

15 May 2026

Environment Committee
Parliament Buildings
Wellington
via: Environment@parliament.govt.nz

Dear Environment Committee,

HORIZONS REGIONAL COUNCIL SUBMISSION – LAND USE CAPABILITY IN A REGULATORY CONTEXT

Thank you for the opportunity to provide our regional council perspective for your consideration as you review the use of Land Use Capability in a regulatory context.

Horizons Regional Council (Horizons) is the regional authority for the Manawatū-Whanganui Region, extending from south of Levin to north of Taumarunui and from Whanganui across to the east coast, covering an approximate 22,000km² in total. Horizons' responsibilities include coordinating our region's response to natural disasters, flood control, managing the region's natural resources, monitoring air and water quality, pest control, facilitating economic growth, and leading regional land transport planning.

EXECUTIVE SUMMARY

1. Horizons Regional Council acknowledges the work undertaken by the Parliamentary Commissioner for the Environment in reviewing the use of the Land Use Capability (LUC) system in a regulatory context. The report provides a valuable contribution to the national discussion on the role of land capability information within environmental regulation, land-use planning, and future spatial planning frameworks.
2. Horizons has substantial practical experience applying LUC-derived information across multiple regulatory contexts, including highly productive land identification, erosion management, forestry regulation, nutrient management, and regional planning through the One Plan. Through this work, Horizons has long recognised many of the opportunities and limitations associated with both the LUC methodology and the underlying New Zealand Land Resource Inventory (NZLRI) dataset.
3. Horizons agrees with the report's identification of several key issues, including:
 - the scale limitations of the NZLRI;
 - the increasing reliance on LUC within regulation;
 - tensions between broad-scale land classification systems and property-scale regulatory decision-making; and the need for ongoing investment in contemporary environmental datasets and land capability information systems.
4. However, Horizons considers it important that the report is read within the broader implementation and regulatory context in which councils operate. Productive land, erosion-prone land, and land subject to land-use change pressures still require management, even where the available tools are imperfect. The issue is therefore not whether the LUC system is

inherently “good” or “bad”, but whether it is sufficiently fit for purpose or the best alternative within the regulatory context in which it is being applied.

5. This submission broadly follows the structure of the report and provides:
 - Context on the LUC system in Aotearoa New Zealand
 - Our observations on the use of LUC across different regulatory frameworks; and
 - Practical considerations associated with the report’s recommendations.

THE LUC SYSTEM AND CONTEXT

6. It is important to distinguish between the Land Use Capability (LUC) classification system and the New Zealand Land Resource Inventory (NZLRI) database. LUC is a methodology for assessing land capability, while the NZLRI is the national geospatial database containing LUC and other land resource information mapped largely at regional scale.
7. This distinction matters because some limitations relate to the LUC methodology itself, while others relate to the age, scale, linework, and underlying information contained within the NZLRI. Improving the NZLRI is therefore not the same as redesigning LUC, and contemporary datasets do not remove the need for a classification system capable of supporting regulatory decision-making.
8. The limited systematic updating of the NZLRI since the 1990s is a significant issue given the extent to which the dataset now underpins land-use planning and regulatory decision-making across New Zealand. In our region only the Wellington Legend has second generation mapping at 1:50,000.
9. LUC, as a classification methodology, was originally developed and used to support decisions about sustained productive use and soil conservation. In that context, a simplified and nationally recognised classification framework remains useful. It provides a common language and broadly consistent starting point for understanding land capability across large areas.
10. However, LUC is also an interpretive classification system that simplifies highly complex land characteristics into broad classes and subclasses. Horizons considers that many of the issues identified in the report arise not because the LUC system is inherently inappropriate, but because it is increasingly being applied to regulatory contexts it was not originally designed for, particularly property-scale environmental regulation, allocation frameworks, consent thresholds, and economic controls.
11. All models, databases and classification systems involve simplification, assumptions, and trade-offs. This is not inherently a flaw, but a necessary part of translating complex environmental information into frameworks capable of supporting decision-making at scale.

