

Soil and Land Use Capability classification assessment
300, 328, 350, 370, & 458 Karaka Road, Drury



Prepared for: Fisher & Paykel Healthcare Properties Limited.

Prepared by: Dr Reece Hill – Landsystems.

Field assessment: 11 January 2023.

Report date: 20 May 2024.

Disclaimer

BeatsonHill Limited (trading as Landsystems) requests that if excerpts or inferences are drawn from this document for further use by individuals or organisations, due care should be taken to ensure that the appropriate context has been preserved and is accurately reflected and referenced in any subsequent spoken or written communication. While BeatsonHill Limited has exercised all reasonable skill and care in controlling the contents of this report, BeatsonHill Limited accepts no liability in contract, tort or otherwise, for any loss, damage, injury or expense (whether direct, indirect or consequential) arising out of the provision of this information or its use by you or any other part.

Contents

1. Introduction	3
Project description	3
Land Use Capability assessment overview	3
2. Background information	4
Soils	4
Land Use Capability.....	4
3. Definition of land containing elite and prime soil	5
4. National Policy Statement for Highly Productive Land.....	7
5. Desktop assessment	8
Regional soil and LUC information.....	8
Soil map information - NZFSL.....	9
Soil map information – Smap Online	10
LUC map information - NZLRI	13
Land containing elite and prime soil.....	14
Highly productive land (NPS-HPL).....	15
Surrounding productive land	15
6. Conclusions	16
Appendix 1: Enlarged Figure 2.	18
Appendix 2: Enlarged Figure 3.	19
Appendix 3: Enlarged Figure 4.	20
Appendix 4: Enlarged Figure 5.	21
Appendix 5: Enlarged Figure 6.	22
Appendix 6: Enlarged Figure 7.	23

1. Introduction

Project description

Fisher & Paykel Healthcare Properties Limited is proposing a Private Plan Change (Plan Change) for an area of Future Urban zoned land within a larger Structure Plan area located at 300, 328, 350, 370, & 458 Karaka Road, Drury. The Plan Change will involve rezoning the land from Future Urban to Business – Light Industry.

The purpose of the Plan Change is to facilitate the future development of a research & development and manufacturing campus to support the growth and expansion of Fisher & Paykel Healthcare.

Land Use Capability assessment overview

The Land Use Capability (LUC) classification assessment involved a desktop soil and LUC assessment of the Future Urban zoned land (the “Site”) within the Structure Plan area. The Site is located immediately south of State Highway 22 (SH 22) and north of the North Island Main Trunk line (NIMT) as shown in **Figure 1**.

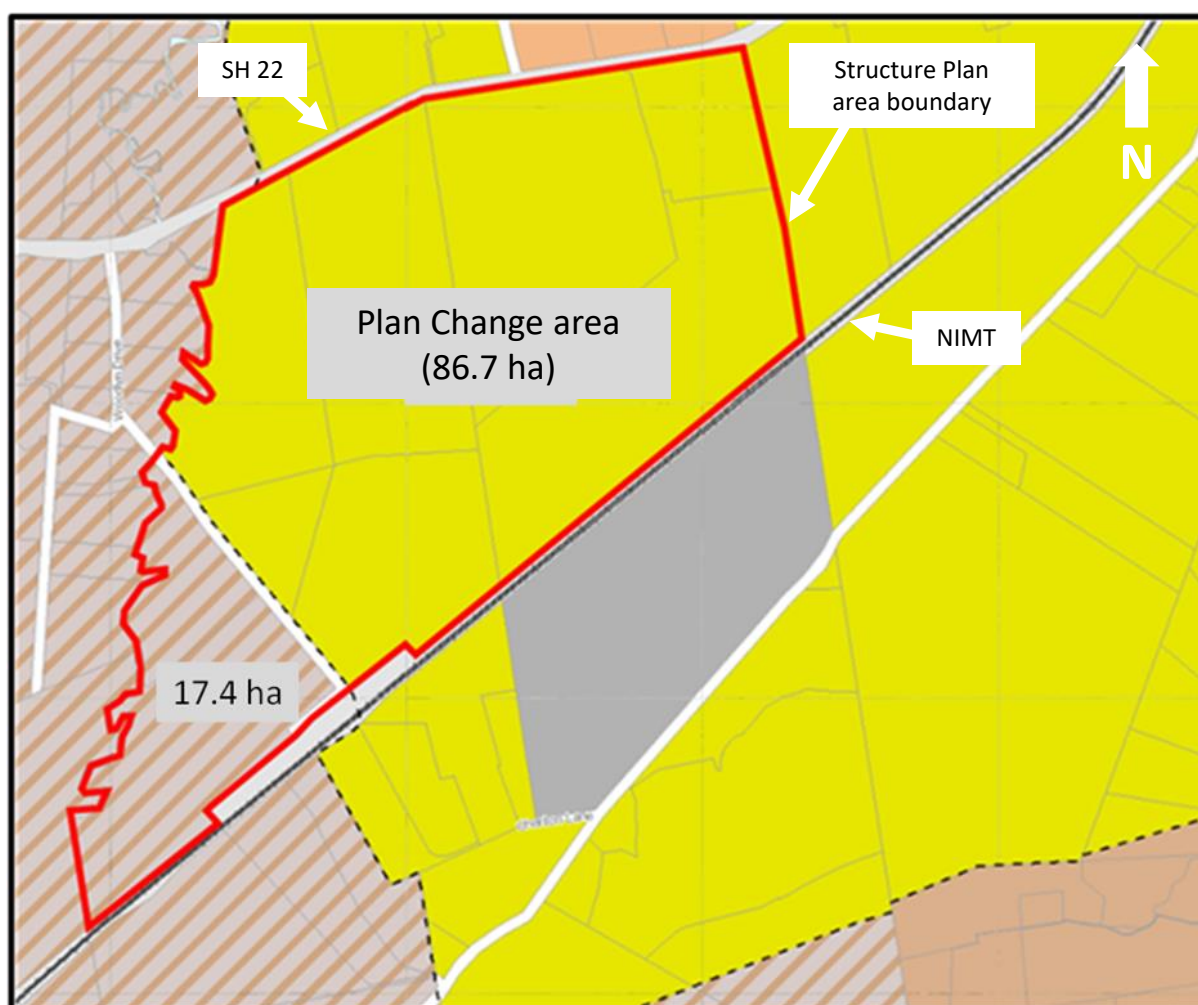


Figure 1. FPH Structure Plan (red boundary) and Plan Change area (86.7 ha yellow area within the red boundary).

