

Proposed Marlborough Environment Plan

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

Report dated 13 November 2017

**Report on submissions and further submissions
topic:
Climate Change**

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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

Submitter Abbreviations

Submitter Number	Submitter Abbreviation	Full Submitter Name
280	NMDHB	Nelson Marlborough District Health Board
401	Aquaculture NZ	Aquaculture New Zealand
425	Federated Farmers	Federated Farmers of New Zealand
426	MFA	Marine Farming Association Incorporated
433	Port Marlborough	Port Marlborough New Zealand Limited
501	Ngati Kuia	Te Runanga o Ngati Kuia
507	QCSRA	Queen Charlotte Sound Residents Association
715	Forest and Bird	Royal Forest and Bird Protection Society
716	Friends of NH and TB	Friends of Nelson Haven and Tasman Bay Incorporated
869	KCSRA	Kenepuru and Central Sounds Residents Association Incorporated
934	Davidson Family Trust	MJH and RL Davidson Family Trust
961	Chamber of Commerce	Marlborough Chamber of Commerce
962	MFIA	Marlborough Forest Industry Association
990	Nelson Forests	Nelson Forests Limited
1059	Climate Karanga	Climate Karanga Marlborough
1186	Te Atiawa	Te Atiawa o Te Waka-a-Maui
1201	Trustpower	Trustpower Limited
1251	Fonterra	Fonterra Co-operative Group Limited

Introduction

My name is David Jackson. I am a Principal Planner from Opus International Consultants, based in Nelson. My qualifications and experience are as follows:

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).

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.

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.

I also lead the preparation of the Nelson Air Quality Plan.

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.

I was not involved with the preparation of the proposed Marlborough Environment Plan (MEP). I was contracted by the Marlborough District Council (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.

I have read Council's Section 32 reports.

Code of Conduct

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.

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.

I am authorised to give this evidence on the Council's behalf.

Scope of Hearings Report

This report is prepared in accordance with section 42A of the Resource Management Act 1991 (RMA).

In this report I assess and provide recommendations to the Hearing Panel on submissions made on Climate Change, Volume 1: Chapter 19 of the MEP.

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.

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.

Overview of Provisions

Chapter 19 relates to Climate Change. The objectives and policies within this chapter are variously RPS, regional coastal plan, regional plan and district plan provisions – some relating to all, some specifically one or several (as denoted above each provision).

There are two issues defined in Chapter 19.

The first issue relates to the potential effects of climate change on Marlborough's natural and physical resources and the ability of people and community to use those resources.

There is a single objective responding to this issue:

- Objective 19.1 – Mitigation of and adaptation to the adverse effects on the environment arising from climate change, with five associated policies 19.1.1 – 19.1.5, and related methods.

The second issue relates to the potential effect of climate change on natural hazards, including coastal inundation associated with sea level rise and storm surge.

There is a single objective responding to this issue:

- Objective 19.2 – Avoid and mitigate the adverse effects of natural hazards influenced by climate change, with two associated policies 19.2.1 – 19.2.2, and related methods.

Statutory Documents

The following statutory documents are relevant to the provisions and/or submissions within the scope of this report. Although a summary of the way in which these provisions are relevant is provided below, the way in which they influence the assessment of the relief requested by submissions will be set out in the actual assessment.

Resource Management Act 1991

National Policy Statements

New Zealand Coastal Policy Statement 2010 (NZCPS)

The NZCPS sets out national policy direction in order to achieve the purpose of the RMA in relation to the coastal environment. It is the only mandatory national policy statement under the RMA. It contains seven objectives and 29 related policies. The NZCPS provides direction to local authorities in relation to how the coastal environment is to be managed, consistent with the functions given to regional councils and district councils under the RMA. The NZCPS must be given effect to in regional policy statements, regional plans and district plans.

The NZCPS is particularly relevant to Issue 19B, Objective 19.2 and related provisions, because of the issue of sea level rise and coastal inundation.

National Policy Statement for Freshwater Management 2014 (NPSFM)

The NPSFM sets out the objectives and policies for freshwater management, providing direction on how local authorities should carry out their responsibilities under the RMA for managing fresh water. The key requirement of the NPSFM is for regional councils to set objectives for the state of fresh water bodies in their regions and to set limits on resource use to meet these objectives.

The NPSFM requires regional councils when setting freshwater objectives for flows and water quality to have regard to the 'the reasonably foreseeable impacts of climate change' (Policies A1 and B1).

Other reports

Climate Change Effects and Impacts Assessment: A Guidance Manual for Local Government in New Zealand, 2nd Edition. Ministry for the Environment 2008, Wellington

This manual provides projections of the expected physical impacts of climate change, both at the national level and for regions around New Zealand. It is designed to help local government identify and quantify opportunities and risks that climate change poses for their functions, responsibilities and infrastructure. It also demonstrates how to incorporate climate risk assessment into local government regulatory, assessment and planning processes to reduce vulnerability to the impacts of climate change. It should be noted that it pre-dates the IPCC 5th Assessment Report published in 2014 and that Assessment Report's updated projections. It also pre-dates the NZCPS 2010 and the 100 year horizon for identifying potential coastal hazards, including from climate change effects including sea level rise and storm surge.

Climate Change Projections for New Zealand: Atmospheric projections based on simulations undertaken for the IPCC 5th Assessment, Ministry for the Environment 2016, Wellington

This report addresses expected changes in New Zealand's climate (temperature and many other climate variables) out to 2120, and draws heavily on climate model simulations from the Intergovernmental Panel on Climate Change (IPCC) Fifth Assessment Report.

New Zealand's Environmental Reporting Series: Our atmosphere and climate 2017, Ministry for the Environment & Stats NZ, 2017, Wellington

This report presents information about the state of New Zealand's atmosphere and climate, the pressures on it, and what that means for New Zealand and the environment. The dominant issue for atmosphere and climate is human-induced climate change. The report documents changes in greenhouse gases levels that have occurred in NZ, and in temperature and sea level rise. The report is not primarily about future climate projections, but does touch on the implications if greenhouse gases emissions continue unabated.

Preparing New Zealand for Rising Seas: Certainty and Uncertainty, Parliamentary Commissioner for the Environment 2015, Wellington

The stated aims of this report are to increase understanding of how sea level rise will affect New Zealand; to show how low-lying coastal areas around the country can be accurately mapped in a standardised way; to describe how some councils have begun to plan for sea level rise; and, to identify problems with, and gaps in, the direction and guidance provided by central government. The report makes recommendations on climate change to Government on a range of matters.

Speech from the Throne, 2017

The Speech from the Throne, 8 November 2017¹, includes the following details of the Government's plans in respect of climate change (information as at the time of writing of this hearing report, 12 November 2017), as follows:

Climate change is the greatest challenge facing the world. If we do not urgently reduce our emissions of greenhouse gases, warming will disrupt the climate which our agriculture and other industries depend upon, and sea-level rise will affect our coastal cities, along with other profound changes.

New Zealand must do its part, as the cost of doing nothing is too high. This government will set a target of a Net Zero Carbon Emissions Economy by 2050, with legally binding emissions reduction targets and carbon budgets to keep New Zealand on track to this goal.

An independent Climate Commission will be established to recommend interim emissions reduction targets and provide advice, focusing on policy development and initiatives in transport, urban form, energy and primary industries.

This government will restore an effective pricing mechanism for climate pollution, with the Climate Commission to determine more details, including how to transition to 100 per cent renewable electricity by 2035, and how to bring agriculture into the scheme.

This government will support a just transition for workers in industries that need to reduce emissions, and it will support the creation of jobs in sectors that are carbon-free or carbon sinks, such as forestry. Farmers operating at best practice will be credited for emissions reductions.

The agreement between Labour and the Green Party also provides for up to \$1 billion of new investment to be stimulated in low carbon industries by 2020, kick-started by a government-backed Green Investment Fund of \$100 million.

¹ Speech from the Throne, 8 November 2017

This ambitious plan to take real action on climate change will involve all New Zealanders. This government will act as a role model, showing leadership by requiring State-owned enterprises and other government organisations to pursue low-carbon options and technologies, including electric vehicles for all Government vehicle fleets. Young people will be encouraged to take part in a Youth Climate Change Challenge.

Analysis of submissions

There were 119 submission points received on provisions relevant to the Climate Change topic. None of these were in common formats.

Key Matters

I have set out my analysis of the submissions points by issue and then by respective components of the topic, under the following headings. The first two relate to the two issues within the chapter. The final two matters relate submissions on the chapter as a whole or which raise additional matters not covered in the other topics.

Matter 1: The mitigation of and adaptation to the adverse effects on the environment arising from climate change (Topic 19.1A and related provisions).

Matter 2: Avoiding and mitigating adverse effects of natural hazards influenced by climate change (Topic 19.2A and related provisions).

Matter 3: General submissions - Chapter 19

Matter 4: Additional policies sought to be included.

Pre-hearing meetings

There have been no pre-hearing meetings for this topic.

Matter 1 - The mitigation of and adaptation to the adverse effects on the environment arising from climate change

Overview of Provisions

This assessment relates to Issue 19.1A, Objective 19.1, Policies 19.1.1 to 19.1.5 and methods 19.M.1 to 19.M.7.

The package of provisions relates to the effects that climate change will have on natural and physical resources in Marlborough, and their use by people, as well as potential direct effects on people such as through changes in temperature and changes in insect species. The objective (Objective 19.1) seeks mitigation of and adaptation to these adverse effects. The five policies (19.1.1 to 19.1.5) support the objective, respectively in terms of reducing or offsetting carbon emissions; raising community awareness; enabling adaptation by primary industries; taking a precautionary approach to freshwater allocation; and ensuring efficiency in use of out-of-stream freshwater. The policies are implemented through seven methods, relating to information and research, other plans or strategies, and regional and district rules.

There are submissions on the following matters and the assessment below has been undertaken as follows:

- Issue 19A
- Objective 19.1
- Policy 19.1.1
- Policy 19.1.2
- Policy 19.1.3
- Policy 19.1.4
- Policy 19.1.5
- Methods

Issue 19A - Submissions and Assessment

Issue 19A is:

Climate change has the potential to affect Marlborough's natural and physical resources and the ability of people and communities to use these resources.

The explanation to the issue states that Marlborough relies on its natural and physical resources for its social and economic wellbeing and its health and safety. It notes that many natural and physical resources and the ability to use them, especially land and freshwater, are dependent on climate. It states that higher temperatures, greater extremes in temperatures, and reduced rainfall could have significant impacts on rural land uses from increased risk of drought and decreased water availability. The explanation says this makes Marlborough vulnerable to any long term changes in climate. The explanation goes on to expand on the various aspects of the issue, discussing potential stress on natural ecosystems and people, in addition to those on primary production. Potential opportunities are mentioned - for crops or renewable energy, or for people with warmer winters. The downside of increased biosecurity risks and insect-borne diseases is also discussed.

Six submitters support in part the issue statement, or rather the explanation to the statement as it is the explanation to which they seek changes.

Climate Karanga (1059.19), Peter Deacon (89.2), Helen Ballinger (351.46) and Marion Harvey (230.1) support the issues statement and most of the explanation, but they consider that the adverse effects of climate change outweigh any potential benefits. The first three of these submitters seek that the fourth paragraph (at the top of page 19-2), which relates to potential opportunities from climate change, be moved to the end of the explanation section. They also seek that the final paragraph of the explanation be deleted. That paragraph relates to the uncertainty associated with climate change predictions, and how little work has been done applying the national predictions to Marlborough. The submitters are concerned that Council may

be 'distracted' by suggestions that the uncertainty means they should wait for more information. Marion Harvey has similar concerns, seeking that more emphasis is given to the seriousness of the threats from climate change and to recognise more recent climate predictions from MfE and National Institute of Water and Atmospheric Research (NIWA).