SCALE IS A CENTRAL ISSUE

12. Scale is one of the most significant issues raised by both the report and Horizons’ practical experience implementing regulation.
13. The LUC methodology can be applied at different scales, but the NZLRI itself, is fundamentally a regional-scale dataset. Applying regional-scale information at property scale can produce misleading or contested outcomes. This issue is not unique to LUC. It is a broader challenge associated with the use of spatial environmental information within regulation.
14. Many of the implementation issues identified in the report arise because policy frameworks seek to address regional or national problems while evidential disputes occur

at property or paddock scale. Strategic issues such as the loss of highly productive land, erosion risk, or large-scale land-use change cannot be fully resolved through property-scale reassessment without undermining the coherence, affordability, and administrability of the planning framework itself.

CONTEMPORARY DATASETS AND EVOLVING APPROACHES

15. Contemporary datasets and improved modelling approaches provide substantial opportunities to improve understanding of land systems. LiDAR, S-map, land cover information, and erosion mapping can all strengthen the evidence base for planning and regulation.
16. However, contemporary datasets do not remove the need for interpretation, classification, validation, or professional judgement. Additional data alone does not create a regulatory framework. Contemporary datasets still require assumptions, thresholds, quality assurance, field validation, and methodologies capable of supporting consistent regulatory decision-making.
17. Contemporary datasets also remain incomplete and unevenly distributed across New Zealand. S-map and LiDAR coverage remains partial in many regions, including Horizons, and this partial coverage has historically been inconsistent and captured at different times and standards.
18. Horizons also notes that key national land resource datasets, including S-map and the NZLRI, are owned and managed by BSI Bioeconomy Science Institute (previously Manaaki Whenua – Landcare Research). While these datasets provide significant value for planning and regulation, access, licensing, maintenance, and ongoing updates involve continuing costs. Horizons considers this important in the context of the report’s recommendations, as contemporary environmental datasets increasingly underpin regulatory systems but are not currently treated or funded as core national environmental infrastructure.

LUC ACROSS REGULATORY CONTEXTS

19. The “regulatory context” is not singular. LUC mapping and the NZLRI maps are currently used across different frameworks seeking to address different policy problems, including productive land protection, erosion management, forestry regulation, climate change mitigation, nutrient management, and strategic spatial planning.
20. The suitability of LUC therefore varies depending on the purpose for which it is being applied. NZLRI LUC may remain highly useful as a broad strategic planning and screening tool, while its limitations become more significant where it is used to support property-scale allocation decisions, consent thresholds, effects-based regulation, or economic controls. This distinction is critical when assessing both the findings and recommendations of the report.

HIGHLY PRODUCTIVE LAND

21. The National Policy Statement for Highly Productive Land (NPS-HPL) is the regulatory context most closely aligned with the original purpose of LUC. The policy seeks to identify and protect finite productive land resources from inappropriate subdivision, use, and development. In this context, a broad-scale land capability framework is understandable as the basis for determining which land should be protected.

22. However, Horizons' experience progressing the implementation of the NPS-HPL has reinforced many of the limitations identified in the report. The framework relies on regional-scale NZLRI-derived mapping while simultaneously requiring councils to identify highly productive land at parcel level. This creates an inherent tension between the scale of the underlying dataset and the scale at which planning decisions and appeals occur.
23. Horizons also notes that while the NPS-HPL now allows greater flexibility in the use of updated datasets, there remains limited prescription regarding how different datasets should be reconciled, how scale issues should be managed, or how contemporary mapping should be tested through statutory planning and appeals processes.
24. The protection of highly productive land is fundamentally a regional and national policy issue. At the same time, private interest and impact cannot be ignored – especially in our region where there are significant rural areas, with highly productive land surrounding many towns and cities. The lack of a clear exemption pathway to allow for site-specific mapping to be integrated into the regional maps also provides significant tension as this introduces challenges with assessing site-specific maps, recognising and providing for these in the methodology and stitching them together in one GIS layer.

