Essential Freshwater 83, Policy decisions following consultation

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Security Level	In-confidence	Priority:	Urgent

	Action sought:	Response by:
To Hon David Parker, Minister for the Environment	Provide direction on which proposals and options you wish to present to your colleagues.	10 March 2020
To Hon Damien O'Connor, Minister of Agriculture		

Actions for Minister's Office Staff	**Return** the signed report to MFE and MPI.
Number of appendices and attachments 3	Titles of appendices and attachments (ie separate attached documents): 1. Table outlining officials' positions on the Independent Advisory Panel's recommendations 2. Summary of submissions 3. Report and recommendations of the Independent Advisory Panel

Ministry for the Environment contacts

Position	Name	Cell phone	1st contact
Principal Author	S9(2)(a)		
Responsible Manager (MFE)	S9(2)(a)		
Responsible Manager (MPI)	S9(2)(a)	S9(2)(a)	✓
Director (MFE)	S9(2)(a)	S9(2)(a)	✓
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Essential Freshwater, Policy decisions following consultation

Purpose

1. You are meeting with Ministerial colleagues on 16 March 2020 to discuss key issues arising from the Essential Freshwater consultation, and how the Government intends to respond.
2. We are seeking your direction on which proposals and options you wish to present to your colleagues. We are not seeking final policy decisions from you at this stage.
3. The purpose of this briefing is to support these discussions, by providing you with initial advice on the outcome of the consultation and the options we have developed in response. This is subject to impact analysis which will be completed in early-March.
    a. We have attached a table outlining officials' initial recommendations, and can provide you with additional detail on any of these matters if required (Appendix 1). This includes officials' positions in relation to the Independent Advisory Panel's (the Panel) recommendations; and
    b. We have included more detail on key issues that are likely to be contentious, and are seeking direction on how you wish to proceed (see advice section below). Options are provided where our recommendations differ from those of the Panel, or between officials from the Ministry for the Environment (MFE) and Ministry for Primary Industries (MPI). This briefing only addresses the Government's advisory groups' views where they are relevant to a specific proposal or issue, and officials are aware of those views. We expect the advisory groups will provide their own advice to Ministers in the coming week.
    c. Copies of the full summary of submissions, and the report and recommendations of the Panel are appended to this briefing for reference (Appendix 2 and 3 respectively).
4. We are meeting with you on 10 March 2020 to receive your feedback on this briefing. Subject to your direction, we will prepare supporting material (eg, a slide pack) including the results of ongoing impact analysis expected 12 March 2020.
5. Your direction will also enable officials to begin drafting a Cabinet paper (DEV) seeking agreement to final policy decisions, for lodging on 2 April 2020.
6. This is a joint briefing developed by officials at MFE and MPI. Unless otherwise specified (ie, by attributing a view to MFE or MPI) all officials share a common view.

Key messages

7. The Essential Freshwater package is designed to deliver on the Government's objectives of halting further declines in freshwater and ecosystem health, making material improvements in five years, and restoring past damage over a generation. The focus is, and continues to be, on making sure long term direction for regional planning is adequate to protect ecosystem health, and regulating harmful activities where we want to drive more immediate change.
8. The package will have an impact on local government and resource users. Impact analysis undertaken since consultation will provide Ministers with more clarity about what these impacts are. It is important to recognise that these are the costs associated with avoiding further declines – environmental benefits are real albeit difficult to express in monetary terms, as is the environmental cost of doing nothing. Impact analysis is ongoing, we have included information in this briefing where it is available, and will provide you with updated impact analysis in time to support discussions at the 16 March 2020 meeting.
9. The package also has broader implications for the Government's response to climate change. Actions to improve water quality are likely to reduce emissions overall (something impact analysis will address).
10. We are preparing a summary of all regulatory impact analysis. This will build on and cross-reference the detailed RIA documents, and include findings from additional impact analysis since consultation.
11. Our advice is largely aligned with that of the Panel. Proposals for improved long term direction to regional planning, with minor adjustments, will address the Panel's recommendations and submitter concerns.
12. Notwithstanding, significant decisions are needed in relation to the following key issues, with more detail provided in the advice that follows:
    a. nitrogen as a measure of ecosystem health in rivers;
    b. regulating to reduce excessive discharges of nitrogen;
    c. regulating intensive winter grazing;
    d. interim intensification rules; and
    e. the broader role of farm planning in relation to proposed activity-based regulation.

Treaty of Waitangi Settlement Obligations

13. As required under settlement legislation MFE have considered how the policy proposals will impact Te Awa Tupua – The Whanganui River and the Ngāti Rangi settlement.
14. MFE considers that settlements will not be directly impacted by any of the proposed changes. We acknowledge that through implementation phase, MFE must engage with Iwi to ensure any possible impact is managed.
15. MFE will provide further information on Treaty of Waitangi obligations within the Cabinet Paper and Regulatory Impact Statement.

Recommendations

16. We recommend that you:

a. **Note** the advice and recommendations contained within the green boxes throughout this briefing, as well as the table attached as Appendix 1.

b. **Note** this is our initial advice and is subject to impact analysis which will be completed in early-March.

c. **Note** we are meeting with you on 10 March 2020 to discuss your feedback on this briefing.

d. **Indicate** whether you require additional advice on other issues prior to your meeting Ministerial colleagues on 16 March 2020.

e. **Provide** officials with direction on which proposals and options you wish to present to your colleagues (ie, by agreeing, or disagreeing, to officials' initial recommendations).

f. **Agree** to proactively release this briefing on the Ministry for the Environment's website, subject to any redactions appropriate under the Official Information Act 1982, once Cabinet has made final decisions on the package.

YES / NO

Signature

S9(2)(a)

Hon David Parker
Minister for the Environment **Date**

Hon Damien O'Connior
Minister of Agriculture **Date**

Advice

Nitrogen as a measure of ecosystem health in rivers

Recap of what was proposed and why

17. Consultation sought the public's views on amending the National Policy Statement for Freshwater Management (NPSFM) to include dissolved inorganic nitrogen (DIN) in rivers as an attribute.

18. Note this was proposed by STAG, and the consultation document stated:

> *"We are seeking feedback on whether to include the new nutrient attribute tables proposed by STAG in the NPSFM. It is important to understand more about the ecological benefits from limiting nutrients, whether this varies by waterbodies, and what impacts the proposed new bottom lines would have on individuals and communities. Final decisions will not be taken until further analysis has been done."*

19. DIN would be a mandatory measure of ecosystem health that regional councils have to monitor and set desired outcomes for. At minimum regional councils would have to maintain DIN, or improve it where it is currently below a defined national bottom line. Regional councils and communities would work towards these outcomes by limiting resource use (eg, ability to discharge nitrogen) over timeframes of their choosing.

