

Soil and Land Use Capability classification assessment

SL1 Houchens Development site



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1. Introduction

Landsystems undertook a Soil and Land Use Capability (LUC) assessment of the SL1 Houchens Development site (the **Site**) for the Referral Application under the Fast-track Approvals Act (FTAA). The assessment was desktop based using regional scale soil and LUC data. The assessment was carried out to provide an overview of the soils and LUC units on the Site, characterise their limitations for productive use, identify the presence of Waipa District Plan defined high class soils, and identify the presence of highly productive land as defined by the National Policy Statement for Highly Productive Land.

Site Description

The Site is approximately 146 ha, comprising flat to gently undulating land and rolling to strongly rolling topography. The Site is situated within the Waipa District, bounded to the northeast by State Highway 3 (SH3) and to the northwest by Houchens Road. The extent of the Site is shown by the red boundary on the Master Plan¹ in **Figure 1**.

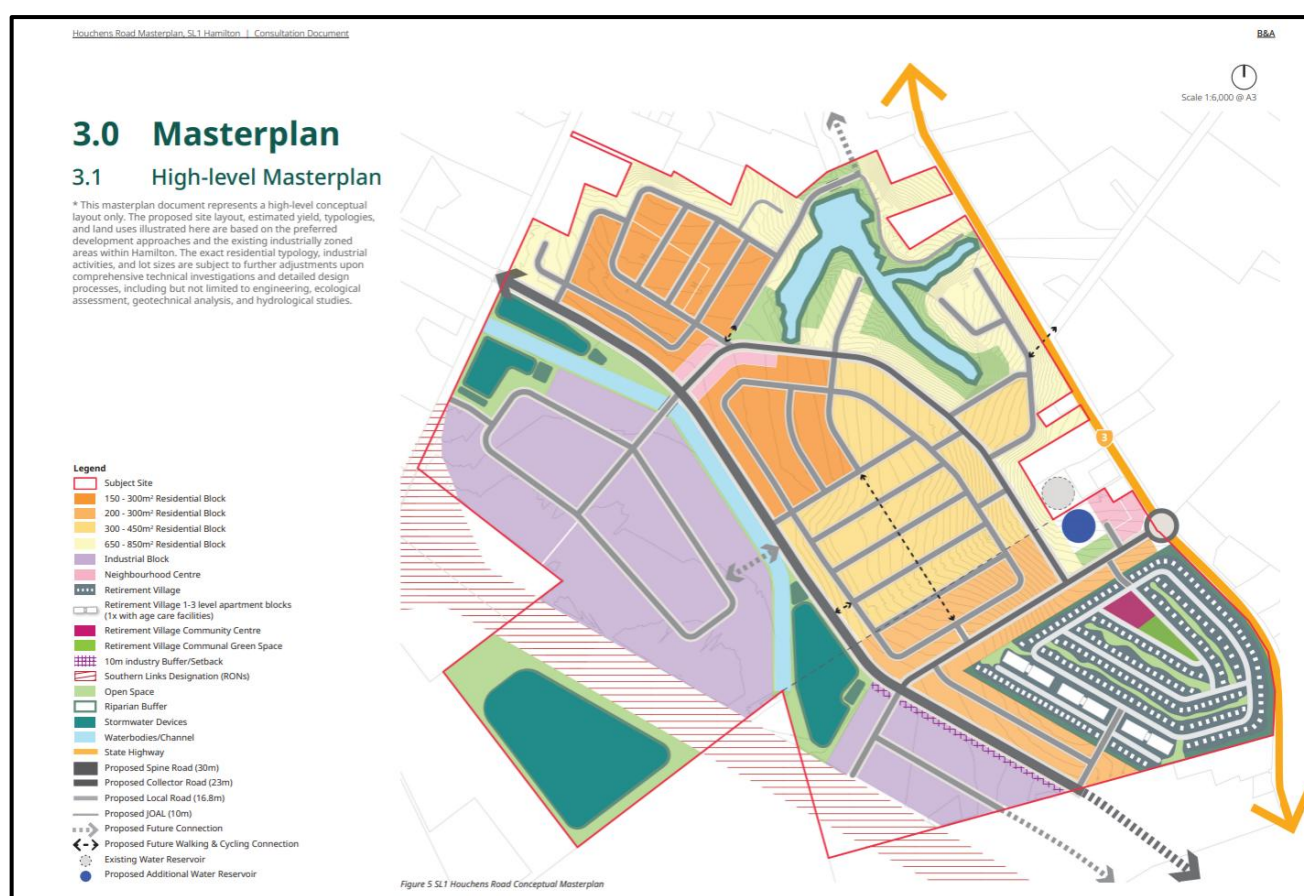


Figure 1: The Site assessment area (red boundary) - SL1 Houchens Development site (146 ha).

The Project

The SL1 Houchens Development is a combined residential and industrial development that comprises circa 145 hectares, which will be split into a mix of residential densities and industrial

¹ SL1 Houchens Development Masterplan - Consultation Document | Hamilton | October 2025. B&A

development. The residential component comprises circa 55 ha of net residential, including 1,300 residential units of varying typologies (including single detached, duplex, terraced apartment), a 400-unit retirement village, along with two supporting mixed-use neighbourhood centres, open spaces, waterbodies and infrastructure devices including wetlands. The SL1 Houchens Development includes a net 25 ha of industrial, generating between 24 – 47 industrial sized lots for industrial activities.

The residential development is underpinned by a series of design principles, which focus on creating a well-connected, legible, and diverse community on Hamilton City's urban fringe. The proposed transport network, with a 30-metre-wide spine road running north-to-south, is supported by existing and proposed local roads, cycle connections and pedestrian pathways to create an accessible and legible development. As aforementioned, a range of housing typologies and densities are proposed to meet the growing and changing needs of the housing market to ensure there are options for future residents. Each typology has been thoughtfully located, based on opportunities and constraints, with density ranging from terraced, duplex and detached dwellings to ensure integration with the adjoining urban footprint.