The LUC assessment provides an overview of the soils and LUC units on the Site, the presence of land containing elite and prime soil under the Auckland Unitary Plan and identifies the presence and distribution of highly productive land as defined by the National Policy Statement for Highly Productive Land 2022.

2. Background information

Soils

Soils are represented on a map as map units. These map units may contain one or more soils (this varies depending on the complexity of the soil map and the scale of mapping). Generally, there is one dominant soil in a map unit which will determine the LUC classification for that map unit.

Additionally, soil naming can vary for different sources of soil map information. This is a factor of when the soil mapping was undertaken and the soil classification that was being used nationally at the time of mapping. In most cases the soil names can be correlated across soil map information sources.

Land Use Capability

LUC assesses an area's capacity for sustained productive use, considering physical limitations, soil type, management requirements and soil conservation needs.

The LUC classification is a systematic arrangement of the different types of land according to those properties that affect its capacity for long term and sustained production. It is a system that primarily assesses the land for arable (cropping) use.

The classification is based on a national land classification system used by soil conservators for farm planning since the 1950s. A detailed description of the system is provided in the Land Use Capability Survey Handbook, a 3rd edition of which was published in 2009 (Lynn et al., 2009)¹.

The LUC classification identifies areas with similar rock type, soil, slope, erosion types and degree and vegetation cover. Where any one of these factors changes significantly a boundary is drawn and a new map unit created. Based on this physical inventory, together with an understanding of climate an assessment is made of each unit's capacity for long term sustained use. Thus, the property is completely covered by mapped units which identify areas having similar physical attributes.

There are eight (8) LUC classes as recognised in the New Zealand Land Resource Inventory with limitations for use and land use versatility increasing from 1 to 8, with 8 considered unsuitable for productive use and best managed for catchment protection.

Descriptions for the LUC classes are provided in the Land Use Capability Handbook (Lynn et al., 2009):

¹ Lynn, IH, Manderson, AK, Harmsworth, GR, Eyles, GO, Douglas, GB, Mackay, AD, Newsome, PJF (2009) Land Use Capability Handbook - a New Zealand handbook for the classification of land 3rd Ed. Hamilton, AgResearch; Lincoln, Landcare Research; Lower Hutt, GNS Science 163pp.

Class 1: the most versatile multiple-use land with minimal physical limitations for arable use.

Class 2: very good land with slight physical limitations to arable use that can be readily overcome by management and soil conservation practices.

Class 3: land with moderate physical limitations to arable use. These limitations restrict the range of crops and the intensity of cultivation, and/or make special soil conservation practices necessary.

Class 4: land with severe physical limitations to arable use. These limitations substantially reduce the range of crops which can be grown, and/or make intensive soil conservation (and management) necessary.

Class 5: land with physical limitations that make it unsuitable for arable cropping, but only negligible to slight limitations or hazards to pastoral, vineyard, tree crop or production forestry use (except where flood-prone).

Class 6: land that is not suitable for arable use and has slight to moderate limitations and hazards under a perennial vegetation cover. Erosion is commonly the dominant limitation, but it is readily controlled by appropriate soil conservation.

Class 7: land that is not suitable for arable use and has severe limitations and hazards under a perennial vegetation cover. Erosion is commonly the dominant limitation, with the land requiring active and intensive soil conservation to be productive.

Class 8: land that is not suitable for arable, pastoral or production forestry use.

3. Definition of land containing elite and prime soil

The Auckland Unitary Plan (Updated 18 April 2014) defines elite land as:

Land containing elite soil:

Land classified as Land Use Capability Class 1 (LUC1). This land is the most highly versatile and productive land in Auckland. It is:

- *well-drained, friable, and has well-structured soils;*
- *flat or gently undulating; and*
- *capable of continuous cultivation.*

Includes:

- *LUC1 land as mapped by the New Zealand Land Resource Inventory (NZLRI);*
- *other lands identified as LUC1 by more detailed site mapping;*
- *land with other unique location or climatic features, such as the frost-free slopes of Bombay Hill;*
- *Bombay clay loam;*
- *Patumahoe clay loam;*
- *Patumahoe sandy clay loam; and*
- *Whatitiri soils.*

Prime land is also very good land but with some minor limitations compared to elite land. The Auckland Unitary Plan defines prime land as:-

Land containing prime soil:

Land identified as Land Use Capability classes two and three (LUC2, LUC3) with slight to moderate physical limitations for arable use. Factors contributing to this classification are:

- *readily available water;*
- *favourable climate;*

- *favourable topography;*
- *good drainage; and*
- *versatile soils easily adapted to a wide range of agricultural uses.*

The definition for land containing elite soil lists features of highly versatile and productive land. The land is described as well-drained, friable, and has well-structured soils. The topography is flat or gently undulating and the soil capable of continuous cultivation. If land is not classified as LUC class 1, all these conditions need to be met for the land to be elite.

The AUP does not itself define “well drained” or “friable”, however, the New Zealand Soil Description Handbook² defines well drained (on p148) and friable (on p84). Flat or gently undulating slopes are defined in the Land Use Capability Survey Handbook³ (p21) as slopes that are 0 to 3 degrees.