20. The rationale for DIN's inclusion is that existing attributes do not adequately manage the effect of nutrients on ecosystem health, primarily because:

    a. Soft-bottomed rivers (~28% of New Zealand's river length) do not support algal growth. Nitrogen will not be managed to achieve periphyton (algal growth) outcomes in these places, but will still impact on ecosystem health; and

    b. Current nitrate and ammonia toxicity national bottom lines are too permissive, protecting only 80% of species, while adverse effects on ecosystem health (other than toxicity) will occur at much lower concentrations of nitrogen.

Summary of positions

21. The Panel, STAG and officials all agree that the current toxicity guidelines are too permissive and that nitrogen needs to be managed for ecosystem health effects.

22. The Panel, STAG and officials all agree that the nitrate and ammonia toxicity bottom lines should be strengthened and that the current 80% species protection bottom lines are not adequate.

23. The Panel have recommended making DIN an action plan attribute. We do not agree with this recommendation for the reasons outlined below.

24. MFE and MPI both agree that the effects of nitrogen on ecosystem health need to be managed, however, officials disagree on how this should be achieved. MFE recommends adopting DIN as a limit setting attribute with a bottom line of 1 mg/L (as consulted on) that would only apply if other ecosystem health bottom lines are not being achieved. MPI recommends not progressing a separate DIN attribute but rather strengthening the nitrate and ammonia toxicity attribute tables, recognising that nitrate and ammonia are key components of DIN.

The key issue is scientific disagreement around whether adopting the DIN attribute will lead to improved ecosystem health, and the magnitude of cost impacts

25. There is disagreement around the relationship between DIN and ecosystem health. It is possible that reducing DIN will not benefit ecosystem health in some situations (ie, specific river types) and thus require unnecessary limits on resource use.

26. Related to this, impact analysis to date suggests the DIN national bottom line will have a greater cost impact in some places (albeit modest at the national level). Because of the above disagreement, we have a limited ability to advise Ministers and give them confidence that benefits for freshwater and ecosystem health will outweigh costs.

27. We have provided you with a range of options, aimed at mitigating cost impacts while retaining environmental benefits.

The recommendations of the Panel and officials' positions

28. The Panel recommends adopting the DIN attribute and national bottom line, but removing the requirement to set limits on resource use to achieve desired outcomes – regional councils would be free to work towards these in any way they choose, and to implement this through 'action plans'. MFE disagrees with this recommendations, with reasons provided further below in this section.

29. MFE recommends adopting the DIN attribute as consulted on *but incorporating an exception to account for situations where ecosystem health is at an acceptable level despite increased DIN*. That is, only where freshwater is at or better than national bottom lines for all relevant ecosystem health attributes, including MCI, periphyton and dissolved oxygen. In any case, DIN would still have to be maintained or improved. This would address the risk of DIN reductions not yielding environmental benefits.

30. MPI support setting limits to manage nitrogen, and strengthening requirements to do so (ie, through more stringent national bottom lines for nitrate and ammonia toxicity), but do not support the proposed DIN national bottom line of 1 mg/L as the basis for this. This is because the expected costs may outweigh the environmental benefits. MPI recommend undertaking further ecological and economic impact analysis, particularly in key regions, before a DIN national attribute and national bottom line is progressed.

31. We have provided you with a range of options below, and seek your direction on which options you want to present to your colleagues.

Positions at a glance

PANEL	SUBMITTERS	STAG	OFFICIALS
Recommended adopting the DIN attribute, without a requirement to set resource use limits. Recommend strengthening the existing nitrate and ammonia toxicity bottom lines to 90% species protection (up from 80%). If DIN is adopted as a limit-setting attribute, they support exceptions to the national bottom line where other ecosystem health attributes are shown to be better than their national bottom lines.	**Over 10,000 form submissions, and about one-third of unique submissions, support adopting the DIN attribute as consulted on** Supporters emphasise risks for drinking water and that the existing attributes offer insufficient protection. Those that question the validity of science, were concerned about economic and social costs and supported a catchment based approach. There is wide support for strengthening the nitrate and ammonia toxicity bottom lines.	**The STAG is split on this issue, and discussions are ongoing.** **Eight members of STAG support adopting the DIN attribute as consulted on.** **Five members of STAG do not support adopting the DIN attribute, but instead support strengthening the existing nitrate and ammonia toxicity bottom lines and developing alternative methods for managing nutrients in rivers that do not support periphyton over the longer term.** **Six members have not been explicit in their views.**	**MFE recommends adopting the DIN attribute as consulted on, but with exceptions to the national bottom line where other ecosystem health attributes are shown to be better than their national bottom lines.** **MPI recommend managing nitrogen by strengthening the nitrate and ammonia toxicity national bottom lines.** Regardless of whether DIN is progressed, we recommend strengthening the nitrate and ammonia toxicity national bottom lines. MFE recommend strengthening these to 95% species protection (up from 80%).

Impact analysis

32. Officials provided you with an interim update on impact analysis on 28 February 2020 (2020-B-06410 refers). We will be providing you with more detailed provisional information on impacts on 12 March 2020.

33. Available impact analysis shows that, in most parts of the country, the DIN attribute will have a marginal impact over and above existing attributes in the NPSFM, but will still require substantial reductions in some catchments. Nitrogen load reductions are largely concentrated in Pukekohe as well as the Canterbury, Waikato, and to a lesser extent Southland regions. Phosphorus load reductions are largely concentrated in Waikato and Northland regions.

34. Ongoing impact analysis will provide us with regional, national and industry economic impacts. This will include the cost of mitigation options by farm type and modelling of the costs of the package for the dairy sector, with draft reports expected early March.

Why not adopt DIN as an action plan without the requirement to set limits (ie, an action-planning attribute as opposed to a limit-setting attribute)?

35. The Panel have recommended the DIN attribute be adopted, but without the requirement to set limits on resource use to achieve desired outcomes.

36. We do not support progressing DIN as an action-planning attribute. All officials agree that councils can and should look to a variety of approaches for achieving desired outcomes for nitrogen – including non-regulatory efforts, good practice and farm planning. Non-regulatory efforts could include restoration, engineered nutrient removal, managed aquifer recharge and other new technologies, improved waste water management, etc.

37. However, we do not consider this is a reason to remove the requirement to set limits on resource use. Any and all of these approaches can be used in combination with limits, which may include rules to prevent further intensification or constrain nitrogen discharges. We consider that any approach to manage nitrogen should be underpinned by limits because:

    a. It is likely nitrogen reductions made through non-regulatory action plans will be overwhelmed by on-going intensification and increasing discharges; and

    b. Limits that define the maximum amount of nitrogen that can be discharged (and are sufficient to support ecosystem health) will be fundamental to any future allocation system.

