BRF- 2156: Final policy options for amending the National Environmental Standards for Sources of Human Drinking Water (NES-DW)

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Security Level	In-confidence	MfE Priority:	Non-Urgent

	Action sought:	Response by:
To Hon Kiritapu Allan, Associate Minister for the Environment	**Note** that, in response to your feedback and submissions from stakeholders, the proposed amendments to the NES-DW have been refined. **Agree** to the preferred option for amendments to the NES-DW.	N/A
CC Hon David Parker, Minister for the Environment	N/A	N/A

Actions for Minister's Office Staff	**Return** the signed report to MfE
Number of appendices and attachments	Appendix One: Draft RIS for your information Appendix Two: Refining of three proposals into amendment packages Appendix Three: Packages of amendments to the NES-DW Appendix Four: Analysis of different packages Appendix Five: Interactions with other legislation

Ministry for the Environment contacts

Position	Name	Cell phone	1st contact
Principal author	Morag McDonald	s 9(2)(a)	
Responsible manager	Vania Llewell	s 9(2)(a)	
Director	Jo Gascoigne	s 9(2)(a)	✓

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Key messages

1. This briefing provides you with policy advice on amending the National Environmental Standards for Sources of Human Drinking Water (NES-DW). Having considered submissions on the NES-DW, we have developed policy options for each of the three proposals. As these three proposals are interdependent, we have provided packages comprised of different options under each proposal. All packages present an approach that improves the current NES-DW. The detail of each package is available in appendix 3.
2. We are seeking your agreement on a preferred package of amendments, to enable development of a Cabinet paper seeking agreement to issue drafting instructions to the Parliamentary Counsel Office (PCO).

Context

Background

3. The safety of drinking water relies on having multiple barriers to contamination across the water supply process. Protection of source water is the first barrier, which is critical as it is not always possible to remove contaminants through the treatment process. Source water protection is also important for giving effect to Te Mana o Te Wai.
4. The NES-DW is the current regulatory tool solely intended for protecting sources of drinking water in New Zealand. The Havelock North Inquiry (HNI) and a subsequent Ministry for the Environment (MfE) review found that the NES-DW has 'significant problems'.
5. An amended NES-DW must be feasible to implement, effective at reducing the likelihood of contamination events, proportionate to the risks of contamination and the costs imposed on resource users and regional councils, consistent with other legislation, fair across different communities in New Zealand, and consistent with the Crown's obligations under Te Tiriti o Waitangi.
6. To strengthen the NES-DW we developed proposals covering three aspects:

a. Proposal One – How at-risk source water areas are delineated.

b. Proposal Two - How activities that pose risks to source water are regulated or managed.

c. Proposal Three – Appropriate scope of the NES-DW.

7. We consulted on the proposals in early 2022 and have refined the policy options in response to your feedback and submissions from stakeholders. The main changes have been to the proposed activity controls (Proposal Two) and the proposed scope (Proposal Three) [BRF-1919 refers].

8. As these three proposals are interdependent, we have developed packages of amendments for your consideration. The packages are comprised of the preferred options under each proposal and show how the proposed changes would work together. Our analysis shows that each of the packages evaluated in this briefing are an improvement on the current NES-DW.

9. Our preferred package is Package Two, which we consider most likely to achieve the policy objectives. Officials can discuss whether combinations of options across the packages is feasible if you wish.

10. All of the packages are consistent with other RMA national direction and broadly consistent with the requirements of the Water Services Act 2021 (WSA), noting that the WSA goes further and regulates all water supplies excluding domestic self-supplies.

Preferred package of NES-DW amendments

11. Our preferred package of amendments is Package Two, which is made up of the following:

Proposal One – How at-risk source water areas are delineated

12. Package Two requires regional councils to define three source water risk management areas (SWRMA) where activities have a higher likelihood of contaminating source water.

13. This option provides regional councils with standard (or default) models to map SWRMA. Regional councils would have some flexibility to recognise local geographical features and context. They would be required to map the SWRMAs for all registered drinking water supplies within the scope of the NES-DW (under Proposal Three).

Proposal Two – Strengthening activity controls in at-risk areas

14. This proposal strengthens activity controls under the NES-DW. The preferred amendments retain the intent of the current NES-DW, meaning regional councils must not allow any activity that would lead to a breach of the Drinking-Water Standards after existing treatment. It also adds some specific activity controls in SWRMA 1 and 2, which have been identified as high-risk to source water. This package does not include any activities that were not within the scope of controls identified in the consultation document.

Proposal Three – Appropriate scope of the NES-DW

15. In Package Two, the application of the NES-DW continues to apply to all supplies that supply drinking water to no fewer than 501 people.

16. The NES-DW would not apply to supplies that supply fewer than 501 people at this stage. Once all supplies have been registered[1] with Taumata Arowai, we recommend that consideration be given on whether to extend the scope of the NES-DW to include them.

Nitrates report

17. Ministers have requested a report on risks associated with nitrate/nitrite levels in drinking water, with particular focus on South Canterbury [CAB-22MIN-0216 refers]. We previously updated you [BRF-1919 refers] on a cross-agency working group tasked with reporting back to Ministers before the end of October.

18. The nitrates report will not recommend any amendments to the NES-DW, nor any additional information to inform the proposed NES-DW amendments. To avoid slowing the progress of the NES-DW amendments, we have not delayed this briefing until after the nitrates report is finalised.

19. Ministers will be provided with an option to release the nitrates report.

[1] All supplies except domestic self-suppliers must register with Taumata Arowai by November 2025, and produce a Source Water Risk Management Plan by November 2028.

Next steps

20. The intended Gazettal date for NES-DW amendments is late March - early April 2023. To meet these deadlines, you will need to seek Cabinet approval in 2022. A draft Cabinet paper to progress these amendments will be provided to your office by 27 October 2022.

21. The nitrates report will be provided to you by 31 October 2022.

Recommendations

22. We recommend that you:

a. **Note** that, in response to your feedback and submissions from stakeholders, the proposed amendments to the NES-DW have been refined.

b. **Note** that the report on nitrate contamination of drinking water is on track to be delivered before the end of October 2022. The report does not recommend any additional amendments to the NES-DW.

c. **Note** that each of the packages of amendments in this briefing represent a significant improvement on the current NES-DW.

d. **Agree** to the preferred option for amendments to the NES-DW. Specifically:

i. **Agree** to require regional councils to map three source water risk management areas (SWRMAs) for each water supply within the scope of the NES-DW.

Agree / Not Agree

ii. **Agree** to retain the current intentions of the NES-DW activity controls as a baseline, and to introduce controls on the listed high-risk activities in paragraphs 23 and 24. All of these controls are within the scope of activity controls identified in the consultation document.

Agree / Not Agree

iii. **Agree** to retain the scope of the current NES-DW, protecting source water for supplies that serve no fewer than 501 people.

Agree / Not Agree

e. **Note** that officials can discuss with you other combinations of options across the packages if you wish.

f. **Agree** that officials should prepare Cabinet materials seeking policy approvals and authority to instruct the Parliamentary Counsel Office to draft the amendments to the NES-DW.

Agree / Not Agree

g. **Note** we will provide you with draft Cabinet materials by 27 October 2022, for you to take to the ENV Cabinet Committee on 24 November 2022.

h. **Note** we are aiming for Gazettal of an amended NES-DW in March-April 2023.

Signature

Jo Gascoigne
Director
Water and Land Use Policy

Date 20/10/22

Hon Kiritapu Allan
Associate Minister for the Environment

Date

BRF-2156 Final policy options for amending the National Environmental Standard for Sources of Human Drinking Water (NES-DW)

Supporting material

Purpose

1. This briefing provides you with policy advice to amend the National Environmental Standard for Sources of Human Drinking Water (NES-DW) across three key areas (mapping, activity controls and scope). We are seeking your agreement on the proposed options.

Context

The regulatory framework

2. The safety of drinking water relies on having multiple barriers to contamination across the water supply process. Protection of source water is the first barrier. The NES-DW is the current regulatory tool solely intended to protect sources of human drinking water in New Zealand. The NES-DW is intended to reduce the likelihood of source water contamination and therefore waterborne disease and acute illness, and its associated economic and societal costs.