‘Well structured’ and ‘capable of continuous cultivation’ are not defined. However, using LUC class 1 soil characteristics as a guide then a suitable definition for ‘well structured’ would be soil that is moderately or strongly pedal, or has earthy structure (Soil Description Handbook p58 & 60). The continuous cultivation definition that best suits Class 1 land is the arable use definition in the LUC Survey Handbook (on p153). This is land suitable for cultivation for cropping and able to grow at least one crop or more per season without permanently degrading the soil.

The most versatile soils in New Zealand are Allophanic soils (e.g. Karaka soils). Favourable topography for arable use is commonly regarded as slopes of 0 to 15 degrees. Slopes steeper than 15 degrees have moderate to severe susceptibility to erosion when cultivated and are not ideal for arable use.

Good drainage can be defined as well drained or moderately well drained drainage classes. Under these conditions there is a minimum of 60 to 90 cm to a water table. Having a freely drained soil is required to be able to grow crops sensitive to wet soil (e.g. kiwifruit). Well drained elite soils are ideal for this (water table greater than 90 cm deep), but prime land may also be suitable. Imperfectly and poorly drained soils are too wet for some horticultural crops and the land is not as versatile as prime land.

Land containing prime soil is arable, versatile, has favourable topography and good drainage. There are no serious climate or soil water storage issues. Unfortunately, these characteristics for land containing prime soil are not defined. AUP land containing elite or prime soil, and other productive land was classified using the definition interpretation used by soil scientists in the Auckland region for previous private plan changes.⁴

² Milne JDG, Clayden B, Singleton P.L, Wilson AD. 1995. Soil Description Handbook. Lincoln, New Zealand, Manaaki Whenua Press. 157p.

³ 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.

⁴ www.aucklandcouncil.govt.nz/UnitaryPlanDocuments/pc-45-appendix-9.2-soil-assessment-report.pdf;
www.aucklandcouncil.govt.nz/UnitaryPlanDocuments/pc-73-appendix-n-land-use-capability-and-soil-assessment.pdf

4. National Policy Statement for Highly Productive Land

The National Policy Statement for Highly Productive Land 2022 (NPS-HPL)⁵ came into force on the 17th October 2022 (clause 1.2(1)).

“Highly productive land” is defined as:

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).

My 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
 - 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.

Referring to clause 3.5(7)(b)(i), “identified for future urban development” means:

- a) identified in a published Future Development Strategy as land suitable for commencing urban development over the next 10 years; or
- b) identified:
 - i. in a strategic planning document as an area suitable for commencing urban development over the next 10 years; and
 - ii. at a level of detail that makes the boundaries of the area identifiable in practice.

With regard to urban rezoning of highly productive land, NPS-HPL clause 3.6 Restricting urban rezoning of highly productive land, in relation to Tier 1 and 2 territorial authorities (Auckland Council being a Tier 1 authority) says:

1. Tier 1 and 2 territorial authorities may allow urban rezoning of highly productive land only if:
 - a) the urban rezoning is required to provide sufficient development capacity to meet demand for housing or business land to give effect to the National Policy Statement on Urban Development 2020; and
 - b) there are no other reasonably practicable and feasible options for providing at least sufficient development capacity within the same locality and market while achieving a well-functioning urban environment; and
 - c) the environmental, social, cultural and economic benefits of rezoning outweigh the long-term environmental, social, cultural and economic costs associated with the loss of highly productive land for land-based primary production, taking into account both tangible and intangible values.

⁵ National Policy Statement for Highly Productive Land 2022. September 2022.

2. In order to meet the requirements of subclause (1)(b), the territorial authority must consider a range of reasonably practicable options for providing the required development capacity, including:
 - a) greater intensification in existing urban areas; and
 - b) rezoning of land that is not highly productive land as urban; and
 - c) rezoning different highly productive land that has a relatively lower productive capacity.
3. In subclause (1)(b), development capacity is within the same locality and market if it:
 - a) is in or close to a location where a demand for additional development capacity has been identified through a Housing and Business Assessment (or some equivalent document) in accordance with the National Policy Statement on Urban Development 2020; and
 - b) is for a market for the types of dwelling or business land that is in demand (as determined by a Housing and Business Assessment in accordance with the National Policy Statement on Urban Development 2020).
5. Territorial authorities must take measures to ensure that the spatial extent of any urban zone covering highly productive land is the minimum necessary to provide the required development capacity while achieving a well-functioning urban environment.

For the purpose of defining and mapping highly productive land on the site, Environment Court decision (Decision No. [2024] NZEnvC 83)⁶ has determined that only NZLRI LUC map information at the time the NPS-HPL 2022 became operative (17th October 2022) can be used.

5. Desktop assessment

Regional soil and LUC information

The desktop assessment for the Site used available map information, soil reports and geospatial data included:

- New Zealand Land Resource Inventory (NZLRI) layers (providing map units of dominant LUC unit at 1:50,000 scale)⁷.
- New Zealand Fundamental Soil Layer (NZFSL) layers (providing full soil map units and dominant soil series at 1:50,000 scale)⁸.
- Smap Online soil map information (providing soil sibling map units at 1:50,000 scale and soil sibling characteristics)⁹.
- Orbell, GE. 1977. Soils of part Franklin County, scale 1:63 360¹⁰.

Soil map information was provided using NZFSL “Soil” and “Series” attributes from “FSL North Island (all attributes)”.

LUC map information was provided using NZLRI the “LUC” attribute from “NZLRI Land Use Capability 2021”.

The NZFSL and NZLRI map information share common map unit boundaries.

The Smap Online map information is provided by more recent soil mapping which used a digital soil mapping (DSM) approach complemented by field observations. As such soil map

⁶ <https://www.environmentcourt.govt.nz/assets/Documents/Publications/2024-NZEnvC-083-Blue-Glass-Limited-v-Dunedin-City-Council.pdf>

⁷ <https://iris.scinfo.org.nz/layer/48076-nzlri-land-use-capability-2021/data/110440/>

⁸ <https://iris.scinfo.org.nz/layer/112061-fsl-north-island-v11-all-attributes/>

⁹ <https://smap.landcareresearch.co.nz/> ; map units of soil sibling.