Located on the eastern and central portions of the Houchens Development are neighbourhood centres that will provide a range of amenities and services to support the residential and industrial developments. This neighbourhood centre will likely include commercial properties, childcares, cafés, and a local superette.

Sitting at the lower, southern point of the site is a retirement village that comprises approximately 15 hectares and provides 400 units of varying typologies, including traditional villa and apartment typologies. This will be serviced by its own private transport network, infrastructure, and high amenity open spaces.

On the north-western edge is strategic industrial land that provides key connectivity to the potential Southern Links Houchens interchange, a Road of National Significance (RONS).

The wider SL1 Houchens Development integrates throughout a number of open spaces, waterbodies and wetlands that are well distributed to create a high amenity community that will be a pleasant and enjoyable place to live for future residents. These open spaces, waterbodies and wetlands support ecological restoration through the retention of a number of natural species and riparian revegetation and support broader cultural biodiversity outcomes within SL1 Houchens Development.

The SL1 Houchens Development includes a proposed Water Reservoir, to provide the ability for a long term strategic water asset for Hamilton City Council to be designated.

The development will be appropriately serviced via a robust infrastructure strategy, which includes the addition of a water reservoir to accompany the one already existing, utilisation of existing services and stormwater artificial wetlands.

2. LUC background

LUC classification is the common method for assessing land in New Zealand; it uses the Land Use Capability System, which is part of the New Zealand Land Resource Inventory (NZLRI) as produced by the Water and Soil Division of the Ministry of Works, for the National Water and Soil Conservation

Organization during the 1970s. In 2009 the 3rd Edition of the LUC Survey Handbook² was published and has been used for this assessment. The LUC uses a systematic arrangement of different kinds of land according to those properties that determine its capacity for permanent sustained production, where the word “capability” is used in the sense of “suitability for productive use” after taking into account the physical limitations the land may have.

The LUC classification is specifically designed to provide an index of versatility. There are eight LUC classes (**Figure 2**) arranged in order of increasing degree of limitation or hazard to use; and a decreasing order of use, from Class 1 to 8.

Increasing limitations to use ↓	LUC Class	Arable cropping suitability†	Pastoral grazing suitability	Production forestry suitability	General suitability	Decreasing versatility of use ↓		
	1	High ↓ Low	High ↓ Low	High ↓ Low	Multiple use land			
	2							
	3							
	4							
	5	Unsuitable			Low		Low	Pastoral or forestry land
	6							
	7		Unsuitable	Unsuitable	Conservation land			
	8							

Figure 2: Increasing limitations to use and decreasing versatility of use from LUC Class 1-8.

Within each LUC Class the land is assigned a subclass according to the kind of limitation (e = Erodibility, w = Wetness, s = Soil limitations within the rooting zone, c = Climate). At the most detailed level LUC groups together those inventory units which respond similarly to the same management, and which are suitable for the same kinds of crops, pasture, or forest species with the same potential yield and which require the application of the same conservation measures.

The LUC worksheets were compiled from all relevant databases of land resource documents available at the time, consequently some sheets suffered from a lack of information that only detailed soil and geological surveys could have provided. Therefore, there are scale limitations, which need to be considered, especially when interpretation is required at the individual property scale.

The LUC units displayed on the 1970s worksheets remain reasonably robust but are subject to change. For example, the second edition (1993) Northland region worksheets were mapped at the more detailed scale of 1:50 000, replacing the earlier first edition 1:63,360 maps. In the first edition, 69 LUC units were defined compared with 91 LUC units in the second edition - about 60 of the first edition classification units changed.

² Lynn IH, Manderson AK, Page MJ, Harmsworth GR, Eyles GO, Douglas GB, Mackay AD, Newsome PJF 2009. Land Use Capability survey handbook – a New Zealand handbook for the classification of land. AgResearch Hamilton; Manaaki Whenua Lincoln; GNS Science Lower Hutt, New Zealand.

The average area for a map unit is 125 ha, however, at the 1:50 000 scale of mapping it is theoretically possible to delineate an unhooked inventory map unit (no vinculum) area of 60 ha (60 ha = 600 m by 1000 m) provided the geology, soil, vegetation, erosion and slope are uniform.

The purpose of this background information is to illustrate and emphasise that the NZLRI information provides excellent physical base data for planners (a planning tool) but is not fit for purpose as a plan (map) unless undertaken at the correct scale.

3. Waipa District Plan definition of high class soil

Under the Waipa District Plan definition, “High class soils” are defined as follows³:

‘High class soils’ means those soils of Land Use Capability classes 1 and 2 (excluding Peat Soils), and soils of Land Use Capability classes 3e1 and 3e5 classified as Allophanic Soils using the New Zealand Soil Classification.

4. National Policy Statement for Highly Productive Land 2022

The National Policy Statement for Highly Productive Land 2022 (NPS-HPL)⁴ came into force on the 17th of October 2022.

‘Highly productive land’ is defined as follows:

means land that has been mapped in accordance with clause 3.4 and is included in an operative regional policy statement as required by clause 3.5 (but see clause 3.5(7) for what is treated as highly productive land before the maps are included in an operative regional policy statement and clause 3.5(6) for when land is rezoned and therefore ceases to be highly productive land).

Our understanding is that NPS-HPL clause 3.5(7) applies because maps produced in accordance with clause 3.4 have not yet been included in an operative regional policy statement as required by clause 3.5. Clause 3.5(7) says:

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

(a) is

(i) zoned general rural or rural production; and

(ii) LUC 1, 2, or 3 land; but

(b) is not:

³ <https://eplan.waikatodistrict.govt.nz/>

⁴ <https://environment.govt.nz/publications/national-policy-statement-for-highly-productive-land-2022-amended-august-2024/>

(i) identified for future urban development; or

(ii) subject to a Council initiated, or an adopted, notified plan change to rezone it from general rural or rural production to urban or rural lifestyle.

The NPS-HPL includes the following definition of LUC 1, 2, or 3 land:

“LUC 1, 2, or 3 land means land identified as Land Use Capability Class 1, 2, or 3, as mapped by the New Zealand Land Resource Inventory or by any more detailed mapping that uses the Land Use Capability classification”.

