APPENDIX P: PRODUCTIVE LAND ASSESSMENT

Land Productivity Assessment

for Land Use Change:

Southwest Industrial

Puna Property Holdings Ltd and Foddercube products (Nth Canty) Limited

290-376 Springs Road, Halswell,

Christchurch.



November 2025

LandVision Ltd

Nelson

1 SUMMARY

1. The proposal is to rezone three titles (Lot 1 DP 82095, Sec 7 SO 482614, Secs 4 and Sec 6 SO 550060) at 318-376 Springs Road, Halswell from Rural Urban Fringe to Industrial Zone.
2. According to regional scale NZLRI mapping the subject title is LUC class 1 and 2 land and therefore triggers the NPS HPL.
3. Paddock scale mapping and site assessment confirmed the **productive capacity of the subject land is classified as moderate to low.**
4. The proposed rezoning will reduce the productive land use area on the property by 17.2 ha.
5. Under the NPS-HPL, the rezoning proposal does not satisfy Clause 3.8 (1) because there is a reduction in effective area.
6. However, under the NPS-HPL the proposal to rezone the subject land satisfies Clause 3.10.
7. When modelled under a highest and best land use the lack of scale results in disproportionally high direct and fixed costs that will not cover current rates costs at a minimum. Lack of adjacent productive land also precludes the site from being attractive for amalgamation or leasing. Under the Canterbury LWRP, Nitrogen loss baseline limitations also prevent potential land use intensification going forward.
8. Therefore, Christchurch City Council can be satisfied that there are permanent and long-term constraints on this site that mean the use of the land for land-based primary productivity is not economically viable for at least 30 years.

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3 PREPARATION OF THIS REPORT

LandVision Ltd is an independent technical agricultural/land and resource management consultancy company with offices in Hawkes Bay, Nelson, Wanganui, and Tauranga. We are a team of multi-skilled staff with extensive experience across farm planning and management, soil and LUC mapping, nutrient budgeting, environmental management, compliance, and policy. In the last 20 years we have undertaken farm planning, land resource inventory/land use capability mapping for over 1.2 million hectares across New Zealand, with about 80,000 ha in the Tairawhiti region.

This report has been prepared by Suzie Le Cren who has a B Agr. Sc. from Massey University in land resource management, farm management and production and has over 35 years in the industry. She has completed over 30 HPL assessments as well as peer reviewed HPL assessments for Councils in the lower North Island and upper South Island. With LandVision Ltd, she specialises in farm planning, nutrient management, resource consents and HPL assessments.

This report has also been peer reviewed by Ian Millner from LandVision Ltd. Ian has undertaken more than 40 HPL peer reviews for nine different councils throughout the country and completed over 30 HPL assessments for clients in the Hawkes Bay/Wairarapa/Marlborough and Canterbury. He has also prepared evidence for consent hearings and environment court hearings as an expert witness. Ian holds a commissioner's certificate and has a degree in resource management.

4 PURPOSE

The purpose of this report is to assess the physical characteristics of the subject land zoned Rural Urban Fringe (Christchurch City Council Plan) which the applicant (Puna Property Holdings Ltd and Foddercube Products (Nth Canty) Limited), seeks to rezone to Industrial (noting a portion of the site is already zoned Industrial). It aims to examine the viability of the proposal under clause 3.8 and 3.10 of the NPS Highly Productive Land and therefore align with the policies of the NPS_HPL. It also ensures that the proposal meets the objectives and policies in Chapter 17 of the Christchurch City Council District Plan by avoiding potential loss of highly productive land in Rural Zones.

