

Proposed Marlborough Environment Plan

**Section 42A Hearings Report for Hearing Commencing
12 February 2018**

Report dated 1 February 2018

**Addendum to
Report Dated 13 November 2017
on submissions and further submissions topic:
Climate Change**

**Report prepared by
David Jackson
Principal Consultant Planner**

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List of Abbreviations

IPCC	Intergovernmental Panel on Climate Change
MDC	Marlborough District Council
MEP	Proposed Marlborough Environment Plan
MfE	Ministry for the Environment
NIWA	National Institute of Water and Atmospheric Research
NPSFW	National Policy Statement for Freshwater Management 2014
NZCPS	New Zealand Coastal Policy Statement 2010
RMA	Resource Management Act 1991
SLR	Sea level rise

Submitter Abbreviations

Submitter Number	Submitter Abbreviation	Full Submitter Name
425	Federated Farmers	Federated Farmers of New Zealand
501	Ngati Kuia	Te Runanga o Ngati Kuia
507	QCSRA	Queen Charlotte Sound Residents Association
716	Friends of NH and TB	Friends of Nelson Haven and Tasman Bay Incorporated
1059	Climate Karanga	Climate Karanga Marlborough
1186	Te Ātiawa	Te Ātiawa o Te Waka-a-Maui

Introduction

1. This report is an addendum to my main report dated 13 November 2017, containing recommendations to the Hearing Panel on submissions made on Climate Change, Volume 1: Chapter 19 of the MEP. This addendum should be read in conjunction with the 13 November report, including the background and explanation within it.
2. This addendum addresses:
 - a. An error in relation to Topic 'Issue 19B', and
 - b. A revised recommendation in relation to 'Policy 19.2.2', to reflect updated guidance to local government released by the Ministry for the Environment (MfE) after my November report was issued.
3. My name is David Jackson. I am a Principal Planner from Opus International Consultants, based in Nelson. My qualifications and experience are as follows:
4. I have a BSc Honours in Botany and a PhD in Plant Physiology, both from the University of Canterbury. I am a full member of the New Zealand Planning Institute (NZPI).
5. I have worked in the resource management field for over 32 years, including for the Commission for the Environment, the Ministry for the Environment, the Nelson City Council, and since 2014 for Opus. During my 19 years at Nelson City Council I held various senior policy planning roles, with my final position being Principal Adviser, City Development. At the Commission for the Environment I specialised in energy and environmental economics.
6. I was one of the principal authors, and in the latter stages Project Leader, for the development of the proposed Nelson Resource Management Plan (NRMP), which received the NZPI Nancy Northcroft Award for planning excellence. The NRMP is a combined district, regional and regional coastal plan. In addition to preparing the residential, industrial, inner city and commercial zone chapters, I prepared the landscape and the historic heritage provisions for the proposed NRMP.
7. I also lead the preparation of the Nelson Air Quality Plan.
8. I prepared Section 42A reports for both the above plans, and as well have been involved in the preparation and processing of more than a dozen variations and plan changes. With these proposed plans and plan changes I have been involved through the hearings and appeals processes.
9. I was not involved with the preparation of the proposed Marlborough Environment Plan (MEP). I was contracted by the Marlborough District Council (MDC/Council) in July 2017 (after the MEP submission period had closed) to evaluate the relief requested in submissions and to provide recommendations in the form of a Section 42A report.
10. I have read Council's Section 32 reports.

Code of Conduct

11. I confirm that I have read the Code of Conduct for Expert Witnesses contained in the Environment Court Practice Note and that I agree to comply with it.
12. I confirm that I have considered all the material facts that I am aware of that might alter or detract from the opinions that I express, and that this evidence is within my area of expertise, except where I state that I am relying on the evidence of another person.
13. I am authorised to give this evidence on the Council's behalf.

Scope of Hearings Report

14. This report is prepared in accordance with section 42A of the Resource Management Act 1991 (RMA).
15. As noted above, this report is an addendum to my main report dated 13 November 2017.
16. Since the release of the 13 November report, the Government has released new advice to local authorities on coastal hazards, which is a major revision of the 2008 edition of guidance, and which includes the findings and projections of the Fifth Assessment Report produced by the Intergovernmental Panel on Climate Change (IPCC).
17. This addendum:
 - a. Provides the Hearing Panel and submitters with information about the new Government guidance documents and their potential implications, and
 - b. Contains a revision to my recommendation to the Hearing Panel in relation to submissions on Policy 19.2.2
 - c. Contains a correction in relation to Issue 19B.
18. As submitters who indicate that they wish to be heard are entitled to speak to their submissions and present evidence at the hearing, the recommendations contained within this report are preliminary, relating only to the written submissions.
19. This report relies on the submissions and further submissions lodged. It does not consider the written evidence lodged with Council ahead of the hearing. This is because at the time of writing some parties had still to file their evidence. I considered it would be inappropriate to consider only the evidence of some submitters, but not others.
20. For the avoidance of doubt, it should be emphasised that any conclusions reached or recommendations made in this report are not binding on the Hearing Panel. It should not be assumed that the Hearing Panel will reach the same conclusions or decisions having considered all the evidence to be brought before them by the submitters.

