



# Summary Report

Adapting to climate change - Economic Planning and Development:

Summary of Compilation of recommendations and actions for local economies and industries

30 MAY 2012

Adapted from reports prepared by




For

North East Greenhouse Alliance



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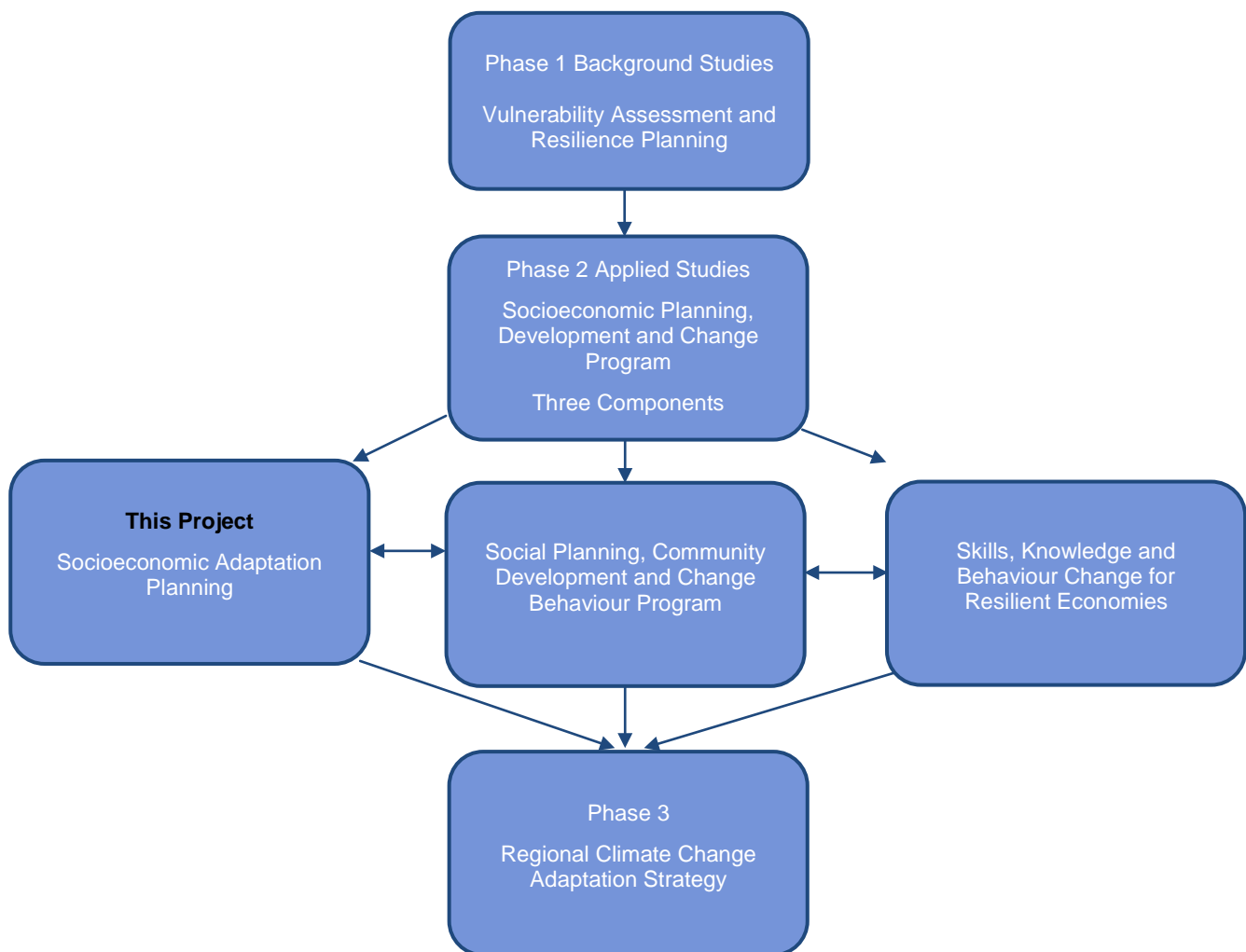
This report provides summary of the compilation of recommendations and actions for local economies and industries in adapting to climate change. It provides a description of the process used to develop the actions, the final actions recommended, a full listing of recommendations and reference to the document they were sourced from, and a toolkit to enable individual councils to assess each action and plan for their implementation.