EROSION SUSCEPTIBILITY, EROSION MANAGEMENT, AND THE NES-CF

25. LUC and LUC-derived erosion susceptibility information continue to play an important role within erosion management and forestry regulation.
26. Horizons has substantial practical experience in erosion management through the Sustainable Land Use Initiative (SLUI). The region's hill country erosion issues were exposed during the February 2004 storm event. More than 60 percent of the Horizons Region is steep or rolling hill country, and the region contains a significant proportion of New Zealand's highly erodible land.
27. SLUI is New Zealand's largest hill country erosion control programme. It works with landowners to keep soil on the hills and out of waterways through Whole Farm Plans and erosion control works such as pole planting, stream fencing, afforestation, and retirement from grazing for native regeneration. As of June 2025, Horizons' SLUI programme, in partnership with landowners, has mapped 987 farms (covering more than 700,000 hectares), erected over 2,000 km of fencing, planted 30 million trees and completed 63,000 hectares of erosion control works.
28. A modified version of LUC mapping has been implemented at the property scale to identify sediment producing land for targeting erosion mitigations.
29. This practical experience reinforces that erosion processes are highly variable and context specific. Sediment delivery pathways, vegetation cover, land management practices, terrain complexity, soil properties, rainfall, and local environmental conditions all influence erosion outcomes. Broad-scale classifications are useful as screening tools, but limitations become more significant where classifications are relied upon for operational or property-scale certainty.
30. The National Environmental Standards for Commercial Forestry (NES-CF) use the Erosion Susceptibility Classification (ESC), which is derived from the NZLRI and LUC extended legends. The ESC provides an initial screening tool for the management of erosion risk associated with forestry activities. Horizons' role is to implement the NES-CF through consenting, compliance, and monitoring functions.
31. Horizons agrees with the report that the ESC is useful as a screening tool but has limitations. The ESC is mapped at 1:50,000, reflecting the underlying NZLRI scale. NES-CF management plans, however, require mapping at a scale not less than 1:10,000. This

means the ESC cannot simply be enlarged and applied at operational scale without interpretation, field assessment, and adjustment. This scale mismatch is a regulatory design issue, not simply a data quality issue.

32. It is also very costly to map this type of land at a finer scale, though we note there is a broader and long-term cost of not undertaking this work. We have examples of where development has occurred in our region on historic soil conservation reserves with no field inspections and the homes are uninhabitable or face significant hazards.
33. Horizons also notes that future improvements to erosion susceptibility and risk assessment should distinguish between susceptibility, risk, sediment delivery, and management response. Contemporary data sources such as LiDAR and contemporary erosion models can improve the evidence base, but they will still require validation, national standards, and clear statutory pathways for use in current and future regulatory decision-making.

CLIMATE CHANGE RESPONSE ACT AND ETS WHOLE-FARM CONVERSIONS

34. Horizons considers that the interaction between LUC, the Climate Change Response Act framework, and restrictions on whole-farm conversions to exotic forestry raises important strategic and regulatory issues.
35. Recent changes restricting the conversion of LUC class 1–6 farmland into exotic forestry rely on national-scale NZLRI mapping while also allowing landowners to undertake more detailed property-scale reassessment. This highlights the same scale issue identified throughout this submission. Broad-scale mapping provides consistency and coverage, but it is being used to influence highly specific land-use decisions with significant economic implications.
36. Horizons supports the principle that where significant private benefit may arise from site-specific reassessment, applicant-led verification may be appropriate. However, these processes must be nationally consistent, technically robust, and aligned with other regulatory frameworks, including highly productive land protection, forestry regulation, erosion management, and future spatial planning.
37. The regulations to facilitate the exemption pathway were tasked to the Environment Protection Agency, an agency that has not held responsibility for the LUC system previously and has no mandate to work collaboratively with BSI – the owners of the LUC system.
38. There is increasing concern that different regulatory frameworks are evolving in parallel without sufficient integration. Highly productive land policy, forestry regulation, emissions trading settings, and erosion management all operate across the same landscapes and should be better coordinated to avoid conflicting or inconsistent outcomes.

