Essential Freshwater [Paper no 18]: Improving Farming[1] Practices and Managing Intensification of Rural Land Use

Ministry for Primary Industries Manatō Ahu Matua			

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	Action sought:	Response by:
To Hon David Parker, Minister for the Environment		
To Hon Damien O'Connor, Minister of Agriculture		

Actions for Minister's Office Staff	
Number of Attachments	
Note any feedback on the quality of the report	

Ministry for the Environment contacts

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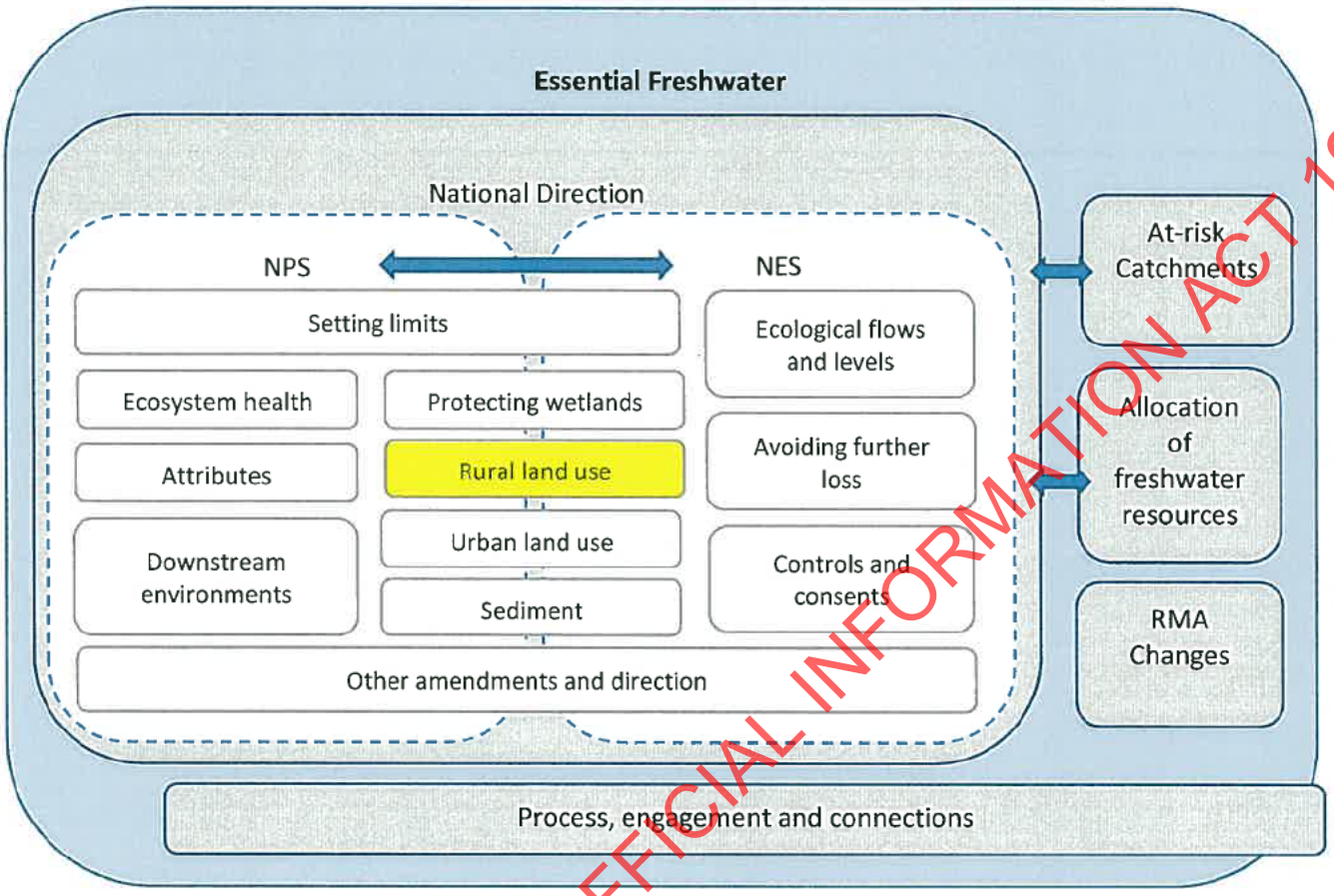
[1] Farming is defined here as including horticulture, but excluding forestry.

