasshouses. Without this proposal (i.e. the site being the main cultural gathering place for the Sikh community), establishment of the community garden is highly unlikely. While I do not consider this garden to be a highly productive land use in the traditional sense, it would enable the community to engage with food production and highlight the importance of HPL.

This increase in activity will enhance the sense of community and foster social interactions, having a positive social and cultural effects.

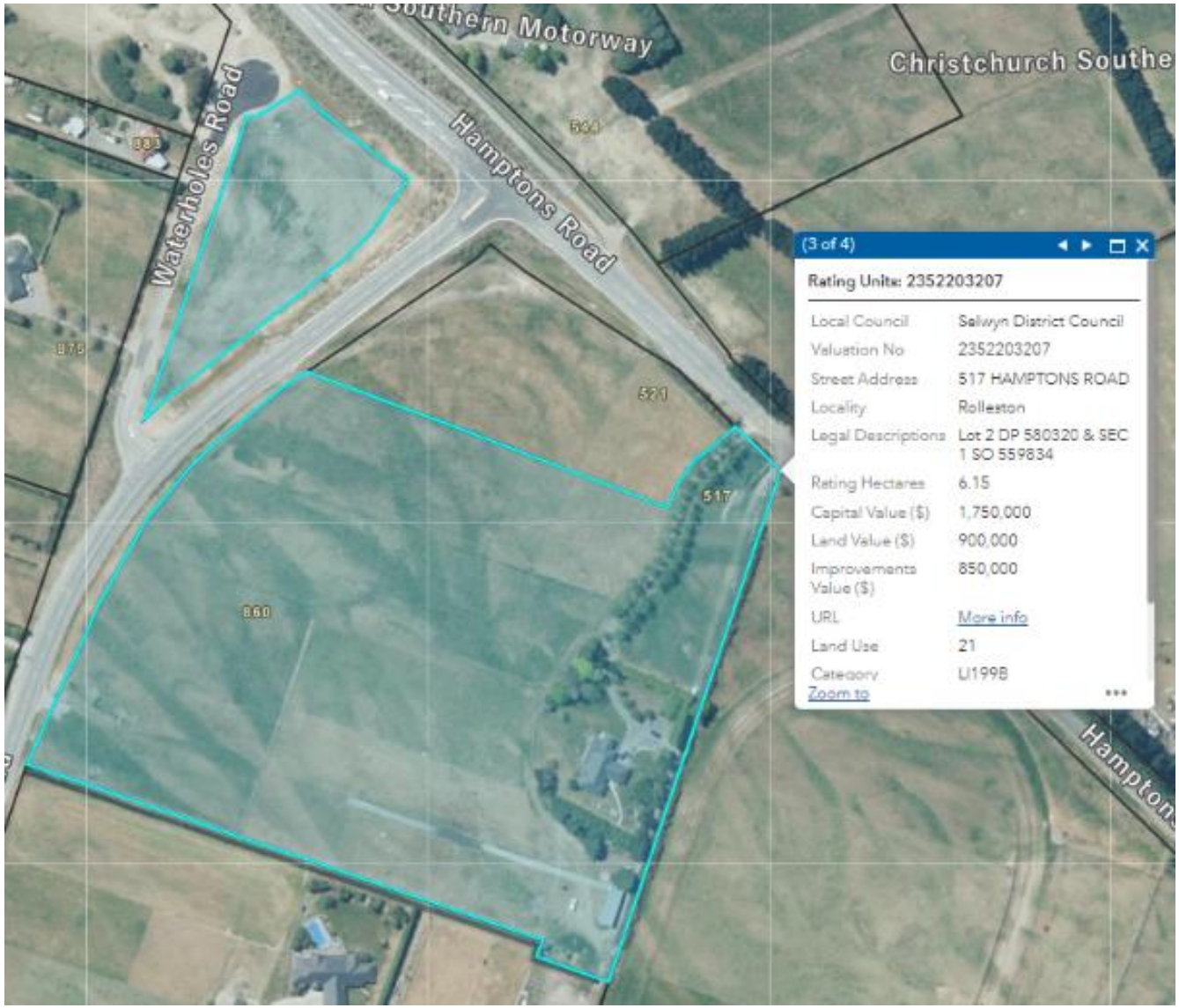
Economic Effects

The economic effects of this proposal are difficult to determine. The proposal will bring people into area, an opportunity to increased economic activity will enhance the overall economic health of the region.