3. In 2017, the Havelock North Inquiry (HNI) found the drinking water regulatory framework was not fit for purpose, and that the NES-DW has 'significant problems'.

4. Since then, the regulatory framework for drinking water has changed. The Water Services Act 2021 (WSA) sets requirements that drinking water suppliers must meet to ensure they provide safe drinking water. A new dedicated regulator, Taumata Arowai, has been established.

5. An updated freshwater regulatory framework is also being implemented, including the National Policy Statement for Freshwater Management 2020 (NPS-FM); Resource Management (National Environmental Standards for Freshwater) Regulations 2020 (NES-F); Resource Management (Stock Exclusion) Regulations 2020. These will have a positive effect on source water quality as they are implemented.

Nitrates

6. Separate to this work, Cabinet requested delivery of a joint report with the Ministry of Health and in consultation with Taumata Arowai, on the risks of nitrates in drinking water and options to address them, with a specific focus on South Canterbury groundwater [CAB-22MIN-0216 refers]. This report will be delivered later this month.

7. The report considers existing policy instruments used to manage nitrates including the role of the NES-DW. The report will not propose any additional amendments specific to the NES-DW to address the issue of nitrates.

8. The NES-DW will retain the current requirements that regional councils must manage activities to ensure there is no breach of the nitrate limits as set out in the Drinking-Water Standards.

Effects of drinking water contamination

9. Both the HNI and MfE identified problems with the NES-DW. Namely that it is complex and unclear, resulting in inadequate and inconsistent application, with no discernible impact on the quality of source water[2]. This ineffectiveness is concerning, as it is conservatively estimated that 34,000 New Zealanders get sick from their drinking water every year[3].

10. Despite the NES-DW being in effect during the 2016 Havelock North drinking water contamination event, inadequate source water protection was identified as one of several contributing failures. There are significant risks associated with contamination events in large supplies, emphasising the need for effective source water protection to protect population health, as well as to reduce the monetary and societal costs.

11. Evidence suggests there is potentially a greater risk of contamination in smaller water supplies, with data showing that, as the size category of a water supply gets smaller,

[2] Compliance data indicates the percentage of all New Zealanders who get their drinking water from compliant water supplies has remained relatively static over the past three years (62% in 2018/19; 64% in 2019/20; 64% in 2020/21). However, the State of the Environment report indicates that, across the country, the percentage of bores (noting monitoring data covers more than just drinking water sources) contaminated with E.coli has been steadily increasing, from 45% in 2011 to 55% in 2022.

[3] Ball, 2006. Estimation of the burden of water-borne disease in New Zealand: preliminary report. https://www.health.govt.nz/system/files/documents/publications/water-borne-disease-burden-prelim-report-feb07-v2.pdf

compliance rate with the New Zealand Drinking-Water Standards worsens[4]. Data also indicates that there are higher notification rates of potentially waterborne diseases in rural areas[5], where there are more smaller drinking water supplies. Compliance rates for bacteria and parasite levels in drinking water are of particular concern, because they can cause acute illness following a single contamination event, and those most at risk of infection are infants and young children, the immune supressed, the sick, and the elderly.

If the NES-DW is not amended

12. If no change is made to the NES-DW (the counterfactual), updated NES-DW users guidance, alongside changes across the wider drinking water and freshwater regulatory frameworks, will likely have a positive impact on source water protection, and NES-DW implementation.

13. The detail of the current situation is outlined in the attached draft Regulatory Impact Statement (RIS) (Appendix One pg 10-12).

14. The policy objectives for an amended NES-DW are feasible implementation, effective reduction in the likelihood of contamination events, proportionality between the risks of contamination and costs imposed on resource users, consistency with other legislation, fairness across different communities, and consistency with Crown obligations under Te Tiriti o Waitangi.

Public consultation on proposed NES-DW amendments

15. Public consultation on proposed amendments to the NES-DW occurred between January and March 2022. Improvements to the NES-DW were proposed in three areas:

    a. Proposal One: How at-risk source water areas are delineated

    b. Proposal Two: How activities that pose risks to source water are regulated or managed

    c. Proposal Three: Protecting all registered water supplies

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[4] In large supplies (those serving more than 10,000) compliance is 95.5% and 84.4% for bacteria and protozoa, respectively, but for small supplies (those serving 101 to 500 people), these compliance rates drop to 66.6% and 33.7%.

[5] Environmental Health Intelligence NZ, 2022. Notifications of potentially waterborne diseases. {Factsheet}. Wellington: Environmental Health Intelligence NZ, Massey University. https://reports.instantatlas.com/view-report/91a2cb47825a4c8cba852eb8001a3d5a/NZ

16. A total of 148 unique submissions[6] were received, with a wide range of views presented on the proposed amendments. A summary of submissions outlining the feedback received was published in June 2022 [BRF-1554 refers].

17. You met with officials on 22 June 2022 to discuss the proposed NES-DW amendments and on 7 September 2022 to discuss the nitrates report back.

18. Based on the feedback received from consultation, broader engagement and your feedback, officials have refined the proposals and developed options for amending the NES-DW. The detail of the analysis for each separate proposal - mapping, activity controls and scope - is included in Appendix Two.

19. As these three proposals are interdependent, we have considered how various amendments to mapping, activity controls and scope could be combined to deliver a feasible package.

Packages of amendments to the NES-DW

20. We identified three packages, ranging from least to most degree of change from the current NES-DW. All packages present an approach that improves the current NES-DW. Each package is detailed in Appendix Three, along with a graphic overview. Detailed analysis of the packages is included in Appendix Four.

21. Package Two is most likely to achieve the policy objectives described in paragraph 14 and is the preferred option.

Preferred option - Package Two

22. The preferred package of amendments is made up of the following:

Proposal One – How at-risk areas to source water are delineated

23. Package Two requires regional councils to define three source water risk management areas (SWRMA) where activities have a higher likelihood of contaminating source water. Mapping of SWRMAs is proposed in all three packages.

24. This option provides regional councils with standard (or default) models to map SWRMA. Regional councils would have some flexibility to recognise local geographic features and context. They would be required to map the following areas for all

[6] We received 2259 form submissions that were based on a form created by Greenpeace.

registered drinking water supplies within the scope of the NES-DW (under Proposal Three):

a. SWRMA 1 – the direct area around the source water intake intended for the management of immediate risks would be mapped using a fixed size method[7].

b. SWRMA 2 – the larger area intended for the management of more medium-term risks would be mapped using either the fixed size or time-of-travel methods around the source.

c. SWRMA 3 – the entire catchment or capture zone for source water intended to capture longer-term risks.

25. Regional councils could also opt for a bespoke mapping approach which allows for alternative (existing or new) mapping methods if they deliver on outcomes at least as protective as the methods above.

Proposal Two – Strengthening activity controls in at-risk areas

26. This proposal strengthens activity controls under the NES-DW. The preferred amendments retain the intent of the current NES-DW, meaning regional councils must not allow any activity that would lead to a breach of the New Zealand Drinking-Water Standards after existing treatment. It also adds some specific activity controls in SWRMA 1 and 2, which have been identified as high-risk to source water. This package does not include any activities that were not within the scope of controls identified in the consultation document[8].

27. In SWRMA 1[9], specific controls are proposed over a range of high-risk activities:

a. We propose to prohibit certain discharges:

i. from new wastewater[10] activities

[7] SWRMA 1 for surface water bodies, comprises the water body itself - a 500 m radius around a lake intake, and 1 km upstream and 100 m downstream of a river intake – and a 5 m riparian margin. For groundwater it comprises a 5 m radius around the bore head.

[8] This includes controls on high intensity livestock activities, additional stock exclusions controls, discharges to land and use of synthetic fertiliser.

[9] In the preferred package of amendments, SWRMA 1 covers less than 0.01% of productive land in New Zealand.