Essential Freshwater [Paper no 18]: Rural land use



Key Messages

1. This is briefing 18 of a series being provided to you on the Essential Freshwater programme of work. As demonstrated by the diagram above, national direction on rural land use is part of a wider set of measures, including measures on urban land use and ecosystem health. The Essential Freshwater work programme has three main objectives [Cab-18-MIN-0296]:
    a. Stopping further degradation and loss;
    b. Reversing past damage;
    c. Addressing water allocation issues.
2. These objectives sit within the government's priorities, particularly "Building a productive, sustainable and inclusive economy" which has four key objectives [Cab-18-Min-0111]:
    a. Grow and share New Zealand's prosperity;
    b. Deliver responsible governance with a broader measure of success;
    c. Support thriving and sustainable regions;
    d. Transition to a clean, green and carbon neutral New Zealand.
3. There is also a strong connection with the government's stated priorities to "Build closer relationships with Maori" and "Create an international reputation we can be proud of."
4. This briefing provides preliminary policy options for:

- Promoting farmer and grower up-take of good practices;
- Managing high-risk farming activities that entail a significant risk of contaminant loss to water;
- Excluding stock from waterways and riparian setbacks; and
- Managing intensification of rural land use.

5. The first three issues above focus on improving practice in existing farming enterprises. The fourth issue, managing intensification, considers whether and how to improve the regulatory framework for managing land use change. A significant amount of primary industry, community and council work is underway to address the above issues and support the transition to an environmentally and economically sustainable and resilient primary sector. It is important that this work is acknowledged and supported to further encourage voluntary landowner, community and industry action.

6. Regional councils have the statutory function and powers to manage the effects of primary industry activities on water quality. Second generation regional plans are significantly improved from earlier plans, but the current management landscape is patchy and progress slow, in part due to the litigious nature of regional rule-making.

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Recommendations

10. We recommend that you:

    a. **Agree** to discuss this paper with officials at your earliest convenience

Yes/No

b. **Agree** that Freshwater Taskforce undertake targeted engagement with Freshwater Leaders Group, Kāhui Wai Māori and others including primary sector and regional councils to better understand the merits and consequences of the various options in this paper.

Yes/No

c. **Note** that we will brief you on feedback from key stakeholders on the initial regulatory options and other approaches in December 2018.

d. **Note** that the Freshwater Taskforce will provide further advice on these in February 2019 so options involving NPS-FM or NES provisions can be identified for inclusion in the 2019 consultation document.

e. **Note** that officials have considered the Rural Proofing Guide in developing this briefing and the work to follow.

f. **Note** that our initial preferred option for improving farming practices and managing intensification to improve water quality are:

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[redacted]

Signature

Martin Workman
Director MfE

Charlotte Denny
Director MPI

Hon David Parker
Minister for the Environment

Date

Hon Damien O'Connor
Minister of Agriculture

Date

Essential Freshwater [Paper no 18]: Rural Land Use Package

Context

11. Agriculture, horticulture and forestry industries make a significant contribution to New Zealand's economy, particularly in our regions. Primary industry exports are forecast to have grown 11.8 percent in the year ending June 2018 to $42.6 billion[2].

12. However, contaminant discharges from farming activities are a major pressure on water quality in many catchments and a threat to further degradation[3]. The challenge is to protect and restore our waterways while sustaining the contribution of the primary sector to our economy.

13. New Zealand farms are highly diverse in terms of landscape, land use, soil characteristics, tree cover, forages, livestock mix and farm management systems. The diffuse discharge pathways and opportunities for reduction in contaminant loss are often highly property/place specific. Identifying and managing critical source areas, and appropriate site selection for activities is often critical, and these matters can be difficult to codify (and therefore enforce) in a plan rule.

14. Many farmers are already changing practices and behaviours leading to improvements in water quality such as through catchment groups that engender Good Management Practices and change behaviour. Many local and voluntary groups are emerging throughout the country and we could focus our efforts to support these groups either through funding to maintain or establish new local groups, or personnel in the form of facilitators to help farmers on a one-on-one basis.