For the purpose of defining and mapping highly productive land on the site, the Environment Court decision (Decision No. [2024] NZEnvC 83)⁵ determined that only the NZLRI LUC map information at the time the NPS-HPL 2022 became operative (17th October 2022) can be used.

5. Non-productive land and modified areas

For an accurate assessment of LUC classification for a property, the assessment should be based on the current condition of the area (i.e. mapped in current state). This is important because some land management practices (e.g. the placement of tracks, excavation of drains, and general earthworks) result in irreversible changes to the soil (i.e. changes other than those that can be remediated by management practices and return the soil to its intrinsic state). These areas are referred to as non-productive land. Examples of non-productive land include native vegetation, wetlands and riparian areas, tracks, and buildings and curtilage.

Non-productive land can include areas where the soil has been modified by truncation, placement of fill or extensive mixing. Where these areas do not resemble a functioning soil, the areas are not considered to be available for primary production (i.e. they are non-productive land). Where these areas do resemble a functioning soil (such as the reinstatement of a soil profile following gravel extraction) the land can be assigned a LUC classification.

For this desktop assessment the productive area of the Site (to which the LUC classification is applied) is the Site area including non-productive land (i.e. the non-productive land areas have not been delineated and removed).

6. Regional scale soil and LUC map information (1:50,000 scale)

An initial desktop LUC assessment was undertaken for the Site. Available map information, soil reports and geospatial data included:

- New Zealand Land Resource Inventory (NZLRI) layers, including the New Zealand Fundamental Soil Layer (NZFSL) and Land Use Capability Layer (providing map units of dominant soil type and LUC unit)⁶

⁵ <https://www.environmentcourt.govt.nz/assets/Documents/Publications/2024-NZEnvC-083-Blue-Glass-Limited-v-Dunedin-City-Council.pdf>

⁶ <https://lris.scinfo.org.nz/layer/48076-nzlri-land-use-capability-2021/>

- S-Map Online (providing map units of Soil Siblings)⁷

Of the available map information sources, the S-Map Online soil map information, NZFSL and NZLRI map information are at a regional scale (approximately 1:50,000 scale).

NZLRI (1:50,000 scale) soil and LUC classification

Based on the available NZLRI and NZFSL map information the soils and LUC units the Site are mapped as shown in **Figure 3**. Available NZLRI map information maps the property⁸ as predominantly the Kaipaki peaty loam and loamy peat (Organic Soil within the New Zealand Soil Classification⁹) and the Rukuhia peat (Organic Soil) on flat to gently undulating slopes. The parent material of these soils is peat, with the Rukuhia peat being described as weakly decomposed deep peat, and the Kaipaki peaty loam or loamy peat as moderately decomposed peat on alluvium. The subdominant soil is the moderately well drained Hamilton clay loam (Granular Soil) found on rolling and strongly rolling slopes in the north and east of the Site. The parent material of these soils is older, strongly weathered 'Hamilton Ash Formation'.

The Site contains 38% (or 55.8 ha) very poorly drained Kaipaki peaty loam or loamy peat on flat to gently undulating slopes (0-3°) with an LUC classification of LUC 2w2. Thirty-four percent (or 50.1 ha) of the Site comprises very poorly drained Rukuhia peat on flat to gently undulating slopes (0-3°) with an LUC classification of LUC 2s5. Less than one percent (or 0.7 ha) of the Site comprises moderately well drained Hamilton clay loam on rolling slopes (8-15°); LUC 3e3. Twenty-seven percent (or 39.4 ha) of the Site comprises moderately well drained Hamilton clay loam on rolling slopes (16-20°), with an LUC classification of LUC 4e2 (**Table 1**).

⁷ <https://smap.landcareresearch.co.nz/maps-and-tools/app/>

⁸ <https://lris.scinfo.org.nz/layer/48134-nzlri-north-island-edition-2-all-attributes/>

⁹ Hewitt AE. 2010. New Zealand Soil Classification. 3rd ed. Landcare Research Science Series No. 1. Lincoln, Manaaki Whenua Press.