Location Map

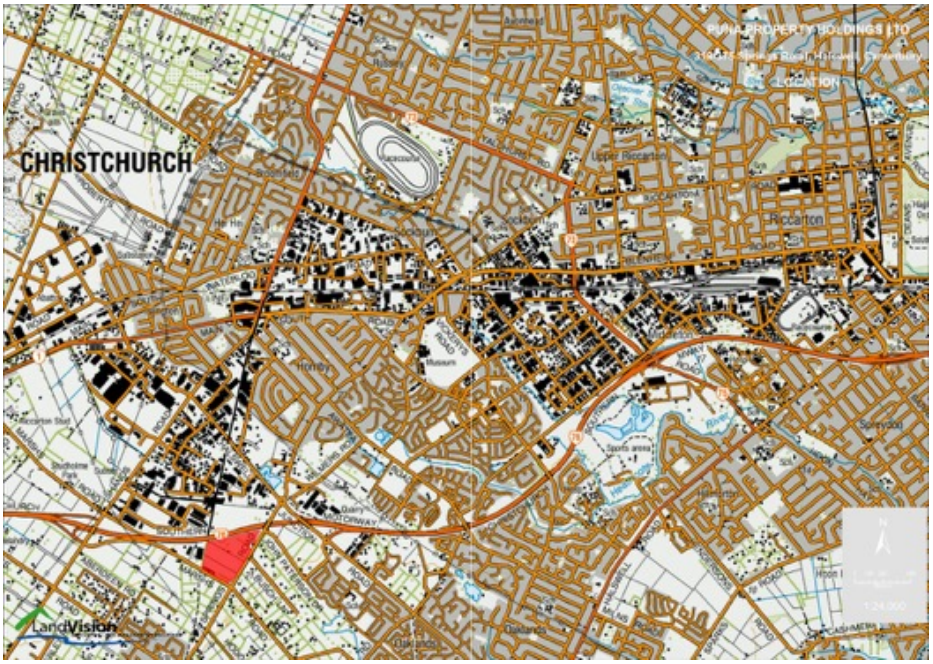




Figure 1: Proposed Concept Plan for 290-376 Springs Road

5 CONSENT APPLICATION

The applicant seeks to rezone three of the following five titles listed in the table below (CB47B/925 Lot 1 DP 82095, 1008404 Sec 7 SO 482614, 999438 Secs 4,6 SO 550060) from Rural Urban Fringe to Industrial with the intent of developing the collective titles into a residential subdivision. The additional two titles (Title No. 998715 Section 2 SO 556764 and Title no.1225357, Section 4 and 5 SO 562497) are already zoned Industrial Heavy. The proposal will affect a zone change on 18.6 ha and this area is subject to a productive land assessment under NPS_HPL policy. This is outlined in the following table and shown in the Proposed Rezoning map below.

Current Legal Title	**Physical Adress**	**Mapped Area (ha)**	**CCC Plan Zoning**	**NPS_HPL assessment**
Titles Implicated by NPS - HPL				
Title No. CB47B/925 Legal Description: Lot 1 DP 82095	318 Springs Rd, Halswell	3.8	Rural Urban Fringe Zone	**Required**
Title No. 1008404 Legal Description: Sec 7 SO 482614	320 Springs Rd, Halswell	2.2	Rural Urban Fringe Zone	**Required**
Title No. 999438 Legal Description: Secs 4 and Sec 6 SO 550060	374-376 Springs Rd, Halswell	12.6	Rural Urban Fringe Zone	**Required**
Total Area (ha)		18.6		
Other Titles				
Title No. 998715 Legal Description: Section 2 SO 556764	290 Springs Rd, Halswell.	0.4	Industrial Heavy Zone	Not required
Title No. 1225357 Legal Description: Section 4 and Section 5 SO 562497	300 Springs Rd, Halswell	2.6	Industrial Heavy Zone	Not Required

Property Zone and Titles Map

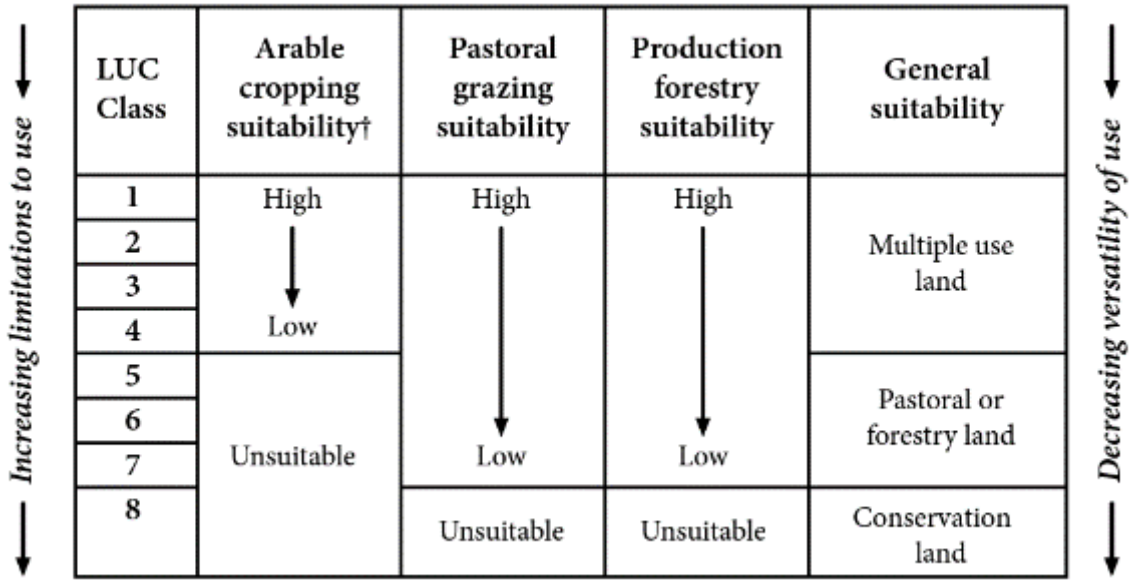


6 LAND RESOURCES REGIONAL SCALE

The National policy statement for Highly Productive Land 2022 (NPSHPL) came into effect in October 2022 with the objective being *"Highly productive land is protected for use in land based primary production, both now and for future generations".* The NPS_HPL gives regard to the land resources as described according to the New Zealand Land Resource Inventory (NZLRI) and Land Use Capability (LUC) classification system and has placed additional restrictions on the development of LUC class 1-3 land. The NZLRI mapping was undertaken at a scale of 1:50,000 in the early 1980's and the Tasman Region is referenced in the South Island LUC Extended Legend.

6.1 LRI & LUC CLASSIFICATION SYSTEM

The LUC classification system classifies land into eight different classes as shown in the following table. Classes 1-4 are typically suited to arable use, classes 6 and 7 are suited to pastural farming and class 8 land is retirement land.



The LUC class is then divided as per its dominant limitation and within the LUC system there are four dominant limitations that include erosion, wetness, soil and climate. as shown in the following table. Typically class 1 land has no limitations to arable use, class 2 land slight limitations to arable use, class 3 land moderate limitations to arable use and class 4 land severe limitations to arable use.