## Introduction

The North East Greenhouse Alliance (NEGHA) adopted a phased approach to the development of its Regional Climate Change Adaptation Strategy. These phases are shown below

As part of the process of developing its adaptation strategies, the North East Greenhouse Alliance (NEGHA) wanted to ensure that the comprehensive studies it commissioned under its Strengthening Basin Communities funded projects – *Adapting to a Low Water Future* and *Socioeconomic Adaptation Planning* resulted in practical strategies for climate change adaptation. NEGHA contracted URS to compile the recommendations and actions from all the reports that were completed and referred to in Phase 1, specifically those recommendations relate to Economic Development, Investment Attraction, Tourism and Urban and Rural Land Planning



Showing how this project fits into the three Phases that will be integrated by NEGHA into the final Strategy

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## 1.1 How this report was compiled

This report was based on the 24 reports completed for the NEGHA. Every report was reviewed and all recommendations were recorded. This included formal recommendations as well as many throughout the texts. The recommendations were then categorised into major groups to identify similar themes and remove repetition.

This process resulted in 249 items classed as recommendations. However, some of these related to long-standing and intractable broad social and economic issues and were judged to be matters outside the scope of the NEGHA to either address or resolve. The recommendations were analysed to assign them into two broad responsibilities of Council and non-Council organisations. This resulted in 88 major Council and 20 non-Council recommendations that became the foundations for this Strategy. Microsoft Excel was used to record all the items providing a systematic and transparent method that could easily be accessed to re-assess decisions to remove or accept items.

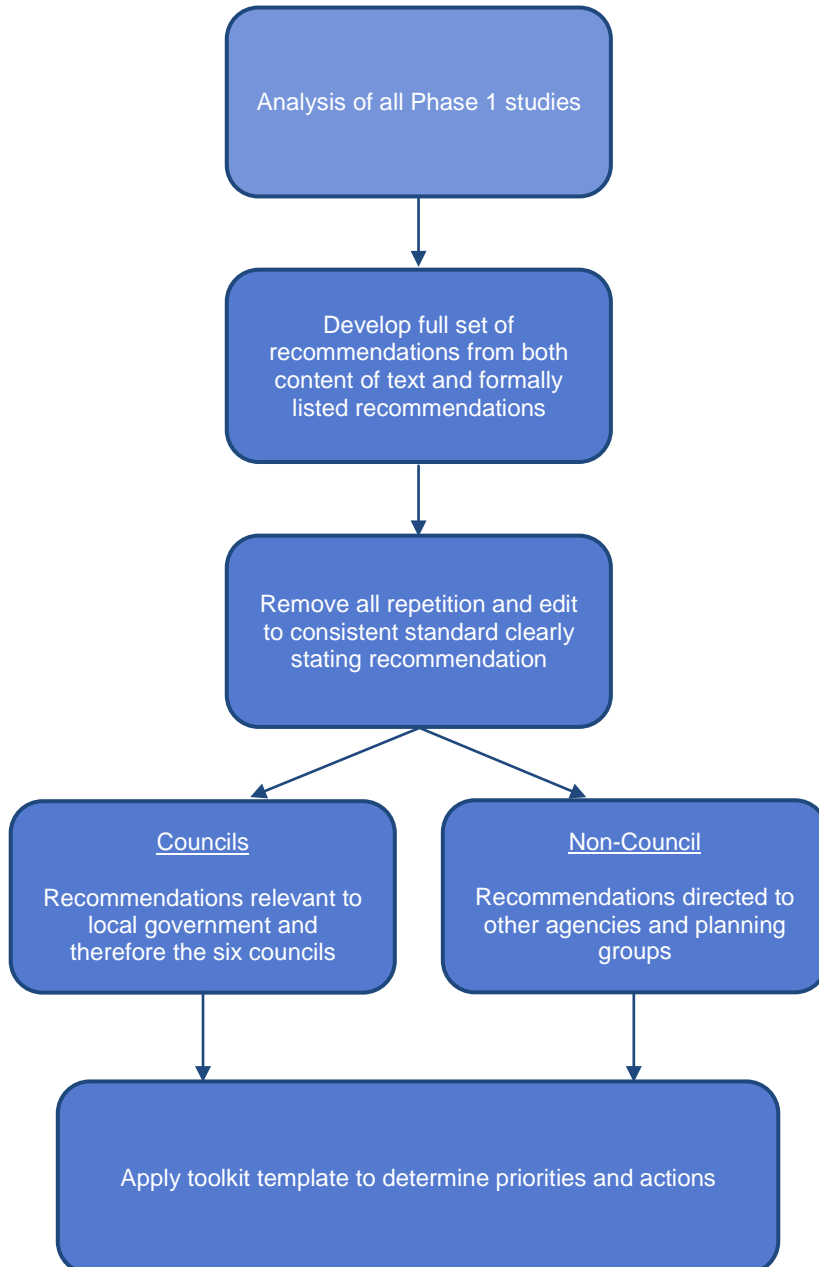
Some of the 88 Council recommendations covered a number of activities and to make them more direct and achievable they were divided into 136 recommendations relevant to the six Councils. The 20 relevant to non-Council categories remained but were also made more achievable and directed to non-Council organisations such as regional industry groups and Victorian Government.

