



Joint Report: Weather Forecasting System Review – Report
Recommendations and Next Steps

Date:	31 May 2024	Report No:	T2024/875; MBIE 2324-2570
		File Number:	SE-2-10-2-2

Action sought

	Action sought	Deadline
Minister of Finance (Hon Nicola Willis)	Note the submission of the Weather Forecasting System Review Final Report Agree to the recommended option for the Weather Forecasting System	28 June 2024
Minister for State Owned Enterprises (Hon Paul Goldsmith)	Note the submission of the Weather Forecasting System Review Final Report Agree to the recommended option for the Weather Forecasting System	28 June 2024
Minister of Science, Innovation and Technology (Hon Judith Collins KC MP)	Sign the attached letters to MetService and NIWA	28 June 2024
Minister for Emergency Management and Recovery (Hon Mark Mitchell)	Note the submission of the Weather Forecasting System Review Final Report	28 June 2024
Associate Minister of Transport (Hon Matt Doocey)		28 June 2024
Associate Minister of Finance (Hon David Seymour)		28 June 2024

Contact for telephone discussion (if required)

Name	Position	Telephone		1st Contact
Kirk McDowall	Senior Analyst, Commercial and Institutional Performance	s9(2)(a) (wk)	s9(2)(a) (mob)	✓
Lars Piepke	Manager, Commercial and Institutional Performance	s9(2)(a) (wk)	s9(2)(a) (mob)	
Andrew McLoughlin	Principal, Science, Innovation and Technology, Entity Performance and Monitoring	n/a	s9(2)(a) (mob)	✓
Nicola Scott	Manager, Science, Innovation and Technology, Entity Performance and Monitoring	n/a	s9(2)(a) (mob)	

Minister's Office actions (if required)

Return the signed report to the Treasury and the Ministry of Business, Innovation and Employment. Send the signed letters to MetService and NIWA.	
Note any feedback on the quality of the report	

Enclosure: Yes (attached)
[Annex One: Letters to MetService and NIWA \(Treasury 4965732.1\)](#)
[Annex Two: Final Report of the Weather Forecasting System Review \(Treasury 4964896.1\)](#)

Joint Report: Weather Forecasting System Review – Report Recommendations and Next Steps

Executive Summary

There are lost synergies and risks from a fragmented weather forecasting system

The final Sapere (Reviewer) report from the Weather Forecasting System Review (the Review) recommends improvements to New Zealand's system arrangements to address increasing risks from climate change related severe weather events. The Review identified:

- duplicated effort and investment, and a lack of integration between national climate science, forecasting, hydrology and coastal hazards capability;
- an increasing risk to public safety and property due to uncertainty over weather warnings and the flow of information between relevant agencies;
- a compelling case for change to current institutional arrangements between the Meteorological Service of New Zealand Limited (MetService) and National Institute of Water and Atmospheric Research Limited (NIWA); and
- a need to improve data access to support the application of weather data, and explore investments in data access to support information sharing and drawing together different insights.

Structural change is needed to optimise weather forecasting system arrangements

The report recommends a re-integration of meteorology services with climate science, hydrology, and oceanography (along with wider recommendations such as improved data access). The following options considered in the Review report have the potential to deliver the necessary system improvements:

- NIWA acquiring MetService initially as a wholly-owned subsidiary and MetService being retained as a brand as New Zealand's authorised meteorologist. Design work on integrating some capabilities would be undertaken in the lead up to acquisition which could result in changes to MetService's suite of capabilities. Further work could consider whether a full amalgamation of the two entities will best meet New Zealand's needs (the Reviewer's and officials' recommendation) (Option Two).
- The establishment of a new public weather service entity that includes weather forecasting capabilities of MetService and NIWA (Option Three).
- Integrating weather forecasting system capabilities and capabilities relating to other natural hazards through MetService, NIWA, and the Institute of Geological and Nuclear Sciences Limited (GNS Science) (Option Four).

Officials seek Ministers' in-principle approval to commence work on NIWA acquiring MetService

The Ministry of Business Innovation and Employment (MBIE), the Treasury and the Ministry of Transport (MOT) support the Reviewer's recommendation of Option Two. While the National Emergency Management Agency (NEMA) has indicated a preference for Option Four, NEMA supports Option Two as a step towards this.

MBIE, the Treasury and NEMA also support the recommendation to improve data access to support the application of weather data.