REGIONAL PLANS AND REGIONAL REGULATION

39. Horizons Regional Council's Regional Policy Statement and Plans are contained in our One Plan. The One Plan establishes cumulative nitrogen leaching limits for some intensive farming land uses based partly on LUC class. This approach sought to link nutrient allocation to the productive capability and natural capital of land, rather than simply reflecting existing land use. This offers a nuanced approach to regional resource management.
40. It is important to note that while we use the NZLRI as the basemap for assessing LUC class, and therefore the nutrient limits, the consent applicant can decide in these

situations to either use regional scale or invest in finer, farm scale mapping to determine their nutrient loss allocation.

41. Looking ahead to implementation of the new Resource Management System through the Planning Bill and the Natural Environment Bill; Horizons considers that regional councils are required to implement national direction and regional regulation through statutory instruments that must withstand legal scrutiny and Environment Court challenge. In practice, councils must reconcile imperfect datasets, contested methodologies, evolving technical guidance, and significant private interests within adversarial legal processes. This is a central implementation challenge that should be recognised in any future use of LUC or replacement classification systems.

CURRENT WORK BY HORIZONS REGIONAL COUNCIL

42. Horizons is actively investing in improvements to the regional evidence base and land capability information systems. This work demonstrates that the Council agrees with the need to modernise and improve the information underpinning land-use planning, while also highlighting the practical complexity involved.
43. Horizons has engaged BSI to update the regional LUC base layer and associated linework. This work is intended to improve alignment between legacy NZLRI mapping, S-map information, contemporary terrain data, and current land-use realities (this work is highlighted in the report as an important update that the Ministry for the Environment is now exploring).
44. The work with BSI will also take a mixed mapping approach to improve the representation of LUC 1–4 land using S-map, LiDAR, and other contemporary datasets where available, supported by regional expertise and validation processes. This work builds from the work undertaken by Environment Canterbury and Hawkes Bay Regional Council (which is highlighted in the report).
45. Horizons considers this work to be a practical example of the type of improvement pathway supported by the report. It uses contemporary datasets to improve both the scale and the evidence base while recognising that modelling outputs still require validation, interpretation, and professional judgement.
46. This work also highlights the implementation uncertainty that remains even where councils are actively modernising datasets. Updated mapping must still be recognised through statutory planning processes, tested through submissions and appeals, and reconciled with changing national policy settings, planning reform, and legal requirements.
47. Horizons considers that differences between datasets do not necessarily invalidate either dataset. In some cases, differences reflect updated linework, revised soil classifications, differing scales, urban expansion, or evolving methodologies rather than fundamental disagreement about land capability. For example, S-map does not differentiate flat versus rolling land within a specific soil map unit and therefore is not fit for purpose for detecting LUC class on flat versus rolling land.
48. Regardless of scale, datasets can only be expected to be accurate within their original focus. Areas of overlap between older and newer datasets may provide increased confidence, whereas areas of divergence can help identify where further refinement or validation is required.