Coastal Hazards and Climate Change: Guidance for Local Government, 3rd Edition¹

21. As noted above, *Coastal Hazards and Climate Change: Guidance for Local Government, 3rd Edition*, is a major revision of the early 2008 guidance to councils² and includes the findings and projections of the Fifth Assessment Report produced by the IPCC. It also contains advances in hazard, risk and vulnerability assessments, collaborative approaches to community engagement and changes to statutory frameworks. It sets out adaptive approaches to planning for climate change in coastal communities including integrating asset management into such planning. This is the substantive 279-page guidance document. It is supplemented by a 35-page summary document, *Preparing for coastal change, A Summary of Coastal Hazards and Climate Change Guidance for Local Government*, Ministry for the Environment, December 2017³.
22. The full guidance is a technical document. It includes details about how to apply a risk-based, adaptive planning approach as proposed in the guidance, along with additional information, case studies, tools and techniques.
23. The summary document is more accessible and less technical, but nevertheless fully explains the new approach.

Adaptive Planning & Community Engagement

24. The guidance introduces a new planning approach - of adaptive planning. It differs from previous guidance editions, and from current coastal hazard management practice, in two significant ways:
 - a. How it deals with uncertainty and risk, and
 - b. By placing community engagement at the centre of decision-making.
25. The guidance approach recognises that, when considering effects of climate change, uncertainty is unavoidable. It states it is not in question that sea levels are rising and will continue to rise, but that the future rate is highly uncertain.
26. Waiting until uncertainties are reduced before decisions are made, or plans and strategies developed, is seen as unacceptable (in terms of those exposed to risk) - and as unnecessary. The guidance proposes a “dynamic adaptive pathways planning” approach. As the name suggests, it identifies ways forward (pathways) despite uncertainty, while remaining responsive to change should this be needed (dynamic).
27. As the summary MfE document (p5) explains:

In the approach, a range of responses to climate change are tested against possible future scenarios. Pathways are mapped that will best manage, reduce or avoid risk. A plan is developed, with short-term actions and long-term options, and includes pre-defined points (triggers) where decisions can be revisited. This flexibility allows the agreed course of action to change if the need arises – such as, if new climate change information becomes available.

¹ *Coastal Hazards and Climate Change: Guidance for Local Government, 3rd Edition*. Ministry for the Environment, December 2017, Wellington
<http://www.mfe.govt.nz/sites/default/files/media/Climate%20Change/coastal-hazards-guide-final.pdf>

² *Climate Change Effects and Impacts Assessment: A Guidance Manual for Local Government in New Zealand, 2nd Edition*. Ministry for the Environment 2008, Wellington, and summarised on p10 of my 13 November 2017 Hearing Report.

³ (<http://www.mfe.govt.nz/sites/default/files/media/Climate%20Change/coastal-hazards-summary.pdf>)

By accommodating future change at the outset, this approach helps avoid locking in investments that could make future adjustments difficult and costly. As such, it assists both longer-term sustainability and community resilience. The dynamic adaptive pathways planning approach is a powerful process for managing and adapting to climate change. It recognises that, first, climate change effects vary from place to place, and second, that decision-makers face unavoidable uncertainty about ongoing sea-level rise. It is usually not possible, practical or sensible for them to wait until uncertainties are reduced before making decisions.

28. The guidance recommends that planning for the impact of climate change on coastal hazards follows a 10-step decision cycle, as shown in the figure below (from p10 of the summary document):