The last paragraph has been overtaken somewhat by events, as noted in Marion Harvey's submission. The Climate Change chapter in the MEP as notified and the related section 32 report relied substantially on the Ministry for the Environment 2008 publication *Climate Change Effects and Impacts Assessment: A Guidance Manual for Local Government in New Zealand, 2nd Edition*². That MfE report, prepared largely by scientists from NIWA relied on the Fourth Assessment Report for the Intergovernmental Panel on Climate Change (IPCC). Since that time the IPCC has produced its Fifth Assessment Report (AR5, 2013) and based on that and other NIWA modelling, MfE has produced updated climate change projections for New Zealand³. The MfE 2016 report states that the 2008 report remains excellent guidance on how regional councils might interpret and apply climate change projections, undertake risk assessments and incorporate projections into planning decisions, and remains relevant to the new projections.

The 2016 MfE report notes⁴:

'Climate models have improved since the AR4 [IPCC 4th assessment report]. Many more global model projections are available from AR5 compared to AR4. This gives us a much larger sample to assess New Zealand changes, and generally increases our confidence in the likely range of impacts. Also, simulations from NIWA's regional climate model are used much more extensively than in the previous report [MfE 2008].

Projected overall changes for New Zealand are similar to those from the previous assessment published in 2008. This report [the 2016 report] is notable, however, for including not only predictions from interpreting global climate models but, for the first time, also those from a detailed New Zealand regional climate model run on the NIWA supercomputer. This...allows an unprecedented level of detail and robustness in the information provided.⁵

The 2016 report includes climate change projection for the various regions of New Zealand, including Marlborough, and the MfE website has a summary of the projections for Marlborough⁶. I note that the preamble to the website summary for Marlborough contains a statement that *'Projections of climate change depend on future greenhouse gas emission, which are uncertain.'* That uncertainty does not necessarily relate to the predictions of future climate change arising from particular future levels of greenhouse gases. The statement in part reflects that levels of greenhouse gases are influenced by policy choices – with active intervention and mitigation there might be lower future levels of greenhouse gases (with particular climate change effects); if little is done, there can be a high greenhouse gas future, with more extreme climate change impacts. There are scenarios in between these. The IPCC models are based on four main global emissions scenarios. To summarise, the qualifier about uncertainty on the MfE website is not uncertainty that climate change will happen; it is uncertainty as regards which path of greenhouse gas emissions governments and communities will choose into the future.

In my view, the last paragraph in the explanation to Issue 19A no longer is an accurate reflection of the state of knowledge regarding potential climate change impacts in New Zealand, and Marlborough. As the 2016 report states, it is now based on *'an unprecedented level of detail and robustness in the information provided'*.

² Ministry for the Environment (2008) *Climate Change Effects and Impacts Assessment: A Guidance Manual for Local Government in New Zealand, 2nd Edition*, Mullan B, Wratt D, Dean S, Hollis M; Allan S, Williams T, Kenny G and MfE. Ministry for the Environment, Wellington.

³ Ministry for the Environment (2016) *Climate Change Projections for New Zealand, Atmospheric projections based on simulations undertaken for the IPCC 5th Assessment*, Mullan B, Sood A, Stuart S, National Institute of Water and Atmospheric Research. Ministry for the Environment, Wellington

⁴ Ibid, p18 and 19.

⁵ Ibid, Executive Summary, p11.

⁶ <http://www.mfe.govt.nz/climate-change/how-climate-change-affects-nz/how-might-climate-change-affect-my-region/marlborough>

I do not consider it appropriate to delete the paragraph as these submitters request. Rather I propose it be updated to reflect the change in certainty and regional modelling that has occurred since the IPCC 5th Assessment and the MfE 2016 report. I understand their concerns - that some people may interpret the current wording as a reason for inaction on climate change - but I think revised wording could resolve this concern. I consider the changes I propose are within the scope of these submissions.

The submitters also request that the fourth paragraph in the explanation be moved the end of the section. In doing so they are seeking to de-emphasise the potential agricultural benefits that might arise from climate change, as they consider the potential adverse effects will outweigh them. In my view there is some validity in these concerns and that the current location (and wording) of the paragraph can suggest an 'on one hand' and 'on the other hand' balance. I support moving the paragraph to become a new paragraph 6, above the current last paragraph which I recommend remains, with amendments. I do not support moving paragraph four completely to the end of the section as it would become an odd outlier. To address the submissions about the perceived lack of emphasis on the potential negative impacts of climate change, I propose that it would be appropriate to include a qualifying statement similar to that used in the MfE website summary in relation to Marlborough "*However, these benefits may be limited by negative effects of climate change such as prolonged drought or greater frequency and intensity of storms*".

Friends of Nelson Haven and Tasman Bay (716.177) support the issues statement and would like recognition that any decrease in water availability will increase competition not only between existing users (as is discussed in paragraph two of the explanation) but also between existing users and values, both instream and extractive. I consider that this additional factor is a reasonable potential adverse effect that should be mentioned. If water becomes scarcer, the competition between instream values and economic values from extractive use of that water will certainly increase.

The NMDHB (280.38), Peter Deacon (89.2) and Climate Karanga (1059.19) want recognition of the potential adverse effects on mental health, and the NMDHB also wants discussion of serious public health effects such as injury from extreme weather events such as floods or fires, and changing insect borne disease patterns. Climate Karanga also raises the issue of the spread of pest plants and insects. I agree that the current explanation in the plan focuses on physical impacts, and that stress-related illnesses from drought and extreme events (floods, fires) should also be discussed. I note there is mention of heat stress in paragraph five. Also, there is mention, in the sixth paragraph, of a greater survival range of insect pests, but the link is not made to insects carrying harmful diseases. I support changes to round out the discussion of possible effects from climate change.

Recommendation

I recommend that the fourth paragraph of the explanatory text under Issue 19A is moved to become the sixth paragraph and be amended as follows:

However, climate change may create new opportunities. Plant growth could improve due to longer growing seasons and rising carbon dioxide levels. Warmer temperatures and decreased frost risk may enable new crops to be established; for example, Marlborough may become more suited to growing red wine grape varieties. Changes in climate may also create the opportunity to develop new ways to produce renewable energy. However, these benefits may be limited by negative effects of climate change such as prolonged drought or greater frequency and intensity of storms.⁷

I recommend that the last paragraph is amended as follows:

The predictions of climate change at a national level involve significant uncertainty and little work has been undertaken to apply these national predictions to Marlborough's climate. Climate models are improving and many more global model projections were available for the Fifth Assessment Report for the Intergovernmental Panel on Climate Change (IPCC) compared to the Fourth Assessment Report. The 2016 Ministry for the Environment report 'Climate Predictions for New Zealand' has drawn on this work, and as well as a detailed New Zealand regional climate model run on the NIWA supercomputer, to give a report with 'an unprecedented level of detail and robustness in the information provided'. The report notes that climate change effects over the next decades are predictable with some level of certainty. This situation is complicated further, however, by the fact

⁷ 89.2 Peter Deacon; 230.1 Marion Harvey; 351.45 Helen Ballinger; 1059.19 Climate Karanga

that New Zealand and Marlborough are subject to natural climate variations associated with La Nina/El Nino and the Interdecadal Pacific Oscillation. These natural variations will be superimposed on human-induced long term climate changes⁸.

I recommend that the last sentence in paragraph two is amended as follows:

Any decrease in water availability will also increase the competition for freshwater amongst existing users, and between extractive and in-stream values⁹.

I recommend that the following is added at the end of the current paragraph five (which begins 'The public health..'):

*Climate change may also lead to more stress-related mental health effects from extreme weather events such as droughts, floods or fires as these can cause disruption to individuals and business, including the primary sector*¹⁰.

I recommend that the following is added at the end of the current paragraph six (which begins 'Communities may'):

*Some of these insects, such as mosquitos, may be carriers of diseases which are currently not present in Marlborough, and which adversely affect human, animal or plant health.*¹¹

Objective 19.1 - Submissions and Assessment

Objective 19.1 reads:

Mitigation of and adaptation to the adverse effects on the environment arising from climate change.

Two submitters support the objective, and seek its retention, while four submitters support it in part, seeking changes either to the objective or the accompanying explanation. One submitter is in opposition but seeks amendments to wording in the explanation rather than to the objective itself.

Aquaculture NZ (401.179) and MFA (426.187) support the objective in part, but want the objective amended to add reference to ocean acidification. Both submitters consider ocean acidification to be one of the major anthropogenic threats to Marlborough's marine environment, which should be recognised in the MEP. Ocean acidification is recognised as a potential effect of what is normally referred to as 'climate change'. That is, with rising carbon dioxide levels, oceans absorb more carbon dioxide becoming more acidic. This is not 'climate change' per se, but is recognised as an important (non-climate related) impact of rising atmospheric carbon dioxide levels¹² – just like potential productivity increases for some plant species that thrive on higher carbon dioxide levels. The usual concept of 'climate change' encompasses these non-climate change effects. Therefore I do not support added the words proposed to the objective. However, I do see merit in referring to ocean acidification in the discussion under Issue 19A as this aspect of the issue is not discussed in the MEP as notified. Te Runanga o Toa Rangatira (166.10)(support in part) raise a similar issue referring to the problems of calcification for shellfish and aquaculture if oceans become acidified. My recommendation on their submission is the same as for Aquaculture NZ and MFA.

Peter Deacon (89.3) and Helen Ballinger (351.46) both seek the removal of the word 'offset' from the last sentence in the explanation [which is reproduced below], and its replacement with 'reduce', believing that reducing emissions is a better approach than offsetting them. They also, along with Climate Karanga (1059.2), seek removal of the wording around retaining flexibility, wanting the text to reflect a more ecologically sustainable approach. The submitters are concerned that 'flexibility' could give the impression that protection of natural and physical resources for the majority may be sacrificed for maximising short term gain for a few. The current wording of the last sentence (and the preceding sentences for context) is:

⁸ 89.2 Peter Deacon; 230.1 Marion Harvey; 351.45 Helen Ballinger; 1059.19 Climate Karanga

⁹ 716.177 – Friends of NH and TB

¹⁰ 89.2 Peter Deacon; 280.38 NMDHB; 1059.19 Climate Karanga

¹¹ 280.38 NMDHB; 1059.19 Climate Karanga

¹² For example, New Zealand's environmental reporting series: Our atmosphere and climate 2017, Ministry for the Environment and Stats NZ.

One of the difficulties is that there is inherent uncertainty regarding the likely local climate changes in Marlborough and therefore the exact nature of those adverse effects is unknown, making it particularly difficult to plan for climate change. Further research will assist in this regard. In the meantime, it is prudent to promote actions that offset carbon emissions and retain sufficient flexibility in the use, development and protection of natural and physical resources to enable resource users to adapt to a changing climate.

I note that in international agreements on climate change 'offsetting' is an allowable approach, and that New Zealand has met some of its obligations through offsets. I appreciate that these can be controversial – they can be seen by some people as not resolving the real issue (reducing emissions at source), or the offsets may be in regimes where verification is difficult and the outcome questionable. However, other offsets such as allowing scrub to revert to native forest, or increased biomass in native forest from control of browsing pests, are legitimate approaches, and can have additional environmental benefits. In my view it is not appropriate to rule out offsets in all cases. I do support the addition of 'reduce' so that both options are included in the explanation. There is sufficient certainty about anthropogenic climate change occurring that a stronger approach than just to 'offsetting' should be contemplated. I note that having reduce or offset would then be consistent with the wording in Policy 19.1.1, but I also note that there are submissions seeking removal of 'offset' from that policy as well, and this is discussed later.

In terms of the submissions to remove the words around flexibility in the use, development or protection of natural and physical resources to allow adaptation to climate change, I do not support the change. The submitters appear to be reading a lot into the term flexibility, and that it means flexibility to maximise short term gain for a few. I do not read the sentence that way. The second part is about enabling resource users to adapt to a changing climate, which is an appropriate response. The flexibility is to assist that to occur. I cannot see that it involves 'sacrificing' resources for the benefit of a few.

Nelson Forests (990.257) and MFIA (962.116) both support the objective and seek its retention as notified, since they see it supporting the planting of trees. Those submissions are accepted, as the objective itself is recommended to remain unchanged.