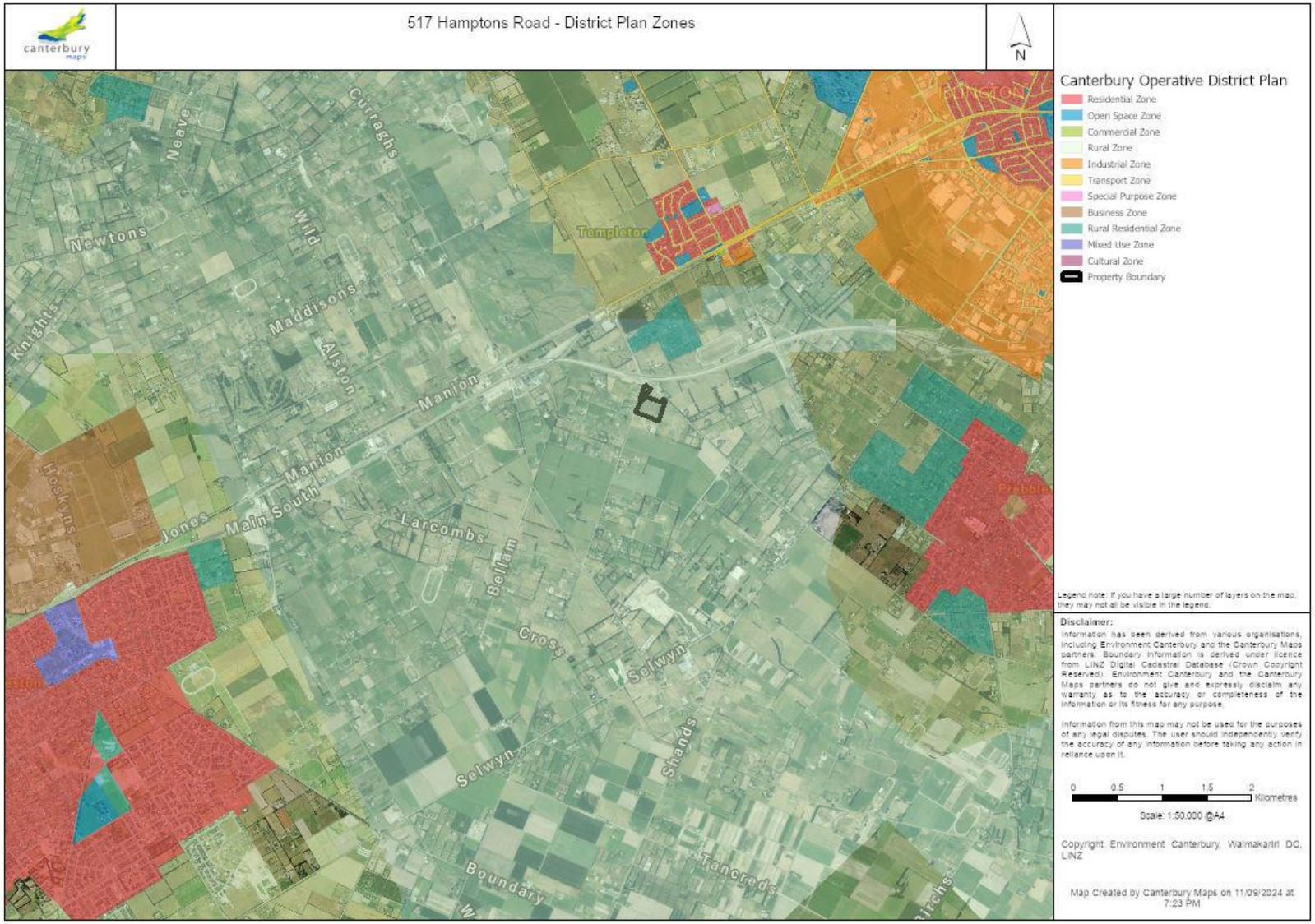
In my view, the combined net environmental, social, cultural, and economic effects of the proposal, both tangible and intangible, are positive and outweigh the costs associated with the loss of HPL. Alongside these factors, according to Victor Mthamo (in a statement of evidence on the Plan Change 79 hearing (in Para 12)), *the 'cost' of losing the HPL should be considered in the context of land remaining available for those activities within the district and region*. In particular, of all the "HPL" in those geographical areas, the site represents a reduction of only 0.0007% and 0.0001% respectively.