[10] In this document, 'wastewater' refers to any human sewage or animal effluent, or biosolids discharges.

ii. from new industrial / trade waste activities (excluding water or stormwater)

iii. from new landfills, offal pits, silage, and composting

iv. of synthetic nitrogen fertiliser

b. We propose to provide minimum requirements for:

i. Discharges from existing wastewater or industrial / trade activities, and discharges from existing contaminated sites, landfills and offal pits

ii. Discharge of stormwater, and certain pesticides

iii. Commercial aquaculture operations

iv. Dams that may result in cyanobacterial blooms

v. Disturbance of the bed of water bodies

vi. Earthworks that could damage shallow aquifers or the protective layers of aquifers (aquicludes or aquitards)

vii. New bores

28. In SWRMA 2[11], the intent is to ensure regional councils consent certain high-risk activities, so that that they know where and when they are occurring, and can ensure their effects are appropriately managed:

a. For SWRMA 2 groundwater, the activities are earthworks that could damage shallow aquifers or the protective layers of aquifers, and new bores.

b. For SWRMA 2 surface water, the activity is direct discharges of contaminants to water, such as wastewater, industrial/trade wastes, certain stormwater discharges, and certain aquatic pesticide discharge.

Proposal Three – Appropriate scope of the NES-DW

29. In Package Two, the application of the NES-DW continues to apply to all supplies that supply drinking water to no fewer than 501 people.

30. Any amendments to the NES-DW would not apply to supplies that supply fewer than 501 people at this stage. Once all supplies have been registered[12] with Taumata Arowai, we recommend that consideration be given to whether to extend the scope of the NES-DW to include them.

[11] In the preferred package, SWRMA 2 covers 6.5% of productive land.

[12] All supplies except domestic self-suppliers must register with Taumata Arowai by November 2025, and produce a Source Water Risk Management Plan by November 2028.

Analysis of preferred option

31. Package Two is a proportionate response to strengthen the NES-DW. It increases the effectiveness of the NES-DW protections for larger water supplies who supply the majority of the New Zealand population. Table 1 shows the impact of their inclusion on supplies, population and land.

Table 1: Impact of preferred package of amendments

	Supplies supplying >500 people [13]			
No. of supplies	276			
No. of people	4,225,323	82%		
Area[14]	**Total land**		**Productive land**	
SWRMA 1	1,430 ha	0.01%[15]	423 ha	0.004%[16]
SWRMA 2	1,227,247 ha	6.8%	606,249 ha	5.5%
SWRMA 3 (no activity controls)	12,602,043 ha	70.0%	5,898,767 ha	48.4%

32. This option provides the most flexibility to regional councils for mapping SWRMAs, establishing both a default and bespoke approach to mapping, and allows them to choose the appropriate level of complexity and therefore associated cost. It also uses a robust set of risk-based criteria, applicable to both surface and ground waters and balances the trade-offs of protection versus difficulty to resource and implement.

33. This option establishes nationally consistent minimum requirements to address the highest risk activities in SWRMA 1 and 2. It allows regional councils to develop more stringent local controls as appropriate, including through freshwater planning, but it is not reliant on them doing so (noting focus on establishing SWRMA controls may not be

[13] Based on the Taumata Arowai register at 18 October 2022.

[14] The area calculations are based on a version of the Taumata Arowai Drinking Water Supply register from May 2022, which are slightly different to final number of supplies and people covered by this scope.

[15] Total land excluding formally protected land is 17,998,483 ha.

[16] Total productive land (high producing grassland, low producing grassland, orchard, vineyard / perennial crop, short rotation crop) is 10,935,336 ha.

achievable for all regional councils by the December 2024 deadline for public notification of freshwater plans).

34. The impact of the specified activity controls is low, with less than 0.01% of productive land in New Zealand impacted by proposed controls in SWRMA 1. This land is riparian (5m border of surface water body) or the 5m radius around the bore head, therefore the impact on individual agricultural producers, relative to the size of their farm, is likely to be minimal.

35. The activity controls in SWRMA 2, which covers 5.5% of productive land in New Zealand, are limited to: earthworks that could damage a shallow aquifer or an aquifers' protective layers; quality requirements for new bores; and controls on direct discharges of contaminants to water. The limited nature of these activity controls, which focus only on high-risk activities that have been clearly identified through consultation, ensures that these controls are proportionate to risk.

36. The activity controls specifically listed in this package are a subset of the controls consulted on in early 2022. Combined with the reduction in scope, the focus on high-risk activities was supported by many submitters. The Ministry for Primary Industries has highlighted that clear and coordinated implementation of these changes would be important for the rural sector. We will continue to work with MPI on implementation requirements, and provide further advice in 2023.

37. Retaining the scope of the current NES-DW provides first-barrier protection to 82% of the population. We recommend revisiting the extension of the scope of the NES-DW after November 2025, once all supplies are required to be registered with Taumata Arowai. Regional councils can include more supplies with the additional protections sooner if they would like.

Te Tiriti o Waitangi analysis

Engagement with iwi, hapū and Māori

38. During the policy process to amend the NES-DW, we undertook a range of engagements with iwi, hapū and whānau Māori. We note the limitations to this engagement due to low uptake. MfE also met with the Freshwater Iwi Advisory Group to discuss the package options. The following concerns were regularly raised:

    a. Generally, we heard strong support for improving the safety and health of the water.

b. We also heard that careful consideration must be given to the mapping of Māori-owned land and to the imposition of regulation, monitoring and enforcement on Māori-owned land, given the historical and ongoing impacts of government mapping in these spaces and the protection of tino rangatiratanga in te Tiriti o Waitangi. This is particularly important when the affected mana whenua have not been directly involved in the development of the regulations[17].

c. Issues of costs and the regulatory burden on marae and papakāinga water supplies were raised through much of this engagement. In wider engagement with Māori on resource management topics, the issue of mana whenua being under-resourced to participate in these processes was raised.

d. Many submitters referenced existing Treaty settlement provisions, wanting to ensure they are recognised and given effect to when implementing the NES-DW.

39. Alongside the overarching concern about impacting tino rangatiratanga, the impacts of the preferred amendments to the NES-DW affect iwi, hapū, and whānau Māori in two opposing ways. If they are the water supplier or water users, it provides additional protection to their water source and reduces the likelihood of contamination. However, there will also be some additional administrative burden in interacting with their local regional council around mapping and activity controls. If whenua Māori is included in the mapped SWRMAs, there will also be some restrictions on activities that can be undertaken around source waters.

Māori as water suppliers and/or water users

40. Some Māori communities, marae and papakāinga supply their own drinking water. On the current Taumata Arowai water supplier register, there are 95 water suppliers that are identified as kāinga[18] that are not solely rainwater supplied. Of these, only one is included in the scope of the current NES-DW.

[17] Directly affected mana whenua who are water suppliers or would be impacted by the mapping could not practically be engaged with through the process of developing national direction. Regional councils will engage with affected mana whenua through the implementation process.

[18] This group includes iwi entities, kura kaupapa Māori, kōhanga reo, marae, papakāinga, and Māori communities. It is likely that there are also many unregistered Māori-owned water supplies, that are not covered in this analysis. They would also not be automatically covered by the NES-DW upon registration under the preferred package.

41. The Freshwater Iwi Advisory Group advised that any expansion of the NES-DW to marae and papakāinga should be considered alongside the consideration of all other small supplies after the registration process with Taumata Arowai is completed in 2025.

Māori as resource users

42. Māori would also be impacted by the regulations as resource users. If Māori-owned land or other land or resources that Māori use is covered by the SWRMAs, they would be covered by the activity controls in the NES-DW. Analysis found that 12.5 ha (0.0009% of total whenua Māori[19]) of whenua Māori is covered by SWRMA 1 and 85,094 ha (6.3% of total whenua Māori) is covered by SWRMA 2.

43. Current land-use and future land-use opportunities may be limited by the presence of the SWRMAs. In other consultation, some iwi/hapū/whānau Māori noted that any action which constrains Māori-collectives from exercising rangatiratanga and mana motuhake over their whenua, waterways and water sources, will have flow on effects that will compound historical grievances and increase disadvantage for Māori-collectives. The second article of te Tiriti o Waitangi, guaranteeing Māori tino rangatiratanga over taonga, is particularly pertinent here as are te Tiriti o Waitangi principles like the right to development.