Recommendation

I recommend that the third paragraph of the explanatory text under Issue 19A is amended as follows:

Marlborough's natural ecosystems could also be vulnerable to the effects of climate change. Indigenous terrestrial, aquatic and marine species could respond to increased temperatures and drier conditions by shifting to more suitable climate zones. And inability to move may have significant consequences for the long term viability of affected indigenous species, especially plants. Ocean acidification, as oceans absorb more carbon dioxide, may cause harm to marine ecosystems, and affect fishing and aquaculture.¹³

I recommend that last sentence of the explanatory text under Objective 19.1 is amended as follows:

In the meantime, it is prudent to promote actions that reduce or¹⁴ offset carbon emissions and retain sufficient flexibility in the use, development and protection of natural and physical resources to enable resource use to adapt to climate change¹⁵.

Policy 19.1.1 - Submissions and Assessment

Policy 19.1.1 reads:

Promote actions within Marlborough to reduce or offset carbon emissions.

Three submitters support the policy, and seek that it be retained, while five submitters support it in part, seeking changes either to the policy or the accompanying explanation.

¹³ 401.179- Aquaculture NZ; 426.187 – MFA; 166.10 – Te Runanga of Toa Rangatira

¹⁴ 89.3 – Peter Deacon; 351.46 – Helen Ballinger

¹⁵ 89.3 – Peter Deacon; 351.46 – Helen Ballinger; 1059.2 – Climate Karanga

Peter Deacon (89.4), Helen Ballinger (351.47) and Climate Karanga (1059.3) support Policy 19.1.1 in part and seek removal of the words 'or offset' from the policy. They are concerned that offsetting does nothing to lower overall greenhouse emissions. Climate Karanga goes on say offsets have damaged New Zealand's clean/green image, and has cost NZ taxpayers millions of dollars in 'worthless Ukrainian/Russian carbon credits'. As discussed above under Objective 19.1 offsets can have these problems, but equally can be a useful tool sometimes with other environmental benefits. The submission of Forest and Bird (715.370) supports the policy and the benefits of permanent carbon sinks involving native species. I note that the policy is not either/or – the policy provides for both offsetting and reduction strategies to be pursued, and they can occur together so that there is a net reduction in emissions. Because some offsets are problematic is not a reason to exclude offsets at the policy level. I accept that care is needed at the implementation or method level. I do not support the amendment proposed and consider that offsets/sinks have a role to play.

The above submitters also seek changes to the explanation to the policy to make a stronger statement that the Council will (rather than 'could') assess and then address the carbon footprint of its own services to the community, and encourage businesses to do likewise. I note that the Council has committed in Method 19.M.1 to look at its own carbon footprint and reduce it so the argument is somewhat moot. However, I would support bringing the wording in the explanation into line with the more definite method statement.

NMDHB (280.39) supports the policy but seeks changes to the explanation that Council record and report on its own carbon emissions and encourage others to do the same. The explanation essentially says this currently, and the above recommended change in response to Peter Deacon, Helen Ballinger and Climate Karanga will help reinforce this. NMDHB also seek recognition of Council's current activities such as tree planting. I think that is implicit in the assessment of Council's carbon footprint and is not strictly necessary, but as a reminder to those undertaking such an assessment, I support including reference to it in the explanation.

The submission from Philip Hunnisett (1016.1) is not clear as to which provision (issue, objective, policy or other) it concerns, but it has been inferred it relates best to this policy. It supports council promoting 'drastic cut backs' on carbon emissions, and it signing up to the 'Global Covenant of Mayors for Climate Change and Energy'. New Zealand has its own 'Local Government Leaders' Climate Change Declaration' which the Marlborough Mayor has signed, which addresses part of the submission. The current wording of the policy provides for reductions in emissions. 'Drastic' reductions are possible within the current policy wording but not mandatory, and would not be consistent with the approach of making improvements but at a rate that allows users to adapt (explanation to Objective 19.1.1). I do not support amendment of the policy.

Friends of NH and TB (716.178) and MFIA (962.117) support the policy and seek its retention. No changes to the wording of the policy are being recommended, other than minor changes to the explanation.

Recommendation

I recommend that the second last sentence of the explanatory text under Policy 19.1.1 is amended as follows:

For example, the Council ~~could~~¹⁶ assess and then address the carbon footprint of delivering its own services to the community (including its tree planting)¹⁷ and encourage businesses to do likewise.

Policy 19.1.2 - Submissions and Assessment

Policy 19.1.2 reads:

Improve the community's understanding of the potential effects of climate change on the Marlborough environment.

Three submitters support the policy, and seek that it be retained, while five submitters support it in part, seeking changes either to the policy or the accompanying explanation.

¹⁶ 89.4 – Peter Deacon; 351.47 – Helen Ballinger; 1059.3 – Climate Karanga; 280.39 – NMDHB.

¹⁷ 280.39 - NMDHB

Peter Deacon (89.5), Helen Ballinger (351.48) and Climate Karanga (1059.4) support the policy, but want changes to the explanatory statement and Anticipated Environmental Results to explain how it will be implemented (e.g. public outreach and education). They specifically seek that the Council establishes a new position of 'MDC Climate Change Advisor'. Peter Deacon also wants a clear action plan of measure the Council will take in the short to medium term to achieve the stated outcome. In my view the explanatory statement, and the Anticipated Environmental Results, are not the sections of the plan for these proposed changes. The submitters are discussing methods to implement the policy. I note that there are methods in the proposed MEP to give effect to the policy. Method 19.M.2 relates to research to better understand the implications of climate change for Marlborough, while 19.M.5 relates to sharing the findings of that research and its implications with the Marlborough community. I consider those methods give effect to the policy. Bill McEwan (259.1) and Britt Flatt (478.1) also ask for a Climate Change Advisor. If a submitter wants a permanent Climate Change Advisor position created, or a detailed action plan on how the Council will implement the policy and the methods, then that could be better done through submissions on the Long Term Plan and Annual Plan, since those actions have financial implications.

Aquaculture NZ (401.180) and MFA (426.188) support the policy in part, but want it amended to add reference to ocean acidification. As under Objective 19.1 above, both submitters consider ocean acidification to be one of the major anthropogenic threats to Marlborough's marine environment, which should be recognised in the MEP. For the reasons given under Objective 19.1, I do not support adding the words proposed to the policy, but note the recommendation under Objective 19.1 above to add reference about acidification under Issue 19A in the MEP.

Forest and Bird (715.371) and Friends of NH and TB (716.179) support the policy and seek its retention. Don Miller (250.1) strongly supports the policy, and also requests no changes to it.

No changes to the wording of the policy or its explanation are recommended.

Recommendation

I recommend that Policy 19.1.2 and its explanatory statement remain as notified (and note that establishment of a Climate Change Advisory position would need to be pursued via submissions to the Annual Plan/Long Term Plan process since it has direct financial implications¹⁸).

Policy 19.1.3 - Submissions and Assessment

Policy 19.1.3 reads:

Enable primary industries to adapt to the effects of climate change.

Two submitters support the policy, and seek that it be retained, five submitters support it in part, seeking changes either to the policy or the accompanying explanation, and one submitter opposes part of the explanation, seeking amendments.

Friends of NH and TB ((716.180) supports the policy in part, but want more emphasis on how it will be implemented. They propose the following words be added at the end '*..by ensuring that plan rules are sufficiently flexible whilst ensuring land uses continue to be consistent with the purpose of the RMA*'. Te Atiawa (further submission 115) support the submission, while William and Kathleen Rainbow (116) and Red Sky Trust (117) oppose it. The opposing submitters state the proposed amendment would narrow the policy to only activities on land, excluding aquaculture for example. They consider the change is inconsistent with relevant definitions and other provisions of the MEP and the Act. I agree with the opposing further submitters. The restriction to land would prevent the policy applying to the marine environment or to freshwater. Also, all plan rules and activities allowed under the Act have to be consistent with the RMA, so adding those words to the policy is unnecessary. Therefore I do not support adding to the policy as sought.

Peter Deacon (89.6) and Climate Karanga (1059.5) support Policy 19.1.2 but want changes to the statement in the explanation relating to increasing sea temperatures providing possible opportunities for aquaculture. Peter Deacon seeks removal of the sentence, while Climate Karanga want it amended to reflect potential

¹⁸ 89.5 – Peter Deacon; ; 259.1 - Bill McEwan; 351.48 – Helen Ballinger; 478.1 - Britt Flatt; 1059.4 – Climate Karanga.

negative effects associated with ocean warming, such as acidification, lower dissolved oxygen, less phytoplankton and more algal blooms and disease species. Aquaculture NZ (401.181) and MFA (426.189) support the policy in part, but want it amended to add reference to ocean acidification. I do not support amending the policy to refer to acidification as sought by Aquaculture NZ and MFA, but I do support an amendment to explanation to refer to acidification (and other matters) as sought by Climate Karanga, and consider there would give partial relief to the Aquaculture NZ and MFA submissions.

Helen Ballinger (351.49) opposes the policy, concerned as with Peter Deacon and Climate Karanga about line 6 in the explanation regarding the potential benefits to aquaculture from warmer seas. She does not state a specific decision she is wanting, but the amendments I am recommending in relation to Mr Deacon's and Climate Karanga's submissions would give some relief to her submission.

Federated Farmers (425.342) and Fonterra (1251.54) support the policy, and want it retained as notified. As the wording of the policy itself is being recommended to remain unchanged, I consider these submitters are getting the relief they seek.

Recommendation

I recommend that the second last sentence in the explanatory statement of Policy 19.1.3 is amended as follows:

Similar opportunities could exist for the aquaculture industry as a result of increasing sea temperatures, but ocean acidification¹⁹, lower dissolved oxygen levels, effects on phytoplankton, and more algal blooms and diseases could create negative impacts²⁰.

Policy 19.1.4 - Submissions and Assessment

Policy 19.1.4 reads:

Take a precautionary approach to the allocation of additional freshwater resources and where freshwater has already been allocated, ensure that the allocation reflects the status of the resource.

Two submitters support the policy, and seek that it be retained, two submitters support it in part, seeking (separate) changes its wording, while two submitters oppose it, seeking its deletion.

Federated Farmers (425.343) and Trustpower (1201.114) want deletion of the policy. Both submitters consider that the policy is already addressed in Chapter 5: Allocation of Public Resources. Fonterra (1251.55) supports in part the policy, seeking its amendment to remove duplication with other policies on the allocation of water in the MEP. I have carefully read Chapter 5, and although climate is mentioned a number of times in that chapter, it is in relation to Marlborough's normal dry climate, or climate and soil type being part of irrigation demand modelling. Climate change is not mentioned in Chapter 5 and, in my opinion, Policy 19.1.4 does not duplicate or repeat provisions from Chapter 5. The explanation to Policy 19.1.4 contains a reference to Chapter 5, but only insofar as the policy (and the environmental data collected over the life of the plan) helps inform any subsequent review of the provisions in Chapter 5. In my view the policy should remain, and unchanged. It provides additional guidance in the plan on water allocation specific to climate change and its potential implications, and guidance that is not reflected in Chapter 5, which is more business as usual in terms of water allocation. I also note that Policies A1 and B1 of the NPSFW require regional councils when making or changing regional plans to have regard to, amongst other things, 'the reasonably foreseeable impacts of climate change'. This further supports the inclusion of Policy 19.1.4 in the MEP.

Friends of NH and TB ((716.181) supports the policy in part. They consider the policy could be improved by adding at the end the words '*..and the effects on both extractive and instream uses and values*'. They comment that, in terms of the latter, trout in particular have limited ability to adapt to increased water temperatures. The proposed addition in my view would improve the guidance in the policy. The current wording, where it relates to freshwater already allocated, seeks to '*ensure that allocation reflects the status of the resource*'. Allocation status of a resource is terminology used in Chapter 5 and relates to a business-

¹⁹ 401.181 – Aquaculture NZ; 426.189 – MFA.

