BEFORE Independent Commissioners appointed by Tasman District Council

IN THE MATTER of the Resource Management Act 1991

AND

IN THE MATTER of an application by CJ Industries Ltd for land use consent RM200488 for gravel extraction and associated site rehabilitation and amenity planting and for land use consent RM200489 to establish and use vehicle access on an unformed legal road and erect associated signage

REPLY EVIDENCE OF REECE BLACKBURN HILL
ON BEHALF OF CJ INDUSTRIES LTD
(SOIL MANAGEMENT AND LAND PRODUCTIVITY)

24 April 2023

1. INTRODUCTION

1.1 My full name is Reece Blackburn Hill. I am a Soil Consultant at Landsystems.

1.2 The applicant has applied for resource consents authorising the extraction of gravel, stockpiling of topsoil, and reinstatement of quarried land, with associated amenity planting, signage and access formation at 134 Peach Island Road, Motueka:

(a) RM200488 land use consent for gravel extraction and associated site rehabilitation and amenity planting, and

(b) RM200489 land use consent to establish and use vehicle access on an unformed legal road and erect associated signage.

1.3 The applicant has also subsequently applied for a discharge permit (RM220578).

1.4 I have produced evidence dated 15 July 2022 addressing the soil management and land productivity of the land use activities and supplementary evidence dated 4 November 2022 addressing the National Policy Statement on Highly Productive Land 2022 ("NPS-HPL").

1.5 Since that date, I have undertaken a visit to subject site at 134 Peach Island Road, Motueka and undertaken a site visit to view re-instated productive land owned by Appleby Fresh on Blackbyre Road, Appleby. I presented information about the Appleby site to the joint witness conference on productive land in February 2023.

1.6 The purpose of my reply evidence is to respond to evidence concerning soil matters. In particular I respond to:

(a) Matters raised in the Statement of Evidence of Dr Iain Campbell on behalf of Valley Residents Against Gravel Extraction (Productive Soils) dated 11 November 2022.

(b) Matters raised in the Statement of Evidence of Dr Michael Harvey on behalf of Valley Residents Against Gravel Extraction (Flood Plain, Stopbank And Erosion Impacts) dated 11 November 2022.

(c) Matters raised in Hearing - Council - Land productivity comment notes – LANGFORD (dated 25 November 2022).

(d) Matters raised by the Commissioner during my hearings presentation on 21 November 2022.

(e) Matters raised in the Hearing statement provided by Dr Iain Campbell dated the 25th of November 2022.

(f) Evidence in the Land Productivity Joint Witness Statement (dated 23 March 2023).

(g) Matters raised in Minute # 9 of the Hearing Commissioner – Joint Witness Statement Land Productivity – Clarification (dated 30 March 2023).

(h) Matters raised in Submitter comments (received on or before 7 April 2023).

(i) Matters raised in Council comments on the revised conditions and management plans and response to Minute # 9 (dated 14 April 2023).

Qualifications and Experience

1.7 My qualifications and experience were set out in my evidence of 15 July 2022. Since that date, I have also undertaken soil and Land Use Capability (LUC) assessments for subdivision that have required assessment against the NPS-HPL.

Code of Conduct

1.8 I have read the Code of Conduct for Expert Witnesses in the Environment Court Practice Note 2023 and I agree to comply with it. My evidence is within my area of expertise, however where I make statements on issues that are not in my area of expertise, I will state whose evidence I have relied upon. I have not omitted to consider material facts known to me that might alter or detract from the opinions expressed in my evidence.

2. EXECUTIVE SUMMARY

2.1 I produced evidence dated 15 July 2022 addressing the soil management and land productivity of the land use activities proposed in the application, and supplementary evidence dated 4 November 2022 addressing the National Policy Statement on Highly Productive Land 2022 ("NPS-HPL"). I produced a draft Soil Management Plan dated 15 July 2022, and a revision filed on 23 March 2023.

2.2 Since November, I have undertaken a visit to the subject site at 134 Peach Island Road, Motueka and undertaken a site visit to view reinstated productive land owned by Appleby Fresh on Blackbyre Road, Appleby.

NPS-HPL

2.3 I retain my opinion that whether the Site is "highly productive" in terms of the NPS-HPL is to be determined by whether it is "LUC 1, 2 or 3" land. Other classification systems for assessing land productivity are not relevant to the NPS-HPL.

2.4 I retain my opinion that it is appropriate to use the LandVision mapping to assess which areas are LUC 1, 2 and 3 land. Based on my on-site observations I consider that the LandVision LUC mapping provides a fair representation of the LUC classes on the subject site at a scale that is more appropriate for property scale decisions than the regional scale LUC map information.

2.5 The Site does not contain LUC 1 or 2 land. The site contains an area of LUC 3 land within the stop banks and another area outside the stop banks. These are the only areas that the NPS-HPL applies to. The LUC 3 area outside the stop bank is affected by flooding, which is a long term constraint in terms of Policy 3.10 NPS-HPL. In relation to the LUC 3 area inside the stop banks, implementation of the SMP will minimise or mitigate loss of availability and productive capacity of highly productive land.

TRMP

2.6 In my opinion, irrespective of the classification applied, the soil depth limitations and variability, and excessive drainage characteristics of the land on the Peach Island Road site remain important productive capacity limitations. I remain of the opinion that the Site is not land of high productive value because it is not capable of producing crops at a high rate or across a wide range. I accept that the area of LUC 3 land within the stop banks is a possible exception.

2.7 I now consider that the areas within the stop banks will achieve "moderately well drained" characteristics post-remediation. I consider that areas outside the stop banks may only be imperfectly draining post-remediation, but I do not consider this to be a concern because of the reduced productive value of this area due to flooding (and even imperfectly drained soils will meet the TRMP definition of high productive value).

2.8 I retain my opinion that the measures required by the consent conditions and draft SMP will at least retain, if not enhance the productive capacity of the site.

Remediation examples

2.9 I remain of the opinion that the two unsuccessful examples of remediation provided by Dr Campbell were unsuccessful because of poor practice and not because successful site remediation is not possible.

2.10 In response to Dr Campbell's evidence I sought other examples of remediation of productive land in the region. I provided to the Joint Witness Conference participants a

current example of remediation at an Appleby site that has high yielding crop and vegetable production within five years of remediation. I have included a description and photos of this site in this reply evidence. This successful remediation site strengthens my opinion regarding the likely success of remediation at the Peach Island Site. Based on this remediation project I consider that post-reinstatement monitoring of five years (rather than three years as previously recommended) is appropriate.

2.11 The revised draft SMP and proposed conditions incorporate lessons from the remediation examples provided. It is my opinion that if correctly implemented successful reinstatement of the soil can be achieved and the site's productive capacity at least retained if not improved.

Soil Management Plan

2.12 I remain of the opinion that the inclusion of imperfectly drained soil as a requirement for the reinstated soil is acceptable as the land will meet the TRMP definition of high productive capacity with imperfect drainage. However, I now consider that a "moderately well-drained" classification can be achieved for areas within the stop banks, and I have recommended this change to the conditions and draft SMP.

2.13 Based on comments and questions from the Commissioner and Council, the SMP has been revised to provide more prescriptive requirements for soil management activities.

2.14 Revisions include:

(a) SMP *requirements* rather than *guidance*.

(b) Additional requirements for stockpile management.

(c) Requirements for mitigating surface depressions from post-placement settlement.

(d) Prescriptive post placement soil monitoring and reporting.

Submitter comments

2.15 I have responded to submitter comments on soil matters not already addressed in my Statement of Evidence and my Supplementary evidence. Matters include:

(a) Volunteered conditions relating to soil management

(b) Draft SMP soil terms

(c) Use of suitable vehicles and machinery to avoid soil compaction

(d) Stockpile and bund management

(e) Off-site transporting of soil

(f) Post-placement land use

(g) Post-placement settlement

(h) Soil monitoring

3. EVIDENCE

Dr Campbell - Statement of Evidence

3.1 In this section I reply to Dr Campbell's evidence.

3.2 In para. 17, Dr Campbell says that from his years of work with Riwaka soils, he is confident the soils have moderate to high productive potential, and this is consistent with the highly productive classification of the land in the NPS-HPL. The NPS-HPL contains a transitional definition of highly productive land which is addressed in my supplementary evidence dated 4 November 2022 (clause 3.5(7) and definition of "LUC 1, 2, or 3 land"). To meet the definition the land must be 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.

3.3 In para. 33, Dr Campbell introduces and applies the classification Webb and Wilson (1995)[1] to highlight the weaknesses of the New Zealand Land Use Capability system and provide evidence of the range of versatility classes for soils similar and different to those on the Peach Island Road site for comparison.

3.4 I note the following points in response.

3.5 The New Zealand Land Use Capability system is the system adopted in the National Policy Statement for Highly Productive Land to define "highly productive land". It is also the most commonly used classification for assessing land in regions throughout New Zealand.

3.6 Even if the Webb and Wilson (1995) classification were able to be applied, my opinion is that while it has its merits, its main limitation is that it averages the scores for all attributes to derive the Soil Versatility Class of a given soil. In general, this does provide a comparison

[1] Webb and Wilson (1995). A manual of land characteristics for the evaluation of rural land. Landcare Research Science Series No. 10).

across different soils. However, the averaging approach can somewhat neglect the importance of a single high scoring (limiting) attribute, especially if all other attributes are low scoring (non-limiting). This is most evident for the Riwaka shallow soil example provided in Dr Campbell's assessment.

3.7 The Tasman Resource Management Plan uses the Productive Land Classification (PLC) and Dr Campbell provides a comparison between PLC and LUC. I have discussed and applied the PLC (1994 and 2021) my Statement of Evidence dated 15 July 2022 (in the attached draft SMP (p25-27) and Appendix 4, p24). My assessment of the PLC criteria for the soils within the LUC units on subject site differs from that provided by Dr Campbell.

3.8 In my assessment, applying PLC 1994, LUC 3s1, 4s1, 5s1 and 6s1 are classed as F, F, H and H respectively, due to soil depth limitations (F) and excess drainage (H). This compares with A for LUC 3s1 and 4s1 in Dr Campbell's assessment applying PLC 1994.

3.9 In my opinion, irrespective of the classification applied, the soil depth limitations and excessive drainage characteristics of the land on the Peach Island Road site remain important productive capacity limitations. The high irrigation and nutrient requirements for intensive land uses coupled with very high nitrogen leaching potential (all of which are subject to existing[2] and likely future national or regional restrictions[3]) require careful consideration when making land use decisions.

3.10 In para.38, Dr Campbell notes that the Nelson region[4] has the smallest area of high value versatile soils compared with all other New Zealand regions and the soils are confined to narrow river valleys and three small valley plain areas.

3.11 I agree with this but add that this does not mean that all soils are confined to narrow river valleys and three small valley plain areas. Given the variable nature of the deposition of sediment associated with these fluvial systems and depositional valley plains, there will be areas where higher energy locations have resulted in very stony, highly variable and shallow soils that would not be considered high value versatile soils. In my opinion the majority of

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[2] An existing restriction is the "nitrogen cap" in Regulations 32 – 34 of the Resource Management (National Environmental Standard for Freshwater) Regulations 2020.
[3] Future restrictions are anticipated through Freshwater Management Unit plan changes to give effect to the NPSFM 2020.
[4] For the purpose of the data Dr Campbell discusses, the Nelson region referred to incorporates the Tasman district, and the Peach Island Road site.

the soils on the Peach Island Road site fit into this category, as is indicated by collective dominance of LUC 4s1, 5s1 and 6s1 land.

3.12 Dr Campbell also notes that most of the loss of the high value versatile soils (>20% of the 3,500 ha. Motueka Plain area) has been the result of residential development, compared with 1.5% of land under gravel extraction. Residential development effectively removes the land from production indefinitely due to subdivision earthworks and the resulting built dwellings.

3.13 The activity proposed in this application will not remove the land from production indefinitely. The draft SMP is in place to ensure the land at least retains its productive value but irrespective of whether the land currently meets the definition of "highly productive land" in the NPS-HPL or the TRMP definition of "land of high productive value", the land on the site will retain its productive capacity.

3.14 In his evidence dated 11 November 2022, In para. 44, Dr Campbell states that he has had experience with similar soil restoration projects and provides and discusses two case studies of gravel extraction-land restoration, one a site in Waimea East (Ranzau Road), and the other at Staplegrove Farm, Waimea West.

3.15 Prior to receiving Dr Campbell's evidence, I discussed these two case studies (which I was already aware of) in the assessment provided within the draft SMP attached to my evidence in chief dated 15 July 2022.

3.16 I now provide additional reply based on the detailed descriptions of the two case studies provided in Dr Campbell's evidence.

3.17 Referring to the example on Ranzau Soils (Case study 1) , Dr Campbell states in para. 54.2 that the soil materials were not handled under wet conditions, and the findings in the report that 'a deterioration in the soil physical properties may have resulted from movement of soil materials when soil moisture levels were above the optimum desirable level' was equivocal.

3.18 I disagree with Dr Campbell on this point. Although Area B was the reportedly wetter than the control site, the report clearly notes (p34) that in comparison Area C was in poorer condition than Area B as the result of reclaiming the land during the winter of 1979 at a too high a moisture content. This in turn lead to plastic deformation, low structural stability, and low topsoil permeability, while compaction of underlying gravels caused impedance of water movement.

3.19 The reported wetter condition of Area B did indicate deterioration following reclamation, which in the report, was attributed to impeded drainage at the AB soil horizon interface (between the topsoil and subsoil).

3.20 The report in its conclusions (p36) did acknowledge that the reclamation process (specifically the respreading of the topsoil and subsoil) did result in trafficability and plant growth problems, caused by reduction in soil structural stability, compaction, loss of permeability and waterlogging.

3.21 However, the report further concludes that 'although some deterioration in physical properties, a number of measures are available to ameliorate the situation'.

3.22 The measures listed in the conclusions were all included in the draft SMP provided with my Statement of Evidence dated 15 July 2022.

3.23 Dr Campbell details the conditions of a second example of a remediated site 'Case Study 2' in para. 57. I am not aware of any specific soil management report that accompanied these conditions.

3.24 In para. 58-60, Dr Campbell provides a summary of the findings of an investigation report of the Staplegrove site (provided in the Appendix of his Statement of Evidence).

3.25 In my opinion the findings clearly indicate that much of the resulting poor condition of the soil and land following remediation was the result of poor adherence to the consent conditions, which Dr Campbell also states in para. 60.13.

3.26 The findings from the investigation are used as the basis for raising a number of concerns regarding the proposed activities at the Peach Island Road site largely based on the Wai-iti soils on the Staplegrove site being similar to the Riwaka soils on the Peach Island Road site (para. 61-79), and the assumption that the same remediation deficiencies, and failure to follow consent conditions would occur on the Peach Island Road site.

3.27 In my opinion, the comparison is not appropriate.

3.28 Although Wai-iti soils and Riwaka soils are similar recent soils, with young alluvial derived silt or sandy loams overlying gravels, the thickness of the overlying finer soil matrix is variable and important to acknowledge as it has relevance to some of the issues raised by Dr Campbell.

3.29 The depth and textural characteristics of the soils on the Peach Island Road site, as well as their distribution across the site have been discussed in the draft SMP provided with my Statement of Evidence dated 15 July 2022, and again in this evidence (para. 3.4-3.7).

3.30 Referring to para. 62, the draft SMP dated 15 July 2022 (p11) and the revised draft SMP filed on 23 March 2023 (p12) state that "the subsoil can contain clay, silt and sand textured soil materials" but also states that "sand and silt rich subsoil materials should be used in preference to clay texture dominated soil materials".

3.31 Referring to para. 66, I acknowledge the importance of maintaining soil biological activity and that any disturbance to the soil will reduce biological activity, including the consent activities proposed.

3.32 The greatest impact on soil microbial biota and biological activity is likely to result from the soil storage.

3.33 The impacts of soil storage (stockpiling) are not entirely clear from the literature, but it seems the general consensus is that temporary storage of soil is unlikely to result in significant loss of soil biota and that that the major changes occurring in stockpiled topsoil are the shifts in fungal dominants and mycorrhizae and some loss of others.[5]

3.34 Maintaining a vegetative cover on the soil is most important for maintaining microbial biota and soil biological activity. As an example, soil quality monitoring indicates that biological activity (as indicated by Anaerobic mineralisable nitrogen) under pasture is much higher than under cropping land use[6].

3.35 The draft SMP and consent conditions have the condition of grassing stockpiled soil where stored for more than one month to minimise soil loss and soil biology decline. Post placement management includes re-grassing of the post gravel extraction re-established soil profile to restore the soil structure and soil biology and return the land to productive use.

3.36 Referring to para. 66-67, in my opinion the soil biological, chemical and physical attributes Dr Campbell refers to constitute the definition of soil quality. Soil quality related soil

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[5] Ramsay WJH. 1986. Bulk soil handling for quarry restoration. Soil and land use management Volume 2, No. 1. Pp30-39.

[6] Drewry JJ, Curran-Cournane F, Taylor MD, Lynch B (2015) Soil quality monitoring across land uses in four regions: implications for reducing nutrient losses and for national reporting. In: Moving farm systems to improved attenuation. (Eds L.D. Currie and L.L Burkitt). http://flrc.massey.ac.nz/publications.html. Occasional Report No. 28. Fertilizer and Lime Research Centre, Massey University, Palmerston North, New Zealand. 14 pages.

properties can be improved through careful land management, and land can remain highly productive despite having poor soil quality. This does not excuse poor soil quality and the purpose of the conditions in the draft SMP is to ensure the reinstated soil profile has good soil quality.

3.37 Dr Campbell notes concerns about substitution of inferior heavier textured earth material into the subsurface (para. 70-71) and introduced foreign subsoil materials (para. 74).

3.38 The draft SMP has conditions for ensuing the quality of topsoil and subsoil properties (p12), including only using material that meets the clean fill parameters in the Peach Island Proposed Quarry: Groundwater and Clean Fill Management Plan (with the exception of organic content, which will be higher for soil than for clean fill).

3.39 In para. 73, Dr Campbell notes concerns about presence of textural unconformity in the re-established soil profile and impeded soil drainage, especially at the topsoil – subsoil interface, which was highlighted in the two examples provided by Dr Campbell.

3.40 In response, the draft SMP recognises this issue and includes provisions of ripping prior to the placement of the successive soil layers, and prior to grassing as part of post-placement management to minimise the effects of layering and any textural unconformities and potential impeded soil drainage. Ripping or soil aeration is commonly used to improve drainage on compacted dairy and cropping land, essentially artificially creating soil structure and allowing plant roots to act to improve the soil structure over time.

3.41 Referring to para.76-77, I remain of the opinion that the reinstated soil profile can meet the TRMP requirements of high productive value land within a three year timeframe.

3.42 In the Ranzau soil example provided by Dr Campbell (Case study 1), the monitoring in the trial was only undertaken for 14 months from the time the first area (Area B) was reclaimed.

3.43 Referring back to the draft SMP (p21), the deterioration documented in the Ranzau example is similar to that described during my discussions with a local grower with experience establishing a pear orchard on rehabilitated soil, where impeded drainage and observed pugging continued in the first year following orchard establishment.

3.44 The grower went on to note that subsequent improvements to orchard management including establishment of rye grass/clover pasture and avoiding heavy machinery during the wet spring remedied this, and in recent years the soils have improved. General observations

now indicated that there was no obvious reduction in production on the site compared with other undisturbed sites. This indicates that improvement was achievable, and an orchard could be productive within a three year timeframe, provided the soil is management correctly.

3.45 In para. 79, Dr Campbell states "The well-drained subsurface material at Peach Island should not be replaced with a nonuniform, drainage impeded medium. This will cause significant effects on deeper rooting horticultural crops in particular".

3.46 In my opinion, Dr Campbell incorrectly assumes that that the materials used for the reinstated soil profile will consist of nonuniform, drainage impeded soil materials.

3.47 The soil materials used will be fine textured (not gravels), primarily silt and sand in texture but they will not be "nonuniform", and drainage will not be impeded if reinstated based on the draft SMP requirements.

3.48 To the contrary, correctly reinstated, the soil profile will have greater available rooting depth, water holding capacity, and greater capacity to store nutrients for plants that the original shallow soils currently on the site.

3.49 Referring to para.80, the area outside the stop bank is located south of an outside bend of the bordering watercourse and as such remains a significant risk to any intensive horticultural investment during periods of high rainfall due to the potential for localised flooding. This risk is most likely to increase with climate change as suggested by NIWA in their 2019 report for TDC 'Climate change projections for Tasman and impacts on agricultural systems'.[7]

Dr Harvey - Statement of Evidence

3.50 Referring to para. 27, Dr Harvey states 'there is likely to be differential settlement of the backfilled pits which will adversely affect the regraded contour and thus the potential for erosion of the placed, overlying uncompacted subsoil and topsoil.

3.51 I agree with Dr Harvey that there may be some differential settlement of the backfilled pits which may affect the regraded contour. The draft SMP included post placement provisions to improve the drainage of these areas and the incremental reinstatement of the soil profile

[7] Pearce P, Woolley J-M, Sood A. 2019. Climate change projections for Tasman and impacts on agricultural systems. Prepared for Tasman District Council/Envirolink. National Institute of Water & Atmospheric Research Ltd, Auckland.

and regrassing of the soil surface (p14-15) will minimise bare soil surfaces and the potential for erosion by overland flow.

3.52 The revised SMP filed on 23 March 2023 includes (on p17) requirements for Remediation Of Surface Depressions as part of post place management. Any resulting surface depressions will be ameliorated by localised recontouring and filling with additional soil replacement without any negative effects on the productive capacity of the soil. This is common practice used on dairy, horticultural and cropping land, most often prior to establishing a new land use enterprise, and mainly to assist with land management (e.g. access and trafficability).

REPLY TO MATTERS RAISED AT HEARING AND POST-HEARING

Clarification of the use of the term "averaging"

3.53 The following section of my evidence addresses my use of the "averaging" term when discussing the LUC classification of the subject site in my hearings statement presented on the 21 November 2022. I also refer to the memorandum provided by Ms Langford with comments on averaging LUC scores across a land unit (dated 28 November 2022), and my supplementary evidence (dated 4 November 2022).

3.54 Firstly, I agree with the comment by Ms Langford in her memo dated 28 November 2022, that the term is not generally used when referring to LUC mapping. A more appropriate term would be to say that the site was mapped at a broader scale. When mapping at a broader scale, there is less density of observations, resulting in less delineation of soil and LUC map units.

3.55 My use of the "averaging" term was an attempt to convey the concept that if the subject site alone was mapped and a single LUC class or unit applied, the site would not be classified as LUC 3s1, rather the site as a whole would most likely be classified as LUC class 4, given the dominance of LUC class 4 (or lesser LUC classes) on the site.

3.56 My discussion of this point was in response to Ms Langford's suggestion (Memorandum, p103 of s 42A report) that the subject site should be mapped as a whole unit, and that if so it would all be LUC 3, and thus highly productive land.

3.57 For reference, I have previously discussed this in 3.10, 3.30 and 3.31 of my supplementary evidence (dated 4 November 2022).

Off-site topsoil

3.58 A question was raised during my presentation to the hearing on the 21 November 2022 regarding the use of topsoil from the site versus from off-site sources.

3.59 The SMP[8] (p12) states "Topsoil removed from the extraction site and stockpiled will be used in preference to topsoil sourced offsite" but also assumes that additional topsoil from off-site will be required to provide for the greater (300-400 mm) depth of topsoil required for the reinstated soil profile. The draft SMP (p12) lists topsoil requirements to ensure topsoil from off-site sources is of an acceptable quality.

3.60 I do not see any issues with using topsoil from off-site sources provided the topsoil requirements provided in the draft SMP are met, and other requirements in the SMP for storage, placement and post placement management are followed. I discuss the recommendation by submitters and Council to limit off-site soil to Riwaka soil materials (Council's condition 58) at paragraphs 3.148 to 3.151 below.

3.61 Whether topsoil from other sources will result in different productive potential depends on factors such as the previous land use and land use management (e.g. whether the land has been in pasture versus cultivated, and the amount and duration of nutrients that have been applied more so than the inherent characteristics of the soil (such as soil texture and natural fertility).

3.62 Post placement management requirements in the draft SMP (Table 2, p19) as well as the restrictions on stocking rates and cultivation in the draft SMP (p17) will ensure the soil structure, nutrients and vegetative cover result in the reinstated topsoil being of equal or greater soil quality than the current topsoil on the subject site.

3.63 A question was raised regarding a potential method for the direct transfer of topsoil involving cutting away a block of topsoil and the existing vegetation, storing and retaining the block, and then placing it back onto the reinstated subsoil has been considered.

3.64 This method of topsoil (and vegetation) reinstatement has been successfully demonstrated and adopted for mine sites on the West Coast of New Zealand over the past decade.[9]

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[8] 07B-X - RM200488 RM200489 - Hearing - Applicant - proposed Soil Management Plan - 23 Mar 23.
[9] p18-19 in: Ross C. 2008. Soils and Indicative Land Rehabilitation, Escarpment Mine Project, Denniston Plateau, Buller. Landcare Research Contract Report: LC0809/020. September 2008.

3.65 From my reading and interpretation of the method used, this method is most useful for ensuring the survival and minimal disturbance to deeper rooting "sensitive" native vegetation on a remediated site.

3.66 For low intensity pasture sites such as the subject site, there is minimal value in ensuring the existing pasture is reinstated, rather the reestablishment of a higher quality, deeper rooting pasture species is preferable to ensure improved soil structure, organic matter and fertility.

Ms Langford - Hearing Statement

3.67 In the following section I respond to issues arising from the hearings statement made by Ms Langford on the 25th of November 2022.

3.68 In her hearings statement, Ms Langford discussed four main points of concern; 1) interpretation of the TRMP, 2) use of the detailed mapping provided by the LandVision report[10], 3) implementation of the draft SMP, and 4) the condition regarding the reinstated soil profile being imperfectly drained.[11]

TRMP – high productive value

3.69 With reference to the TRMP definition of high productive value, and the subject site's ability to produce crops at a high rate or across a wide range, I maintain that based on the mapping provided by the LandVision report and my on-site soil observations, the subject site as a whole would not be capable of meeting this requirement given the shallow and variable soils (for land within the stop bank) and flood risk (outside the stop bank). Within the site, the only possible exception would be the slightly deeper soils within the LUC 3s1 map unit.

3.70 I also refer to Mr Mike Nelson's evidence in which he states that in his opinion, the site could not produce crops at a high rate, or across a wide range (para. 3.12, p6-7).

3.71 Regardless of whether part or all of the site is classed as being of high productive value, reinstatement of the soil profile following gravel extraction, would result in deeper (fine soil) and reduced soil depth variability across the subject site. As a result, production post-reinstatement would be at a higher rate and the site potentially suitable for a wider range of land uses including cropping and horticulture.

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[10] LandVision. 2021. Peach Island LUC & Soil Survey, Peach Island Road Motueka Valley, CJ Industries.
[11] Condition 50 (c) in Document 05O-2 RM200488 - Applicant evidence - Planning - TAYLOR - supplementary - Attachment 1 conditions - 2022-11-04.pdf Page 13 of 22.

3.72 Therefore, following gravel extraction and the reinstatement of the soil the subject site is likely to meet the requirements of the last sentence in the definition and be considered TRMP land with high productive value.

LandVision mapping

3.73 In relation to the NPS-HPL, an issue arose with regard to whether the LandVision mapping could be used to determine if the subject site was highly productive land.

3.74 The transitional definition of highly productive land (Clause 3.5(7) and definition of "LUC 1, 2 or 3 land") appears clear in allowing more detailed mapping to be used. Ms Langford takes the view that Council has a discretion whether or not to accept the more detailed mapping and relies on Government guidance.[12] This is a legal/interpretation issue that will be addressed by Counsel.

3.75 However, to the extent that Ms Langford is relying on Government guidance from December 2022 as to whether more detailed mapping can be used, I noted that a revised guide for the implementation of the NPS-HPL was released by Ministry for the Environment on 30 March 2023[13]. A copy of the revised guide is attached to my evidence as **Attachment 1**.

3.76 I have reviewed the LandVision mapping and assessed its accuracy on site. It remains my view that the LandVision mapping provides the most detailed and accurate soil and LUC map information for the subject site and is mapped at a scale more "fit for purpose" for determining land use management decisions at a property scale.

3.77 Although I do not question the quality of the soil mapping underpinning the regional scale soil and LUC mapping, regional scale mapping does not have the density of observations as that of finer scale mapping and is only "fit for purpose" for regional policy and catchment scale (not property scale) decision making.

3.78 Since the NPS-HPL became operative on the 17th of October 2022, I am aware of councils in other regions accepting detailed soil and LUC mapping in preference to regional scale map information to support decisions relating to the NPS-HPL.

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[12] Joint Witness Statement p3, Ms Langford says "Guidance p 14 – no intended to include site specific". This refers to the Guidance released in December 2022

[13] National-Policy-Statement-Highly-Productive-Land-Guide-to-implementation-March-2023.pdf (environment.govt.nz)

3.79 As an example, I was involved in a private plan change application in Auckland (Plan Change 73 - O'Hara, Waiuku) where I was engaged by the Council to review soil mapping provided by the applicant's soil expert. In making their decision, the Commissioners accepted that 26.3 ha (91%) of the site was highly productive land[14]. The area of highly productive land was based on detailed soil mapping provided by the applicants' soil expert and reviewed by me.

Draft SMP implementation

3.80 With reference to the draft SMP, Ms Langford maintains concerns regarding the effective implementation of the draft SMP.

3.81 Since the November hearing, the draft SMP has been revised[15] to be more prescriptive and provide clearer requirements for soil removal, storage, placement, post placement management and monitoring.

3.82 In my opinion, the draft SMP now provides requirements to ensure that the reinstated soil profile will have the productive capacity at least if not better than the current soils on the subject site.

Imperfectly drained soil

3.83 Previous versions of the draft SMP and proposed conditions have stated the reinstated soil profile drainage "be at least imperfectly drained, preferably moderately well or well drained where the inherent soil drainage characteristics of the land allow".

3.84 With reference to the condition requirement that the reinstated soil be at least imperfectly drained, Ms Langford does not accept this and commented that allowing imperfectly drained soil would result in a downgrading of the site, and the soil being less productive than the current soil on the subject site.

3.85 I remain of the view that this is not a "downgrading" because the soil would still meet the TRMP definition of high productive value even with imperfectly drained soils. However, based on my visit to the subject site and observations of the site's topography and soil drainage characteristics of the current soil, I am now of the opinion that that following soil reinstatement, moderately well to well drained soil profile drainage can be achieved in the Stage 2 and 3 areas but imperfect soil drainage may still occur following soil reinstatement in

[14] Para. 212 - https://www.aucklandcouncil.govt.nz/UnitaryPlanDocuments/pc-73-decision.pdf
[15] 07B-X - RM200488 RM200489 - Hearing - Applicant - proposed Soil Management Plan - 23 Mar 23

the Stage 1 area soils due to lower topography. Imperfect drainage in the Stage 1 area would be of lesser concern given the agreement that this area is not considered to be of high productive value due to flooding.

3.86 As such, the Applicant volunteers the following amended condition:

(a) Soil drainage of the reinstated soil in the Stage 2 and Stage 3 areas be at least moderately well or well drained.

(b) Soil drainage of the reinstated soil in the Stage 1 area be at least imperfectly drained, preferably moderately well or well drained where the inherent soil drainage characteristics of the land allow.

3.87 Consequential amendments have been made to the draft SMP.

3.88 I acknowledge that the risk of impeded drainage resulting from the compaction of the topsoil and subsoil during reinstatement if the requirements in the draft SMP are not followed correctly.

3.89 The draft SMP and the proposed conditions[16] include the requirement for staff training, and regular monitoring of the site and activities which minimise this risk.

3.90 Given that the reinstated soil profile will result in deeper and less variable soils that are moderately well to well drained (at least in the Stage 2 and 3 areas), the site as a whole will have the productive capacity and capability to support a range of land use options at least equivalent to but most likely better than the current site.

3.91 I note also that achieving at least moderately well drained reinstated soils greater than the minimum requirement in the TRMP definition for land with high productive value (criterion (c)) which states "imperfectly-drained to well-drained soils".

Revised Soil Management Plan

3.92 Based on questions and comments by the Commissioner and Council, the draft SMP has been revised to provide prescriptive requirements for soil management activities. The main revisions are:

[16] 07B-W - RM200488 RM200489 - Hearing - Applicant - proposed conditions land use - clean - 23 Mar 23

(a) General wording changes have been made so that the draft SMP[17] now provides *requirements* rather than *guidance*.

(b) The inclusion of the requirement "No driving of machinery is permitted on the soil stockpiles"[18] and is also included in Condition 92[19].

(c) The maximum allowable height of 3 m for stockpiles has not been changed in the draft SMP but it is acknowledged that the actual height of stockpiles is likely to be much less and determined by the ability of machinery to create stockpiles without driving on the stockpile.

(d) Inclusion of mitigations to address any surface subsidence resulting from the settling of the reinstated soil[20]. This inclusion is in response to issues raised regarding post placement settling as well as observations and discussions at the Appleby site visit (referred to in the Joint Witness Statement – Productive Land[21]).

(e) Inclusion of more prescriptive post placement soil monitoring and reporting[22].

(f) With regard to the soil monitoring, visual assessment of the reinstated soil profile and topsoil (Visual Soil Assessment) is included. This approach is preferred over sampling and analysing an extensive range of soil physical properties. The main reasons being that soil physical properties are inherently variable (even with a large number of samples) and difficult to interpret on a year to year basis.

(g) The Visual Soil Assessment and soil profile morphological observations included in the soil monitoring will provide a more holistic representation of soil quality and soil profile condition and can be used to ascertain whether activities need to be changed or remedial actions are required.

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[17] 07B-X - RM200488 RM200489 - Hearing - Applicant - proposed Soil Management Plan - 23 Mar 23
[18] Table 2 – p19 in 07B-X - RM200488 RM200489 - Hearing - Applicant - proposed Soil Management Plan - 23 Mar 23
[19] P18 - 07B-W - RM200488 RM200489 - Hearing - Applicant - proposed conditions land use - clean - 23 Mar 23
[20] P17 - 07B-X - RM200488 RM200489 - Hearing - Applicant - proposed Soil Management Plan - 23 Mar 23
[21] EXPERT WITNESS CAUCUSING CONFERENCE AND JOINT WITNESS STATEMENT: Productive land
[22] P21-23 - 07B-X - RM200488 RM200489 - Hearing - Applicant - proposed Soil Management Plan - 23 Mar 23

(h) In addition to the soil monitoring requirement before activities commence, control sites have been included as a requirement to provide ongoing comparison between the remediated soil and the original soil on the site.

(i) The draft SMP includes requirements that all remediated areas must be assessed annually for up to five years to identify obvious surface depressions (p 17) and annual soil quality (soil condition) monitoring for rehabilitated soil areas for the first three years following the completion of the rehabilitation (p 21).

Proposed conditions

3.93 In the proposed Conditions (dated 23 March 2023), Condition 19 (c) (iii) (p7) included a requirement to sampling and analysis of "Trace elements (total recoverable concentrations) of the topsoil and subsoil".

3.94 This was included in error. It is not consistent with the draft SMP soil monitoring and has been removed from the conditions filed with the applicant's right of reply.

3.95 For post-placement soil sampling and analysis is covered by the draft SMP. For soil brought onto the site sampling and analysis is covered by the Groundwater and Clean Fill Management Plan. The testing for trace elements (heavy metals) for all fill sourced off-site is covered by the Groundwater and Clean Fill Management Plan[23], with the method for sampling and analysis on p17 of the document. Soil sourced offsite must meet the requirements of the Groundwater and Clean Fill Management Plan.