38. Adopting DIN as an action-planning attribute is likely to add complexity, and it is important to note that regional councils will be setting limits on resource use to manage nitrogen regardless. This is because regional councils are already required to set limits on resource use to achieve target attribute states for the existing nitrate and ammonia toxicity attributes.

If DIN is progressed as a limit setting attribute

39. The Panel and all officials agree if DIN is adopted as a limit-setting attribute, there should be exceptions to the national bottom line where other ecosystem health attributes are shown to be better than their national bottom lines. Specifically, the national bottom line would not apply if a regional council can demonstrate other relevant ecosystem health attributes (ie, those that may respond to nutrients, so not sediment) are at or better than their national bottom lines. This will account for those situations where ecosystem health is already at an acceptable level despite DIN being worse than the bottom line, and so avoid unnecessary costs associated with DIN reductions.

40. What this means is, if freshwater is currently not providing for ecosystem health (as indicated by those other attributes), regional councils will have to manage DIN as part of their response. MFE consider where freshwater is in a poor state, DIN should be included in the management response to ensure we are not putting freshwater ecosystem health at further risk.

41. Further to the above, if a DIN attribute is progressed with a national bottom line, MPI recommend there should be broader exceptions (in addition to the above), based on socio-economic grounds.

Further options

42. Note that the next section considers options for strengthening the existing nitrate and ammonia toxicity attributes and national bottom lines – these options will impact on soft-bottomed streams and may affect your decisions here.

43. We recommend you retain all options until we can provide you with fuller impact analysis on 12 March 2020.

Please indicate whether you wish to present the following options to your colleagues.

Agree to adopt the DIN attribute, but without the requirement to set limits on resource use to achieve desired outcomes (ie, as an action-planning attribute), as recommended by the Panel.

YES / NO

OR

Agree to adopt the DIN attribute as consulted on (ie, as a limit-setting attribute), but providing an exception to the national bottom line if all relevant ecosystem health attributes are maintained at or better than their national bottom lines.

YES / NO

AND

Providing broader exceptions, including on socio-economic grounds, as recommended by MPI.

YES / NO

OR

Agree to not progress the DIN attribute and national bottom lines at this time, but reconsider it for inclusion after officials have had time to develop it further (eg, to account for different river types). Note your decisions on whether to strengthen the existing nitrate and ammonia toxicity attributes may affect your decision here.

YES / NO

Strengthening the existing nitrate and ammonia toxicity national bottom lines

44. Some in the STAG do not support the proposed DIN attribute and instead recommend developing alternative methods for managing nutrients in rivers that do not support periphyton over the longer term. In the short term, they recommend an enhanced status quo, by strengthening the existing nitrate and ammonia toxicity national bottom lines. They would support this (rather than the DIN attribute) on the basis that toxicity effects are well understood and are nationally applicable (ie, different river types do not respond differently). Longer term, these STAG members support development of a DIN attribute with varying national bottom lines that account for different river types and how they are likely to respond.

45. We note there is widespread agreement the existing nitrate and ammonia toxicity attributes do not provide adequate protection for ecosystem health, and support strengthening the national bottom lines. Submitters and all officials agree that 80% species protection is not enough.

46. If the DIN attribute is not adopted, then strengthening the existing nitrate and ammonia toxicity national bottom lines will also be the main avenue for improving protection of soft-bottomed rivers that will not otherwise be managed via the periphyton attribute.

47. The Panel recommend strengthening the national bottom lines to provide protection of 90% of species (up from 80%). However, concerns about the bottom lines are likely to persist. Currently the national bottom line for nitrate toxicity is 6.9 mg/L, and 0.7% of river sites we monitor are worse than this.[1] At 90% species protection, a national bottom line of 3.8 mg/L, 2.3% of river sites we monitor are worse.

[1] Based on monitoring data collected between 2013 and 2017 and reported in *Environment Aotearoa 2019*.

48. Instead, MFE recommends strengthening the national bottom lines for nitrate and ammonia toxicity to provide 95% protection, for nitrate this is a national bottom line of 2.4 mg/L. At this point, 5% of river sites we monitor are worse than this bottom line. We consider this will offer a greater, and more credible, level of protection for ecosystem health if the DIN attribute is not adopted.

49. MPI recommends strengthening the nitrate and ammonia toxicity bottom lines from 80% to at least 90% species protection, but does not yet have a view on whether 95% is the appropriate level of species protection. They are waiting to see finalised impact analysis before making a recommendation.

50. The three options strengthening the nitrate and ammonia toxicity bottom line are:

% Species protection	Nitrate concentration (impact in terms of % of monitored sites that exceed this)	Ammonia concentration (impact in terms of % of monitored sites that exceed this)
80% (status quo)	6.9 mg/L (0.7%)	1.3 mg/L (0.3%)
90% (recommended by the Panel and MPI)	3.8 mg/L (2.3%)	0.54 mg/L (0.4%)
95% (recommended by MFE)	2.4 mg/L (5%)	0.24 mg/L (0.9%)

51. We are expecting further impact analysis results in early March that will inform the selection of the nitrate and ammonia toxicity bottom lines.

Please indicate whether you wish to present the following options to your colleagues.

Agree to strengthen the national bottom lines for nitrate and ammonia toxicity to 90% species protection (up from 80%), as recommended by the Panel.

YES / NO

OR

Agree to strengthen the national bottom lines for nitrate and ammonia toxicity to 95% species protection (up from 80%).

YES / NO

Regulating to reduce excessive discharges of nitrogen

Recap of what was proposed and why

52. Consultation sought the public's views on three options for reducing high nitrogen discharges from farms.

    a. ***Option 1:*** A consent requirement for all dairy and low-slope dry stock farms that have nitrogen discharges over a threshold value (we consulted on a range, from the 70th to 90th percentile of a catchment's discharges) and are located in catchments listed in a schedule (Schedule 1). Granting of a consent would be conditional on:

        i. reducing discharges to the threshold over five years; or if this is not possible

        ii. implementing best practicable options to reduce discharges.

    b. ***Option 2:*** A national per hectare fertiliser cap.

    c. ***Option 3:*** A requirement for farms in Schedule 1 to have a freshwater module of a farm plan (FW-FP) in place by 2022.

53. Option 1 would apply on an interim basis, until councils fully implement the NPSFM (to be required by 2025 via other proposals). It would come into effect after 6 months for dairy, and 12 months for dry stock, providing time to estimate nitrogen discharges using Overseer.