¹⁰ Orbell, GE. 1977. Soils of part Franklin County, scale 1:63 360.

unit boundaries and soil names (soil siblings) differ from those provided by the NZFSL map information.

Soil map information - NZFSL

The soil and map information provided by the NZFSL was originally sourced from *Soils of part Franklin County*¹¹. This soil survey was originally mapped at a scale of 1:63,360, and subsequently integrated into the NZLRI (at 1:50,000 scale).

The NZFSL soil distributions for the Future Urban zoned area are shown in **Figure 2** (a larger map image is provided in **Appendix 1**).

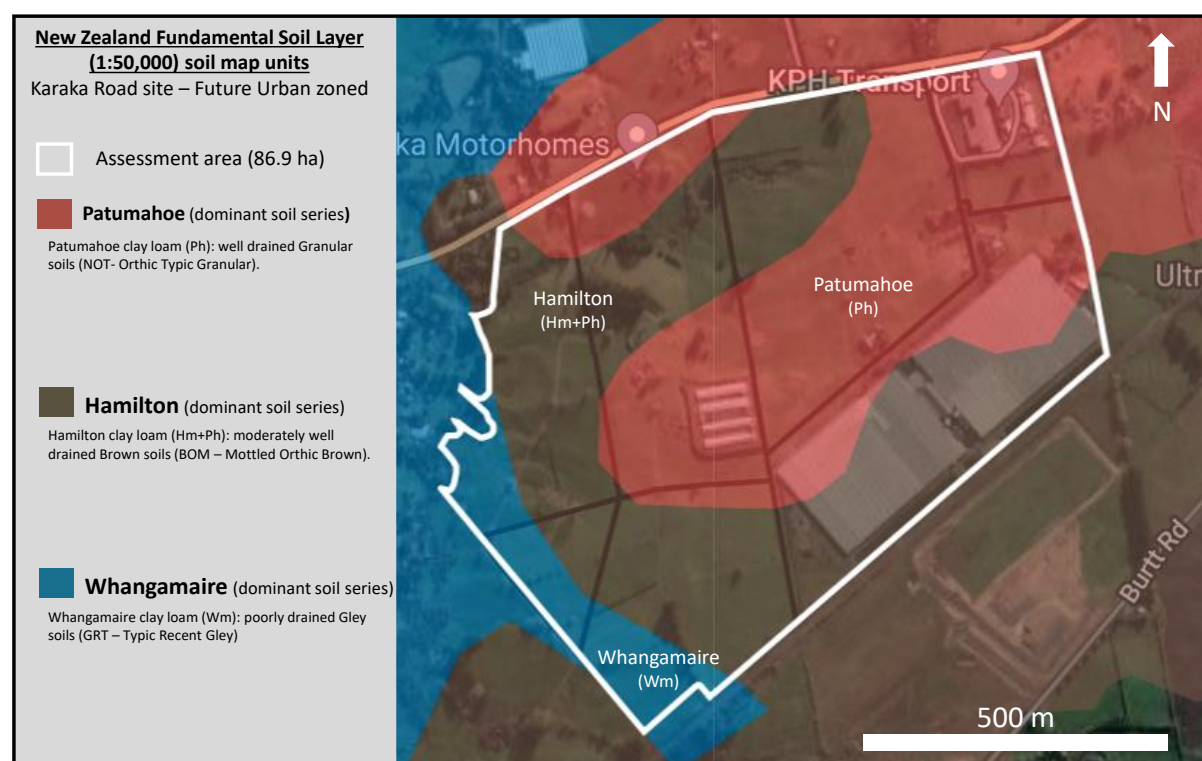


Figure 2. NZFSL soil map units for the Site.

Table 1 provides a summary of the NZFSL soil map unit characteristics for the Future Urban zoned area, Karaka Road site.

¹¹ Orbell, GE. 1977. *Soils of part Franklin County*, scale 1:63 360.

Table 1. Summary of the NZFSL soil map unit characteristics for the Future Urban zoned area, Karaka Road site.

Dominant soil series	Soil map units	Parent material	NZSC Soil Order	Features
Patumahoe	Ph	Weathered ashes	Granular (NOT)	Well drained clay loam with strong to moderate blocky structure.
Hamilton	Hm+Ph	Weathered ashes over terrace alluvium	Brown (BOM)	Moderately well drained clay loam with strong blocky structure.
Whangamaire	Wm	Alluvium predominantly from surrounding ashes	Gley (GRT)	Poorly drained mottled clay loam with moderate to weak nut to prismatic structure.

Soil map information – Smap Online

The Smap Online soil (soil order and soil sibling) distributions for the Future Urban zoned area of the Karaka Road site are shown in **Figure 3** (a larger map image is provided in **Appendix 2**).