Officials seek Ministers' in-principle approval for NIWA acquiring MetService and starting the process for addressing a number of urgent issues with the current system, such as unified public weather warning messaging, and a more coordinated response to any future weather events.

As NIWA and MetService are separate companies, NIWA's board is required to agree (by resolution) to undertake the acquisition. s9(2)(h) [REDACTED]

Further work is required by officials on implementation, specifically the impact on competition in the weather forecasting market of NIWA acquiring MetService, the impact of increasing access to weather data and any associated fiscal impacts, the legislative change process, and the opportunity to increase linkages with emergency management and hazards.

A number of recent reviews, including the Government Inquiry into the Response to the North Island Severe Weather Events (the Inquiry into NIWE), support the development of an integrated hazards platform (including capability held by GNS Science).

MBIE has appointed a Science System Advisory Group (SSAG) to provide advice to the government on strengthening the science, innovation and technology system. The SSAG's Terms of Reference includes consideration of "effectively delivering science services of ongoing importance to New Zealand, such as national monitoring systems for weather and geohazards", with final advice due by October 2024.

Officials consider that work on NIWA acquiring MetService can be taken forward without predetermining the direction and outcomes of the SSAG process, or removing future opportunities to consider the wider science, innovation and technology system and an integrated hazards platform (i.e. Option Two could be an end point, or it could be a stepping stone towards Option Four).

A key risk throughout the project will be ensuring continuity of weather forecasting services during the transition - and will require close collaboration between all parties. NIWA and MetService have received a copy of the final Review report and signalled they will work constructively to implement any Government decisions.

Next steps: MetService and NIWA would play a significant role during implementation

If Ministers agree to the recommendations in this report, we suggest that you meet with the NIWA and MetService board chairs and chief executives to discuss the outcome of the Review and sign the attached letters to set the process in motion.

Following decisions from Ministers, officials expect to provide a draft Cabinet committee paper in July 2024 on NIWA acquiring MetService. It will also provide advice on the implementation pathway and associated issues, including the impacts on competition, data access, any Treaty of Waitangi implications, fiscal impacts, and funding and monitoring arrangements.

Joint Report: Weather Forecasting System Review – Report Recommendations and Next Steps

Purpose of Report

1. The purpose of this report is to provide the Weather Forecasting System Review (the Review) final report, seek agreement to the recommended option and proposed next steps.

The Weather Forecasting System Review Report concludes there is a compelling case for change in the current weather forecasting system

2. The current arrangements in the weather forecasting system are inefficient, evident by duplicated effort and investment, and a lack of integration between climate science, forecasting, hydrology and coastal hazards. There is evidence of public uncertainty through inconsistent messaging from two Crown-owned weather forecasters during severe weather events. Decisions are not always informed by the latest information, leading to increasing risk to public safety, property and the economy.
3. Previous reviews in 2001, 2006 and 2018 also identified long-term risks associated with existing institutional arrangements. Non-structural changes to improve collaboration between the entities failed, such as a Memorandum of Understanding.
4. There is now wide support for structural solutions to the problems identified in the weather forecasting system to ensure it can address future climate-related weather challenges and improvements to New Zealand's emergency management system. The need for reform is supported in recent reviews including the Government Inquiry into the Response to the North Island Severe Weather Events (the Inquiry into NIWE).

The Weather Forecasting System Review Report findings

5. The purpose of the Review was to recommend the optimal arrangements in the weather forecasting system to meet future weather-related challenges and the impacts from climate change, rather than seek efficiency gains in the short-term.
6. Recommendations of the Review include the structural configuration of the Meteorological Service of New Zealand Limited (MetService) and National Institute of Water and Atmospheric Research Limited (NIWA), and appropriate arrangements for access to weather data. Officials consider the final report (**Annex Two**) delivers on the Terms of Reference (ToR) (T2024/430 refers).
7. The Reviewer¹ interviewed over 50 stakeholders, received 145 responses to its survey and held a workshop at the 2023 Meteorological Society of New Zealand annual conference. The Reviewer held several meetings with MetService and NIWA and the entities responded to information requests. MetService also provided an independent submission for the Reviewer to consider.
8. The final report highlights the increasing value public weather forecasting delivers to society and the important role of government in the provision of public good weather forecasts. However, the current institutional arrangements appear to be the root cause for many issues identified in the Review, which is ultimately creating increasing risks to public safety, property, and the economy.