²⁰ 89.6 – Peter Deacon; 351.49 – Helen Ballinger; 1059.5 – Climate Karanga.

as-usual allocation judgement, not a precautionary approach to reflect the additional effects of climate change. Therefore referring to the Chapter 5 (non-climate change) allocation status in this policy, in my opinion, on its own would be insufficient and somewhat circular, since the status may need to change as a result of climate change. For that reason I consider the change sought in the Friends of NH and TB submission is appropriate, as it provides guidance as to the effects to be considered rather than just the existing allocation status of the resource.

Helen Ballinger (351.50) and Climate Karanga (1059.6) support Policy 19.1.4 and seek its retention. The above recommendations, if adopted, would see the policy remain but with the additional wording as sought by Friends of NH and TB.

Recommendation

I recommend that Policy 19.1.4 is amended as follows:

Take a precautionary approach to the allocation of additional freshwater resources and where freshwater has already been allocated, ensure that the allocation reflects the status of the resource and the effects on both extractive and instream uses and values²¹.

Policy 19.1.5 - Submissions and Assessment

Policy 19.1.4 is:

Ensure that the freshwater that is available for out-of-stream use is allocated and used efficiently, by:

- (a) requiring that the rate of water use authorised by water permit be no more than that required for the intended use, having regard to the local conditions;*
- (b) enabling the transfer of water permits between users within the same Freshwater Management Unit; and*
- (c) enabling the storage of water for subsequent use during low flow and low level periods.*

Three submitters support or support the policy in part, all seeking changes to its wording. Four submissions seek deletion of the policy or in the case of one, one clause of it.

Federated Farmers (425.344) and Trustpower (1201.115) seek deletion of the policy. As with Policy 19.1.4 above they consider that the policy is appropriately addressed in Chapter 5 and is repetitive. Fonterra (1251.55) supports in part the policy, seeking its amendment to remove duplication with other policies on the allocation of water. Again, I have carefully read Chapter 5, and do not see that Policy 19.1.5 duplicates matters in that chapter. The policy adds a layer of guidance to freshwater allocation with climate change and its potential effects on water quantity in mind. The policy could sit in Chapter 5 or in Chapter 19, but its provisions are not repetitive in my view. It is also my view that the policy is better located in the Climate Change chapter, since it is the issues and objective in this chapter that have generated the policy response. I do think that more cross referencing between Chapter 5 and Chapter 19 would be beneficial. Chapter 19 refers to Chapter 5, but it would be easy for someone reading Chapter 5 to overlook the provisions of Chapter 19. Although no submitter has asked for it, I consider that the cross referencing could be added as either a minor amendment or inconsequential change.

Warwick Lissaman (255.7) and Te Atiawa (1186.100) oppose the policy, seeking deletion of clause (b) which seeks to enable the transfer of water permits within a Freshwater Management Unit. Mr Lissaman says the policy has drawn criticism from many in the community but does not explain the basis of that criticism. Te Atiawa submit that water not used by a consent holder should remain in the resource for the mauri or good of the water body, and the environment. The Te Atiawa have also made similar submissions in relation to Chapter 5 (Allocation of Public Resources). Submissions on that chapter are likely to be heard in the middle of 2018. My recommendation is that a decision on the submission points of Mr Lissaman and Te Atiawa be made after the wider aspects of resource allocation are heard later in 2018 in relation to Chapter 5 of the MEP.

²¹ 716.181 – Friends of NH and TB

Helen Ballinger (351.51) and Climate Karanga (1059.7) support in part policy 19.1.4. They seek the amendment of clause (c) to read *'enabling the storage of water during periods of high river flow for subsequent use during low flow and low level periods'*. I support the change to the wording. The clause is potentially ambiguous in its notified form. Although the explanation makes it clear (paragraph 2, page 19-4) the water for storage is to be taken during 'periods of higher river flow', the policy does not say this. It is possible to read clause (c) as proposing that water (for subsequent use) be taken during low flow periods. It would be clearer, and reflect the intention stated in the explanation, if the words sought by the submitters were included in the policy.

Friends of NH and TB (716.182) supports in part the policy. They do not want changes to the text, but do want the clauses re-ordered to make the current clause (c) 'the first priority'. The decision sought in the submission has clause (c) moved to become (a) and the existing (a) and (b) re-numbered accordingly. There is no priority of any of the clauses in the policy – there is nothing to say first to do (a) and then (b) etc. They all have equal weighting – or to be weighted as the case may be in a particular circumstance. There is nothing to be gained by changing the order as sought. It would also require a number of consequential changes to the explanatory statement – for no resource management purpose.

Recommendation

I recommend that a decision in relation to Policy 19.1.5 (b) is deferred until after submissions are heard on Chapter 5, Allocation of Public Resources²².

I recommend that Policy 19.1.5 (c) is amended as follows:

enabling the storage of water during periods of high river flow²³ for subsequent use during low flow and low level periods.

Method of Implementation 19.M.1 - Submissions and Assessment

Method 19.M.1 reads:

Investigate Council operations to establish their carbon footprint; set goals for reducing carbon emissions and develop an action plan to reach those goals.

Peter Deacon (89.7), Helen Ballinger (351.52) and Climate Karanga (1059.8) support the provision in part, but seek the addition of wording to tie the goals for emission reductions to the national reduction targets, as follows: *Investigate Council operations to establish their carbon footprint; set goals for reducing carbon emissions in accordance with New Zealand's national emissions reduction targets and develop an action plan to reach those goals.*

The current national targets for reducing New Zealand's greenhouse gas emissions are:

- a target under the first Kyoto Protocol commitment period of reducing greenhouse gas emissions to 1990 levels between 2008 and 2012. New Zealand met this target in 2015 by submitting its "True-up Report" to the UNFCCC²⁴.
- a target of reaching 5 percent below 1990 greenhouse gas emissions levels by 2020.
- a target of reaching 30 percent below our 2005 greenhouse gas emissions levels by 2030 (this target is equivalent to 11 per cent below 1990 levels by 2030).
- a long-term target of 50 percent below 1990 greenhouse gas emissions levels by 2050.

These targets may change under the new Government elected in 2017. I note also that the national targets relate to greenhouse gases in general, not just carbon emissions as in the Council's proposed action plan for its operations. For these reasons I do not consider it would be appropriate to use such rigid wording as 'in accordance with' when referencing the national targets. However, I do see merit in the Council having regard to the national targets when setting their carbon reduction goals and its action plan. That would

²² 255.7 - Warwick Lissaman; 1186.100 - Te Atiawa

²³ 351.51 - Helen Ballinger; 1059.7 - Climate Karanga.

²⁴ <http://www.mfe.govt.nz/climate-change/reducing-greenhouse-gas-emissions/emissions-reduction-targets>

recognise that targets for greenhouse gases cannot be directly mapped to carbon reductions, and also that different regions and sectors, including council operations, have carbon footprints that may be different to the national one, and which affect the nature of the reductions that may occur.

Recommendation

I recommend that Method 19.M.1 is amended as follows:

Investigate Council operations to establish their carbon footprint; set goals for reducing carbon emissions having regard to New Zealand's national emissions reduction targets²⁵ and develop an action plan to reach those goals.

Method of Implementation 19.M.2 - Submissions and Assessment

Method 19.M.2 reads:

Consider, in the review of the Marlborough Regional Transport Plan, provisions to reduce emissions of greenhouse gases.

Peter Deacon (89.8), Helen Ballinger (351.53) and Climate Karanga (1059.9) support the provision in part. They want the method to be reframed to be more positive, submitting that transport accounts for 20 percent of New Zealand's greenhouse gas emissions and that there is a need to respond more quickly and decisively. They propose the method be reworded as follows: ~~Consider,~~ *in the review of the Marlborough Regional Transport Plan, Council will include provisions to reduce emissions of greenhouse gases.*

Regional Land Transport Plans are prepared under the Land Transport Act 2003. Under section 14 of that Act in their preparation the regional transport committee is required to have taken into account any regional policy statement or plan in force under the RMA. 'Take into account' is a stronger term than the current term 'consider'. However, I do not think the MEP can go so far as to pre-empt the process of preparing the Regional Land Transport Plan, and its legislative mandate under separate legislation, by saying what it will or will not include. Having said that, I consider that a reference to taking into account climate change provisions of the MEP would strengthen the method towards what the submitters are seeking, while remaining within the legal framework under which the Transport Plan is prepared.

Recommendation

I recommend that Method 19.M.2 is amended as follows:

Consider, in the review of the Marlborough Regional Transport Plan, provisions to reduce emissions of greenhouse gases, taking into account the climate change provisions of the Marlborough Environment Plan²⁶.

Method of Implementation 19.M.4 - Submissions and Assessment

Method 19.M.4 reads:

Apply the findings of international and national climate change research to Marlborough's environment to the extent that is possible. The findings can then be applied to determine and better understand the implications of climate change.

Helen Ballinger (351.54) and Climate Karanga (1059.10) support the provision in part. They want the method to be amended as follows (but do not give reasons why): *Apply the findings of international and national climate change research to Marlborough's environment to the extent that is possible and support research in Marlborough. The findings can then be applied to determine and better understand the implications of climate change.*

I consider this is a reasonable change, as research on the effects or response within Marlborough will be useful to the Council and the community. I don't think the research needs to be 'in' Marlborough. For

²⁵ 89.7 - Peter Deacon; 351.52 - Helen Ballinger; 1059.8 - Climate Karanga.

²⁶ 89.8 - Peter Deacon; 351.53 - Helen Ballinger; 1059.9 - Climate Karanga.

example, the NIWA supercomputer modelling is about Marlborough but not necessarily undertaken in the region. Supporting the research need not involve the Council funding it – it could involve promoting it, supporting it in kind, or accessing central government Envirolink funding. I support the amendment but with a small adjustment to the wording to reflect the above points.

Recommendation

I recommend that method 19.M.4 is amended as follows:

Apply the findings of international and national climate change research to Marlborough's environment to the extent that is possible and support research relating to Marlborough²⁷. The findings can then be applied to determine and better understand the implications of climate change.

Method of Implementation 19.M.5 - Submissions and Assessment

Method 19.M.5 is “Share the findings of research on climate change in Marlborough and the implications of these predictions with the community. This will help to allow people to take action to prepare for those implications and therefore reduce the adverse effects of climate change.”

Peter Deacon (89.9), Helen Ballinger (351.55) and Climate Karanga (1059.11) support the method (or in part for Climate Karanga). They all want the method to be retained, unchanged.

Recommendation

That Method 19.M.5 is retained as notified²⁸.

Method of Implementation 19.M.7 - Submissions and Assessment

Method 19.M.7 is:

Apply a range of permitted activity rules to farming and forestry activities. Use broad definitions of “farming” and “forestry” so that farmers and foresters are able to modify farming practices and diversify or change crop/stock types in response to changes in climate. Enable the creation of permanent carbon sinks through the application of appropriate rules.

Peter Deacon (89.10), Helen Ballinger (351.56) and Climate Karanga (1059.12) support the method. Helen Ballinger and Peter Deacon want the method to be retained unchanged, and the same decision is inferred from the Climate Karanga submission.

Peter Deacon (89.10), Bill McEwan (259.1), Helen Ballinger (351.57), Birte Flatt (478.1) and Climate Karanga (1059.13) seek addition of a new method as follows: “Council will establish a Climate Change Advisory Group comprising representatives from science, industry and the local community to work with Council in a collaborative way to identify regional climate change threats in Marlborough and devise appropriate adaptation and mitigation responses.”

There are funding and staffing implications associated with such a method, which should be considered in the Long Term Plan/Annual Plan context. As a concept the Council (as advised by the MDC Manager Environmental Policy) is receptive to the method as it understands that inevitably climate change will create challenges (and opportunities) in terms of the Council's delivery of functions and in terms of the community's ability to adapt. The Council supports the concept of collaborative community process to identify risks (and opportunities) and develop/apply management to those risks. I support inclusion of the method, but with the words “The Council will consider..” to reflect the fact this is a method with policy/resourcing implications.

Recommendation

Method 19.M.7 is retained as notified²⁹.

²⁷ 351.54 - Helen Ballinger; 1059.10 - Climate Karanga.

²⁸ 89.9 - Peter Deacon; 351.55 - Helen Ballinger; 1059.11 - Climate Karanga.