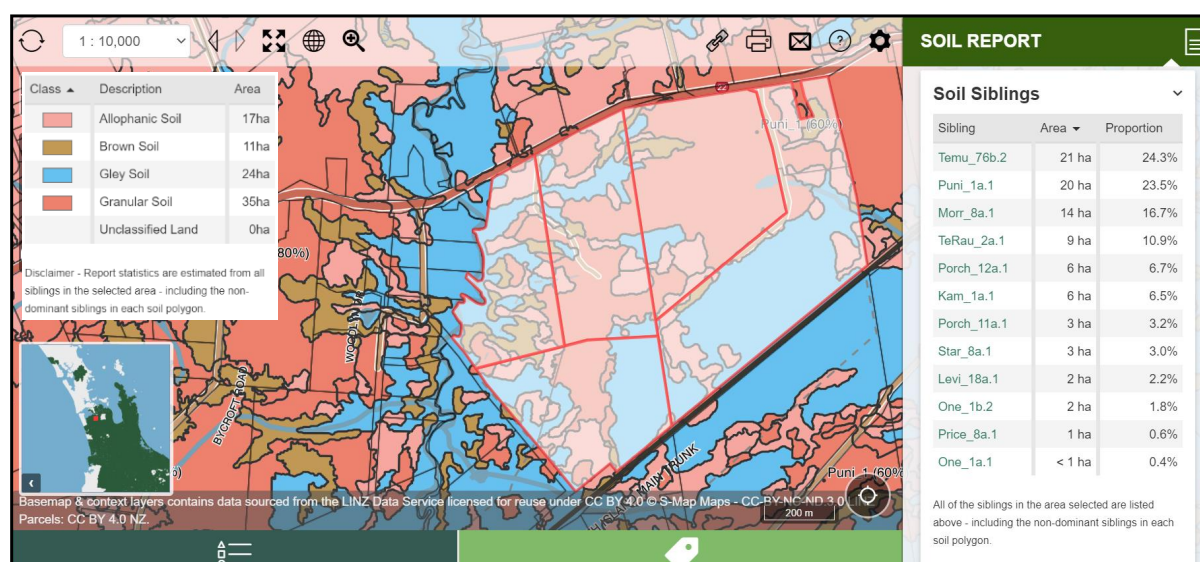


Figure 3. Smap Online soil (soil order and soil sibling) distributions for the Site.

A simplified map is provided in **Figure 4** (a larger map image is provided in **Appendix 3**).

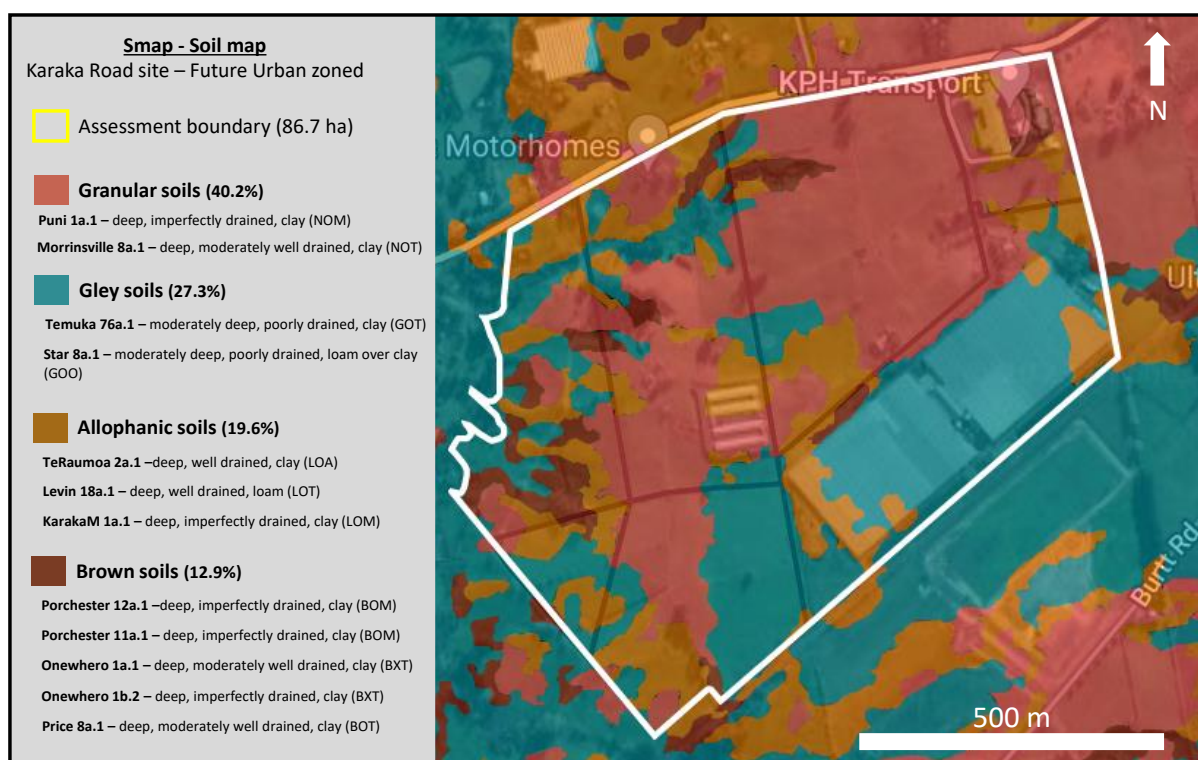


Figure 4. Smap soil sibling map units for the Site.

Based on the Smap Online map information, the Future Urban zoned area of the site has Gley, Granular, Allophanic, and Brown soil orders represented. Twelve soil siblings are represented, of which Temuka 76b.2 (Gley soils), Puni 1a.1 and Morrinsville 8a.1 (Granular soils), TeRaumoa 2a.1 and KarakaM 1a.1 (Allophanic soils) and Porchester 12a.1 (Brown soils) are most common. Smap Online factsheets for all soil siblings can be viewed on the Smap Online website¹².

Table 2 provides a summary of the Smap soil sibling map unit characteristics for the Future Urban zoned area.

¹² <https://smap.landcareresearch.co.nz/maps-and-tools/factsheets/>

Table 2. Smap soil sibling map unit characteristics for the Future Urban zoned area, Karaka Road site.