Productive Land JWS

Appleby site photos

3.96 As part of the joint witness caucusing, I presented photos to the experts[24] of a remediated site in vegetable production that I visited in February and referred to these photos in Questions 3 and 4 of the Productive Land JWS[25]. The site is referred to the "Appleby site" in the JWS.

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[23] 07B-Y - RM200488 RM220578 - Hearing - Applicant - proposed Groundwater and Cleanfill Management Plan - 23 Mar 23
[24] Noted on p5 - RM200488 and ors – JWS – Land productivity – HILL, LANGFORD, CAMPBELL, NELSON
[25] RM200488 and ors – JWS – Land productivity – HILL, LANGFORD, CAMPBELL, NELSON

3.97 The photos presented to the experts in the Productive Land Joint Witness caucusing are referred to in the following section of my evidence (and provided in Appendix 1).

3.98 The Appleby site is owned by Appleby Fresh and located on Blackbyre Road, Appleby. The Appleby site provided a current example of remediated soils of varying ages from 1 year to 4 years following reinstatement of the soil.

3.99 The site was visited by Mr Mike Nelson and myself on the 7th February 2023. The purpose of the site visit was to observe a site currently undergoing soil reinstatement, and the land use the site was capable of supporting.

3.100 It is my understanding that the Appleby site does not have a soil management plan or consent conditions as is for the Peach Island Road site.

3.101 At the site we had discussions with the landowners, who provided some understanding of the remediation of the site over the past five or so years, and the production occurring on the remediated soils.

3.102 By way of background, gravel extraction had been undertaken on the site some years back and remediated by the placement of soil on the depression created by quarrying. Production on the land had been unsuccessful due to the remediated soil being too close to the water table. The current remediation has been undertaken over approximately the past five years. It has included the placement of fill, followed by topsoil, to raise the soil surface to that of the adjoining original soil area. As a result, the reinstated soil is no longer adversely affected by the underlying water table.

3.103 I note that in Question 3 of the JWS (p6)[26], Dr Campbell states that Appleby site has taken 30 years to at last achieve crop growth. This is not a correct representation of the soil remediation of the site, nor the time taken to achieve the crop production on the site.

3.104 Based on the JWS, my understanding is that Dr Campbell was involved with the original remediation of the site and was unaware of the current remediation being undertaken. As such, the crop production is on reinstated soils that have been in place for less than five years.

[26] p6 - RM200488 and ors – JWS – Land productivity – HILL, LANGFORD, CAMPBELL, NELSON

3.105 The area with reinstated soil was adjacent to an area with original soils in long term vegetable production. The soils in this area have been mapped as Wai-iti soils[27], the same soils as identified for the Staplegrove Farm gravel extraction site[28]. However, given that the reinstated soil area is closer to the river, it was more likely to include shallower Waimea soils before gravel extraction.

3.106 The following outlines the main observations and matters discussed during the site visit.

3.107 The landowners noted that the quality of reinstatement varied over the site, and their methods had been improved over time based on trial and error. Of note was the requirement for good contractor practice during soil placement, avoiding placement of wet soils, removal of foreign materials from the fill and soil, and management of areas of subsidence following placement.

3.108 My observations of the reinstated soil indicated that there was generally 500 mm of clay loam topsoil overlying either clay subsoil or fill. The gravel content varied throughout the reinstated soil and across the site.

3.109 Landowners noted that subsidence following reinstatement occurred due to soil settling in localised areas for up to a period of three to five years. Filling these settled areas was undertaken annually and resulted in an even land surface, with less soil variability and improved suitability for vegetable production. High yielding vegetable production was possible on this land (see Figure 1 in Appendix 1).

3.110 Post-placement management has varied but usually included establishing grass in year one, establishment of oats or barley in year two, growing melons in year three, and vegetable production in subsequent years.

3.111 Land put into melons two or three years after reinstatement produced the highest yields on all of the cropped land, including the land with the original soils (see Figure 2 in Appendix 1).

3.112 However, settling during the first five years had resulted in some seasonal surface ponding, especially in areas where poor soil reinstatement was undertaken by one contractor (see Figure 3 in Appendix 1).

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[27] Figure 5, p14 – Simmonds B, Westley M. 2020. Waimea Plains Nitrate Report: Land-Use, Soil And Groundwater Properties.
[28] P6 - Campbell I. 2017. Report on soil restoration at Staplegrove Farm gravel extraction site, Waimea West, Nelson Land & Soil Consultancy Services, Nelson.

3.113 My observation of the soil profile in these ponded areas did not indicate a high water table and I consider the surface ponding was primarily due to compaction in the upper soil profile restricting infiltration, most likely due to compacting of the clay loam topsoil by machinery traffic. This compaction could be mitigated by ripping or, if on pasture, a grassland aerator.

3.114 My interpretation is that the higher yields from the reinstated soils compared with the original soils is most likely due to the greater availability of nitrogen and carbon compared with the original soils which had been in long term production.

3.115 My observations of the area in vegetable production four years following reinstatement, indicated that the land was capable of intensive vegetable production. Localised topographic depressions were still evident but were less apparent and similar to depressions observed in the original soil area (see Figures 4 and 5 respectively in Appendix 1).

3.116 Based on my site visit I conclude:

(a) That following gravel extraction, it is possible to have reinstated soils that are capable of producing crops at a high rate and across a wide range.

(b) That localised subsidence is likely to occur for up to five years following reinstatement and that this can be mitigated by annual filling of these settled areas with additional topsoil.

3.117 Based on the Appleby site visit, the draft SMP and proposed Conditions were revised to incorporate additional requirements for mitigating soil settlement following placement, and annual soil monitoring was extended to five years following soil reinstatement.

3.118 The draft SMP has retained the requirements controlling land use following reinstatement. Specifically, in the first three years following reinstatement, only low intensity grazing is permitted, and cropping is not permitted.

Application Site visit

3.119 As part of the joint witness caucusing, I referred to a site visit to the Peach Island Road site (the subject site) in my response to Questions 1 and 2.

3.120 I visited the site on the 7th February 2023. The purpose of the site visit was to check the LandVision LUC mapping covering the Stage 2 and Stage 3 areas.

3.121 In addition to my comments provided in the JWS, I provide the following clarification.

3.122 Based on my site visit, the mapping by LandVision does provide an acceptable representation of the LUC map units on the subject site.

3.123 The LUC 3s1 map unit has moderately deep (60-80 cm including the subsoil C horizon) soils with 15 cm silt loam topsoil and fine loamy sand subsoils over sand and gravels.

3.124 The remainder of the site area has shallower soils over sand and gravels and soil depth is variable. The Land Vision LUC mapping reflects and confirms that these LUC map units are not LUC class 3 land as mapped by the regional scale LUC map information.

3.125 As per my response to Question 3 of the JWS, this is the only area of LUC class 3 land (and highly productive land) on the subject site within the stop banks.

3.126 Similarly, the LandVision mapping outside the stopbank is an acceptable representation of the LUC 3 present.

JWS LUC maps

3.127 The LUC maps provided for the JWS (and provided subsequently by Ms Langford in response to a request from the Commissioner) were based on the regional scale NZLRI LUC map information, and LUC classes 1-3 were coloured varying shades of green to indicate NPS-HPL highly productive land.

3.128 Although this is correct, the map and legend do not specify the LUC class or unit for each of the map unit areas.

3.129 I believe it would have been useful to show the LUC classes of the subject site compared to surrounding land; the subject site being mapped as LUC class 3 and the green areas to the north being predominantly LUC classes 2 and 1 land.

Commissioner Minute #9

3.130 With respect to the JWS in its entirety, I was not intending to address Stage 1 as it had already been excluded from being defined as highly productive land because of flooding.

3.131 With reference to Commissioner Minute #9[29], the Productive Land JWS and the Commissioner Minute #9 response provided by Ms Langford[30], it was also my understanding that Question 10 of the JWS did not relate to Stage 1 of the proposed activity.

3.132 In my response to JWS questions 1 (p1-3) and 2c (p5), I have specifically referred to LUC 3s, which based on the LandVision mapping, is located in the Stage 2 and 3 areas only.

Submitters' and Council Officers' Comments April 2023

3.133 In this section of my evidence I respond to Memorandum - Council Officers Comments on additional information, updated management plans and revised conditions; and submitters' comments received on these, dated 14 April 2023 and 7 April 2023 respectively.

3.134 On p4, section 2.5.2 Council notes their continued concern about allowing the remediated soil profile to be at least imperfectly drained, as specified in the previous draft SMP and the proposed conditions.

3.135 I have addressed this matter at paragraphs 3.83 to 3.91 above.

3.136 On p4, section 2.5.2 Council notes that the draft SMP requires actions past the 15-year duration applied for, specifically relating to soil monitoring of reinstated soil areas completed within the last five years of the consent. This is addressed at paragraph 3.92 (i) above.

3.137 On p4 (section 2.5.3), Council notes that Ms Langford agrees with the concerns raised by Valley Rage and Ms Mae. I have responded to submitter comments later in this rebuttal evidence.

3.138 On p4 (section 2.5.3), Council notes that Ms Langford agrees with the provision of conditions as listed in Paragraph 54 (p12, Valley RAGE Memo 7 April).

3.139 My response to the recommended conditions in Paragraph 54 of the Valley RAGE's Memo are provided for the listed conditions (54 (a) to (i)) below.

> *(a) Only vehicles with low ground pressures should be used, apart from trucks removing the extracted gravel.*

[29] 07C-C RM200488 - Hearing - Commissioner Minute no 9 - clarification productivity to Langford - 30 Mar 23
[30] Memorandum - Council Officers Comments on additional information, updated management plans and revised conditions; and submitters' comments received on these, dated 14 April 2023.

3.140 The draft SMP specifies (on p10, 11, 13, and 18) the requirement to use light-tracked machinery or flotation tyred vehicles, which meets the requirement of "vehicles with low ground pressures".

> *(b) There must be separate removal of the A and B horizons with low ground pressure machinery and separate storage with a stockpile height of not more than 80 cm (approximately what can be expected from a tip truck unloading).*
>
> *(c) In order to achieve a minimum of 80 cm of replaced Riwaka soil material for best possible growing conditions, it is likely that C horizon material will also need to be removed, stockpiled and replaced or incorporated with the B horizon material. At Staplegrove Farm, B and C horizon materials were not separately removed and were therefore homogenised creating conditions different from the original soil and not ideal.*
>
> 54 (b) and (c) refer to "A, B and C horizons". In my evidence and in the draft SMP and proposed conditions, the term topsoil equates to A horizon soil material and subsoil equates to B and C horizons soil material (and excludes the underlying gravels).

3.141 In response to 54 (b), the draft SMP (Figure 5 - p14) and proposed condition 91 (p18), specify the requirement to remove and stockpile topsoil and subsoil separately.

3.142 I am unclear on the meaning and intent of this condition 54(c). However, proposed condition 91 (p18), does specify the separate removal of the subsoil, which would include both the B horizon and the sand textured C horizon collectively (i.e. the fine soil matrix overlying the gravels).

3.143 The soils on the site are young and for most of the site the combined depth of the subsoil (B and C horizons) is 40 cm or less. There is minimal B horizon soil development compared with the C horizon, and the B horizon and C horizon textures are very similar (predominantly loamy sand and sand).

3.144 In my view, separate removal and treatment of the C horizon is not warranted and would only result in increased vehicle trafficking over the site, increasing the risk of soil compaction.

> *(d) The replacement of the original Riwaka soil material must be to a minimum depth of 80 cm and must only be Riwaka soil materials. There are no other soils in the district that have the same*

natural nutrient levels and replacing any part of the 80 cm soil profile with other soil material represents a downgrading of the natural nutrient status from the original.

3.145 The recommendation at 54 (d) involves amendments:

(a) To condition 55(a) to specify that following completion of soil restoration, restored soil shall be a minimum of 800 mm deep.

(b) New condition 58 that "the replacement of the original Riwaka soil material must be to a minimum depth of 800 mm and must only be Riwaka soil materials to avoid a downgrading of the natural nutrient status".

3.146 This is not achievable. The existing soil depth on the site is only in places 800 mm deep in the area mapped as LUC 3s1 by LandVision. For the remainder of the mapped LUC units, soil profile depth is predominantly less than 40 cm. The condition therefore requires a significant increase in soil depth which cannot be achieved using the soil on the site.

3.147 To achieve a minimum reinstated soil depth of 800 mm would require soil sourced from off-site, which is very unlikely to be Riwaka soil material, and would imply removing soil from highly productive land.

3.148 Irrespective of whether there are soils in the district that have the same natural nutrient levels, I do not consider that replacing any part of the 800 mm soil profile with other soil material represents a downgrading of the natural nutrient status from the original. Although soil type does play some part in determining the natural nutrient characteristics of soils, for most if not all productive soils, nutrient status is predominantly determined by land management history and practices such as the addition of fertiliser and the intensity of land use. Furthermore, soil nutrients status can be managed, including through the addition of fertiliser.

(e) The replaced A horizon should have a minimum thickness of 15 cm across the whole area. The Landvision report states 300-400mm topsoil minimum and 700mm of subsoil but these are generalised figures and the non-specific definitions of the soil materials and include fill material.

3.149 The draft SMP (not the LandVision report as stated) specifies the requirement for the reinstated topsoil to be 300-400 mm[31] and the subsoil to be 700 mm to ensure that a

[31] p12 - 07B-X - RM200488 RM200489 - Hearing - Applicant - proposed Soil Management Plan - 23 Mar 23

minimum soil profile depth of 800 mm is achieved, taking into account that some minor variability may occur due to settling over time. The requirement for at least 300 mm topsoil in the draft SMP is greater in depth than the original soil and the suggested requirement from Dr Campbell/Valley RAGE is that the replaced A horizon should have a minimum thickness of 15 cm across the whole area. The 300 mm reinstated topsoil requirement is to allow for some settling and ensure that the reinstated topsoil is favourable for plant re-establishment and exceeds the current topsoil thickness across the whole site. For clarification, the topsoil and subsoil depth requirements do not include the clean fill.

3.150 Considering both 54 (d) and (e), I have considered an alternative to the current draft SMP topsoil and subsoil reinstatement requirements regarding depth. The alternative would be more in alignment with Valley RAGE's recommended conditions at paragraph 54 (d) and (e), which Council have shown support for (section 2.5.3 in Council Officers Comments dated 14 April 2023) and would reduce the use of offsite sourced topsoil and subsoil. In light of those parties comments, I now recommend conditions requiring that:

a. The replaced topsoil (A horizon) shall be of a depth that ensures a minimum thickness of 150 mm across the whole Site.

b. The replaced subsoil (B and C horizons) shall be of a depth that ensures that a minimum total soil profile depth (including topsoil (A horizon) and subsoil (B and C horizons) of 800 mm is achieved.

3.151 The draft SMP (p12-13) has been amended to include this recommendation.

(f) After soil replacement is completed, no machinery (other than for cultivation purposes) should be allowed to travel over the restored soil surface to minimise compaction.

3.152 In response to 54 (f), the suggested condition has merit as it would ensure minimal risk of soil compaction. However, it is unclear whether "other than for cultivation purposes" excludes only gravel extraction machinery or would also exclude machinery (including vehicles) for the application of nutrients, establishing pasture vegetation, irrigation machinery, and placement of soil for remediating soil settlement, all required for the post placement management of the site as specified in the draft SMP (p16-18). I consider the condition to only be applicable to machinery used for gravel extraction, and clean fill or soil removal and placement activities (with the exception that such machinery may be required for post-placement mitigation of surface depressions). I recommend that the volunteered condition be amended and accepted as follows:

(a) After soil replacement is completed, and except for the purpose of remediating post-placement surface depressions, no machinery used for gravel extraction, and clean fill or soil removal and placement activities, should be allowed to travel over the restored soil surface to minimise compaction.

3.153 The draft SMP (p25) has been amended to include this recommendation.

(g) The replacement of the fill materials must only be with the use of low ground pressure machinery and no fill or foreign materials should be within 80 cm of the soil surface.

3.154 In response to 54 (g), Condition 19 (v) in the proposed conditions (p6) specifies that the draft SMP include requirements for the preparation of the receiving surface. The draft SMP (on p11) has the requirement to use light-tracked machinery or flotation tyred vehicles, which meets the requirement of "vehicles with low ground pressures". However, the draft SMP does not have this requirement for the placement of the clean fill as suggested.

3.155 Given that the same light-tracked machinery or flotation tyred vehicles will be use for the placement of the clean fill, the following requirement can be added to the SMP to meet the suggested condition: "Light-tracked machinery or flotation tyred vehicles must be used for the placement of the clean fill".

3.156 The draft SMP requirements (on p12) for topsoil and subsoil properties state that both must meet the clean fill requirements of the Groundwater and Clean Fill Management Plan, which means that no foreign materials can be in the soil.

3.157 The draft SMP requirement (on p13) and Condition 56 (a) in the proposed conditions state that "A minimum of 800 mm of plant growth medium" is required. For clarity this condition is amended in the draft SMP to read "A minimum of 800 mm of soil material (excluding clean fill)".

(h) The replaced soil should be well drained. It will not be possible to determine the soil drainage state at the time of soil reinstatement as drainage problems will only be apparent sometime after a new soil moisture regime has been established. Continued subsurface consolidation of fill materials and the presence of clayey fill material will play an important part in the final soil drainage condition which cannot be predicted.

3.158 In response to 54 (h), I agree that the soil drainage at the time of replacement will not be possible to determine and will only be apparent some time after placement. For this reason, the draft SMP includes (on p21) monitoring of soil profile condition. I am uncertain whether this suggested condition refers to the eventual soil drainage of the reinstated soil or the soil drainage condition of the replaced soil. If the suggested condition refers to the eventual soil drainage of the reinstated soil as being well drained, I have addressed this at paragraphs 3.83 to 3.91 above. If the suggested condition refers to the soil drainage condition of the soil material used for replacement, then this is acceptable, and especially has merit for subsoil sourced off-site.

3.159 The following draft SMP requirement has been added to subsoil properties (on p12): " the subsoil material must not have soil drainage characteristics that indicate that the subsoil was sourced from a soil with poor drainage". Soil drainage characteristics for poorly drained soils are provided in Milne et al. 1995[32].

(i) The movement of soil and fill materials should only take place when the soil is dry.

3.160 In response to 54 (i), the draft SMP (on p10) and proposed conditions have requirements for the removal and placement of the soil in "dry" soil condition, as described in the draft SMP. A requirement to extend this to include clean fill placement is not practical as clean fill placement may be required to ensure groundwater is not exposed in the case of rising groundwater (p 3-4 Groundwater and Clean Fill Management Plan).

3.161 With reference to para. 18 in the Valley Rage Memorandum of Counsel dated 27 January 2023, Dr Campbell is of the opinion that fluctuations of water into the fill will result in pugging and consolidation and inevitably to restricted soil drainage and potential plant rooting depths.

3.162 I do not agree with this view given that the fluctuations of ground water would have to reach near the soil surface (rather than just in the fill underlying the soils profile) to result in surface pugging.

3.163 In response to para. 46, I agree that versatility should not be confused with economic viability but based on the LandVision LUC mapping and my own on-site observations of the soils (mentioned in JWS – p3-4), the majority of subject site land does not have the

[32] Milne JDG, Clayden B, Singleton PL, Wilson AD. 1995. Soil Description Handbook. Lincoln, New Zealand, Manaaki Whenua Press. 157p. (p146).

moderately deep Riwaka soils and is predominantly not LUC class 3s land as indicated by the regional scale mapping. For this reason I do not consider the majority of the subject site land to be versatile land, capable of producing crops at a high rate and/or across a wide range. As far as I am aware, Dr Campbell has not inspected the soils on the site.

3.164 In response to para. 46, proposed condition 99 states that "Stage 1 is to be quarried in 3 tranches, with a maximum of one third of the Stage 1 area to be actively quarried or being remediated at any time. Subsequent tranches within Stage 1 shall only commence when the previous tranche has been rehabilitated to the point that a vegetated cover is established". The reasoning for this approach is to reduce the area of bare soil in the Stage 1 area that is exposed to flood waters and the potential loss of soil. I have no issues with this change from a soil productivity perspective.

3.165 Proposed condition 100 states that "Stage 1 quarrying and placement of Clean Fill, subsoil and soil is only to take place during the months of October to March, in order to ensure a vegetated cover is established before winter". The purpose of this condition is to minimise exposure of bare soil in the Stage 1 area over wetter months and reducing the potential risk of soil loss. I have no issues with this change from a soil productivity perspective.

3.166 Irrigation may be required to ensure rapid and successful revegetation. Application of irrigation water will be at rate and duration (similar to light rainfall) that is not likely to degrade the soil physical condition, nor result in surface erosion of soil by overland flow processes.

3.167 In paras. 42-53, Dr Campbell (on behalf of Valley Rage) provides an overview of the A, B and C horizons. Dr Campbell further states that the terms topsoil and subsoil used in the draft SMP, and the proposed conditions are imprecise, at times fill and subsoil are used interchangeably.

3.168 I acknowledge Dr Campbell's point that the terms topsoil and subsoil are less precise than using pedological soil horizons terms. As set out above, in the draft SMP and proposed conditions, the term topsoil equates to A horizon soil material and subsoil equates to B and C horizons soil material but excludes the underlying gravels. The intent for the use of the topsoil and subsoil terms in preference to individual pedological soil horizons is to improve the "accessibility" of the draft SMP and proposed conditions for their practical and correct implementation during activities by non-soil scientists. This is important for the successful implementations of all soil management activities.

3.169 In the draft SMP and proposed conditions, the term "clean fill" does not mean subsoil or soil material and the draft SMP, proposed conditions and the Groundwater and Clean Fill Management Plan make this distinction. However, I have noted four instances in the draft SMP where the term 'fill' has been used where "clean fill" should be used and the draft SMP.

3.170 I recommend that the use of the term "fill" in the draft SMP be replaced with the term "clean fill". I have amended the draft SMP (p12) to reflect this.

3.171 To provide clearer interpretation in the draft SMP and proposed conditions, I recommend including a clarification in the draft SMP that the term topsoil equates to A horizon soil material and subsoil equates to B and C horizons soil material but excludes the underlying gravels". I have amended the draft SMP (p12) to reflect this.

3.172 In para. 56, Valley RAGE suggest a requirement to maintain the site under high producing pasture for a minimum of 30 years in order to establish a stable A horizon soil structure. I do not agree with this requirement as it is not necessary. The 30 year requirement for high producing pasture would benefit organic matter accumulation in topsoil. However, high producing pasture could imply that the required stocking rate would need to be intensive to manage pasture growth. Intensive stocking is known to be the main cause of soil compaction on pastural land.[33] The draft SMP includes requirements (on p16-17) to minimise the impacts of intensive land use and allow the development of soil structure and organic matter accumulation.

Submitter comments - Webster, Sundbye, Le Frantz

3.173 In response to para. 2, proposed condition 92. Machinery movement is not restricted for the construction of the proposed noise bund, but machinery movement is restricted for all excavation, backfilling and soil rehabilitation activities. The differentiation is required to ensure the correct construction of the bund. The bund will remain in place for the duration of the activities and the material used for its construction will not be used for soil reinstatement on the site. However, the bund does not need to be constructed of topsoil, and references to this (e.g. in the Noise Management Plan) have been amended.

3.174 Paragraph 5 that states "Larger loaders, excavators and trucks will … compact the soils on the land that is being reinstated". In response, the draft SMP specifies (on p10, 11, 13, and

[33] Ministry for the Environment & Stats NZ. 2021. New Zealand's Environmental Reporting Series: Our land 2021. Available from environment.govt.nz and www.stats.govt.nz.

18) the requirement to use light-tracked machinery or flotation tyred vehicles, which meets the requirement of "vehicles with low ground pressures".

Submitter comments - Mae

3.175 Paragraph 74 refers to proposed condition 117, and questions whether one month a realistic period of time to allow sufficient settlement before seeding of new cover takes place. In response, revegetation of the reinstated soil is possible within one month irrespective of settlement because the soil will remain in place (i.e. settlement only lowers the soil surface and does not result in the loss of the soil). Additionally, the draft SMP (on p17) includes requirements for ongoing remediation of surface depressions.

3.176 With reference to para. 79 and the Frew Quarry consent condition document (Jan 2016), the draft SMP includes (on p16) similar restrictions for three years following reinstatement. This period is considered sufficient to allow topsoil soil structure to develop and organic matter to accumulate to a level similar to that of highly productive land under intensive production.

3.177 Referring to the submitter's comment in para. 85 regarding the 3 m stockpile height (draft SMP p11), the maximum allowable height of 3 m for stockpiles has not been changed but a requirement for machinery not to drive on the stockpiles has been included. As a result, I acknowledge that the actual height of stockpiles may be lower and determined by the ability of machinery to create stockpiles without driving on the stockpile.

3.178 Referring to the submitter's comment in para. 86 regarding the vibration and compaction of soil during transport (draft SMP p11), it is acknowledged that there is some risk of soil degradation from vibration at higher speeds. However, this risk is considered minimal and reducing the risk further by reducing speeds on open roads considered impractical.

3.179 Referring to the submitter's comment in para. 87 regarding soil placement and irrigation (draft SMP p13), the requirement states that any exposed soil surfaces require protection from wind erosion and that light surface wetting of the soil topsoil via irrigation is an acceptable method. Other methods of protection may be available and a requirement for irrigation only would prevent the use of other methods of protection.

3.180 Referring to the submitter's comment in para. 88, I acknowledge the suggestion and agree that the separate handling and storage of topsoil and subsoil should be explicitly stated in the draft SMP text, in addition to Figure 5. I have amended the draft SMP (p10-11) to reflect this.

3.181 Referring to the submitter's comment in para. 91 regarding soil monitoring in the draft SMP, monitoring includes sampling and assessment of the soil reinstated area in the past 12 months (draft SMP p22). Additionally, monitoring includes annual assessments for up to five years to identify obvious surface depressions (draft SMP p17).

3.182 Referring to the submitter's comment in para. 92 regarding soil monitoring control sites (draft SMP p21), control sites are specific to the post-placement soil monitoring. Control sites are monitoring sites on the original soil. Control sites have been included as a requirement to provide ongoing comparison between the remediated soil and the original soil on the site.

Conclusion

3.183 In conclusion, I maintain the opinions expressed in my primary and supplementary evidence that:

(a) The site contains two areas of LUC 3 land, one within and one outside the stop banks. My opinion that the LUC mapping in the LandVision report is appropriate is reinforced by my site visit to the application site in February 2023.

(b) The land area outside the stop bank is not suitable for agricultural land development due to limitations of an inherent seasonally high water table and flood risk. In my opinion, it has "permanent or long-term constraints" in terms of clause 3.10(1)(a) of the NPS-HPL.

(c) The land inside the stop bank has soil limitations that restrict production, and the range of land uses that it is suitable for over the long term. Adherence to the Soil Management Plan will ensure that the removal, management and placement of soil avoids or minimises impacts on the soil properties prior and following placement, and that the re-established soil can over the long term, retain or exceed the soil versatility of the original soil on the site.

(d) The site is not of high productive value in terms of the TRMP definition, but regardless its productive value will be retained or enhanced over the long-term.

(e) The measures in the draft SMP are robust and will be effective. I am fortified in my opinion having inspected the Appleby Fresh site.

Reece Hill

24 April 2023

Appendix 1 – Photos presented at the Joint Witness caucusing (16 February 2023).

Figure 1 – Example of a high producing vegetable production on reinstated soil (four years following reinstatement).

Figure 2 – Example of a high producing melon crop on reinstated soil (two years following reinstatement).

Figure 3 – Example of surface depressions in melon crop on reinstated soil (two years following reinstatement).

Figure 4 – Example of surface depressions in reinstated soil (year two to the left, and year four to the right).

Figure 5 – Example of surface depressions in original soil area.

March 2023

National Policy Statement for Highly Productive Land

Guide to implementation

Ministry for the Environment
Manatū Mō Te Taiao

Te Kāwanatanga o Aotearoa
New Zealand Government

Disclaimer

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Introduction

Purpose

This guide has been developed to help stakeholders understand and implement the National Policy Statement for Highly Productive Land 2022 (NPS-HPL). There will be two parts to the guidance.

- **Part 1** focuses on providing guidance to local authorities, landowners, applicants and planners on the NPS-HPL provisions that relate to subdivision, use and development and rezoning proposals on highly productive land (HPL). This guide will:

a) assist local authorities to understand and interpret the provisions that influence the processing of resource consent applications and rezoning proposals on HPL

b) benefit landowners and applicants in understanding how the NPS-HPL applies to HPL and in preparing resource consent applications for HPL and private plan changes to rezone HPL.

- **Part 2** focuses on mapping, and changes to regional policy statements and district plans to give effect to the NPS-HPL.

The NPS-HPL came into force on 17 October 2022, with most provisions having immediate effect, placing restrictions on rezoning, subdivision and land-use proposals on land that meets the transitional definition of HPL (Land Use Capability (LUC) classes 1–3, with some exceptions).

However, the extent to which the NPS-HPL can influence the outcome of resource consent processes will depend on the operative land-use and subdivision rules in each district plan. The influence of the NPS-HPL on rezoning plan changes will depend on whether that area has been identified for future urban development, and whether the plan change is needed to provide sufficient development capacity under the National Policy Statement on Urban Development 2020 (NPS-UD).

Structure of the guide

The guide is divided into the following sections:

General overview

- Provisions with immediate effect
- Implementation timeframes for mapping and updating district plans and regional policy statements
- What is highly productive land?
- What is land-based primary production?

Part 1 – Resource consents and rezoning

- Subdividing highly productive land (Policy 7 and Clause 3.8)
- Land use and development on highly productive land (Policy 8 and Clause 3.9)

- Exceptions on highly productive land for permanent or long-term constraints (Clause 3.10)
- Rezoning highly productive land to an urban zone (Policy 5 and Clause 3.6)
- Avoiding rezoning highly productive land for rural lifestyle (Policy 6 and Clause 3.7)
- Other relevant NPS-HPL policies and clauses (Clauses 3.2, 3.3, 3.11–3.13)

Part 2 – Mapping and plan changes

- Mapping of highly productive land (Policy 3, Clauses 3.4 and 3.5)
- Updating policy statements and plans to give effect to the NPS-HPL (Clauses 3.2, 3.3, 3.11–3.13)

Provisions with immediate effect and implementation timeframes

Provisions with immediate effect

The NPS-HPL will begin to influence the preparation and processing of plan changes to rezone HPL and resource consents (for both land use and subdivision on HPL) from the day the NPS-HPL came into force (17 October 2022).

Before regionwide mapping of HPL is notified, the transitional definition of HPL (Clause 3.5(7)) will apply.

Provisions requiring territorial authorities to introduce new policy and rule frameworks that give effect to this NPS will not need to be implemented until two years after the mapping becomes operative in the relevant regional policy statement. However, these provisions may be relevant for local authorities currently undertaking full plan reviews or preparing plan changes.

Timing of changes to regional policy statements and district plans to give effect to the NPS-HPL

The provisions relating to the timing of changes to regional policy statements and district plans to give effect to the NPS-HPL are Clause 3.5 and Part 4: Timing.

- Clause 3.5(1) provides that every regional council must (using Schedule 1 of the Resource Management Act 1991 (RMA)) notify a change to its regional policy statement to include maps of all the land in its region that is required to be mapped as HPL in accordance with Clause 3.4 (Mapping highly productive land). The identification of HPL must be done as soon as practicable, and no later than three years after the commencement date.
- Clause 3.5(2) allows regional councils to sequence the identification of HPL over three years following the commencement date. This may be a useful option for some regions if there is an area of potential HPL that is facing significant urban development or fragmentation pressure and there is a need to prioritise HPL mapping in a particular location.
- Clauses 3.5(3) and 3.5(4) require that territorial authorities insert HPL maps that are the exact equivalent to those included in the regional policy statement into their district plans, without using the RMA Schedule 1 process, as soon as practicable, and no later than six months after the regional policy statement HPL maps become operative.
- Clause 4.1(2) in Part 4 states that territorial authorities are required to update their relevant objectives, policies, and rules to give effect to the NPS-HPL as soon as practicable, but no later than two years after maps of HPL in the relevant regional policy statement become operative. These district plan changes will need to include objectives, policies and rules to manage subdivision, use and development on HPL in accordance with the implementation requirements in the NPS-HPL. Changes to the provisions of a regional

policy statement to align with the NPS-HPL are not explicitly required under a particular clause of the NPS-HPL. However regional councils are required to change their regional policy statements in accordance with a national policy statement under section 61(1)(da) of the RMA and all regional policy statements are required to give effect to a national policy statement under section 62(3). It is anticipated that any amendments to regional policy statement provisions that are necessary to give effect to the NPS-HPL will be undertaken as part of the proposed change to the regional policy statement to include HPL maps for efficiency.

The combined effect of these clauses is that there will be a period of time where local authorities and applicants will need to consider the policy direction and implementation requirements in the NPS-HPL without HPL being mapped (up to three years) and without specific policy direction and implementation requirements in either regional policy statements (up to three years) or in district plans (up to five years) in relation to the protection of HPL for land-based primary production. There may, however, be existing provisions in district plans relating to highly productive land or versatile soils (however defined) that still need to be considered through this period until the NPS-HPL is given effect to.

NPS-HPL provisions relevant to different proposals and activities

The key NPS-HPL provisions for rezoning plan changes and proposals for subdivision, use and development on HPL are included in table 1 below. The NPS-HPL is designed to be read as a whole, and the information in table 1 does not limit the extent to which any single policy or implementing clause may be relevant to an application. Rather, the table is intended as a quick reference guide for users to find the key NPS-HPL provisions relevant to their type of application.

Table 1: Relevant NPS-HPL provisions for different proposals and activities[1]

Type of application	Policies	Implementing clauses
Rezoning plan change	1, 2, 4, 9 (for all rezoning) 5 (for urban rezoning) 6 (for rural lifestyle rezoning)	3.3 – Tangata whenua involvement 3.5(6) and (7) – Transitional definition of HPL 3.6 – Urban rezoning of HPL 3.7 – Rural lifestyle rezoning of HPL 3.10 – Exemptions for permanent or long-term constraints
Subdivision consent	1, 2, 4, 6, 7, 9	3.5(6) and (7) – Transitional definition of HPL 3.8 – Avoiding subdivision of HPL 3.10 – Exemptions for permanent or long-term constraints
Land-use consent	1, 2, 4, 6, 8, 9	3.5(6) and (7) – Transitional definition of HPL 3.9 – Protecting HPL from inappropriate use and development 3.10 – Exemptions for permanent or long-term constraints
Mapping	1, 2, 3	3.2 – Integrated management 3.3 – Tangata whenua involvement

[1] The NPS-HPL objective is relevant to all types of applications and activities on HPL.

Type of application	Policies	Implementing clauses
		3.4 – Mapping HPL 3.5 – Identifying HPL in regional policy statements and district plans
Updating policy statements and plans	1, 2, 4, 5, 6, 7, 8, 9	3.2 – Integrated management 3.3 – Tangata whenua involvement 3.8 – Subdivision 3.9 – Protecting HPL from inappropriate use and development 3.10 – Exemptions for permanent or long-term constraints 3.11 – Continuation of existing activities 3.12 – Supporting appropriate productive use of highly productive land 3.13 – Managing reverse sensitivity and cumulative effects

Part 1: Resource consents and rezoning

This section of the guide focuses on the key NPS-HPL provisions that will apply to subdivision and land-use applications and rezoning plan change proposals located on HPL (by the transitional definition) before HPL has been mapped and the maps in a regional policy statement have been made operative.