RESPONSE TO THE REPORT'S RECOMMENDATIONS

RECOMMENDATION 1: DO NOT USE THE CURRENT LUC SYSTEM AS THE BASIS FOR ANY FUTURE REGULATORY CONTROL

49. Horizons supports the intent of ensuring that regulatory tools are fit for purpose and aligned with the policy problems they are intended to address.
50. The key issue is not whether LUC and the NZLRI should or should not be used, but the regulatory context, scale, and purpose for which it is applied. Scale is inherently context dependent. Regional and national planning questions require different levels of detail and certainty than property-scale regulatory or consenting decisions. Moving between scales, whether upscaling fine-scale information or applying broad-scale information at property scale, requires careful consideration and acceptance that uncertainty will inevitably be introduced.
51. There is currently no nationally consistent alternative capable of replacing the LUC system across all regulatory contexts in the short term. Spatial planning, highly productive land protection, erosion management, forestry regulation, and land-use change controls will continue to require some form of land capability or spatial classification framework.
52. Future land capability systems will require significantly stronger national stewardship, governance, and statutory support than currently exists. The cadastral parcel system provides a useful example of a nationally governed framework supported through legislation, standards, quality assurance, and accepted evidential processes. Importantly, cadastral systems operate across a wide range of scales and contexts without relying on a single universal mapping scale.
53. Similar governance arrangements, technical standards, quality assurance processes, and evidential pathways could strengthen future land capability and classification systems and improve their ability to withstand regulatory implementation and legal scrutiny.
54. There may also be value in exploring nationally recognised or ISO-aligned standards for land classification methodologies, validation, quality assurance, metadata, and evidential application. This would help improve consistency, transparency, repeatability, and confidence across both public and private sector applications.

Horizons recommends:

- Nationally consistent standards and methodologies be developed to support the appropriate use of LUC and associated land capability information across different planning and regulatory contexts. This should include guidance on how different datasets can be integrated and applied at regional, catchment, farm, and property scales, recognising that moving between scales inevitably introduces uncertainty and requires professional judgement.
- Future national direction provide clearer statutory guidance regarding the relationship between regional-scale planning tools and property-scale implementation and appeals processes. Especially where property or farm scale means significantly finer scale.
- Central government explore nationally coordinated governance and standards frameworks for land capability systems, including the potential role of ISO-aligned standards, quality assurance processes, and accepted evidential methodologies. With the cadastral parcel system providing a useful example of how nationally coordinated standards and legislative support can enable consistent application across multiple scales and regulatory contexts without relying on a single universal mapping scale.

RECOMMENDATION 2: INVEST IN ESSENTIAL CONTEMPORARY DATASETS THAT UNDERPIN LAND USE REGULATION AND ENSURE THEY ARE PUBLICLY AVAILABLE AND AFFORDABLE

55. Horizons strongly supports continued investment in contemporary environmental datasets, including LiDAR, S-map, land cover information, comprehensive land use mapping, and erosion mapping.
56. The development, maintenance, validation, and integration of contemporary environmental datasets is also highly resource-intensive and increasingly cost-prohibitive for regional councils to undertake independently at a region-wide scale. This is particularly challenging where these datasets are expected to underpin nationally directed regulatory frameworks and statutory planning processes.
57. Horizons considers that contemporary environmental datasets should be treated as nationally significant environmental infrastructure rather than relying on fragmented regional investment and uneven implementation that results in inconsistent capture of information in both time and specification.
58. Contemporary dataset coverage also remains incomplete and inconsistent across New Zealand, especially within our region. LiDAR has been captured at different times, resolutions, and standards, while S-map coverage remains partial in many regions. These inconsistencies create additional implementation and integration challenges where datasets are relied upon within national regulation.

Horizons recommends:

- Nationally coordinated investment, governance, maintenance, and funding arrangements for environmental datasets used within regulation.
- Contemporary environmental datasets be recognised and funded as core national environmental infrastructure where they underpin national regulatory systems.
- Datasets intended for regulatory use be supported by nationally consistent standards for scale, accuracy, validation, metadata, and evidential application.