Soil order ¹³	Soil sibling (NZSC) ¹⁴	% of area	Soil material	Profile depth	Profile drainage	Profile texture
Gley	Temuka 76a.2 (GOT)	24.3	Rhyolitic alluvium	Moderately deep	Poorly drained	Clay
Gley	Star 8a.1 (GOO)	3.0	Peat on rhyolitic alluvium	Moderately deep	Poorly drained	Loam over clay
Granular	Puni 1a.1 (NOM)	23.5	Rhyolitic alluvium	Deep	Poorly drained	Clay
Granular	Morrinsville 8a.1 (NOT)	16.7	Tephra	Deep	Imperfectly drained	Clay
Allophanic	TeRaumoa 2a.1 (LOA)	10.9	Tephra on loess	Deep	Well drained	Clay
Allophanic	Levin 18a.1 (LOT)	2.2	Tephric sand	Deep	Well drained	Loam
Allophanic	KarakaM 1a.1 (LOM)	6.5	Tephra	Deep	Imperfectly drained	Clay
Brown	Porchester 12a.1 (BOM)	6.7	Rhyolitic alluvium	Deep	Imperfectly drained	Clay
Brown	Porchester 11a.1 (BOM)	3.2	Rhyolitic alluvium	Deep	Imperfectly drained	Clay
Brown	Onewhero 1a.1 (BXT)	0.6	Tephra on rock	Deep	Moderately well drained	Clay
Brown	Onewhero 1b.2 (BXT)	1.8	Tephra on loess	Deep	Imperfectly drained	Clay
Brown	Price 8a.1 (BOT)	0.6	Rhyolitic alluvium	Deep	Moderately well drained	Clay

The Smap soil map information provides a more spatially detailed representation of the soils on the site than the NZLRI soil map information. However, because of the absence of land characteristics information (e.g. slope) for the soil map units, it is not possible to assign LUC units. Given that most of the Smap soil map units correlate to the soils identified by the NZLRI map information, it is likely the LUC units will be similar. To correctly identify and map the LUC units a property scale assessment using the LUC classification criteria described in Lynn et al. (2009) would be required.

¹³ NZSC – New Zealand Soil Classification: Hewitt AE (2010) New Zealand Soil Classification. 3rd ed. Landcare Research Science Series No. 1. Lincoln, Manaaki Whenua Press.

¹⁴ NZSC – New Zealand Soil Classification: Hewitt AE (2010) New Zealand Soil Classification. 3rd ed. Landcare Research Science Series No. 1. Lincoln, Manaaki Whenua Press.

LUC map information - NZLRI

The NZLRI LUC distributions for the Future Urban zoned area, Karaka Road site are shown in **Figure 5** (a larger map image is provided in **Appendix 4**).

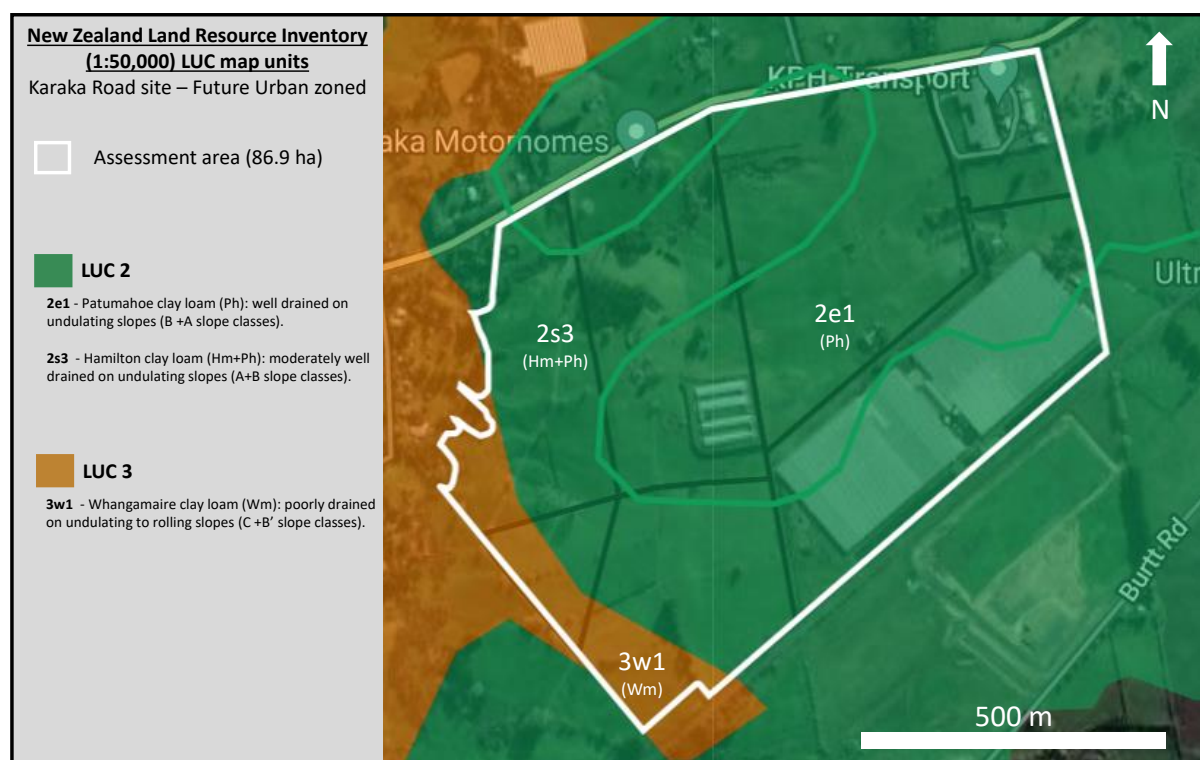


Figure 5. NZLRI LUC map units for the Site.

Based on the NZLRI LUC map information, the Future Urban zoned area comprises three dominant soil types (Patumahoe clay loam, Hamilton clay loam and Whangamaire clay loam) which are classified into three corresponding LUC units (LUC 2e1, 2s3, and 3w1). **Table 3** provides a summary of the NZLRI soil and LUC map unit characteristics mapped for the site.

Table 3. Summary of the NZLRI LUC map unit characteristics for the Future Urban zoned area, Karaka Road site.

LUC unit	Dominant soil(s)	Soil drainage	Slope class	LUC limitations	Area ha (%)
2e1	Patumahoe clay loam	Well drained	B +A (0-7°)	Erosion (e) Slight to moderate rill and sheet erosion when cultivated.	39.0 (45.0%)
2s3	Hamilton clay loam	Moderately well drained	A+B (0-7°)	Soil (s) Slight limitations to cultivation due to heavy textured nature of the subsoils.	41.0 (47.3%)
3w1	Whangamaire clay loam	Poorly drained	C +B' (4-15°)	Wetness (w) Moderately high water table and subject to runoff from surrounding slopes.	6.7 (7.7%)

Land containing elite and prime soil

For land to be considered land containing elite soils, the LUC class must be LUC 1, or have characteristics that meet the requirements of LUC class 1 including flat to gently undulating slopes (0-3° slopes; slope class A) and well drained soils.