Relevance of NPS-HPL for consideration of resource consent applications

The NPS-HPL will need to be considered for land-use and subdivision applications involving land that meets the transitional definition of HPL from the date the NPS-HPL came into force (17 October 2022). This NPS-HPL will generally not be relevant for regional consenting processes as the provisions are focused on restricting urban and rural lifestyle zoning, subdivisions and land use on HPL.

This includes all resource consent applications that were lodged before the NPS-HPL's commencement date, but where a decision has not been made under section 104 of the RMA. That section sets out what consent authorities must consider when making a decision on a resource consent application, including the requirement under section 104(1)(b)(iii) to have regard to "any relevant provisions of… a national policy statement". It is the timing of the decision-making and the statutory environment that dictates which national policy statements are relevant, not the date a consent application is lodged or how long it has been waiting for processing.

Note that "have regard to" does not mean it is optional to consider the NPS-HPL policy direction. The NPS-HPL represents recent national policy direction (which is more up to date than operative plan provisions) and contains clear and directive provisions. This means that if a decision on an application received before the 17 October 2022 NPS-HPL commencement date has not been made, then any relevant provisions of the NPS-HPL must be considered when undertaking the assessment.

The relevant weighting of factors for a section 104 assessment will depend on the circumstances of the case and how it aligns with other national direction. The extent to which the NPS-HPL will be relevant to a subdivision and land-use consent application will largely depend on:

- the activity status of the resource consent and the scope of matters of control or discretion (if it is a controlled or restricted discretionary activity)
- the nature of the application and whether it is consistent with or contrary to the NPS-HPL objective and the relevant provisions.

Impact of activity status

The likely impact of activity status in the relevant district plan for land-use or subdivision proposals on land identified as HPL under the transitional definition of HPL is as follows.

- **Permitted activity** – not affected by the NPS-HPL. The NPS-HPL will only become relevant at such time as a territorial authority completes a plan change to give effect to it, which may involve changing which activities are enabled as permitted activities on HPL.
- **Controlled activity** – applications for controlled activities must be granted under section 104A of the RMA. The ability of the territorial authority to impose consent conditions is limited to matters over which control is reserved. If control is reserved over a matter that relates to issues covered by the NPS-HPL – such as managing reverse sensitivity effects, enabling land-based primary production or protecting rural production/HPL (or equivalent term) – then a condition that addresses any of these matters could be appropriate. However, any condition imposed must not frustrate the purpose of the consent.
- **Restricted discretionary activity** – the relevance and impact of the NPS-HPL will be determined by the matters of discretion. Territorial authorities have the right to grant or refuse an application for a restricted discretionary activity under section 104C of the RMA. However, the ability to have regard to the relevant provisions of the NPS-HPL under section 104(1)(b)(iii) is limited to the matters over which discretion is restricted. If a restricted discretionary activity does not have any matters of discretion relating to matters covered by the NPS-HPL, then the NPS-HPL must be recognised in the assessment under section 104 but it is given less weight and it cannot be a reason to decline the application. However, if the matters of discretion relate to matters covered by the NPS-HPL, then the relevant NPS-HPL provisions must be considered as part of the assessment of the application under section 104C and may be a reason for declining that application. This may include more generic matters of discretion relating to rural productivity and protecting the rural environment for primary production activities – the matter does not specifically have to mention HPL or versatile soils (however described).
- **Discretionary and non-complying activities** – all relevant matters can be considered when determining discretionary and non-complying activities under section 104B. Therefore consent authorities must have regard to any relevant provisions of the NPS-HPL when considering whether to grant or refuse a discretionary or non-complying resource consent application.

If bundling the reasons for consent means an activity is discretionary or non-complying overall, all relevant matters in the NPS-HPL can be considered. This applies even if the reason for the application being discretionary or non-complying was not the core reason for consent. For example, a restricted discretionary combined land-use and subdivision application that becomes non-complying because of an earthworks infringement would still allow for full consideration of the NPS-HPL.

Note that this advice regarding the ability of territorial authorities to consider the NPS-HPL when making decisions on resource consent applications relates to district plan provisions that were drafted before the NPS-HPL came into effect. Plan changes or full plan reviews that involve updating general rural or rural production zone provisions for land use and subdivision after the NPS-HPL took effect will be required to give effect to the NPS-HPL.

Status of provisions in district plans

Some territorial authorities will have been in the process of reviewing the rural provisions of their district plans at the time the NPS-HPL took effect. This may result in activities having different activity statuses under the operative and proposed provisions. For example, a rural lifestyle subdivision in the general rural zone may be a controlled activity under the operative plan but a discretionary activity under the proposed plan or plan change. Unless a rule has

immediate legal effect under section 86B, the activity status of the rule in the operative district plan will apply until a territorial authority has made a decision on the proposed plan or plan change. As the activity status of a resource consent application has implications on the extent to which the NPS-HPL can be considered, it is important to identify the correct activity status of each application (including bundled applications) before considering the guidance in Impact of activity status above.

What is highly productive land?

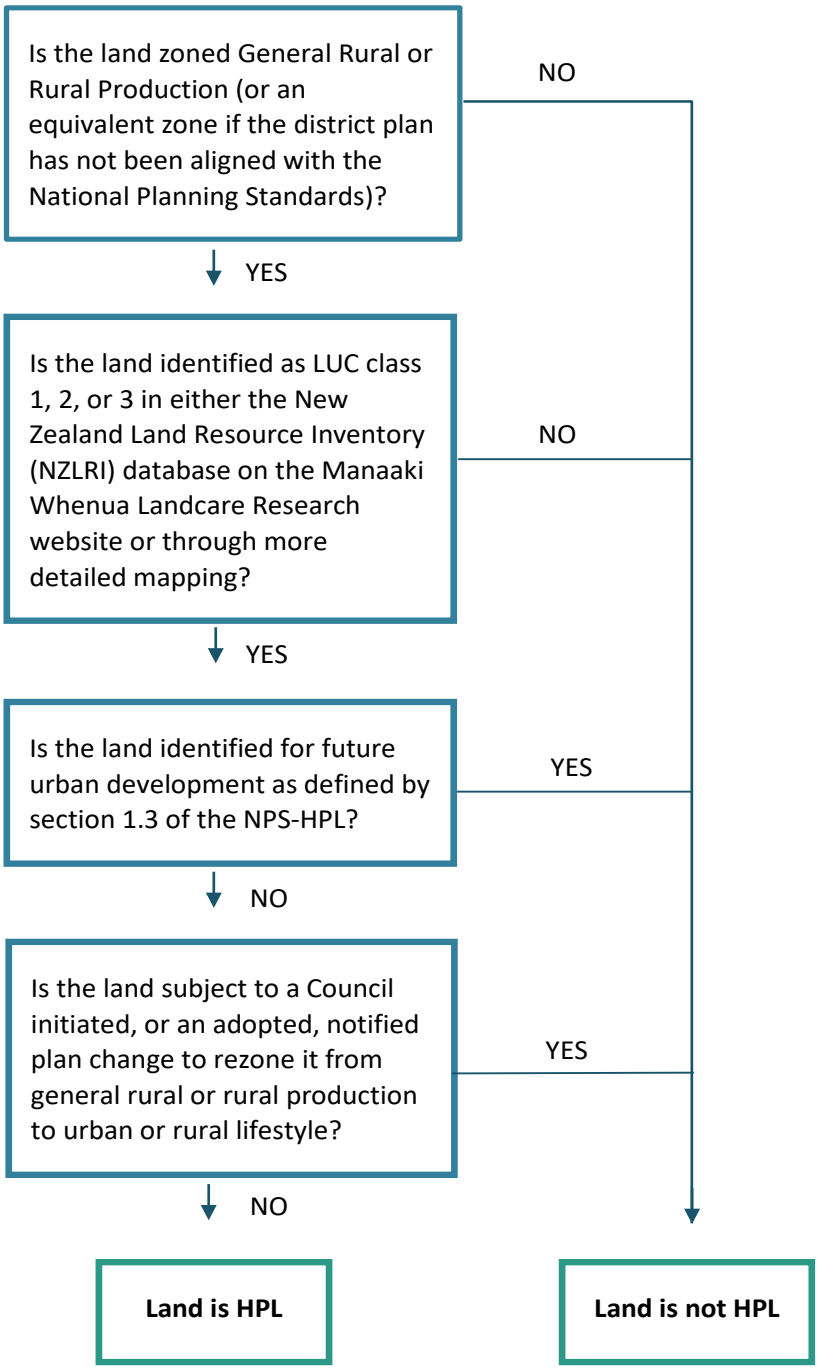
Transitional definition of highly productive land

Until such time as HPL has been mapped as part of the regional policy statement and these maps have been made operative (mapping is covered in Part 2 of this guidance), the 'transitional definition' of HPL in Clause 3.5(7) applies. Clause 3.5(7) states:

> *(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.*

A flow chart to assist with interpreting Clause 3.5(7) is in figure 1 below.

Figure 1: Basic flowchart to determine if land is HPL under the transitional definition of HPL



It is important to note that the criteria for the transitional definition of HPL are different to those related to mapping HPL in Clause 3.4. In particular, the transitional definition of HPL applies to all LUC class 1, 2, and 3 land in general rural and rural production zones and there is no requirement to consider whether it forms a "large and geographically cohesive area".

The LUC data layer is either available to view on the Landcare Research Our Environment's website, or available for download from the New Zealand Land Resource Inventory.

The intention of the exemptions in Clause 3.5(7)(b) is to make sure the NPS-HPL does not undermine work that is well advanced by local authorities to plan for new urban growth areas. Urban growth planning requires significant effort and resources from local authorities, along with community and tangata whenua engagement. The NPS-HPL transitional definition does not apply to land already 'identified for future urban development' through a Future Development Strategy (FDS) or 'strategic planning document', or land subject to a council-initiated or adopted[2] notified plan change to rezone the land. Land that is already zoned 'future urban' is also exempt. This zone is explicitly excluded from the transitional definition of HPL under Clause 3.5(7)(a)(i). Conversely, where the land is subject to a private plan change that has been 'accepted' (rather that adopted) by the relevant territorial authority, it is captured by the transitional definition of HPL and the NPS-HPL will apply to that plan change.

Interpreting Clause 3.5(7)(a)

Clause 3.5(7)(a) makes it clear the NPS-HPL is only relevant to land zoned general rural or rural production. This means all other zones are excluded from the transitional definition of HPL. All 'urban' zones (including special purpose and future urban zones, as defined in the NPS-HPL) and rural lifestyle zones are excluded from the transitional definition of HPL.

If a district plan has not implemented the National Planning Standards, any reference to zones in the NPS-HPL should be read as applying to the "nearest equivalent zone" in the district plan (refer Clause 1.3(4)(b)). The nearest equivalent zone should be assessed by referring to the zone descriptions in the National Planning Standards and comparing them to the district plan zone description, objectives, policies, activity table and subdivision provisions (in the round). This is to assess whether a 'rural-type' district plan zone is in fact a rural production/general rural, rural lifestyle or settlement zone in the National Planning Standards (as the only four options for rural zones). For example, there may be a special purpose zone in an operative district plan relating to a productive rural environment that is predominately used for primary production activities. Such a zone should be interpreted as rural or rural production zone for the purposes of Clause 3.5(7)(a)(i) rather than an urban zone.

LUC class 1, 2 or 3 land is defined in Clause 1.3(1) as "land identified as Land Use Capability Class 1, 2, or 3, as mapped by the New Zealand Land Resource Inventory[3] or by any more detailed mapping that uses the Land Use Capability classification". This means that if a region or district has more detailed LUC mapping than the original New Zealand Land Resource Inventory, then that can be used by the relevant local authority to identify HPL under the transitional definition of HPL and for subsequent mapping of HPL.

More detailed mapping could be tools such as S-Map, however it is not intended to include site-specific soil assessments prepared by landowners. If a local authority intends to use more detailed mapping information, it must be based on the LUC classification parameters (completing the assessment according to the methodology in the Land Use Capability Survey Handbook (2009)), and not consider other factors such as water availability. Part 2 of the guide

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[2] Adopted in this context means a private plan change that was originally advanced by the private sector but was adopted by a territorial authority at notification stage. If the territorial authority adopts a private plan change, it continues through the process as if it was a council-initiated plan change. This implies that the council generally supports the change proposal and bears the cost of managing the plan change from the date that it adopts it.

[3] The LUC data layer is available to view on the Landcare Research Our Environment's website, or for download from the New Zealand Land Resource Inventory.

will provide further guidance on best practice for undertaking more detailed assessment of LUC.

Until HPL has been mapped in a regional policy statement and those maps have become operative, the transitional definition of HPL will apply to all land zoned general rural and rural production that is identified as LUC class 1, 2 or 3, regardless of its shape or size. This means many land parcels may only be partially identified as HPL under the transitional definition of HPL where part of the land parcel is LUC class 1, 2 or 3 and part is not.

See When only part of a land parcel meets the transitional definition of HPL below for how the NPS-HPL applies to land parcels comprising a mix of HPL and non-HPL under the transitional definition.

Interpreting Clause 3.5(7)(b)

Identified for future urban development

Clause 3.5(7)(b) excludes areas *'identified for future urban development'* from the transitional definition of HPL.[4] '*Identified for future urban development'* is defined in Section 1.3 of the NPS-HPL as follows:

> *(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.*

The definition of 'identified for future development' only applies to areas identified as 'suitable for commencing urban development over the next 10 years' in a Future Development Strategy or other strategic planning document. 'Suitable'[5] in this context should be based on whether the area has been clearly identified for urban development/rezoning in the short to medium term (up to 10 years). The intent is to ensure future urban development areas are only excluded from HPL (transitional definition and mapping) when there is a high level of certainty the land will be developed for urban use in the next 10 years. It recognises that areas identified for future urban development in the next 10 years have often already been factored into decisions about servicing, infrastructure, transport links, and so on. Introducing the NPS-HPL should not undermine this work. The 10-year timeframe also aligns with the definition of short term ('within the next 3 years') and medium term ('between 3 and 10 years') in the NPS-UD.

If there is no indication in the Future Development Strategy or strategic planning document that the land is suitable for urban development in the 10 years following 17 October 2022, then the future urban growth area is captured by the definition of HPL. This does not mean

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[4] Operative future urban zones are already excluded from the transitional definition of HPL as they are special purpose zones under the National Planning Standards.

[5] The reference to 'suitable' should be interpreted based on its plain and ordinary meaning. It is not intended to align with how that term is used in the NPS-UD in relation to business land.

future urban development of that area is now inappropriate under the NPS-HPL. It simply means the relevant urban rezoning provisions (Policy 5 and Clause 3.6) will apply when that land is rezoned, or the relevant resource consent provisions (Policies 7 and 8 and Clauses 3.8, 3.9 and, in some cases, 3.10) will apply when subdivision and land-use consents for urban development are applied for. Whether a future urban growth area meets the definition of 'identified for future urban development' needs to be assessed on a case-by-case basis with reference to the guidance on Future Development Strategies and strategic planning documents below.

Future development strategies

Future development strategies (FDS) are required for tier 1 and 2 territorial authorities under Clause 3.12(1) of the NPS-UD (and were previously also required under the NPS-UDC 2016). However, other local authorities that are not tier 1 or 2 can also prepare a Future Development Strategy under Clause 3.12(4) of the NPS-UD. Both of the following tests must be met for land identified for future urban development in a Future Development Strategy to be excluded from the transitional definition of HPL:

- **is published** – the Future Development Strategy needs to be approved by the relevant local authority and published on its website before 17 October 2022. This means land identified for future urban development in a Future Development Strategy that was being consulted on 17 October 2022 but is still in draft form would be captured by the transitional definition of HPL, and
- **identifies the land as being suitable for commencing urban development over the next 10 years** – the land must be identified for urban development **and** identified as being suitable for commencing urban development in the next 10 years from 17 October 2022. The purpose of a Future Development Strategy under Clause 3.13 of the NPS-UD is to provide at least sufficient development capacity over a 30-year timeframe, so not all land identified for future urban development in a Future Development Strategy will be excluded from the transitional definition of HPL – only the land identified as being suitable for future development in the next 10 years (ie, in the short to medium term to provide development capacity to meet demand).

Strategic planning documents

Many regional councils and territorial authorities have prepared non-statutory growth strategies to plan for future urban growth that are not a Future Development Strategy – either on their own or in collaboration with other local authorities. These strategic documents are covered by the definition of "strategic planning document" in Clause 1.3 of the NPS-HPL as "means any non-statutory growth plan or strategy adopted by local authority resolution". Both of the following tests need to be met for land identified for future urban development in a strategic planning document to be excluded from the transitional definition of HPL:

- **identifies the land as being suitable for commencing urban development over the next 10 years from 17 October 2022** — the land needs to be identified for future urban development **and** suitable for commencing development in the 10 years following 17 October 2022. Other types of strategic planning documents, including those prepared as part of Local Government Act processes, or spatial planning processes may also identify land that is suitable for urban development over the next 10 years, and
- **is identified at a level of detail that makes the boundaries of the area identifiable in practice** — strategic planning documents vary in how they identify areas for future urban development. Some documents identify land down to parcel level, so it is easy to

determine whether land has been identified for future urban development. Other documents use indicative layers that may appear like blobs or circles, which provide some indication about where urban growth might occur but no certainty on which land parcels are captured. For future urban development land identified in a strategic planning document to be excluded from the transitional definition of HPL, it must include mapping that is specific enough to identify the boundaries of the future urban area and know with certainty whether a particular land parcel is included or excluded. Territorial authorities will need to make the assessment of whether the area is identified at a level of detail to meet the definition of 'identified for urban development' in the NPS-HPL based on their detailed knowledge of their own strategic planning document.

Subject to a council-initiated, or adopted, notified plan change

Clause 3.5(7)(b)(ii) is intended to exclude land from the transitional definition of HPL if there is a council-initiated, or adopted, notified plan change to rezone the land to either an urban zone (defined in Clause 1.3(1) of the NPS-HPL) or to a rural lifestyle zone. If a territorial authority has progressed a plan change to rezone rural land to urban and this has already been notified, then the NPS-HPL does not undermine the work undertaken by territorial authorities and their communities to get to this point in the process.

However, the clause makes a distinction between plan changes (as defined under s43AA) that are council-initiated or adopted under Clause 25(2)(a) of Schedule 1 of the RMA vs a private plan change that is 'accepted' for notification under Clause 25(2)(b) of Schedule 1 of the RMA. Private plan changes that are not adopted by territorial authorities are often more contentious and driven by individual landowner aspirations for land development as opposed to being considered strategically as part of wider district and urban growth planning by a territorial authority in accordance with a Future Development Strategy. If a notified private plan change was not made operative by 17 October 2022 and is still proceeding through the process in RMA Schedule 1, then the land subject to that plan change is captured by the transitional definition of HPL. This does not mean that private plan changes should not occur on HPL, but the NPS-HPL will need to be given effect to when making a decision on that private plan change (and the relevant tests of either Clause 3.6 for urban rezoning or Clauses 3.7 and 3.10 for rural lifestyle rezoning).

Occasionally a private plan change needs to be amended during the RMA Schedule 1 process to align with other planning processes affecting other parts of the district plan. The introduction of the Medium Density Residential Standards (MDRS), for example, has necessitated council-initiated variations to private plan changes to align them with the requirements of the MDRS in multiple districts nationally. The policy intent is that the introduction of a council-initiated variation to align a private plan change with national direction (essentially making consequential amendments for consistency) does not mean that the private plan change becomes "council initiated". In this scenario, the policy intent is that the land subject to the private plan change and council-initiated variation is still captured by the transitional definition of HPL.

With respect to submissions on proposed plans, plan changes or variations, submissions do not form part of a council-initiated or adopted plan change, and consideration of the NPS-HPL is relevant.

Clause 3.5(6) – approved plan changes

Clause 3.5(6) applies where HPL is subject to an approved plan change to rezone the land from general rural or rural production to an urban or rural lifestyle zone. Clause 3.5(6) states:

> *If highly productive land is the subject of an approved plan change to rezone the land so that it is no longer general rural or rural production zone, the land ceases to be highly productive land from the date the plan change becomes operative, even if the change is not yet included in maps in an operative regional policy statement.*

In Clause 3.5(6), an "approved plan change" applies to plan changes that have become operative. This makes it clear that land identified as HPL (mapped or under the transitional definition) remains as such until it is rezoned through an operative plan change that is beyond challenge. It is anticipated that regional policy statement maps of HPL will be updated periodically to reflect any rezoning changes on HPL occurring at the district level (as per Clause 3.5(5)).

When only part of a land parcel meets the transitional definition of HPL

Where the transitional definition of HPL applies to part of a land parcel and the balance of the land parcel is LUC class 4–8, the NPS-HPL will only apply to that part of the lot that meets the transitional definition of HPL for land-use activities. If the proposed use or development is located on the HPL part of the parcel and resource consent is required, then Policy 8, Policy 9 and Clause 3.9 of the NPS-HPL will need to be considered. Policies 8 and 9, respectively, are as follows.

> ***Policy 8**: Highly productive land is protected from inappropriate use and development.*
>
> ***Policy 9**: Reverse sensitivity effects are managed so as not to constrain land-based primary production activities on highly productive land.*

Conversely, if a land-use activity is proposed on the portion of the lot that is not HPL, then the NPS-HPL is less likely to be relevant to the decision-making process.[6] In some situations, a land-use activity may span both HPL and non-HPL land under the transitional definition of HPL. In these circumstances, a holistic assessment should be undertaken with the NPS-HPL provisions applying to the overall land-use activity – the relevant provisions are discussed further in Land use and development on highly productive land below.

A combination of HPL and non-HPL land on a lot has different implications for subdivision. This is discussed further in relation to assessing the overall productive capacity of the land Subdividing highly productive land below.

What is land-based primary production?

Land-based primary production is defined in the NPS-HPL as "production, from agricultural, pastoral, horticultural, or forestry activities, that is reliant on the soil resource of the land". This definition is deliberately narrower than the National Planning Standards definition of

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[6] Policy 8 requiring local authorities to protect HPL from inappropriate use and development and Policy 9 of relating to managing reverse sensitivity effects on land-based primary production on adjacent/nearby HPL may still be relevant, depending on the proposed land-use activity.

'primary production' as there are some activities covered by the primary production definition that do not need to locate on HPL in the same way as agricultural or horticultural activities do. In particular, the following primary production activities in the National Planning Standards definition of primary production do not fall within the scope of the 'land-based primary production' definition:

- **Intensive indoor primary production** – this activity was excluded from the definition of land-based primary production as inherently primary production that occurs predominantly inside buildings (such as intensive pork, poultry or mushroom farming) is not "reliant on the soil resource of the land". The intention is that intensive indoor primary production activities would be encouraged to establish on other rural land that was not HPL. However, refer to guidance on Clause 3.9 – protecting highly productive land from inappropriate subdivision, use and development and Clause 3.9(2)(a) in Table 2 below, as there may be scope for indoor components of a wider land-based primary production activity to be considered 'supporting activities' (as defined in the NPS-HPL) in some circumstances.
- **Hydroponic growing systems** – this activity was excluded from the definition of land-based primary production as hydroponic growing systems occur inside buildings and are not "reliant on the soil resource of the land".

  However, refer to guidance on Clause 3.9 – protecting highly productive land from inappropriate subdivision, use and development and Clause 3.9(2)(a) in Table 2 below, as there may be scope for indoor components of a wider land-based primary production activity to be considered 'supporting activities' (as defined in the NPS-HPL) in some circumstances. Structures that are erected to protect soil-reliant plants from weather, wind or pests (ie, covered crops) are land-based primary production because they rely on the soil.
- **Mining/quarrying** – the intent of the NPS-HPL is not to protect HPL for these primary production activities. However, there is a pathway for mineral and aggregate extraction on HPL under Clause 3.9(2)(j) where these meet certain tests (operational and functional need to be on HPL or provide significant public benefits). Small-scale farm quarries could also potentially have a pathway on HPL as "supporting activities", see discussion in Clause 3.9(2)(a), Clause 3.9 – protecting highly productive land from inappropriate subdivision, use and development, below for more information.
- **Aquaculture** – excluded on the basis that this is not a land-based primary production activity.
- **Processing of commodities** – the intention is that processing of commodities from land-based primary production should occur on land that is not HPL. However, there is the potential for some initial processing activities (as described in the definition of primary production in the National Planning Standards) to be considered "supporting activities" under Clause 3.9(2)(a). Refer to guidance on Clause 3.9 for more information.

The intent of the NPS-HPL is not to create a hierarchy of land-based primary production activities – there should be an opportunity to establish any type of land-based primary production on HPL. Councils may provide more specificity on what types of land-based primary production are supported in their district in objectives and policies of the regional policy statement or district plan – this is covered in Part 2: Updating policy statements and plans to reflect the NPS-HPL.

The definition of land-based primary production in the NPS-HPL specifically includes "forestry activities" which can include both plantation forestry and carbon forestry. Although forestry

may not be the most productive use of HPL, it has the potential to be converted to other land-based primary production activities, following remediation, unlike urban rezoning/development and fragmentation into lifestyle lots, which is irreversible.

Subdividing highly productive land

The NPS-HPL will be a relevant consideration for subdivision on HPL under both the transitional definition of HPL and mapped HPL.

The key policy in the NPS-HPL for subdivision is Policy 7:

> *The subdivision of highly productive land is avoided, except as provided in this National Policy Statement.*

The direction that subdivision of HPL be "avoided", apart from the specific exceptions in the NPS-HPL, is intended to provide a stringent approach for any subdivision proposal on HPL to avoid further fragmentation of this finite resource. The implementing clause for this policy (discussed further below in Clause 3.8 – avoiding subdivision of highly productive land) does provide a pathway for some types of subdivision in some circumstances, but these are limited in scope.

Policy 6 provides further direction that rural lifestyle development on HPL is to be specifically avoided as follows (**emphasis added**):

> *The rezoning and **development of highly productive land as rural lifestyle is avoided**, except as provided in this National Policy Statement.*

The National Planning Standards zone standards describe a rural lifestyle zone as areas:

> *used predominantly for a residential lifestyle within a rural environment on lots smaller than those of the General rural and Rural production zones, while still enabling primary production to occur.*

While rural lifestyle zones may allow primary production to occur, the reason that rural lifestyle on HPL should be avoided is that the use of HPL for predominantly rural lifestyle purposes is an inappropriate use of a scarce resource. Rural lifestyle zoning prevents HPL being used efficiently for land-based primary production as it increases the potential for reverse sensitivity effects and allows for lot sizes that make land-based primary production less viable.

Subdividing land to create smaller land parcels for rural lifestyle use is not provided for unless there are exceptional circumstances (refer to Clause 3.10). This focus on avoiding rural lifestyle subdivision and development is intentional, as the fragmentation of HPL and its inefficient use for rural lifestyle development was identified through the development of the HPL as one of the key contributing factors to ongoing losses of HPL nationally.

In relation to the National Planning Standards description of rural lifestyle zone, the consideration is not whether the sites are large enough for primary production. It is whether the main land use is primary production or residential activity. It is appropriate to consider specific characteristics of the site and reasonably foreseeable opportunities for using the land for land-based primary production (over a 30-year period) in forming these conclusions.

Clause 3.8 – avoiding subdivision of highly productive land

Clause 3.8 of the NPS-HPL is intended to be clear and directive in terms of the outcomes sought for subdivision of HPL as follows (emphasis added).

> *(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:***
>
> *(b) the subdivision is on **specified Māori land:***
>
> *(c) the subdivision is for **specified infrastructure**, or for defence facilities operated by the New Zealand Defence Force to meet its obligations under the Defence Act 1990, and there is a **functional or operational need** for the subdivision.*
>
> *(2) Territorial authorities must take measures to ensure that any subdivision of highly productive land:*
>
> *(a) avoids if possible, or otherwise mitigates, any potential cumulative loss of the availability and productive capacity of highly productive land in their district; and*
>
> *(b) avoids if possible, or otherwise mitigates, any actual or potential reverse sensitivity effects on surrounding land-based primary production activities.*
>
> *(3) In subclause (1), subdivision includes partitioning orders made under Te Ture Whenua Māori Act 1993.*

Guidance on the terms in bold above is provided in the following sections.

Productive capacity

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

> *…the ability of the land to support land-based primary production over the long term, based on an assessment of:*
>
> *(a) physical characteristics (such as soil type, properties, and versatility); and*
>
> *(b) legal constraints (such as consent notices, local authority covenants, and easements); and*
>
> *(c) the size and shape of existing and proposed land parcels.*

The productive capacity of land does not depend on whether the current use is land-based primary production, or its past history of land uses. The key measure of productive capacity depends on the potential capacity of the land to support land-based primary production activities. To assess whether the "overall productive capacity" will be retained in the context of a subdivision application (under Clause 3.8(1)(a)), or a small scale or temporary activity (Clause 3.9(2)(g)), the emphasis is on the 'overall' productive capacity and not just the productive capacity of the balance lot. This assessment will require the existing productive capacity of the subject land to be assessed so that an overall comparison between the existing and proposed can be made. The relevant factors contributing to the existing productive capacity will vary depending on the local context and may include consideration of:

a) soil type patterns across a site

b) the characteristics of soils, including drainage, potential rooting depth, any existing contamination and erosion proneness

c) land-form features, including slope and aspect, and flood proneness

d) climate, including general characteristics relating to suitability for productive use

e) availability of water

f) legal constraints (such as consent notices, local authority covenants and easements)

g) current and potential opportunities for using the land for land-based primary production.

These characteristics will influence the type of land-based primary production suitable for that particular site. A full range of suitable types of land-based primary production should be considered as part of the assessment, not just the existing land-use type. Consideration of the application in terms of a cumulative loss of HPL may also be relevant, including previous subdivision and planning history of the site and neighbouring sites.

Retaining the overall productive capacity of the land over the long term means there is no loss in the potential of the subject land being used for land-based primary production, when viewed over a 30-year timeframe based on reasonably foreseeable conditions. This should include consideration of effects of the proposed subdivision and/or subsequent proposed land use on the potential land-based primary production use of the subject land, including loss of land from production through access, curtilage development, any setbacks and any changes to the size and shape of property boundaries to mitigate reverse sensitivity effects.

If the proposed subdivision means the productive capacity of the original lots are retained (that is, the likelihood for the land to be used for a particular type or range of land-based primary production has not reduced or has improved), then the test in Clause 3.8(1)(a) would be met. This test envisages enabling:

i) subdivisions such as boundary adjustments where HPL is amalgamated to form a larger productive landholding.

ii) subdividing a large farm into smaller lots that are still capable of being used for a particular type or range of land-based primary production (for example, the separation of a 120-ha farm into two 60-ha farms).

It is unlikely that subdivision into rural lifestyle lots would meet the productive capacity test in this clause.

Where only part of the site is identified as HPL (either under transitional definition or when mapped in a regional policy statement) then the consideration of how the proposal aligns with the direction in the NPS-HPL will be on a case-by-case basis. The intent of Clause 3.8 is that:

- the proposed lot layout should not result in the HPL being further fragmented across multiple lots
- reverse sensitivity effects on land-based primary production activities will be avoided if possible, or otherwise mitigated.

The NPS-HPL deliberately does not contain direction on the size of a lot that will guarantee the productive capacity of HPL will be retained. This will be dependent on a range of factors and will vary from region to region. Whether or not a particular lot can remain productive will vary

depending on, for example, fluctuating markets or local conditions in each district. As discussed above, the determining factor is whether the site is large enough so that the predominant use of the site is land-based primary production and not residential lifestyle.

The way rural businesses operate is constantly evolving. The traditional owner/proprietor model is increasingly being replaced by an aggregated agri-business enterprise model, where operations are spread across several blocks of land. The economy of scale of aggregated agri-businesses enables the sharing of equipment, labour, administrative services and capital assets. Therefore, the size of the parcel is not always as relevant as its potential to support land-based primary production in the context of the agri-business. An assessment of productive capacity should consider a range of alternatives that allow the land to remain productive, such as leases to use a parcel as part of a larger agri-business.

Note that economic viability is not a consideration in an assessment of productive capacity under Clause 3.8. Any constraints on using land identified as HPL for land-based primary production that are not short term and result in land no longer being economically viable (including irreversible land fragmentation and/or water or nutrient constraints) for land-based primary production must be assessed under Clause 3.10 (see Exemptions for HPL subject to permanent or long-term constraints below).

The assessment of productive capacity should be at a sufficient level of detail appropriate to the proposal to ensure an informed decision on the application can be reached and needs to be considered over at least a 30-year period. Where the information necessary for an assessment is not readily available to the applicant from existing or previous landowners, or where inadequate or contradictory information has been provided, then further specialist input may be requested from suitably qualified and experienced professionals. The experience and qualifications needed will depend on the particular aspect of the proposal the further information required relates to. This may, for example, include economists with expertise in agriculture, agricultural consultants, valuers, soil scientists or other land or water scientists. Territorial authorities may wish to have information that is submitted as part of an application peer reviewed, including by seeking the advice from relevant specialists in regional councils so as to validate the information provided.

Cumulative loss and reverse sensitivity effects associated with subdivision

Clause 3.8(2) is as follows.

> *(2) Territorial authorities must take measures to ensure that any subdivision of highly productive land:*
>
> *(a) avoids if possible, or otherwise mitigates any actual loss or potential cumulative loss of the availability and productive capacity of highly productive land in their district; and*
>
> *(b) avoids if possible, or otherwise mitigates, any actual or potential reverse sensitivity effects on surrounding land-based primary production activities.*

As with Clause 3.8(1) the first direction in Clause 3.8(2) is to avoid a loss of HPL and provides a strong position for territorial authorities to decline a subdivision application that results in a cumulative loss of HPL in that district, unless under an Operative District Plan that application is for a controlled activity or a restricted discretionary application (and the matters of control or discretion do not include loss of HPL). Historically, cumulative effects have been difficult to

consider in terms of HPL. Each application involving a loss of HPL argues that the loss is no more than minor, as it is a small percentage of the entire district/region. The intent of Clause 3.8(2)(a) is to support local authorities taking a strong stance on HPL loss on the basis that any loss should be avoided, because all the minor losses across a district/region collectively result in a more significant loss.

The cumulative loss of HPL must take into account any loss of HPL resulting from the mitigation of reverse sensitivity effects.

Subdividing land in and of itself does not create reverse sensitivity effects – it is the subsequent land uses that are enabled by the subdivision which can result in reverse sensitivity effects on existing land-based primary production activities. Consideration should be given to potential future reverse sensitivity effects resulting from the subsequent land uses at the time of subdivision. It may be appropriate to implement subdivision consent conditions, such as:

- requiring future dwellings to be constructed on specified building platforms away from boundaries with land-based primary production activities
- restricting the number of future dwellings on a property (if the rules would otherwise allow for more than one dwelling) by way of a consent notice on the title
- requiring the construction of a barrier or screen (eg, shelter belt planting, fencing) to help block potential odours, noise, dust or the visual presence of the land-based primary production activity from a future sensitive activity.

Any loss of HPL that may result from these requirements needs to be taken into account when calculating any loss of productive capacity under Clause 3.8(1).

Should a substantive decision to grant a consent to subdivide HPL under Clause 3.8 be reached then Clause 3.8(2) also requires territorial authorities to mitigate actual or potential loss of HPL and reverse sensitivity effects. Consent notices preventing further subdivision and precedent effects may be considered to avoid cumulative loss in the future.