RECOMMENDATION 3: MODERNISE THE LUC AND ESC SYSTEMS AND CREATE BESPOKE FIT-FOR-PURPOSE MODELS

59. Horizons agrees that there is significant value in modernising the LUC and ESC systems and developing fit-for-purpose approaches for specific regulatory purposes.
60. Horizons is currently undertaking this work with BSI Bioeconomy Science Institute through updates to the regional NZLRI base layer using contemporary datasets, including S-map and LiDAR, and deriving updated LUC information from these inputs. Horizons considers this work a significant achievement and a practical example of how contemporary datasets can improve the evidence base supporting land-use planning and regulation.
61. However, this work has also reinforced the complexity, cost, ground truthing/ field validation and ongoing maintenance requirements associated with modernising land capability systems. While some inputs may be automated, substantial manual GIS work, field validation, interpretation, and expert judgement are still required. Horizons is fortunate to have in-house capability to support this work, but recognises this capacity will not exist consistently across all regions.
62. It is also important that these approaches do not become one-off or point-in-time exercises. To remain useful for planning and regulation, contemporary land capability information needs to function as maintained and evolving spatial data infrastructure rather than static mapping products. Horizons is therefore working with BSI and internally

to ensure updated information can be maintained and integrated into future planning and regulatory systems over time.

63. The benefits of updated systems and datasets ultimately rely on their ability to progress through statutory planning and regulatory processes. Current uncertainty associated with planning reform, paused plan processes, and evolving national direction creates uncertainty regarding how these systems will ultimately be implemented and tested through statutory processes and appeals.

Horizons recommends that:

64. Central government work collaboratively with councils, BSI, the Land Monitoring Forum and wider technical practitioners, industry, and regulators to develop nationally consistent and enduring standards for land classification methodologies, validation, quality assurance, maintenance, and evidential application within regulation.
 - Future frameworks distinguish clearly between improving datasets, improving classification methodologies, and improving the statutory systems that rely on them.
 - Central government support long-term maintenance, governance, and implementation pathways for contemporary land capability information systems, rather than relying on fragmented regional investment and one-off updates.

RECOMMENDATION 4: FOCUS LIMITED RESOURCES FOR IMPROVING DATA ON HOTSPOTS

65. Horizons supports prioritising hotspots where improved information is most urgently needed.
66. However, hotspotting alone will not resolve the implementation issues identified throughout the report unless planning frameworks allow councils to confidently rely on improved regional or local information within statutory processes.
67. Horizons also notes that areas of overlap between legacy and contemporary datasets can themselves identify high-confidence hotspots, while areas of divergence can help prioritise further validation and refinement. In many cases, differences between datasets provide valuable information about changing methodologies, assumptions, scale, or land characteristics. However, this requires users to clearly understand the purpose, limitations, and assumptions underpinning different datasets and classification approaches. Improved documentation, metadata, and guidance will therefore be important to support consistent interpretation and application within regulatory settings.
68. A regional-scale approach should not preclude site-specific refinement. However, where landowners seek to depart from broad strategic classifications for significant private benefit, applicant-led verification pathways may be appropriate, provided they follow nationally consistent methodologies and standards.

Horizons recommends that:

- Future planning frameworks clearly distinguish between regional-scale strategic planning and property-scale refinement processes.
- Nationally consistent statutory pathways be developed for councils and landowners to use improved regional, local, or site-specific information where appropriate.

CONCLUDING REMARKS

69. Horizons Regional Council appreciates the opportunity to provide feedback on the report and acknowledges the significant contribution it makes to the discussion around land-use capability data, classification systems, and its role within environmental regulation.
70. Continued national discussion and investment in improving land management data, methodologies, and regulatory frameworks is strongly supported. The issues raised by the report highlight the importance of nationally coordinated environmental information systems, clear implementation pathways, and fit-for-purpose planning tools capable of supporting both strategic decision-making and practical implementation.
71. Ultimately, Horizons considers that improving the quality, consistency, transparency, and governance of land-use information systems will be critical to supporting effective environmental management, productive land use, and future spatial planning outcomes across New Zealand.

We welcome any questions or further engagement on this matter. Please direct enquiries to Erin Murphy, Senior Policy Analyst (erin.murphy@horizons.govt.nz).

Ngā mihi nui,

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