The subclass is then further divided to generate the LUC unit. This is where land with similar land resource inventory factors are grouped together to form the LUC unit. The resource inventory factors include the underlying geology or rock type, the soil type, the slope, the erosion type and severity, and the dominant vegetation. When mapping LUC and one of these inventory factors change then so should the polygon change.

6.2 NZLRI ON THE SUBJECT LAND

According to the NZLRI data 18.3 ha on the subject land title is mapped as being LUC class 1 land with the balance of land, 0.3 ha class 2. This is shown on the map below and described in the following table. The consent application is therefore subject to NPS HPL legislation

Regional Scale NZLRI and LUC Map



The following table describes the different LUC units on the subject land, according to the South Island Land Use Capability Extended Legend, 1983 and mapped at 1:50,000 scale and the land resource information within those units. The description for Kaiapoi (K1) and Waimakariri (W1) soils as mapped and described under regional scale NZLRI is outlined in Appendix 2.

LUC and description	Parent material	Dominant soil type	Slope degree	Erosion degree and severity		Dominant vegetation	Area (ha)
				Actual	Potential		
1w1 Deep, slightly wet soils on flood plains in summer moisture deficient districts.	Alluvium	K1 Kaiapoi sandy loam.	0-3⁰ A	Negligible	Negligible	Pasture	18.3
2s2 Low terraces and floodplains with fertile, moderately deep soils in seasonally moisture-deficient districts.	Alluvium	W1 Waimakariri silt loam	0-3⁰ A	Negligible	Slight wind erosion when cultivated	Pasture	0.3

6.3 MAPPING SCALE

When undertaking LUC/LRI mapping the smallest map unit according to the LUC Handbook[1] is about 1 cm^2 on the map irrespective of scale. Therefore for 1:50,000 scale mapping the smallest map unit is about 25 ha (25 ha is 1 cm^2 on the 1:50,000 scale map). Under paddock scale mapping, i.e. 1:7,000 scale, the smallest map unit is about 0.6 ha.

[1] Lynn I, A Manderson, M Page, G Harmsworth, G Eyles, G Douglas, A MacKay, P Newsome (2021): Land Use Capability Survey Handbook 3rd Ed.

7 SITE DESCRIPTION

A site inspection was undertaken in November 2025 to access the site characteristics when mapped at the paddock scale (1:7,000). The land resource information and site parameters are listed below and a detailed description of the soils and LRI are shown in Appendix 1.

7.1 CURRENT AND PAST LAND USES

The NPS HPL came into force in October 2022. The Current Land Use map and the 2020 Google Maps imagery below show the land use over the whole property has not changed since the legislation commenced.

The following table shows the property currently has 17.2 ha (93%) in productive land use and 1.4 ha are in non-productive house, sheds, utility area and accessway.

Current Land Use		Map symbol	Area (ha)	Percentage (%)	Total Area (ha)
Productive Land Uses	Grazed pasture	gS	10.8	58 %	17.2
	Turf production	gS	6.4	35 %	
Non-Productive Land Use	Dwellings, Curtilage, Sheds, Utility, Accessways	NP	1.4	7 %	1.4
Total			**18.6**	**100**	**18.6**

Current Land Use Map



Land Use November 2020 *(supplied by Google Maps)*



7.2 PADDOCK SCALE LAND RESOURCE INFORMATION

The following table summarizes the Land Resources for the property when mapped at 1:7,000 scale.

Resource Parameter	Description
Rock type	Alluvium over sandy alluvium
Soils	Soil 1 – Kaiapoi silt loam Soil 2 – Waimakariri silt loam
Slope	Flat (0-3º)
Erosion type and severity	Negligible erosion present



Photo: View northwest from 318 Springs Rd



Photo: View north from 376 Spring Rd

7.3 Soil Physical Characteristics

The following table summarises the main characteristics, strengths and limitations of soil types present on the property and a full description is in Appendix 1.

Soils	Key Characteristics	Inherent Strengths	Inherent Limitations
Kaiapoi silt loam (Soil 1a) **Waimakariri silt loam (Soil 2a)** Total: 6.4 ha	• Found across most of the property • Deep soil • A LUC class 1 soil • Moderate soil water holding capacity. • Moderately well structured soil.	• Found on alluvial flats with good contour. • Deep soil profile suited to deep rooting crops and tree crops. • Well drained so low risk of • Suited to winter grazing with low risk of pugging. • Responds well to fertiliser. • Moderately well structured therefore suited to periodic cultivation.	• Relatively drought prone, requires irrigation to maintain soil moisture levels above stress point from Oct-late March. • Moderate to low nutrient holding capacity. Requires regular applications of fertiliser at relatively low rates • Moderately high risk of nutrient leaching. • Prone to slight wind erosion if cultivated.
Mined Topsoil **Kaiapoi silt loam (Soil 1a)** **Waimakariri silt loam (Soil 2a)** Total: 10.8 ha	• Found on the Turf farm. • Up to 35cm reduction in soil depth.	•	• Devoid of topsoil therefore reduced water holding capacity and drought prone. • Deplete soil fertility and reduced ability to retain soil nutrients. Increased occurrence of leaching. • Degraded soil structure therefore increased risk of wind erosion when cultivated.

Paddock Scale Land Resource Information Map (1:7,000)



7.4 OTHER SITE CHARACTERISTICS

The following table summarises other site characteristics present.