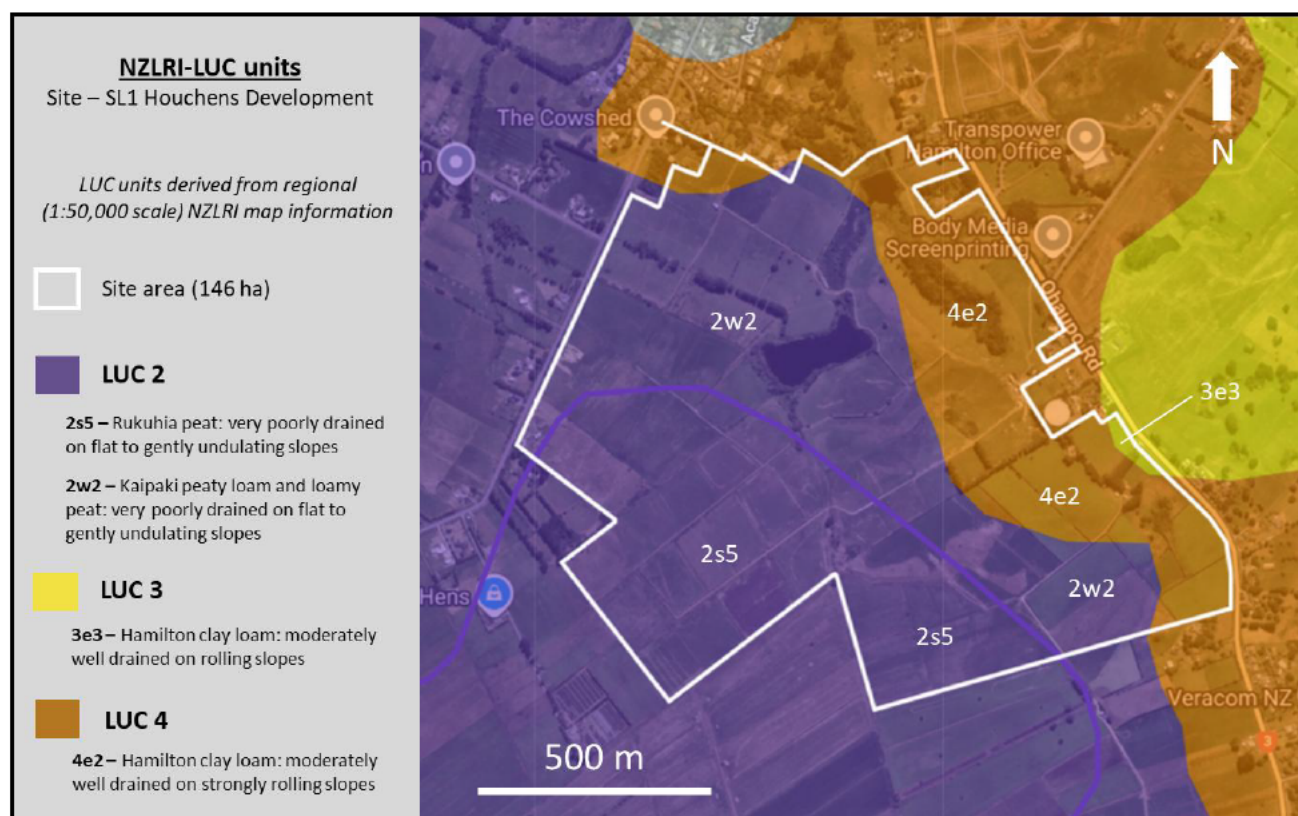


Figure 3: LUC units for the Site, derived from regional scale NZLRI-LUC map information.

Table 1 gives the general characteristics of the soils and LUC units as mapped in Figure 3. The approximate % cover of these regional NZLRI derived LUC units were estimated using Google MyMaps.

Table 1. Summary of the NZLRI soil and LUC map unit characteristics and approximate % cover (estimated from Figure 3) of regional NZLRI derived LUC units within the Site.

Soil type (NZSC Soil Order)	Parent material	Soil drainage	Slope class	LUC unit (limitation)	Area of total assessment area ha (%)*
Rukuhia peat (Organic Soil)	Weakly decomposed peat	Very poorly drained	A	2s5 (soil)	50.1 (34)
Kaipaki peaty Loam and loamy peat (Organic Soil)	Moderately decomposed peat over alluvium (at > 1 m depth)	Very poorly drained	A	2w2 (wetness)	55.8 (38)
Hamilton clay loam (Granular Soil)	Strongly weathered "Hamilton Ash Formation"	Moderately well drained	C	3e3 (erosion)	0.7 (<1)
Hamilton clay loam (Granular Soil)	Strongly weathered "Hamilton Ash Formation"	Moderately well drained	D	4e2 (erosion)	39.4 (27)

*% areas rounded to whole number.

Based on the available NZLRI and NZFSL map information the majority of the assessment area is a very poorly drained Kaipaki peaty loam and loamy peat on flat to gently undulating slopes and

classified as LUC 2w2 (38% of the Site); with a similar sized area comprising very poorly drained Rukuhia peat flat to gently undulating slopes and classified as LUC 2s5 (34% of the Site); a small area of moderately well drained Hamilton clay loam, on rolling slopes classified as LUC 3e3 (less than 1% of the Site); and an area of moderately well drained Hamilton clay loam on strongly rolling slopes classified as LUC 4e2 (27% of Site) (**Table 1**).

S-Map Online

The S-Map soil map information is sourced from S-Map Online and is mapped at 1:50,000 scale. S-Map soil polygons are only available on the S-Map Online website. The soil names for each map unit are 'soil siblings', with a probability of occurrence (%) and certainty rating provided for each soil sibling in a map unit.

S-Map Online identified the majority of the soils on the Site as Organic Soil (53%), Brown Soil (18%), Allophanic Soil (15%), Granular Soil (12%) and Gley Soil (less than 2%) (**Figure 4** and **Table 2**).

Comparing the soil distribution as mapped according to S-Map, with the soil distribution represented by the NZLRI mapping suggests that the area on the Site mapped as Granular soil may comprise a mix of Granular soils, clay rich Brown soils associated with the Granular soils, Allophanic soils and Gley soils, and that the extent of these soils may be greater than indicated by the NZLRI map information. Given that S-Map does not provide slope information, LUC classification cannot be confirmed without on-site assessment. However, if the NZLRI slope classes are applied the land with these soils would remain predominantly LUC class 4 land, with a small area of LUC class 3 land.