In terms of mitigating reverse sensitivity effects, some territorial authorities (either currently or historically) impose no-complaints covenants (sometimes known as rural emanations easements) registered on the titles at the time of subdivision as a means to manage reverse sensitivity effects. These covenants contain clauses that remind buyers that they are living in a rural environment, and that farming activities may be undertaken in the area without interference or restraint, with the intention of discouraging neighbouring properties from complaining about effects from adjacent production activities. There are known limitations associated with no-complaints covenants in terms of enforceability, particularly as they do not negate the responsibility of a local authority to follow up on a complaint if it is lodged. Feedback received on the use of no-complaints covenants as a reverse sensitivity tool is they are largely ineffective and do not afford rural activities the same protection as physical measures to separate sensitive land uses from productive rural activities. We would caution local authorities that are considering relying on no-complaints covenants as the main tool for managing reverse sensitivity effects that they are unlikely to provide sufficient protection for land-based primary production activities using HPL.

Some territorial authorities may already have specific direction in their district plans to consider cumulative loss of HPL and potential reverse sensitivity effects at the time of subdivision (ie, as a matter of restricted discretion or as part of a subdivision objective and/or policy). If not, territorial authorities can still consider whether reverse sensitivity effects have

been avoided if possible, or mitigated, as part of their assessment under section 104 of the RMA for discretionary or non-complying subdivision activities (or restricted discretionary activities if reverse sensitivity is a matter over which discretion has been restricted).[7]

Specified Māori land

Clause 3.8(1)(b) provides a pathway for subdivision of HPL on Māori land that meets the definition of specified Māori land in the NPS-HPL. The types of Māori land captured by the definition of specified Māori land (representing approximately 3 per cent of LUC 1, 2 and 3 land) will be evident from existing or historical title records retrievable from Land Record Search | Toitū Te Whenua — Land Information New Zealand (linz.govt.nz).

Subdivision of specified Māori land should still take measures to minimise the actual and cumulative loss of HPL in the district and mitigate reverse sensitivity effects that may adversely affect the productive use of HPL on neighbouring sites.

Further guidance on what the NPS-HPL means for Māori and Māori land is available.[8] An information guide[9] is also available on changing the status of general land owned by Māori to Māori freehold land and rezoning land to Māori purpose zone (as defined in the National Planning Standards).

Specified infrastructure

Subdivision that is required to deliver specified infrastructure is exempt from Clause 3.8, provided there is a **functional or operational need** (see definitions below). "Specified infrastructure" is defined in the NPS-HPL in a manner consistent with other national direction as (emphasis added):

> ***specified infrastructure*** *means any of the following:*
>
> *(a) infrastructure that delivers a service operated by a* ***lifeline utility****:*
>
> *(b) infrastructure that is recognised as* ***regionally or nationally significant*** *in a National Policy Statement, New Zealand Coastal Policy Statement, regional policy statement or regional plan:*
>
> *(c) any public flood control, flood protection, or drainage works carried out:*
>
> *(i) by or on behalf of a local authority, including works carried out for the purposes set out in section 133 of the Soil Conservation and Rivers Control Act 1941; or*
>
> *(ii) for the purpose of drainage, by drainage districts under the Land Drainage Act 1908.*

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7 See Impact of activity status, above.

8 Ministry for the Environment. 22 September 2022. *National Policy Statement for Highly Productive Land: Information on what it means for Māori and Māori land*. Retrieved from https://environment.govt.nz/publications/national-policy-statement-for-highly-productive-land-information-on-what-it-means-for-maori-and-maori-land/

9 *National Policy Statement for Highly Productive land: Further information on changing the status of Māori land and rezoning land to Māori purpose zone. Retrieved from* https://environment.govt.nz/publications/nps-hpl-further-information-on-changing-the-status-of-maori-land-and-rezoning-land-to-maori-purpose-zone

Lifeline utility has the meaning in section 4 of the Civil Defence Emergency Management Act 2002.

The NPS-UD is an example of national direction that identifies 'nationally significant infrastructure', and most regional policy statements include lists of the types of infrastructure assets that are 'regionally significant' in the context of their region. These will be the most common places to find information on whether a particular infrastructure project is "regionally or nationally significant" and therefore meets the definition of "specified infrastructure". Consideration of whether renewable energy generation projects, as supported by the National Policy Statement for Renewable Energy Generation 2011 (NPS-REG), are "nationally significant" will depend on the specifics of an application.

Subdivision for the purposes of developing specified infrastructure is enabled. Some new specified infrastructure may be developed under the maintenance, operation, upgrade or expansion of specified infrastructure, others may choose to seek a designation for the activity which is then enabled on HPL under 3.9(2)(h). There is a pathway to become a requiring authority under s167 of the RMA.

Functional need is defined in the National Planning Standards as follows.

> ***Functional need*** *means the need for a proposal or activity to traverse, locate or operate in a particular environment because the activity can only occur in that environment.*

Operational need is defined in the National Planning Standards as follows.

> ***Operational need*** *means the need for a proposal or activity to traverse, locate or operate in a particular environment because of technical, logistical or operational characteristics or constraints.*

These functional and operational need tests are intended to be sufficiently high to avoid unnecessary loss of a finite resource.

Applicants and consent planners are expected to have regard to relevant case law on functional and operational need when interpreting the relevant provisions in the NPS-HPL that use these terms.

Land use and development on highly productive land

The NPS-HPL will be relevant for proposals for land use and development on land identified as HPL under the transitional definition of HPL from 17 October 2022. The process for determining whether land is HPL is covered in What is highly productive land? above.

The key NPS-HPL policy for land use and development on HPL is Policy 8:

> *Highly productive land is protected from inappropriate use and development.*

The policy direction that HPL is to be 'protected' from inappropriate use and development sends a clear message that territorial authorities must prevent inappropriate use and development occurring on HPL. In terms of what types of use and development are "inappropriate" on HPL, Clause 3.9 provides further direction by setting out a list of land uses and activities that may be appropriate on HPL.

Clause 3.9 – protecting highly productive land from inappropriate subdivision, use and development

Policy 8 is to be implemented through Clause 3.9, with Clause 3.9(1) providing strong direction as follows.

> *Territorial authorities must avoid the inappropriate use or development of highly productive land that is not land-based primary production.*

The starting point is that all land use and development activities that are not land-based primary production are inappropriate on HPL and to be avoided. Clause 3.9(2) provides further direction to implement Policy 8 by providing a specific list of activities that may be appropriate on HPL – provided the measures relating to cumulative loss of the availability and productive capacity of HPL and reverse sensitivity effects in Clause 3.9(3) are applied.

Table 2 below provides some guidance on the list of activities that may be appropriate on HPL under Clause 3.9(2) and gives examples of the types of activities anticipated under this clause. The intent is that Clause 3.9(2) applies to the main purpose of the use and development, ie, the 'core' activity being proposed. For example, where the main purpose of the activity is not listed in Clause 3.9 (eg, a proposed golf course or retirement village) but elements of the activity will provide public access and restore some indigenous biodiversity, this does not mean the core activity is also appropriate on HPL by association. Only the public access and indigenous biodiversity elements would be appropriate on HPL.

In order for the activities listed in 3.9(2) to be considered not "inappropriate", Clause 3.9(3) also needs to be satisfied – see Cumulative loss and reverse sensitivity effects associated with land use below.

Table 2: Examples of activities that may be appropriate on HPL under Clause 3.9(2)

Appropriate land-use activity	Intention and examples of activities anticipated
(a) it provides for supporting activities on the land	Note: Further guidance on preparing objectives, policies and rules that give effect to Clause 3.9(2)(a) with respect to "supporting activities" is provided in Part 2 of the guide. "Supporting activities" are defined in Clause 1.3 of the NPS-HPL as "those activities reasonably necessary to support land-based primary production on that land (such as on-site processing and packing, equipment storage, and animal housing)". The intention of this clause is that activities that support land-based primary production on surrounding HPL or as part of a landholding [10]where the production is occurring, have a pathway to occur on HPL. Activities such as residential accommodation for the landowner and/or farm staff, seasonal worker accommodation, sheds for farm machinery, workshops for repairing and maintaining equipment and roadside sales of goods produced on site would all be anticipated under this clause where these support land-based primary production. This clause could also cover on-site processing and manufacturing of goods that were produced on HPL, packing produce, or installing a water reservoir to support the land-based primary production activity. However, the purpose of these

[10] Note that "landholding" in this context is intended to have the same meaning as the definition of 'landholding' in the Resource Management (National Environmental Standards for Freshwater) Regulations 2020, which is defined as meaning "one or more parcels of land (whether or not they are contiguous) that are managed as a single operation".

	activities must be to directly support land-based primary production. For example, a water reservoir would not be appropriate on HPL if it was used to irrigate a golf course. The support provided by these activities must be reasonably necessary in order to be considered appropriate under this clause. Supporting activities of land-based primary production are considered to comprise activities that align with the definition of primary production in the National Planning Standards subclauses (b)–(d). These supporting activities would comprise: • initial processing, as an ancillary activity, of commodities that result from land based primary production; and • any land and buildings used for the initial processing of those commodities; but • excludes further processing of those commodities into a different product For example, this would include minimal processing activities as defined by the Food Act but would not include a dairy factory. Supporting activities also support land-based primary production when they are ancillary to that production activity, but not when they are independent rural industry. For example, supporting activities would include seasonal workers accommodation delivered as part of land-based primary production activity, including accommodation serving multiple sites and landholdings. Supporting activities would not include accommodation provided by labour supply companies operating as an independent rural industry. A "supporting activity" may also include some elements of a wider land-based primary production activity that occur within buildings and/or do not need the HPL soil resource and that might otherwise be excluded from the definition of land-based primary production. Territorial authorities will need to look at the farm system being proposed as a whole to assess whether all components are "supporting" the land-based primary production activity, including whether the farm system occurs on a single parcel or across multiple parcels that are part of the same operation or landholding. For example, an intensive indoor primary production activity or glasshouse may be considered as an integrated part of a wider arable or pastoral farm system through the transfer of nutrients to support the activities of surrounding HPL. Similarly, "supporting activities" may include small-scale farm quarries that only supply aggregate to support land-based primary production enterprise on the same landholding.
(b) it addresses a high risk to public health and safety	Activities such as flood mitigation works, emergency works, removal of dangerous trees and repairs to infrastructure are all anticipated as appropriate activities on HPL under this clause, provided they are only undertaken to address a high risk to public health and safety. Whether these activities are needed to address a "high risk" to public health and safety will need to be assessed on a case-by-case basis, but the intent is that it applies where there is a clear and obvious risk that needs to be addressed.
(c) it is, or is for a purpose associated with, a matter of national importance under section 6 of the Act	Many of the matters covered in section 6 of the RMA are addressed more specifically in other sub-clauses in this section (eg, public access, management of natural hazards, indigenous biodiversity). However, this clause covers all other section 6 matters not otherwise referred to in other sub-clauses. This includes, for example, the protection of outstanding natural features and landscapes, historic heritage and

	protected customary rights. The purpose of this clause is to confirm that activities are appropriate on HPL when these are necessary to recognise and provide for one of the matters of national importance in section 6 of the RMA.
(d) it is on specified Māori land	This clause provides a pathway for activities to occur if they are proposed on specified Māori land. The types of Māori land captured by the definition of specified Māori land will be evident from existing or historical title records retrievable from Land Record Search | Toitū Te Whenua — Land Information New Zealand (linz.govt.nz).
(e) it is for the purpose of protecting, maintaining, restoring, or enhancing indigenous biodiversity	While the protection of 'significant natural areas'[11] is provided for under Clause (c), this clause is broader and covers the full range of activities to protect, maintain and restore all indigenous biodiversity not just the protection of significant natural areas. Activities such as pest control, replanting and restoration of significant natural areas, riparian margins, wetlands, etc, are all anticipated as appropriate activities on HPL under this clause. Mitigation planting proposed as part of non-land-based primary production would not justify such an activity. The planting itself would be appropriate on HPL, but it would not justify the associated 'core' activity, as discussed above.
(f) it provides for the retirement of land from land-based primary production for the purpose of improving water quality	It is recognised that, in some situations, it may be necessary to retire portions of land from being actively used for land-based primary production, to improve water quality standards under the National Policy Statement for Freshwater Management 2020 (NPS-FM). This clause provides for that to occur as an appropriate land use and activity on HPL. However, retiring land for water quality purposes does not automatically mean the land is suitable for other non-land-based primary production. Any proposed alternative use would need to meet the tests in the NPS-HPL on its own merits.
(g) it is a small-scale or temporary land-use activity that has no impact on the productive capacity of the land	Activities such as home businesses, small-scale visitor accommodation (eg, bed and breakfast) are anticipated as small-scale activities. Temporary activities are likely to be short-term activities with a defined start and end date, such as festivals/events and markets. Both of these types of activities may be appropriate on HPL under this clause, provided they have no impact on productive capacity of the land. 'Productive capacity' is defined in the NPS-HPL and the information requirements to assess productive capacity are outlined in the 'Overall productive capacity' section above in relation to Clause 3.8. There is some overlap with Clause (g) and Clause (a) as some supporting activities may also be small scale with no impact on the productive capacity of the land.
(h) it is for an activity by a requiring authority in relation to a designation or notice of requirement under the Act	This clause recognises that requiring authorities may either already have designations on HPL or may need new or extended designations in the future. Designations are generally for essential public works, and this clause provides for such works as appropriate for use and development on HPL. It is noted that the processes for applying for an activity in relation to a designation or a notice of requirement are managed under Part 8 of the RMA rather than by regional or district plan rules. Clause 3.9(2)(h) simply clarifies that the NPS-HPL anticipates applications being made by requiring authorities for designation activities or notices of requirement on HPL and the NPS-HPL is not a barrier to those being processed.

[11] 'Significant natural areas' is the term commonly used to refer to areas of significant indigenous vegetation and significant habitat of indigenous fauna that are to be protected under section 6(c) of the RMA.

(i) it provides for public access	Accessways (walking, cycling or road access, depending on the situation) to provide the public with access to public areas such as beaches or reserves is anticipated under this clause as appropriate use and development on HPL. Providing for public access on HPL under this clause is expected to have no, or very limited, impact on the availability and productive capacity of HPL. For the access to be "public" it would need to be unfettered (no restrictions on the time of day or year) and assured by legal means (eg, land vested to council or access guaranteed via easement).
(j) it is associated with one of the following, and there is a functional or operational need for the use or development to be on the highly productive land: (i) the maintenance, operation, upgrade, or expansion of specified infrastructure (ii) the maintenance, operation, upgrade, or expansion of defence facilities operated by the New Zealand Defence Force to meet its obligations under the Defence Act 1990 (iii) mineral extraction that provides significant national public benefit that could not otherwise be achieved using resources within New Zealand (iv) aggregate extraction that provides significant national or regional public benefit that could not otherwise be achieved using resources within New Zealand.	The intention of this clause is to recognise situations where the use or development of specified infrastructure, defence facilities or mineral or aggregate extraction may occur on HPL. The key test is to demonstrate that the use and development has a 'functional need' and 'operational need' to be on HPL. These terms are defined in the National Planning Standards (as discussed in Specified infrastructure above, in relation to Clause 3.8) and fits into one of the categories listed. (a) **Specified infrastructure** – this test recognises that the functional and operational needs of specified infrastructure (as defined in Clause 1.3 of the NPS-HPL) means that they may need to be located on HPL – such as where a new road or transmission lines may need to traverse over an area of HPL. Further, in many cases, the presence of specified infrastructure on HPL does not preclude the balance of the HPL being used by land-based primary production. For example, land surrounding structures used for infrastructure can often be used for animal grazing or some forms of horticulture. (b) **Defence facilities** – this test recognises there are existing New Zealand Defence Force facilities located on HPL and that, to meet obligations under the Defence Act 1990, there will be occasions where these facilities need to be upgraded or expanded, and this may involve new Defence Force activities on HPL. Provided the proposal is needed to meet obligations under the Defence Act 1990 and it also has a functional or operational need to be on HPL, defence facilities will have a pathway to be an appropriate use and development on HPL under this clause. (c) **Mineral or aggregate extraction** – there are two tests for determining whether mineral or aggregate extraction can occur on HPL: there must be a significant national public benefit for mineral extraction and a significant national or regional benefit for aggregate extraction. It must also be proven that the same benefit could not be achieved elsewhere in Aotearoa New Zealand on non-HPL land. The national test is intentionally high, as the activity of extracting minerals or aggregate from land can, in some cases, result in land never being able to be used for land-based primary production again. Extraction activities that result in the permanent loss of HPL are envisaged to only be appropriate where the mineral or aggregate being extracted cannot be supplied domestically from another source on non-HPL land. The degree to which land is able to be restored to support land-based primary production is a relevant consideration. Note that Clauses 3.9(j)(iii) and (iv) are intended to apply to larger commercial-scale mineral and aggregate extraction and there is a potential pathway for small-scale farm quarries as "supporting activities" under Clause (a).

Cumulative loss and reverse sensitivity effects associated with land use

Clause 3.9(3) sets out the other measures that must be taken by territorial authorities when considering a use or development on HPL. These measures must be applied before any of the activities listed in Clause 3.9(2) can be considered not "inappropriate" on HPL. Clause 3.9(3) is as follows.

> *(3) Territorial authorities must take measures to ensure that any use or development on highly productive land:*
>
> *(a) minimises or mitigates any actual loss or potential cumulative loss of the availability and productive capacity of highly productive land in their district; and*
>
> *(b) avoids if possible, or otherwise mitigates, any actual or potential reverse sensitivity effects on land-based primary production activities from the use or development.*

The wording of Clause 3.9(3)(a) is slightly different to the equivalent cumulative loss clause for subdivision in Clause 3.8(2)(a). It is intended to recognise that most land use or development that has a pathway under Clause 3.9(2) will inevitably lead to some loss of the availability and productive capacity of HPL[12] – so an 'avoid if possible' test as a starting point was not considered appropriate. Instead, Clause 3.9(3)(a) requires territorial authorities to focus on minimising or mitigating any actual loss or potential cumulative loss of the availability and productivity capacity of HPL, when considering any proposed use and development on HPL. When considering if a use or development "minimises" or "mitigates" a loss of productive capacity, territorial authorities should consider:

- **the location of the activity** – whether it can be sited somewhere on the subject site that minimises the impact on the productive capacity of HPL
- **the footprint of the activity** – whether efforts have been made to keep the footprint of the activity as small as possible to minimise the actual loss of HPL
- **clustering of activities** – whether there is an option to group a number of activities in a similar location to mitigate the cumulative loss of HPL that would occur through activities being spread out across a wider area of HPL (eg, clustering of buildings, co-location of telecommunications infrastructure or containing multiple activities in the same building, such as using an existing residential dwelling for a home business or visitor accommodation activity, rather than constructing multiple buildings)
- **co-existing with land-based primary production** – whether the activity can be designed in such a way that is does not preclude being able to carry out land-based primary production around the activity (eg, the potential for using the land around specified infrastructure to be used for vegetable production or animal grazing).

Clause 3.9(3)(b) requires applicants to "avoid if possible or otherwise mitigate" any actual or potential reverse sensitivity effects on land-based primary production activities from the proposed use or development. Many of the activities listed in Clause 3.9(2) are unlikely to create reverse sensitivity effects (eg, restoring indigenous biodiversity or flood mitigation works). However, supporting activities such as residential dwellings for farm owners/managers, farm worker accommodation or small-scale activities such as home

[12] The exception is small-scale and/or temporary activities, which are required under Clause 3.9(2)(g) to have no impact on the productive capacity of the HPL.

businesses or small-scale visitor accommodation, do have the potential to cause reverse sensitivity effects. Often, potential reverse sensitivity effects can be avoided (or, if not fully avoided, mitigated) by either:

- physically separating the potentially sensitive activity from the land-based primary production activity
- using a barrier or screen (eg, shelter belt planting, fencing) to help block potential odours, noise, dust or the visual presence of the land-based primary production activity.

Most territorial authorities will have existing provisions in the rural chapters of their district plans to manage potential reverse sensitivity effects and may already have setback rules – for example, rules that require the separation of residential dwellings from productive rural environments or require setbacks from effluent-spreading areas or setbacks to manage spray drift. An applicant demonstrating compliance with existing district plan provisions to manage reverse sensitivity effects may be sufficient to give effect to Clause 3.9(3)(b). Non-compliance with an existing rule to manage reverse sensitivity may mean that Clause 3.9(3)(b) may have more relevance when making a determination under section 104 of the RMA as to whether the activity is appropriate or inappropriate on HPL. If a district plan does not currently include provisions to manage reverse sensitivity effects in rural environments, territorial authorities are still able to consider whether reverse sensitivity effects have been avoided if possible, or mitigated, as part of their section 104 assessment for discretionary or non-complying activities (or restricted discretionary activities if reverse sensitivity is a matter over which discretion has been restricted).

Exemptions for HPL subject to permanent or long-term constraints

For the majority of proposed activities seeking to establish on HPL (rezoning, subdivision, use and development) there is a specific policy and set of implementing clauses in the NPS-HPL to direct whether or not that activity should be allowed. The starting point is to protect HPL for use in land-based primary production (as per the NPS-HPL objective). If an activity is for another purpose, proposals should refer to:

- Urban rezoning – Policy 5 and Clause 3.6
- Rural lifestyle rezoning of HPL – Policy 6 and Clause 3.7
- Subdivision – Policies 6 and 7 and Clause 3.8
- Use and development – Policy 8 and Clause 3.9.

If a proposed activity is unable to find a pathway through these policies and implementing clauses, then in most cases it should not be able to occur on HPL and the HPL should continue to remain available to be used for land-based primary production.

However, in rare circumstances it may be that the HPL is subject to “permanent or long-term constraints” that mean the use of land for land-based primary production is not economically viable for at least 30 years. Clause 3.10 provides a series of specific and deliberately stringent tests to determine whether the permanent or long-term constraint on the land justifies the HPL being used for a purpose that is not land-based primary production. It is not expected that Clause 3.10 will be used regularly, and it has been designed to apply to genuine scenarios where land is subject to permanent or long-term constraints that cannot be addressed through reasonably practicable options. An applicant would need to first demonstrate there is not a

pathway for their proposal under any other clause of the NPS-HPL, then show their particular situation meets the requirements of Clause 3.10, before a non-land-based primary production activity could occur.

Clause 3.10 cannot be used as a pathway for urban rezoning if a proposal has not met the requirements of Clause 3.6. If there is justification for land that is subject to a permanent or long-term constraint being zoned urban, then it should be able to pass the tests in Clause 3.6 on its own merits. Essentially, urban rezoning of HPL always has a potential pathway under Clause 3.6, whereas rural lifestyle rezoning and some types of subdivision and land-use activities do not have pathways under 3.7, 3.8 and 3.9. Therefore, for these activities, Clause 3.10 is the only available pathway, which can only be used when the relevant territorial authority is satisfied the specific tests have been met.

Clause 3.10 contains an intentionally high bar in terms of evidence needed to justify the subdivision, use or development of HPL in a way that is not provided for in Clauses 3.7, 3.8 and 3.9. It should only be used in situations where the use of HPL for land-based primary production is not economically viable for at least 30 years because of a permanent or long-term constraint, and where the other relevant tests in Clause 3.10 are met.

Clause 3.10(1) – tests

Clause 3.10(1) sets out three tests that must be met for an activity not otherwise provided for under Clauses 3.7, 3.8 or 3.9 to occur on HPL. A proposal must meet **all parts of all three tests** to be allowed on HPL (although meeting these tests does not presume an application will be approved). The three tests are met where:

> *(a) there are permanent or long-term constraints on the land that mean the use of the highly productive land for land-based primary production is not able to be economically viable for at least 30 years; and*
>
> *(b) the subdivision, use, or development:*
>
> > *(i) avoids any significant loss (either individually or cumulatively) of productive capacity of highly productive land in the district; and*
> >
> > *(ii) avoids the fragmentation of large and geographically cohesive areas of highly productive land; and*
> >
> > *(iii) avoids if possible, or otherwise mitigates, any potential reverse sensitivity effects on surrounding land-based primary production from the subdivision, use, or development; and*
>
> *(c) the environmental, social, cultural and economic benefits of the subdivision, use, or development outweigh the long-term environmental, social, cultural and economic costs associated with the loss of highly productive land for land-based primary production, taking into account both tangible and intangible values.*

Test 3.10(1)(a) – permanent or long-term constraints

The first step is to demonstrate there is a permanent or long-term constraint on the land that will be present for at least 30 years. The types of constraints envisaged under this clause include the following.

- **Access to water** – water constraints are the most likely constraint to create a situation where the absence of water means that land-based primary production is no longer

economically viable. It is anticipated that potential restrictions on water takes arising out of processes under the NPS-FM and National Environmental Standards for Freshwater 2020 (NES-F) may result in some HPL needing to be considered under Clause 3.10. It would need to be clear these constraints are indeed permanent and not short term (ie, not able to be resolved by improvements or reallocation of resources within the catchment within the next 30 years).

- **Contamination** – although less likely to occur compared to water constraints, it is possible a piece of HPL has been contaminated by a past land use to the point where it cannot be used for land-based primary production. This contamination would need to be severe, extensive and unable to be remediated to the point where land-based primary production could not take place. In the case of contamination, a territorial authority will also need to consider what is an appropriate alternative use for the land. Extensive contamination that makes land unsafe for land-based primary production will usually make the land unsuitable for residential use or other sensitive activities such as rest homes, childcare centres, healthcare or community facilities.
- **Natural hazards or climate change–related hazards** – note that works to mitigate natural hazards or climate change-related hazards are provided for under Clause 3.9(2)(b) if they are needed to address a high risk to health and safety, or under Clause 3.9(2)(c) if they are needed to manage significant risks from natural hazards under section 6(h) of the RMA. Territorial authorities will need to consider whether there are any other uses for the land, as, if the natural hazard or climate change hazard risk is so severe it prevents the HPL from being used for land-based primary production, it is also likely to mean the land is unsuitable for other types of subdivision, use and development.
- **Non-reversible land fragmentation** – territorial authorities may consider that some areas of HPL in their district have become highly fragmented (eg, extensive amount of rural lifestyle-sized lots covering a particular area due to historic or operative subdivision rules) that there are no reasonably practicable options available to consolidate the land and return it to a productive use. Note that although the size of a landholding in which the HPL occurs is not of itself a determinant of a permanent or long-term constraint (see discussion in Clause 3.10(4) – size is not determinant below), a territorial authority could look at a large area of fragmented HPL and determine whether the fragmentation is significant enough to pass the tests in Clause 3.10. If subdivision patterns across a territorial authority's district indicate areas of extensive fragmentation, this could potentially be a permanent or long-term constraint. Councils have the discretion to decide whether non-reversible fragmentation is relevant to a resource consent application made under Clause 3.10.

Test 3.10(1)(a) – economic viability

The second step once a permanent or long-term constraint has been identified is to demonstrate that the constraint means that land-based primary production cannot be economically viable for at least 30 years. Applicants will need to demonstrate it is **the presence of the constraint** that makes land-based primary production economically unviable, not simply that the landowner thinks it is uneconomic to use the HPL productively. Using 30 years as a timeframe for "long-term" is intended to ensure it is a genuine long-term constraint that cannot be addressed – recognising the importance of protecting the finite HPL resource for current and future generations. This timeframe also ensures the assessment of constraints and economic viability can take account of potential changes in technology and markets that are reasonably foreseeable over this 30-year period.

Technical evidence supporting the presence of the constraint will be required in the first instance (eg, information on available water, contaminated land analysis). Secondly, economic analysis will generally need to be provided as part of the evidence base for the impact that the constraint is having on the economic viability of land-based primary production.

Note that the size of the landholding containing the HPL is not in itself a permanent or long-term constraint. This is discussed further in Clause 3.10(4) – size is not determinant below.

Test 3.10(1)(b) – avoidance and/or mitigation

The second test involves looking at the wider context for the potential loss of HPL within a district, and the potential impact the change of land use or subdivision might have on the ability of surrounding HPL to continue to be used for land-based primary production. It gives territorial authorities the ability to decline an application for subdivision, use or development which relies on the Clause 3.10 pathway if it will compromise the ability of other HPL in the district to be used for land-based primary production.

- Clause 3.10(1)(b)(i) is strong direction that a subdivision, land use or development must 'avoid' any significant loss (either individually or cumulatively) of productive capacity of highly productive land in the district. Whether the loss of productive capacity in a district is 'significant' is somewhat subjective and will need to be assessed by the territorial authority on a case-by-case basis. Generally, the larger the proposed loss of HPL in a spatial sense, the less likely a proposal will be to pass this test. Significant loss of HPL can also result from the cumulative effects of very small losses of HPL adding up over time, as opposed to just single subdivision, use or development resulting in a significant loss of HPL. In assessing the significant cumulative loss of HPL, territorial authorities should consider past subdivision patterns or approvals for non-productive land uses to determine if HPL in their district is at a tipping point for unacceptable cumulative loss of productive capacity of HPL. Refer to information requirements for assessment of productive capacity in relation to Clause 3.8 in Productive capacity above.
- Clause 3.10(1)(b)(ii) is another strong 'avoid' test that focuses on avoiding the fragmentation of large and geographically cohesive areas of HPL. Again, this test is subjective and will depend largely on how HPL is spatially distributed in a district. For example, if the proposed loss of HPL is limited to a small area on the edge of an already isolated small area of HPL, then this test could be met. However, if the proposal involves subdivision, use or development in the middle of a large area of HPL, then this test may not be met. It will be up to the territorial authority to determine whether a proposal constitutes fragmentation of a large and geographically cohesive area of HPL based on the individual circumstances of the proposal.

Clause 3.10(1)(b)(iii) focuses on reverse sensitivity and is the same reverse sensitivity test as proposed for both subdivisions and land use in Clauses 3.8(2)(b) and 3.9(3)(b), respectively. Refer to Cumulative loss and reverse sensitivity effects associated with subdivision and Cumulative loss and reverse sensitivity effects associated with land use in the guidance above for these clauses.

Test 3.10(1)(c) – benefits outweighing costs

The third test is intended to shift the assessment of whether or not HPL can be used for a non-productive purpose away from a purely economic assessment, towards a more robust consideration of the environmental, social, cultural and economic impacts of a proposal.

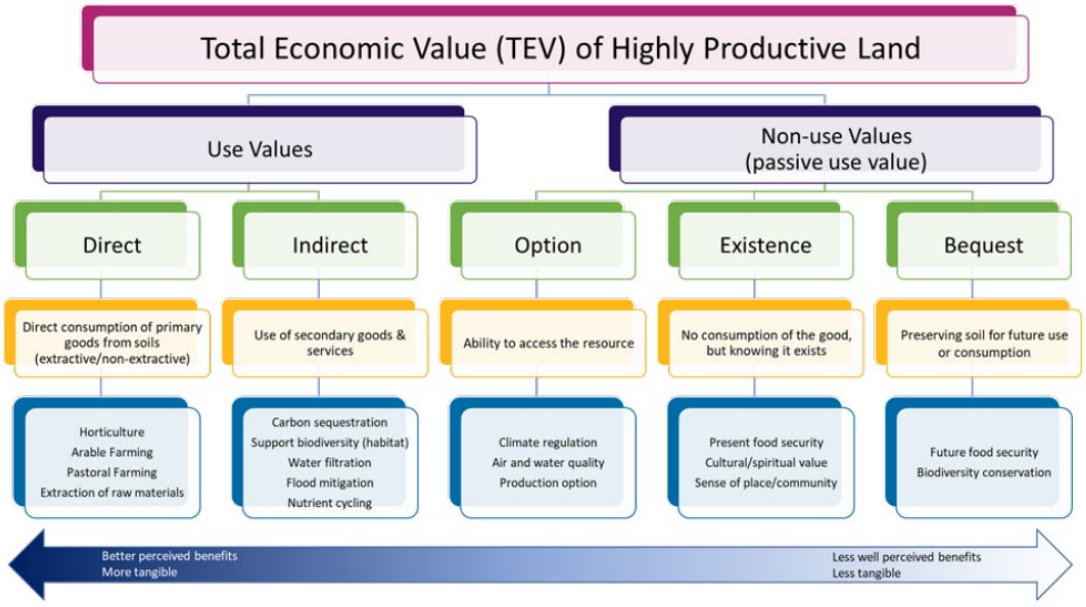
Clause 3.10(1)(c) directs territorial authorities to only allow HPL to be subdivided, developed or used in a manner not provided for by Clauses 3.7, 3.8 or 3.9 if they are satisfied that:

> *…the environmental, social, cultural and economic benefits of the subdivision, use, or development outweigh the long-term environmental, social, cultural and economic costs associated with the loss of highly productive land for land-based primary production, taking into account both tangible and intangible values.*

Examples provided by territorial authorities during the development of the NPS-HPL highlighted the difficulties in assessing the benefits and costs of converting HPL to a non-productive use, and the relative weight given to economic arguments that the highest and best use of the land was the use that generated the highest monetary return. This narrow focus on economic costs and benefits has a tendency to skew decision-making in favour of urban or rural lifestyle land uses, as landowners will naturally experience a higher return on their land if it can be used for those purposes, compared to land-based primary production. The purpose of this third test is to build on best practice decision-making and direct both applicants and territorial authorities to consider the environmental, social and cultural costs and benefits of a proposal, including tangible and intangible benefits.

The section 32 analysis for the NPS-HPL[13] identified a range of benefits of retaining HPL for land-based primary production that are often intangible, and it is inappropriate to assign them a monetary value. This includes, for example, connection of a farming community to land, sense of identity, ecological functions of retaining land in productive use, and intergenerational benefits such as future food security, and the value of keeping HPL available for land-based primary production. The range of benefits and costs discussed in the NPS-HPL section 32 analysis may provide a good starting point for considering an application under Clause 3.10(1)(c). Some of the tangible and intangible benefits associated with retention of HPL are covered in figure 2.

Figure 2: Total economic value of HPL



Source: CBA of NPS-HPL prepared by Market Economics

[13] Above, n **Error! Bookmark not defined.**.

Note that, to pass this test, the benefits of the subdivision, use or development must outweigh the costs when considered over the long term (at least 30 years). As with any weighting exercise, territorial authorities will be required to consider each proposal on a case-by-case basis using best practice methodologies aligned with section 32 evaluations.

Clause 3.10(2) – assessing reasonably practicable options

The second part of the Clause 3.10 assessment is a consideration of reasonably practicable options that could result in the HPL being retained for land-based primary production use. The purpose of this exercise is to require an applicant to:

- demonstrate they have considered alternatives for continuing land-based primary production on their HPL
- provide relevant evidence as to why these alternative options were not reasonably practicable.