I recommend that a new method is inserted after 19.M.5 (and subsequent methods be renumbered accordingly):

The Council will consider establishing a Climate Change Advisory Group comprising representatives from science, industry and the local community to work with Council in a collaborative way to identify regional climate change threats in Marlborough and devise appropriate adaptation and mitigation responses³⁰.

Matter 2 – Avoiding and mitigating adverse effects of natural hazards influenced by climate change

Overview of Provisions

This assessment relates to Issue 19.1B, Objective 19.2, Policies 19.2.1 and 19.2.2 and Methods 19.M.8 to 19.M.10.

The package of provisions relates to the natural hazards resulting from climate change including more extreme weather events and their consequences (droughts, fires, storms and floods), and sea level rise. It includes consideration of effects on regionally significant infrastructure such as buildings, roads, water, sewerage, electricity transmission and communication systems.

The objective (Objective 19.2) aims for avoidance and mitigation of the adverse effects of climate change. The first policy relates to monitoring flood hazard, and the second relates to avoiding inundation by sea level rise and storm surge of new buildings and relevant infrastructure.

The policies are implemented through three methods, relating to research, monitoring and district rules.

There are submissions on the following matters and the assessment below has been undertaken as follows:

- Issue 19B
- Objective 19.2
- Policy 19.2.1
- Policy 19.2.2
- Method 19.M.8

Issue 19B - Submissions and Assessment

Issue 19B reads:

Climate change could affect natural hazards and create a coastal inundation hazards associated with sea level rise.

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.

²⁹ 89.10 - Peter Deacon; 351.56 - Helen Ballinger; 1059.12 - Climate Karanga.

³⁰ 89.10 - Peter Deacon; 259.1 - Bill McEwan; 351.57 - Helen Ballinger; 478.1 - Birte Flatt; 1059.13 - Climate Karanga.

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.

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 of the NZCPS deals with the identification of coastal hazards. 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.

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.

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.

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 experienced. While subsidence in itself is not an effect of climate change, it is a relevant issue when combined with sea level rises induced by climate change, and I support its inclusion.

Recommendation

I recommend that Issue 19B is retained as notified³¹.

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 metres by 2090. This rise ~~potentially~~³² 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 values³³. 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

³¹ 716.183 - Friends of NH and TB.

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

³³ 716.183 – Friends of NH and TB.

*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.*³⁴

Objective 19.2 - Submissions and Assessment

Objective 19.2 reads:

Avoid and mitigate the adverse effects of natural hazards influenced by climate change.

Two submitters support the objective, three support it in part, while one opposes/supports it.

Friends of NH and TB (716.184 and 716.186) submitted both in support and in opposition to the objective. They support the wording of the objective, but seek the addition of the following words: *“that the adverse effects of hazard mitigation structures are managed consistent with the purpose of the RMA”*. They do not specify where the words are to be added. This is a very specific statement. It is more suited as a policy direction and in my view is not appropriate to add to the objective. To do so would take the objective from its appropriately high level, and to focus on one aspect of the effects of climate change – in this case the effects of hazard mitigation structures. In addition, all decisions made under Council’s RMA functions need to be consistent with the purpose of the Act, and it is unnecessary to re-state this in the Objective. I do not support the proposed change.

In its second submission point Friends of NH and TB (716.186) oppose the objective, arguing that there is no policy to guide assessment of resource consent applications within the coastal area as regards the effects of climate change. They seek a new policy but the submission does not include details of the proposed wording. I note Friends of NH and TB have submitted on Policy 19.2.2 (which does guide consent applications). That submission is more detailed than the one on Objective 19.2, and I have assumed that the changes sought to that policy, if agreed to, would give effect to this submission point.

Federated Farmers (425.345) support in part the objective, seeking that the words *“on human communities”* be added at the end. They submit that the primary concerns in relation to natural hazards are human related. The definition of natural hazards in the RMA is:

Any atmospheric or earth or water related occurrence (including earthquake, tsunami, erosion, volcanic and geothermal activity, landslip, subsidence, sedimentation, wind, drought, fire, or flooding) the action of which adversely affects or may adversely affect human life, property, or other aspects of the environment.

The definition goes beyond human-centric considerations, including as it does *“other aspects of the environment”*. This is reinforced by the MFE *Coastal Hazards and Climate Change: A Guidance Manual for Local Government in New Zealand*, where it discusses *“the need to provide for the natural character, ecological, landscape, amenity, public access, cultural and spiritual values of the coast”*³⁵. I do not support narrowing the focus of the objective to effects on human communities as it would be contrary to the definition of natural hazards, and would exclude effects that are required to be considered under the RMA.

Peter Deacon (89.12) and Helen Ballinger (351.60) support in part the objective. They want the wording in paragraphs 1 and 2 of the explanation amended to acknowledge the need to investigate where and how sea level rise effects will be felt, and into future-proofing communities to create resilience to sea level rise. I note that Method 19.M.8 involves investigation to determine the areas likely to be affected by inundation, and the nature of the effect. I consider that addresses those submissions relating to investigation, and note that that matter is more appropriately addressed as a method, rather than in the explanation to the objective. As regards future-proofing communities to create resilience to sea level rise, Method 19.M.5 deals with information and advising the community on the implications of climate change, to allow people to take action to prepare for those implications. In my view this existing method adequately covers what is sought by the submitters.

³⁴ 688.173 – Judy and John Hellstrom.

³⁵ *Coastal Hazards and Climate Change: A Guidance Manual for Local Government in New Zealand*, MFE, 2008 at page 5 (also at section 4.3.5 with reference to natural character, amenity and public access, as well as biosecurity and biodiversity).

Nelson Forests (990.258) and Climate Karanga (1059.15) support the objective and its retention.

Recommendation

I recommend that Objective 19.2 is retained as notified³⁶.

Policy 19.2.1 - Submissions and Assessment

Policy 19.2.1 reads:

Monitor flood hazard on an ongoing basis.

Helen Ballinger (351.61), Michael and Kristen Gerard (424.134) and Climate Karanga (1059.16) support the policy and seek its retention. There are no submissions in opposition or seeking changes, therefore the provision must remain unchanged.

Recommendation

That Policy 19.2.1 is retained as notified³⁷.

Policy 19.2.2 - Submissions and Assessment

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.*

There is one submission in support, four submissions supporting in part, and one submission in opposition.

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 development 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).

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 the effects of climate change need to be factored into the identification of hazards. The MEP as seeks to give effect to the NZCPS in three ways:

- As noted in the explanation to the policy, rules elsewhere in the MEP require buildings to be set back from the Coastal Marine Area. That setback in itself acts to protect buildings from the adverse effects of sea level rise and/or storm surge;
- Policy 19.2.2 operates to guide applications for buildings seeking to establish within the setback, as well as construction of infrastructure within the coastal environment; and
- Method 19.M.8 defines an investigation process to define the extent and nature of the coastal inundation hazard.

In my view these provisions together adopt a precautionary approach as required in Policy 4 of the NZCPS, and will implement Policy 24.

³⁶ 89.12 - Peter Deacon; 351.60 - Helen Ballinger; 425.345 - Federated Farmers; 716.184 and 186 – Friends of NH and TB; 990.258 – Nelson Forests; 1059.14 - Climate Karanga.

³⁷ 351.61 - Helen Ballinger; 424.134 – Michael and Kirsten Gerard; 1059.16 - Climate Karanga.

I note however that the explanation to Policy 19.2.2 states that a timeframe out to 2099 has been used to define the (at least) 0.5 metre sea level in the policy. Friends of NH and TB have sought that a 100 year timeframe is used for considering coastal hazards. I agree this is the timeframe to use as set out in NZCPS Policy 24(1) “hazard risks, over at least 100 years are to be assessed..” The timeframe used and the 0.5 metre figure contained in the current Policy 19.2.2 is only 75 years. I do not consider this gives effect to the NZCPS, and that the sea level rise figure in Policy 19.2.2 and the explanation should be based on a timeframe of at least 100 years.

The sea level rise figure of ‘at least 0.5 metres’ comes from MfE advice to local authorities for a planning and decision timeframes out to 2090-2099. MfE advise that “*for planning and decisions timeframes beyond the end of this century use an additional allowance of 10mm per year*”³⁸. For a 100 year timeframe therefore – out to 2117 - an additional 10mm x 17 years = 170mm needs to be factored into the sea level figure in Policy 19.2.2(a), giving a new figure of 0.67 metres. The explanatory statement in paragraph two would need amendment to explain about the NZCPS 100 year horizon and how the 0.67 metre figure has been derived. I note that the Parliamentary Commissioner for the Environment (PCE) in her 2015 report *Preparing New Zealand for rising seas: Certainty and Uncertainty*³⁹ discusses time horizons for planning for sea level rise. She notes the 100 year timeframe in the NZCPS, and suggests that might be too long for a single dwelling with a Building Act life of 50 years, but too short for decision-making around a new coastal suburb. She recommended, among other things, that central government revise its direction and guidance on sea level rise and consider specific planning horizons that are appropriate for different types of development. At this stage the PCE’s recommendations have not led to a change in government advice or to the NZCPS. The NZCPS is an operative document and the MEP must give effect to it. Therefore, the 100 year minimum timeframe is the one that must be incorporated into the Plan.

Ngati Kuia (501.82) support in part the policy, and want a more conservative allowance of one metre for sea level rise over 100 years. The above recommendation in relation to the Friends of NH and TB submission would partially address the relief the submitter is seeking. A one metre rise in sea level is well beyond even the 0.8 metre recommended by MFE to be considered in assessment processes as an upper level.

Federated Farmers (425.346) support the policy in part, but consider the policy 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. I do not support inserting ‘habitable’ into the policy. ‘Habitable’ in the Building Act and most resource management plans is defined as relating to domestic or residential living. Restricting the policy to ‘habitable buildings’ would exclude the policy from applying to commercial buildings, including new commercial centres which could then potentially establish in areas subject to sea level rise. The same applies for industrial developments. This would not be consistent with the precautionary approach in the NZCPS Policy 3. Similarly, excluding infrastructure from the policy would remove important guidance as to 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. Finally, buildings (whether habitable or not) and infrastructure if allowed to establish within the identified future inundation area, and if inundation occurs, can have effects on natural character and coastal processes (for example if the building is destroyed) or can lead to pressure for coastal defence works to protect the structure, with adverse effects on the coastal environment. The changes sought are not supported.

Helen Ballinger (351.63), Queen Charlotte Sound Residents Assoc (504.76) and Climate Karanga (1059.17) support the policy and do not seek changes.

Recommendation

I recommend that Policy 19.2.2 is amended as follows:

³⁸ <http://www.mfe.govt.nz/climate-change/adapting-climate-change/adapting-sea-level-rise>

³⁹ *Preparing New Zealand for rising seas: Certainty and Uncertainty*, Parliamentary Commissioner for the Environment, November 2015, section 8.4

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~~ 0.67⁴⁰ metres relative to the 1980-1999 average; and
- (b) storm surge.

I recommend that paragraph two of the explanation to Policy 19.2.2 is amended as follows:

*The Ministry for the Environment advises local government (for planning and decision timeframes out to 2090-2099), to plan for a sea level rise 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. The New Zealand Coastal Policy Statement 2010 (Policy 24) requires coast hazard risks to be assessed over at least 100 years. The Ministry for the Environment advises that for timeframes beyond the end of this century, an additional allowance of 10mm per year should be used. For a planning horizon of 2117, this means a sea level rise of 0.65 metres relative to the 1989-1999 base value.*⁴¹

19.M.8 - Submissions and Assessment

Method 19.M.8 reads:

In order to plan for the effect of sea level rise, it is necessary to understand the areas along the Marlborough coast that are likely to be affected by inundation in the long term. The Council will undertake an investigation to establish the extent and nature of the inundation hazard using the Intergovernmental Panel on Climate Change's most recent projections of sea level rise.

The Queen Charlotte Sounds Residents Assoc (504.77) supports the method without change.

Recommendation

That Method 19.M.8 is retained as notified.