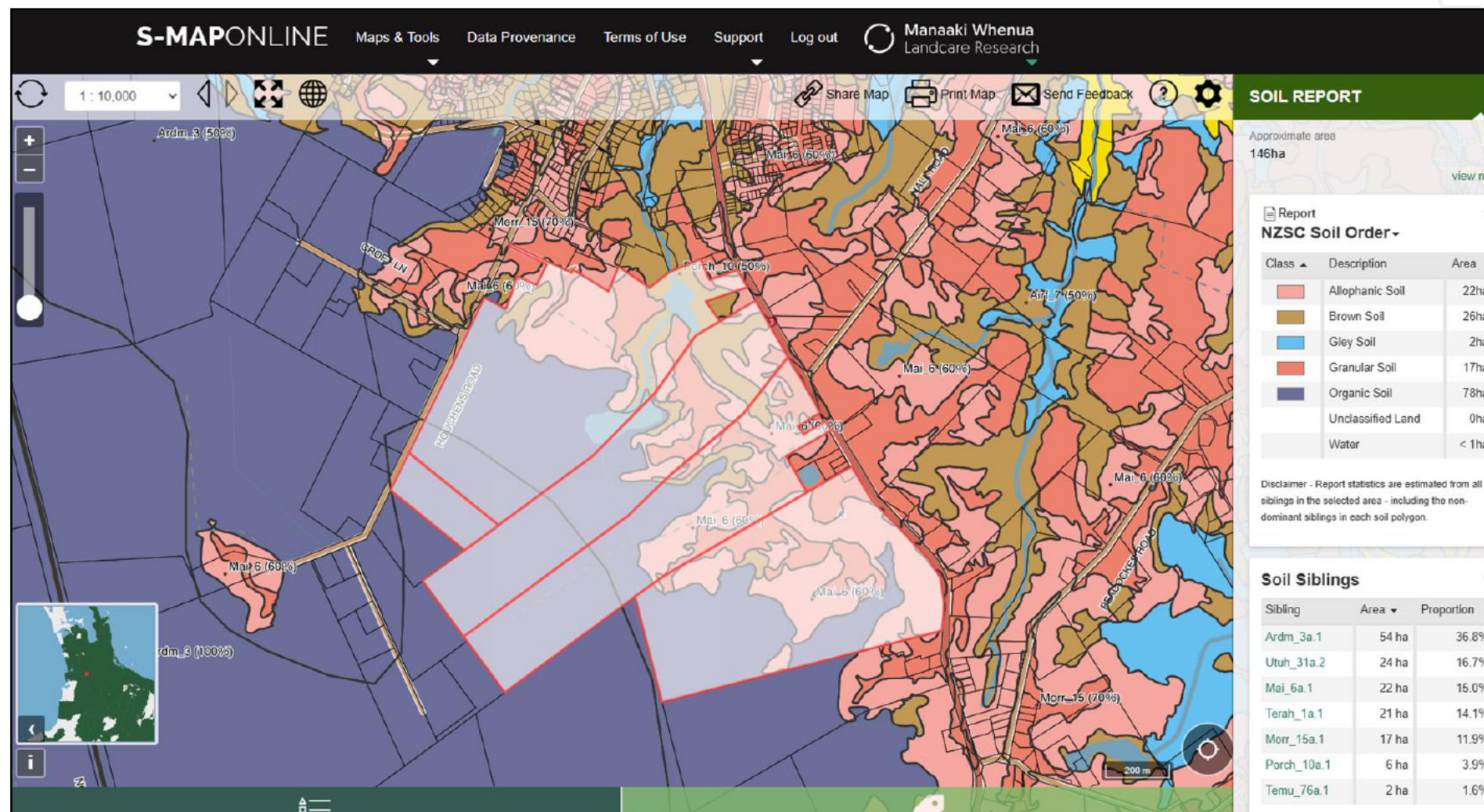


Figure 4: S-Map soil (Soil Order and soil sibling) distributions for the Site.

Table 2 provides a summary of the S-Map soil sibling map unit characteristics, including S-Map Family, S-Map Sibling, correlating Soil Series name, NZSC Soil Order, soil drainage, and their approximate proportions, for the Site. All soils are deep (> 100 cm), have either silt loam or clay loam textures, with variable drainage. This information is derived from S-Map Online factsheets and can be sourced from the S-Map Online website¹⁰.

Table 2. S-Map soil sibling map unit characteristics for the Site.

S-Map Family	S-Map Sibling	Soil Series name	NZSC (Soil Order)	Soil drainage	Proportion (%)
Ardmore	Ardm_3a.1	Rukuhia peat	Organic (OFA)	Very poorly drained	36.8
Utuhina	Utuh_31a.2	Te Rapa	Organic (OHM)	Very poorly drained	16.7
Mairoa	Mai_6a.1	Ohaupo	Allophanic (LOT)	Well drained	15.0
TeRahu (Terah)	Terah_1a.1	Ohaupo	Brown (BOT)	Moderately well drained	14.1
Morrinsville	Morr_15a.1	Hamilton	Granular (NOT)	Moderately well drained	11.9
Porchester	Porch_10a.1	Rotokauri	Brown (BOM)	Imperfectly drained	3.9
Temuka	Temu_76a.1	Rotokauri	Gley (GOT)	Poorly drained	1.6

The S-Map soil map information provides a more spatially detailed representation of the soils on the site than the NZLRI 1:50,000 soil map information. However, because of the absence of land characteristics information (e.g. slope) for the soil map units, there is currently no direct correlation with LUC units. Some, but not all, of the S-Map soil map units correlate to the soil series identified by the NZLRI map information. In this report, we have retained the DSIR's soil nomenclature (e.g. soil type and series names) in preference to the S-Map soil sibling nomenclature to allow for direct correlation of the soils with the LUC units provided by the NZLRI map information and associated NZLRI Extended Legends.

7. NPS-HPL assessment based on regional map information

Applying the transitional definition of the NPL-HPL, the NPS-HPL is only applicable to the Waipa District Plan Rural Zone areas of the Site (**Figure 7**).