Of these 136 Council and 20 non-Council recommendations, 89 have been incorporated into this strategy. The process of forming the recommendations is summarised in Figure 1-2.

It is important to stress that the recommendations were derived from the reports completed for the NEGHA in Phase 1 and remain grounded in that extensive work. They have not been devised by URS and they reflect the extensive work and reports commissioned by NEGHA.

## Analysis of related plans

Plans such as those prepared by the State Government agencies and authorities such as North East and North East Catchment Management Authority, including the Sustainable Water Strategy for the Northern Region were reviewed. A list of these documents is provided in Appendix B. A number of these documents also provide numerous recommendations or actions to be applied to aspects of the community actions for example, water efficiency. The process of reviewing the Phase 1 studies and developing recommendations that form this report is shown below.



Document review and analysis and prioritisation of recommendations

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## Development of a template that can be used as a toolkit for prioritising and implementing the Strategy

A template was developed in discussion with the NEGHA Steering Committee to determine priorities for each of the recommendations. This template can easily be expanded to include aspects such as monitoring and evaluation. Both versions are provided, in Appendix A and Table 4-1. How this table and the recommendations can be expanded to create an implementation plan is shown in Appendix A.

The method of prioritising is shown in Table 4-1 along with the combined Council and non-Council recommendations. The column 'ID' has been created for the convenience of easy reference to the recommendations in the future. Similarly, the columns: 'Responsibility'; 'Priority expressed as a timeframe'; 'Link with Existing Council Strategy or Plan?'; and 'Implementation partners' have been generated to provide an example of how Councils and non-Council organisations can prioritise and implement these recommendations, and the table can be adapted as necessary by Council and non-Council organisations.



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## Strategies to adapt to climate variability

Many of the Phase 1 reports refer to the predictions that climate change will increase temperature creating a drier future but there will be greater variability within it. That variability is likely to increase the incidence of extreme weather events that may increase fire risk in dry times and flooding in the wet periods. There is a great deal of controversy about the relationship of recent droughts to long-term change in weather patterns and if that change is directly linked to human-induced climate change.

Notwithstanding this controversy over recent climate events, the great benefit of the Phase 1 studies for the six Councils in North Eastern Victoria that comprise the NEGHA is that the recommendations arising from them present a range of risk management opportunities. Laying out the recommendations shows how the Councils and their communities can prepare for climate change in a positive way that also includes managing the day to day, annual and longer-cycle El Nino events at the same time.

The path of climate change adaptation and mitigation mapped out in the recommendations will inevitably benefit the regional economy. Those Councils and their communities proactive in dealing with climate variability are also protecting their social and economic fabric.

The North East region has a diverse economy, equal to the diversity of the whole of regional Victoria. They are in a reasonably good position to cope with potential future climate change and variability. However, this is a general observation, as places like Towong has been identified to have a relatively low level of economic diversity, with 35% of residents being employed in the agricultural industry (Arold and Kinrade 2012). Furthermore, an investigation on economic resources revealed that communities in larger urban centres, such as Benalla, Corryong, Myrtleford and Wangaratta on average have lower economic resources than households in smaller townships and rural households (Arold and Kinrade 2012). Consequently, it is important to address the potential impacts of climate change as a whole and identify which avenues are available to the region for adapting to climate change and minimising the impacts on the region's economic development.