44. In summary, some marae and papakāinga are self-suppliers due to historically being under-served by municipal supplies. Many of these supplies will not yet be registered on the Taumata Arowai register. Each different supplier will also have unique views on whether, as mana whenua, they would like to have the additional NES-DW regulations (additional protections and land use restrictions) applied to their whenua. Marae and papakāinga supplies that serve fewer than 501 people will be considered alongside all other smaller supplies in Nov 2025, after the registration process with Taumata Arowai is complete. Any additional source water protections for these water supplies should be dealt with on a local scale, with leadership from the mana whenua groups, working with the regional council.

[19] Whenua Māori as defined by Te Ture Whenua Act and included in the Māori Land Court Spatial Dataset, and does not include whenua Māori that is not Māori Freehold Land or Māori customary land (ie does not include land that is owned by iwi or land that is privately owned by Māori). Total whenua Māori is 1,404,710ha

Interactions with other national direction and legislation

45. Our preferred package of amendments is consistent with other RMA national direction and broadly aligns with WSA, noting that the WSA goes further and regulates all water supplies excluding domestic self-supplies. The interactions are detailed in Appendix Five.

46. Through our preferred package, regional councils are supported in identifying and mitigating risks to sources of drinking water and therefore in their meeting of objectives identified in the NPS-FM, giving effect to Te Mana o te Wai. The NPS-FM also requires regional councils to consider water quality and quantity, contaminants, and aesthetic values when identifying appropriate values to apply to an FMU (freshwater management units), our preferred package aims to mitigate contamination risk and either maintain or improve water quality.

Consultation

47. We consulted on proposed amendments to the NES-DW from 10 January until 6 March 2022. Officials held webinars with key stakeholders consisting of regional councils, water suppliers, water industry representatives, Post Settlement Governance Entities and the primary sector during the consultation period.

48. We received 148 unique submissions which set out a range of views about each aspect of the proposed amendments. A summary of submissions outlining the feedback received was published in June 2022.

49. The policy options and packages in this briefing have been informed by our engagement with the Ministry for Primary Industries and Taumata Arowai.

50. We tested the package options with a group of regional council experts to ensure the perspective of the implementor was considered when we developed the preferred package.

51. We discussed the package options with the Freshwater Iwi Advisory Group, a group that sits under the Iwi Leaders Forum. Their advice was that the expansion of the NES-DW to marae and papakāinga should be considered in 2025, alongside the consideration of all other small supplies.

52. We also consulted on the draft RIS (Appendix One) with the Ministries of Primary Industries, Health, Education, Housing and Urban Development, Business, Innovation

and Employment, Defence, Departments of Prime Minister and Cabinet, Conservation and Corrections, Te Arawhiti, Te Puni Kokiri and Waka Kotahi.

Legal issues

53. There are no legal barriers to the amendment of the NES-DW.

Financial implications

54. There are no financial implications to the Crown for the preferred option. The marginal costs and benefits of the preferred option compared to no amendments is detailed in the draft RIS (Appendix One, pg 43 – 51).

Next Steps

55. If you agree to a package of amendments, we anticipate seeking Cabinet approval in November 2022.

56. Pending Cabinet approval, we would expect PCO drafting to take three months. This would lead to the final Cabinet paper seeking approval of regulations that represent policy decisions and approval to gazette going to LEG Cabinet Committee in either late March or April 2023. We would then work with Taumata Arowai and regional councils to implement the updated NES-DW.

Table 2: Upcoming deadlines

Date	Product
27 October 2022	Draft Cabinet paper due to Minister
31 October 2022	Report back on nitrates due to Ministers
1 November – 15 November 2002	Ministerial consultation period (10 days)
17 November 2022	Cabinet paper lodged
21 November 2022	Talking points to ENV Cabinet Committee provided to Minister
24 Nov 2022	ENV Cabinet Committee: - Seeking agreement on final policy decisions - Seeking approval to begin drafting with PCO

Date	Product
28 Nov 2022	Cabinet
Dec 2022 – March 2023	PCO drafting - Dependant on PCO availability
March/April 2023	LEG Cabinet Committee Cabinet Committee - Approval to Gazette
March/ April 2023	Gazettal
April 2023 onwards	Implementation of NES-DW

Appendix One –Draft Regulatory Impact Statement (for your information)

Appendix Two – Refining of three proposals into amendment packages

Proposal One – How at-risk areas to source water are delineated

1. The current NES-DW does not map source water zones, but instead refers to "upstream of abstraction point" to determine where activities should be managed in relation to source water. The NES-DW consultation proposed establishing a default methodology for better mapping of source water risks management areas (SWMRAs) at three different risk levels. Mapping would be required for all supplies within the scope of the NES-DW.

2. Overall, we received positive feedback on the proposal to require mapping for source water areas however submitters identified that clear and simple implementation guidance would be required.

3. Based on the supportive feedback, the proposal for mapping SWRMAs has remained the same as the option that was consulted on. The details from the submissions have helped to refine and clarify the existing proposal. This option is detailed in Box 1 below. It is intended that a gazettal process would be provided so that regional councils could establish bespoke SWRMAs, where appropriate, which allow for alternative (existing or new) mapping methods if they deliver on outcomes at least as protective as the default method.

Box 1: Mapping requirements - preferred option

Default SWRMA zones

SWRMA 1 is the immediate area around the source water take where there is an immediate risk of contamination because there is very little time to respond to any contamination before it enters the water supply.

- For rivers, it encompasses the river and its bed 1,000 metres upstream and 100 metres downstream of the intake, extending 5 metres into land from the river edge.
- For lakes, it encompasses the lake and its bed within a 500-metre radius of the intake, extending 5 metres into land from the lake edge.
- For aquifers, it encompasses land within a 5-metre radius around the intake (bore head).

SWRMA 2 is a larger area where activities need to be managed, to mitigate more medium-term risks of contamination. The size will vary because it is based on the time it takes for water to flow to the source.

- For rivers, it is the river and bed from where water travels to the intake within an 8-hour period, extending 100m landward from the river edge.
- For lakes, it is the entire lake area, extending landward 100 metres, and includes tributaries (being the area from where water travels to the lake within an 8-hour period).
- For aquifers, it is the land area above where groundwater travels to the intake (bore) within a 1-year period, to a maximum of 2.5 kilometres.

SWRMA 3 is the entire catchment area or capture zone for the source water. Persistent contaminants and cumulative effects of all activities within the catchment are the management focus in this area, and they are considered to be appropriately managed under the RMA. The proposed amendments to the NES-DW aim to clarify that consenting decisions must address source water risks.

Proposal Two - Strengthening activity controls in at-risk areas

4. For Proposal Two, the consultation document proposed stringent location-based controls for a range of activities in SWRMA 1 and requirements to ensure specified high-risk activities (bores, aquifer disturbance and discharges of contaminants to water) were not permitted by regional councils in SWRMA 2. No activity controls were proposed for SWRMA 3. Feedback on this proposal was explicitly sought through consultation.

5. Feedback received was mixed, with support for both more stringent and explicit controls, and concern that the consultation option went too far. Key feedback we heard included:

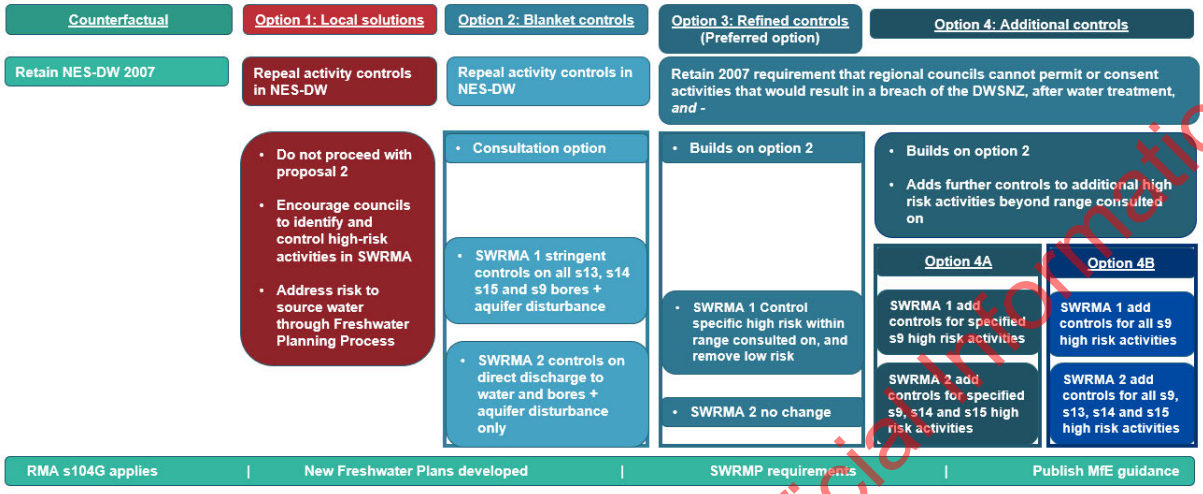
   a. There was broad support among councils, environmental groups and water suppliers for national direction on activity controls in SWRMAs with clear identification of activities that are permitted and prohibited, and activities requiring resource consent. This support is conditional on the controls being proportionate to risk.

   b. There were concerns among some resource users about disproportionate impacts and costs, and negative effects on specific types of industry. Some submitters are particularly concerned that the use of prohibitions would restrict necessary or reasonable activities.