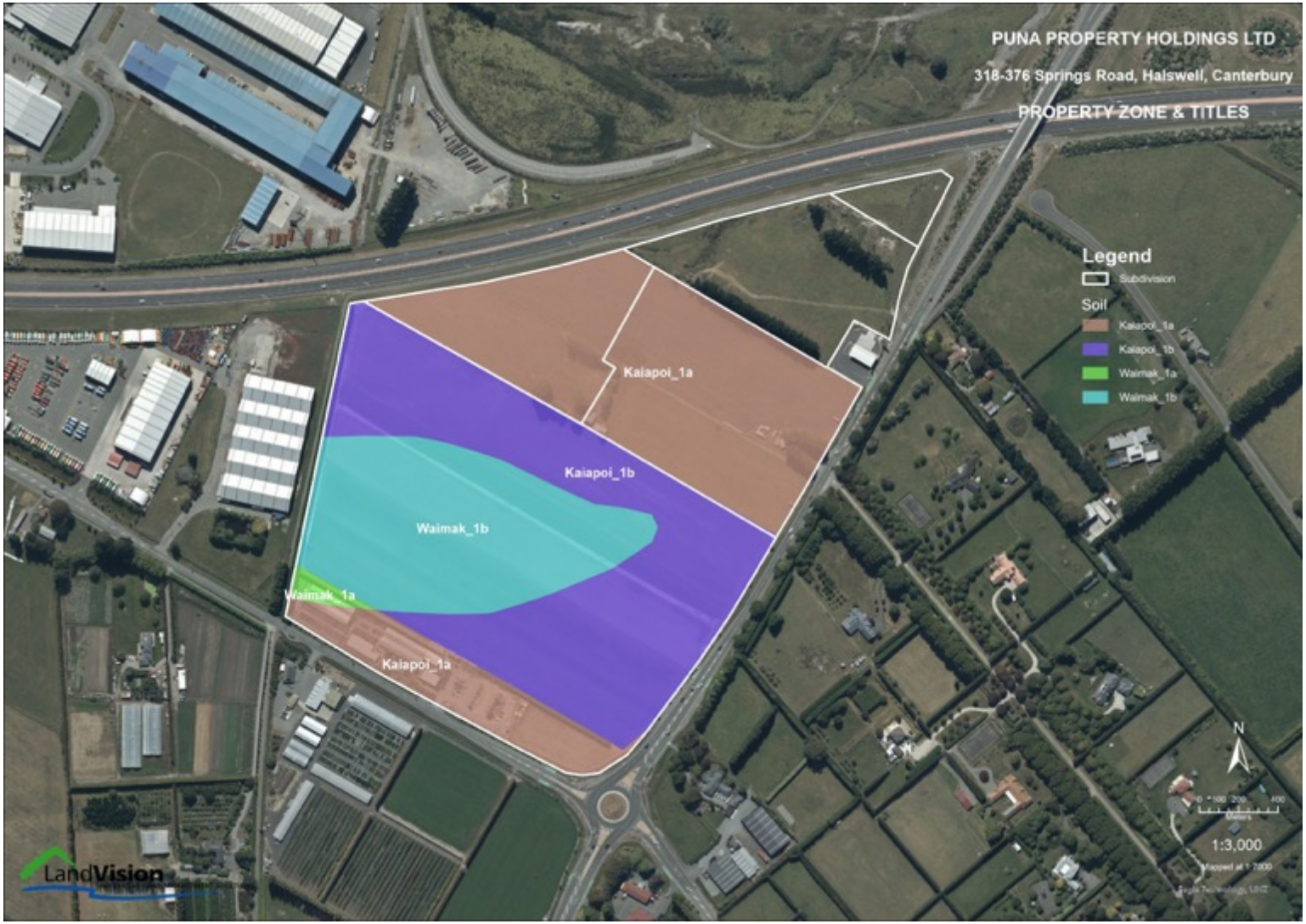
Surrounding properties.	The subject land is an isolated parcel of HPL. Adjacent land use comprises of roads and land zoned Industrial Heavy. • 64% of the boundary is motorway or public road • 36% of the boundary is industrial land
Access.	Good access off Springs Road and Marsh's Road
Water.	Irrigation applied to 10.8 ha of land currently used for Turf production. Two active resource consents for Irrigation 318 Springs Rd. **CRC012763.1** to take and use groundwater, Expiry date Jan 2035. 374 Springs Road. **CRC211384** to take and use groundwater, Expiry date: 31 Jan 2035.
Aspect.	Not applicable. Flat land.
Elevation.	< 25 m a.s.l
Proximity to the ocean.	23.5 km

7.5 CLIMATE

The following table summarizes the climate.

Parameter	Typical Value / Range	Land Use Considerations
Average Annual Rainfall	600-650 mm	Below the national average. Relatively evenly spread autumn-spring with a slight winter maximum.
Drought Risk	High in summer and early autumn	Soil water holding capacity is moderate however still prone to periodic soil moisture deficits.
Sunshine Hours	2,000 - 2,200 hours Up to 3,000 hours peak year.	High sunshine hours during summer. Good for fruit ripening.
Summer Temp	> 25-32°C	Typically, hot and sunny, suitable for fruit ripening. February warmest month.
Winter Temp	0-10°C	Regular frosts, Cold south-westerly winds.
Humidity	72% (summer) – 74% (winter)	Generally suitable range for most crops, pasture and soils.
Wind	High wind hours and strength.	Site is exposed. Subject to prevailing northwest wind, easterly sea-breeze during summer. Exposed to southerly wind also.
Frosts	Frequent during winter.	Up to 70 frosts per year.