15. A significant amount of industry-led work is underway to improve the environmental performance of farmers and growers, including commitments to prepare farm environment plans and adopt good practices.

16. This is driven by existing regulatory requirements and the desire to improve the social license and economic resilience of the primary sector. Examples of industry initiatives are attached as Annex one.

17. It is important that we take a collaborative and farmer-centric approach that utilises and understands the perspective of those who will be impacted by these options and decisions, namely:

    a. Identify the burden that these changes will place on them when they may be struggling to manage current compliance requirements and within financial constraints.

    b. Understand that there is no one size fits all model, and solutions can be identified by those who are already innovating at a farm level.

    c. Farmers learn from farmers, and to get the best outcome we need to work with these farmers to ensure the solutions we put in place fix the problem. These solutions need to meet the intended outcomes and facilitate the right behaviours, without unintended consequences.

18. Regional councils have the statutory function and powers to manage the effects of primary activities on water quality. While the regional management regimes (including regulatory frameworks) of second generation regional plans are generally significantly improved from earlier frameworks, the current management landscape is patchy and progress is slow in some regions, in part due to litigation associated with regional plan-making processes. Further, plan implementation appears likely to be hampered by insufficient resourcing in many regions.

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[2] Situation and Outlook for Primary Industries, September 2018, Ministry of Primary Industries

[3] PCE, 2013 & 2015. Water Quality in New Zealand: Land Use and Nutrient Pollution.

19. Compliance monitoring of management practices (e.g. for grazing or fertiliser application) can also be challenging. Many practices are not easily observed/monitored at the time that the contamination has occurred and Councils may not be aware that poor practice is occurring because of remoteness and location away from roads. This makes it difficult to enforce rules in such circumstances. In this context, creating farmer buy-in, understanding and ownership of problems and solutions ("hearts and minds") is important to improving water quality. Skilled advisors with knowledge of environmental management, farm systems and excellent communication, empathy and influencing skills are critical in this context. Such individuals are in short supply.

20. Improving water quality will require regulatory changes and new approaches and tools for landowners, farmers and Councils. This paper covers four inter-related areas where improved performance is needed:

    - Promoting the use of Good Management Practices generally by all rural land use activities;
    - Excluding stock from water bodies and provision of riparian setbacks (a fundamental and generic GMP);
    - Controlling specific high-risk farming activities, for example hill country cropping and some winter grazing practices; and
    - Constraining or preventing some forms of rural land use intensification in some places.

21. The Land and Water Forum (LAWF) has provided advice on the above matters. LAWF's objective was to develop a shared vision and a common way forward among all those with an interest in water, through a stakeholder-led collaborative process. LAWF's advice on GMP is summarised in Annex two.

Good Management Practices (GMPs) can make a positive difference to water quality

22. GMP practices are an evolving suite of practical measures that can be put in place at a land user, sector and industry level to assist in achieving agreed community outcomes[4]

23. Getting all farmers and growers implementing GMPs is an important contributor to improving water quality[5]. There is wide agreement that farmers and growers should be moving towards and implementing good practice. Equally, it is also recognised that GMP is not a silver bullet and other measures like land use change and best practice may be needed in over-allocated catchments. There may also be high-risk activities that shouldn't be practiced in any catchments.

24. A range of inter-connected factors are driving improved environmental performance from farmers and growers. Increasingly, good practice is being adopted through using farm environment plans (FEPs) to provide tailored solutions that target the risks to water quality on each farm and tying these to catchment needs.

Problems with the current approach to GMP

25. There is a need to improve the rate of uptake of good practice, to be able to demonstrate that this has occurred, and will ultimately make a difference to water quality outcomes. The fundamental problem is how best to do this. This work needs to consider the role FEPs might best play, and options for monitoring and reporting on progress in order to promote confidence that the approach is delivering intended outcomes.

26. There is no national agreement on what metrics need to be collected to monitor and report on

[4] *Good Farming Practice: Action Plan for Water Quality 2018*

[5] Land and Water Forum advice on improving water quality – May 2018

good practice up-take. The Good Farming Practice: Action Plan for Water Quality Governance Group is due to provide a first report on Action Plan implementation in mid-2019, which will assist. There is also a continued need to build the evidence base about the impacts various good management practices have on water quality in different situations (e.g. varying soil types, topography and climate).