6. Based on this feedback and a detailed risk analysis of activities, we refined the policy options, as shown in Figure 1. Option 2 is the option presented in the consultation document.

7. The detail of the activities covered in the different options is included in the attached draft RIS (Appendix One, pg 54-58):

Figure 1: Options for activity controls



8. Analysis against the objectives identified Option 3 (refined controls that do not control any activities not included in the consultation document) and Option 4A (a slightly longer list of high-risk activities controlled) as the preferred options. Both options are an improvement on the current NES-DW activity controls, as they will reduce the likelihood of contamination events and be clear and simple to understand and implement.

Proposal Three – Appropriate scope of the NES-DW

9. The NES-DW regulations currently only apply to registered water supplies serving no less than 501 people. While emergency notification requirements (regulation 12 in current NES-DW) apply 'upstream' from supplies serving 25 or more people, the NES-DW does not regulate source water protection for these supplies. Supplies serving fewer than 25 people do not have any protections under the NES-DW.

10. The consequences of a contamination event is larger if the population supplied is larger. Evidence suggests that rural communities have higher notification rates of waterborne illness, and data for smaller suppliers shows that compliance with the Drinking-Water Standards is demonstrably worse than for larger supplies[20]. Smaller supplies are also less likely to be well-resourced to prevent and respond to

[20] In large supplies (those serving more than 10,000) compliance is 95.5% and 84.4% for bacteria and protozoa, respectively, but for small supplies (those serving 101 to 500 people), these compliance rates drop to 66.6% and 33.7%.

contamination events. However, despite the risks associated with smaller supplies, there are currently no source water protection regulations applying to them.

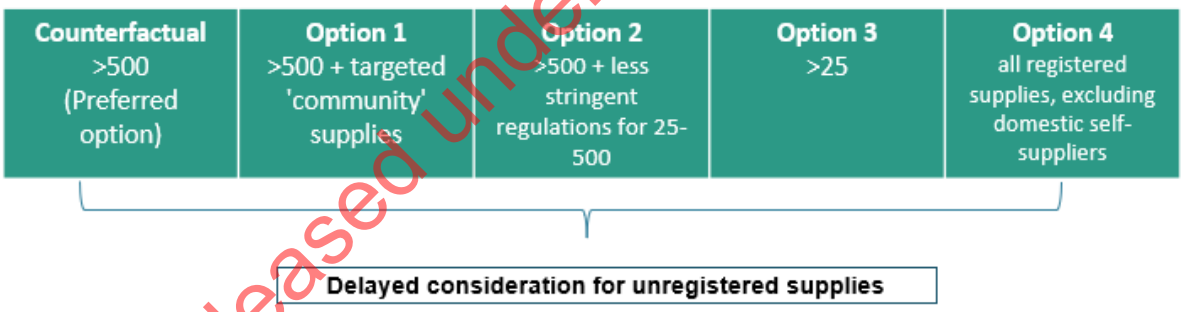
11. The NES-DW consultation document proposed to extend the NES-DW regulations to apply to all registered water suppliers (not including domestic self-suppliers). Taumata Arowai have engaged BECA to estimate the number of unregistered supplies – they advise that there are between 57,000 and 97,000 currently unregistered supplies. We received a lot of feedback on this option with the following key themes emerging:

    a. Many submitters thought it would be impossible to include all the currently unregistered supplies, and if they were included the costs to map and the coverage of land that would include restrictions which would be disproportionate to the risks of drinking water contamination.

    b. Many submitters raised concerns about the extensive resources and funding required by regional councils, iwi, hapu and whānau Māori, and water suppliers to apply the NES-DW to all registered water supplies.

12. Considering this feedback, and the practicality of this option [BRF-1919 refers], we have refined the options for the scope of the amended NES-DW, shown in Figure 2:

Figure 2: Options for scope of NES-DW

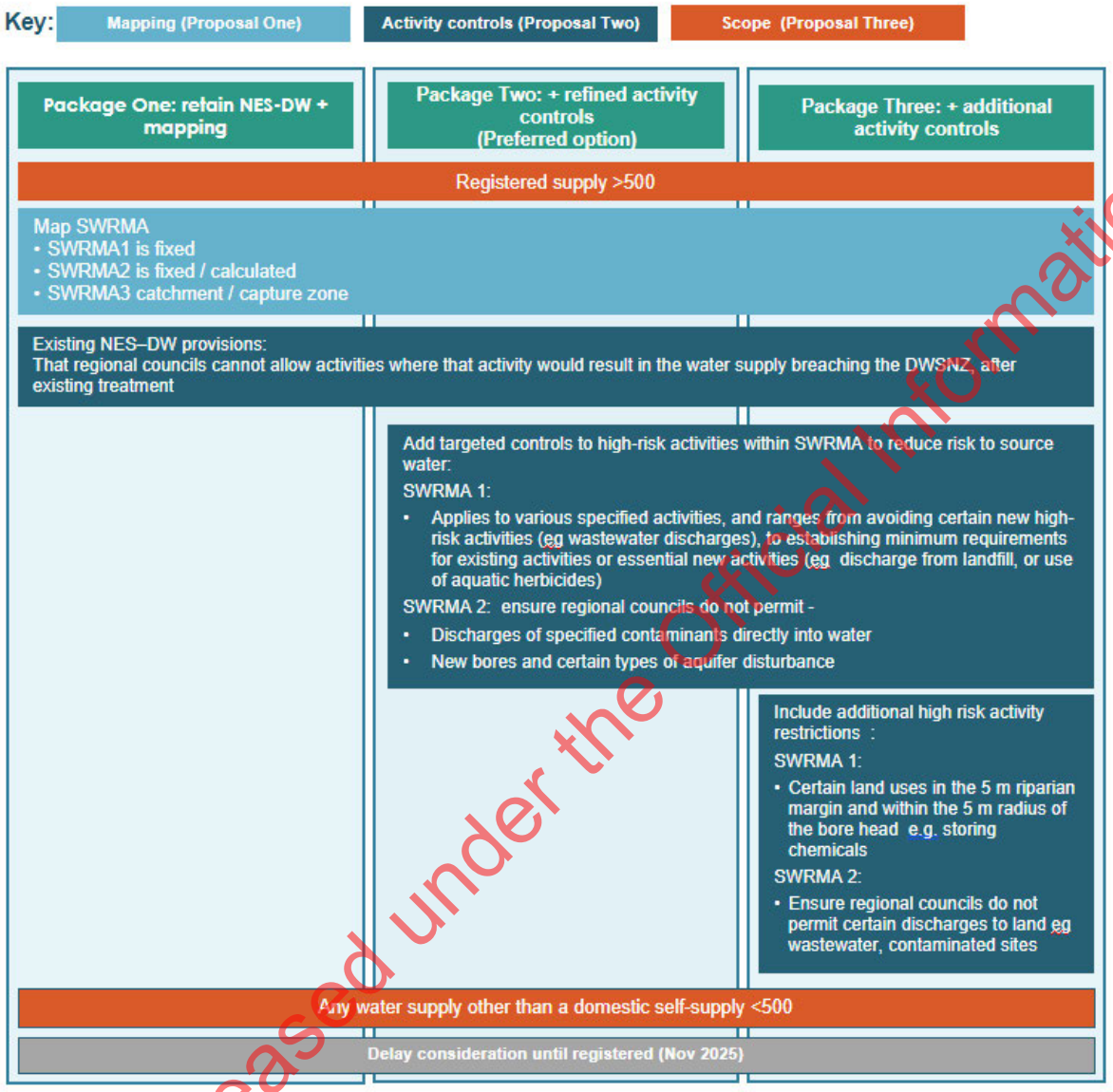


13. Analysis identified that all the options that sought to expand the scope of the NES-DW wouldn't be feasible to implement at this time. We explored options with less stringent regulations for smaller supplies, however due to the ongoing process of registration until 2025, any option to include some smaller suppliers now would result in inequities from some small supplies being given the NES-DW protections and some not, due solely to the timing of their registration, and inefficiencies for regional councils and the mapping process, as more supplies register over time in their area requiring mapping.