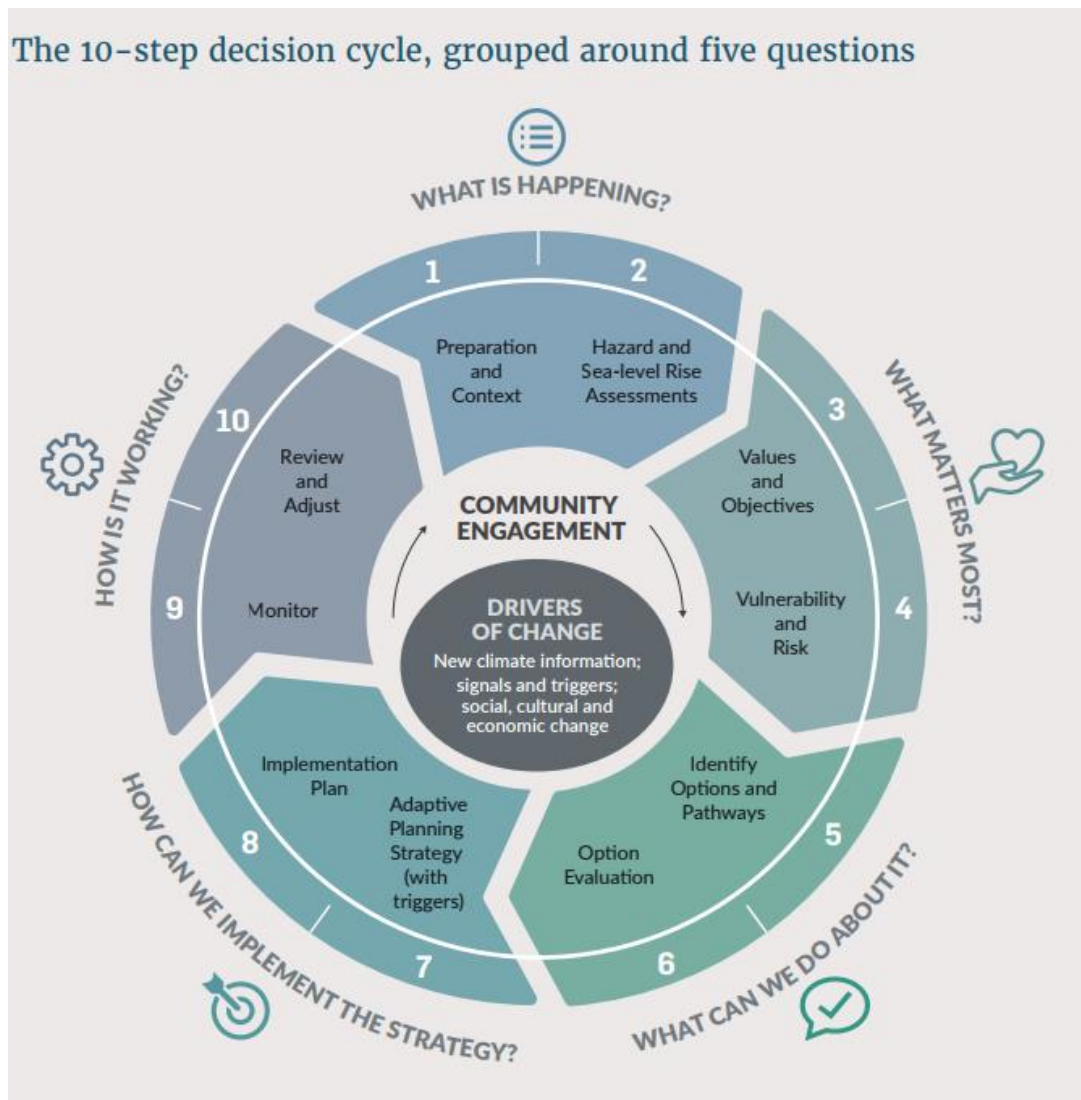


Figure 1: 10-step decision cycle, from 'Preparing for Coastal Change: A Summary of Coastal Hazards and Climate Change Guidance for Local Government, 2017'.

29. The 10-step decision cycle is structured around five key questions:

- a. What is happening?
- b. What matters most?
- c. What can we do about it?
- d. How can we implement the strategy?

- e. How is it working?
30. The figure has community engagement at its centre. The community includes all people, iwi, groups and organisations with an interest in the issue. The guidance recommends that engagement be more inclusive, rather than less. Pages 46 and 47 of the main guidance document discuss why community engagement is important. Some of the key factors include:
- a. Dialogue can help define what areas and resources are most valued by the community (i.e. what is most important to protect or manage);
 - b. It can help give a 'voice' to future generations, who may be most affected by sea level rise;
 - c. Sea level rise impacts will not affect everyone evenly – engagement helps identify this and its implications;
 - d. It can help generate potential solutions, and identify potential trade-offs required;
 - e. Better and more robust solutions are likely;
 - f. Trust in government, both central and local, is more likely to be retained or improved; and
 - g. It provides a more certain framework, less susceptible to change, for example with election cycles.

Sea Level Rise Guidance

31. The other key change in the December 2017 MfE guidance relates to sea level rise. As with the current guidance, the 2008 guidance recommended councils use a risk assessment process to assist decision-making relating to or affected by sea level risk. To assist this process the 2008 guidance recommended:

For planning and decision timeframes out to the 2090s (2090–2099):

*a. a **base** value sea-level rise of **0.5 m relative to the 1980–1999** average should be used, along with*

*b. **an assessment of the potential consequences from a range of possible higher sea-level rises** (particularly where impacts are likely to have high consequence or where additional future adaptation options are limited). At the very least, all assessments should consider the consequences of a mean sea-level rise **of at least 0.8 m** relative to the 1980–1999 average. Guidance on potential sea-level rise uncertainties is provided within the Guidance Manual to aid this assessment.*

*For planning and decision timeframes beyond 2100 where, as a result of the particular decision, future adaptation options will be limited, an allowance for sea-level rise of **10 mm per year beyond 2100** is recommended (in addition to the above recommendation).*

32. The new guidance provides 'minimum transitional' sea level rise (SLR) values for councils to use – until they have undertaken their adaptive planning approach in the regional context (which might also need to take account of significant vertical land movement or other local conditions). This is set out in Table 1 below, reproduced from the summary guidance document.
33. The guidance differentiates between new activities, and those that already exist or are minor (such as non-habitable short-lived assets).