54. Proposals are intended to target the highest discharges within a catchment, and lead to immediate reductions to assist with the Government's policy objective of halting further declines and making material improvements within five years.

Summary of Panel recommendations and official's positions

55. The Panel and all officials agree that Option 3, managing nitrogen inputs through FW-FPs, should be progressed.

56. The Panel and MFE both recommend that Option 1, setting threshold values for nitrogen discharges, should be progressed in conjunction with Option 3. However, MPI officials consider that the focus should be on delivering Option 3 only.

57. The Panel and all officials agree that if Option 1 is adopted a suite of changes to the consulted on proposal for Option 1 should be undertaken to address submitter feedback.

We recommend some changes to address Panel recommendations and submitter feedback

58. In terms of the nitrogen threshold value, the most significant changes are:

    a. Allowing for more time to complete initial estimates of nitrogen discharges, increasing to 12 months for all farm types.

    b. Targeting dairy, and low-slope beef and dairy support (rather than all low-slope dry stock) as these represent the highest risk.

    c. Setting the nitrogen threshold values at the 80th percentile of a catchment's discharges.

59. We also recommend changing the nature of consenting requirements (ie, if the nitrogen threshold value is exceeded). That is, to make achievement of specified practices the point of compliance rather than a specific discharge value – based on feedback and analysis to date, this would have been difficult to enforce.

60. We are likely to recommend removing catchments from Schedule 1 where evidence has been provided indicating that the catchment is inappropriate for inclusion. We are also likely to recommend adding additional catchments through a future process under section 360(2) of the Resource Management Act 1991 in late-2020. We are in the process of identifying these catchments now and will provide you with more detail through the draft Cabinet paper as it develops. Note adding catchments will require targeted consultation.

61. Overall, these changes are consistent with the recommendations of the Panel. However, officials disagree with the Panel in relation to the use of nitrogen surplus, and application to horticulture and arable sectors. These issues are discussed in more detail below.

Progressing with Option 3

62. While MFE agree with the Panel that both Options 1 and 3 should be progressed together, Option 3 requires institutional arrangements that will take some time to establish. This means it is not considered an effective way to reduce excessive discharges of nitrogen in the short term – whether or not it is progressed in the longer term. The roll-out of FW-FP could target Schedule 1 catchments in the first tranche.

63. MPI considers that only Option 3 should be progressed. While enforceable FW-FP are two years away we can start working immediately with industry to prioritise FW-FP roll out effort in Schedule 1 catchments to ensure excessive application of nitrogen is not occurring.

Positions at a glance

PANEL	SUBMITTERS	ADVISORY GROUPS	OFFICIALS
Combine Options 1 and 3 in Schedule 1 catchments. Extend the timeframes for the initial Overseer estimate to be provided to the council. **Enable use of Nitrogen-surplus or other model as alternatives to Overseer for setting the threshold** **Set threshold based on discharge data from all farmers and growers (not just pastoral farmers as at present) and include all farmers and growers in the consent requirements**. Set threshold at 80th percentile. **Consent conditions should not require achievement of the threshold but include this as a matter for the decision maker to consider.**	Significant cross-sectoral support for Option 1 (subject to caveats). Most ENGOs and form submissions support Option 2, while the primary sector and councils oppose it. Views on Option 3 are mixed. Various suggestions to add or remove catchments to Schedule 1. General concern that timelines are not feasible for initial Overseer estimates. Some support for using N-surplus instead of Overseer, eg, to avoid capturing non-target farms already at good practice Desire for a more targeted approach, eg, targeting sectors or farms based on risk. No consensus on the percentile threshold to be used. Change consent provisions including more stringent activity status, and avoidance of Overseer numbers as point of compliance	FLG does not support N-surplus as a basis for the N-cap proposal (as opposed to using an Overseer estimate of discharges).	**MFE recommend progressing amended Option 1 (with Option 3 implemented when the FW-FP regulations are in place).** **MPI agree that Option 3 should be progressed but consider that the focus should be on delivering FW-FPs in the Schedule 1 catchments instead of progressing with Option 1.** If Option 1 is progressed, all officials recommend extending timeframes for initial estimates of nitrogen discharges. **MFE recommend proceeding with Overseer as the *only* model for setting threshold as in draft regulations.** **Set threshold based on discharge data from pastoral farmers as proposed (not all farmers and growers)** We recommend targeting policy at highest risk pastoral sectors (dairy, and low-slope beef/dairy support). We recommend using the 80th percentile for the threshold. We recommend altering consent requirements so specific actions as point of compliance for consents (rather than achievement of a specific discharge). We recommend amendments to Schedule 1 where robust evidence has been supplied.

Outline of rationale and recommended changes to the nitrogen threshold value under Option 1

64. Submissions have clarified that setting the threshold using Overseer estimates would take much longer than allowed for in the draft regulations in the Waikato and Southland regions, because of the large number of affected farmers, the limited pool of Overseer modellers, and the inadequate standard of many existing Overseer estimates from a regulatory viewpoint.

65. We consider that the best way to address this is to:

    a. Reduce the number of nitrogen discharge estimates required by targeting dairying, and low slope dairy-support and beef-dominated farms. This would approximately halve the number of estimates required. Excluding low-risk land uses such as sheep farms also reduces the overall costs of the policy to the sector, with little change in the environmental benefits achieved.

    b. Extend the timeframe for nitrogen discharge estimates in the regulations to 12 months for all farms (up by 6 months for dairy). This has flow-on effects through the draft regulations, with the consent requirement also delayed by 6 months.

66. We also agree with the Panel's recommendation to use the 80th percentile for the threshold, based on the weight of economic analysis indicating that the reductions required are achievable at the farm-scale.[2]

Please indicate whether you wish to present the following options to your colleagues.
Agree to proceed with Option 1 – a consent requirement for all dairy and low-slope beef and dairy support farms that have nitrogen discharges *over the 80th percentile of a catchment's discharges*, and are located in catchments listed in a schedule (Schedule 1). Granting of a consent would be conditional on: **(a) reducing discharges to the threshold over five years; or if this is not possible** **(b) implementing best practicable options to reduce discharges.** **YES / NO** **AND** **Agree to extend the timeframes for initial estimates of nitrogen discharges to 12 months, with consequential extension to the timeframe for obtaining a consent.** **YES / NO**

An alternative to a per hectare fertiliser cap, Option 2

67. Minister Parker has requested advice on an alternative to a per hectare fertiliser cap, that would set a national nitrogen-fertiliser target (reducing over time), with additional regulations if the non-regulatory targets are not met. In New Zealand's fourth report for the United Nations Framework Convention on Climate Change, nitrogen fertiliser use was projected to fall by over 9% between 2017 and 2030 under current policy settings (including the existing NPSFM). Further reductions can be expected as a result of the Essential Freshwater proposals and climate change fertiliser pricing policies.