14. We recommend that the scope of the current NES-DW be retained and delay any decision to extend the scope of the NES-DW after November 2025 (when water

suppliers are required to be registered under the WSA). At that point, Taumata Arowai will have more understanding of the number of water suppliers, their location, and relative capability.

Appendix Three – Packages of Amendments to the NES-DW



Package One

1. This package of amendments would require the least change. It retains the current NES-DW's scope and activity controls but clarifies where the risk to source water lies by adding SWRMA mapping requirements.

Proposal One – How at-risk areas to source water are delineated

2. Regional councils would be required to define three source water risk management areas (SWRMA) where activities have a higher likelihood of contaminating source water.

a. SWRMA 1 – the direct area around the source water intake intended for the management of immediate risks would be mapped using a fixed size method[21].

b. SWRMA 2 – the larger area intended for the management of more medium-term risks would be mapped using either the fixed size or time-of-travel methods around the source.

c. SWRMA 3 – the entire catchment or capture zone for source water intended to capture longer-term risks.

3. Regional councils could also opt for a bespoke mapping approach, which allows for alternative (existing or new) mapping methods if they deliver outcomes at least as protective as the default method.

Proposal Two – Strengthening activity controls in at-risk areas

4. The activity standards in the current NES-DW would be retained, unchanged. Regional councils would still be restricted from consenting or permitting any activities upstream of an abstraction point, that would cause a breach of the Drinking-Water Standards.

Proposal Three – Appropriate scope of the NES-DW

5. This package retains the scope of the current NES-DW, so only supplies of drinking water to no less than 501 people would be covered by the additional protections. The amendments to the NES-DW would not apply to supplies supplying fewer than 501 people. Once all supplies have registered[22] with Taumata Arowai, we recommend that their inclusion in the scope of the NES-DW be reassessed.

Package Two (preferred package)

6. Package Two introduces a list of high-risk activities that would require controls in specific SWRMAs. These activities are high-risk for causing source water quality issues and are all within the scope of the activity controls that were identified within the Consultation Document in early 2022.

Proposal One – How at-risk areas to source water are delineated

7. Package Two has the same mapping requirements as Package One.

Proposal Two – Strengthening activity controls in at-risk areas

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[21] SWRMA 1 for surface water bodies, comprises the water body itself - a 500 m radius around a lake intake, and 1 km upstream and 100 m downstream of a river intake – and a 5 m riparian margin. For groundwater it comprises a 5 m radius around the bore head.

[22] All supplies except domestic self-suppliers must register with Taumata Arowai by November 2025, and produce a Source Water Risk Management Plan by November 2028.

8. Package Two introduces national direction on a list of high-risk activities that would need to be controlled in SWRMA 1 and 2.

9. Regional councils would still be restricted from allowing activities that would cause a breach of the Drinking-Water Standards after existing treatment (as in the current NES-DW). However, specific activities would be controlled in SWRMA 1 and 2:

10. In SWRMA 1[23], the following controls on some high-risk activities are proposed:

    a. Package Two would prohibit certain discharges:

        i. from new wastewater[24] activities
        ii. from new industrial / trade waste activities (excluding water or stormwater)
        iii. from new landfills, offal pits, silage, and composting
        iv. of synthetic nitrogen fertiliser

    b. Package Two would allow, but identify minimum requirements for:

        i. Discharges from existing wastewater or industrial / trade activities, and discharges from existing contaminated sites, landfills, and offal pits
        ii. Discharge of stormwater, and certain pesticides
        iii. Commercial aquaculture operations
        iv. Dams that may result in cyanobacterial blooms
        v. Disturbance of the wet-bed of water bodies
        vi. Earthworks that could damage shallow aquifers, or the protective layers of aquifers (aquicludes or aquitards)
        vii. New bores.

11. In SWRMA 2[25], the intent is to ensure regional councils require consent be obtained for certain high-risk activities, so that that they know where and when they are occurring, and can ensure their effects are appropriately managed:

    a. For SWRMA 2 groundwater, the activities are earthworks that could damage shallow aquifers or the protective layers of aquifers, and new bores.

[23] In the preferred option SWRMA 1 covers less than 0.01% of productive land in New Zealand. SWRMA 1 for surface water bodies, comprises the water body itself - a 500 m radius around a lake intake, and 1 km upstream and 100 m downstream of a river intake – and a 5 m riparian margin. For groundwater it comprises a 5 m radius around the bore head.

[24] In this document, 'wastewater' refers to any human sewage or animal effluent, or biosolids discharges

[25] SWRMA 2 is a larger area, calculated based on the travel time of water to the intake.

b. For SWRMA 2 surface water, the activity is direct discharges of contaminants to water, such as wastewater, industrial/trade wastes, certain stormwater discharges, and certain aquatic pesticide discharges.

Proposal Three – Appropriate scope of the NES-DW

12. Package Two scope is the same as the current NES-DW and Package One.

Package Three

13. Package Three has the same scope and mapping requirements as Package One, but includes controls on additional high-risk activities beyond those identified in the consultation document.

Proposal One – How at-risk areas to source water are delineated

14. Proposal Three has the same mapping requirements as Package One.

Proposal Two – Strengthening activity controls in at-risk areas

15. Package Three introduces activity controls that go beyond those expressly identified in the Consultation Document in early 2022. Submissions and MfE risk analysis identified additional activities that pose a high-risk to source water. Package Three would address some of those activities.

16. In SWRMA 1, storing hazardous substances and keeping farmed animals around the bore head would be prohibited.

17. In SWRMA 2 groundwater, regional councils would not be able to permit high-risk discharges to land of wastewater, or discharges to land from industrial / trade wastes, contaminated sites, landfills, and offal pits. These SWRMA 2 controls would ensure regional councils collect the necessary information to protect aquifers used for source water, and manage effects, including cumulative effects, appropriately.

Proposal Three – Appropriate scope of the NES-DW

18. Package Three's scope is the same as Package One.

Appendix Four- Analysis of different packages

1. We have analysed the different packages against the policy objectives (feasible to implement, effective at reducing the likelihood of contamination events, proportionate to the risks of contamination and the costs imposed on resource users, consistent with other legislation, fair across different populations, and consistent with the Crown's obligations under te Tiriti o Waitangi.). Table 1 summarises this analysis and shows the trade-offs in each package.
2. The policy objectives require us to balance outcomes, specifically effectiveness at reducing contamination risk and cost/complexity. Any solution needs to be implemented efficiently and be proportionate to the risk.
3. We are confident that each of the packages considered in this document would be easier to implement than the consulted proposal. Based on the feedback received, we have further refined and reduced the activity controls from what was originally proposed and we are no longer proposing amendments to expand the coverage of the NES-DW to small supplies.
4. In the packages, trade-offs have been made between how effectively the solution reduces the likelihood of contamination and how proportionate it is. A proportionate response would need to account for a variety of factors beyond how well it reduces the contamination risk, such as the cost, complexity and the risk of a contamination event occurring. There is tension between effectiveness and proportionality and efficient implementation.
5. As shown in Table 1, each package would result in improvements to source water protection compared to the counterfactual (retaining the current NES-DW). The key trade-offs shown in the options analysis table include:

Effectiveness of packages at reducing the likelihood of contamination events

6. The coverage and specificity of the activity controls plays a role in the effectiveness and proportionality of a response. All the packages will require regional councils to restrict activities that may cause a breach of the Drinking-Water Standards. Across the three packages there are varying degrees of restrictions to manage specific activities. Very broad coverage, with lots of specific activities controls or blanket controls, would be effective at reducing the likelihood of contamination events, but would also increase the impact on resource users and thus reduces proportionality.