7. Appendices

Appendix 1: Property Rating Units



Appendix 2: Zoning Map. Black outline– property area. Source: Canterbury Maps



Appendix 3: Land Use Capability Map. Black outline – block. Source: Canterbury Maps. This shows the block is LUC 3

Appendix 4: Land Use Capability report. Source: Our Environment, Manaaki Whenua.

The soil is 3s-33 meaning the dominant limitation is the physical and chemical properties of the soil.

Pin at -43.57089, 172.46380

Report prepared by Our Environment, 9:40:15 am 5/11/2023 Manaaki Whenua - Landcare Research

Pin at -43.57089, 172.46380

Latitude Longitude
43° 34′ 16″ S 172° 27′ 50″ E
NZTM Easting, Northing
1556702, 5175646
Elevation
37m

Land Capability

Land Use Capability

Dominant Land Use Capability Unit

nz3s-33
LUC codes have 3 parts: Class + Subclass + Unit e.g. 6e22. The Class (1-8) indicates general land use capability. Subclass identifies the dominant physical limitation or hazard ('e' is erodibility; 'w' is wetness; 's' is soil; 'c' is climate). Units group together areas where similar land inventories have been mapped, and which have similar agricultural suitability, or require similar land management. Where complex units occur (e.g., nz3s-34+nz6e-146) the dominant unit (i.e., nz3s-34) only will be shown.

Dominant LUC Class

3 - Land with moderate limitations for arable use, but suitable for cultivated crops, pasture or forestry