The list of potential options in Clause 3.10(2) is deliberately non-exhaustive, as individual situations nationally may warrant consideration of other options not on this list. However, the list of options in Clause 3.10(2) may be a useful starting point for an assessment. Table 3 provides some examples of solutions to retain HPL for land-based primary production,

Table 3: Examples of reasonably practicable options under Clause 3.10(2)

Subclause of 3.10(2)	Example
(a) alternate forms of land-based primary production	As per Clause 3.10(3)(c), the future productive potential of highly productive land must be considered, and this should not be limited to past or present uses. Should an existing form of primary production be found to be unviable due to permanent or long-term constraints, this subclause requires consideration of the economic viability of alternative forms of primary production. For example, should reduced access to water result in an area of HPL no longer being considered economically viable for its continued use in dairy farming, consideration should be given to alternative pastoral, arable or horticultural uses that may be economically viable within the water access constraints. An alternative production strategy should be considered in cases where conventional (or regenerative) primary production practices (to the region) are no longer profitable in the long term. A combination of improved land-management strategy with an alternative productive strategy may typically involve: • investment in methodology improvement • alternative approaches from advancements in agricultural technology • diversification of use • or adopting new methods that improve the productivity of the landowner's existing primary sector operations. Some examples are: • increasing the diversity of pasture species • grazing management, such as a rotational grazing plan • planting of perennials over single winter crops. Other considerations may include the investment of technology to reduce manual labour, in cases where the uncertainty within the labour market have resulted in the unviability of primary production. Landowners are encouraged to consider alternative production strategies so they are prepared for future challenges. These include
(b) improved land-management strategies	
(c) alternative production strategies	

	climate change adaptation, managing disruptions to supply chains, and responding to changing consumer preferences.
(d) water efficiency or storage methods	Availability of water is anticipated to be one of the key constraints that may make land-based primary production economically unviable. This sub-clause requires consideration of whether alternative options for more efficient water usage or storage have been explored, such as developing systems that use significantly less water – eg, drip irrigation, using less water-intensive crops or products, so that what water is available can be used efficiently. Additionally, for some properties with water permits, there may be the option of constructing storage and taking water at generally higher winter flows for use during the summer.
(e) reallocation or transfer of water and nutrient allocations	For properties that are mainly limited by water and/or nutrient restrictions, this clause requires an assessment on whether those restrictions can be managed or mitigated. For example, depending on the region and specific rules in place, it may be possible to seek a transfer of a water permit or part of a nutrient load to the property from areas of land that have excesses available (eg, a farm converting to a forest may be able to transfer nutrients and water takes to elsewhere in the catchment). Other options include joining schemes or groups that enable water or nutrients to be shared between participants, for example irrigation schemes or water and nutrient user groups. While these options may come at a cost, we expect them to be seriously considered.
(f) boundary adjustments (including amalgamations)	As per Clause 3.10(4), discussed below in Clause 3.10(4) – size is not a determinant, the size and shape of land parcels is not in of itself a permanent or long-term constraint. However, it is recognised that the legal configuration of land parcels can be a contributing factor to a constraint. For example, it may be more difficult to adapt to an alternative form of land-based primary production to make better use of a water resource if the land parcel is undersized for that activity. Rearranging legal boundaries, either through boundary adjustments or amalgamation of land parcels, should be considered as an alternative to losing more HPL to unproductive uses.
(g) lease arrangements	Another option to altering legal boundaries between land parcels, as discussed in respect of subclause (f) above, is investigating whether a piece of HPL can be leased so that it becomes part of a wider land-based primary production operation. It is not essential that a piece of leased land be physically adjoining a land-based primary production activity on another site for a leasing arrangement to work, as many farming operations can operate on multiple, physically separated land parcels across a district (although physical proximity can help with making operations more efficient).

Clause 3.10(3) – cost-benefit analysis

Clause 3.10(3) addresses several status quo arguments that are typically used to justify the conversion of HPL to unproductive land uses. The clause provides direction on how to complete the evaluation of reasonably practicable options under Clause 3.10(2), as follows.

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

Clause 3.10(3)(a) removes the ability for an applicant to use the potential economic benefit of using the HPL for an activity other than land-based primary production as an argument for converting it to a non-productive use. Historically, there have been examples of cost-benefit analysis reports placing more weight on the economic benefits of other land uses (rural residential subdivision, residential housing, business land, etc) over the benefits of retaining the land for land-based primary production.

HPL will always be more valuable in monetary terms when converted to an urban or rural residential use, particularly in the short term, compared to being retained for land-based primary production. The purpose of Clause 3.10(3) is to explicitly remove this argument from consideration of the merits of various, reasonably practicable options.

Clause 3.10(3)(b) requires specific consideration of the loss that the HPL would have on the landholding in which that HPL is located. This is in response to arguments that the loss of a small portion of HPL does not impact on what the balance of the property can be used for. In the wider context of a Clause 3.10 assessment (where the core argument is that there is a permanent or long-term constraint that makes the use of HPL for land-based primary production economically unviable), the loss of a small portion of HPL may exacerbate a constraint on the balance of the landholding by reducing the size of the land parcel. This should be factored into the wider assessment of reasonably practicable alternatives.

Clause 3.10(3)(c) aims to shift the discussion away from the previous or current use of an area of HPL and move it towards the potential use of the HPL. Under the status quo, arguments for using HPL for non-productive purposes, and arguments around the economic viability of a land-based primary production activity, often centre around the ability of a current landowner to make that land productive. Economic analysis often focuses on the cost of new technology, or the capital investment needed in the operation to make it economically viable, to suggest that it is beyond the means of the current landowner to afford to make those changes. However, a lack of resources and/or willingness from the current landowner to adapt the land-based primary production activity does not mean that another owner with different resources and/or willingness to invest in new technology would not be able to make the operation economically viable. It also does not mean the HPL itself no longer has characteristics that make it productive. The purpose of Clause 3.10(3)(c) is to focus on future potential of the HPL and whether or not the reasonably practicable options considered as part of Clause 3.10(2) could enable the HPL to remain in use by land-based primary production.

Clause 3.10(4) – size is not a determinant

Clause 3.10(4) makes it clear that “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”. This is important, as landowners will often use the size of their particular land parcel as a reason for why it cannot be used productively and why it should be allowed to be developed further. The legal arrangement of parcel boundaries does not make HPL inherently any less productive – the same soil, slope and climatic conditions exist regardless of where legal boundaries are placed. However, the existing pattern of land ownership on HPL is challenging, and it is acknowledged the more fragmented HPL is, the more difficult it is to find solutions to enable its use in land-based primary production (refer to the commentary on non-reversible fragmentation as a potential constraint above). However, there are multiple options available for either amalgamating land parcels or finding other ways to combine parcels that enables them to be used productively (and these options are required to be explored, as discussed in Clause 3.10(2) – assessing reasonably practicable options above).

Relevance of NPS-HPL for considering rezoning highly productive land

The NPS-HPL will need to be considered for proposals to rezone land identified as HPL (under the transitional definition of HPL) from a rural or rural production zone to an 'urban' or rural lifestyle zone. This section provides guidance on plan changes that propose to rezone HPL to either an 'urban' (as defined in the NPS-HPL) or a rural lifestyle zone. Further advice on amendments to give effect to the NPS-HPL which may include rezoning and plan changes to amend provisions is covered in Part 2 of the guide.

The NPS-HPL does not apply to council-initiated, or adopted, plan changes to rezone rural land to urban or rural lifestyle if they were notified before 17 October 2022 but where a decision has not yet been made. This is because these types of plan changes are excluded from the transitional definition of HPL (as discussed in more detail in What is highly productive land? above). The NPS-HPL will be relevant for all rezoning proposed plan changes on HPL after that date. The urban rezoning provisions apply equally to all types of plan changes – whether initiated by a council or lodged privately, and whether they use the responsive planning pathway under the NPS-UD or not. The NPS-HPL tests under Clause 3.6 are the same.

The various rezoning provisions (policies and implementation clauses) in the NPS-HPL are intended to work together to provide clear, coherent policy direction on when rezoning HPL to urban or rural lifestyle zoning may be appropriate to achieve the overall objective of the NPS. The NPS-HPL provides a more stringent 'avoid' approach for rural lifestyle zoning on HPL given this is an inefficient (and generally inappropriate) use of this finite resource. A more enabling 'restrict' approach provides for urban rezoning on HPL. This recognises the need for HPL to be used in some circumstances to provide sufficient development capacity for housing and business land while also ensuring a robust assessment of alternatives is undertaken before this occurs. This also recognises that urban rezoning typically provides significantly greater benefits than rural lifestyle zoning in terms of efficient use of land as it can minimise the loss of HPL by allowing for more intensive urban development on a smaller area of land.

Rezoning HPL to an urban zone

The NPS-HPL provides a pathway for urban rezoning on HPL to align with both the requirements in the NPS-UD and the RMA functions of all local authorities. In this way the NPS-HPL provides a pathway for councils to enable sufficient development capacity to meet demand for housing and business land in regions and districts. Policy 5 is the key policy relating to urban rezoning, which states:

> *The urban rezoning of highly productive land is avoided, except as provided in this National Policy Statement.*

This requires local authorities to avoid rezoning HPL unless they follow the process set out in Clause 3.6 of the NPS-HPL (restricting urban rezoning of highly productive land). This means that urban rezoning should be avoided on HPL unless all tests in Clause 3.6 can be met.

Policy 5 and Clause 3.6 applies to urban rezoning; it does not apply to 'urban development' generally. Resource consents, designations or other processes for 'urban development' that do not involve rezoning are to be assessed under the provisions relating to the subdivision, use, and development of HPL (Clauses 3.8 and 3.9) as discussed above.

The zones that are considered to be 'urban' zones are defined in Clause 1.3 of the NPS-HPL and this includes nearly all the zones defined in Standard 8 (Zone Framework Standard) in the National Planning Standards. Note that:

- Rezoning of HPL to a Māori purpose zone is not covered by the NPS-HPL on the basis that this zone specifically provides for Māori aspirations for the development of their land.
- The reference to special purpose zone within the definition of 'urban' is intended to capture the standard special purpose zones listed in the Zone Framework Standard in the National Planning Standards. It is not intended to capture bespoke special purpose zones that may be more rural in nature when considering the "nearest equivalent zone".
- Rezoning of HPL to a natural open space zone is not covered by the NPS-HPL as land is usually zoned natural open space due to the presence of a natural hazard, or because the land is part of a coastal or riparian margin. Natural open space zones may also be suitable for use as parks. However, a natural open space zoning does not result in the permanent or irreversible loss of HPL for land-based primary production.

Relationship with the National Policy Statement for Urban Development 2020

Regional councils and territorial authorities are required to give effect to both the NPS-HPL and the NPS-UD as relevant through plan change processes.[14] Proposed plan changes to rezone HPL to an urban zone are where the NPS-HPL and NPS-UD directly interact. The wording of Clause 3.6 of the NPS-HPL has been drafted specifically with this interaction in mind — it enables territorial authorities to implement the NPS-HPL urban rezoning provisions to effectively fulfil their obligation to provide sufficient development capacity to meet demand for housing and business land under the NPS-UD.

The NPS-HPL also deliberately uses wording and terms that are consistent with those used in the NPS-UD (eg, sufficient development capacity, feasible, well-functioning urban environment), to ensure consistent terminology and interpretation across both national direction instruments. Clause 1.3(3) of the NPS-HPL confirms that terms defined in the NPS-UD have the same definition in the NPS-UD unless otherwise specified.

Additionally, Policy 2 and Clause 3.2 of the NPS-HPL requires that HPL is managed in an integrated way that considers the interactions with urban development. This encourages local authorities and developers to consider the relationship between the NPS-HPL and the NPS-UD in an integrated and effective manner to enable outcomes that best achieve the objectives and requirements of each national direction instrument.

[14] Noting that the NPS-UD does not apply if a district does not have an 'urban environment' (as defined in the NPS-UD).

Sufficient development capacity

The NPS-HPL enables rezoning of HPL to an urban zone (provided certain tests can be met) to enable local authorities to provide "sufficient development capacity" to meet demand for housing and business land to give effect to the NPS-UD. This also aligns with the general function of regional councils and territorial authorities under the RMA to provide sufficient development capacity to meet demand for housing and business land (section 30(1)(ba) and section 31(1)(aa) of the RMA).

Part 3, subpart 1 (providing development capacity) of the NPS-UD has specific requirements to determine whether there is "sufficient development capacity" to meet demand for housing and business land. Those provisions should be referred to when interpreting Clause 3.6(1)(a) of the NPS-HPL which applies to tier 1 and tier 2 local authorities. The use of the same term in the NPS-HPL is intended to provide alignment with the NPS-UD.

Well-functioning urban environment

The use of the term "well-functioning urban environment" is another example of consistent terminology between the NPS-HPL and the NPS-UD. It is used to clearly incorporate the considerations of Policy 1 of the NPS-UD into any decision on an urban rezoning proposal on HPL by a tier 1 and 2 local authority. Policy 1 of the NPS-UD requires planning decisions to contribute to well-functioning urban environments, which are defined as:

> *…urban environments that, as a minimum:*
>
> *(a) have or enable a variety of homes that:*
>
> *(i) meet the needs, in terms of type, price, and location, of different households; and*
>
> *(ii) enable Māori to express their cultural traditions and norms; and*
>
> *(b) have or enable a variety of sites that are suitable for different business sectors in terms of location and site size; and*
>
> *(c) have good accessibility for all people between housing, jobs, community services, natural spaces, and open spaces, including by way of public or active transport; and*
>
> *(d) support, and limit as much as possible adverse impacts on, the competitive operation of land and development markets; and*
>
> *(e) support reductions in greenhouse gas emissions; and*
>
> *(f) are resilient to the likely current and future effects of climate change.*

Using the term "well-functioning urban environment" in Clause 3.6(1)(b) when assessing reasonably practicable and feasible options makes it clear that all options should result in good urban outcomes where the plan change contributes to, or achieves, a well-functioning urban environment. This is particularly relevant when considering alternative locations for urban rezoning which are not on HPL but are further away from existing urban environments. For example, it may be possible to avoid HPL further away from the urban edge but this option may not achieve a well-functioning urban environment when considering factors such as transport links, provision of infrastructure, accessibility and so on.

The requirement for an urban rezoning proposal to achieve a well-functioning urban environment should also be considered in the context of the wider "urban environment" it is located within. An urban rezoning proposal does not have to meet all the requirements listed in Policy 1 of the NPS-UD to be a considered a well-functioning urban environment in its own right, but it should contribute to meeting requirements as appropriate to the specific urban rezoning proposal and location.

Clause 3.6(1) – when urban rezoning can occur on HPL for tier 1 and 2 local authorities

Clause 3.6 of the NPS-HPL sets out slightly different processes for territorial authorities considering urban rezoning on HPL depending on what 'tier' they are as defined in the NPS-UD. Tier 1 and 2 local authorities have a particular pathway for urban rezoning of HPL because of their requirement to prepare a Housing and Business Development Capacity Assessment (HBA) under the NPS-UD. These are also the larger urban centres with generally more pressure for urban growth and expansion onto HPL. Clause 3.6(1) describes the three requirements that must be met before urban rezoning of HPL can occur within the district of a tier 1 or 2 local authority.

Clause 3.6(1)(a) – sufficient development capacity

Clause 3.6(1)(a) requires that a tier 1 or 2 local authority may only allow urban rezoning of HPL if (**emphasis added**):

> *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.*

As noted above, "sufficient development capacity" is defined in Part 3, subpart 1 of the NPS-UD. The intention of this test is that rezoning HPL to an urban zone can only be considered if it is "required" to provide sufficient development capacity to meet demand for housing and business land (as assessed in a HBA for tier 1 and 2 local authorities). Where there is already sufficient development capacity to meet demand for housing and business land within the district, Clause 3.6(a) is not met and urban rezoning on HPL cannot occur.

The intent is the test could support the rezoning of HPL to an urban zone if needed to provide for short term (within next 3 years) and/or medium term (3–10 years) sufficient development capacity as this is required to be zoned for housing and business land for it to be 'plan-enabled' (refer Clause 3.4 of the NPS-UD). Rezoning HPL to an urban zone to provide for long-term development capacity (10–30 years) would not meet this test. This is to avoid the premature loss of HPL to urban rezoning and ensure the maximum amount of HPL remains available for land-based primary production until it is actually needed to be rezoned to provide sufficient development capacity.

Clause 3.6(1)(b) – no other reasonably practicable and feasible options

Clause 3.6(1)(b) is intended to ensure there is a robust assessment of reasonably practicable, alternative options for providing the required development capacity before urban rezoning can occur on HPL. It provides specific direction on how to assess reasonably practicable options for providing the required development capacity which is clarified further in Clause 3.6(2). This

makes is clear the assessment of "reasonably practicable options" needs to focus on options that:

1. are feasible (as defined in the NPS-UD)
2. are within the same locality and market
3. achieve a well-functioning urban environment.

These three components are heavily interrelated and should be considered together 'in the round' when identifying and assessing reasonably practicable options for providing sufficient development capacity.

A key point to note is that the assessment of options must be **both** "reasonably practicable" (discussed further in Clause 3.10(2) – assessing reasonably practicable options below) and "feasible". The reference to "feasible" is another example of consistent terminology with the NPS-UD where 'feasible' is defined as follows:

> ***Feasible*** *means:*
>
> *for the short term or medium term, commercially viable to a developer based on the current relationship between costs and revenue*
>
> *for the long term, commercially viable to a developer based on the current relationship between costs and revenue, or on any reasonable adjustment to that relationship.*

The next part of the test is intended to ensure the assessment of reasonably practicable and feasible options focuses on providing development capacity "within the same locality and market". This is discussed further in Clause 3.6(3) – same locality and market below. The last part of the test on Clause 3.6(1)(b) makes it clear all options must still achieve 'a well-functioning urban environment' as defined in the NPS-UD (outlined above).

Clause 3.6(1)(c) – cost-benefit assessment

Clause 3.6(1)(c) requires an assessment of the benefits and costs of rezoning. It is intended to ensure a more robust assessment of benefits and costs across the four wellbeings (environment, economic, social, cultural) is undertaken for all urban rezoning proposals on HPL and that this specifically considers long-term benefits and costs and tangible and intangible values.

This assessment can be undertaken as part of an evaluation under section 32 of the RMA, or it can be a separate assessment specifically focused on meeting the tests of Clause 3.6. Wherever the assessment is completed, the evaluation should be cohesive and comprehensive. Ideally it will be part of a single document, rather than spread across a piecemeal range of documents.

The intent of Clause 3.6(1)(c) is to build on best practice in terms of section 32 evaluations but also to emphasise that, in the case of urban rezoning of HPL, there is an even greater need to look beyond the short-term economic benefits of any urban rezoning proposal and to consider the full spectrum of environmental, economic, social and cultural benefits and costs. A robust section 32 assessment that covered both the section 32 tests and the requirements of Clause 3.6(1)(c) is recommended as best practice.

The references in Clause 3.6(1)(c) to the "loss of HPL for land-based primary production" and "tangible and intangible values" require a consideration of the values of HPL that may be lost if

an urban rezoning proposal is approved. This consideration should go beyond the economic value of transitioning from rural to urban use. Intangible values of HPL that should be considered as part of this assessment include:

- its value to future generations
- its finite characteristics and limited supply
- its ability to support community resilience
- the limited ability of other land to produce certain products.

The section 32 evaluation report for the NPS-HPL identified a range of benefits of retaining HPL for land-based primary production that are often intangible and where it is inappropriate to assign them a monetary value. The range of benefits and costs discussed in the NPS-HPL section 32 evaluation report include those shown in figure 2 of this report, which may provide a good starting point for considering a cost-benefit assessment for an urban rezoning proposal on HPL to meet the requirements of Clause 3.6(1)(c).

Clause 3.6(2) – range of reasonably practicable options

Clause 3.6(2) provides more specific direction on how a territorial authority must consider a range of reasonably practicable options to provide the required development capacity to meet the requirements of Clause 3.6(1)(b). Clause 3.6(2) provides a non-exhaustive list of options that should be considered (as a minimum) before pursuing urban rezoning of HPL. As the list is not exhaustive, other reasonably practicable and feasible options may also be considered as appropriate.

Clause 3.6(2) needs to be read with Clause 3.6(1)(b) in terms of what a reasonably practicable option needs to achieve. For example, an option that does not serve the same locality and market that is proposed for development (for example, a completely different part of the district or within a completely different and distinct part of a large urban city) is not a reasonably practicable option that needs to be assessed. Additionally, the reasonably practicable options assessed must be "feasible" (ie, commercially viable for developers as defined in the NPS-UD). Options that are not commercially viable for developers do not need to be assessed and likewise a territorial authority cannot require developers to assess options that are not commercially viable. This may be due to a range of reasons, for example, infrastructure limitations, development constraints, or the inability to acquire other land.

Finally, while Clause 3.6(2) sets out a minimum list of options that must be assessed, the requirement to assess "reasonably practicable" options does not require an exhaustive assessment of all possible options. The use of the words "reasonably practicable options" is intended to align with the assessment of reasonably practicable options in section 32(1)(b)(i) and ensure a pragmatic assessment of realistic and achievable options to provide the required development capacity is completed. It is also important to recognise there are often limitations on the ability to undertake a detailed assessment of other reasonably practicable options. For example, other options may involve constraints that are not readily apparent or cannot be easily identified by territorial authorities or private plan change applicants as part of the scoping and site selection process.

In the case of private plan changes proposing urban rezoning of HPL, there are often more limitations on the reasonably practicable options that can be assessed – particularly as it is often not possible for a private landowner or developer to acquire a range of other landholdings for development. However, consideration of the listed options in Clause 3.6(2)

and any other reasonably practicable options is still required for private plan changes to meet the requirements of Clause 3.6(1)(b). Other key factors to consider when assessing reasonably practicable options for providing the sufficient development capacity include:

- the extent of HPL around the existing urban environment
- options for providing development capacity in surrounding suburbs/similar small settlements nearby
- infrastructure servicing and constraints
- the presence of other constraints, such as natural hazards and sensitive and valued natural environments to be protected.

Clause 3.6(2)(a) – greater intensification in existing urban areas

Clause 3.6(2)(a) requires the consideration of whether greater intensification of existing urban areas can provide sufficient development capacity instead of urban rezoning on HPL. This is part of the requirement to demonstrate there are no other reasonably practicable options. In this context, "greater intensification" could involve 'up-zoning' existing urban zones, removal or reduction of development controls (such as minimum site sizes or recession planes), or a combination of such measures.

The relevance of this potential option will vary depending on the specific urban rezoning proposal and the locality and market it is intended to serve. For some urban rezoning proposals (eg, the rezoning of HPL to a heavy or light industrial zone), intensification is highly unlikely to be a practicable and feasible option to provide the development capacity. This is due to the nature of the activities the zone encourages (ie, industrial activities may find it more challenging to 'intensify' in the same way as residential or some business activities as the space they require usually serves an operational purpose). Greater intensification is likely to be most relevant when the urban rezoning proposal is intended to provide sufficient development capacity to meet demand for housing. In these cases, it is important to consider relevant constraints on intensification, such as a lack of infrastructure, n5and legal constraints such as covenants. It is also necessary to consider market demand for more intensive residential housing and the likelihood of greater intensification being 'feasible and reasonably expected to be realised' (as defined in Clause 3.26 of the NPS-UD).

The Resource Management (Enabling Housing Supply and Other Matters) Amendment Act 2021 and the subsequent introduction of the Medium Density Residential Standards (MDRS) are likely to have resulted in a significant increase in theoretical development capacity in tier 1 and specified tier 2 urban environments across Aotearoa New Zealand. This may have an impact on previously published HBA, or HBA in development, and should be factored into any assessment of reasonably practicable options to provide the required development capacity through greater intensification under Clause 3.6(2)(a).

Clause 3.6(2)(b) – urban rezoning of land that is not HPL

The purpose of Clause 3.6(2)(b) is to ensure urban rezoning is directed away from HPL as a priority, and this is front of mind when considering reasonably practicable options for providing the required development capacity. Whether it is practicable, feasible and appropriate for non-HPL land to be rezoned urban instead of HPL will depend on a range of factors that will need to be assessed on a case-by-case basis. Relevant factors that may need to be assessed include:

- the amount of development capacity that is needed
- the relative locations of HPL and non-HPL land, particularly compared to the broader locality and market intended to be served by the urban rezoning proposal
- infrastructure availability and capacity
- the range of services and considerations needed to achieve a well-functioning urban environment (eg, a contiguous urban form with good accessibility).

Where an urban environment has a range of feasible options for greenfield development, the intent is that Clause 3.6(2)(b) will result in urban rezoning being directed to non-HPL land as the preferred option. For local authorities planning for future urban growth, the NPS-HPL now requires urban rezoning to be directed to non-HPL land unless this is not practicable, feasible or appropriate in terms of the relevant considerations in Clause 3.6(1). For private plan changes, territorial authorities will need to ensure there is a robust assessment of reasonably practicable options for providing the required development capacity on non-HPL land and this assessment should not be limited to the preferred site for the developer.

For all territorial authority urban rezoning proposals and private plan changes, a key consideration will be whether an option for urban rezoning on non-HPL will achieve a well-functioning urban environment. If urban rezoning of non-HPL would result in a disconnected or poorly functioning urban environment, then this could be justification to discount this as a reasonably practicable option under Clause 3.6(1)(b) and Clause 3.6(2)(b).

Clause 3.6(2)(c) – rezoning different HPL that has a relatively lower productive capacity

Clause 3.6(2)(c) requires consideration of the different options for urban rezoning on HPL with relatively lower "productive capacity" (as defined in the NPS-HPL and discussed in Productive capacity above). For example, this will require an urban rezoning proposal on LUC class 1 land to consider whether urban rezoning on LUC class 2 or 3 is a reasonably practicable and feasible option to provide sufficient development capacity and achieve a well-functioning urban environment. This clause recognises there are a number of urban environments that are completely surrounded by LUC class 1, 2 or 3 land, so any future urban growth is going to result in some loss of HPL. In these situations, the intent of Clause 3.6(2)(c) is that urban rezoning should occur on the HPL with lower productive capacity potential as a priority unless that is not a feasible option or would result in a poorly functioning urban environment.

When considering the relative productive capacity of different parcels of HPL, the intent is to focus the inherent productive capacity of the land, irrespective of its current use or the ability of current landowners to use that HPL productively for land-based primary production. Conducting land productivity assessments for various land parcels (discussed in Land use and development on highly productive land) may assist with determining relative productive capacity of different urban rezoning options on HPL. If the LUC classification of the urban rezoning options is the same or similar (eg, an urban environment surrounded by LUC 3 land), further information and site-specific assessments may be needed to inform an assessment of the productive capacity of the land under Clause 3.6(2)(c).

Clause 3.6(3) – same locality and market

Clause 3.6(3) provides additional guidance to applicants and decision-makers on how to determine whether reasonably practicable options are providing development capacity within the same locality and market as the proposed urban rezoning. This is an important part of the test under Clause 3.6(1)(b) as it is a qualifier for options considered as alternatives to proposed urban rezoning of HPL. The assessment of reasonably practicable options needs to be based on a 'like for like' assessment in terms of development capacity in a location where it is needed, and to the market that is experiencing the demand.

Locality

Clause 3.6(3)(a) clarifies that sufficient development capacity is deemed to be in the same locality as a proposed urban rezoning area if it:

> *…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.*

A locality is an urban area (or part of an urban area, or a collection of urban settlements/areas in close proximity) with identifiable demand and supply characteristics for the purpose of assessing demand for housing and the sufficiency of existing development capacity in that locality within an HBA. The intent of Clause 3.6(3)(a) is to ensure options to provide for the required development capacity are located as close as possible to where it is needed, to avoid situations where sufficient development capacity can be provided on non-HPL, but that capacity is not in the right locality to meet the identified demand. This outcome would undermine the provisions of the NPS-UD, which are intended to ensure that sufficient development capacity is available in the localities where it is needed, and that urban rezoning results in a well-functioning urban environment (which inherently involves enabling urban development in the locations where it is needed).

The specification that an urban rezoning proposal is considered to be in the same locality if it is "in or close to a location where demand for additional development capacity has been identified" through an HBA will require an interpretation of any published HBA and the assessment that underpinned it to understand where demand for housing or business land is anticipated. For example, an HBA may cover a whole metropolitan region that comprises multiple districts, each with multiple urban areas. If the HBA identifies different demand characteristics for each of the urban areas, that may be sufficient to determine the locality where additional development capacity is required.

However, a locality should not simply be defined as the entire district administered by the territorial authority (or authorities) that prepared the Future Development Strategy. In a scenario where the territorial authority assessed demand and supply as a whole within the district (and provided no useful distinctions as to locations of demand within the district), consideration of locality is intended to be finer grained than a district as a whole and will require further analysis to understand where the key demand areas for urban growth are. Conversely, not every suburb or settlement will be its own locality – for instance a cluster of similar suburbs, or a group of settlements that cater to the same market may be a single locality. See Market, below.

If there is no guidance or information in the HBA on how development capacity is broken down spatially across the district, it may be appropriate to consider what assessment was undertaken for the Future Development Strategy under Clause 3.13(2)(a) of the NPS-UD, which requires the spatial identification of areas that will require development capacity and refers to Clauses 3.2 and 3.3 of the NPS-UD, and which the HBA is required to inform.

Some HBAs assess capacity and/or demand based on existing methods for spatially identifying small parts of a district, such as neighbourhoods or Stats NZ areas like SA1 or SA2 boundaries. In these cases, supply and demand may be assessed by the HBA at different scales. In these situations, it is important to consider the 'within or close to a location' component within in Clause 3.6(3)(a). Some localities may have high demand but have no or limited options to provide development capacity "within" that location.

Market

Clause 3.6(3)(b) clarifies that sufficient development capacity is deemed to be within the same market as a proposed urban rezoning area if it:

> *…is for a market for the types of dwelling or business land that [are] in demand (as determined by a Housing and Business Assessment in accordance with the National Policy Statement on Urban Development 2020).*

In this context, a development "market" refers to the housing typologies or types of business land that have been identified in the HBA – for example, a single-house typology or heavy industrial land.

Generally, an urban rezoning proposal on HPL considered under Clause 3.6(1)(b) with respect to "market" should serve the market(s) which are experiencing demand, and which do not have sufficient development capacity, as identified in an HBA.

It is not necessary to apply each component of demand rigidly, particularly when there are substitution effects between different elements of demand (eg, between different types of dwellings, such as a three-bedroom terraced house being a substitute, or partial substitute, for a three-bedroom, stand-alone house). It may also be appropriate to provide some capacity for development types for which there is low or no demand, if this is necessary to service the proposed area for rezoning and important to achieving a well-functioning urban environment (eg, a neighbourhood centre zone associated with a predominantly residential development, or open space and active recreation zones).

Clause 3.6(4) – territorial authorities that are not tier 1 or tier 2

Clause 3.6(4) provides a slightly different pathway for urban rezoning in the districts of territorial authorities that are not a tier 1 and 2 local authority (as defined in the NPS-UD). This recognises these territorial authorities are not subject to the same requirements in the NPS-UD (eg, to prepare a HBA and Future Development Strategy), but are still required to provide sufficient development capacity to meet demand for housing and business land under section 30(1)(ba) and section 31(1)(aa) of the RMA. Clause 3.6(4) applies to all other territorial authorities that are not tier 1 or 2, including those that are not tier 3 under the NPS-UD (ie, districts that do not contain a 'urban environment' as defined in the NPS-UD). This ensures there are still robust tests for urban rezoning on HPL regardless of the size of the urban area.

The intent of Clause 3.6(4) is consistent with the tests for urban zoning for tier 1 and 2 local authorities outlined above. It outlines three tests that must be met before a territorial authority may allow urban rezoning on HPL:

1. it is required to provide sufficient development capacity to meet demand for housing and business land
2. there are no other reasonably practicable and feasible options for providing the required development capacity
3. a robust assessment of benefits and costs is undertaken that demonstrates the benefits of the rezoning outweigh the costs associated with the loss of HPL.

The key differences in the tests for urban rezoning in Clause 3.6(4) are as follows:

- there is no reference to the NPS-UD (even though this applies to tier 3 local authorities and all local authorities with urban environments)
- there is no reference to 'same locality and market' as those terms are specific to an HBA under the NPS-UD
- there is no reference to the urban rezoning achieving a 'well-functioning urban environment'
- there is no list of options that must be assessed to demonstrate there are no other reasonably practicable and feasible options for providing the required development capacity.

Clause 3.6(5) – loss of HPL to be minimised

Clause 3.6(5) applies to all territorial authorities considering proposals for urban rezoning of HPL. The purpose of Clause 3.6(5) is to minimise the amount of HPL lost to urban rezoning and to ensure the loss of HPL is the minimum necessary to provide the required development capacity and achieve a well-functioning urban environment. In practice, this clause should inform how urban rezoning proposals are designed and assessed and to ensure any urban rezoning of HPL is an efficient use of that land (eg, it provides a high yield of housing to meet the demand for housing, rather than lower density residential development which depletes more HPL). The loss of HPL should only be considered if required to provide enough development capacity. The minimum amount of HPL should be lost to provide that capacity. Acknowledging that the NPSUD refers to providing **at least** sufficient development capacity, significant additional development capacity (beyond that is required for the next 10 years) should not generally be provided on HPL.

Comparisons against other reasonably practicable and feasible options may be a way to demonstrate that the loss of HPL is minimised. For example, an urban rezoning proposal may minimise the loss of HPL by being predominantly on non-HPL land and some smaller areas of LUC class 3 land, while deliberately avoiding larger areas of LUC 1 and 2 land. The design of an urban rezoning proposal can also minimise the loss of HPL and ensure any loss of HPL is an efficient use of this land. For example, this may involve efficient location of infrastructure, key roading connections, and/or a structure plan design that ensures a high yield for the development to minimise the loss of HPL while providing the required development capacity and achieving a well-functioning urban environment.

Avoiding rezoning HPL for rural lifestyle

The NPS-HPL contains strong direction through Policy 6 and Clause 3.7 that rural lifestyle zoning of HPL should be avoided. The rationale is that it is inappropriate to:

- use Aotearoa New Zealand's most productive land for low-density housing, and
- prevent future productive use of this land through allowing fragmented ownership and the construction of dwellings and hardstand areas that have the potential to cause reverse sensitivity effects on land-based primary production activities.

For more detail see section 32 of the evaluation report for the NPS-HPL.

The expectation is that local authorities will not seek to rezone HPL to a rural lifestyle zone and will decline private plan change applications for rural lifestyle zones on HPL in accordance with Policy 6 and Clause 3.7. The only exception to this is if the land is subject to a permanent or long-term constraint that means the use of the HPL for land-based primary production is not able to be economically viable for at least 30 years. In such a scenario, there may be a pathway under Clause 3.10 to rezone the land to a rural lifestyle zone.

Further guidance on the level of information required to support a rural lifestyle rezoning application under Clause 3.10 is contained in Exemptions for HPL subject to permanent or long-term constraints above.

Integrated management

Policy 2 of the NPS-HPL requires that:

> *The identification and management of highly productive land is undertaken in an integrated way that considers the interactions with freshwater management and urban development.*

Clause 3.2 – integrated management

Although the integrated management policy and clause are primarily aimed at regional councils and territorial authorities undertaking plan changes to give effect to the NPS-HPL (see Integrated management, in Part 2), Clause 3.2 also contains direction that local authorities must "manage the effects of subdivision, use, and development of highly productive land, in an integrated way", which has implications for resource consents and rezoning plan changes.

The most relevant subclause is likely to be Clause 3.2(1)(a), which requires consideration of how land-based primary production (including supporting activities) interact with freshwater management at a catchment level. This might be most relevant for proposals seeking to use Clause 3.10 as a pathway for development on the basis there is a permanent or long-term water availability constraint.

The remaining subclauses – Clauses 3.2(1)(b) and 3.2(1)(c) – are more strategic and will be most relevant for mapping and regional policy statement/district plan changes.

Tangata whenua involvement

Clause 3.3 – tangata whenua involvement

Clause 3.3 mainly applies when a local authority is seeking to give effect to the NPS-HPL through changes to regional policy statements and district plans (see Tangata whenua involvement, in Part 2), including any rezoning plan changes initiated by territorial authorities after the commencement of the NPS-HPL on 17 October 2022.

Clause 3.3 is not intended to specifically direct tangata whenua involvement in resource consent applications relating to HPL unless their involvement has been specifically requested.

Further guidance on engagement with tangata whenua is available on the Local Government New Zealand website.[15]

Other clauses

The NPS-HPL contains a number of clauses with the primary purpose of directing future changes to regional policy statement and district plan provisions to give effect to the NPS-HPL. These clauses are:

- Clause 3.11 – continuation of existing activities
- Clause 3.12 – supporting appropriate productive use of highly productive land
- Clause 3.13 – managing reverse sensitivity and cumulative effects.