7. Package One retains the existing activity controls under the existing NES-DW and does not include any additional activity controls.

8. Package Two, adds targeted controls for specific high-risk activities already identified within the consultation document. These refined controls consider risk to source water based on the likelihood and consequence of hazardous events occurring.

9. Package Three, builds on from Package Two with further activity controls going beyond what was consulted on in the consultation document. Risk analysis identified controls beyond what was included in the consultation document may be justified to ensure effects on source water are known and appropriately managed. The likely impacts of these additional controls are:

    a. Additional activities would be controlled in SWRMA 1, including storing hazardous substances and keeping farmed animals around the bore head would be prohibited.

    b. Additional controls in SWRMA 2 (above groundwater) include certain types of discharge where the associated contaminants are likely to migrate to the source water intake within one year. If an activity is permitted the regional council is unlikely to have good data, and effects (including cumulative effects) may not be appropriately managed. The degree of impact will depend on the quality of current regional council rules. Some (eg landfill discharges) may already require consent, while some (eg offal pits) may be permitted.

10. As these 'additional' high-risk activities were not expressly identified in the consultation document in early 2022, there may be a perception that consultation in relation to these activities has been inadequate. Further, detailed consideration of the costs and benefits of including additional controls in the NES-DW has not been completed. Guidance on these activities will be included in an update to the Draft Users' Guide to the NES-DW 2009, which will improve broader implementation of the NES-DW and use of SWRMA maps. These controls could be considered as part of any future review of the NES-DW to include smaller water supplies, after November 2025.

Increased costs of mapping requirements and activity control implementation:

11. All options have some additional cost for regional councils compared to not amending the NES-DW, as they would require mapping of the SWRMAs. Once mapped, activities that could pose a risk to source water are more easily identified, reducing the time spent assessing risky activities in the future.

12. All of the packages allow for regional councils to choose the level of complexity of the mapping. This will enable complex and costly mapping to be used in appropriate situations, and for simple or small supplies, the fixed size option is available.

13. Clear activity controls reduce the ongoing implementation cost for regional councils, relative to local controls being developed for each region or specific water source

Table 1: Package options analysis

Criteria/Option	Counterfactual • Scope >500 • No mapping • NES-DW 2007 activity controls retained	Package One • Scope >500 • SWRMA mapping • NES-DW 2007 activity controls retained	Package Two • Scope >500 • SWRMA mapping • + Refined activity controls	Package Three • Scope >500 • SWRMA mapping • + Additional activity controls
Implementation	0	0 *Mapping requires resource.* *Lack of explicit activity controls requires additional regional council work, same as counterfactual*	++ *Clear national direction ensures consistent and straightforward implementation*	++ *Clear national direction ensures consistent and straightforward implementation*
Effectiveness	0	+ *Mapping improves understanding of risk zones.* *Lack of specific high-risk activities and a requirement to act reduce the effectiveness of this option*	+ *Mapping, plus requirement to restrict specific high-risk activities makes this option more effective than counterfactual.*	+ *Mapping, plus requirement to restrict additional specific high risk activities makes this option more effective than counterfactual.* *No requirements to restrict activities for smaller suppliers*
Consistency	0	0 *Activity controls are same as counterfactual – mapping may aide councils to implement TMOTW, but not explicitly required in this option*	+ *Advocates for multi-barrier approach and will give effect to TMoTW.*	++ *Advocates for multi-barrier approach and will give effect to TMoTW. More waterbodies considered/ covered.*
Proportionality	0	0 *Activity controls are the same as counterfactual.* *Low risk activities are not controlled, as in the counterfactual*	- *High risk activities will be controlled in 5.5% of NZ productive land.* *Low risk activities are not controlled, as in the counterfactual.*	- *High risk activities will be controlled in 5.5% of NZ productive land.* *Low risk activities are not controlled, as in the counterfactual.*
Fairness	0	0 *Scope is the same as counterfactual*	0 *Scope is the same as counterfactual.*	0 *Scope is the same as counterfactual.*
Te Tiriti o Waitangi	0	0 *Māori involvement is as provided for through wider RMA processes*	0 *Māori involvement is as provided for through wider RMA processes*	0 *Māori involvement is as provided for through wider RMA processes*
Overall Assessment	0	+	++	++

Appendix Five – Interactions with other legislation

	What the legislation says:	What the preferred NES-DW amendments do[26]:	Potential/perceived interactions and overlap:
Water Services Act 2021	**Source water (subpart 5):** • **SWRMPs:** drinking water suppliers must prepare and implement a SWRMP. Local authorities must contribute by provision of applicable information and undertaking agreed action on identified risks/hazards. • **Monitoring:** drinking water suppliers must monitor the quality of source water. • **Information:** regional councils must report annually on source water quality and quantity, and every 3 years assess the effectiveness of their interventions.	• **SWRMA:** regional councils are required to map SWMRAs at three risk levels (SWRMA 1, 2, and 3). • **Activity controls:** depending on SWRMA location some high-risk activities are provided for, subject to minimum requirements, and others are prevented. • **Bespoke approaches:** regional councils can apply a bespoke mapping approach or more stringent activity controls than those provided.	The NES-DW is designed to work with the WSA. The NES-DW provides a foundation for regional councils in identification and management of risks and hazards to source water, and support in their provision of information to water suppliers developing their SWRMPs. The foundation of the NES-DW may be further refined through regional plans, as the SWRMP development-evaluation cycle establishes.
Water Services Act 2021	**Drinking Water Quality Assurance Rules 2022 (DWQAR):** A registered drinking water bore head must be sanitary. Meeting this requirement includes a 5 m radius exclusion zone around the bore head for farm animals.	Keeping of farmed animals is a land use (s9) activity under the RMA. If Option 4A were adopted for proposal 2, the NES-DW would align with the DWQAR and require farm animals be excluded from the 5 m radius around the bore head.	Aligning the NES-DW with the DWQAR supports greater consistency and avoids potential confusion. Note: the Stock Exclusion Regulations apply only to surface water bodies.
NES-Freshwater 2020	**Standards for farming activities (Part 2) – stock management:** • **Feedlots, stockholding areas, agricultural intensification:** provides standards for use of land and associated discharge for these activities. Where a feedlot is not permitted and becomes discretionary, effluent must meet regional council rules and be no closer than 50 m to a bore used for abstraction.	The NES-DW does not contain related provisions for s9 land uses, however if Option 4A is adopted for proposal 2, farm animals would be excluded from the 5 m radius around the bore head. 1. **SWRMA 1:** NES-DW controls discharges of effluent to land and water, biosolids to land, and specified stormwater to land and water.	Some limited interaction between the NES-F (farming activities) and NES-DW may exist should registered drinking water supplies be established within or immediately adjacent to farming activities controlled by the NES-F – this would mainly affect land associated within SWRMA 1 (i.e. 5 m radius around bore head

[26] The preferred option for activity controls is 'Option 3 - refined controls'. However, as 'Option 4A – additional controls' provides for inclusion of some further activities, their interaction is also described where appropriate. It is also proposed to retain the current baseline requirements of the NES-DW – that a regional council cannot allow any activity that would cause a registered drinking water supply to breach the NZDWS, after existing treatment. This would continue to apply in conjunction with other legislative requirements, as it does now (but this baseline is not described in each row of the above table).