Category	Description	Transitional response
A	→ Coastal subdivision, greenfield developments and major new infrastructure.	→ Avoid hazard risk by using sea-level rise over more than 100 years and the H+ scenario.
B	→ Changes in land use and redevelopment (intensification).	→ Adapt to hazards by conducting a risk assessment using the range of scenarios and using the pathways approach.
C	→ Land-use planning controls for existing coastal development and assets planning. Use of single values at local/district scale transitional until dynamic adaptive pathways planning is undertaken.	→ 1.0 m sea-level rise
D	→ Non-habitable short-lived assets with a functional need to be at the coast, and either low-consequences or readily adaptable (including services).	→ 0.65 m sea-level rise

Table 1: Minimum transitional New Zealand-wide sea-level rise allowances and scenarios for use in planning instruments where a single value is required at local/district scale while in transition towards adaptive pathways planning using the New Zealand-wide sea-level rise scenarios (from 'Preparing for Coastal Change: A Summary of Coastal Hazards and Climate Change Guidance for Local Government, 2017').

34. New development could include new coastal subdivisions, greenfield developments or major new infrastructure (Category A in Table 1). Being new, and long lasting, there is an opportunity to plan to avoid the hazard risk by using a more conservative SLR scenario (100-year timeframe combined with the higher, most extreme climate change/SLR scenario (H+) considered in the guidance document). The H+ scenario is used for stress testing the future climate sensitivity and adaptive capacity of major new developments, and testing adaptation pathways for existing development.
35. Changes in land use and redevelopment (Category B), that is, intensification of use, should adapt to hazards by conducting a risk assessment, using all four scenarios and the pathways planning approach outlined in the guidance.
36. Category C includes existing development, which is challenging in terms of adapting to climate change. The minimum transitional guidance level, until dynamic adaptive pathways planning is undertaken, is 1.0m SLR over 100 years.
37. Category D relates to non-habitable buildings or assets which have a functional need to be on the coast, and for which there are low consequences or where the structure can be readily adapted.

38. The guidance document (main document pages 108-111) references these different categories to the NZ Coastal Policy Statement (NZCPS 2010). It notes that NZCPS Policy 27 relates to existing development (Categories C and D) and that Policy 25 treats greenfield or change in land use (Categories A and B) differently from existing development. Policy 25 has an emphasis on locating such new activity (including infrastructure where practicable) away from areas prone to coastal hazard risks, and seeking to avoid increasing the risk.

Amended advice

Issue 19B - Submissions and Assessment

Addendum Comment:

39. *The Friends of NH and TB submission in relation to Issue 19B seeks relief of 'a further issue statement, objective and policies relating to addressing climate change that give effect to NZCPS policies 14 and 26'.*
40. *In the last sentence of paragraph 4 below, I mistakenly referred in my 13 November 2017 report to NZCPS Policy 24 instead of Policy 26. I correct this and the text related to that below.*
41. *In addition, the figure for sea level rise in the explanation (0.18 to 0.59m by 2090) is no longer in accordance with levels in recent guidance by MfE, nor those proposed below under Policy 19.2.2. Also, under my new advice on Policy 19.2.2, I recommend that a 100-year forecast period be used, in accordance with the NZCPS. A year of 2120 is closer to this than the 2090 figure currently in the MEP under Issue 19B. It is recommended that these figures be amended in the explanation as consequential changes, and a footnote be added as a source.*
42. *My advice on Issue 19B, from pages 25-27 of my 13 November report, is set out below in full, with my new changes in ~~strikeout~~ to indicate text to be removed, and new text underlined. I have shaded the changes to differentiate them from text changes proposed in the 13 November report.*
43. *These changes do not affect my recommendation on 'decisions requested' in relation to Issue 19B, in Appendix 1 of my 13 December report.*

Issue 19B - Submissions and Assessment

44. Issue 19B reads:

Climate change could affect natural hazards and create a coastal inundation hazard associated with sea level rise.
45. The explanation to the issue states that climate change predictions include more extreme weather events. For the east coast of the South Island, including Marlborough, drier conditions are expected, more incidence of drought but also a change in the frequency of extreme rainfall events with potentially more frequent and severe flooding. Sea level rise of 0.18 to 0.59 metres by 2090 is predicted. The impact on coastal erosion is discussed, and the effect on the level of the Wairau River bar and river mouth is noted as having far greater influence on potential inundation than projected sea level rise alone. The direct risks from sea level rise are seen as greatest in the Marlborough Sounds where settlements and related infrastructure tend to be located close to the water edge.
46. Five submitters support in part the issue statement, or rather the explanation to the issues statement as it is the explanation to which they seek changes. One submitter opposes the issue statement itself, seeking changes to it and the creation of an additional statement.
47. Friends of NH and TB (716.183) opposes the issues statement, considering it too limited. It considers coastal inundation is only one of the effects of sea level rise, noting other effects such as increased risk of landslides and direct damage from waves, as well as adverse effects on natural values including by mitigation measures such as seawalls. They seek deletion in the issues statement of the words "and create a coastal inundation hazard associated with sea level rise". They then seek establishment of 'a further issue statement, objective and policies relating to addressing climate change that give effect to NZCPS policies 14 and 26'. The decision sought by the submitter is very general. It is difficult for the Council as decision-maker, or for would-be further submitters to know what is being sought. For example, NZCPS Policy 14 relates to restoration of the natural character of the coastal environment. It, amongst other things, requires regional councils to identify