¹⁰ <https://smap.landcareresearch.co.nz/maps-and-tools/app/>

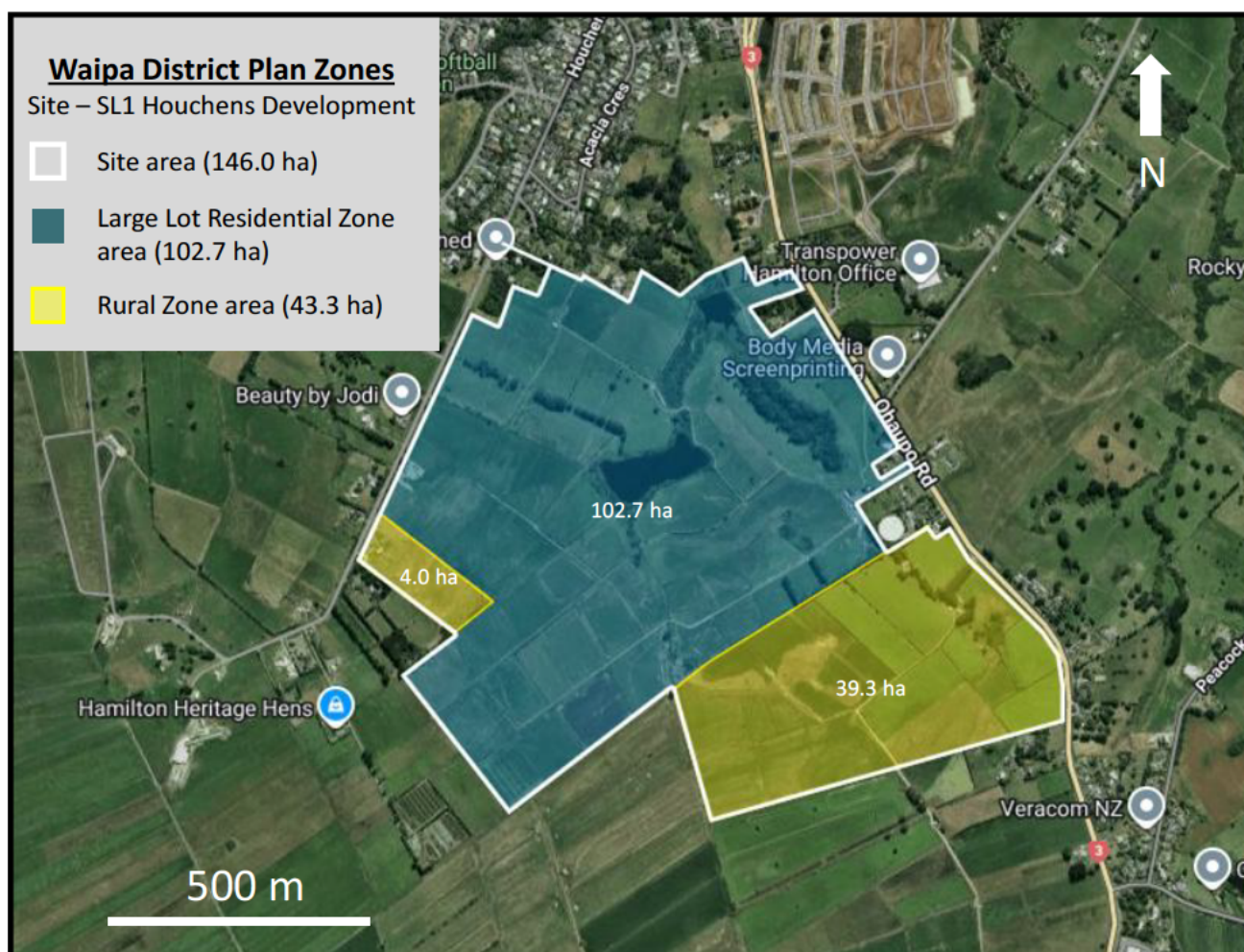


Figure 7: Waipa District Plan zones for the Site.

For the Waipa District Plan Rural zoned land of the Site and applying the NPS-HPL, LUC 2s5, 2w2, and 3e3 land is considered highly productive land. LUC class 4e2 land is not considered highly productive land (Figure 8).

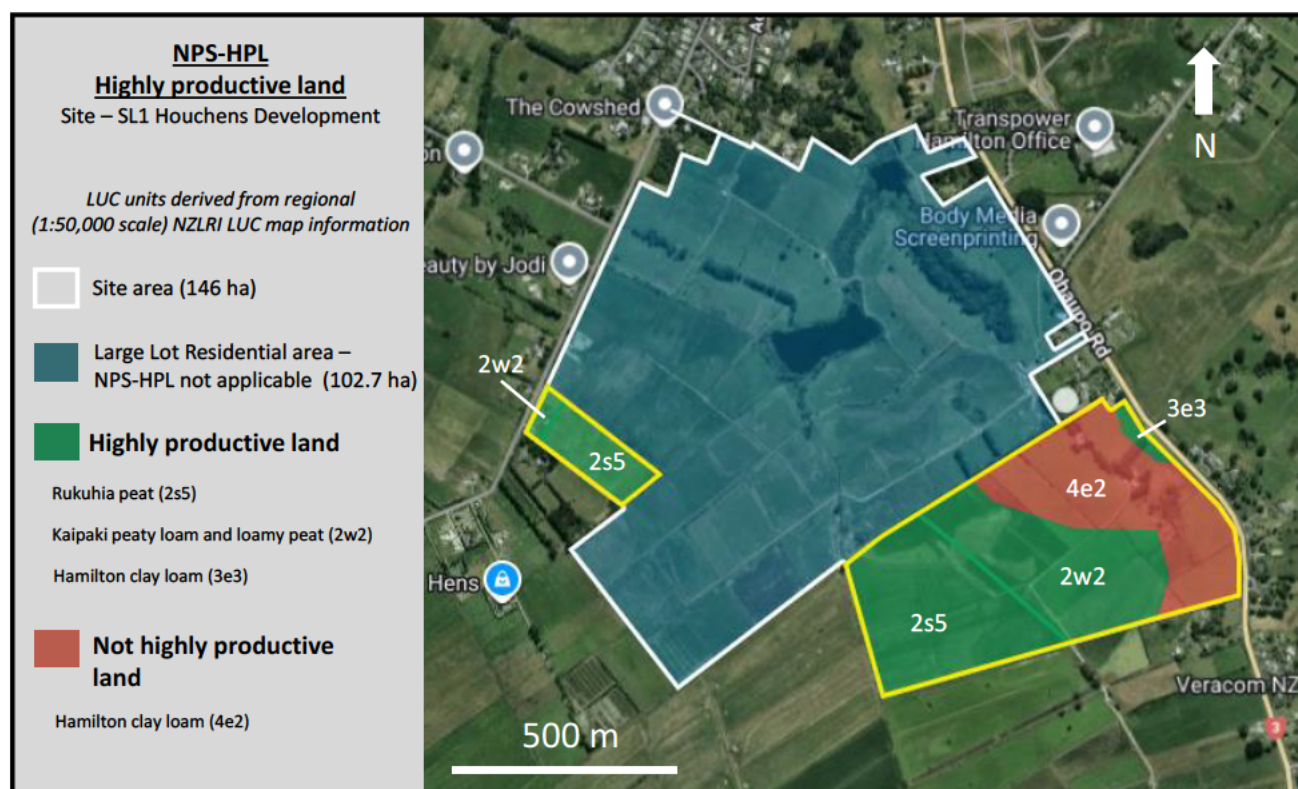


Figure 8: The distribution of NPS-HPL highly productive land for the Site, based on the NZLRI (1:50,000 scale) map information.