Part 2 of this guide provides more information on how these clauses inform the development of plan changes to amend regional policy statements and district plans to give effect to the NPS-HPL. However, these clauses may also have some limited applications for resource consents and/or plan change processes from the date of commencement. For example, Clause 3.11 may be used by a decision-maker on a resource consent application to inform whether they should approve an application to upgrade (including potential expansion) of an existing activity that is already located on HPL.

[15] Local Government New Zealand | Ko Tātou. June 2017. *Council-Māori Participation Arrangements: Information for councils and Māori when considering their arrangements to engage and work with each other*. https://www.lgnz.co.nz/assets/Uploads/2dac054577/44335-LGNZ-Council-Maori-Participation-June-2017.pdf

Part 2: Mapping highly productive land and updating plan provisions to reflect the NPS-HPL

Introduction

Part 2 of this guide focuses on the key NPS-HPL provisions that apply when:

a) a regional council goes through the process of identifying and mapping HPL in their regional policy statement; and

b) regional councils and territorial authorities update objectives, policies and rules in regional policies statements and district plans to give effect to the NPS-HPL.

Integrated management

The NPS-HPL provides as follows:

> *Policy 2: The identification and management of highly productive land is undertaken in an integrated way that considers the interactions with freshwater management and urban development.*
>
> ...
>
> *3.2 Integrated management*
>
> *(1) Regional councils and territorial authorities must identify highly productive land, and manage the effects of subdivision, use, and development of highly productive land, in an integrated way, which means:*
>
> *a) considering how land-based primary production, including supporting activities, interact with freshwater management at a catchment level; and*
>
> *b) providing co-ordinated management and control of the subdivision, use, and development on highly productive land across administrative boundaries within and between regions; and*
>
> *c) taking a long-term, strategic approach to protecting and managing highly productive land for future generations.*

The intention of Policy 2 and Clause 3.2 is to highlight the key interactions between HPL, subdivision, use and development of land, and freshwater management. These provisions seek to ensure that decisions to protect HPL are made alongside managing freshwater quality and quantity, and that the management of both these resources are considered together as part of the plan-making process – for example, in setting water quality and quantity limits and allocations. The provisions also reiterate good practice in terms of taking a co-ordinated approach when working across administrative boundaries. Integrated management is not a new concept and is already a function of regional councils and territorial authorities under sections 30(1)(a) and 31(1)(a) of the RMA, respectively.

Although neither Policy 2 or Clause 3.2 mention other pieces of national direction, specifically, these provisions do not override councils' obligation to implement all national direction instruments equally; they do not place the requirements of the NPS-HPL above or below any other national direction instrument. There will inevitably be interactions and trade-offs when considering how to give effect to the NPS-HPL alongside other national direction, such as the NPS-UD and the NPS-FM.

The specific mention of freshwater management in Clause 3.2(1)(a) does not mean that freshwater issues are more important than other issues covered in national direction instruments. Rather, it recognises that provisions introduced to manage HPL will have a strong interaction with freshwater-catchment planning. The other key area of interaction (urban development) already has a specific clause to manage its alignment (Clause 3.6, see examples of other non-LUC class 1, 2 and 3 land that may be considered HPL). However, the integrated management of other areas of resource management should also be considered under Clause 3.2, including any interactions with the coastal environment, implications for climate adaptation and impacts on indigenous biodiversity.

Integrated management and mapping of HPL

With respect to taking an integrated approach to mapping HPL in a regional policy statement (RPS), the specific requirements for mapping HPL set out in Clause 3.4 (discussed in Mapping highly productive land below) set the direction for how the HPL mapping process is to be completed. The more general Clause 3.2 does not override this more specific direction on mapping, rather, it provides direction to regional councils to consider taking an integrated management approach where it is applicable to the mapping process. In practice, taking an integrated management approach with respect to issues such as management of freshwater is likely to be more relevant when deciding if any additional land (other than LUC class 1–3) should also be identified as HPL, as set out in Examples of other non-LUC class 1, 2 and 3 land that may be considered HPL below. Under this clause, regional councils have more discretion to decide if an area of land is a good candidate for being identified as HPL and if taking an integrated management approach to that decision – factoring in other issues such as water availability, for example – would be appropriate.

Integrated management and provisions to give effect to the NPS-HPL

The establishment, implementation and review of objectives, policies and methods to achieve integrated management of the natural and physical resources of a region is a function of regional councils under section 30 of the RMA. Integrated management of the effects of the use, development or protection of land and associated natural and physical resources of the district is a function of territorial authorities under section 31 of the RMA. From a practical perspective, Policy 2 and Clause 3.2 in the NPS-HPL are directing regional councils and territorial authorities, when giving effect to the NPS-HPL through mapping and amending plans, to consider questions such as:

- Where is HPL located, relative to freshwater catchments that are experiencing quality and/or water availability issues? Are different approaches needed when drafting HPL provisions to recognise freshwater issues in particularly degraded or constrained catchments?

- Where is HPL located, relative to the coastal environment? Is there a need to amend any provisions that enable land-based primary production on HPL to address sensitive coastal areas?
- How do subdivision, use and development provisions on HPL consider indigenous biodiversity? Is there a way to develop subdivision rules that align with the NPS-HPL but that also achieve positive indigenous-biodiversity outcomes?
- How can local authorities ensure there is sufficient non-HPL land available for primary production activities and other rural activities that do not directly rely on the versatility of the soil but still need to locate in a rural environment?
- Do the new provisions to give effect to the NPS-HPL integrate well with the outcomes sought by other national direction instruments?

Taking an integrated management approach in this context means that, depending on local circumstances, councils need to assess existing provisions in their regional and district plans that address the types of matters stated above, to see if there are any conflicts or tensions that need resolving. Consequential changes to provisions in other chapters of a regional or district plan are within the scope of a plan change to give effect to the NPS-HPL if they are needed to achieve an integrated management outcome. A more detailed discussion of the types of provisions that might need to be looked at in a district plan can be found in this guide (see Subdivision rules and standards and Land use on HPL below, which discusses management of indigenous biodiversity relating to Clauses 3.8 and 3.9).

As part of taking a best practice approach to integrated management, local authorities are encouraged to think about the rural environment holistically when developing provisions to give effect to the NPS-HPL. The rural sector is a significant contributor to the Aotearoa economy and supports rural communities nationwide. It includes land-based primary production activities but also other primary production activities that are not reliant on the soil resource (such as glasshouses, hydroponic operations, intensive indoor -farming activities, seasonal worker accommodation) and rural industries that support primary production.

As part of considering how to give effect to the NPS-HPL, consideration should also be given to how other activities that support the rural sector will be enabled within a district or region. This ensures that the rural sector as a whole is supported. For instance, this may include making provision for labour supply companies which can be an important part of supporting the horticulture industry. District councils should therefore make adequate provision in their district plans for this activity to occur[16].

Considering how to provide for other activities that support the rural sector may include a review of provisions that manage primary production activities in non-HPL areas. Territorial authorities should review whether a sufficient amount of non-HPL land has been zoned to accommodate these other rural activities and industries, and ensure they are taken into account in business land supply assessments required under the NPS-UD[17].

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[16] The cap for Recognised Seasonal Employer (RSE) places has increased since the scheme came into effect in 2007, which has resulted in increased demand for seasonal worker accommodation in some districts. Demand for purpose-built accommodation for labour supply companies that serve an entire district or region may become more prevalent in the future.

[17] The NPS-UD requires tier 1 and tier 2 local authorities to assess how well demand for housing, including seasonal worker accommodation, is met within the urban environment. Local authorities should seek information from the people employing seasonal workers and providing their accommodation. If a

Any provisions in a district plan, RPS or regional plan designed to ensure HPL is managed in an integrated way[18] should be clearly identified in the associated section 32 report, with an accompanying explanation of how the proposed provisions address the identified balance/tension/trade-off.

Tangata whenua involvement

Involvement of tangata whenua in mapping HPL

The criteria for what land is mapped as HPL is intentionally limited by the direction in Clause 3.4 to provide a nationally consistent approach to mapping, and to minimise uncertainty and litigation during the mapping process. However, regional councils retain some discretion about the extent of HPL mapping in their region, in particular for areas of land considered to be highly productive that are not LUC 1, 2 or 3. Subject to the criteria in Clause 3.4(1)–(3), which outline what land can be mapped as HPL, Clause 3.3 requires that each local authority must also enable tangata whenua to be involved in decision making on areas to be mapped as HPL – particularly in relation to areas (not LUC 1, 2 or 3)[19].

Involvement of tangata whenua in changes to policy statements and plans

Clause 3.3 also applies to the involvement of tangata whenua in policy development to give effect to the NPS-HPL, particularly as it relates to specified Māori land (and also other land owned by Māori, including Treaty settlement land[20]) that might be identified and mapped as HPL. Read more about the Ministry for the Environment's National Policy Statement for Highly Productive Land: Information for what it means for Māori and Māori land. As discussed above, objectives, policies and rules to give effect to the NPS-HPL will require consideration of integrated management, which will benefit from the contribution of tangata whenua and consideration of matāuranga Māori and tikanga Māori.

Regional councils and territorial authorities should take into account aspirations of tangata whenua in rezoning decisions, particularly tangata whenua aspirations for any land identified as HPL that is not specified Māori land and which is suited to being rezoned as Māori purpose zone – see additional information on the Ministry for the Environment's National policy statement for Highly Productive Land: Information on changing the status of Māori land and rezoning land to Māori purpose zone.

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shortfall is identified, local authorities are required to understand the reasons for, and take steps to address, the shortfall. Guidance on implementing the NPS-UD, including understanding housing demand and ensuring sufficient development capacity, can be found in *The introductory guide to the National Policy Statement on Urban Development*, and on the NPS-UD landing page.

[18] That is, that the provisions take into account other national-direction instruments and/or other resources that require protection.

[19] See Clause 3.4(3).

[20] Being land held by a post-settlement governance entity (as defined in the Urban Development Act 2020) where the land was transferred or vested and held (including land held in the name of a person such as a tipuna of the claimant group, rather than the entity itself): (i) as part of redress for the settlement of Treaty of Waitangi claims; or (ii) by the exercise of rights under a Treaty settlement Act or Treaty settlement deed.

Clause 3.3(1) – to the extent they wish to be involved

Use of the phrase "to the extent they wish to be involved" intends to allow both iwi/hapū and local authorities to have flexibility when working together to determine appropriate ways to manage and protect HPL. This is also to ensure that local iwi and hapū have the opportunity to participate in local government decision making throughout the implementation of the NPS-HPL, particularly through the development of regional and district plans and policy statements.

Clause 3.3(2) – active involvement of tangata whenua

Clause 3.3(2) requires that the involvement of tangata whenua in giving effect to the NPS-HPL through regional policy statements, regional plans and district plans must include consultation that is early, meaningful, in accordance with tikanga Māori (as far as practicable) and undertaken at the appropriate levels of whānau, hapū and iwi decision-making structures. Note that this may require consultation beyond just the iwi and hapū authorities defined as "tangata whenua" under the RMA.[21] The Crown's Treaty obligations towards Māori are a forefront consideration. The extent to which tangata whenua are involved (and appropriate levels of whānau, hapū and iwi decision-making structures) will depend on the relative landholdings and concerns or aspirations of tangata whenua in a particular district/region. As the application of the NPS-HPL has implications for urban rezoning, freshwater, and the management and development of Māori land, this may require extensive engagement with tangata whenua.

The intent is that early collaboration with tangata whenua in the identification and mapping of the HPL will promote the sharing of expertise in this area and minimise future debate and litigation between local authorities and tangata whenua, recognising that any initial collaboration does not limit the degree to which any constituent group may wish to get involved in the Schedule 1 process for the insertion of HPL maps into a RPS.

The following links provide guidance on different partnership arrangements and principles of engagement with iwi/Māori:

- Guidelines for engagement with Māori, Te Arawhiti – Office for Māori Crown Relations
- Council-Māori Participation Arrangements: Information for councils and Māori when considering their arranges to engage and work with each other, Local Government New Zealand

Mapping highly productive land

Policy 3

Policy 3: Highly productive land is mapped and included in regional policy statements and district plans.

Policy 3 directs that HPL is identified in accordance with the direction set out in the NPS-HPL and then mapped and included in RPSs (and subsequently in district plans). Policy 3 makes the

[21] Section 2 of the RMA defines "tangata whenua" as, "in relation to a particular area, means the iwi, or hapu, that holds mana whenua over that area".

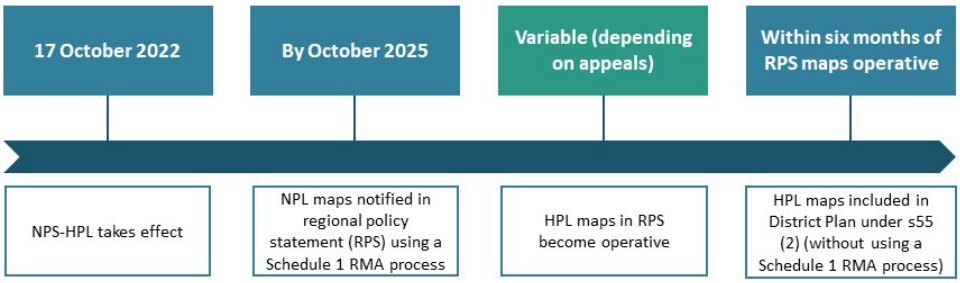
requirement to undertake HPL mapping mandatory for all local authorities and Clause 3.4 provides local authorities with the starting point for a nationally consistent HPL-identification and spatial-mapping methodology. This ensures that HPL is being identified and mapped in the same way nationwide, noting that Clause 3.4(3)[22] gives local authorities some discretion as to which additional classes of LUC (4–8) should be identified as HPL in their region/district, depending on local circumstances. Conversely, local authorities also have some discretion to exclude LUC class 1–3 land from being mapped as HPL if it does not meet the criteria in Clause 3.4(1) and (2).[23] Clause 3.5(1)–(6) provides direction on timeframes for HPL mapping in RPSs and district plans and when they should be updated.

Summary process for mapping highly productive land

Mapping of HPL is intended to be a collaborative process between regional councils and territorial authorities in consultation with tangata whenua (Clause 3.4(4)(a) and (b)) whilst adhering to the limited criteria for mapping set out in Clause 3.4(1)–(3). Refer to Tangata whenua involvement and Integrated management for further guidance on the amount of discretion regional councils have with respect to mapping HPL.

The proposed HPL maps are to be notified in an RPS within three years of the commencement date (Clause 3.5(1)), following a Schedule 1 process under the RMA. Once operative, these HPL maps need to be inserted into district plans under section 55(2) of the RMA (ie, via an amendment to their district plans, without using a process in Schedule 1) within 6 months (Clause 3.5(4)). The intent is to ensure that mapping is done once and at a scale that can be used and relied upon by all parties, and that it will not be subject to multiple iterations.

Figure 3: Summary timeframes for HPL mapping[24]



[22] Clause 3.4(3) provides:

"Regional councils may map land that is in a general rural zone or a rural production zone, but is not LUC 1, 2, or 3 land, as highly productive land if the land is, or has the potential to be (based on current uses of similar land in the region), highly productive for land-based primary production in that region, having regard to the soil type, physical characteristics of the land and soil, and climate of the area."

[23] However, all LUC class 1–3 land is considered to be HPL under the transitional definition of HPL until such time as the HPL mapping process has been completed and tested through the Schedule 1 process.

[24] Note that this figure only covers the NPS-HPL implementation process under the RMA, not any new legislation being developed as part of resource management reform.

A summary of the key sequential steps for undertaking the mapping is outlined in table 4 below.

Table 4: Summary of key sequential steps for HPL mapping

Step	Description	Relevant NPS-HPL provisions
1	Identify all land that is zoned general rural or rural production zone (or equivalent) **and** is LUC class 1, 2 and 3. Determining whether a particular zone in the District Plan is "equivalent" to general rural or rural production zone in the National Planning Standards must be based on the purpose of the zone, not necessarily the name or title of the zone. This may involve considering the zone objectives, policies and rules (including subdivision site sizes) to determine what the 'best fit' National Plannings Standards zone is.	Clause 3.4(1)(a) and (b)
2	Remove all land identified under step 1 that, at the commencement date of the NPS-HPL, is identified for future urban development (as defined in Part 1, Interpreting Clause 3.5(7)(b)).	Clause 3.4(2) Clause 1.3: definition of "identified for future urban development"
3	Identify any other land that is in a general rural or rural production zone (or equivalent), that is or has the potential to be highly productive for land. This could be based on current uses of similar land in the region, having regard to the soil type, physical characteristics of the land and soil, and climate of the area.	Clause 3.4(3)
4	Using the areas identified in steps 1 to 3 as a base, identify large and geographically cohesive areas of HPL that are predominantly LUC class 1–3 (noting that regional councils retain some discretion on including or excluding land from being mapped as HPL under Clause 3.4(1), (3) and (5)).	Clause 3.4(1)(b): "predominantly" Clause 3.4(1)(c): "large and geographically cohesive" Clause 3.4(5): explanation of Clause 3.4(1)

Permanent or long-term constraints on the use of land for land-based primary production are not justification for land not being mapped as HPL, as the inherent characteristics that make land highly productive (and resulted in LUC class 1–3 classification) are still present, regardless of other external constraints, such as water availability or what the land is currently being used for by the landowner. If a piece of land is subject to a permanent or long-term constraint that mean the use of the HPL for land-based primary production is not able to be economically viable for at least 30 years, then a landowner is able to apply for a range of alternative uses of that land (rural lifestyle rezoning, subdivision or non-land-based, primary production activities) under Clause 3.10. Refer to Exemptions for HPL subject to permanent or long-term constraints in Part 1 of this guide for more information on interpreting Clause 3.10.

Data sources for HPL mapping

The starting point for the mapping process is the NZLRI[25], which is a national map series, mapped at 1:63, 360 scale. There are recognised limitations with using the NZLRI map series to

[25] NZLRI and LUC are able to be viewed on the Our Environment website, or are available for download at the LRIS Portal.

identify LUC class 1–3 land; these relate to the scale of the maps, the age of the data and the fact that the soils do not necessarily follow easily identifiable geographic features (eg, river boundaries, roads or land-parcel boundaries). Additionally, it is possible that some pockets of LUC class 1, 2 or 3 land could be excluded from the NZLRI maps, where they exist in compound units (eg, LUC is often expressed by the dominant class in a map unit, but some map units will have more than one class mapped). Notwithstanding these limitations, Clause 3.4(5)(a) states that the LUC information on the NZLRI maps is conclusive of LUC status.

Regional councils may draw on more detailed mapping (where available) to inform the mapping process. More detailed mapping refers to an alternative mapping system that is still based on the LUC classification in the NZLRI, but includes more detailed or up-to-date data that is accepted by the regional council, not individual, site-specific assessments undertaken by landowners. NZLRI and LUC mapping completed by council staff or LUC-mapping professionals approved by councils are appropriate sources of information. Pre-existing soil conservation plans are also valid for assessing farm-scale LUC mapping if completed and approved by catchment board staff.

Where the NZLRI maps do not appear to be logical or reflective of more recent soil survey (eg, S-map) regional councils may wish to undertake more detailed LUC mapping, so as to more accurately define boundaries of LUC class 1–3 land, and use this information to inform the mapping of HPL. Detailed mapping should be based on the latest version of the 'Land Use Capability Survey Handbook'.[26] The soil-survey component should be in accordance with the 'New Zealand soil mapping protocols and guidelines'. In order to undertake more detailed mapping, councils should appoint a LUC or soil-mapping professional. When considering whether an individual is a 'professional' LUC assessor, a local authority could consider whether the individual has:

- been on an LUC training course and can produce assessments consistent with the LUC survey handbook for the past three to five years[27]
- a demonstrated track record and the experience of a LUC assessor in both mapping of soils and NZLRI/LUC, assessments specifically of land within LUC classes 1, 2 and 3 as being highly productive or not.

The section 32 report would need to clearly explain the basis for HPL boundaries and identify situations where more detailed mapping had been relied on over NZLRI (or similar) data.

"Predominantly LUC 1, 2 or 3 land" and "large and geographically cohesive area"

The references to areas of "predominately LUC 1, 2 or 3 land" and to "large and geographically cohesive area" in Clause 3.4(1) are intended to give regional councils the flexibility to define the spatial extent of HPL based on pragmatic geographic boundaries (eg, roads, rivers, property boundaries), instead of requiring that every area of LUC class 1, 2 and 3 land in the region is identified and mapped as HPL. The terms also give regional councils the ability to include small areas of land that are not LUC class 1–3 as HPL if they are part of a larger area

[26] The handbook is available from the New Zealand Soil Science Society or from the Manaaki Whenua Landcare Research Digital Library.

[27] Councils may want to consult with the LUC governance group or professional societies – such as New Zealand Association of Resource Management and New Zealand Society of Soil Science – on both factors to consider, and the process for determining/assessing, 'professional' soil and LUC mappers.

that is predominantly HPL and it makes sense to include the entire area of land as HPL, rather than excluding the small area. This is important to ensure that the maps do not show small areas of non-HPL surrounded by large areas of HPL, as this has the potential to result in reverse sensitivity effects on land-based primary production activities using the HPL.

Once a regional council has determined what data they will use as a starting point for their HPL-identification process, it is recommended that the regional council develops a methodology to translate this data into a mapping layer that identifies land that is "predominantly LUC 1, 2 or 3". This methodology may be as simple as using the LUC class 1–3 boundaries on the NZLRI database and applying them to a HPL mapping layer. Or, it may involve a combination of identifying a percentage figure – to define "predominantly" for areas of land at the edge of the suggested HPL area – and then completing a manual review of identified land – to ensure that the layer captures "large and geographically cohesive" areas. Consideration of what types of natural, legal or non-natural boundaries should be used to determine the extent of HPL (as per Clause 3.4(5)(b)) also forms part of this exercise – see Defining HPL boundaries below for more information on this process.

It is recommended that no matter which methodology regional councils agree on for identifying and mapping HPL, the process be documented, so that there is transparency as to how land parcels were identified as HPL. This transparency will be important to assist regional councils in defend their mapping methodology through the Schedule 1 process, particularly for areas of land parcels that are not LUC class 1–3 but that have been identified as HPL for other reasons (eg, as part of a large and geographically cohesive area or for being productive despite having a higher LUC class). It is also important for retaining a record of the methodology used so that the same process can be repeated in the future if/when new LUC data is made available or when there is a need to update HPL maps.

The intention is that some small, discrete and more isolated areas of LUC class 1–3 land may not need to be mapped as HPL if they are not connected to a wider area of HPL – Clause 3.4(5)(d) was included to ensure that the HPL identification process did not result in isolated pockets of HPL "spot zoning", as this is not aligned with good practice for mapping zones/precincts/overlays. Conversely, small pockets of LUC class 4–8 land may be included in HPL mapping if they would otherwise break up a "geographically cohesive area of LUC 1, 2, or 3 land". For example, the productive kiwifruit land around Te Puke is largely LUC class 1–3 land, but is often divided by steep gullies that contain other classes of LUC land. In this scenario, a regional council could include these gully areas as HPL on the basis that they form part of a large and geographically cohesive area of HPL and the land parcels that contain the gullies are predominantly LUC class 1–3 land.

Defining HPL boundaries

The intention is for HPL mapping to be done at a scale that enables landowners to readily identify whether their land is HPL. The HPL maps prepared by regional councils should leave landowners with no doubt as to whether their land is considered to be HPL or not. This will require some translation of the NZLRI data down to the scale of land parcels and some site-specific decisions as to where the HPL boundary should be. We recommend that the regional council uses the following steps for deciding appropriate boundaries for HPL:

1. Follow the HPL boundary as shown on the NZLRI maps if it aligns with a boundary in terms of Clause 3.4(5)(b).
2. If there is no alignment, look to use natural boundaries (eg, roads, margins of waterbodies) for the HPL boundary.

3. If there is no natural boundary, use a legal boundary (ie, the boundary of a land parcel) and either include or exclude small areas of LUC class 1–3 land in order to create a large and geographically cohesive area of HPL using that boundary.
4. If none of these is an option, fence-lines could be used to separate a large property that had distinct HPL and non-HPL areas – but fences are the least preferred option, as they are the easiest physical boundaries to change.

It is not a requirement that the HPL maps differentiate between LUC class 1, 2 and 3 pieces of land (or any other land classes deemed to be HPL under Clause 3.4(3)). Once land is identified as HPL, it has the same status under the NPS-HPL, regardless of its LUC class.[28] However, it is recommended that councils keep a record of the underlying LUC class as part of the base data for the LUC maps, to assist with future decision making through plan changes and resource-consent applications; it may be helpful background information to understand the spatial distribution of LUC classes, particularly for future discussions about rezoning HPL to an urban zone when considering Clause 3.6(2)(c). It would also be useful information to include in the section 32 report, to transparently explain why each area of land was identified as HPL.

Examples of other non-LUC class 1, 2 and 3 land that may be considered HPL

Clause 3.4(3) allows local authorities to consider land in other LUC classes as potential candidates for being HPL, provided it has certain characteristics that mean that the land is, or has the potential to be, highly productive in the context of that region/district. Some parts of Aotearoa have a disproportionately low amount of LUC class 1–3 land, but have land in other LUC classes that is highly productive in the context of that region/district. Alternatively, a region or district may have a particular, land-based primary production industry that relies on a class of land that is not LUC 1–3 (eg, viticulture). As such, the NPS-HPL provides discretion for regional councils to identify areas of land that have a LUC class other than 1–3 as HPL under Clause 3.4(3), provided there are local circumstances to justify taking such an approach.

Clause 3.4(3) states that a regional council may consider other areas of land that contain LUC classes other than LUC 1–3 as HPL, based on an assessment of:

- soil type
- physical characteristics of the land and soil
- climate of the area

Regional councils should also consider existing land-based primary production activities in the region and where they are located as part of the evidential basis for rezoning non-LUC class 1–3 land as HPL. For example, viticulture and stone-fruit orchards in areas like Hawke's Bay and Marlborough are often located on non-LUC class 1–3 land, but a regional council could identify the locations of these existing activities and map them as HPL on the basis that the land is being utilised productively by a land-based primary production activity and is providing significant employment and economic benefits to the region. Another example could be the shallow, stony, seasonally moisture-deficient soils of the Canterbury Plains. These soils would have a higher LUC classification than LUC class 1–3, but with good management and irrigation they can be regarded as highly productive. However, as discussed in Integrated management above, the inclusion of additional LUC classes as HPL that are not LUC class 1, 2 or 3 needs to be considered alongside other national direction, particularly urban development and

[28] Councils may decide to apply a particular rule framework to different areas of HPL to meet the needs of the district/region, provided the provisions are consistent with the NPS-HPL, including Clause 3.9. Refer to Updating policy statements and plans to reflect the NPS-HPL below.

freshwater management, as there may be other issues to consider (eg, the best location for growth given the spatial distribution of LUC classes, the susceptibility of particular soils to nutrient leaching, the impact of using the land for land-based primary production on water quality and quantity).

Site-specific assessments through the HPL mapping process

The NPS-HPL mapping process does not require widespread ground truthing or site-specific assessment of all potentially HPL land across a region. The intention is that the HPL-identification process would largely be a desktop exercise that is based on the best available information on the location of LUC class 1–3 land and following a mapping methodology agreed on by the regional council, relevant territorial authorities and tangata whenua. This mapping methodology must be based on the principles set out in Clause 3.4.

Some individual landowners may attempt to use their own site-specific assessments to justify why their land should not be included as HPL and provide those assessments to local authorities by way of submissions through the Schedule 1 process for finalising HPL maps. Regional councils have full discretion as to whether they accept third-party, site-specific, detailed mapping information (Clause 3.4(5)(a)) and do not have to accept site-specific assessments provided by landowners as a basis for excluding land parcels from being identified as HPL, as a piece of land may not be LUC class 1–3 but it may form part of a large and geographically cohesive area which necessitates its inclusion in HPL maps. Prior to the consideration or exercise of their discretion, councils should consider whether the site-specific assessments have been authored by professional LUC assessors (see Data sources for HPL mapping) and whether they have adhered to the LUC and soil-survey mapping guidelines[29].

In circumstances where there may be conflicting site-specific assessment information detailing the presence of LUC class 1–3 land or not, local authorities may consider practising the precautionary principle, or take a more conservative approach and map a larger, more cohesive area of HPL.

Detailed site-specific assessments may be provided and considered as part of a resource-consent application or rezoning process, as part of an assessment of the productive capacity of land and may involve peer review – refer to Productive capacity, in Part 1 of this guide.

Removing land from HPL maps or updating HPL maps

Once HPL is mapped in an RPS and subsequently mapped in district plans, there are different processes to go through to update these maps over time. RPS maps cannot be amended by private plan changes – the only opportunity to update RPS maps is as part of a regional-council-initiated RPS plan change or full RPS review. It is expected that each time a RPS requires a review, the HPL maps will be updated to reflect recent changes to zoning, LUC

[29] Detailed mapping should be based on the latest version of the 'Land Use Capability Survey Handbook', available from the New Zealand Soil Science Society or from the Manaaki Whenua Landcare Research Digital Library. The soil-survey component should be in accordance with the 'New Zealand soil mapping protocols and guidelines'.

classification (assuming that the NZLRI database has the potential to be updated in the future) or any other matter affecting the classification of land as HPL (see Clause 3.5(5)).

The process to remove land from district plan HPL maps will require a plan change – refer to Clause 3.5(6) – approved plan changes. If HPL is the subject of an approved district plan change to rezone the land so that it is no longer general rural or rural production zone, the land ceases to be HPL from the date the district plan change becomes operative, even if the change is not yet included in maps in an operative RPS (see Clause 3.5(6)). District councils can remove the HPL layer from the district plan maps through a plan-change process, despite this resulting in an inconsistency between the district plan and HPL maps in the RPS. This is because this scenario is specifically anticipated by Clause 3.5(6) of the NPS-HPL and both RPSs and district plans need to give effect to the NPS-HPL as a higher-order document. It is important that district plans remain current with respect to the HPL layer, particularly for any approved plan changes to rezone HPL to an urban zone using Clause 3.6. Failure to do so would likely result in unnecessary resource consents resulting from HPL provisions relating to the HPL maps, despite the land having changed to an urban use.

Updating policy statements and plans to reflect the NPS-HPL

In addition to the identification and mapping of HPL in RPSs and district plans, objectives, policies and rules in plans and policy statements will also need to be updated to reflect relevant provisions in the NPS-HPL. The degree to which changes are necessary will vary across the country, depending on how aligned operative provisions are with the NPS-HPL and in the distribution of HPL within a district/region relative to other non-HPL land. For some local authorities, minor updates to wording will be sufficient to ensure alignment of terminology and definitions, while others will require more substantial plan changes. Giving effect to the NPS-HPL will require councils to ensure that they have suitable objectives, policies and rules to protect HPL for use in land-based primary production, both now and for future generations. In doing so, it will also be necessary to consider how other rural activities/industries (not provided for on HPL) that are also important to the rural economy are provided for (refer to Integrated management above for more information).

This section outlines the key parts of RPSs, regional plans and district plans to look at when formulating new provisions to reflect the NPS-HPL.

Amendments to regional policy statements

Regional councils will need to amend their RPSs in two ways to give effect to the NPS-HPL – the insertion of objectives and policies to reflect the direction of the NPS-HPL and the insertion of maps showing the location of HPL as identified through the mapping process in Clause 3.5 of the NPS-HPL. The NPS-HPL only provides direction on the timing of RPS plan changes relating to the inclusion of HPL maps (Clause 3.5(1) and (2), as discussed in Mapping highly productive land above). However, regional councils are required to change their RPS in accordance with a national policy statement under section 61(1)(da) of the RMA and are required to give effect to a NPS under section 62(3) of the RMA.

It is recommended that amendments to the RPS policy framework and the insertion of HPL maps occur as part of a single Schedule 1 process (ie, as part of the same plan change) as opposed to separate processes, although there is nothing explicit in the NPS-HPL that requires this. However, combining both the mapping and policy components into a single, cohesive plan change is recommended as best practice, so all parties can understand the new direction of the RPS with respect to HPL at the same time as seeing the spatial extent of where the new policy direction is proposed to apply.

Regional councils should focus on developing objectives and policies that give effect to the overarching objective and Policy 1–9 of the NPS-HPL. The wording of the objective and policies in Part 2 of the NPS-HPL is clear and direct, and is supported by implementation clauses in Part 3, however, there is scope for regional councils to provide more specificity through the RPS as to how the objective and policies apply in a regional context. For example, Policy 4 relating to prioritising and supporting land-based primary production on HPL could translate into an RPS policy with the same intent, but referring to specific areas of HPL to give it a regional focus.

Changes to an RPS may also be based on a consideration of how the rural environment should be managed as a whole – including the areas identified as HPL, but also the balance of the rural environment and other parts of the region that can accommodate non-land-based primary production activities (as discussed in Integrated management above). It is important that non-land-based primary production activities that are not provided for on HPL, but are still important to the region, are enabled on non-HPL land. Direction at the RPS level to consider the rural environment holistically and how HPL provisions integrate with provisions in other areas/zones will provide useful direction to district councils as they undertake their own NPS-HPL-implementation plan changes.

Best practice for policy development encourages policy drafters to consider the NPS-HPL direction and how it may apply to the specific HPL issues facing their region, as opposed to using the exact wording of the objective and policies from Part 2 of the NPS-HPL and including identical provisions in their RPS.

Amendments to district plans

The NPS-HPL provides specific direction to territorial authorities as to the timing and content of updates to district plans to give effect to the NPS-HPL. Clause 4.1(2) states that:

> *(2) Every territorial authority must notify changes to objectives, policies, and rules in its district plan to give effect to this National Policy Statement (using a process in Schedule 1 of the Act) as soon as practicable, but no later than 2 years after maps of highly productive land in the relevant regional policy statement become operative.*

The updates to district plans are critical for the successful implementation of the NPS-HPL, as it is the subsequent rule framework that falls out of the NPS-HPL and RPS direction that will ultimately have the greatest impact on protecting HPL for land-based primary production and achieving the NPS-HPL objective. The following sections contain guidance as to the sorts of provisions that could be inserted into district plans to give effect to the NPS-HPL with respect to subdivision and land use.

Subdivision of HPL

The key provisions to look at when drafting subdivision provisions to give effect to the NPS-HPL are Policy 7 and Clause 3.8. Policy 7 is clear that the subdivision of HPL must be avoided, except as provided in the NPS-HPL. This means that district plan subdivision provisions must only allow for the subdivision of HPL if it aligns with the direction given in Clause 3.8.

Subdivision objectives and policies

It is expected that subdivision objectives and policies will reflect the direction provided in Policy 7 and Clause 3.8, but not repeat the NPS-HPL wording verbatim, as this does not provide any additional clarity about how the NPS-HPL provisions are being given effect to in the local context of a district. Objective and policy wording will also need to consider the subdivision-policy direction provided in the amended RPS, as (in most cases) amendments to the RPS to introduce both new provisions and mapping will occur in advance of district plan changes to give effect to the NPS-HPL. Where district plan changes are being prepared in advance of RPS changes, territorial authorities should work closely with regional councils in giving effect to the NPS-HPL.

Key principles that any subdivision objectives and policies should cover include:

- direction to "protect" HPL for use in land-based primary production in the objective
- strong 'avoid' direction for subdivision of HPL in Policy 7
- a focus on retaining "overall productive capacity" on all subdivided lots on HPL, in accordance with Clause 3.8(1)(a)
- consideration of whether the subdivision will result in "inappropriate use and development" in terms of subsequent activities that would be enabled by the subdivision, as Policy 8 directs that HPL should be protected from this
- direction that subdivision "avoids if possible or otherwise mitigates" the cumulative loss of HPL in accordance with Clause 3.8(2)(a), including by being explicit in a policy that any further loss of the availability or productive capacity of HPL as a result of subdivision will be an unacceptable outcome
- direction that subdivision "avoids if possible or otherwise mitigates" reverse sensitivity effects that could occur as a result of subdividing HPL in accordance with Policy 9 and Clause 3.8(2)(b)
- consideration of whether any specific policy direction is required to support the subdivision rules and standards (eg, a reference to supporting the amalgamation of existing smaller sized lots or the use of a minimum lot size)
- provision for subdivision on specified Māori land and subdivision for specified infrastructure/defence facilities on HPL in accordance with Clause 3.8(1)(b) and (c).