There are a range of options for improving uptake of GMP

(a) Enhanced status quo – strengthening and supporting existing initiatives

27. This option would see a concerted effort by central government, primary sector and councils to communicate and report on progress and encourage voluntary up-take of good practices though tailored FEPs and support for the successful implementation of the *Good Farming Practice: Action Plan for Water Quality*. That Action Plan includes 21 nationally agreed good farming practice principles and a commitment to all farmers and growers having an FEP by 2030, with priority catchments and sectors completed first.

28. The idea is for the FEP to focus on the good practice principles that target the priority water quality challenges in each catchment, and to promote continued improvement.

29. Work is currently underway on a process to certify people as farm environment planners. Use of appropriately skilled people to prepare the FEPs would be promoted by industry, councils and government, and would continue to be required by some councils, but would not be a national requirement.

30. This option would be underpinned by strengthened support for extension programmes and farmer-led catchment initiatives and training of farm advisors, funding/budget initiatives, and on-going work on efficacy of good practices. In addition, councils would continue to implement the NPS-FM, including choosing to use FEPs in a regulatory context and good practice standards where they see fit. National guidance could be used to promote improve practices and workshops held to share learnings from different approaches being used.

(b) Risk based Regulatory Approach to good practice up-take via FEP

31. This option would require good practice implementation via a risk-based FEP process that would be set out in the NPS-FM and/or an NES. All farm businesses would be required to prepare a FEP by a specified date (e.g. 2025), with requirements including matters such as

    a. Name and address, location of property and nature of the business

    b. A farm map identifying the environmental characteristics of the farm; critical source areas, sensitive environmental and risky elements of the operation; and contaminants of concern;

    c. Proposed good practice actions (ideally "SMART") to avoid, remedy and mitigate adverse impacts of farming activities on water quality.

    d. Any specified additional requirements for (defined) high-risk activities on the property

    e. Data and format standards and information systems to help aggregate data for reporting at catchment, regional and national scale

    f. Requirements to review and up-date plans

    g. Any auditing requirements, such as third party auditing as suggested by LAWF

32. It will be particularly important that the actions identified are targeted at the key risks and are implemented. As for option (a) catchment and property-scale risk assessments to identify the priority water quality issues for each catchment and property would inform the identification of

actions in the FEP. This requires a degree of judgement meaning the option may also require such assessments to be made by people with appropriate qualifications (e.g. certified farm planner). Independent auditing of the FEPs and their implementation would reduce the risk of FEPs becoming a tick-box exercise.

(c) Prescribing good practice standards in a national instrument

33. The third option is to prescribe management actions that all farmers and growers must follow set out in an NES or regulation. If done well, this would send a strong signal to farmers and growers about what exactly they have to do, and in some cases it may be easier to assess compliance. However, it will be difficult for government officials to prescribe what good practice is in a way that makes sense across diverse environments and farm systems, and does not hamper innovation and ability to respond to market drivers. If requirements do not make sense on farm, it will likely lead to low levels of compliance and unnecessary financial impacts on farm businesses. We do not recommend this option.

High-risk farming activities can pose a significant risk to waterways

34. High-risk farming activities are management practices that carry a significant risk of contaminant loss to water (sediment, pathogens and nutrients). An initial set of high-risk activities is:

- Intensive winter grazing: a range of practices needed to ration available feed supplies for livestock over winter, when pasture growth rates are low, including:
  - Break-feeding[6] of pasture or crops to low levels, which can cause pugging[7] with increased risk of contaminant leaching and run-off.
  - Moving stock off pastures or crops after a restricted daily grazing period to stand-off areas such as sacrifice paddocks, feed-pads, or covered sheds, to reduce pugging damage.
  - Moving some or all of a dairy herd to sheep and beef farms over the winter to avoid the risks of pugging and leaching on the milking platform.
- Hill country winter cropping of rolling or steeper land with forage species to provide winter feed for stock, with a high-risk of contaminant run-off if no mitigations are in place.
- Feedlots and fully-housed dairy cow systems: occur on a confined site predominantly used all year round. If well designed, feed pads and cow housing reduce risks to water quality.