68. MFE's initial view is that a reduction of 20% over 10 years is ambitious but achievable. We are aiming to provide you with further analysis prior to 16 March. To be effective, we recommend that the targets be accompanied with supporting short-term non-regulatory initiatives (such as information and advice for farmers) to increase the likelihood of successfully meeting the targets.

69. Greenpeace have written to Minister Parker outlining the case for an immediate per hectare cap of 60 kg/ha, falling to zero within five years, with a consent requirement for all farms applying synthetic nitrogen fertiliser. We will provide Minister Parker with talking points for

[2] Howarth, S., Journeaux, P., 2016. Review of Nitrogen Mitigation Strategies for Dairy Farms - is the method of analysis and results consistent across studies? Online: http://flrc.massey.ac.nz/workshops/16/Manuscripts/Paper_Howarth_2016.pdf

your meeting with Greenpeace on 12 March.

We recommend proceeding with Option 3, MFE and MPI differ on timeframes

70. We agree that Option 3, managing nitrogen inputs through FW-FPs, should be progressed.

71. MPI officials recommend focusing on delivering Option 3 within Schedule 1 catchments. FW-FPs would be used to ensure good farm practice. The process of a farmer developing a freshwater module of farm plans is appropriate for ensuring farm practices are not resulting in excessive nitrogen leaching arising from poor management practice.

72. While enforceable FW-FPs are two years away we can start working immediately with industry to prioritise the roll out of non-statutory FW-FPs to Schedule 1 catchments. Once the enforceable FW-FPs framework is legally in place then these catchments can be the first for approval followed by independent audit. It is noted that the estimated timeframes for Option 1 is 18 months which is similar to the timeframe for the roll out of FW-FPs to priority catchments.

73. MPI believe that Option 3 will result in faster action on the ground, and are concerned that combining FW-FPs with a threshold measure will reduce the energy and effort going into delivering FW-FPs.

74. MFE considers there is a risk associated with requiring farmers to develop FW-FPs in the short term, before we know what will be required once the new FW-FP regulations are in place (ie, expending effort and resource on something that may need to be redone).

Please indicate whether you wish to present the following option to your colleagues.
Agree to proceed with Option 3 – managing nitrogen inputs the FW-FPs. **YES / NO**

75. We recommend that the regulations clarify that thresholds should be set at the sub-catchment scale where soils and rainfall vary significantly across the catchment. This reduces the number of non-target farms being caught by the regulations ie, farms that have high nitrogen losses but are already at good management. Note that sub-catchments would need to be clearly identified within the regulation.

Please indicate whether you wish to present the following option to your colleagues.
Agree that nitrogen threshold values should be set at the sub-catchment scale where soils and rainfall vary significantly across the catchment, with specific sub-catchments defined within the regulation. **YES / NO**

76. Very few submissions touched on the definition of low-slope applied in the proposals (this included options of 5, 7 or 10 degrees). We recommend use of "less than 10 degrees" slope as the definition of low slope to maintain consistency with the stock exclusion regulations. Reducing the slope definition would further reduce the number of farms covered.

Please indicate whether you wish to present the following option to your colleagues.
Agree to use the "less than 10 degrees" definition of low-slope, which will determine which beef and dairy support operations are subject to these proposals. **YES / NO**

Officials disagree with the Panel in relation to the use of nitrogen surplus, and application to horticulture and arable sectors

77. MFE recommend that, contrary to the Panel's recommendations, the regulations remain unchanged on the following aspects:

    a. Overseer should be used as the sole metric for setting thresholds: We considered use of nitrogen-surplus in place of Overseer (whether as an optional alternative as proposed by the Panel, or as the sole measure as suggested by some submitters). While nitrogen-surplus would enable the thresholds to be set more quickly, it is not sufficiently reliable as an indicator of good practice, especially for intensive farms making use of well-managed infrastructure such as feed pads. Overseer use provides additional benefits, such as testing the impacts of potential management changes on discharges, and increasing farmers' understanding of discharges, ahead of future allocation regimes.

    b. The horticultural and arable sectors remain excluded from the regulation: while arable and horticultural properties can have higher nitrogen losses than dairy and intensive dry stock farms, they are not well-suited to this type of policy. A composite threshold would not be useful as an indicator of good practice in any of the sectors. Setting separate thresholds for each sector would be possible for the pastoral sectors, but not for the arable and horticultural sectors because of the widely divergent crops and the small numbers of such growers in Schedule 1 catchments.

78. Should you wish to accept the Panel's recommendation on other models we can change the draft regulations to do this, with regional council taking the decision on which model to apply.

79. We note the government has commissioned a peer review of the use of Overseer in the context of regulation, as recommended by the Parliamentary Commissioner for the Environment in his December 2018 report. The independent Science Advisory Panel conducting the peer review is holding its first meeting on 30-31 March 2020.MPI recommends waiting for the results of the first stage of peer review, which is focused on the validity of the overall modelling approach, before taking final decisions on the specifying the use of Overseer in national regulation.

Please indicate whether you wish to present the following options to your colleagues.
Agree that Overseer will be used as the sole metric for determining nitrogen threshold values. **YES / NO** **OR** **Agree to enable regional councils to decide whether nitrogen-surplus or alternative models can be used instead of Overseer, as recommended by the Panel.** **YES / NO**

80. While extending the regulations to include the horticulture and arable sectors is an option, we do not recommend it as this would create illogical thresholds that do not reflect good practice in any of the sectors, and there is a risk of legal challenge given the scope of proposals that were consulted on.

Note Option 1 has recently been considered (and rejected) through Waikato's Plan Change 1 process

81. The Commissioners hearing Waikato Region's Plan Change 1 (PC1) have proposed changes to a proposal that is similar to Option 1. The draft report from the Commissioners recommends that the "75th percentile" threshold approach, on which Option 1 is modelled, be changed. The reasons given by the commissioners are:

    a. the fact that variable attenuation is ignored;

    b. the uncertainty created for farmers in the period before the threshold is set; and

    c. the way Overseer was proposed to be used to compare farms, whereas soil variability within a sub-catchment is such that the Commissioners felt the comparison is inappropriate.

82. The Commissioners' recommendations on PC1 for the Waikato and Waipā river catchments will be publicly released later in March. We expect that some of these recommendations will be appealed to the Environment Court.