Soil Map (1:7,000)



8 TECHNICAL ASSESSMENT OF THE PRODUCTIVE CAPACITY OF THE LAND

8.1 CHANGE IN LAND USE

The proposed rezoning of the subject land will affect 17.2 ha of Highly Productive Land (as mapped by the regional scale NZLRI) to non-productive land use. This land is currently used for dryland livestock grazing (6.4 ha) and irrigated turf farming (10.8 ha).

8.2 PRODUCTIVE CAPACITY OF SUBJECT LAND

In summary, the productive capacity of the HPL land on the subject land is **moderate**. Limitations to productive potential include lack of available irrigation water on the 6.4 ha of dryland pastoral land and mined topsoil on the 10.8 ha of turf land. This is discussed below.

8.2.1 Productive Capacity of Turf Production Land

The Productive Capacity of the land that is currently being used for turf production is considered **moderate.** Paddock scale mapping confirmed the soil across 10.8 ha of the property have been mined under the turf enterprise and the topsoil is subsequently reduced. There is a measured reduction of up to 35cm in the A Horizon between the mined Waimakariri silt loam and Kaiapoi sandy silt loam soils, on the turf farm (labelled Waimak_1b and Kaiapoi 1b respectively on the soil Map below) and the unaffected soil profiles seen under pasture. This level of top soil reduction is after 40 yrs of turf production.

The A horizon forms at the soil surface and is characterised by incorporation of humified organic matter that has been incorporated into the mineral B Horizon below by biological activity or by mixing with cultivation. This results in the topsoil on these alluvial soil types having superior physical, chemical and biological attributes than the mineral horizons further down in the soil profile. In terms of productive capacity, the topsoil typically provides superior soil fertility and nutrient retention, enhanced drainage and soil water holding capability, better soil texture and improved soil structure.

There is opportunity to mitigate the soil degradation to a certain extent with the incorporation of organic matter and fertiliser, however, this requires significant material input and a long period of time. Removal of the topsoil across the turf farm has therefore reduced the current and long term productive capacity of these soils to **moderate.**




8.2.2 Productive Capacity of Non-Irrigated Land

The 6.4 ha of the subject land that is currently in pastoral farming has no available irrigation water. As outlined above the climate in this part of this region is characterised by summer droughts and high summer wind occurrence. The resulting high evapotranspiration rates coupled with the low water holding capacity of the soil preclude the viability of all highly productive crop types in the absence irrigation.

The highest and best land use for this land is dryland pastoral farming and the productive capacity of the land is considered **moderate.**

8.3 Land Use Suitability for High Value Crops

The following table details the most important commercial crops produced in Canterbury and the viability of these land uses on the subject land. In summary, insufficient scale, lack of irrigation water(in part), N-Loss baseline limitation, risk of nutrient leaching and lack of top soil (in part) are the primary constraints to intensive land use.

For environmental purposes and as a minimum management requirement there is insufficient land area to spell soils to retain long term soil quality under continued intensive cropping on the subject land. Added to this, lack of irrigation water on 6.4 ha of the subject land precludes all key commercial crops being grown on 37% of the subject property. The commercial feasibility of producing these crops is not achievable without irrigation due to limited yields and poor quality product.

Further to this, seed crops require sufficient scale and critical isolation in order to avoid the significant risk of cross contamination. This is not possible on 17.2 ha of land.

The land is also subject to a low N-loss baseline (2009-2013) given the land use during the calculation period was extensive pastoral farming. Intensive land use will not meet the baseline threshold for N-loss and will not therefore be a permitted activity. In addition, these alluvial soils are classified as well drained and therefore have a high risk of N leaching, further elevating potential N-loss under an intensive cropping regime.

The degraded soil characteristics on the 10.8 ha of turf land puts further long term or permanent constraint on productive capacity. Production of shallow rooted plants will be particularly impacted. This puts further impetus on fertiliser and irrigation requirements, increasing the risk of nutrient loss and groundwater contamination.

There are no highly productive or high value crops that are commercially viable on this parcel of land. The highest and best land use on the subject land is pastoral farming.

High Value Crops grown in the Canterbury Region	District Comments	Comments of Subject Land
Cereals	Wheat grown for flour. Barley grown for feed, malting and brewing. Oats grown for stock feed and human consumption. Between 68-82% of national cereal production is grown in Canterbury. Suitable climate and soils. Requires scale on dryland properties to be viable. Irrigation preferable.	**Not viable due to:** • Insufficient scale to be an economic unit. • Part of the property is dryland which makes all high value crops non-viable on 37% of the land area. • Part of the property (10.8 ha) has irrigation but insufficient scale for high value crops. • High risk of nutrient leaching due to fertiliser requirements and soil properties. • Baseline N-Loss (2009-2013) calculated under pastoral farm system. Intensive land use not permitted under LWRP nutrient rules. • Insufficient scale for seed crop isolation to prevent cross contamination and in order to meet biosecurity requirements for export. • Insufficient topsoil quality on 10.8 ha of turf farm soils for long term crop quality and yields on shallow rooting crops.
Seed crops	Includes grass and clover as well as vegetable seed production. Over 80% of national seed production produced in Canterbury, of which 8-% is for export market. Suitable climate and soils. Requires irrigation for viable quality and yield.	
Vegetables	Predominantly grown for processing. Also grown for fresh market gardening. Includes potatoes, carrots, brassicas, onions. Requires irrigation for viable quality and yield.	
Field Peas and other Pulses	Includes peas, beans, pulses for processing and for stock feed.	
Forage and Fodder Crops	Includes maize silage and grains for stock feed. Fodder crops such as brassicas and beet. Grown to support regional livestock and dairy industries. Grazed in situ or harvested and removed.	**Not viable due to:** • Insufficient scale to prevent continual cropping. • Baseline N-loss will not permit increased N-loss fodder cropping.