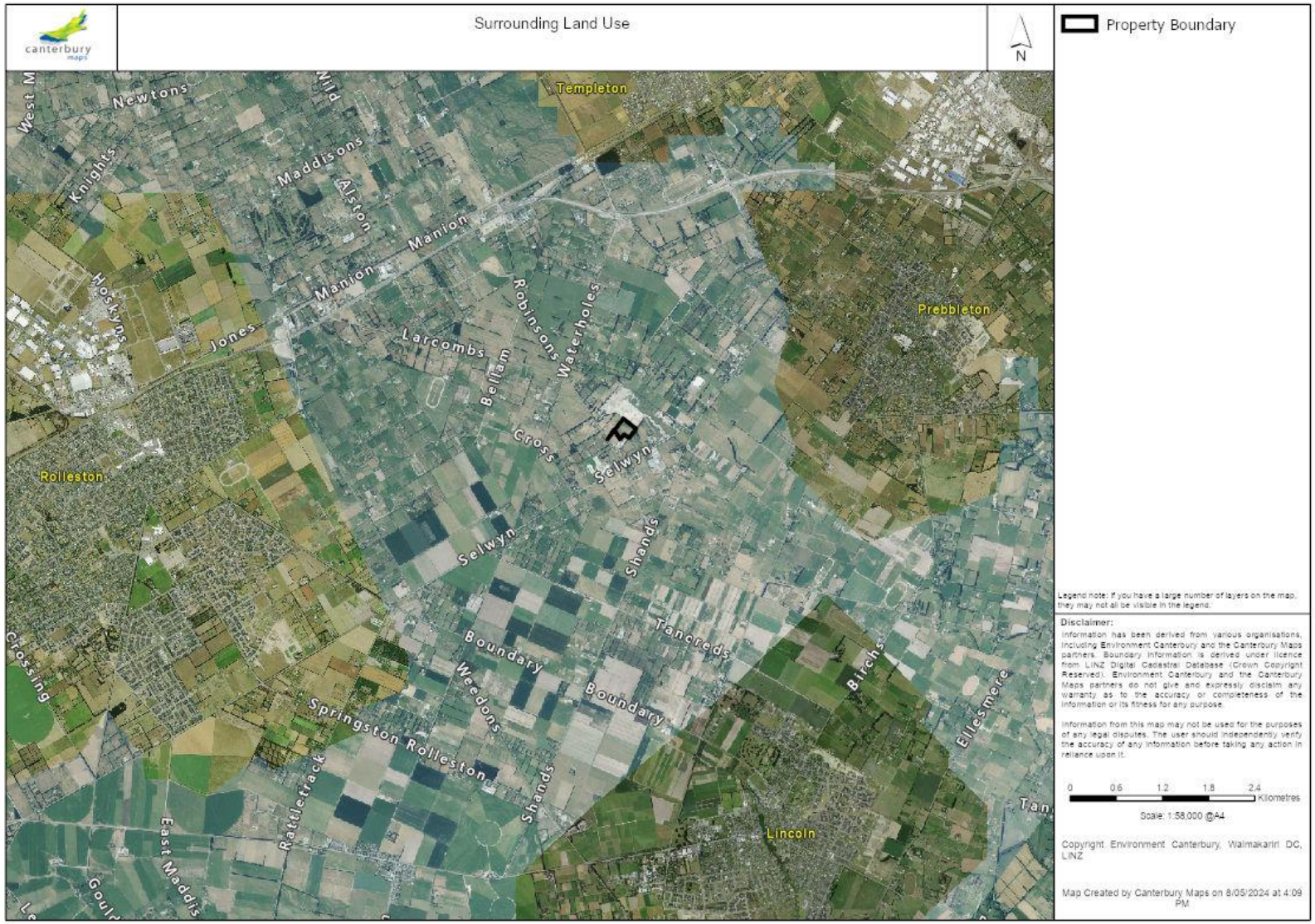
Dominant limitation to land use

s - Soil physical or chemical properties in the rooting zone such as shallowness, stoniness, low moisture holding capacity, low fertility (which is difficult to correct), salinity, or toxicity first limits production

Unit Description

Flat to undulating alluvial plains and terraces below 400 m asl with moderately shallow and/or stony Brown and Recent (yellow grey earth and recent) soils in low (<800 mm) rainfall areas with a marked summer moisture deficit.