High-risk farming activities can evolve quickly and can be difficult to regulate

35. Existing regulation is insufficient in some cases. Problems are associated with the following:

- Some of the high-risk practices are relatively new. Regional plan rules have yet to be developed for hill country cropping of steep land using helicopters, for example.
- Proposed regional plan rules may be appealed. If regional plan rules are proposed to better manage high-risk activities, they can meet strong landowner resistance through the consultation, submissions and appeals processes.
- There are research gaps for new high-risk activities to quantify the level of risk, and whether and how the risks may be mitigated.
- Mitigations are often site-specific and are evolving. Codifying a full set of rules for activities such as winter grazing in plans is complex and can be counter-productive for water quality

[6] Break feeding is the feeding of livestock on pasture or forage crops where feed allocation is controlled by the frequent movement of an electric fence

[7] Pugging is compaction and churning of soil caused by stock hooves in wet soil, reducing soil permeability and productivity and potentially increasing run-off to waterways

outcomes, compared with site-by-site evaluations and requirements, especially if the site-by-site approach enables innovative mitigations.
- Compliance monitoring and enforcement can be difficult and rule breaches and/or their effects may not be picked up if the activity is in a remote area.

Options for managing high-risk farming activities include:

(a) Enhanced status quo

36. This approach would support regional councils, industry and community to better manage high-risk activities. It is most appropriate for activities at the lower end of the risk scale, and where the incentives for improved practice are strong. In such cases mitigations are well-known and uptake is high. The approach may not be appropriate where risks are higher, especially in at-risk catchments.

(b) Risk-based regulatory approach

37. This option could mandate use of a Farm Environment Plan (FEP) and/or consents for high-risk activities, e.g. through a requirement in an NES, or in high-risk areas.

38. This approach has the advantage of enabling tailored approaches as outlined in the GMP section of this paper.

(c) Nationally prescribed standards

39. This option would apply activity status rules and performance standards nationally and permanently, e.g. through an NES. It could combine some minimum performance rules set nationally with a mandatory FEP requirement. This could include requiring stock exclusion and riparian setbacks for specific high-risk activities.

40. Our initial thinking is that all of the options have merit, and the best policy option for a particular high-risk activity depends on the risks associated with the activity, the available mitigations, and the degree to which good practice can be codified nationally. For some high-risk activities, banning the practice in particular catchments or slopes may be the best approach. For others, working with sector organisations to improve uptake of improved practice may be sufficient to manage the risks in most catchments. Targeting the intervention to the activity would ensure improved water quality outcomes can be achieved without unnecessarily constraining farm management and economic development.

Stock exclusion from waterways helps to improve water quality

41. Stock entering water bodies has negative effects on water quality. The contaminants most problematically discharged to water as a result of stock access are:

- Pathogens - disease-causing organisms in stock faeces and urine.
- Sediment - caused by trampling of stream beds, erosion, vegetation loss and soil loss. High levels of fine sediment can lead to increased phosphorus levels and algal blooms.
- Nitrogen – can be increased by direct discharge of stock urine into the water and inputs from pasture via surface and groundwater flow pathways.

42. Further, allowing stock access to water bodies creates a negative perception of the primary industry sector and potentially of New Zealand agricultural products more generally.

43. The benefits of excluding stock almost always increase when coupled with riparian planting. Riparian planting helps to filter out contamination and improves ecosystem health.

Requirements for stock exclusion vary widely across the country

44. There is a patchwork of regional rules controlling stock access to freshwater bodies across the country. In some regions (such as Canterbury) intensive farming (dairy, pigs and irrigated

pastoralism) is clearly and effectively regulated but other forms of livestock farming (dryland sheep and/or beef) are not (or only on a performance basis). As a consequence, the nature and effectiveness of stock exclusion rules varies region by region.

45. Stock exclusion and riparian setbacks are difficult to regulate effectively and optimally because:

- Risk associated with stock access depends on location and farm systems.
- Setbacks (buffers) and associated riparian vegetation can significantly increase the benefits of exclusion fencing but the extent of that benefit (and the optimal setback/planting width) will also be location dependent.
- Research suggests[8] that some of the most important areas for stock exclusion would have been exempt from previous regulatory proposals. Loads from low-order, small streams <1 m wide, 30 cm deep, and in flat catchments dominated by pasture exempt from the fencing regulations proposed in 2017 accounted for an average of 77% of the national load.
- The cost implications of complying with stock exclusion requirements can be significant for some farms due to fencing, water reticulation and lost pasture costs.
- The ability to implement stock exclusion requirements will likely affect Māori landowners and Māori farm businesses disproportionately due to costs and governance issues.