The total area of NPS-HPL highly productive land for the Site is summarised in Table 3.

Table 3. NPS-HPL highly productive land for the Site.

Waipa District Plan zoning	NZLRI LUC unit(s)	Area in hectares (% of Site area)
NPS-HPL highly productive land		
Rural	2w2	12.2 (8.4%)
	2s5	16.4 (11.2%)
	3e3	0.7 (0.5%)
Total		29.3 (20.1%)
Not highly productive land		
Rural	4e2	14.0 (9.6%)
Large Lot Residential	2w2, 2s5, 4e2	102.7 (70.3%)
Total		116.7 (79.9%)

For the Site, 29.3 ha (20.1% of the Site area) is defined as NPS-HPL highly productive land, and the balance of the Site area (116.7 ha – 79.9%) is not defined as NPS-HPL highly productive land.

8. Waipa District Plain high class soil assessment based on regional map information

Based on the available 1:50,000 scale NZLRI LUC information and applying the Waipa District Plan definition of high class soil, there is no soil considered high class soil within the assessment area. LUC 2s5 and 2w2 (both peat soil), LUC 3e3, LUC 4e2 are not considered high class soil (Figure 9).

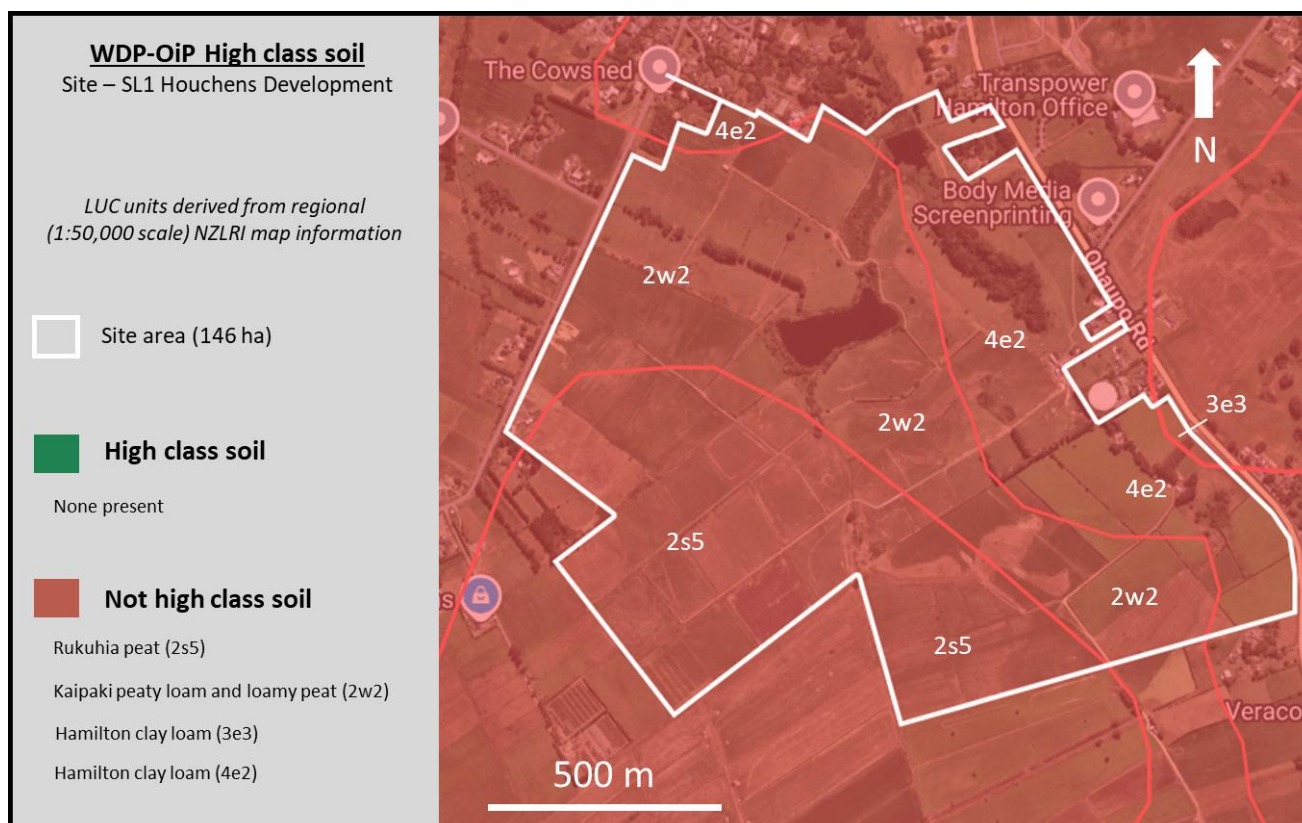


Figure 9: The distribution of Waipa District Plan defined high class soil for the Site, based on the (1:50,000 scale) NZLRI map information.

9. LUC limitations and land use

The LUC limitations identified for the Site are ‘e’ – erosion (LUC 4e2), ‘w’ - soil wetness (LUC 2w2) and ‘s’ – soil limitations (LUC 2s5).

It should be noted that the Rukuhia soil of the LUC 2s5 unit and the Kaipaki soil of the LUC 2w2 unit are both classified as Organic soil (peat soil). The main differences in the characteristics between the two soils is that the Rukuhia soil comprises more fibrous peat, often contains woody material, and is commonly deeper than the more mineralised Kaipaki soil of the LUC 2w2 unit.