Appendix 5: Surrounding Land Use. Source: Canterbury Maps



Appendix 6: Class 8 South Island Mixed Finishing Beef & Lamb NZ Economic Survey

Beef + Lamb New Zealand Economic Service							27-03-24	
Sheep and Beef Farm Survey - $ Per Hectare Analysis							Notes tab	
Class 8 S.I. Mixed Finishing - New Zealand								
						Provisional	**Forecast**	
	2017-18	**2018-19**	**2019-20**	**2020-21**	**2021-22**	**2022-23**	**2023-24**	**Average**
Revenue Per Hectare								
Wool	$428	$19	$27	$18	$22	$27	$33	$82
Sheep	$203	$293	$376	$381	$556	$584	$529	$417
Cattle	$152	$190	$219	$125	$201	$243	$163	$185
Dairy Grazing	$194	$222	$249	$274	$249	$369	$367	$275
Deer + Velvet					$14	$18	$20	$17
Goat + Fibre								
Cash Crop	$2,089	$2,152	$2,391	$2,541	$2,260	$2,329	$2,306	$2,295
Other	$374	$258	$334	$364	$349	$239	$264	$312
Total Gross Revenue	**$3,033**	**$3,133**	**$3,596**	**$3,701**	**$3,651**	**$3,809**	**$3,682**	**$3,515**
Expenditure Per Hectare								
Wages	$172	$193	$187	$191	$184	$157	$157	$177
Animal Health	$21	$24	$24	$32	$40	$53	$59	$36
Weed & Pest Control	$326	$290	$336	$357	$415	$363	$380	$352
Shearing Expenses	$15	$18	$20	$28	$31	$31	$35	$25
Fertiliser	$307	$336	$403	$389	$467	$575	$499	$425
Lime	$13	$9	$23	$20	$11	$18	$19	$16
Seeds	$93	$90	$108	$124	$91	$100	$104	$101
Vehicle Expenses	$120	$135	$125	$130	$116	$127	$130	$126
Fuel	$97	$100	$96	$92	$129	$167	$177	$123
Electricity	$15	$12	$13	$13	$15	$12	$13	$13
Feed & Grazing	$77	$70	$81	$71	$68	$71	$78	$74
Irrigation Charges	$162	$144	$183	$193	$189	$190	$196	$180
Cultivation & Sowing	$50	$25	$39	$70	$64	$67	$71	$55
Cash Crop Expenses	$175	$215	$192	$199	$197	$167	$177	$189
Repairs & Maintenance	$142	$144	$159	$190	$172	$158	$150	$159
Cartage	$56	$52	$68	$69	$62	$68	$76	$64
Administration Expenses	$52	$52	$57	$67	$76	$65	$65	$62
Total Working Expenses	**$1,893**	**$1,911**	**$2,116**	**$2,240**	**$2,329**	**$2,390**	**$2,385**	**$2,181**
Insurance	$56	$59	$67	$79	$77	$77	$85	$71
ACC Levies	$7	$8	$7	$12	$9	$10	$10	$9
Rates	$46	$47	$51	$70	$55	$57	$60	$55
Managerial Salaries	$7	$11	$10	$15	$10			$11
Interest	$403	$322	$326	$302	$301	$376	$475	$358
Rent	$61	$68	$67	$58	$31	$32	$33	$50
Total Standing Charges	**$580**	**$515**	**$527**	**$536**	**$482**	**$553**	**$662**	$551
Total Cash Expenditure	**$2,472**	**$2,426**	**$2,643**	**$2,776**	**$2,812**	**$2,943**	**$3,047**	$2,731
Depreciation	$392	$360	$375	$370	$335	$330	$325	$355
Total Farm Expenditure	**$2,865**	**$2,786**	**$3,018**	**$3,147**	**$3,147**	**$3,273**	**$3,372**	**$3,087**
Farm Profit before Tax	**$169**	**$347**	**$578**	**$555**	**$504**	**$535**	**$311**	**$428**
For more information:	Notes tab		**© Beef + Lamb New Zealand Economic Service 2024**					

Appendix 7: Proposed Development Plans, 2 December 2024

KEY - PROPOSED

- Site boundary
- District plan boundary setbacks
- Proposed building
- Existing planting
- Landscape area
- Hard surfacing

DISTRICT PLAN

Authority	Selwyn District Council
Zone	Inner Plains Zone

OPERATIVE DISTRICT PLAN BUILT FORM RULES

Structure coverage	5%
Maximum building height	8m
Road boundary setback	20m
Internal boundary setback	5m

OVERLAYS

Overlays Airport Noise	50dBA Contour

ROADING

Hamptons Road	Arterial
Waterholes Road	Arterial
NZTA-4	Motorway

EARTHWORKS

Maximim	50,000m3

PROPOSED STRUCTURE COVERAGE

Site area	61,457m²
Existing structures	Approx 124 + 343 = 467m²
Proposed hall	489m²
Total coverage	956m²
Structure coverage	< 1%

CARPARKING

No minimum car-parking spaces required by district plan. Main & accessible car-parking to be provided as required by the community & in accordance with Novo Group Integrated Traffic Assessment dated 29 July 2024. Spaces given as indication only. All accessible parking to be on hard surfacing, all main parking to be on shingle surfacing

Main spaces	2.5 x 5.0m
Accesible spaces	3.6 x 5.0m
Aisle width	7.0m (min 6.6m)

SITE SERVICES

Wastewater, stormwater and water supply to be determined. Specialist advise & engineering design will be required

FLOOD MANAGEMENT

Refer to eCAN Floor Hazard Assessment dated 20 February 2024
- No high hazard areas on property
- New building is a permitted activity where the FFL is at least 300mm above the 200 year ARI floor level
- LIDAR data in proposed location - Existing GL between +38.5 to +39.3m
- Selwyn District 200 year ARI map for water depth above GL - No water depth identified in proposed building location
- Proposed FFL +39.5m (250mm above EGL)

2316 **517 HAMPTONS ROAD** DEG TEGH FATEH SIKH SOCIETY					1:1500 @ A3 2/12/24	**PROPOSED MASTERPLAN** **A1-004**