83. The PC1 report recommends that the "75th percentile" threshold approach, on which the Essential Freshwater (EFW) Option 1 is modelled, be dropped from the plan change. Instead of dairy farms requiring a consent if over the 75th percentile (as initially proposed), the report recommends that consents will be required for dairy farms over a pre-specified estimate of the 25th or 30th percentile. Drystock farms running more than 18 stock units per hectare will also need a consent. This will require many more farmers to obtain a consent than under the original plan change provisions.

84. We have considered whether the Commissioners' recommended approach is preferable to the Government's Option 1. The advantage of the Commissioner's approach is that many more farms would be subject to regional council scrutiny of their nitrogen losses and farm practices (through consent monitoring). The disadvantages are:

    a. there is no fixed threshold that high-discharging farms must reduce to in the Commissioners' approach, whereas the EFW option 1 has strong incentives for reducing to the threshold within five years (by making consents controlled and non-notified if the threshold can be reached)

    b. the Commissioners approach would require three times as many consents to be issued as the EFW option 1, including for many relatively low-risk farms.

Regulating intensive winter grazing

Recap of what was proposed and why

85. Consultation sought the public's views on two options for better managing intensive winter grazing through rules and activity status in a national environmental standard:

    a. ***Option 1 (nationally imposed standards)*:** Intensive winter grazing would be a permitted activity, provided good practice is implemented and the activity is carried out below a slope and size threshold (we consulted on a range as indicated below) with a minimum set-back from waterbodies.

        i. Slope must be less than 10 (or 15) degrees; and

        ii. Area subject to intensive winter grazing must be 30 ha or 5% of the property, whichever is less (or 50 ha or 10%); and

        iii. Set-back from waterbodies must be 5 m (or 20 m).

        If these standards cannot be met, individuals would need to get a resource consent for winter cropping.

    b. ***Option 2 (based on industry standards)*:** Intensive winter grazing would be a permitted activity provided it is carried out on a 20 degree slope or less, setback at least 5 m from waterbodies, and pugging does not exceed the depth of the ankle joint (fetlock).

The key issue is the stringency of thresholds used and, as a consequence, the number consents that may be required

86. The Panel and all officials agree that standards should be imposed nationally for winter grazing (Option 1). This means a consent will be required if certain thresholds are met.

87. Officials all agree that if winter grazing is provided for in a certified FW-FP a consent to winter graze may not be required. This means the rules will only apply until such time as a farm has a certified and enforceable FW-FP.

88. We also agree that a number of practice requirements would be impractical to monitor and enforce and therefore we recommend these be removed from the regulations (ie, pugging depth). We agree that thresholds based on slope and size requirements should be include but disagree on the size of those thresholds.

89. The Panel and MPI are concerned that more constraining thresholds (ie, the slope and size requirements) will require a much larger number of consents which will be costly to farmers and create a burden on regional council capacity. MPI is aware that drainage of soil and rainfall are significant factors, in addition to slope and size, in the erosion risk associated with intensive winter grazing. Further impact analysis is expected in the next two weeks, and will inform our final advice on this issue.

90. However, MFE recommends retaining more stringent threshold because of the environmental risks associated with the activity at less stringent thresholds, and an inability to mitigate this risk in other ways.

Positions at a glance

PANEL	SUBMITTERS	OFFICIALS
Supports regulation of intensive winter grazing. Recommend removing several practice requirements that would be impractical to monitor or enforce, instead requiring farm plans to cover those activities (includes removing of pugging) – limiting permitted activity status to: o **slope below 15 degrees;** o **an area of 50ha or 10% of total contiguous area of farm;** o **an area of 15% of total contiguous area of farm if the farmer has a winter grazing plan;** o an un-grazed strip of 5m between the grazed area and surface waterbodies; and o the area is resown within 1 month or as soon as reasonably practical.	Mixed views on whether the proposals are too strict vs not strict enough. Some consider the practice should be regulated through farm planning – conversely some are opposed to farm planning. Concern about monitoring and enforcement difficulties (particularly the pugging standard). Concern proposals will require too many resource consents. Question whether or not environmental benefits will outweigh economic costs.	We broadly agree with the Panel's recommendations (except for the specific thresholds that have been bolded). MFE disagree with Panel's recommended thresholds, consider more stringent thresholds should be retained given the environmental risks associated with the activity (ie, 10 degrees slope, and 30 ha / 5% of farm). MPI agree with Panel's recommended thresholds. All officials agree that as certified and enforceable farm plans become available, these could be recognised as alternatives to resource consents. All officials consider there are no arrangements in place that we can have confidence in as a substitute for immediate regulation.

Removing impractical practice standards from the regulation

91. All officials agree with the Panel's recommendation that some practice standard requirements should be removed from the proposed regulations on the basis they are not practical to enforce, better suited to management through freshwater farm plans, and could be dealt with via guidance.

92. These practice standards include:

    a. Grazing on sloping land takes place progressively downhill from the top of the slope to the bottom of the slope.

    b. Stock is not grazed in any critical source area.

    c. Pugging to a depth of more than an average of 20cm (10cm) does not occur over more than 50% of the paddock.

93. The Panel recommend retaining the practice standard requirement to re-sow the area within one month or as soon as practicable. Officials also agree with this recommendation.

Please indicate whether you wish to present the following option to your colleagues.
Agree to remove the practice standard requirements (listed above) from the regulations consulted on and focus only on slope, size, set-back thresholds, and re-sow requirements. **YES / NO**

Stringency of thresholds used in the regulation

94. All officials agree with the Panel's recommendation to require a 5 m setback from waterbodies.

95. Riparian setbacks intercept sediment, nutrients, and pathogens and therefore mitigate the effects of winter cropping. The width of setbacks, their vegetation, and their slope determine how effective they are at intercepting contaminants. Research on the issue shows "inflection points" of interception effectiveness after 5 m setbacks whereby each additional metre of setback has diminishing environmental benefits.

96. However, MFE and MPI have differing views on recommended thresholds for consenting.

97. MPI supports the Panel's recommended size and slope thresholds that would trigger the need for a resource consent.

98. MFE recommends retaining more stringent thresholds due to the environmental risks associated with less stringent thresholds, and do not have confidence that the impacts of the activity will be mitigated unless directed to (ie, through consenting processes).

99. The table below outlines the two positions:

Factor	Panel and MPI recommended thresholds	MFE recommended thresholds
Slope	15 degrees	10 degrees
Size	50 ha or 10% of property	30 ha or 5% of property

Why not adopt more lenient thresholds recommended by the Panel?

100. Winter cropping greatly increases the risk of erosion and associated nutrient loss as well as pathogen (*E. coli*) and sediment discharges to water. Winter cropping results in bare ground and soil disturbance during the wettest period of the year. When soil is bare and disturbed, it erodes more easily during rainfall events and carries nutrients and pathogens to waterbodies.