areas and opportunities for restoration and rehabilitation, and it lists possible approaches to restoring or rehabilitating degraded areas. I do not read that policy as relating to areas that in the future might be degraded by the effects of climate change and need restoration or rehabilitation. I do not think any potential further submitter could reasonably understand what the submitter was seeking in terms of relief. Policy 24-26 of the NZCPS deals with the identification of natural defences against coastal hazards. A potential further submitter would be clearer about the meaning of that provision. It is not exclusively about sea level rise and climate change, but the effects of climate change on coastal processes, sea levels, erosion etc and built development need to be considered over at least a 100 year timeframe.

48. Policy 19.2.2 addresses long-term sea level rise and the effects of storm surge. Also, Method 19.M.8 deals with research to understand the areas along the coast that are likely to be affected by sea level rise. In my view, the deletion of the text as sought by Friends of NH and TB is not appropriate, and nor is a new issue statement with an associated objective and policies. I consider that a minor change to the wording of the existing issue statement, along with providing more explanation, is the most appropriate relief. In addition, changes to Policy 19.2.2 and Method 19.M.8 would also provide some further relief. I accept that the issue relating to the coastal impacts of climate change involves more than just sea level rise. Storm surges affect inundation and can be a function of both higher sea levels and at times potentially more extreme storms. I support this, and some of the risks to natural values, being introduced into the explanatory statement.
49. Peter Deacon (89.11), Helen Ballinger (351.57) and Climate Karanga (1059.13) support the issue but seek removal of the word 'potentially' from the second sentence of the third paragraph of the explanatory statement. The second and third sentences currently state: "Sea level is predicted to rise around 0.18 to 0.59 meters by 2090. This rise potentially increases the risk of inundation of the coast". I support removal of the word 'potentially' as it follows that if sea level rises, the risk of inundation will increase. 'Potentially' therefore becomes redundant.
50. Judy and John Hellstrom (688.173) support in part the issue, but would like a reference in the explanatory statement that land subsidence (in the Sounds) adds to the rate of relative sea level rise experienced. While subsidence in itself is not an effect of climate change, it is a relevant issue when combined with sea level rise induced by climate change, and I support its inclusion.

Recommendation

51. I recommend that Issue 19B is retained as notified⁴.
52. I recommend that paragraph 3 of the explanation to Issue 4A is amended as follows:

Global warming is expected to result in a rise in sea level due to thermal expansion of ocean water and melting of glacial and polar ice. Sea level is predicted to rise around 0.18 to 0.59 0.55 to 1.36 metres by 2090 2120¹. This rise potentially⁵ increases the risk of inundation at the coast. Coastal erosion could also become more prevalent, increasing the need for coastal protection measures, both of which can have adverse effects on natural values⁶. Along the coastal margin of the Wairau Plain, the level of the Wairau River bar and river mouth efficiency has far greater influence on the potential for inundation than the projected sea level rise. Further south, the topography and lack of settlement minimises any inundation risk. However, the risks are far greater in the Marlborough Sounds where settlement and associated infrastructure (especially means of access, such as jetties and access tracks) tend to be located in the coastal environment and near the water edge. Where land is subsiding, the adverse effects of sea level rise from climate change can be accelerated.⁷

Footnote 1: Table 10, Coastal Hazards and Climate Change: Guidance for Local Government, 3rd Edition, Ministry for the Environment, December 2017.

⁴ 716.183 - Friends of NH and TB.

⁵ 89.11 - Peter Deacon; 351.57 - Helen Ballinger; 1059.14 - Climate Karanga.

⁶ 716.183 – Friends of NH and TB.

⁷ 688.173 – Judy and John Hellstrom.

Policy 19.2.2 - Submissions and Assessment

Addendum Comment:

53. As noted earlier (paragraph 21-38) there is new national guidance from MfE in relation to planning for the effects of climate change and coastal hazards. The sea level rise figure, used in Policy 19.2.2 in the MEP as notified, is now very dated, based as it is on earlier 2008 MfE guidance, and the superseded 4th IPCC Assessment Report. As discussed, the recommended policy approach to addressing future sea level rise has also changed considerably, with different allowances and sea level rise scenarios now being recommended depending on the nature of the planning activity – e.g. new versus existing, long-lived v short-lived.

54. There is an opportunity to update the MEP to reflect the most recent national guidance and IPCC assessment. In my view, there is scope within the submission of Friends of NH and TB (716/185) to bring the MEP into line with the new MfE guidance, if the Hearing Panel is inclined to do so.