	• **Intensive winter grazing:** provides standards for this use of land and associated discharge to land. Requires identification and management of 'critical source areas' and a 5m setback from river and lake beds. The Stock Exclusion Regulations are also relevant to the NES-F.	2. **SWRMA 2**: NES controls direct contaminant discharge to water for effluent and some stormwater contaminants directly to water for effluent and specified stormwater. Controls on effluent/biosolid discharges are limited to those collected for managed discharge, so may apply to activities with such practices. Stormwater controls are intended to apply to large reticulated systems, not land runoff.	and 5 m riparian strip) (similar to drinking water quality assurance rules 2022 interaction). The NES-F focuses on the wider environmental impacts of farming activities, and the NES-DW focuses on source water protection. Where provisions within either NES overlap, it is appropriate the more stringent provisions prevail being: the NES-DW restrictions on effluent and biosolids within SWRMA 1 would apply.
NES-Freshwater 2020	**Standards for farming activities (Part 2) – nitrogen fertiliser:** the NES-F provides standards for the application of synthetic nitrogen fertiliser to pastoral land and places an annual cap on nitrogen usage.	The NES-DW imposes further restrictions than the NES-F, prohibiting synthetic nitrogen fertiliser application within SWRMA 1 i.e., the 5 m radius around the bore head, and the 5 m riparian strip.	The NES-DW does not impose additional restrictions on nitrogen beyond restricting discharge of synthetic nitrogen fertiliser in SWRMA 1. The NES-F and NPS-FM are considered more appropriate tools to holistically address nitrate concerns.
NES-Freshwater 2020	**Standards for other freshwater activities (Part 3), Natural wetlands (Subpart 1):** the NES-F sets various restrictions to avoid wetland loss with wetland restoration is enabled: vegetation clearance and earthworks are permitted activities within, or within a 10 m setback from a natural wetland. Take, use, damming, diversion, or discharge of water within or within a 100 m setback from a natural wetland is also permitted.	The NES-DW considers wetland as 'complex' systems. If a water supply take is within a wetland a bespoke mapping approach would be required. Wetlands may lie within SWRMA of lakes and rivers. RMA classifications considers wetlands as land, therefore proposed bed disturbance rules within SWRMA 1 do not apply. NES-DW controls on the disturbance of certain aquifers could apply within 100 m of a wetland, as could controls on dams that may result in cyanobacterial blooks, and certain discharges of contaminants.	It is not known how many registered drinking water supplies are in wetlands. There is potential for there to be some minor overlap between the NES-F wetlands provisions and the NES-DW, for earthworks where they are located over certain aquifers*, damming where it could result in cyanobacterial blooms, and discharges. If a registered water supply is located in a wetland, then where provisions in the NES-F and NES-DW overlap, the most stringent provisions of each NES should prevail. **shallow aquifers or aquicludes / aquitards sensitive to disturbance.*
NES-Freshwater 2020	**Standards for other freshwater activities (Part 3), passage of fish affected by structures (Subpart 3):** the NES-F provides for various structures in rivers to ensure fish passage is provided for. It establishes permitted activities for culverts and weirs in rivers.	The NES-DW does not address structures in rivers but does address the bed disturbance associated with structures. That bed disturbance is provided for, subject to minimum requirements that ensure adverse effects on source water are addressed.	There is no interaction between the NES-F fish passage provisions and the NES-DW.
Stock Exclusion	Stock Exclusion Regulations apply to different farmed animals in different ways, some apply to certain stock in all	**SWRMA 1:** surface water includes a 5 m riparian strip. However, there are no similar or overlapping	There is no interaction between Stock Exclusion Regulations and the NES-DW. The Stock Exclusion

Regulations 2020	circumstances, while others only apply to certain stock present in mapped areas. General requirements are: • **Setbacks:** a 3 metre setback from lakes, rivers wider than 1 m, and natural wetlands applies to certain stock. • **Animal crossings:** the need for lawful crossings are provided for, either using a dedicated bridge or culvert, or infrequent and actively managed crossing.	s9 or s13 activity controls proposed within SWRMA 1. If Option 4A is adopted for proposal 2 farm animals would be excluded from the 5m radius around the bore head.	Regulations are intended to be the primary means to address stock access to surface water bodies. There is an option for the NES-DW to exclude stock around the bore head of registered water supplies, in accordance with the DWQAR 2022. This would not result in overlap as the Stock Exclusion Regulations are focussed on surface water and do not contain exclusions for aquifers / groundwater.
NES-Plantation Forestry 2017	The NES-PF provides for various activities and it provides a permitted rules for discharge and bed disturbance. • **Setbacks:** afforestation and earthworks are prevented within 5 – 10 m of perennial rivers (depending on size), large wetlands or lakes, outstanding freshwater bodies, and water bodies subject to conservation. Quarrying setback is 20 m. • **Quarrying:** permitted with restrictions if the quarry; extends into the aquitard above a confined aquifer, and within 1 m of the seasonable high-water table above an unconfined aquifer. • **Sediment discharge and bed disturbance:** basic sediment and stormwater control measures are required, and activities must minimise disturbance. • **Slash and slash traps:** slash must not be deposited into water bodies or riparian margins, however slash is permitted within water bodies and riparian margins. • **Management plans:** where required, must identify registered drinking water supply, including drinking water sources for more than 25 people within 1 km downstream of the activity. • **Regional plan rules:** can be more stringent in 'unique and sensitive environments'.	The NES-DW will establish controls for the following activities: • Earthworks above certain aquifers* • Disturbance of the riverbed in SWRMA 1, including that associated with clearing vegetation and construction or maintaining structures. It will provide for bed disturbance subject to minimum requirements intended to address source water risk • Certain stormwater discharges. **shallow aquifers or aquicludes / aquitards sensitive to disturbance*	Interaction between the NES-PF and NES-DW if a registered drinking water supply is located within or near plantation forestry. The NES-PF recognises environments specifically related to drinking water and provides for regional councils to set more stringent rules, therefore it is appropriate that the more stringent provisions of the NES-DW prevail over the NES-PF. There is unlikely to be conflict with the NES-PF setback requirements as the NES-DW does not impose controls on afforestation, or on earthworks or quarrying unless over 'certain aquifers'. Note: detailed drafting of aquifer provisions is still underway however it is likely they will be consistent with the NES-PF. The NES-PF enables bed disturbance and sediment discharge with effects that may be inconsistent with source water protection. Therefore, it is appropriate to the more stringent provisions of the NES-DW prevail. Larger scale forestry activities will already have management plans which identify drinking water supply, and consequently operators should already be considering additional measures required to manage adverse effects on source water.
Hazardous Substances	HSNO intends to protect the environment, and the health and safety of people and communities, by preventing or	The NES-DW will establish controls for the following activities:	HSNO authorises the manufacture and import of hazardous substances for use in New Zealand, and recommended conditions of use.

and New Organisms Act 1996	managing the adverse effects of hazardous substances and new organisms. It provides for the assessment of hazardous substances, and for the Environmental Protection Authority (EPA) to establish a hazard classification system. Controls are mainly prescribed by EPA notice, with codes of practice for their implementation (including under the Health and Safety at Work Act 2015). Exposure limits can be set for substances with toxic properties. HSNO contains strict controls on vertebrate toxic agents (a type of pesticide) (also see the Resource Management (Exemption) Regulations in row below). When used near source water, the power to grant permissions is delegated to medical officers of health and health protection officers. They can set extra terms and conditions as appropriate.	• Discharge of certain aquatic pesticides to water in SWRMA 1 and 2. and in SWRMA 1 (the 5 m riparian strip and 5 m radius around the bore head): • Discharge of certain pesticides to land in a manner that may enter water. • Storage of hazardous substances (if Option 4A is adopted for proposal 2).	However, regional councils can choose to impose additional controls under the RMA, for their discharge when those substances may enter water. The NES-DW ensures focus is managing adverse effects to source water in a nationally consistent manner. While HSNO provides hazardous substances storage requirements, there are no specific controls to prevent their storage near freshwater bodies, or groundwater bores.
Resource Management (Exemption) Regulations 2017	These regulations grant exemptions from RMA s15, for three vertebrate toxic agents (brodifacoum, rotenone and sodium fluoroacetate), as the RMA requirements were found to duplicate controls under HSNO (see description in row above) and the Agricultural Compounds and Veterinary Medicines Act 1997. Discharge of these agents can occur under the conditions specified in the regulations. This includes notice to the regional council.	The NES-DW will establish controls for the following activities: • Discharge of aquatic pesticide to water in SWRMA 1 and 2. • Discharge of pesticide to land in a manner that may enter water in and in SWRMA 1 (the 5 m riparian strip and 5 m radius around the bore head).	The regulations will override controls in the NES-DW.