Subdivision rules and standards

The key direction in Clause 3.8 is that subdivision of HPL can only be provided for if the applicant demonstrates that the proposed lots will retain the "overall productive capacity" of the subject land over the long term (at least 30 years)[30]. Ways that a territorial authority could draft subdivision rules to give effect to this direction include (but are not limited to):

- setting a minimum lot size for the district that is a sufficient size to ensure the land will retain the overall productive capacity. Subdivision in accordance with this minimum lot size could be a controlled, restricted-discretionary or discretionary activity, and anything smaller than this could be a non-complying activity. It is noted that there are difficulties in obtaining objective and credible evidence for reaching a definitive site size at which the productive capacity of land is maintained. Councils may decide to set a minimum lot size that is larger than most existing sites to discourage any further fragmentation of HPL
- having no minimum lot size for subdivision of HPL but making subdivision of HPL a non-complying activity (in line with the 'avoid' direction in Policy 7). The non-complying activity status means that applicants would need to meet the tests of 104D of the RMA. Applicants will need to demonstrate that their proposal will have less than minor effects with respect to impacting the productive capacity of the HPL and not be contrary to the objectives and policies that were introduced to give effect to the NPS-HPL. Objectives and policies should be drafted so as to provide sufficient clarity on when applications to subdivide HPL should be declined. Subdivisions such as small-scale boundary adjustments to allow for minor rearrangements of lots could have a more permissive activity status than other subdivisions (ie, controlled or restricted discretionary).

There are pros and cons to each of these two approaches. Justification of the approach, any thresholds and rationale for activity status will need to be supported by robust evidence and analysis. It will be necessary to undertake some analysis of the HPL resource in the district/region, and of opportunities and constraints for using that land for land-based primary production, including an analysis of the existing subdivision pattern and physical characteristics of the HPL (see Productive capacity), that is:

- Is there capacity for more subdivision of HPL within the district whilst maintaining the overall productive capacity of HPL land in the district?
- Are lot sizes on HPL within the district already uneconomic in terms of supporting land-based primary production activities and should amalgamation or leasing arrangements be incentivised?

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[30] *3.8 Avoiding subdivision of highly productive land*

(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:

(b) the subdivision is on specified Māori land:

(c) the subdivision is for specified infrastructure, or for defence facilities operated by the New Zealand Defence Force to meet its obligations under the Defence Act 1990, and there is a functional or operational need for the subdivision.

(2) Territorial authorities must take measures to ensure that any subdivision of highly productive land:

(a) avoids if possible, or otherwise mitigates, any potential cumulative loss of the availability and productive capacity of highly productive land in their district; and

(b) avoids if possible, or otherwise mitigates, any actual or potential reverse sensitivity effects on surrounding land-based primary production activities.

Territorial authorities may consider including information requirements for applicants that set out the evidence expectations for demonstrating the retention of "overall productive capacity" of the HPL. Information that could be provided to support an argument that the overall productive capacity of lots is being retained over the long term has been discussed in Productive capacity in Part 1 of this guide.

In the same way as rezoning HPL for rural-lifestyle development is considered to be an inefficient use of a valuable resource, allowing rural-lifestyle subdivisions on HPL is not aligned with the direction in Policy 7 and Clause 3.8 of the NPS-HPL. The direction is to require applicants to demonstrate that the proposed **lots** will retain the overall productive capacity of the subject land over the long term (meaning all lots created by the subdivision, not just the balance lot). Rural-lifestyle-sized lots would generally not align with this direction, however this would depend on the existing configuration of lots and how an applicant was proposing to rearrange them to demonstrate an increase of productive capacity. For example, an applicant may apply to rearrange the boundaries of a number of existing lots to create one large productive-sized lot, but also a number of smaller rural-lifestyle-sized lots.

If the existing configuration of lots could potentially be used for land-based primary production, then rearranging them to create some rural-lifestyle lot(s) would not be appropriate, because land-based primary production activities are already supported on these lots. However, if the existing configuration of lots were already unable to support land-based primary production activities, then it may be appropriate to allow some rural-lifestyle sized lots, so as to create an overall benefit in productive capacity compared to the status quo, provided there was no net increase in the number of lots created and preferably a net loss in the overall number.

Territorial authorities may wish to consider options for enabling the creation of more productive-sized lots and reversing fragmentation, as this would align with the broader objective of the NPS-HPL to protect HPL for use in land-based primary production. Some territorial authorities already use forms of transferable-development-right (TDR) subdivision rules to encourage outcomes such as the protection of indigenous biodiversity, but similar rules could also be used, or may already be in use, to encourage amalgamation of titles on HPL in exchange for development rights in a more suitable location not on HPL. There are other known complications with TDR subdivision rules,[31] so territorial authorities will need to consider whether such an approach would work for their district and/or be supported by the community.

Territorial authorities retain the ability to decide what activity status is most appropriate for their subdivision rules that apply on HPL. As a starting point for discussion, a controlled activity status for subdivisions that are likely to have minimal impacts on the productive capacity of HPL may be appropriate (eg, boundary adjustments, subdivision for specified infrastructure or subdivisions involving lots that can meet a set minimum-lot size that enables the land to be used productively. Any controlled subdivision activity on HPL should have a matter for control relating to maintaining or improving the productive capacity of the land and supporting land-based primary production on HPL.

[31] Known barriers to TDR provisions working successfully include: difficulties with administration and keeping track of where subdivision rights move to; the need to find both a donor and a receiver site; private arrangements between two landowners that can complicate the transfer process; and the availability of a suitable donor zone that can accommodate additional development rights.

For all other subdivisions, particularly in areas, districts or regions where HPL is already highly fragmented, territorial authorities should consider using a more stringent activity status (eg, discretionary or non-complying), combined with strong policy direction aligned with the direction in the NPS-HPL that clearly sets out when subdivision applications should be declined. Having a strict rule framework with respect to subdivision may encourage other arrangements to occur that will improve productive capacity, such as boundary adjustments and leasing arrangements.

Land use on HPL

The key provisions to look at when drafting land-use provisions to give effect to the NPS-HPL are Policy 8 and Clause 3.9. Policy 8 is clear that HPL is to be protected from inappropriate use and development. Clause 3.9 provides direction on how to implement Policy 8, by directing that territorial authorities must avoid the inappropriate use or development of HPL that is not land-based primary production and then setting out the sorts of activities that may be appropriate on HPL.

Table 2 in Part 1 of this guide provides examples of the sorts of activities that may be appropriate on HPL. Territorial authorities can use these examples as a guide when developing objectives, policies and rules to manage activities on HPL. However, when developing any potential rules, the following principles should be considered.

- The direction in Policy 8 and Clause 3.9 is clear that activities that are not land-based primary production should be avoided on HPL, unless they have a pathway under Clause 3.9. When read in conjunction with Policy 4 and Clause 3.12, this directs territorial authorities to:
  - make land-based primary production activities permitted on HPL (or controlled, if there are other factors that require decision makers to reserve the ability to impose consent conditions)
  - require all other activities to go through a more stringent resource-consent process that allows the territorial authority to decline an application, unless the activity is listed in Clause 3.9(2).
- Not all activities listed in Clause 3.9(2) of the NPS-HPL need to be "enabled" on HPL as permitted or controlled activities – the pathway provided under Clause 3.9(2) simply recognises that the activity may not be inappropriate on HPL. For example, rules to encourage and support planting of species that support indigenous biodiversity may have a permitted pathway on HPL, but specified infrastructure may need to go through a consent process. The measures in Clause 3.9(3) to avoid reverse sensitivity effects and minimise the loss of HPL also need to be applied.
- Councils may decide that some activities require parameters around the scale and characteristics of a proposal, if it is to be a permitted or controlled activity. Whether or not an activity needs particular parameters to limit its impact on HPL will depend on the characteristics of the HPL resource or the relevance/significance of the activity to the district/region – refer to table 2 in Part 1 for more guidance on these types of activities.
- It may also be appropriate for activities listed in Clause 3.9(2) to be either restricted discretionary (with relevant matters of discretion) or discretionary on HPL, so that decision makers retain the ability to decline such applications on HPL if the measures in Clause 3.9(3) cannot be met or if there are other project-specific factors that mean the activity is in fact inappropriate on HPL.

Territorial authorities should also consider how to accommodate the balance of primary production activities and rural industries that are not reliant on the soil resource of the land in parts of the district that are not HPL. This may involve looking at provisions in rural zones where there is no mapped HPL and ensuring that they enable a wider range of rural activities and/or considering whether there is sufficient land zoned to accommodate rural industries (such as commercial-scale packhouses and cool stores) off HPL. This could be on rural land, light-industrial land or a special purpose zone catering for rural industry, depending on the needs of the district.

Continuation of existing activities

Policy 8 requires that HPL is protected from inappropriate use and development, however this policy does not override existing use rights for activities in districts where they have been lawfully established. Existing use rights under section 10 of the RMA will continue to apply.

Clause 3.11 gives direction to territorial authorities on how they are required to provide for the continuation of existing activities on HPL through objectives, policies and rules in district plans. The focus of the NPS-HPL is primarily on new activities or rezoning proposals, and on decisions on HPL from 17 October 2022 onwards. The NPS-HPL is not able to be retrospective and amend past decisions on land fragmentation and use of HPL for non-productive purposes. As such, there is recognition in Clause 3.11 that there are activities already established on HPL that would now be considered inappropriate under Clause 3.9.

Clause 3.11(1)(a) states that territorial authorities must include objectives, policies and rules in district plans to "enable the maintenance, operation, or upgrade of any existing activities" on HPL. Territorial authorities have discretion to decide how this will work in their district plan, however potential options include (but are not limited to):

- ensuring that any provisions enabling the maintenance, operation or upgrade of existing activities apply to activities that existed on HPL as at 17 October 2022 (commencement date of the NPS-HPL)
- providing a permitted-activity pathway to maintain, operate or upgrade existing activities on HPL, provided there is no increase in the footprint of the activity and there is no change to the intensity of the activity or the likelihood that the activity will result in reverse sensitivity effects on adjacent land-based primary production activities.
- setting a total maximum area for extending the footprint of an activity (ie, in m^2) on HPL as a controlled, restricted discretionary or discretionary activity, depending on the preference of the territorial authority. This would meet the direction to enable the upgrade of an existing activity, but it would limit the extent of HPL lost and/or give councils the ability to consider whether the loss of HPL has been minimised through the design or location of the extension
- enabling rules tailored to specific scenarios, where the territorial authority anticipates the need for activities to expand (eg, enabling existing intensive indoor primary production, as defined in the National Planning Standards) to respond to changing animal-welfare legislation and practices, including the rebuilding and the expansion of a building's footprint
- provide a controlled, restricted discretionary or discretionary activity status to maintain, operate or upgrade an existing activity, but without setting a specific m^2 area.

Territorial authorities are required by Clause 3.11 to amend provisions in their district plans to give effect to the direction in the clause as soon as practicable, in accordance with the timeframes in Part 4: Timing of the NPS-HPL. It may be appropriate to consider rezoning land that has established uses that are not land-based primary production (refer to Relevance of NPS-HPL for considering rezoning highly productive land), though the NPS-HPL will apply and will need to be considered as part of such any application or decision.

Supporting appropriate productive use of HPL

Policy 4 requires that the use of HPL for land-based primary production is prioritised and supported.

Clause 3.12 directs territorial authorities to support appropriate productive use of HPL through objectives, policies and rules in district plans. The direction is that land-based primary production activities should be prioritised on HPL over other uses. Most district plans will already have provisions that enable primary production activities in their rural environments and discourage other more urban uses, which is largely consistent with Clause 3.12. When Clause 3.12 is read in conjunction with Clause 3.9, it supports a position that a land-based primary production activity on HPL should be prioritised over another rural activity that is not reliant on the soil resource of the land and that non-land-based primary production activities should be redirected to another non-HPL location in the rural environment. Policy 4 and Clause 3.9 do not negate the need to consider other relevant national direction, and how intensively land is used for land-based primary production must be considered alongside the actual and potential effects of this use on freshwater and other environmental limits.

Managing reverse sensitivity and cumulative effects

Policy 9 requires that reverse sensitivity effects are managed so as not to constrain land-based primary production activities on HPL. It is anticipated that most district plans will already contain both policy direction and rules that manage reverse sensitivity effects in rural zones.

In addition to avoiding reverse sensitivity effects, Clause 3.13[32] also requires that territorial authorities include objectives, policies and rules in their district plans to ensure that the cumulative effects of any subdivision, use or development on the availability and productive capacity of HPL in their district are considered as part of any subdivision, land use or plan change application.

In terms of how this direction should be translated into district plan provisions, Clause 3.13(1)(a) states that district plan objectives, policies and rules should "identify typical activities and effects associated with land-based primary production on highly productive land

[32] ***3.13 Managing reverse sensitivity and cumulative effects***

(1) Territorial authorities must include objectives, policies, and rules in their district plans that:

(a) identify typical activities and effects associated with land-based primary production on highly productive land that should be anticipated and tolerated in a productive rural environment; and

(b) require the avoidance if possible, or otherwise the mitigation, of any potential reverse sensitivity effects from urban rezoning or rural lifestyle development that could affect land-based primary production on highly productive land (where mitigation might involve, for instance, the use of setbacks and buffers); and

(c) require consideration of the cumulative effects of any subdivision, use, or development on the availability and productive capacity of highly productive land in their district.

that should be anticipated and tolerated in a productive rural environment". This is anticipated to typically translate into a permitted-activity-rule regime for land-based primary production activities on HPL, supported by a policy framework that specifically identifies effects generated by land-based primary production activities that should be anticipated and tolerated (eg, noise, dust, odour, crop spraying, traffic movements).

For district plans that already contain policy direction relating to reverse sensitivity effects and/or cumulative effects on HPL, Clause 3.13 may not require any further amendments to provisions (although the section 32 report will need to justify how the existing provisions give effect to Clause 3.13). For district plans that do not currently contain policy direction relating to reverse sensitivity effects and/or cumulative effects on HPL, new clauses that align with the direction in Clause 3.13 will need to be introduced. This is anticipated to be in the form of policy direction on reverse sensitivity and cumulative effects, aligned with the wording in Clause 3.13(1)(b) and (c), and then matters of control/discretion for potentially sensitive activities that allows for consideration of reverse sensitivity and cumulative effects. Another potential option is to consider the use of buffer areas or setbacks around the edges of HPL, where a more stringent activity status applies to new sensitive activities, with the aim of directing these sensitive activities to alternative locations further away from areas of HPL.

Amendments to regional plans

It is not anticipated that extensive changes to regional plans will be necessary, but regional plan changes will still need to give effect to the NPS-HPL to the extent relevant.

It may be necessary for regional councils to amend their regional plans to give effect to the NPS-HPL (where consistent with the function of regional councils under section 30 of the RMA), particularly in regions where HPL may be regionally or nationally significant. The NPS-HPL does not contain specific direction to amend regional plans to give effect to the NPS-HPL and some regional councils may review their existing regional plan provisions and decide that amendments are not required. However, regional councils are required to change their regional plans in accordance with a national policy statement under section 66(1)(ea) of the RMA and are required to give effect to a national policy statement under section 67(3)(a) of the RMA.

Parts of regional plans in which the impacts of using HPL for land-based primary production may need to be considered include:

- establishing, implementing and reviewing objectives, policies and methods to achieve integrated management of the natural and physical resources of the region. Although this is typically the role of the RPS, consequential changes may also be required to regional plan provisions to align with the RPS direction in this area
- preparing objectives and policies in relation to any actual or potential effects of the use, development or protection of land which has regional significance
- controlling the use of land for the purpose of soil conservation
- controlling the taking, use, damming and diversion of water.

The NPS-HPL may impact regional plan changes relating to the setting of nutrient limits under the NPS-FM. The distribution of water and nutrient allocations may need to be amended to support the use of HPL for land-based primary production or discussions may need to be had with territorial authorities as to the impact that enabling land-based primary production in a particular catchment may have on water quality. For example, greater nutrient reductions may

be needed on non-HPL rural land than on HPL, to continue to enable that HPL to be used for land-based primary production. This enables ongoing use and redistributes nutrient allocations in the catchment to achieve this. It is also worth considering if there are any areas where the regional plan and district plan can align, for example, where a wastewater consent is needed for an activity that is a supporting activity on HPL.

Glossary

Term	Description
FDS	Future Development Strategy
HBA	Housing and Business Development Capacity Assessment
HPL	Highly productive land
LUC	Land Use Capability
MDRS	Medium Density Residential Standards
NES-F	National Environmental Standards for Freshwater 2020
NPS-FM	National Policy Statement for Freshwater Management 2020
NPS-HPL	National Policy Statement for Highly Productive Land 2022
NPS-UD	National Policy Statement for Urban Development 2020
RMA	Resource Management Act 1991
RPS/RPSs	regional policy statement/regional policy statements

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SOIL MANAGEMENT PLAN
FOR 134 PEACH ISLAND ROAD, MOTUEKA

Contents

Prepared for: C J Industries Limited ('the Applicant')

Prepared by: Dr Reece Hill - BeatsonHill Ltd *trading as* Landsystems.

Report version: 24 April March 2023

Suggested citation:

Hill, RB. 2023. Soil Management Plan for 134 Peach Island Road, Motueka. Contract report for C J Industries Limited. Landsystems, Hamilton.

SUMMARY

A site covering approximately 13.5 hectares (134 Peach Island Road, Motueka) will be used for gravel extraction over a period of 15 years. The gravel extraction area will be reinstated with clean fill from off-site sources before the original subsoil and topsoil from the site is replaced. This Soil Management Plan provides the requirements for the removal of topsoil from the gravel extraction area, methods for topsoil storage, methods for backfilling of the gravel extraction pit, placement of the topsoil, vegetation rehabilitation requirements following rehabilitation, and soil monitoring.

INTRODUCTION

CONSENT APPLICATION BACKGROUND

C J Industries Limited ('the Applicant') seeks resource consent from the Tasman District Council ('the consent authority') to authorise the extraction of gravel deposition of clean fill and reinstatement of quarried land as well as the establishment of amenity planting, on-site health and safety signage, and access on an unformed legal road and marginal strip ('the proposal') at 134 Peach Island Road, Motueka ('the site'). The Peach Island Road site is shown in **Figure 1**.

Figure 1. Peach Island Road site, 134 Peach Island Road, Motueka.

It is important to ensure that the soil resource will be protected through the extraction and restoration process.

A Soil Management Plan has been requested by the Applicant for land use consent RM200488 for gravel extraction and associated site rehabilitation at 134 Peach Island Road, Motueka. The Soil Management Plan (once certified by Council) will provide the basis for Standard Operating Procedures (SOPs) for specific activities.

OVERVIEW OF PROPOSED ACTIVITIES

The Applicant proposes to undertake gravel extraction on the property in three stages, within an area of approximately 73,500 m^2 (~7.4 ha), and over a 15 year period (**Figure 2**).

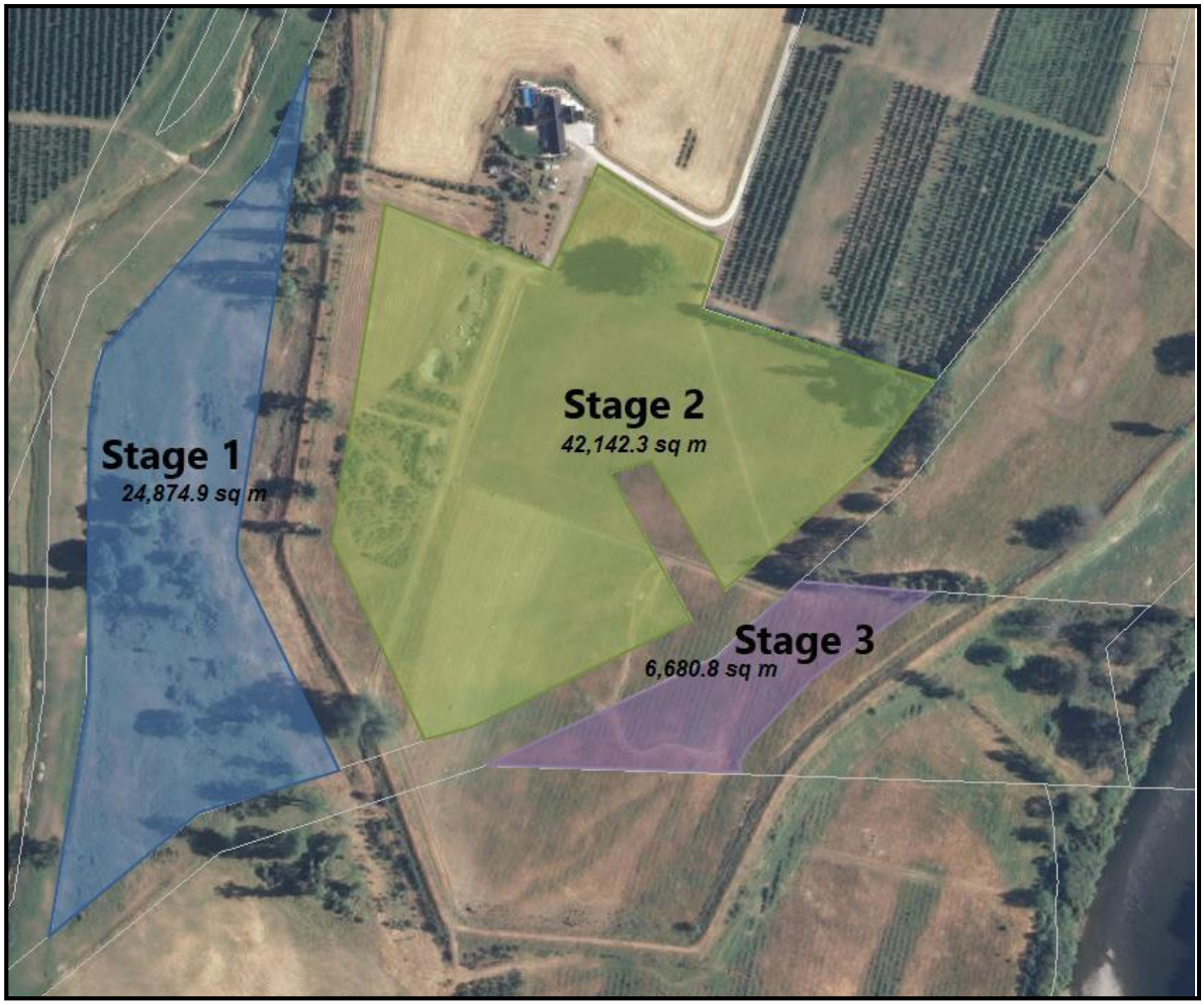

Figure 2. Proposed gravel extraction staging for the Peach Island Road site (from the Application for Resource Consent – Planscapes, 2020).

No processing or crushing of gravel will occur on site.

Test pit excavations on the site indicate that on average, the gravel surface is between 0.5 m to 1 m below ground surface and up to 5 m of gravel was encountered before reaching groundwater. No excavation will occur below the groundwater level at the time of extraction. In addition:

- No excavation will occur within 20 m of stop banks, on the Motueka River side of the stop bank within Lot 2 DP 2357, nor within the land surrounding the dwelling and sheds.
- Any excavation which approaches property boundaries will have a batter of material which will remain unexcavated.

- Gravel will be extracted progressively in an upstream direction starting at the downstream end of the property, and all excavation will occur in strips (20 m wide x 80 m long) which are aligned parallel to the general direction of flood flow.

Topsoil will be removed from extraction area for the day, this will be stockpiled. Aggregates will then be extracted and carted from the site using an excavator and 30-ton dump trucks.

The material will be stockpiled in an area behind the stop bank. The base of the stockpile will be 1 metre below ground level. As the truck returns to the extraction site from the stockpile, it will bring clean fill with it to be used for reinstatement of the extraction site. At the end of each day, clean fill will replace extracted material so that by the end of each day the pit size will be no greater than 1600m^2 (i.e. 20 m x 80 m), though shape may vary from time to time. In this way the extraction site will move daily.

Backfilling will be undertaken at every possible opportunity even when no new excavation is occurring. Clean fill material will be clean and substantially inorganic.

The ground will be reinstated to the original levels as far as practicable and the finished ground levels will not result in the obstruction or deflection of flood flows.

SOILS AND LAND USE CAPABILITY OF THE SITE

The following information about the site's soil and LUC is included to prove a baseline record which is relevant to the soil restoration measures set out in this Management Plan.

A soil and LUC survey was undertaken by LandVision (LandVision, 2021)[1] on Peach Island Road, Motueka at 1:6000 scale for the purpose of consenting for gravel extraction[2]. The total area mapped was 9.98 ha.

To add certainty to the survey, an EM (electromagnetic) sensor was run over the survey area sampling about 2000 points per hectare at two depths (1.5 m and 0.5 m). The results from this were used to determine where soil pits or auger holes were investigated.

The LandVision report identified six dominant soil types on the property. The soils were all formed from alluvium derived from greywacke sands, gravels and finer material. Some soil types were more dominant than others and some were derivatives of others (**Figure 3**), varying only in depth of fine soil matrix over gravel, dominance of sandy versus silt textures and soil drainage. No soil series or Smap sibling names were assigned to these soils. However, based on the available regional scale soil map information, they are likely to be Riwaka soil variants. Note that the soils identified have been allocated numbers for reference (1-6; Br indicates bedrock) rather than soil type names. These numbers do not have any reference to LUC classes.

[1] LandVision. 2021. Peach Island LUC & Soil Survey, Peach Island Road Motueka Valley. Prepared for CJ Industries.

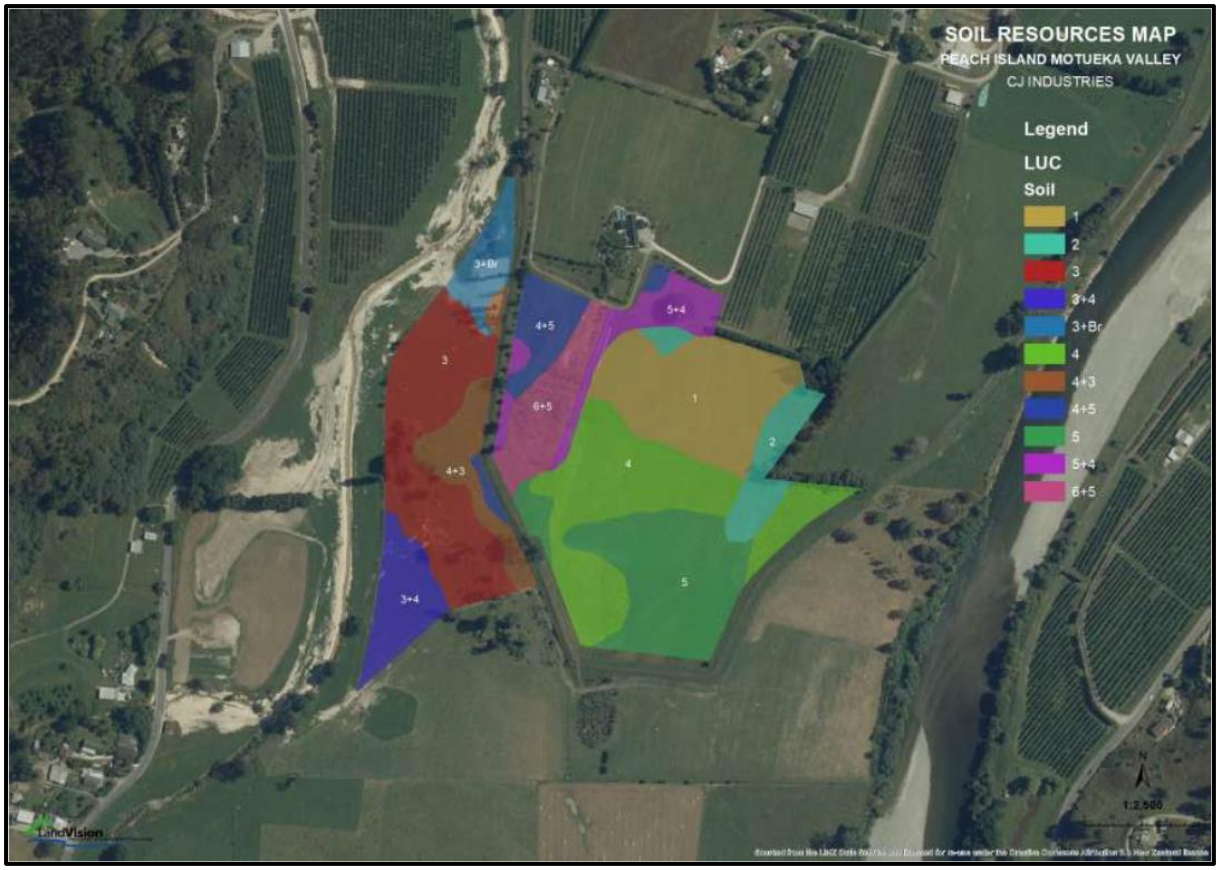

Figure 3. Soil map units for the Peach Island Road site based on the property scale soil assessment undertaken by LandVision (2021).

For this survey, slope, erosion and vegetation were considered consistent across the site and were not assessed[3]. In total there were six different LUC units present ranging from LUC class 3 to LUC class LUC 6 land. Based on the LandVision report, 36% is LUC 3 land, 23% LUC 4 land, 15% LUC 5 land, and the remaining area is LUC 6 land. The area of the assessment extended beyond the Stage 1, Stage2 and Stage 3 areas.

A map showing the distribution of LUC units based on the 1:6000 scale soil map and in relation to the staged excavation areas is provided in **Figure 4**.

[3] LandVision. 2021. Peach Island LUC & Soil Survey, Peach Island Road Motueka Valley, CJ Industries.

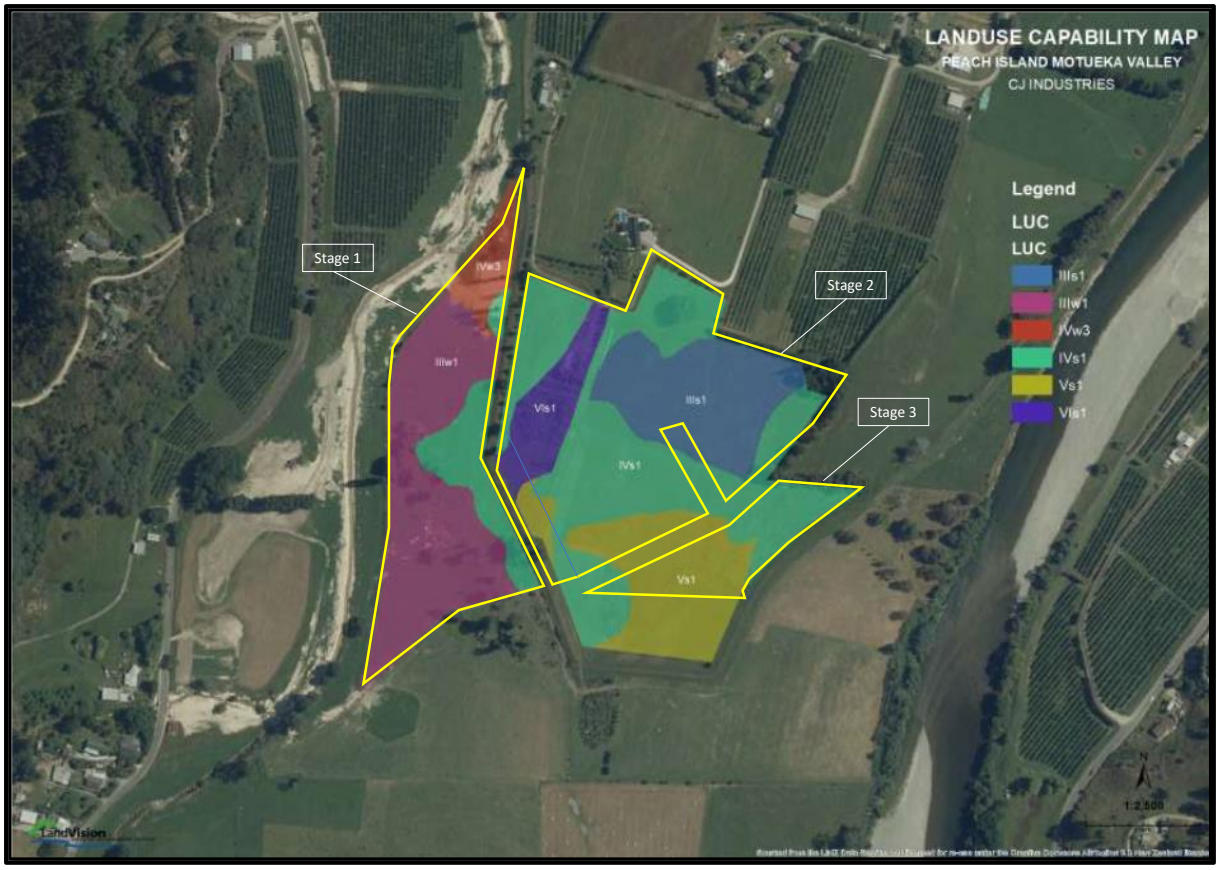

Figure 4. Property scale (1:6000 scale) LUC map for the Peach Island Road site.

Based on the LUC map provided in **Figure 4**, the distribution of LUC units across the proposed gravel extraction stages (Stage 1, Stage 2 and Stage 3) is summarised as follows:

- Stage 1 – Predominantly 3w1, with lesser sized areas of 4s1and 4w1.
- Stage 2 – Predominantly 4s1 and 3s1 with lesser sized areas of 6s1 and 5s1.
- Stage 3 – Similar sized areas of 4s1 and 5s1.

Table 1 provides a summary of the LUC units mapped for the site, the soils within each LUC unit and the limitations for each map unit.

Table 1. Summary of the LUC units and limitations mapped for the site (from LandVision, 2021)

LUC unit	Description	Soil parent material	Soil map units	Comments
3w1	Flat to undulating floodplains and low terraces with moderately deep sandy loam to clay loam soils. Depth to low chroma colours and mottling is >45 cm. Moderately high water table for part of the year.	Finer alluvium and alluvial sands.	3, 3+4	The soils are moderately developed finer materials with good structure. The soils have a moderate wetness (w) limitation during winter and spring and are prone to pugging.
3s1	Flat to undulating floodplains with shallow[4] (30-45 cm) and stony silt loam or sandy loam textures.	Alluvial sands over gravels.	1	Well drained soils with gravels below the plough layer. Weakly developed structure that will not handle repeated cultivation. Prone to wind (sheet) erosion if cultivated. Moderate soil (s) limitations for arable use.
4w3	Flat to undulating floodplains and low terraces with moderately deep sandy loam to clay loam soils. Depth to low chroma colours and mottling is <45 cm. Moderately high water table for part of the year.	Finer alluvium and alluvial sands.	3+Br	Similar to 3w1 but more prone to flooding and deposition. Prone to pugging when wet. Severe wetness (w) limitation.
4s1	Flat to undulating floodplains, low terraces and fans with shallow[5] (15-30 cm) stony silt loam to sandy loam soils.	Alluvial gravels.	2, 4, 4+3, 4+5	The shallow depth to gravels and stones is a severe soil (s) limitation for arable use. The very weakly developed topsoil not suited to repeat cultivation and prone to wind (sheet) erosion if cultivated.
5s1	Flat to gently rolling floodplains and fans with very shallow[6] silt loam to sandy loam textured soils with surface boulders.	Alluvial gravels.	5	Low natural fertility and prone to drying out in summer months. Reasonably resistant to pugging but near surface gravels makes them unsuitable for cultivation. Severe soil (s) limitation.
6s1	Flat to gently rolling floodplains and fans with very shallow[7] silt loam to sandy loam textured soils with surface boulders.	Alluvial gravels and boulders.	6, 6+5	Surface boulders inhibit cultivation.