¹ Sapere Research Group Limited were selected to undertake the Review following a Request for Proposal process.
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9. The current weather data access and management arrangements are also restrictive in terms of cost and they limit innovation within the wider system. This is consistent with findings from the 2018 review, *Weather Permitting: Review of open access to weather data in New Zealand*², which found the New Zealand model is at the most commercial and restrictive end of cost and limitations on data use. By international comparison, New Zealand has relatively low public expenditure in funding weather forecasting services.

The Report recommends NIWA acquiring MetService as a wholly-owned subsidiary and then further work on amalgamating the two entities

10. The Reviewer considered a long-list of options in relation to funding, delivery and regulatory levers and how the options would best position New Zealand to meet future weather-related challenges. The report assesses five options for change, and three options were considered to have the potential to achieve the optimal system state:
- NIWA acquiring MetService initially as a wholly-owned subsidiary and MetService being retained as a brand as New Zealand’s authorised meteorologist. Further work would then be performed on whether a full amalgamation of the two entities will best meet New Zealand’s needs (**Option Two**).
 - The establishment of a new public weather service entity that includes weather forecasting capabilities of MetService and NIWA (**Option Three**).
 - Integrating capabilities in relation to the weather forecasting system and capabilities relating to other natural hazards through MetService, NIWA and the Institute of Geological and Nuclear Sciences Limited (GNS Science) (**Option Four**).
11. The Reviewer recommends **Option Two**, a re-integration of meteorology services with climate science, hydrology, and oceanography through NIWA acquiring MetService.

Broader recommendations

12. The Review contains a number of broader recommendations relating to monitoring, funding, and in particular improved data access to support the application of weather data and modelling. This would include reviewing data access policies and systems and moving quickly to ensure greater transparency regarding what data exists, that all publicly funded data is easily available, and that any costs of access are justifiable. The Reviewer noted that the cost of free open data access may be approximately \$40 million in lost revenue per annum.

Officials support the recommendation of NIWA acquiring MetService

Recommendation to reintegrate NIWA and MetService – Option Two

13. MBIE, the Treasury and the Ministry of Transport (MOT) support the Reviewer’s recommendation of Option Two – NIWA acquiring MetService, subject to further work from officials on the implementation process. While the National Emergency Management Agency (NEMA) has indicated a preference for Option Four, NEMA is supportive of Option Two as a step towards Option Four.
14. Officials consider that re-integration of meteorology services through the acquisition should be taken forward now as it will start to address a number of urgent issues within the current system, including unified public weather warning messaging and support a

² <https://www.mbie.govt.nz/assets/5b3b826f79/weather-permitting-review.pdf>
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more coordinated response to any future severe weather events, involves less risk while maintaining service provision, without predetermining the Science System Advisory Group's (SSAG)³ review recommendations, which has the mandate to assess the integration of wider natural hazard and/or emergency management capability within the weather forecasting system, and can engage with the Inquiry into NIWE cross-government steering group.

15. NIWA may propose further amalgamation after the acquisition of MetService, and officials will provide advice to Ministers at that time.

The NIWA and MetService boards have indicated they will work constructively to implement Government decisions

16. Officials provided the final report to the boards and chief executives of MetService and NIWA but the report has not been shared more widely with staff. The entities both agree that a single weather forecasting agency is in the best interests of New Zealand but have different views on how this is best achieved. Both boards have indicated they will work constructively to implement any Government decisions.

Consideration of Option Three

17. The Reviewer considered the establishment of a new public weather service entity that includes weather forecasting capabilities of MetService and NIWA, an option consistent with MetService's submission⁴.
18. The Reviewer concluded there are fewer net benefits from this option. MBIE and the Treasury also consider that a new entity would not provide an entire research-to-operations pathway as certain research capability would remain with NIWA, and may create financial viability risk for NIWA due to the extent of capability removed, and the implementation process would take a longer time as it would require assets and capability from both MetService and NIWA moving to a new entity.

Consideration of Option Four

19. Option Four could lead to substantive improvements in forecasting and warnings for the emergency management system, addressing one of the key recommendations from the Inquiry into NIWE. It has the potential to move towards the perceived best practice of one warning system for multiple hazards, through the integration of weather and geological hazards, which are being adopted internationally (for example, Japan, as noted in Sapere's Interim Report).
20. The Inquiry into NIWE highlighted the emergency management system requires change and the interdependencies with weather forecasting, and a cross-government officials' steering group is being established in response to its findings.
21. NEMA is concerned that progressing Option Two, and then revisiting Option Four later, rather than addressing changes all at once, could lead to sustained uncertainty and disruption to New Zealand's weather forecasting system creating implications for the emergency management system as a result. NEMA has noted that funding and governance arrangements for New Zealand's geohazards forecasting system (GeoNet) are also being currently considered, so there are likely benefits to examining natural hazard monitoring, forecasting and warning systems at present.