8.4 BASELINE PERIOD USED TO DETERMINE N-LOSS TO MEET LWRP NUTRIENT REQUIREMENTS.

The following historical imagery shows the land use over the baseline period of 2009-2013 was pastoral farming. The predicted N-loss under an intensive cropping land use system will not be a permitted activity as it will almost certainly exceed the baseline threshold. In addition, the alluvial soils on the subject land are classified as well drained and therefore have a high risk of N leaching, further precluding intensive cropping as a permitted activity.

Land Cover March 2009 Source: Google Maps



8.5 POTENTIAL LIVESTOCK CARRYING CAPACITY

The following table shows the estimated physical potential average stock carrying capacity for the productive grazed part of the property mapped at 1:7,000 scale that is currently in productive use. This value is derived from the resource information obtained on site coupled with local climate data and based on regional and national experience of farm systems on this land type.

To achieve this physical potential requires all limitations to be removed and assumes highest level farm management is being undertaken. Seasonal fluctuations in stocking rate are significant on this soil type and the summer stocking rate would likely be less than 3 su/ha on the non-irrigated land.

LUC Unit	Area (ha)	Estimated potential stock carrying capacity (su/ha)	Estimated physical potential stocking rate (su)
Iw1 Irrigated	10.8	14	151

Iw1 Dryland	6.4	8	51
Average estimated stock rate			**11.7 su/ha**

The highest and best land use for the subject land is pastoral farming. Given the highest potential carrying capacity is 11.7 su/ha, the productive capacity of the land that is being proposed for rezoning is considered **moderate to low.**

8.5.1 Economic Viability of Pastoral Land Use

If livestock gross margins are currently $199/su then the property has the potential to generate $39 999 (or $2325/ha) if maximum potential production is achieved. The current state of the pastures and soil fertility status indicate that the property would struggle to achieve 30% of this.

The capital value of the land is currently $3,650,000 or $212,209 / ha effective. If 40% was mortgaged ($1 460,000) then there would be an annual interest of about $73 000 /year. At best, the annual revenue of $39 999 will cover 54% of the annual interest bill($73 000) or about 46% of the costs of the loan and rates combined. (not accounting for the farm running costs)

The highest and best land use for the subject land is pastoral farming. However, under pastoral land use the economics of running a livestock grazing enterprise are **not viable.**

8.6 FRAGMENTED NPS_HPL

The property is not contiguous with any adjacent NPS_Highly Productive Land. On a broader scale, it is also fragmented from district wide NPS_HPL. Assessment of immediately adjacent land use showed 64% of adjacent land comprised of roads or motorway and 36% is land zoned Industrial Heavy under the CCC District Plan Zones. The subject land is entirely isolated and cannot practically be amalgamated with other adjacent highly productive land.

9 NPS FOR HIGHLY PRODUCTIVE LAND

9.1 INTENT OF NPS_H PL

The NPS-HPL came into force on 17 October 2022 and aims to protect highly productive land for use in land-based primary production, both now and for future generations by requiring councils to map and zone highly productive land and manage subdivision, use and development of that land.

9.2 PRODUCTIVE CAPACITY OF THE SITE

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

In relation to land, means the ability of the land to support land-based primary production over the long term, based on an assessment of:

[Therefore, an assessment of attributes of any land involved with consent applications on highly productive land (as described by clause 3.5(7) of the NPS-HPL) is required to complete assessments under clause 3.8, 3.9, and 3.10 of the NPS-HPL.]

a) physical characteristics (such as soil type, properties, and versatility);

Our assessment found that due to the physical attributes on the subject land, the following critical long term constraints to productive capacity exist:

Implications of lack of Scale

- Intensive or high value crops suited to growing in Canterbury are not economically viable due to lack of scale
- Insufficient scale for inclusion of pasture in crop rotation, risk of soil degradation.
- High risk of soil compaction due to over cultivation and over cropping
- Inability to isolate crops with a high biosecurity risk or vulnerable to cross-contamination.

Implications of depleted topsoil on turf farm (63%)

- Poor nutrient retention with a high risk of nutrient leaching.
- Difficult to lift soil nutrient status to optimum fertility levels long term.
- Low soil moisture holding capacity, reduced irrigation efficiency
- Increased infiltration rates with increased risk of leaching.
- Not suited to shallow rooting crops
- Poor soil structure and increase risk of wind erosion

Implications of Dryland (37%)

- Not suitable for intensive cropping or high value land uses without irrigation
- Drought prone with low pasture production rates during dry periods

Implications of Baseline N-Loss Land Use

- The estimated N-Loss from high value cropping land use will exceed the Baseline N-Loss (2009-2013) which was pastoral farming land use. Intensive cropping would not be a permitted activity under current LWRP Nutrient Rules.
- The potential environmental effects of intensification of this land is a high risk of contamination to ground water through nutrient leaching.