[4] Newsome PFJ, R H Wilde RH, Willoughby EJ. 2008. Land Resource Information System Spatial Data Layers Data Dictionary. Landcare Research New Zealand Ltd, Palmerston North.

[5] Newsome PFJ, R H Wilde RH, Willoughby EJ. 2008. Land Resource Information System Spatial Data Layers Data Dictionary. Landcare Research New Zealand Ltd, Palmerston North.

[6] Newsome PFJ, R H Wilde RH, Willoughby EJ. 2008. Land Resource Information System Spatial Data Layers Data Dictionary. Landcare Research New Zealand Ltd, Palmerston North.

[7] Newsome PFJ, R H Wilde RH, Willoughby EJ. 2008. Land Resource Information System Spatial Data Layers Data Dictionary. Landcare Research New Zealand Ltd, Palmerston North.

SOIL MANAGEMENT PLAN

PURPOSE

The purpose of the Soil Management Plan is to:

a) Ensure that the removal, management and placement of soil avoids or minimises impacts on the soil properties prior to and following placement, and that the re-established soil retains or exceeds the soil versatility of the original soil on the site, and
b) minimise potential for soil loss to water.

KEY CONCEPTS FOR RESTORATION

Key to the effective reestablishment of the soil on the gravel extraction site are careful pre-planning, adherence to the guidance provided in the Soil Management Plan, and the training of all staff involved.

The main on-ground factors that achieve successful land restoration and retain productive value of the land are preparation of the existing surface to ensure it has the appropriate contour, and careful removal storage and placement of the fill and soil material so they are not degraded or compacted.

Much of the guidance for these activities is provided by the publication *Bulk soil handling for quarry restoration* (Ramsey, 1986)[8].

The reinstated soil, will ideally have a topsoil depth of 150 mm and a total soil profile depth of 800 mm with no significant barriers to plant roots, provided the soil materials used are stone free. If this is achieved, and slopes are less than five degrees, then the land will be LUC class 2 with slight limitations to arable use (Lynn et al., 2009)[9].

Pasture is the best vegetation for preparing the soil for cropping and horticulture. The fine roots of pasture create soil structure and grow into the new subsoil to coat cracks and pores. Generally, after three years in pasture and with careful stock management to avoid compaction, the new soil is suitable for cropping and horticulture.

BASELINE MONITORING

To allow comparative assessment of the soil quality of the re-established soil following extraction, baseline sampling and analysis of the original soils in the Stage 1, Stage 2 and Stage 3 areas must be undertaken by a suitably qualified and experienced person prior to extraction occurring. Additionally, sampling of a control site in an adjoining undisturbed site (on a similar original soil) is required to be undertaken by a suitably qualified and experienced person. This is to differentiate between the effects of contemporary land use management and effects associated with the reestablishment of the soil.

Details of baseline and control monitoring requirements are set out below in the Soil Monitoring section.

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[8] Ramsay WJH. 1986. Bulk soil handling for quarry restoration. Soil and land use management Volume 2, No. 1. Pp30-39.

[9] 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 3rd ed. Hamilton, AgResearch; Lincoln, Landcare Research; Lower Hutt, GNS Science. 163p.

GRAVEL EXTRACTION STAGING

The gravel extraction will occur in three stages over a period of up to 15 years with removal of topsoil and overburden undertaken incrementally. Staging the gravel extraction reduces the short term loss of productive land on the site and reduces the volume of soil requiring stockpiling and the time the soil is stockpiled. This in turn reduces the potential for soil degradation and soil loss (by overland flow runoff or wind).

Within Stage 1, additional measures are required to minimise potential for sediment loss as a result of flooding while a pit is active. These additional measures are:

- Stage 1 is to be quarried in 3 tranches, with a maximum of one third of the Stage 1 area to be actively quarried or being remediated at any time. Subsequent tranches within Stage 1 shall only commence when the previous tranche has been rehabilitated to the point that a vegetated cover is established.
- Stage 1 quarrying and placement of cleanfill, subsoil and soil is only to take place during the months of October to March, in order to ensure a vegetated cover is established before winter.

SOIL REMOVAL AND PLACEMENT

Before any soil removal (also referred to as lifting or stripping) activities are carried out all existing vegetation must be killed and/or removed. This will avoid green vegetative materials being incorporated into the replaced soil at the site.

All soil material must be removed from all affected land prior to the commencement of any trafficking of the area and stockpiled in a secure predesignated area.

The handling of the topsoil and subsoil material may only be undertaken in “dry” soil condition to avoid soil compaction. Compaction restricts root growth and drainage and is the main risk to being able to return the soil to a usable condition. A useful field method of deciding whether a soil is sufficiently “dry” to be moved safely is the spade test: plasticity is determined by hand-rolling a sample from the relevant horizon on the back of a spade to see if a thread of 3 mm diameter can be formed without crumbling. If a thread can be formed the soil is too wet for working (Ramsay, 1986). Light irrigation for dust suppression purposes does not render topsoil too wet for placement.

Topsoil and subsoil must be handled and placed separately.

Topsoil may only be removed using an excavator and extreme care must be taken to avoid shearing and compressive force on the soil (i.e. the inherent structure of the topsoil will be maintained as much as possible). This is best achieved by only removing soil when the soil is in a dry condition with single continuous bucket movements.

Light track-driven machinery (e.g. tracked excavators and dozers) or flotation tyred machines must be used for the soil removal and placement to avoid the considerable compaction and shearing of soil by large heavy rubber tyred machines (this does not preclude the use of cropping machinery, as long as any machinery does not have a detrimental compacting effect on the soil).

All areas that are not being actively quarried will be maintained in vegetation.

SOIL STORAGE

All trees and vegetation including large root systems, old fences, rock, debris, and all obstructions of whatever kind, whether natural or artificial, encountered within the area of the works must be removed and disposed of in an appropriate approved manner.

Appropriate sediment control measures are required to prevent the discharge of soil into watercourses, or onto, or through downstream properties. Existing sediment traps may be useful, but additional sediment capture ponds or barriers must be installed if required during removal, placement, and following placement at the property until vegetation is established.

A designated centralised storage area on the landward side of the stop bank must be used for stockpiling soil. Use of a centralised storage area will ensure the potential for soil loss to water from the stockpiled soil is well managed and minimised. No stockpiling of soil will occur outside the landward side of the of the stop bank, other than topsoil that will be used in that day's rehabilitation. Some topsoil may be used for establishing vegetation cover only on a noise bund if required.

Topsoil and subsoil must be stockpiled separately.

Soil stockpiles must be protected from compaction, degradation and soil loss (to water).

No machinery is permitted on the soil stockpiles.

Stockpiles must not exceed three metres in height and must be kept for as short a period as possible to minimise loss of soil structure. Depending on the machinery used to deposit the soil, stockpiles of less than three metres may practically be required, to ensure machinery does not drive on or over the stockpiles.

Soil stockpiling provisions are required to be included in pre-planning and scheduling to (as much is as practicable) minimise the time topsoil is stockpiled.

For any soil stockpiles stored for greater than one month, the stockpile must be covered or vegetated with grass to reduce soil damage and loss caused by rain.

TRANSPORT

For transport of topsoil and other soil material, the main consideration is the degradation of soil aggregates caused by the vibration during transport. Given the size of the site, the degradation of soil aggregates caused by the vibration is considered a low risk. Reducing the transport distances and vehicle speed on site will reduce any potential for degradation of soil aggregates. This will be achieved using a centralised designated storage area to minimise transport distances on site and restricting vehicle speed on site to 15 km/hour.

It is likely that topsoil will be brought onto the site from offsite sources. Should topsoil be brought from off-site, it is not practicable (because of open road speed limits) or necessary (because vibration is considered a low risk) to transport topsoil from offsite sources at less than 15 km/hour.

PREPARATION OF THE RECEIVING SURFACE

The receiving soil surface must be cultivated to provide as even surface as is possible. Light track-driven machinery (e.g. tracked excavators and dozers) or flotation tyred machinery must be used to prepare the receiving surface to minimise soil compaction.

Cultivation must avoid creating concentrated areas of compaction (e.g. wheel track lines up and down the slope) and must minimise the number of passes over the site.

Where possible, cultivation and levelling of the soil surface will be along the contour.

SUBSOIL PROPERTIES

The following applies to subsoil:

The replaced subsoil (B and C horizons) shall be of a depth that ensures that a minimum total soil profile depth (including topsoil (A horizon) and subsoil (B and C horizons) of 800 mm is achieved, and that the subsoil comprises predominantly fine matrix soil materials, free of rocks and other coarse materials.

The following properties are required for the subsoil material:

- Where subsoil is brought onto the site from an offsite source, it must meet the clean fill requirements of the Groundwater and Clean Fill Management Plan, except that it may include a higher percentage of fine organic materials and it must not contain rocks.
- The subsoil material must not have soil drainage characteristics that indicate that the subsoil was sourced from a soil with poor drainage[10].
- Coarse organic materials (e.g. branches) are not permitted in the subsoil material.
- The subsoil may contain clay, silt and sand textured soil materials. Where practicable, sand and silt rich subsoil materials should be used in preference to clay texture-dominated soil materials.
- The subsoil material can include up to 35% by volume of gravels (moderately gravelly)[11] of 6-20 mm diameter[12] with fine soil matrix materials.
- Subsoil removed from the extraction site and stockpiled can be used.

TOPSOIL PROPERTIES

The following applies to topsoil:

The replaced topsoil (A horizon) shall be of a depth that ensures a minimum thickness of 150 mm across the whole Site. This is to ensure the final re-established soil profile has a topsoil that has organic matter, nutrients and fine matrix soil materials similar to the original soil profile.

The following properties are required for the topsoil material:

- Topsoil removed from the extraction site and stockpiled will be used in preference to topsoil sourced offsite.
- Other clean topsoil sourced offsite can be used if it meets the following requirements:
    - it must meet the clean fill requirements of the Groundwater and Clean Fill Management Plan, except:
        - The exclusion of topsoil in the GCMP does not apply.
        - The topsoil may include up to 10% (by volume) of fully decomposed organic material, provided it is thoroughly mixed with the other soil material.
    - Coarse organic materials (e.g. branches) are not permitted in the topsoil.
    - The topsoil material cannot contain rocks.

[10] As defined by Milne JDG, Clayden B, Singleton PL, Wilson AD. 1995. Soil Description Handbook. Lincoln, New Zealand, Manaaki Whenua Press. 157p. (p46).

[11] Milne JDG, Clayden B, Singleton PL, Wilson AD. 1995. Soil Description Handbook. Lincoln, New Zealand, Manaaki Whenua Press. 157p. (p46).

[12] Milne JDG, Clayden B, Singleton PL, Wilson AD. 1995. Soil Description Handbook. Lincoln, New Zealand, Manaaki Whenua Press. 157p. (p45).

- The topsoil material can include up to 5% (by volume) of gravels (slightly gravelly) with fine soil matrix materials.

SOIL PLACEMENT

Soil placement is the single most important operation in the restoration process. The soil must be placed under optimal conditions to specified depths on a platform graded to design levels.

The platform design determines the future landform and must consider materials available, groundwater levels, erosion hazard, slope criteria for restored land use, aspect, microclimate, aesthetics, and most importantly, drainage (Ramsay, 1986). Final slopes of five or less degrees are considered optimal for cropping and horticultural purposes.

Once the shape of the existing land surface has been attained, the soil materials must be placed using light track-driven machinery or flotation tyred machinery.

Between the placed subsoil and topsoil, the surface must be ripped along the contour (if any) or otherwise treated to reduce any subsurface compaction and eliminate slippage surfaces and root restricting or water perching layers. Sharp interfaces between texturally contrasting materials must be avoided.

Vehicular traffic and soil handling must be kept to a minimum and all soil compaction must be rectified by appropriate tillage/ripping treatments prior to establishment of a plant cover. Special care is required to avoid continually using the same vehicle tracks when redistributing the soil materials, or if this is not possible then the excessively tracked areas must be ripped.

The topsoil material must be distributed in such a way as to achieve an approximately uniform stable thickness over the whole area.

Any exposed soil surfaces require protection from wind erosion. Light surface wetting of the soil topsoil via irrigation is an acceptable method. All areas that are not being actively quarried will be maintained in vegetation.

The site is to be progressively stabilised i.e. each active stage must be remediated prior to excavation commencing on the next stage.

OVERVIEW OF RESTORED SOIL

The objective of restoration is for the restored soil to reach the following outcomes:

i. A minimum of 800 mm[13] of soil material (excluding clean fill)" with little or no limitations to root penetration.
ii. Soil strength to be such that there is no serious limitation to cultivation and movement of machinery, i.e. no visually obvious contrasting compacted layers within the restored soil profile, especially between the subsoil and the topsoil, and no visually obvious compaction within the upper 150 mm of topsoil.
iii. Soil drainage of the reinstated soil in the Stage 2 and Stage 3 areas be at least moderately well or well drained.
iv. Soil drainage of the reinstated soil in the Stage 1 area be at least imperfectly drained, preferably moderately well or well drained where the inherent soil drainage characteristics of the land allow.

Figure 5 and **Figure 6** indicate the placement sequence to achieve the above conditions.

[13] TRMP requirement d).

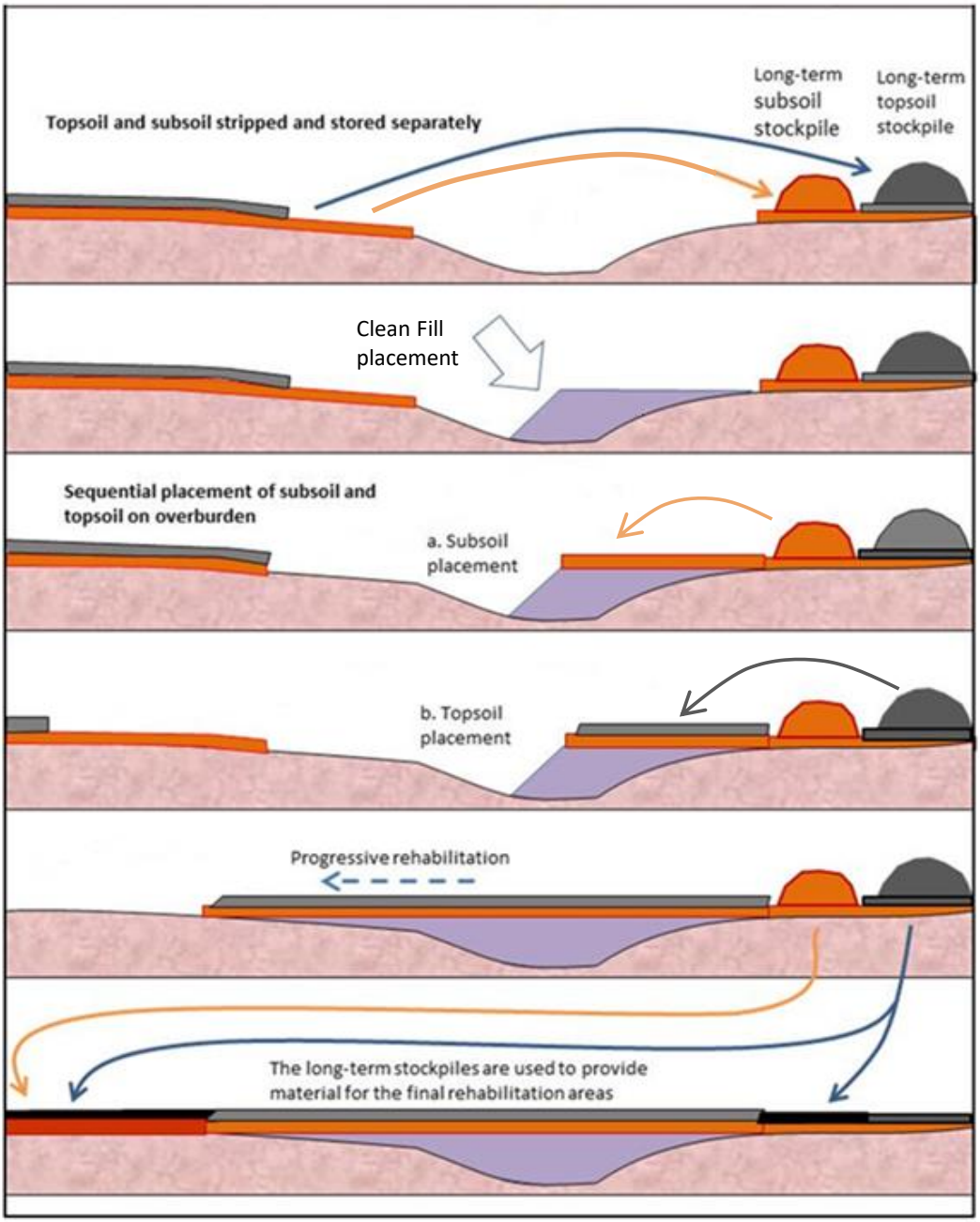

Figure 5. Sequence of topsoil and subsoil removal and replacement on clean fill.

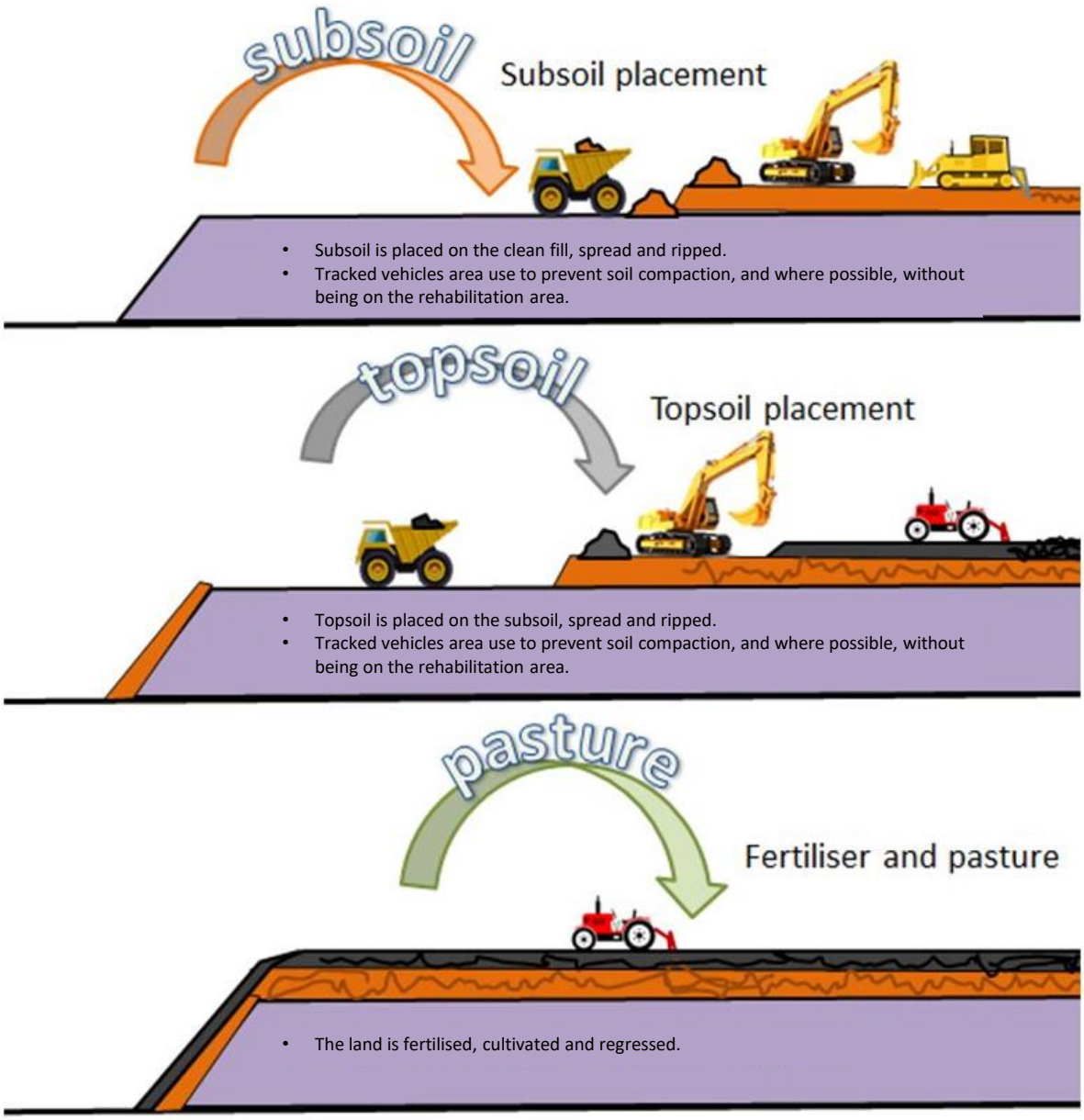

Figure 6. Sequence of soil replacement and preparation.

REHABILITATION AFTER PLACEMENT

INTRODUCTION

The primary purpose of rehabilitation (soil condition reinstatement) is to:

- Maximise favourable environmental conditions for plant growth and hasten revegetation processes by managing those factors that are able to be controlled. This also involves, monitoring results of progress, and where necessary, progressively adapting activities to improve results.
- Ensure that the life supporting capacity of the soil is retained following extraction activities, in a way that retains the range of potential land uses provided by land with high productive value as defined by the TRMP.
- Minimise post-placement soil compaction of the reinstated soil.
- Minimise exposed areas (bare soil areas) and achieve soil stabilisation as soon as is practical after soil placement.
- Mitigate surface depressions resulting from fill and soil settling which show by way of surface ponding.

REVEGETATION AND SOIL STRUCTURE

After soil replacement is completed, and except for the purpose of remediating post-placement surface depressions, no machinery used for gravel extraction, and clean fill or soil removal and placement activities, should be allowed to travel over the restored soil surface to minimise compaction.

Following the placement of the new soil profile, the consent holder must obtain advice from a qualified agronomist on fertiliser application and other soil treatments, as determined by soil test, to encourage effective re-vegetation. Suitable pasture species for the local conditions must be selected.

Pasture is the best vegetation for restoring the soils to a condition suitable for intensive land uses such as cropping and horticulture. Pasture roots help create soil structure and penetrate the subsoil. This helps ensure the cracks needed for drainage and air supply in the soil are kept open.

Re-vegetation to pasture must be undertaken as soon as practicable after topsoil placement. This will minimise possible deterioration of soil structure and development of erosion problems on bare cultivated soils. Ideally, and weather permitting, seeding should occur within two weeks following topsoil placement. On any cut-bank batters the use of mulches or hydro-seeding may be necessary to control erosion, promote germination of seeds and increase the moisture retention capacity of the soil.

LAND USE

To encourage the rapid recovery of the soil structure, stocking rates must be kept to a minimum for at least three years with only light weight stock such as yearling cattle and sheep being allowed on the pastures. This helps prevent recompacting the soil. Deer, bulls and pigs are not allowed under any circumstances during the recovery period. The number of grazing animals must be strictly controlled during wet periods, with total withdrawal of stock if the soils are wet (at field

capacity[14]), and a management system which promotes grass harvesting (hay and/or silage) over the initial years is to be encouraged. Cultivation must be avoided for at least three years to facilitate recovery of soil structure and allow the stabilisation and development of soil aggregates. Any repairs to pasture must be made by under-sowing techniques rather than recultivation.

REMEDIATION OF SURFACE DEPRESSIONS

All remediated areas must be assessed annually for up to five years to identify obvious surface depressions.

Remediation of obvious surface depressions, which show by way of surface ponding, must be undertaken annually for up to five years following reinstatement, to allow for full settling of the reinstated clean fill and soil.

Areas of obviously impeded drainage, which show by way of surface ponding, must be examined to establish if any moisture restricting layer exists and appropriate ripping or subsurface aeration undertaken to shatter such compacted layers. If such ripping is unsuccessful then drainage will need to be considered.

Mitigation of obvious surface depressions must occur by filling depressions with additional topsoil and surface levelling using a laser level or similar, to ensure the surface contour is level and the surface depression removed.

Re-vegetation to pasture must be undertaken as soon as practicable after topsoil placement.

MEASURES FOR MINIMISING RISK OF SOIL LOSS TO WATER

Soil management related potential for soil loss to water is associated with soil storage, transport, preparation of the receiving surface, soil placement, and post placement management. Relevant measures for reducing soil loss to water from the Soil Management Plan are summarised in **Table 2**.

[14] Field capacity is the amount of soil moisture or water content held in soil after excess water has drained away and the rate of downward movement has materially decreased, which usually takes place within 2–3 days after a rain.

Table 2. Summary of Soil Management Plan measures relevant to soil loss to water.

Section in Soil Management Plan
Soil storage
Soil stockpiles (other than topsoil that will be used in that day's rehabilitation) must be located on the landward side of the stop bank to increase protection from flooding (and soil loss to water).
A centralised storage area must be designated and used for soil stockpiles to ensure the potential for soil loss to water is well managed.
Placement of sediment control measures. Existing sediment traps may be useful, but additional sediment capture ponds or barriers may be required during removal, placement, and following placement at the property until vegetation is established.
Stockpiles must not exceed three metres in height and must be kept for as short a period as possible.
No driving of machinery is permitted on the soil stockpiles.
For soil stockpiles stored for greater than one month, the stockpiles must be covered or vegetated with grass to reduce soil loss caused by rain.
Transport
Deep sided trucks (dump trucks) must be used onsite to reduce spill and if possible, the soil should be covered.
Deep sided trucks with covers must be used for the transport soil to the site.
Tracking of soil onto public roads from vehicle wheels must be minimised. Procedures must be in place to check for and remove any soil spill.
Preparation of receiving surface
Light track-driven machinery or flotation tyred machinery must be used to minimise soil compaction.
Cultivation must avoid creating concentrated areas of compaction (e.g. wheel track lines up and down the slope).
Cultivation must minimise the number of passes over the site to avoid soil compaction.
If applicable, cultivation and levelling of the soil surface must be along the contour.
Soil placement
Light track-driven machinery must be used for soil placement to minimise soil compaction.
Post placement management
Revegetation must occur using suitable grass species to develop soil structure.
Nutrients (fertiliser) must be added to increase fertility and promote and maintain even revegetation.
Soil moisture must be managed via irrigation to promote and maintain even revegetation.

In addition to the requirements summarised in **Table 2**, soil removal and placement activities in the Stage 1 area must only occur in summer, and for all of the site (Stages 1, 2 and 3) shall only be undertaken in dry weather (no rainfall) providing soil moisture conditions are suitable and cease ahead of forecast heavy rainfall.

SOIL MANAGEMENT TRAINING, MONITORING AND REPORTING

SOIL MANAGEMENT TRAINING

Soil management training of all staff involved, and activities monitoring is included to ensure the effective reestablishment of the soil on the gravel extraction site. The consent holder must consult suitably qualified persons for the initial training of relevant staff. The suitably qualified persons must include a soil scientist and an experienced site remediation contractor.

Soil management training for staff must be undertaken as part of the site induction programme. The induction programme must include the following information specific to soil management:

- Information about soil management and the activities that may cause soil loss to water within the site with the potential to impact neighbouring areas,
- consent requirements,
- soil management procedures,
- description of soil management monitoring for the site, and
- complaints management procedures.

Staff training records must be maintained on site. The records will include:

- Who was trained,
- when the person was trained, and
- general description of training content and whether follow up/refresher courses are required at a later date.

The following are also required as part of the soil management training:

Soil removal

Operator performance in the lifting phase is crucial, and on-site guidance on soil horizon recognition and on machine routing is required to be provided to the operator in consultation with a soil scientist and site remediation contractor. This guidance can be provided to all relevant staff as part of the site induction programme. Additionally, an excavator with GPS depth control is recommended to ensure the correct soil horizon is being removed.

Soil placement

Operator performance in the placement phase is crucial, and on-site guidance on correct placement and on machine routing, is required to be initially provided to the operator by a soil scientist and site remediation contractor. This guidance must be provided to all relevant staff as part of the site induction programme.

Post placement

The staged and incremental reinstatement of the excavated area allows for iterative checking and refinement of placement procedures to ensure the quality of the replaced soil profile. Annual inspection of the in-situ placed clean fill and soil materials (the reinstated soil profile) by a soil scientist or site remediation contractor is required.

Assessment must include the following matters, plus any additional matters identified by the soil scientist or site remediation contractor:

- Visual assessment of the placed soil profile, examining for abrupt horizon boundaries, compacted layers, smeared layers, visual evidence of restricted water movement.
- Confirmation of the presence and % content of gravels and soil colour (using a Munsell soil colour chart) will be recorded for the subsoil, and topsoil.
- Topsoil and subsoil samples for soil analysis.

An indicative timeframe for productive uses:

- 0-2 months – pasture establishment (no grazing),
- 3 years – available for low intensity grazing (no cropping),
- >3 years – available for intensive land uses including cropping and orchards.

The consent holder must undertake annual soil quality (soil condition) monitoring for rehabilitated soil areas for the first three years following the completion of the rehabilitation of each gravel extraction stage, to ensure soil quality is restoring as intended.

SOIL MONITORING

Soil monitoring must be undertaken by a suitably qualified and experienced Soil Scientist.

As a minimum, soil monitoring must include:

- Baseline sampling and analysis.
- Control site sampling and analysis
- Ongoing sampling and analysis of reinstated areas.
- Sampling and analysis of the following:
    - Soil quality properties of the topsoil.
    - Soil profile condition
        - Soil profile description.
        - Visual Soil Assessment of the topsoil.

SOIL PROFILE CONDITION

The objective for the restored soil profile is that there is no serious soil physical limitation to production and water movement in the soil profile, i.e. no visually obvious contrasting compacted layers within the restored soil profile, especially between the subsoil and the topsoil, and no visually obvious compaction within the 150 mm of topsoil.

Monitoring of soil profile condition must include the subsoil and topsoil to ensure there are no visually obvious contrasting compacted layers within the restored soil profile.

Soil profile condition will include a soil profile description of soil morphological characteristics and will be according to Milne et al. 1995[15], including as a minimum: soil horizons and depths, soil boundary shape and distinctness, colour, mottles, soil texture, soil structure, surface stone abundance, gravel abundance, soil consistence, root abundance, the presence of restricting layers, abrupt horizon boundaries, compacted layers, smeared layers, visual evidence of restricted water movement layers, and soil profile drainage class.

Field evaluation of topsoil condition will be carried out using the method outlined in the Visual Soil Assessment Field Guide (2009)[16].

SOIL QUALITY PROPERTIES

The soil quality properties listed in **Table 3** must be monitored

The **Table 3** soil properties are commonly used to assess the impacts of land management on soils under a given land use. These are soil quality indicator soil properties used by regional authorities (including Tasman District Council) for regional and national reporting[17]. They provide a research based representation of soil chemical, biological and physical condition (soil quality) and provide comparability with other productive land in the region.

Table 3. Suggested soil properties to monitor.

Term	Definition
Soil pH	A measure of the acidity or alkalinity of a soil.
Total carbon	A measure of the total amount of all forms (organic and inorganic) of carbon in the soil.
Total nitrogen	A measure of the total amount of all forms of nitrogen in the soil.
Anaerobically mineralisable nitrogen	A laboratory measure of the amount of nitrogen that can readily be supplied to plants through the decomposition of soil organic matter. An indicator of soil biological activity.
Olsen phosphorus	A measure of the amount of phosphorus available for plant and microbial uptake.
Bulk density (fine dry bulk density)	The weight of soil in a given volume. This is a measure of how densely soil particles are packed in situ in the field.
Air-filled porosity (at -10 kPa)	The proportion of soil volume drained between the pressure levels of 0 and -10 kPa on the soil-water desorption curve (i.e. pores >30 um equivalent cylindrical diameter). The terms air-filled porosity (at -10 kPa) and macroporosity (at -10 kPa) are often used interchangeably.
Aggregate stability	A measure of the ability of soil aggregates to resist disruption when outside forces are applied.

Soil quality sampling and analysis for the topsoil must use methods consistent with the National Environmental Monitoring Standards for Soil Quality and Trace Elements[18].

BASELINE AND CONTROL SITE MONITORING

All sampling locations will be recorded using a handheld GPS.

Baseline and control site sampling and analysis must include the following:

- A soil profile description of the dominant soil for each LUC unit identified in the LandVision report, including as a minimum: soil horizons and depths, soil boundary shape and distinctness, colour, mottles, soil texture, soil structure, surface stone abundance, gravel abundance, soil consistence, root abundance, the presence of restricting layers, abrupt horizon boundaries, compacted layers, smeared layers, visual evidence of restricted water movement layers, and soil profile drainage class.

[17] https://www.nems.org.nz/documents/soil-quality-and-trace-element-monitoring/

[18]https://bucketeer-54c224c2-e505-4a32-a387-75720cbeb257.s3.amazonaws.com/public/Documents/Soil-Quality-and-Trace-Elements-v1.0.0.pdf

- Soil quality property sampling and analysis for the topsoil using methods consistent with the National Environmental Monitoring Standards for Soil Quality and Trace Elements[19].
- Visual Soil Assessment using the method outlined in the Visual Soil Assessment Field Guide (2009)[20].

POST REINSTATEMENT MONITORING

All sampling locations will be recorded using a handheld GPS.

Post reinstatement sampling and analysis must include the following:

- A soil profile description representative of the soil reinstated area in the past 12 months, including as a minimum: soil horizons and depths, soil boundary shape and distinctness, colour, mottles, soil texture, soil structure, surface stone abundance, gravel abundance, soil consistence, root abundance, the presence of restricting layers, abrupt horizon boundaries, compacted layers, smeared layers, visual evidence of restricted water movement layers, and soil profile drainage class.
- Soil quality property sampling and analysis for the topsoil using methods consistent with the National Environmental Monitoring Standards for Soil Quality and Trace Elements[21].
- Visual Soil Assessment representative of the soil reinstated area in the past 12 months, using the method outlined in the Visual Soil Assessment Field Guide (2009)[22].
- All remediated areas must be assessed annually for up to five years to identify obvious surface depressions.

REPORTING

A baseline monitoring report including results and interpretation must be completed prior to excavation commencing and must be made available to Tasman District Council on request.

An annual monitoring report including results, interpretation and any mitigation requirements must be completed and made available to Tasman District Council on request.

[19]https://bucketeer-54c224c2-e505-4a32-a387-75720cbeb257.s3.amazonaws.com/public/Documents/Soil-Quality-and-Trace-Elements-v1.0.0.pdf

[20] Shepherd, T.G. 2009: Visual Soil Assessment. Volume 1. Field guide for cropping and pastoral grazing on flat to rolling country. 2nd edition. Horizons Regional Council, Palmerston North. 119p.

[21]https://bucketeer-54c224c2-e505-4a32-a387-75720cbeb257.s3.amazonaws.com/public/Documents/Soil-Quality-and-Trace-Elements-v1.0.0.pdf

[22] Shepherd, T.G. 2009: Visual Soil Assessment. Volume 1. Field guide for cropping and pastoral grazing on flat to rolling country. 2nd edition. Horizons Regional Council, Palmerston North. 119p.