55. My reasoning is set out below:

a. The Friends of NH and TB submission is:

“This policy is opposed because it does not give effect to the NZCPS 2010, in particular policies 4(3)(c) and 24(h)”.

b. The relief they seek is to replace the policy, as follows:

“That the following amendment (strike-through) is made to Policy 19.2.2:

~~*Policy 19.2.2 Avoid any inundation of new buildings and where appropriate infrastructure within the coastal environment by ensuring that adequate allowance is made for the following factors when locating, designing and/or constructing any building or infrastructure:*~~

Replace Policy 19.2.2 with a policy requiring any new development to avoid coastal hazards, taking into account at least a 100-year timeframe and having regard to relevant NZCPS Policies, including in particular Policy 24 (h).”

c. Te Ātiawa o Te Waka-a-Maui Trust made a further submission in support.

d. I also note that Te Runanga o Ngati Kuia, in their original submission (501/82), sought that the 0.5m SLR in the policy be changed to 1m.

e. NZCPS Policy 24(h) is as follows:

Identification of coastal hazards

(1) Identify areas in the coastal environment that are potentially affected by coastal hazards (including tsunami), giving priority to the identification of areas at high risk of being affected. Hazard risks, over at least 100 years, are to be assessed having regard to:

(a) physical drivers and processes that cause coastal change including sea level rise;

(b) short-term and long-term natural dynamic fluctuations of erosion and accretion;

(c) geomorphological character;

(d) the potential for inundation of the coastal environment, taking into account potential sources, inundation pathways and overland extent;

(e) cumulative effects of sea level rise, storm surge and wave height under storm conditions;

(f) influences that humans have had or are having on the coast;

(g) the extent and permanence of built development; and

(h) the effects of climate change on:

(i) matters (a) to (g) above;

(ii) storm frequency, intensity and surges; and

(iii) coastal sediment dynamics;

taking into account national guidance and the best available information on the likely effects of climate change on the region or district.

- f. Policy 24 includes a 100-year timeframe (which I mentioned in my 13 November report) and a broad scope of matters to be considered. I note the last phrase in the policy 'taking into account national guidance and the best available information on the likely effects of climate change on the region or district'. The policy is not tied to any particular version of national guidance, and requires account to be taken of the best available information. Therefore, in my view the policy would require consideration of the latest December 2017 MfE guidance document, and the information on which that is based.
- g. The Friends of NH and TB submission is not tied only to Policy 24. It includes 'have regard to relevant NZCPS Policies' (on coastal hazards). While Policy 24 is mentioned specifically in the submission, it is an inclusive list.
- h. That brings into consideration Policy 25, 26 and 27 (and Objective 5)
- i. Policy 27 focuses on addressing the effects on existing development.
- j. Policy 25, which also includes a 100-year timeframe, treats greenfields development / redevelopment differently from existing development. It also specifically mentions infrastructure.
- k. Objective 5 requires decision-makers to ensure that coastal hazard risks, taking account of climate change are managed by locating new development away from areas prone to such risks, considering responses such as managed retreat for existing development, and protecting or restoring natural defences to coastal hazards.
- l. The December 2017 MfE report specifically references all these policies (pages 108-111 of the main guidance document) in discussing the four different categories of sea level rise guidance it proposes in Table 12 of the main report, as set out below:

Table 12: Minimum transitional New Zealand-wide SLR allowances and scenarios for use in planning instruments where a single value is required at local/district scale while in transition towards adaptive pathways planning using the New Zealand-wide SLR scenarios

Category	Description	Transitional response
A	Coastal subdivision, greenfield developments and major new infrastructure	Avoid hazard risk by using sea-level rise over more than 100 years and the H+ scenario
B	Changes in land use and redevelopment (intensification)	Adapt to hazards by conducting a risk assessment using the range of scenarios and using the pathways approach
C	Land-use planning controls for existing coastal development and assets planning. Use of single values at local/district scale transitional until dynamic adaptive pathways planning is undertaken	1.0 m SLR
D	Non-habitable short-lived assets with a functional need to be at the coast, and either low-consequences or readily adaptable (including services)	0.65 m SLR

56. *In conclusion, in my view, there is scope within the Friends of NH and TB submission, if the Panel is minded to, to bring Policy 19.2.2 into line with the guidance in Table 12 of the latest MfE guidance document:*
- a. *The submission seeks that the policy be replaced, not just amended, having regard to the 'relevant NZCPS policies', and a 100-year timeframe.*
 - b. *NZCPS Policy 24 includes having regard to national guidance (which is not tied to a particular document or edition) and to 'best available information', which the latest guidance represents.*
 - c. *The December 2017 guidance, in its Table 14, and in the text, references policies 24, 25 and 27 in taking a different policy approach for existing development, compared to new or intensified development.*
57. *It is appropriate to use the four categories within MEP Policy 19.2.2 because this different approach is consistent within the NZCPS policies (which the MEP needs to give effect to), while the specific SLR numbers/approaches are mandated in the latest "national guidance" and are the "best information available".*
58. *The text below completely replaces the advice and recommendation in relation to Policy 19.2.2 on pages 28-30 in my 13 November 2017 report.*