Based on the NZLRI map information used in this desktop assessment, the Site does not have land containing elite soil, as there is no LUC class 1 land identified on the site, or land that meets the other listed requirements for land containing elite soil.

Based on the NZLRI LUC map information used in this desktop assessment (refer **Figure 5**), the majority of the Site has LUC class 2 land with A+B slopes classes and good drainage and is defined land containing prime soil.

The 6.7 ha of LUC 3w1 land classed as LUC 3w1 has poor drainage. Assessments by Soil Scientists in the Auckland region for Plan Change 45¹⁵ and Plan Change 73¹⁶, determined that LUC class 2 and 3 land with poorly drained soils (including LUC 3w1 land with Whangamaire clay loam) were defined as “other productive land” and not “land containing prime soil” because the poor soil drainage did not meet the criteria of ‘good drainage’. The distribution of AUP land containing elite and prime soil for the Site is shown in **Figure 6**. A larger map image is provided in **Appendix 5**.



Figure 6. Distribution of AUP land containing elite and prime soil for the Site.

¹⁵ www.aucklandcouncil.govt.nz/UnitaryPlanDocuments/pc-45-appendix-9.2-soil-assessment-report.pdf

¹⁶ www.aucklandcouncil.govt.nz/UnitaryPlanDocuments/pc-73-appendix-n-land-use-capability-and-soil-assessment.pdf

The area and proportions of land containing elite, prime and other land were calculated from the mapped areas using Google MyMaps. The summary of the areas and proportions of land containing elite, prime and other land are shown in **Table 4**.

Table 4. Desktop assessed AUP land containing elite, prime, other productive land and non-productive land for the Site.

LUC class	AUP Elite/Prime/Other	Area (ha)	Area (%)
2e1	Prime	39.0	45.0%
2s3	Prime	41.0	47.3%
3w1	Other	6.7	7.7%
Total	-	86.7	100.0%

Applying the AUP definition for land containing elite or prime soil there is no land containing elite soil on the site, 80.0 ha (92.3%) of land containing prime soil, and 6.7 ha (7.7%) of other productive land.

Although the Site is predominantly land containing prime soil, its Future Urban zoning (i.e. is not Rural zoned) means that the requirement that prime soil is managed, for potential rural production (which applies to Rural zoned land)¹⁷ does not apply to the Site.

Highly productive land (NPS-HPL)

Based on the NZLRI LUC map (refer **Figure 5**) the Site contains mostly LUC class 2 land (LUC 2e1 and 2s3) with a lesser area of LUC class 3 land (LUC 3w1).

Although the Site contains both LUC class 2 and 3 land, NPS-HPL clause 7(b)(i) means that land that is Future Urban zoned does not meet the definition of highly productive land in the NPS-HPL. Therefore, the NPS-HPL does not apply to the Site.

Surrounding productive land

The distribution of LUC map units for the area surrounding the Site (based on the NZLRI 1:50,000 scale LUC map information) is shown in **Figure 7** (a larger map image is provided in **Appendix 6**).

¹⁷<https://unitaryplan.aucklandcouncil.govt.nz/Images/Auckland%20Unitary%20Plan%20Operative/Chapter%20H%20Zones/H19%20Rural%20zones.pdf>

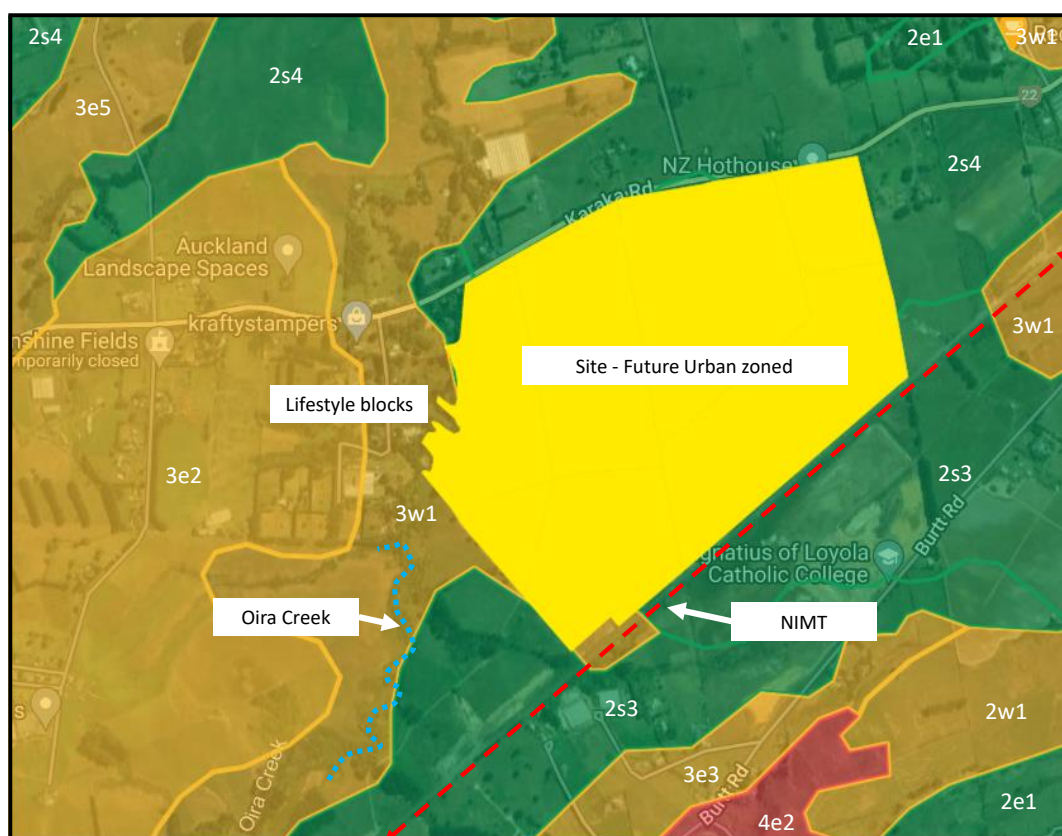


Figure 7. The distribution of LUC map units surrounding the Site and features that limit land amalgamation.