Implications of being an Isolated Parcel of HPL

- No adjacent HPL to amalgamate with. The land parcel is isolated from other HPL due to public roads and industrial zoned land therefore no opportunity to amalgamate or lease adjacent land for economies of scale.

b) ***Legal constraints (such as consent notices, local authority covenants, and easements); and***

Nil.

c) ***the size and shape of existing and proposed land parcels.***

Implications of lack of scale on productive capacity

The best and highest land use is pastoral farming.

Due to the physical and soil constraints listed above the land is not suited to growing regionally significant high value commercial crops (refer section 8.3). The best and highest land use is pastoral farming. At maximum potential pasture production and astute farm management practices, this land can potentially run up to 11.7 su/ha. The land therefore has a **moderate to low productive capacity** under pastoral farming.

Over the existing 17.2 ha effective the returns on livestock production will cover no more than approximately 50% of the loan value on the subject land (not including a cost of capital for equity).

9.3 ANALYSIS UNDER CLAUSE 3.08 NPS-HPL.

(1) **Territorial authorities must avoid the subdivision of highly productive land unless one of the following applies to the subdivision, and the measures in subclause (2) are applied:**

(a) the applicant demonstrates that the proposed lots will retain the overall productive capacity of the subject land over the long term:

As discussed above and from the site assessment there are 17.2 ha of 'highly productive land' as identified from the NZLRI 1:50,000 scale map on the subject title. The result of the rezoning proposal is a change of 17.2

ha of HPL to non-productive land use and therefore does not meet clause 3.08 of the NPS HPL and therefore needs to be assessed under clause 3.10 below.

9.4 ANALYSIS OF SITE UNDER CLAUSE 3.10 NPS-HPL

(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

As previously discussed, despite the site being classified as class 1 under the NZLRI classification the paddock scale mapping verified this land has physical and practical constraints that preclude the land being economically viable for highly productive land use. This includes:

- Lack of scale
- Lack of irrigation water on 37% of the property
- Reduced topsoil on 63% of the property
- No adjacent HPL to amalgamate with to increase scale.
- Baseline N-Loss prohibitive to intensification of land under LWRP nutrient loss limits.
- High risk to environmental effects with nutrient leaching under intensive land uses

The primary constraints are permanent with no opportunity to overcome long term.

Further to this the opportunity to either sell or lease to a neighbouring property for primary based production do not exist.

The estimated carrying capacity is 11.7 su/ha over the 17.2 ha = 201 stock units. This would need to be reduced significantly over January-February period or significant feed inputs would be required.

Area	4.8 ha	
Gross margin (gross revenue – total working expenses) from livestock farming[2] using the physical potential carrying capacity	17.2 ha x 11.7 su/ha = 201su 201 su x $199/su = $12,074	$39 999
Rates		$13,283
Capital value of the land (current effective area) from CCC rating information (17.2 ha effective)	Land value of $3,650,000 for 17.2ha = $212,209/ha	
Cost of capital for 80%	Finance required for 40% mortgage = $3,650,000 x 80% = $1 460,000 mortgage @ 5% interest rate = $73 000 per year of debt servicing	$73,000
Net Profit(loss)		-$46 284 *(This value is a pure operational result and does not include*

[2] Derived from Beef&lambNZ Economic service: mixed finishing Marlbourough Canterbury. This data includes elemments of irrigation and cash cropping as well as lamb and beef finishing.

		other costs such as wages of management and insurance and accounting.)

- This analysis assumes physical potential carrying capacity is achieved. This would require a considerable investment.

The above basic calculation shows that the best use of pastoral farming is not a viable economic option for the property. The beef&Lamb data used is from large commercial operations (300ha – 400ha) with cash cropping as a significant financial contributor and are therefore conservative when assessed against the benchmark limitations on this site.

(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

There is no loss of highly productive land from a regional perspective as the land cannot be considered highly productive. Significant, long-term constraints on the physical land resources mean this land has moderate to low productive capacity.

The Canterbury region has 1,300,000 ha of HPL (class 1, 2 and 3) land. The loss of 17.2 ha is < 0.00001% of the region's HPL land. This is insignificant in the context of HPL land in the region.

It is noted that the draft Canterbury Regional Policy Statement[3] does not include the subject land within the extent of highly productive land for the region. The draft CRPS has not been adoped or ratified.

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

The proposed rezoning to Industrial will not produce effects beyond those already experienced in the area. The development of this site will not cause further fragmentation of the HPL in the wider Christchurch district as this development is already isolated from other HPL by roads and industrial land.

(iii) avoids if possible, or otherwise mitigates, any potential reverse sensitivity effects on surrounding land-

As this proposal is for industrial activity adjacent to existing industrial activity, there is no reason for new reverse sensitivity effects beyond that currently experienced in the rural environment.

(c) the environmental, social, cultural and economic benefits of 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.

[3] https://www.ecan.govt.nz/your-region/plans-strategies-and-bylaws/canterbury-regional-policy-statement

Cost	Benefit	Overall
Environmental		
Given the highly modified state of the land, fragmentation and proximity to existing industrial land and roads the environmental cost of this proposed rezoning will be negligible.	The environmental benefits of this proposal are limited. There will be some benefits from the development of dedicated stormwater management systems.	Neutral.
Economic		
The site has been shown to be economically non-viable for primary production over both the short term and the long term. Therefore, the potential economic loss from the development is negligible.	The propsed development will create and mainatain a higher level of economic benefit.	Improvment.
Social		
Current social value of the land is directly related to the productive potential of the land. This site been shown to have low productive potential. Consequently, the social cost of development will also be low.	As the development will result in additional labour requirements and therefore people attributing value to the site the social benefit will be high both for the individual directly benefiting and the wider community through increased employment opportunity.	Improvement
Cultural		
No cultural costs have been identified.	No cultural costs have been identified.	Neutral.