Policy 19.2.2 - Submissions and Assessment

59. Policy 19.2.2 reads:
- Avoid any inundation of new buildings and where appropriate infrastructure within the coastal environment by ensuring that adequate allowance is made for the following factors when locating, designing and/or constructing any building or infrastructure:*
- (a) *rising sea levels as a result of climate change of at least 0.5 metres relative to the 1980-1999 average; and*
 - (b) *storm surge.*
60. There is one submission in support, four submissions supporting in part, and one submission in opposition.
61. Friends of NH and TB (716.185) oppose the policy, submitting that it does not give effect to the NZCPS 2010. They seek that the policy be replaced with one requiring that any new developments avoid coastal hazards, taking into account at least a 100-year timeframe and having regard to relevant NZCPS policies, including in particular Policy 24(h).
62. Policy 24 of the NZCPS requires identification of areas in the coastal environment potentially affected by coastal hazards, and priority to the identification of high risk areas. Policy 24 is not concerned exclusively with hazards due to climate change and sea level rise, but clause (h) requires explicit consideration of the effects of climate change, including effects on storm frequency, intensity and surges, and on coastal sediment dynamics. Policy 24 requires hazards risks over at least 100 years to be assessed.
63. The Friends submission is not restricted to NZCPS Policy 24, but seeks that regard be had to other 'relevant policies'. The other policies relevant to climate change and coastal hazards are discussed below.
64. Policy 25, relates to subdivision, use and development within areas of coastal hazard risk. The policy requires consideration of 'at least the next 100 years' and seeks to avoid increasing the risk of harm from coastal hazards. It focuses on new development (greenfields) or redevelopment, which must be avoided in locations where there would be increased risk of adverse effects from coastal hazards. In other instances, new development or redevelopment if it occurs must reduce the risk of adverse effects from coastal hazard e.g. by providing for managed retreat or by designing for relocation or recovery from hazard events.

65. Policy 25 also encourages the location of infrastructure away from areas of hazard risk where practicable, and discourages the use of hard protection structures, promoting alternatives including natural defences.
66. Policy 26 concerns defences against coastal hazards. It encourages the protection, restoration or enhancement of natural defences where these protect coastal land uses, or sites of significant biodiversity, cultural, heritage or geological value, from coastal hazards.
67. Policy 27 relates to existing development. In areas of 'significant existing development' likely to be affected by coastal hazards, a range of options to reduce risk should be assessed. These include 'managed retreat', 'do-nothing', recognising that hard protection may be necessary to protect existing infrastructure of national or regional significance, and recognising that hard protection for private structures may have high environmental and social costs. The policy also directs that strategies should reduce the need for hard protection structures or similar engineering solutions, and plan to move to more sustainable approaches. Policy 27 requires consideration over at least a 100-year timeframe, taking into account the nature of the coastal hazards risk and how that might change over a 100-year timeframe, including the expected effects of climate change.
68. I also note that Objective 5 of the NZCPS requires decision-makers to ensure that coastal hazard risks, taking account of climate change, are managed by locating new development away from areas prone to such risks, considering responses such as managed retreat for existing development, and protecting or restoring natural defences to coastal hazards.
69. The December 2017 MfE report draws on this policy approach in its guidance. This includes Table 12 of the main MfE report with interim sea level rise allowances and scenarios where a single value is required for district and regional planning, in the transition to the adaptive pathways planning approach.
70. Method 19.M.8 in the MEP defines an investigation process to define the extent and nature of the coastal inundation hazard. The Council no doubt would use the latest MfE guidance in its approach to defining the extent of the hazard and the community input to that process.
71. Until that assessment process has been undertaken, transitional guidance is needed. The Government's recommended approach in Table 12 of the MfE document provides that guidance. In my view, incorporating that approach into Policy 19.2.2 would give effect to the submission on Friends of HNH and TB, and the NZCPS. I recommend that Policy 19.2.2 be replaced, as requested, with new wording in line with the 2017 guidance.
72. As a consequential amendment, the explanation to the policy will also need amending to reflect these changes.
73. Ngati Kuia (501.82) support in part the policy, and want a more conservative allowance of one metre sea level rise over 100 years. The above recommendation in relation to the Friends of NH and TB submission would address the relief the submitter is seeking, but also go further in relation to new developments and intensification of land uses.
74. Federated Farmers (425.346) support the policy in part, but consider it should focus on habitable buildings where there is a risk to human life, not simply any buildings. They consider that farm sheds and other ancillary buildings should not be treated the same as homes or places where the community congregates. They also seek deletion of 'and where appropriate infrastructure', for similar reasons. The change being recommended in response to the Friends of HN and TB submission introduces a new category for non-habitable short-live assets and would meet the Federated Farmers submission in part.
75. I do not support excluding infrastructure from the policy as sought by Federated Farmers as it would remove important guidance on the location of infrastructure relative to coastal inundation. It is prudent to have regard to sea level rise and storm surge risk when decisions are made on the location and design of new infrastructure, since these developments can often be multi-million-dollar community investments. Moreover, removing reference to infrastructure would be inconsistent with the new national guidance, and would not give effect to NZCPS Policy 25 (d). That provision encourages the location of infrastructure away from hazard risk areas where practicable.
76. Helen Ballinger (351.63), Queen Charlotte Sound Residents Association (504.76) and Climate Karanga (1059.17) support the policy and do not seek changes. The amendments proposed in response to the Friends of NH and TB submission would mean these submissions are accepted in part.