19.AER.1 - Submissions and Assessment

Anticipated Environmental Result 19.AER.1 reads:

Anticipated environmental result	Monitoring effectiveness
19.AER.1 The community's understanding of the effects of climate change and sea level rise improves over time.	The results of research into the local effects of climate change and sea level rise are reported to the Council. Environmental data, including climate and flooding, is collected and reported to the Council to establish long term trends.

Helen Ballinger (351.64) supports in part the AER. She submits that every opportunity needs to be taken to improve the community's understanding of the effects of climate change. However, she does not seek in her decision a change to the AER.

⁴⁰ 716.185 – Friends of NH and TB and 501.82 – Ngati Kuia

⁴¹ 716.185 – Friends of NH and TB

Recommendation

That 19.AER.1 remain as notified.

19.AER.2 - Submissions and Assessment

Anticipated Environmental Result 19.AER.2 reads:

Anticipated environmental result	Monitoring effectiveness
19.AER.2 Primary producers are able to adapt to the effects of climate change.	Monitoring of land use and land use change establishes changes in crop type.

Helen Ballinger (351.65) supports in part the AER. She submits that every opportunity needs to be taken to improve the community's understanding of the effects of climate change. However, she does not seek in her decision a change to the AER.

Recommendation

That 19.AER.2 remain as notified.

19.AER.3 - Submissions and Assessment

Anticipated Environmental Result 19.AER.3 reads:

Anticipated environmental result	Monitoring effectiveness
19.AER.3 Buildings and infrastructure established after the notification of the MEP are not inundated by the sea.	Reports of inundation and/or damage to buildings and/or infrastructure.

Peter Deacon (89.13), Helen Ballinger (351.66) and Queen Charlotte Sounds Residents Assoc (504.78) support in part 19.AER.3, and seek its retention.

Peter Deacon (89.13), Helen Ballinger (351.67) and Climate Karanga (1059.18) propose a fourth AER as follows: *There is a significant reduction in the carbon footprint of the Marlborough District.* I consider that there is merit in having an AER that provides a measure of changes in carbon intensity within Marlborough. However, the Council does not have a baseline for the existing carbon footprint for the district, and there is no method included in the plan to measure the future carbon footprint – therefore the proposed AER would not be measuring an outcome from the provisions within the MEP (which is the purpose of the AERs). Having said that, I consider that an AER relating to the Council's own carbon footprint would be appropriate, as the Council proposes to establish its existing footprint and reduce it in Method 19.M.1. I therefore support a new AER relating to that outcome, albeit without the word 'significant' as the level of reduction in the footprint has yet to be established, and will be set about part of the 19.M.1 process. As a consequential and related amendment, I propose that a Monitoring Effectiveness provision be included with the new AER (to complete the right hand side of the column in the AER table).

Recommendation

That 19.AER.3 is retained as notified⁴².

I recommend that a new Anticipate Environment Result and Monitoring Effectiveness provision be added, after 19.AER.3 as follows⁴³:

Anticipated environmental result	Monitoring effectiveness
<u>19.AER.4</u> <u>There is a reduction in the carbon footprint of the Marlborough District Council's operations</u>	<u>Council report establishing existing carbon footprint and subsequent reports on reductions achieved.</u>

Matter 3: General submissions - Chapter 19

Overview of Provisions

The submissions addressed in this section of the report are those which relate to Chapter 19 as a whole, or which do not fall within other topic areas.

This section of the report is organised as follows:

- Chapter title
- Location / profile of the chapter
- Chapter introduction
- General chapter-wide submissions

Title - Submissions and Assessment

Aquaculture NZ (401.182) and MFA (426.190) support in part Chapter 19, but want the title of the chapter amended to be Climate Change and Ocean Acidification. They submit that acidification is one of the major anthropogenic threats to Marlborough's marine environment and that this should be recognised in the MEP. As discussed earlier in this report, ocean acidification is recognised as a potential effect of what is normally referred to as 'climate change'. While is not 'climate change' per se, acidification is recognised as an important (non-climate related) impact of rising atmospheric carbon dioxide levels– just like potential productivity increases for some plant species that thrive on higher carbon dioxide levels. 'Climate change' encompasses these non-climate change effects arising from increasing carbon dioxide concentrations. Therefore I do not support adding the words proposed to the chapter title. I note that an earlier recommendation (under submission points 401.179 And 426.187) is to refer to ocean acidification in the discussion under Issue 19A.

Recommendation

I recommend that the title to Chapter 19 remain as notified⁴⁴.

⁴² 87.13 - Peter Deacon; 351.66 - Helen Ballinger; 504.78 - Queen Charlotte Sounds Residents Assoc.

⁴³ 87.13 - Peter Deacon

⁴⁴ 401.182 - Aquaculture NZ ; 426.190 - MFA

Location/Profile of Chapter - Submissions and Assessment

James Wilson (139.1), Roger Edward & Leslie Hill (378.1) and Birte Flatt (478.1) express concern about the disruptive and potentially exponential changes that will be wrought by climate change. The decision they seek is to raise the profile of climate change and its effects in the MEP.

Bill McEwan (259.1) supports in part Chapter 19, and says he supports the Climate Karanga submission. He seeks (among other requests within his submission) that the chapter be moved to the beginning of Volume 1, presumably to emphasise the importance of the issue, and the responses to it. Hugh Steadman (427.1) seeks a similar decision.

Pamela Nichols (309.1) supports in part the chapter, and wants climate change made a much higher priority throughout the MEP. It is unclear to me from the submission whether she means to weave climate change (with more emphasis) through the various chapters of the MEP, or that the Climate Change chapter should be stronger.

Te Runanga of Toa Rangatira (166.3) supports Chapter 19, but they are concerned about its isolation. They submit that there should be a blending of the objectives and other provisions of the chapter with others 'so that applicants etc have regard for climate change when reading the other chapters'.

In my view there is no one correct way to address climate change within a planning document such as the MEP. If the provisions are scattered throughout the plan, people can argue that the issue and the response to it are less visible. Putting them in one chapter highlights both the issue and the provisions that address it, but can be seen as diminishing the amount of integration across and within the plan. In my view having a separate chapter on climate change flows more logically from the process of identifying resource management issues, and then developing objectives, policies and methods to address those issues. It is more problematic to respond to a clear and largely singular issue like climate change across a wide range of chapters within the MEP. As noted earlier in this report, part of the solution to better integration of climate change with other issues in the MEP, and vice versa, could be to use more cross referencing. In my view this could be added to the plan as a minor change, since it does not materially alter the effect of the plan, but assists with readability and usability.

As regards raising the profile of the climate change in the MEP, I consider that a number of the recommendations in this report, if adopted by the Hearing Panel, would strengthen the climate change provisions in the plan, and would accept in part those submissions seeking more emphasis on this issue. Finally, there is the issue that some submitters raise, as to the location of the chapter. I am not in a position to recommend shifting the chapter within the plan.

Recommendation

I recommend that Chapter 19 remain as notified, but with the cross referencing and other amendments proposed in this report⁴⁵.

Introduction - Submissions and Assessment

Climate Karanga (1059.1) and Helen Ballinger (351.44) support in part the Introduction to Chapter 19. They are concerned that the words used in the Introduction do 'fully reflect the scale and urgency of the problem and understates the amount of warming that has occurred, by using a misleading baseline [1990 rather than pre-industrial temperatures]'. They also are concerned at the use of the term "*While there is not unanimous agreement*" as to the anthropogenic cause of warming from increased levels of greenhouse gases. They consider the lack of consensus is overstated. Related to that, they are concerned about the level of uncertainty as regards the effects of climate change that is in the Introduction. They seek the following changes, and Peter Deacon (89.1) seeks largely similar changes:

Society will continue to rely currently relies on fossil fuels as an energy source ~~for the foreseeable future~~ but needs to find alternatives as quickly as possible. The consumption of these fuels ~~results~~

⁴⁵ 139.1 - James Wilson; 166.3 - Te Runanga of Toa Rangatira; 259.1 - Bill McEwan; 309.1 - Pamela Nichols; 378.1 - Roger Edward & Leslie Hill; 427.1 - Hugh Steadman; 478.1 - Birte Flatt.

and livestock farming are the two major contributors to the large increase in the release of carbon dioxide and other greenhouse gases into the atmosphere over the last 150 years. The general consensus of scientific opinion is that the world is getting warmer, causing its climate to change. Global temperatures are approximately 0.6 1.5 degrees Celsius higher than pre-industrial levels and 0.6 degrees higher now than they were in the early 1990s. To prevent dangerous and potentially irreversible impacts of climate change global temperatures must be kept well below 2 degrees Celsius above pre-industrial levels. While there is not unanimous agreement, there is now strong evidence that most of the warming observed is attributable to increased concentrations of greenhouse gases produced by human activities. As more gases accumulate in the atmosphere, the Earth gets warmer, resulting in rising sea temperatures and levels, the melting of glaciers and ice caps and greater extremes in weather patterns, such as more storms of greater intensity and longer droughts.

In Marlborough, NIWA predicts it is predicted that the mean temperature will increase by approximately 1.8 degrees by 2040 and 2.8 degrees by 2090 above pre-industrial levels. The climate is likely to become drier and the frequency of droughts is expected to increase. There is also a predicted increase in westerly winds, especially in winter and spring.

Section 7 of the Resource Management Act 1991 (RMA) requires the Council to have regard to the effects of these predicted climatic changes in exercising its functions under the RMA. Uncertainty about the nature of these effects at international, national and local level makes this a difficult task. Most projections are also long term and certainly beyond the ten year life of the Marlborough Environment Plan (MEP). Taking all of this into account, the provisions of this chapter focus on applying the best available information to enable people and communities to respond to the adverse and positive effects created by climate change. It is noted that the adverse long-term effects of global warming are likely to outweigh any regional short term benefits that may occur.

Regarding the first sentence of the Introduction, I think it is reasonable to remove the words “will continue to rely” and “for the foreseeable future” and adding “currently relies” as sought. The change makes the sentence more a statement of fact, and removes unnecessary assumptions about future behaviour, or any perception of an implicit values statement. For similar reasons however I do not support adding the clause about finding alternatives as quickly as possible. This is the Introduction to the chapter – it should set the scene and not necessarily spell out the solutions, which come via the objectives, policies and methods. Adding a reference to livestock farming is reasonable as agriculture contributes 48% of NZ’s greenhouse gas emissions⁴⁶.

I have difficulty reconciling the figures for global temperature increase used in the notified Introduction (0.6 degrees C since 1990) and the 1.5 degree figure (since pre-industrial times) proposed by the submitter. The 0.6°C figure in the Plan is unreferenced and is larger than might be expected, since the per decade increase in temperature globally ranges from 0.08 to 0.14 °C in recent times⁴⁷. I also note that the recent MfE/Stats NZ report gives a 1 °C increase in average New Zealand temperature since 1909⁴⁸. Equally, the 1.5°C increase in global temperatures since pre-industrial times that Climate Karanga seeks to include in the Plan is difficult to reliably reference. In my view it is better to use figures from the IPCC Fifth Assessment Report as that is the most recognised and accepted document, forming the reference point for international climate change negotiations. IPCC tends to work from an 1850-1900 base, when reliable temperature records began, and the ‘industrial era’ is generally defined as commencing around 1750. The global increase in temperature between 1880 and 2012 according to the IPCC has been 0.85°C⁴⁹. That, and the MFE/Stats NZ figures in my opinion are the only reliable figures to use in the MEP. Similarly I consider the UN’s Paris Agreement is the best text to refer to within the Introduction as regards the target for any future increase in global temperatures.

I support removal of the words “While there is not unanimous agreement” from the sentence about the human-contribution to global warming. The IPCC 5th Assessment Report concludes that it is 95-100 percent likely that human influence has been the dominant cause of the observed warming since the mid-20th

⁴⁶ *Our Atmosphere and Climate 2017*, Ministry for the Environment and Stats NZ, October 2017, Figure 6.

⁴⁷ *Climate Change 2014 Synthesis Report*, Intergovernmental Panel on Climate Change (IPCC), Fifth Assessment Report, section 1.1.1.