Options for excluding stock from waterways include:

(a) Strengthen support for voluntary up-take of good practice

46. This option would see a concerted effort by councils, industry bodies and central government to support farmers to continue to exclude stock, plant riparian margins, and encourage voluntary stock exclusion and riparian setbacks though tailored FEPs. This would be underpinned by strengthened support for extension programmes, training of farm advisors, possible funding/budget initiatives, and on-going work on efficacy of stock exclusion and riparian zones. This approach would likely have positive effects but would take time.

(b) Risk based Regulatory Approach to stock exclusion via a module of a FEP

47. This option would require stock exclusion via a mandatory risk-based FEP process (or consent) that would be set out in the NPS-FM and/or an NES. All farm businesses with waterways would be required to prepare and implement a stock exclusion and riparian plan by a specified date (e.g. 2025). The requirement should also oblige the council to stage the process and prioritise planning for at-risk or targeted catchments.

(c) Prescribing stock exclusion in a national instrument

48. The third option is to prescribe stock exclusion and riparian zone rules that all farmers and growers must follow, set out in an NES or regulation. If done well, this would send a strong signal to farmers and growers about what exactly they have to do. However, it will likely be difficult to prescribe good stock exclusion practice in a way that is applicable everywhere. This was an issue with the NPS consultation undertaken in 2017 where the proposed rules were set based on the gradient of slopes and in practice this was confusing and inoperable. We do not recommend this option.

Managing land use intensification may be needed in some catchments

49. Agricultural intensification occurs when land use changes from a relatively low input system such as sheep farming to a higher input system such as dairying or vegetable production. It can also

[8] McDowell, Cox and Snelder, Journal of Environmental Quality September 2017.

occur within the same land use activity, for example when a sheep farm increases fertiliser use and stocking rates, or a vegetable grower increases the number of crops grown in a year.

50. Intensification usually leads to higher profits per hectare, and increased employment. However there is also a link between intensive land uses (rural and urban) and poor water quality.[9]

51. There are two main approaches being taken to constrain intensification in recent regional plan changes:

- Regional rules that require consent to change the type of land use, and
- Setting nitrogen discharge limits (as a proxy for intensification) at the property scale.

Intensification can have negative environmental effects and is difficult to manage

52. The regulatory framework for managing intensification is insufficient in some regions/catchments. Agricultural intensification will continue in some regions over the next 10 years[10], and regional council rules constraining intensification and/or its effects are not yet in place in some of those.

53. In catchments where water quality objectives have yet to be set, there may be a perverse incentive for those with suitable land to intensify land uses ahead of any regulatory constraints.

54. Rules constraining land use change are blunt instruments and can be seen as inequitable because low discharging land uses are "locked in", while existing high discharging land uses can continue. This disproportionately affects Māori-owned land which is (on average) less developed than other land in most catchments.

Options for managing intensification

55. As outlined in Essential Freshwater Paper 11 (Brief 2018-13-04963), structural changes involving allocation and/or pricing in relation to nitrogen discharges would enable effective management of intensification. Similarly, limits being established by regional councils in accordance with the NPS-FM obligations will also control intensification as it affects other freshwater pressures. However, both structural change and council methods will take some time to develop and implement. In the interim, targeted regulatory intervention may be needed to constrain intensification that would increase contaminant discharges, especially in at-risk catchments.

(a) Enhanced status quo

56. This option could involve:

- Increased support from government for councils to develop regional plan rules that constrain intensification, especially in at-risk catchments,
- Greater use of the streamlined planning process to constrain intensification.

(b) Temporary intensification constraints

57. This option could target government intervention in at-risk catchments to constrain intensification while plan rules are being developed. It would help "hold the line" while regional rules are developed:

- Targeted short-term prohibited activity status on specified changes in land use in targeted at-risk catchments until council rules are in place.
- Changing the activity status for specified land use changes to non-complying or discretionary in targeted at-risk catchments, until council rules are in place.