Figure 7 shows that the Site is bordered to the north by SH 22, to the west by the Oira Creek, poorly drained land and an area of lifestyle blocks (non-primary production land), and to the south by the NIMT. The presence of these features either limits the potential of the Site's land to be amalgamated with surrounding primary productive land or adjoining land has similar limitations to the land on the Site.

6. Conclusions

The desktop assessment of the Site identified the following:

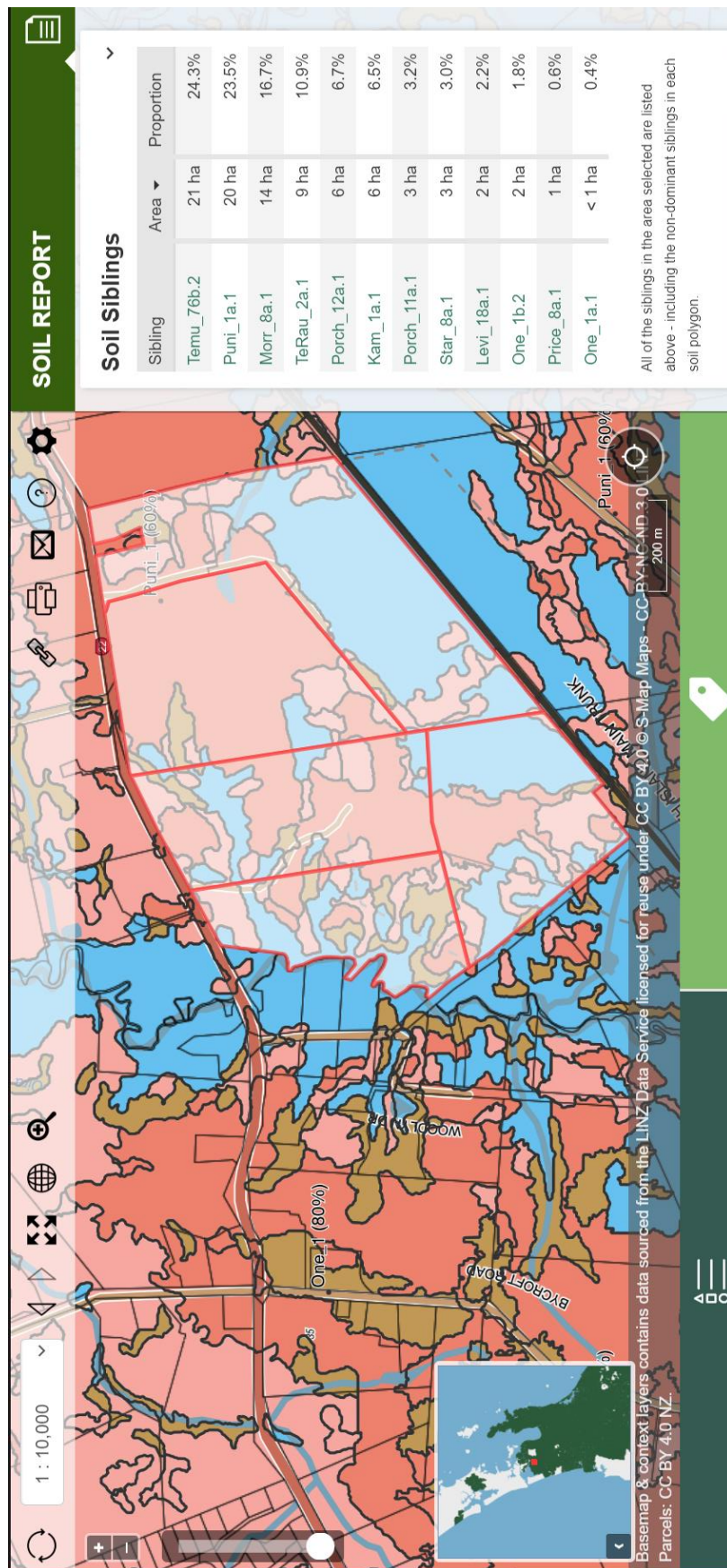
- The NZFSL soil map information identified that the Site comprised Hamilton, Patumahoe and Whangamaire soils.
- The NZLRI LUC map information identified that the area comprised LUC units 2e1, 2s3 and 3w1. There was no LUC class 1 land identified.
- Soils with similar characteristics were confirmed by the Smap Online soil information, however, Smap map information does not have the land characteristics information to allow the classification of LUC units.
- Based on the NZLRI LUC map information and applying the AUP definition for land containing elite or prime soil, the Site has no land containing elite soils, 80 ha of land containing prime soil and 6.7 ha of other productive land.

- Although the Site is predominantly land containing prime soil, its Future Urban zoning means that the requirement that prime soil is managed, for potential rural production does not apply to the Site.
- Although the Site contains both LUC class 2 and 3 land, NPS-HPL clause 7(b)(i) means that land that is Future Urban zoned does not meet the definition of highly productive land in the NPS-HPL. Therefore, the NPS-HPL does not apply to the Site.

Appendix 1: Enlarged Figure 2.



Appendix 2: Enlarged Figure 3.



Appendix 3: Enlarged Figure 4.



Appendix 4: Enlarged Figure 5.



Appendix 5: Enlarged Figure 6.



Appendix 6: Enlarged Figure 7.