Recommendation

77. I recommend that Policy 19.2.2 is deleted and replaced with the following⁸:

For planning and development in the coastal environment the following sea level rise allowances and scenarios should be used (until a dynamic adaptive pathways planning process is completed) to assess and manage potential coastal hazard risk:

- (a) Coastal subdivision, greenfield developments and major new infrastructure – Avoid hazard risk by using sea-level rise over more than 100 years and the H+ scenario;
- (b) Changes in land use and redevelopment (intensification) – Adapt to hazards by conducting a risk assessment using the range of scenarios and a dynamic adaptive pathways planning approach;
- (c) Existing coastal development and assets – use a minimum 1.0m sea level rise⁹; and
- (d) Non-habitable short-lived assets with a functional need to be at the coast, and which either have low consequences or are readily adaptable (including services) - use a minimum 0.65m sea level rise¹⁰.

Dynamic adaptive pathways planning approach, and the climate change/sea level rise scenarios are as defined in “Coastal Hazards and Climate Change: Guidance for Local Government, Ministry for the Environment, December 2017”.

78. As a consequential change, and in response to the submissions of Friends of NH and TB and Ngati Kuia, I recommend that the explanation to Policy 19.2.2 is amended as follows:

~~In 2013, The International Panel on Climate Change has determined that it is very likely that the rate of global mean sea level rise during the twenty-first century will exceed the rate observed during 1971– 2010 due to increases in ocean warming and loss of mass from glaciers and ice sheets.~~

~~The Ministry for the Environment advises local government* (for planning and decision timeframes out to 2090-2099), to use a ‘dynamic adaptive pathways planning’ approach to considering the effects of climate change, and managing and adapting to it and the hazards risk from ~~plan for a~~ sea level rise and climate change. The approach provides flexibility that allows an agreed course of action to be changed if the need arises. of 0.5 metres relative to the 1980-1999 average as a base value but that assessments be made of potential consequences from a sea level rise of up to 0.8 metres. Until the adaptive pathways planning is undertaken, the Ministry for the Environment guidance is to use interim sea level rise allowances and scenarios, depending on the type of activity. This advice, for four categories of activity, is reflected in Policy 19.2.2. In Policy 19.2.2 (a) a fixed figure is not used because a development occurring in the late 2020s, for example, will have a different forecast period (and predicted sea level rise), than one occurring earlier than this, or later. Also, the decadal increments for sea level rise over the next 100 years are not equal, but get larger under the H+ scenario further into the future.~~

~~Although the life of the MEP is only ten years, buildings have a minimum design life of 50 years and new subdivisions and property titles have an indefinite life. Equally, new infrastructure can be long-lived, and involve multi-million-dollar community investment. The policy reflects the different timeframes, and increases of sea level – and the different risk involved – associated with various types of development. It also recognises that a different approach is possible with new compared to existing development. It is therefore important that any new building is located, designed and/or constructed having regard to the long term risk of inundation as a result of sea level rise. This approach is also appropriate to infrastructure located in the coastal environment that is not intended by design to be subject to inundation. The Ministry for the Environment advice has been utilised to establish the increase in sea level to be applied.~~

⁸ 716.185 – Friends of NH and TB

⁹ 501.82 – Ngati Kuia

¹⁰ 425.346 – Federated Farmers

Storm surges occurring in response to low pressure weather systems can cause higher than normal sea levels and inundation of low lying areas. This hazard increases with increasing sea levels, so any risk assessment made in accordance with this policy should also take into account the potential additive effects of storm surge on top of sea level rise.

This policy will be applied to the determination of resource consent applications, plan changes and designations. Rules elsewhere in the MEP require buildings to be set back from the coastal marine area. This in itself will act to protect buildings from the adverse effects of sea level rise and/or storm surge. However, when applications are made to establish a building within this setback, then the policy will be able to be applied.

**Coastal Hazards and Climate Change: Guidance for Local Government, Ministry for the Environment, December 2017.*

Appendix 1: Recommended decisions on ‘decisions requested’ – amendments from addendum report

Submission Number	Submission Point	Submitter	Volume	Chapter	Provision	Recommendation
351	63	Helen Mary Ballinger	Volume 1	19 Climate Change	Policy 19.2.2	Accept in part
425	346	Federated Farmers of New Zealand	Volume 1	19 Climate Change	Policy 19.2.2	Reject <u>Accept in part</u>
501	82	Te Runanga O Ngati Kuia	Volume 1	19 Climate Change	Policy 19.2.2	Accept in part
504	76	Queen Charlotte Sound Residents Association	Volume 1	19 Climate Change	Policy 19.2.2	Accept in part
716	185	Friends of Nelson Haven and Tasman Bay Inc	Volume 1	19 Climate Change	Policy 19.2.2	Accept in part
1059	17	Climate Karanga Marlborough	Volume 1	19 Climate Change	Policy 19.2.2	Accept in part