As noted above, there will be no resulting significant loss (either individually or cumulatively) of productive capacity of highly productive land in the district as a result of this development, and therefore the benefits outweigh the potential costs associated with the loss of highly productive land.

(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):

Various aspects of the site's productive capacity and options to improve are discussed below.

(a) alternate forms of land-based primary production:	Economic analysis of highest and best use is pastoral use and shows the site is incapable of economic feasibility due to constraints of scale. The site is not suited to horticultural use.
(b) improved land-management strategies:	Typical land management improvements were assumed for the site. The site was shown to be unfeasible with these strategies employed.

(c) alternative production strategies:	N/A
(d) water efficiency or storage methods:	N/A, Irrigation not available over part of the property. Opportunities to increase the availability of irrigation water a re cinstrined by a lack of unallocated water and the cost of transferring existing allocation to this site. Current benchmarked land use for the Site limits the potentil to increase the viability of the Site.
(e) reallocation or transfer of water and nutrient allocations:	N/A
(f) boundary adjustments (including amalgamations):	There are no feasible options for amalgamation or lease of this land because: • The site is isolated from all other HPL land by industrial property and roads. • The site is not economically viable and therefore unattractive for a lessee.
(g) lease arrangements:	As above.

(3) Any evaluation under subclause (2) of reasonably practicable options: (a) must not take into account the potential economic benefit of using the highly productive land for purposes other than land-based primary production; and

(b) must consider the impact that the loss of the highly productive land would have on the landholding in which the highly productive land occurs; and

A) – the analysis above only considers the lands suitability for land based primary productivity. The site's suitability for land based primary productivity is severely constrained by a lack of scale.

B) The analysis is based on the extent of HPL for the Site. As the HPL on Site is not economic, the effect of its loss on the residual land will be negligible.

(c) must consider the future productive potential of land-based primary production on highly productive land, not limited by its past or present uses.

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

landholding has the meaning in the Resource Management (National Environmental Standards for Freshwater) Regulations 2020
long-term constraint means a constraint that is likely to last for at least 30 years.

10 NPS HPL Conclusion

The site at 290-376 Springs Road is severely constrained due to physical constraints on the land resources and a small, physically isolated parcel of HPL with no potential to scale up preventing highest and best use from being economically viable.

When modelled under a highest and best land use the lack of scale results in disproportionally high direct and fixed costs and limited income that will not cover the cost of capital, let alone insurance, accounting cost or wages of management. A lack of viability and isolation also precludes the site from being attractive for amalgamation of leasing.

Therefore, Christchurch City Council can be satisfied that there are permanent and long-term constraints on this site that that mean the use of the land for land-based primary productivity is not able to be economically viable for at least 30 years.

11 CHRISTCHURCH CITY COUNCIL DISTRICT PLAN PRODUCTIVE LAND

The criteria for identifying and assessing Productive Land as defined in the Christchurch City Council District Plan, Chapter 17, aligns with the definition in the National Policy Statement for HPL. This interim definition is used until CCC completes and notifies its official mapping of highly productive land under the NPS_HPL framework.

Therefore, with respect to the assessment outlined above, Christchurch City Council can be satisfied that there are permanent and long-term constraints on this site that mean the use of the land for land-based primary productivity is not economically viable for at least 30 years.

12 Appendix 1: Paddock Scale Soil Resource Description

The two main soil types found on the property are described below.

	**Name**: Kaiapoi silt loam 1a and Waimakariri 1a **Location:** The predominant soil type found across the property. **Parent rock material**: Non accumulating alluvium. **Drainage status**: Well drained. **Topsoil consistence**: Friable when moist, friable when wet. **Degree of topsoil development**: Weakly developed **Pugging susceptibility:** Low **Profile description**: 1a 1b (mined topsoil) **Current soil fertility:** Unknown **Soil Limitations:** 1aDepleted A Horizon, low soil organic matter, weak soil structure,
	**Name**: **Soil 2: Waimakiriri Silt loam** **Location:** The predominant soil type found across the property on land that has not been altered. **Parent rock material**: Non accumulating alluvium. **Drainage status**: Well drained. **Topsoil consistence**: Friable when moist, friable when wet. **Degree of topsoil development**: **Pugging susceptibility:** Low **Profile description**: 15cm **Current soil fertility:** Unknown **Soil Limitations:**

13 Appendix 2: NZLRI Soil Description

Source: General Survey of the Soils of South Island, Soil Bulletin 27.

Soil Name	Description
Kaiapoi sandy loam	10 in very dark grey, blocky granular silt loam, friable, over pale olive mottled red, massive fine silt loam, friable to firm.
Waimakariri silt loam	9in very dark greyish brown (10YR 3/2) fine sandy loam, friable, weakly developed medium and fine granular and nutty structure, indistinct boundary, over 7in olive brown (2.5YR 4/4) fine sandy loam, friabke, weakly developed coarse blocky structure with much fine granular structure in places, sharp boundary, over Pale olive brown (2.5YR 5/4) fine sand.