³ The SSAG's Terms of Reference includes consideration of "effectively delivering science services of ongoing importance to New Zealand, such as national monitoring systems for weather and geohazards", and final advice is due by 30 October 2024.

⁴ MetService's submission to the Review recommended a two-phase move to establish a new Crown entity with integrated meteorological, oceanographic, hydrological, and climatological capabilities, and responsibility across the entire research-to-operations pathway.

22. MBIE and the Treasury consider that, while Option Four has merits, Option Two is preferred as it will realise system alignment benefits faster, will have less risk than is inherent in large contemporaneous structural reforms, and it supports service continuity. s9(2)(f)(iv) [redacted] While NEMA has indicated a preference for Option Four, NEMA supports Option Two as a step towards Option Four.

The implementation pathways of the recommended option

23. Key implementation issues include the mechanism for NIWA acquiring MetService as a wholly-owned subsidiary, NIWA's board agreeing (by resolution, after any required due diligence) to undertake the acquisition, s9(2)(h) [redacted], consideration of the Treaty of Waitangi, access to weather data and any fiscal impacts.

s9(2)(h) [redacted]

24. s9(2)(h) [redacted]

25. s9(2)(h) [redacted]

26. s9(2)(h) [redacted]

27. s9(2)(h) [redacted]

s9(2)(h) [redacted]

28. s9(2)(h) [redacted]

29. s9(2)(h) [redacted]

⁵ s9(2)(h) [redacted]

s9(2)(h)

30. s9(2)(h)

31. s9(2)(f)(iv)

Other implementation considerations

32. Table One outlines other implementation considerations for the recommended option, which will be covered in the draft Cabinet committee paper that is expected to be provided in July 2024.

Table One: Other implementation considerations for the recommended option

Legal information included in the table below is legally privileged

CRI acquiring an SOE	Option Two involves a Crown Research Institute (CRI) acquiring a State-owned enterprise (SOE). s9(2)(h)
Section 9 of the SOE Act 1986	Section 9 of the State-Owned Enterprises Act 1986 requires the Crown to act in a manner that is consistent with the principles of the Treaty of Waitangi. s9(2)(h)
s9(2)(h)	If NIWA acquires 100 per cent of the shares in MetService, the transaction would involve the Minister of Finance making decisions in two capacities, as a seller, and as shareholder of the purchaser. s9(2)(h)
s9(2)(h)	s9(2)(h)
Ministry of Transport Contract	There are other considerations that need to be assessed, including the s9(2)(b)(ii) (including the Government’s statutory and regulatory obligations).
Monitoring Arrangements	Further work is required on monitoring arrangements and monitoring performance of the weather forecasting system.
Funding of Transition	There may be short-term funding required to support agencies throughout the transition, as well as for MBIE and the Treasury as provisions in current and future baselines have not been made to cover implementation advice and costs.

⁶ s9(2)(h)

Transition risks

33. The implementation of the recommended option must ensure the continuity of weather forecasting services for New Zealand, retain critical capability, and ensure forecasting network assets and services are maintained.
34. There is the opportunity for MetService and NIWA to lead on the change design process and contribute to the implementation pathway to mitigate transition risks. This includes assessing the entities' system requirements, retention of critical capability, the consolidation of weather monitoring equipment, and business continuity. MetService's capability and responsibilities will be retained as a wholly-owned subsidiary, but duplicated functions will no longer be required.
35. The structure of the transaction of NIWA acquiring MetService would need to be assessed further, including acquisition value, funding requirements and any implications on appropriations.
36. Strong governance is needed to guide the entities through the transition, and there will be a number of upcoming board vacancies from 30 June 2024 across MetService and NIWA. We will provide advice on director appointments consistent with Ministers' decisions. s9(2)(f)(iv)
37. s9(2)(b)(ii)
38. It is important that any new weather forecasting system prioritises strong engagement with Māori and Māori organisations, and that iwi, hapū and Māori organisations have access to optimised weather forecasting products to prepare for, and respond to, severe weather events. NIWA has an established iwi / Māori engagement and partnership unit (Te Kuwaha) who are capable of providing this service alongside the Treaty principles.