⁴⁸ *Climate Change 2014 Synthesis Report*, above (at page 7)

⁴⁹ *Climate Change 2014 Synthesis Report*, section 1.1.1

century. Therefore, I think it is sufficient and accurate to simply start the sentence with “There is strong evidence..”.

In terms of the changes the submitter is seeking to the Marlborough projections, it is difficult to find reliable estimates of temperature forecasts relative to pre-industrial levels, partly for the reasons discussed above. The estimates by NIWA/MfE use 1995 as a base. This is not to minimise the magnitude of forecast temperature increases, but rather that 1995 is taken as a representation of the climate 1986-2005. To get an increase from a pre-20th century base one could add 1°C to each figure, but my preference would be to use the NIWA/MfE figures without adjustment, since adjustment increases uncertainty. The NIWA/MfE figures are 0.7°C-1.0°C warmer by 2040 (compared to 1995), and 0.7°C-3.0°C by 2090⁵⁰.

Finally, turning to the last sentence that Climate Karanga seeks to add to the Introduction. Presumably it to address the current final sentence, with refers to responding to “*the adverse and positive effects created by climate change*”. In my view the existing sentence does imply that negative and positive effects are of equal likelihood and importance. It is accepted that governments and councils are acting on climate change because the effects of it are considered adverse – and that net effects will be adverse, even allowing for any potential beneficial effects. I do not support the full new sentence that the submitter is proposing, but I do support an amendment to the existing wording to reflect the significance of adverse effects relative to positive ones.

Friends of NH and TB (716.176) support in part the Introduction, but seek the dates for the Marlborough climate change forecasts to be changed from 2040 and 2090, to 2060 and 2116, to reflect the 100 year time horizon in the NZCPS. The NIWA forecasts that exist do not match the timeframes that Friends is proposing, and it is not possible to extrapolate from the projections that have been done. Therefore, the Council needs to work with the forecasts that are available. The projections discussed in the Introduction are just part of setting the scene. They do not have to match the 100 year timeframe in the NZCPS, as Policy 24 in that document has a different purpose (defining the extent of future coastal hazards).

NMDHB (280.37) support the Introduction in part, and want it to recognise that climate change is the biggest global health threat of the 21st century. I am aware that the World Health Organisation website carries such a statement, but I have been unable to find a more substantive report to support for this view at an international level. I note that the health impacts of climate change are discussed in more detail within Chapter 19, and consider that is the appropriate place for it rather than focus in particular on one set of effects from climate change within the introductory statement. I am not able to recommend the change.

The Davidson Family Trust (934.1) supports in part the Introduction, but consider it misleading. They cite a report that challenges the temperature data in NZ, and another article in ‘Winepress’ that argues against 2015 being among the hottest since 1930. They also refer to a petition of scientists, physicians and engineers who reject ‘global warming alarmism’. They want the Introduction amended, but do not offer specifics. I find the reports of NIWA and MfE/Stats NZ (referred to earlier) more convincing and reliable, and prefer that evidence. Equally, the IPCC is an international UN organisation, with rigorous scientific standards involving hundreds of leading scientists, and whose reports undergo multiple rounds of drafting and review involving thousands of other experts. While there is a range of views in the community about climate change, the Council and the Hearing Panel in my view is entitled to rely on official NZ Government and IPCC reports for its factual basis. I do not support the change being sought.

Recommendation

I recommend that the Introduction to Chapter 19 is amended as follows:⁵¹

Society ~~will continue to rely~~ currently relies on fossil fuels as an energy source for ~~the foreseeable future~~. The consumption of these fuels results and livestock farming are the two major contributors to the large increase in the release of carbon dioxide and other greenhouse gases into the atmosphere over the last 150 years. The general consensus of scientific opinion is that the world is getting warmer, causing its climate to change. Global temperatures are approximately ~~0.6~~ 0.85

⁵⁰ <http://www.mfe.govt.nz/climate-change/how-climate-change-affects-nz/how-might-climate-change-affect-my-region/marlborough>

⁵¹ 89.1 – Peter Deacon; 351.44 – Helen Ballinger; 1059.1 – Climate Karanga

~~degrees Celsius higher than in 1880 according to the IPCC 5th Assessment Report now than they were in the early 1990s. To “strengthen the global response to the threat of climate change” the UN Paris Agreement set an aim to hold the increase in global average temperatures to well below 2°C above pre-industrial levels. While there is not unanimous agreement, there is now strong evidence that most of the warming observed is attributable to increased concentrations of greenhouse gases produced by human activities. As more gases accumulate in the atmosphere, the Earth gets warmer, resulting in rising sea temperatures and levels, the melting of glaciers and ice caps and greater extremes in weather patterns, such as more storms of greater intensity and longer droughts.~~

~~In Marlborough, NIWA predicts that the mean temperature will increase by approximately 4 0.7-1.0 degrees by 2040 and 2 0.7-3.0 degrees by 2090 above 1995 levels. The climate is likely to become drier and the frequency of droughts is expected to increase. There is also a predicted increase in westerly winds, especially in winter and spring.~~

~~Section 7 of the Resource Management Act 1991 (RMA) requires the Council to have regard to the effects of these predicted climatic changes in exercising its functions under the RMA. Uncertainty about the nature of these effects at international, national and local level makes this a difficult task. Most projections are also long term and certainly beyond the ten year life of the Marlborough Environment Plan (MEP). Taking all of this into account, the provisions of this chapter focus on applying the best available information to enable people and communities to respond to the adverse and positive effects created by climate change - and any beneficial effects that may arise.~~

General – Chapter 19

Mt Zion Charitable Trust (515.7) opposes Chapter 19 and seeks its deletion from the Plan. No reasons are given. Section 7 of the RMA requires the Council to have regard to the effects of these predicted climatic changes in exercising its functions and preparing plans under the RMA. I cannot support the change requested.

The Chamber of Commerce (961.96) opposes the chapter, saying it lacks strategic focus and that more research is needed on the community's footprint, and that more specific goals need to be established to reduce the community's effects on the environment. They also submit that more attention is needed to scientific evidence, as the science is as yet unproven. They also say that “support needs to be considered where any change or restriction of policy has an impact on the current situation”. I assume this a reference to the impact on producers and the community of adapting to regulations related to climate change. I note Policy 19.1.3, which is to enable primary producers to adapt to the effects of climate change, and I consider this supports adaptation to the effects of climate change. I also note my comments above about the science on climate change, and the IPCC conclusion that it is 95-100 percent certain that humans have contributed to the global warming that has occurred in the last six decades. The Chamber of Commerce does not state the decision that it wants, and given this and my analysis above I recommend no change.

Bill McEwan (259.1) supports in part Chapter 19, but wants more definite language used ('will' rather than 'may', 'could' or similar wording) in Issue 19A and its explanation and in Issue 19B. If the changes I have earlier recommended to these provisions are accepted then Mr McEwan's submission would be accepted in part, since these changes while not exactly what the submitter is seeking, do make the statements around climate change and its effects more definitive.

Peter Deacon (89.1) and Climate Karanga (1059.20) seek that MDC affiliate with the Global Covenant of Mayors for Climate Change. I note that a Mayors' group has been established in New Zealand, and that the Mayor of Marlborough has signed the 'Local Government Leaders' Climate Change Declaration'. I consider that would, largely if not fully, meet the submitters' request.

Helen Ballinger (351.58) seeks a new method of implementation relating to on-going tree planting to provide a carbon sink to off-set emissions and slow global warming. She proposes that Council could assist other groups such as local boards, schools, service and social sector groups, private entities, farmers, Department of Conservation, New Zealand Transport Association, and private developers, amongst others, that already plant trees and shrubs around the district. She sees a role for Council to assist to improve co-ordination between these groups and help to provide an overall strategy around what tree species are planted and where, and to encourage the planting of trees in this way, and also through Council's own operations.

I note that the Government is establishing a Climate Commission, proposes to re-establish the New Zealand Forestry Service, and has plans to plant 100 million trees a year over a 10 year period. In addition, funding to the Department of Conservation is to be increased⁵². In my view it could be premature for Council to make a detailed commitment to play a such a large role in co-ordinating tree planting. It may be that DOC or the new Forestry Service might take that lead. In the meantime I consider a general method in the MEP to encourage tree planting could be appropriate.

Recommendation

I recommend that Chapter 19 is retained (not deleted)⁵³.

I recommend that a new method 19.M.XX is added (on page 19-4 of the MEP, and that subsequent Methods be re-numbered accordingly):

*Encourage tree planting in appropriate locations to assist with carbon sequestration.*⁵⁴

Matter 4 – Additional Policies Sought

Additional Policies- Submissions and Assessment

Te Runanga o Ngati Kuia (501.80) support in part Chapter 19 but submit that there should be a policy enabling the installation, operation and utilisation of alternative energy sources that do not release greenhouse gases. There are a number of policies in Chapter 18 (Energy) that promote the use and development of renewable energy resources that do not emit greenhouse gases – Policies 18.1.1 (renewable energy), 18.1.2 (solar thermal energy) and 18.1.3 (renewable – factors to consider), as well as Policy 18.2.1 that promotes greater energy efficiency. For these reasons I do not consider an addition policy is necessary.

Ngati Kuia (501.80) and Nelson Forests (990.259) seek a new policy to promote plantation and carbon sequestration forest planting. The proposed MEP contains rules that permit commercial forest planting and carbon sequestration forestry (Rule 3.1.6) and conservation planting and carbon sequestration forestry (Rules 3.1.10, 4.1.6, 4.1.7 and 4.1.9). Therefore I do not consider that a policy to promote this is necessary.

Kenepuru and Central Sounds Residents Association (869.42) supports Chapter 19 in part. They are concerned however that Policy 19.2.2, which relates to avoiding locating new buildings and infrastructure within the future coastal inundation area. They consider that a new policy is needed to apply to existing infrastructure such as road in the context of seal level rise and coastal hazard, so as to define steps to protect or replace them. The MEP is a key regulator as to the establishment of new buildings and infrastructure, but can have limited influence over existing structure and infrastructure. I note that Method 19.M.8 (Research) is to define the areas of the coastal environment that will be subject to risk of future inundation. That process will identify buildings, infrastructure and other assets or areas that are at risk. The information can then feed into the next review of the MEP (for example, it might then define a coastal hazard overlay). For infrastructure the best mechanism for Council to address the risks to its assets will be via its various Asset Management Plans, which are mandatory for councils to prepare under the Local Government Act. These cover transport, water supply/drainage and waste water, and other assets such as community parks and buildings. Once the risk is defined, then the Asset Management Plans better can include strategies, timeframes and financial resources to address the risk. I consider that Asset Management Plans – and the Long Term Plan/Annual Plan process that they feed into - are a more appropriate way to address the real and significant issue that the submitter is raising. I do not support adding a new policy to the MEP.

Recommendation

I recommend that the Plan be retained as notified, and no new policies are added⁵⁵.

⁵² Speech from the Throne, 8 November 2017

⁵³ 515.7 – Mt Zion Charitable Trust

⁵⁴ 351.58 – Helen Ballinger

⁵⁵ 501.80 – Te Runanga o Ngati Kuia; 869.42 - Kenepuru and Central Sounds Residents Association; 990.259 - Nelson Forests.