[9] PCE, 2013 & 2015. Water Quality in New Zealand: Land Use and Nutrient Pollution

[10] Dorner, Z. 2018. LURNZ Reference Scenario for future land use change. MfE Internal paper

58. In both cases, using the streamlined planning process or an NES could fast-track the required plan changes and minimise the disadvantages of temporarily constraining intensification with a blunt national policy.

(c) Nationally prescribed standards (consent requirements)

59. This option would apply consent requirements for and could be targeted at catchments and regions and be temporary or permanently until plan changes are made. A significant disadvantage of this approach is that it would be seen as unfair to low dischargers who would need a consent to intensify, while existing high dischargers have no consent requirement.

60. This would require NPS-FM amendments and an NES. This approach could be designed so that existing more stringent regional plan rules would prevail over the NES. A risk with this approach is that regional rules might tend to default to the national rule at the next plan change. An NES could take from 12-18 months to develop depending on complexity.

Synthesis of options and approaches to improving farming practices and managing intensification of rural land use to improve water quality

61. We have assessed the four key areas of farming practice that require new practices and approaches against three levels of intervention: Enhanced Status quo; Risk-based regulatory approach; and Targeted national regulation.

62. For all areas we are continuing to explore the following key questions

a. *Addressing the problem: How does the option address the problem or problems and how likely will it do so?*

b. *Holding the line: What will be the impact on the ecosystem health of fresh water? How quickly will this option have this impact?*

c. *Costs: What are the costs and where will they fall?*

d. *Risks: What are the direct and indirect risks associated with this option? What is the likelihood of those risks occurring?*

e. *Co-benefits: Are there any co-benefits associated with this option, e.g. climate change, employment opportunities?*

63. The range of tools for implementing these strategies includes promotion of/support for voluntary and industry driven initiatives, other regional scale government interventions, the NPS-FM, NES and section 360 regulations. These options are not mutually exclusive and a number of options may need to be combined and/or phased and staged to form an effective and coherent package.

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We will engage across sectors and interests to test these options

66. Over the next six weeks we will engage with stakeholders including industry bodies, Māori agribusiness, environmental NGOs, regional councils, and government to test the merits of the options outlined in this brief and where appropriate build the detail of preferred options. Based on that engagement we will further evaluate the options and recommend a preferred approach based on more detailed information in February 2019. Formal consultation will be undertaken on the overall Freshwater package in April 2019.

Risks associated with this paper

67. There will be costs associated with all of the options identified, including enhanced status quo. Information on estimated costs, and who they may accrue to, will be outlined in the briefing to you in February 2019.

68. Implementation of an FEP regime would require development of processes and workforce for accreditation, implementation, monitoring and enforcement of FEPs. This will take considerable time, effort and costs to design and implement and there will be a need to check that any regulatory proposals for delegating approval of FEPs align with the RMA

69. There are a limited number of people with the mix of understanding farm systems and management of environmental impacts. These skills, together with communication and empathy skills to engage effectively with farmers, are necessary to support the development and implementation of quality farm environment plans. Initiatives are in place, including the development of a scheme to certify farm environment planners. Staged implementation of any FEP requirements will allow the system to progressively grow the capacity and capability to undertake the necessary work.

70. The possibility of future legislative change may create uncertainty and undermine existing voluntary initiatives by farmers, industry bodies and catchment groups. To manage this it will be important to clearly signal the direction of change and help individuals see how work they are doing can align with future policy.

71. There is also a risk that national direction proposals may not integrate well with existing regional council regulatory approaches. Targeted engagement with the regional sector will help identify ways to reduce this risk.

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Rural Proofing

74. Officials have considered the Rural Proofing Guide, and our assessment will consider the cumulative effects of Government policies on the rural community, implications for the ease of doing business and cost of compliance in rural areas and how to engage rural communities in formal consultation on the Freshwater package in April 2019.