Communications

39. There is growing public interest in the outcomes of the Review with increasing media enquiries, Official Information Act 1982 requests and media articles.
40. Minister Goldsmith is the Ministerial spokesperson of the Review (T2024/609 refers). Officials will provide advice on a ministerial announcement before 28 June 2024.
41. NIWA and MetService would appreciate the opportunity to inform staff of Ministers' decisions prior to any announcement.

Consultation

42. MBIE and the Treasury consulted the Department of Prime Minister and Cabinet, MOT, NEMA, the Public Service Commission and the Prime Minister's Chief Science Advisor during the preparation of this advice. All agencies indicate support for the approach and recommended option, with feedback incorporated in the briefing as appropriate.

Next Steps

- 43. If you agree to proceed, we recommend portfolio Ministers meet with the NIWA and MetService chairs and chief executives together to discuss the review outcome and pathway forward (you may also wish to first meet with your Ministerial colleagues to discuss the Review options). Proposed response letters to the chairs of MetService and NIWA are included in **Annex One**, for signature by portfolio Ministers.
- 44. Following decisions from Ministers, officials expect to provide a draft Cabinet committee paper in July 2024 on NIWA acquiring MetService. It will also provide advice on the implementation pathway, associated issues and proposed timeframes.
- 45. Following a Cabinet decision, there will be a legislative bid for the proposed Bill, which will consider key policy considerations and consultation. s9(2)(f)(iv) and after enactment of the Bill, NIWA will acquire MetService.
- 46. Further advice will also be provided on director appointments for both MetService and NIWA, s9(2)(f)(iv)

Recommended Action

- a **Note** the Weather Forecasting System Review Final Report concludes there is a compelling case for changes to the weather forecasting system and recommends the reintegration of MetService and NIWA
- b **Note** officials consider a key outcome of any system change is ensuring critical weather forecasting capability and infrastructure is managed in a coherent and unified way, and that any structural reforms should be in pursuit of that objective
- c **Note** officials consider that the option in recommendation d can be taken forward now, without predetermining any outcomes in the work that is also being undertaken through the Science System Advisory Group on the optimal configuration of the wider science system and the Inquiry into NIWE steering group. This preserves optionality in the wider science system reform process
- d **Agree in principle** to the Reviewer’s recommendation of NIWA acquiring MetService initially as a wholly-owned subsidiary and MetService being retained as a brand as New Zealand’s authorised meteorologist, subject to Cabinet consideration and approval

Agree/disagree.
Minister of Finance

Agree/disagree.
Minister for State Owned Enterprises

Agree/disagree.
Minister of Science, Innovation and Technology

- e **Agree** to meet with the Board chairs and chief executives of NIWA and MetService to discuss the outcome of the review in June 2024

Agree/disagree.
Minister for State Owned Enterprises

Agree/disagree.
Minister of Science, Innovation and Technology

f If recommendation d is agreed, **agree** for shareholding Ministers to sign the attached letters to the chairs of MetService and NIWA (**Annex One**), to initiate the acquisition process

Agree/disagree.
Minister of Finance

Agree/disagree.
Minister for State Owned Enterprises

Agree/disagree.
Minister of Science, Innovation and Technology

g **Agree in principle** to the Reviewer’s recommendation that access to weather data be made more open within the weather forecasting system, subject to implementation advice being provided, and noting there are likely fiscal implications and policy issues to be addressed

Agree/disagree.
Minister of Finance

Agree/disagree.
Minister for State Owned Enterprises

Agree/disagree.
Minister of Science, Innovation and Technology

h If recommendation d is agreed, **note** officials expect to provide a draft Cabinet committee paper in July 2024 on NIWA acquiring MetService. It will also provide advice on the implementation pathway and associated issues

i **Note** in the event a further amalgamation between NIWA and MetService is proposed after the acquisition of MetService, officials will provide advice to Ministers at that time.



Lars Piepke
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Nicola Scott
Manager, Science, Innovation and Technology, Entity Performance and Monitoring, MBIE

Hon Nicola Willis
Minister of Finance

_____/_____/_____

Hon Paul Goldsmith
Minister for State Owned Enterprises

_____/_____/_____

Hon Judith Collins KC MP
Minister of Science, Innovation and Technology

_____/_____/_____

Hon Mark Mitchell
Minister for Emergency Management and Recovery

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Hon Matt Doocey
Associate Minister of Transport

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Hon David Seymour
Associate Minister of Finance

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