Appendix 1: Recommended decisions on decisions requested

Submission Number	Submission Point	Submitter	Volume	Chapter	Provision	Recommendation
89	2	Peter Deacon	Volume 1	19 Climate Change	Issue 19A	Accept in part
230	1	Marion Harvey	Volume 1	19 Climate Change	Issue 19A	Accept in part
280	38	Nelson Marlborough District Health Board	Volume 1	19 Climate Change	Issue 19A	Accept
351	45	Helen Mary Ballinger	Volume 1	19 Climate Change	Issue 19A	Accept in part
716	177	Friends of Nelson Haven and Tasman Bay Inc	Volume 1	19 Climate Change	Issue 19A	Accept
1059	19	Climate Karanga Marlborough	Volume 1	19 Climate Change	Issue 19A	Accept in part
89	3	Peter Deacon	Volume 1	19 Climate Change	Objective 19.1	Accept in part
166	10	Te Runanga o Toa Rangatira	Volume 1	19 Climate Change	Objective 19.1	Accept in part
351	46	Helen Mary Ballinger	Volume 1	19 Climate Change	Objective 19.1	Accept in part
401	179	Aquaculture New Zealand	Volume 1	19 Climate Change	Objective 19.1	Accept in part
426	187	Marine Farming Association Incorporated	Volume 1	19 Climate Change	Objective 19.1	Accept in part
962	116	Marlborough Forest Industry Association Inc	Volume 1	19 Climate Change	Objective 19.1	Accept in part
990	257	Nelson Forests Limited	Volume 1	19 Climate Change	Objective 19.1	Accept in part
1059	2	Climate Karanga Marlborough	Volume 1	19 Climate Change	Objective 19.1	Accept in part
89	4	Peter Deacon	Volume 1	19 Climate Change	Policy 19.1.1	Accept in part
280	39	Nelson Marlborough District Health Board	Volume 1	19 Climate Change	Policy 19.1.1	Accept in part
351	47	Helen Mary Ballinger	Volume 1	19 Climate Change	Policy 19.1.1	Accept in part
715	370	Royal Forest and Bird Protection Society NZ	Volume 1	19 Climate Change	Policy 19.1.1	Accept in part
716	178	Friends of Nelson Haven and Tasman Bay Inc	Volume 1	19 Climate Change	Policy 19.1.1	Accept in part
962	117	Marlborough Forest Industry Association Inc	Volume 1	19 Climate Change	Policy 19.1.1	Accept in part
1016	1	Philip Erwin Hunnisett	Volume 1	19 Climate Change	Policy 19.1.1	Reject
1059	3	Climate Karanga Marlborough	Volume 1	19 Climate Change	Policy 19.1.1	Accept in part
89	5	Peter Deacon	Volume 1	19 Climate Change	Policy 19.1.2	Accept in part
250	1	Don Miller	Volume 1	19 Climate Change	Policy 19.1.2	Accept
351	48	Helen Mary Ballinger	Volume 1	19 Climate Change	Policy 19.1.2	Accept in part
401	180	Aquaculture New Zealand	Volume 1	19 Climate Change	Policy 19.1.2	Reject
426	188	Marine Farming Association Inc	Volume 1	19 Climate Change	Policy 19.1.2	Reject

715	371	Royal Forest and Bird Protection Society NZ	Volume 1	19 Climate Change	Policy 19.1.2	Accept
716	179	Friends of Nelson Haven and Tasman Bay Inc	Volume 1	19 Climate Change	Policy 19.1.2	Accept
1059	4	Climate Karanga Marlborough	Volume 1	19 Climate Change	Policy 19.1.2	Accept in part
89	6	Peter Deacon	Volume 1	19 Climate Change	Policy 19.1.3	Accept in part
351	49	Helen Mary Ballinger	Volume 1	19 Climate Change	Policy 19.1.3	Accept in part
401	181	Aquaculture New Zealand	Volume 1	19 Climate Change	Policy 19.1.3	Accept in part
425	342	Federated Farmers of New Zealand	Volume 1	19 Climate Change	Policy 19.1.3	Accept
426	189	Marine Farming Association Incorporated	Volume 1	19 Climate Change	Policy 19.1.3	Accept in part
716	180	Friends of Nelson Haven and Tasman Bay Inc	Volume 1	19 Climate Change	Policy 19.1.3	Reject
1059	5	Climate Karanga Marlborough	Volume 1	19 Climate Change	Policy 19.1.3	Accept in part
1251	54	Fonterra Co-operative Group Limited	Volume 1	19 Climate Change	Policy 19.1.3	Accept
351	50	Helen Mary Ballinger	Volume 1	19 Climate Change	Policy 19.1.4	Accept in part
425	343	Federated Farmers of New Zealand	Volume 1	19 Climate Change	Policy 19.1.4	Accept in part
716	181	Friends of Nelson Haven and Tasman Bay Inc	Volume 1	19 Climate Change	Policy 19.1.4	Accept
1059	6	Climate Karanga Marlborough	Volume 1	19 Climate Change	Policy 19.1.4	Accept in part
1201	114	Trustpower Limited	Volume 1	19 Climate Change	Policy 19.1.4	Accept in part
1251	55	Fonterra Co-operative Group Limited	Volume 1	19 Climate Change	Policy 19.1.4	Accept in part
255	7	Warwick Lissaman	Volume 1	19 Climate Change	Policy 19.1.5	No recommendation
351	51	Helen Mary Ballinger	Volume 1	19 Climate Change	Policy 19.1.5	Accept
425	344	Federated Farmers of New Zealand	Volume 1	19 Climate Change	Policy 19.1.5	Accept in part
716	182	Friends of Nelson Haven and Tasman Bay Inc	Volume 1	19 Climate Change	Policy 19.1.5	Reject
1059	7	Climate Karanga Marlborough	Volume 1	19 Climate Change	Policy 19.1.5	Accept
1186	100	Te Atiawa o Te Waka-a-Maui	Volume 1	19 Climate Change	Policy 19.1.5	No recommendation
1201	115	Trustpower Limited	Volume 1	19 Climate Change	Policy 19.1.5	Accept in part
1251	56	Fonterra Co-operative Group Limited	Volume 1	19 Climate Change	Policy 19.1.5	Accept in part
89	7	Peter Deacon	Volume 1	19 Climate Change	19.M.1	Accept in part
351	52	Helen Mary Ballinger	Volume 1	19 Climate Change	19.M.1	Accept in part
1059	8	Climate Karanga Marlborough	Volume 1	19 Climate Change	19.M.1	Accept in part

89	8	Peter Deacon	Volume 1	19 Climate Change	19.M.2	Accept in part
351	53	Helen Mary Ballinger	Volume 1	19 Climate Change	19.M.2	Accept in part
1059	9	Climate Karanga Marlborough	Volume 1	19 Climate Change	19.M.2	Accept in part
351	54	Helen Mary Ballinger	Volume 1	19 Climate Change	19.M.4	Accept in part
1059	10	Climate Karanga Marlborough	Volume 1	19 Climate Change	19.M.4	Accept in part
89	9	Peter Deacon	Volume 1	19 Climate Change	19.M.5	Accept
351	55	Helen Mary Ballinger	Volume 1	19 Climate Change	19.M.5	Accept
1059	11	Climate Karanga Marlborough	Volume 1	19 Climate Change	19.M.5	Accept
89	10	Peter Deacon	Volume 1	19 Climate Change	19.M.7	Accept
351	56	Helen Mary Ballinger	Volume 1	19 Climate Change	19.M.7	Accept
351	57	Helen Mary Ballinger	Volume 1	19 Climate Change	19.M.7	Accept
1059	12	Climate Karanga Marlborough	Volume 1	19 Climate Change	19.M.7	Accept
1059	13	Climate Karanga Marlborough	Volume 1	19 Climate Change	19.M.7	Accept
89	11	Peter Deacon	Volume 1	19 Climate Change	Issue 19B	Accept
351	59	Helen Mary Ballinger	Volume 1	19 Climate Change	Issue 19B	Accept
688	173	Judy and John Hellstrom	Volume 1	19 Climate Change	Issue 19B	Accept
716	183	Friends of Nelson Haven and Tasman Bay Inc	Volume 1	19 Climate Change	Issue 19B	Accept in part
1059	14	Climate Karanga Marlborough	Volume 1	19 Climate Change	Issue 19B	Accept
89	12	Peter Deacon	Volume 1	19 Climate Change	Objective 19.2	Accept in part
351	60	Helen Mary Ballinger	Volume 1	19 Climate Change	Objective 19.2	Accept in part
425	345	Federated Farmers of New Zealand	Volume 1	19 Climate Change	Objective 19.2	Reject
716	184	Friends of Nelson Haven and Tasman Bay Inc	Volume 1	19 Climate Change	Objective 19.2	Reject
716	186	Friends of Nelson Haven and Tasman Bay Inc	Volume 1	19 Climate Change	Objective 19.2	Accept in part
990	258	Nelson Forests Limited	Volume 1	19 Climate Change	Objective 19.2	Accept
1059	15	Climate Karanga Marlborough	Volume 1	19 Climate Change	Objective 19.2	Accept
351	61	Helen Mary Ballinger	Volume 1	19 Climate Change	Policy 19.2.1	Accept
424	134	Michael and Kristen Gerard	Volume 1	19 Climate Change	Policy 19.2.1	Accept
1059	16	Climate Karanga Marlborough	Volume 1	19 Climate Change	Policy 19.2.1	Accept
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
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
504	77	Queen Charlotte Sound Residents Association	Volume 1	19 Climate Change	19.M.8	Accept in part
351	64	Helen Mary Ballinger	Volume 1	19 Climate Change	19.AER.1	Accept
351	65	Helen Mary Ballinger	Volume 1	19 Climate Change	19.AER.2	Accept
89	13	Peter Deacon	Volume 1	19 Climate Change	19.AER.3	Accept in part
351	66	Helen Mary Ballinger	Volume 1	19 Climate Change	19.AER.3	Accept
351	67	Helen Mary Ballinger	Volume 1	19 Climate Change	19.AER.3	Accept
504	78	Queen Charlotte Sound Residents Association	Volume 1	19 Climate Change	19.AER.3	Accept
1059	18	Climate Karanga Marlborough	Volume 1	19 Climate Change	19.AER.3	Accept
139	1	James Wilson	Volume 1	19 Climate Change	19. (Matter 3)	Accept in part
89	1	Peter Deacon	Volume 1	19 Climate Change	19. (Matter 3)	Accept in part
166	3	Te Runanga o Toa Rangatira	Volume 1	19 Climate Change	19. (Matter 3)	Accept in part
259	1	Bill McEwan	Volume 1	19 Climate Change	19. (Matter 3)	Accept in part
280	37	Nelson Marlborough District Health Board	Volume 1	19 Climate Change	19. (Matter 3)	Reject
309	1	Pamela Nicholls	Volume 1	19 Climate Change	19. (Matter 3)	Accept in part
351	44	Helen Mary Ballinger	Volume 1	19 Climate Change	19. (Matter 3)	Accept in part
351	58	Helen Mary Ballinger	Volume 1	19 Climate Change	19. (Matter 3)	Accept in part
378	1	Roger (Budyong) Edward and Leslie Janis Hill	Volume 1	19 Climate Change	19. (Matter 3)	Accept in part
401	182	Aquaculture New Zealand	Volume 1	19 Climate Change	19. (Matter 3)	Reject
426	190	Marine Farming Association Incorporated	Volume 1	19 Climate Change	19. (Matter 3)	Reject
427	1	Hugh Walter Royston Steadman	Volume 1	19 Climate Change	19. (Matter 3)	Reject
478	1	Birte Flatt	Volume 1	19 Climate Change	19. (Matter 3) & Policy 19.1.2	Accept in part
515	7	Mt Zion Charitable Trust	Volume 1	19 Climate Change	19. (Matter 3)	Reject
716	176	Friends of Nelson Haven and Tasman Bay Inc	Volume 1	19 Climate Change	19. (Matter 3)	Accept in part

934	1	M J H and R L Davison Family Trust	Volume 1	19 Climate Change	19. (Matter 3)	Reject
961	96	Marlborough Chamber of Commerce	Volume 1	19 Climate Change	19. (Matter 3)	Reject
1059	1	Climate Karanga Marlborough	Volume 1	19 Climate Change	19. (Matter 3)	Accept in part
1059	20	Climate Karanga Marlborough	Volume 1	19 Climate Change	19. (Matter 3)	Accept in part
501	80	Te Runanga O Ngati Kuia	Volume 1	19 Climate Change	19. (Matter 4)	Reject
869	42	Kenepuru and Central Sounds Residents Association Inc	Volume 1	19 Climate Change	19. (Matter 4)	Reject
990	259	Nelson Forests Limited	Volume 1	19 Climate Change	19. (Matter 4)	Reject