Next Steps for improving farming practices and managing intensification

75. The proposed approach and timeframes for progressing the work in this paper are:

- Engage with key stakeholders to test the initial regulatory options and other approaches for stopping further degradation and loss, and reversing past damage, to freshwater quality. (November/December 2018)
- Evidence gathering is underway to support our analysis, including:
    - Forecasting of areas where intensification would occur over the next 10 years if there were no regulatory constraints on land use change,
    - Reviewing regional plans to indicate where regional plan rules are not yet in place to constrain intensification.
    - Identifying the extent of hill country cropping and de-vegetation caused by winter grazing on sloping land, using remote sensing.
- To brief you on feedback from key stakeholders on the initial regulatory options and other approaches (December 2018).
- Present the full range of options and analysis of them, and recommended actions for your approval (February 2019).
- Cabinet approval of proposals for formal consultation as part of National Policy Statement, Freshwater Management (March 2019).

Annex One: Examples of industry led initiatives

76. Industry led initiatives:

- *Good Farming Practice: Action Plan for Water Quality 2018*
- Increasing focus on Extension Services (e.g. new MPI Extension Service Model, Red Meat Profit Partnership, Extension 350 in Northland) by government, industry and councils to provide one on one support to farmers to change practices
- Certification scheme for farm environment planners is under development and will help improve confidence in quality of FEPs prepared
- On-going research to improve the science around good farming practice mitigations in different circumstances (e.g. DairyNZ wetlands demonstration project and the *Our Land and Water* national science challenge).
- Catchment groups springing up around the country focussed on working together to improve environmental, business and community outcomes
- New management tools to help e.g. MitAgator to help farmers assess and prioritise mitigation actions; REGEN's service providing customised real-time advice to farmers about when to irrigate
- More focus on supporting the primary sector becoming a trusted source of high-value natural products – focussing on value over volume, including the potential to add value from the sustainability "story"
- Greater focus on understanding farmer behaviour and what drives their farm performance (e.g. MPI farm systems change project aims to understand the realities and challenges facing farmers in the current environment, and how government can work with the to develop solutions).
- Increased interest in farm planning for other purposes as well – e.g. biosecurity, occupational safety and health, animal welfare, GHG emissions, and what Government can do to promote quality plans that are useful to farmers and reduce compliance costs through data sharing etc.

Annex Two LAWF feedback

Good farming practices and farm planning

Recommendation 13 "implementing good management practice now" of the LAWF report says central government in partnership with industry and stakeholders construct a national policy instrument (NES and/or regulation) that defines GMP in rural (and urban) environments and which.

- identifies sector specific minimum standards that can be applied across NZ for common activities that pose an environmental risk (the body of the LAWF paper narrows this somewhat to activities that pose a higher environmental risk);
- includes sector specific risk assessment to identify the best management practices in specific circumstances (including a farm map identifying the environmental characteristics of the farm; identification of critical source areas, sensitive environmental and risky elements of the operation; contaminants of concern; mitigation approaches, and processes for implementation, third party auditing and monitoring and reporting);
- Identifies auditing, monitoring and reporting requirements
- Requires implementation of the above through farm plans by a specified date.
- enables flexibility, innovation and adaption
- Includes review provisions to allow for review and update of minimum standards as technologies develop and improve.

LAWF also recommend (Recommendation 15) that central government urgently support building capacity of persons with skills to develop and audit good farming practices and farm plans and co-ordinate the development of determine the effectiveness of mitigations.

High-risk Land Use Activities and stock exclusion

The LAWF report recommended a national instrument (NES and/or regulation) to define good management practice (GMP), and which would identify *sector-specific practices and minimum standards* that can be applied *across New Zealand* for common activities that *pose an environmental risk* (Rec 13, emphasis added). The standards and practices should be measurable (para 38a). LAWF recommended a farm plan based approach to implement these practices and minimum standards in rural areas (Rec 13f).

LAWF also recommended that rules be developed through the same national instrument, for the risky practices for sediment discharges they identified (Rec 16b):

- Exclusion of stock from waterways and provision of appropriate riparian margins
- Hill country cropping
- Intensive winter grazing …
- Integrated drainage management [ensure public and private drains are big enough and well designed – risk if flooded land is cultivated – para 51]
- Management of cultivated land

Intensification:

The LAWF report: rejected consents for intensification but recommended prohibited activity or moratoria in at-risk catchments (rec 6c); AND in fully allocated catchments, regional councils required to make additional discharges prohibited activity (rec 11)