101. Figure 1 shows erosion rates for a typical lower Southland farm that has pasture cover through winter versus the same farm if it does winter cropping with earlier versus later re-sowing. At 10 to 15 degrees and above, with no mitigations in place, erosion loss with winter cropping increases enormously compared to pasture.

102. In addition to the slope of the paddock, the scale of the activity directly relates to erosion rates and overall erosion risk. As activity area increases, the erosion rate per hectare increases as does the overall area subject to higher erosion risk. Figure 2 shows how erosion increases for the same farm location (assuming a 5 degree slope) as the area of the activity increases. So, for example, when the activity is undertaken across 50 ha, erosion per ha is significantly higher than when the activity is undertaken across just 30 ha. Note this example only represents the typical Southland farm and intended to be illustrative only.

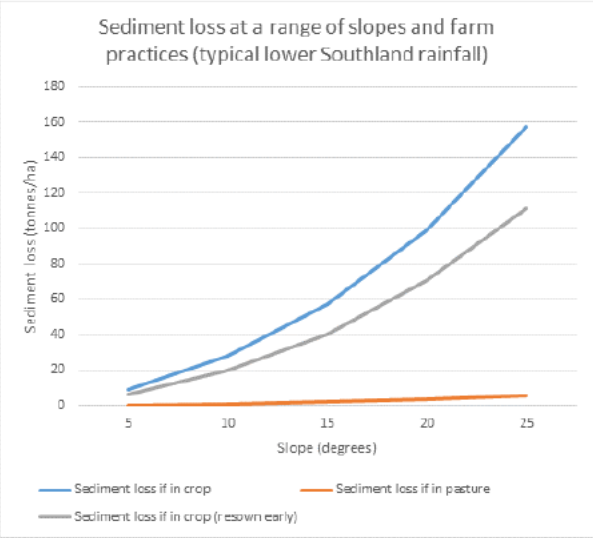

Figure 1, erosion of a typical Southland farm by slope

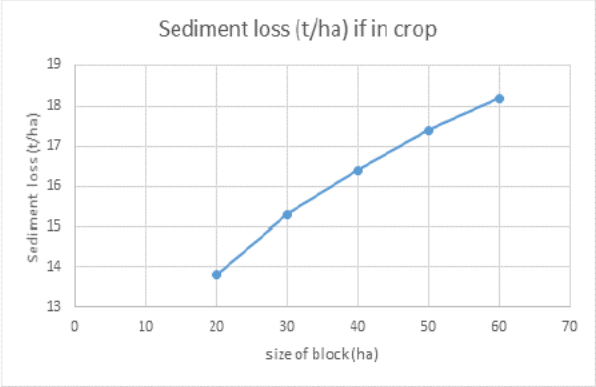

Figure 2, relationship between sediment loss and area of winter grazing

103. For these reasons, MFE currently recommends retaining the more stringent thresholds we consulted on and provide you with the option of doing so below.

104. Further analysis of winter grazing is underway to understand how sensitive water quality outcomes are to winter grazing activity considering the factors included in the proposed regulations (ie, slope and distance from waterways). A scalable risk map considering a wider range of drivers such as soil permeability and climate is being developed.

Please indicate whether you wish to present the following options to your colleagues.

Agree to require a 5m un-grazed strip between the grazed area and surface waterbodies.

YES / NO

AND

Agree to retain a slope threshold of 10 degrees, and size thresholds of 30 ha or 5% (whichever is less), as recommended by MFE.

YES / NO

OR

Adopt a slope threshold of 15 degrees, and size thresholds of 50 ha or 10% of the property (whichever is less), as recommended by the Panel and MPI.

YES / NO

Consenting implications of different thresholds

105. MFE's analysis indicates that in winter 2018 there were 3,028 paddocks with winter cropping in areas with higher than 10 degrees slope (about 13,100 ha in all). This compares to 436 paddocks with winter cropping in areas with greater than 15 degrees slope (about 1,400ha).

106. MFE's analysis indicates that in winter 2018, for all land over 7 degrees there were 44 paddocks with winter cropping on an area greater than 30ha. This compares to 11 paddocks with winter cropping on an area greater than 50 ha.

107. It is important to note that an individual farm may have more than one paddock in winter cropping and so the above is indicative only. We are looking at ways to approximate the number of consents required at the farm-scale.

Interim Intensification Rules

Recap of what was proposed and why

108. Consultation sought the public's views on interim rules to manage intensification through a national environmental standard, which would remain in effect until the existing or updated NPSFM was fully implemented by regional councils.

109. The proposed interim regulations to restrict intensification would require a resource consent to:

a. expand irrigated production area and intensive winter grazing

b. carry out a high risk land use change

c. expand commercial vegetable production.

110. Consent applications would need to demonstrate that nitrogen, phosphorus, sediment or microbial pathogen discharges will not increase above the average discharge for the 2017/18 farm year.

Summary of official's positions

111. We agree that there is a need for interim rules to be in place to achieve the Government's objective of making immediate changes to halt further decline of freshwater degradation and to stop water quality getting worse.

112. Officials and the Panel largely agree on refinements to the intensification proposals. We recommend a number of refinements to the regulations to improve their workabil;ity and to better target higher-risk activities (see appendix 1).

113. Officials have differing recommendations on whether or not to include a sunset clause, or specific end date, to these provisions.

Sunset clause

114. The Panel seriously considered recommending a sunset clause, and noted there were pros and cons of having one. Its final recommendation was that it considers the requirement to finish the planning process to trigger the sunset of these rules a sufficient incentive. It therefore recommended clarifying that the date at which the NPSFM is implemented in an FMU (freshwater management unit) is sufficient sunset to address submitters concerns.

115. MFE agrees with the Panel that implementation of the NPSFM is a sufficient incentive. Including a sunset clause may create an incentive for councils to delay implementation of the NPSFM and it does not make sense to revoke the regulations for councils who fail to comply with them.

116. MPI recommends that a sunset clause taking effect in 2026 is necessary to provide certainty and clarity that the blunt interim intensification rules proposed are in fact only short-term measures, ones that will not set the scene for a future allocation system based on grand-parenting.

117. Many submitters are concerned that the proposed interim intensification rules - with no set end date - will effectively pre-empt a future allocation system. There is a view that the rules reward those that have already intensified, in some cases on inappropriate soils, and punishes those with less intensive farm systems. Restricting or disincentivising these changes into the future may lock in on-farm activity in a state when its operations are not as efficient as they could be. In a time of uncertainty prior to limit-setting processes and an allocation coming into place, this can create an incentive for high discharging activities to maintain their high discharges rather than risk converting to a less intensive form of farming.