LUC 2w2 and 2s5 land is not particularly versatile due to very poor drainage. However, with careful ongoing management using artificial drainage, their versatility can increase. Conversely, even with drainage in place, in some instances land can remain wet at least seasonally, or a wetness limitation be present throughout most of the year. An on-site assessment would be required to accurately assess the drainage status of the LUC 2w2 and 2s5 land on the Site. Although arable cropping is possible in drier months, trafficability is very limited during wetter months. Seasonally high water tables, and days in which soil is inundated by water on this land is likely to affect the yield and/or survival of water sensitive crops.¹¹

¹¹ Lynn IH, Manderson AK, Page MJ, Harmsworth GR, Eyles GO, Douglas GB, Mackay AD, Newsome PJF 2009. Land Use Capability survey handbook – a New Zealand handbook for the classification of land. AgResearch Hamilton; Manaaki Whenua Lincoln; GNS Science Lower Hutt, New Zealand.

Both LUC 2w2 and 2s5 land is best suited to pastoral land use, with no or lighter stocking during wetter months, and under carefully managed conditions, may support arable cropping during drier months.

LUC 3e3 land has moderately well drained, clay rich Granular soils (Hamilton soils) on rolling slopes. This land has a moderate susceptibility to erosion under cultivation.¹² The LUC 3e3 soils can support horticulture but have limited suitability due to their clay texture and moderate drainage which affects the yield and/or survival of horticulture crops requiring deep, friable, well drained soil. LUC 3e3 land is best suited to pastoral land use.

LUC 4e2 land also has moderately well drained, clay rich Granular soils (Hamilton soils) but steeper (strongly rolling) slopes than LUC 3e3 land. LUC 4e2 land has a moderate to high susceptibility to erosion under cultivation.¹³ LUC 4e2 land is best suited to pastoral land use, plantation forestry, or conservation where erosion is evident.

10. Productive capacity of Organic soils

Organic (peat) soils

Organic soils in the Waikato are primarily used for pastoral use including dairy farming, with smaller areas utilised for seasonal arable cropping, such as maize for silage, and potentially horticultural use limited to blueberries.

Kaipaki and Rukuhia peat soils are naturally poorly drained and prone to subsidence when drained. Key properties include high organic carbon, low bulk density, high porosity, low bearing strength, and severe trafficability limitations, particularly when wet. Soil acidity varies depending on management, and available rooting volume and aeration are limited when water tables are kept high to minimise subsidence.

Soil management requirements

Peat soils require careful drainage and cultivation to establish productive pastures and crops. Long-term management must balance lowering the water table to allow production while maintaining sufficient moisture to minimise peat subsidence caused by oxidation, compaction, and consolidation. Nutrient management, particularly phosphorus, and soil pH adjustment are essential for maintaining productive capacity. Cultivation for seasonal arable crops, such as maize, can exacerbate peat subsidence and must be carefully managed.

Soil wetness limitations

The Site has soil wetness limitations that persist despite the presence of drainage. Limitations include high water tables and slow internal drainage, which restrict long-term land use to summer

¹² Lynn IH, Manderson AK, Page MJ, Harmsworth GR, Eyles GO, Douglas GB, Mackay AD, Newsome PJF 2009. Land Use Capability survey handbook – a New Zealand handbook for the classification of land. AgResearch Hamilton; Manaaki Whenua Lincoln; GNS Science Lower Hutt, New Zealand.

¹³ Lynn IH, Manderson AK, Page MJ, Harmsworth GR, Eyles GO, Douglas GB, Mackay AD, Newsome PJF 2009. Land Use Capability survey handbook – a New Zealand handbook for the classification of land. AgResearch Hamilton; Manaaki Whenua Lincoln; GNS Science Lower Hutt, New Zealand.

cropping and pastoral activities. Artificial drainage improves versatility, but the land remains seasonally wet. Seasonally high water tables and temporary surface inundation on LUC 2w2 and 2s5 areas may reduce crop yield or survival, making pastoral land uses with reduced stocking during wetter months the most suitable option. Ongoing drain maintenance is critical to maintain drainage efficiency.

Long-term productive capability

Despite inherent limitations, the Site can support intensive pastoral use, such as dairy farming, and seasonal arable cropping where conditions allow, with ongoing management of drainage, water tables, nutrients (particularly phosphorus), soil pH, and seasonal wetness. However, soil and land limitations restrict the type, intensity, and timing of productive land uses. Improved drainage can extend productive periods, but long-term deepening of drains may accelerate peat subsidence, lowering the soil surface. The low bulk density and high porosity of peat also limit trafficability during wet months.

Taking soil properties, wetness limitations, and subsidence risk into account, the land with Organic soils on the Site is best suited to pastoral use, with careful management required to maintain soil structure, minimise subsidence, and optimise their productive use.

11. Summary

Based on NZLRI LUC map information, and the Waipa District Plan zoning, 29.3 ha (20.1%) of the Site area is classified as highly productive land when applying NPS-HPL clause 3.5(7).

Based on NZLRI LUC map information, and the Waipa District Plan definition for high class soil, the Site does not have any land with high class soils.

Regional scale (1:50,000 scale) NZLRI and NZFSL map information showed that land with Organic soils (peat soils) occupy 72% of the Site area. Moderately well drained Granular soils on rolling slopes (LUC 3e3) and strongly rolling slopes (LUC 4e2) respectively occupy <1% and 27% of the Site.

More recent S-Map soil map information (considered to be more spatially accurate), indicates that the area on the Site mapped as Granular soil may comprise a mix of Granular soils, clay rich Brown soils associated with the Granular soils, Allophanic soils and Gley soils, and that the extent of these soils may be greater than indicated by the NZLRI map information. On-site assessment would be required to confirm these soils and their LUC classification.

Land use on the very poorly drained Organic soils (LUC units 2w2 and 2s5) is limited due to soil wetness limitations that persist even after drainage. Based on the soil wetness limitation, this land is best suited to pastoral use, with reduce stocking in wetter months, or possibly with careful management, arable uses in drier months provided trafficability is not restricted. High ongoing management inputs are required.

Land use on the moderately well drained Granular soils (LUC 3e3 on rolling slopes, and LUC 2s5 on strongly rolling slopes) is limited due to soil erosion limitations that increase with slope. Based on the soil erosion limitations, the LUC 3e3 land is best suited to pastoral use, with limited potential for arable use with careful management, and the LUC 4e2 land is best suited to pastoral use, plantation forestry, or conservation if erosion is evident.