118. Given that a more effects-based and nuanced allocation system, as well as a community limit setting process, have not yet been implemented we do consider that interim rules will help hold the line on water quality in the meantime. However, we note that they may end up freezing rural land use at commencement date, and if the rules are in place any later than a set, specific date – there is little flexibility and incentive for land owners to transition to more productive and sustainable land use and actually improve water quality in the medium term.

119. The rules as currently drafted are proposed to be in place until such time that plans in line with the updated NPSFM have been implemented. No council is yet to fully implement any NPSFM and have clearly submitted on the Essential Freshwater proposals that that they will not have sufficient capacity nor capability to guarantee new plans can be in place by 2025.

120. Land owners are therefore concerned that these rules will in practice 'tie up natural resources for longer' than intended and will 'cement the grand parenting approach to allocation' (Beef+Lamb NZ). A sunset clause could help provide an incentive for the development of regional plans. It would signal that these blanket intensification rules would no longer be in effect after a certain date.

121. The lending sector raised concerns with the interim intensification rules during consultation. In the possibly likely event that new plans are not implemented by 2025, the ambiguity of when these blunt rules will no longer be in effect will impact on a land owners ability to undertake short-medium term business planning. This in turn will affect their borrowing ability. Banks are already considering the direction of travel on environmental limits across water as part of lending assessments, resulting in credit becoming increasingly harder to obtain.

122. Confidence in funding is key for mitigating adverse impacts on land values. Furthermore, the uncertainty of how long these rules will apply for may make it more difficult to access funding and may therefore restrict farmers' and growers' ability to invest in on-farm solutions to improve environmental outcomes and diversify into more productive and sustainable land uses.

Please indicate whether you wish to present the following option to your colleagues.
Agree to include a sunset clause on the interim intensification rules taking effect in 2026. **YES / NO**

Providing catchment flexibility in the intensification regulations

123. A number of submitters expressed concern that the intensification proposals lock-in and 'grandparent' existing land uses and do not have enough flexibility for land-use change. They argued this would particularly impact underdeveloped land, including multiply-owned Māori land. This is because the proposal states that resource consents will only be granted if the applicant can demonstrate their activity does not increase contaminant discharges relative to previous years.

124. Some submitters suggested applying regulations only in 'at risk' catchments as a way to target the regulations to the riskiest areas. Officials do not agree with this approach, as it would likely create new intensification problems in the areas where the regulations would not apply. In this respect it is important to note that councils are required to maintain or improve water quality everywhere – no catchment has further room for deterioration. The key implication of this is that further intensification requires 'headroom' to be created elsewhere.

125. The Panel did not recommend targeting approach to intensification controls, but did recommend allowing a pathway for low-discharging intensification where possible.

126. One option for creating such a pathway, and for creating some flexibility is to allow some off-setting within a catchment. The regulations could stipulate that a council can grant a resource consent for an intensification land use change where it is satisfied that contaminant loads have decreased elsewhere in the catchment and that the new activity (eg, a conversion from forestry to sheep and beef) would increase contaminant discharges by less than the decreased load.

127. For example, in a catchment that has seen large areas converted to forestry, a council may be confident that granting a resource consent to convert a forestry block into low-intensity sheep and beef would not increase the contaminant loads in the catchment.

128. MFE considers that such a proposal could use a 3:1 ratio, where two thirds of the contaminant load reduction is 'banked' by the water itself and not transferred to another resource user. Under this approach, the council would need to be confident that the increase in contaminant discharges from the intensification activity is, at most, one third of the contaminant load decrease in the catchment.

129. This option starts to become a quasi-allocation system, but it may send a useful signal that intensification within environmental limits is allowed.

130. There are a number of issues that would need to be worked through to make sure such an approach would work. For example, it may be difficult for councils to manage such an approach in practice due to the need for catchment scale information on contaminant loads, and stringent record keeping at a catchment level. In practice it may only be utilised in areas that have seen large-scale land use change into lower-discharging activities. There are also potential equity issues to consider, for example, who would get the first right to catchment 'head room' when it is created – is it a first-in first-served approach, or should it be first allocated to under-developed land?

131. Should you wish to explore this, or other options to refine the regulations further, we can provide further analysis in the next week.

Please indicate whether you wish to present the following option to your colleagues.
Agree to include greater flexibility for catchment offsetting in the intensification regulations, subject to further work from officials **YES / NO**

The broader role of farm planning in relation to proposed activity-based regulation

132. On 28 February 2020, officials provided you with a separate briefing on freshwater farm plans ("Essential Freshwater 82: Making Freshwater Farm Plans enforceable"). That briefing outlines current thinking on core elements of a possible future freshwater farm plan regime. You have agreed to develop drafting instructions for a Supplementary Order Paper to amend the RMA. If enacted, this amendment would enable future development of regulations for a freshwater farm plan regime.

133. Officials consider that farm planning can support and drive improvements to freshwater and ecosystem health through implementation of good practice that is tailored to individual farms and circumstances. However, farm planning is complementary – *and not an alternative* – to regulatory proposals described in this briefing.

134. Regional planning (eg, in relation to specific contaminants) will set the desired outcomes to be achieved and, in combination with activity-based regulations (NES), will define the outer bounds within which resource use must occur. Farm planning is a tool to assist farmers in complying with these, and to drive the adoption of good practice. Farm plans also enable farm-specific risks to freshwater to be addressed though tailored approaches where it's not practical to regulate the activity nationally.

135. Getting every farmer and grower operating at good practice, including those in catchments with satisfactory water quality, provides a mechanism to improve ecosystem health, implement mahinga kai and Te Mana o Te Wai, and free up some additional resource for other users (as well as for the benefit of the environment).

136. Developing an implementation strategy for Freshwater Farm Plans will be important for the success of this approach to regulating for environmental improvements. Poorly coordinated implementation of this proposal, on top of the many other policy proposals affecting agricultural and horticultural enterprises, risks discouraging those people affected from genuinely engaging with the policies.

137. We think there will be considerable value from working with iwi/Māori, regional councils and industry organisations to ensure that achievable, measurable and visible progress is made early, which will provide examples and build capability to support wider adoption. With such engagement, officials will be able to develop informed advice about the timing, rollout and prioritisation of Freshwater Farm Plans, taking into account other policy areas already announced, such as the agriculture and pastoral sectors' climate change commitments under He Waka Eke Noa and national direction on biodiversity. Existing work on At-Risk Catchments, for example, could also be factored in to the prioritisation process.