Energy, water and resource efficiency is one avenue for adapting to climate change. For example, many Phase 1 reports state that climate change projections indicate reductions in average rainfall, runoff and streamflows. Benefits of improved water use efficiency are: reducing pressures on the community when there is lower irrigation water availability; and increasing water security (Cruse and Clarke 2010; Kinrade et al. 2011). Using energy, water and resources efficiently can also reduce financial costs for businesses and community members (Martin 2012). Energy efficiency provides protection from increases in cost of energy (Kinrade et al. 2011). This Strategy contains a number of actions related to energy, water and resource efficiency for adapting to climate variability.

Economic development is an important focus for the NEGHA Councils and a majority of them have economic development strategies. These strategies have been developed to strengthen the local economy by supporting existing businesses and attracting new enterprises. However, the 24 Phase 1 reports and the recommendations show that there is potential for further intervention on climate change adaptation and mitigation. It is certain that some or all the six Councils and the wider community will already be addressing some of the recommendations shown below. In that case they can be strengthened by further action if deemed necessary or noted as dealt with. It is the recommendations that are not being addressed that can alert Councillors and senior staff in the Councils for the need to prioritise actions to implement actions to mitigate and adapt to climate change.

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The report contains actions related to maintaining and developing partnerships. This will enhance building the resilience of the region through improving regional planning and/or service delivery.

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Each recommendation in Table 4-1 is accompanied by a key indicating where to locate the recommendation within the Microsoft Excel spreadsheet, provided in Appendix C, which can then be matched up with the source document and its page reference. For example the recommendation *'Procedures should be summarised in a question and answer template for distribution to human resources and OH&S staff. (6 – 1&2)'* indicates that this recommendation can be traced back to recommendation number **six, parts one and two**. The recommendations that were identified to be unrelated to the Council's responsibility can also be traced back to source documents (e.g. (**non council document – line 18**) this recommendation is **number 18**. With this system in place, it has great benefit such as enabling easy access to further context around the recommendation and the origin of the recommendation.

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## Appendices

### **Appendix A**

Provided is an example of how Table 4-1 and the recommendations can be expanded to create an implementation plan.

### **Appendix B**

Provided is a comprehensive list of the 24 of the previous reports prepared by a range of consultants for the NEGHA. The column 'Microsoft Excel Spreadsheet reference' is the link between the recommendations contained in Appendix C. 'File name' is the name of the report in electronic form and 'Document Name' and 'Author, year' contain the details of the document. The column 'Recommendation extracted from the document, page number in brackets' contains the recommendation number and the page number that were extracted from that document.

### **Appendix C**

Appendix C provides a list of the 88 broad recommendations that were distilled from the original 249 items of information recorded in the source documents. These are the 88 recommendations which were further analysed to provide the final list of 156 recommendations (136 council and 20 non-council).

The recommendations were sorted and reviewed using Microsoft Excel. This has provided a totally transparent process with the ability to trace back from the recommendation to the source document. Appendix C contains the spreadsheet of the recommendation's origins and details. The columns 'Reference' and 'Page' contain the name and details of the source document and where the recommendation is located. The column 'Recommendations' contains the series of recommendations as direct excerpts from the document, and some of the recommendations in their similarity have been grouped together to form the column 'Paraphrasing' which is a more direct and encompassing recommendation. This aided in reducing repetition between the recommendations. The column 'Who is responsible' was generated using predominately information from the source documents and the documents' delegations of responsibility. The column 'Type' is the type of the recommendation in the document (e.g. 'Formal' and 'Action' indicates that the document explicitly listed this recommendation). The column 'Broad category' is a general topic guide for the recommendation to aid in reducing repetition.

## Appendix A Demonstration: how the prioritisation table can be converted into an implementation plan

The recommendations prioritisation table can be expanded to create an implementation plan with appropriate headings with a suggested example shown below

Table Appendix A-1 Implementation plan

Strategy and Recommendation	Relevant Council Strategy or Plan	Who in Council has primary responsibility for this recommendation?	Are there unintended consequences in the present Plans that conflict with this recommendation?	Is this recommendation already being adequately addressed?	Does this recommendation highlight a major gap in Council's work or planning?	Are there immediate steps that need to be taken?	Are there other partners that need to be engaged?	Immediate actions. Particularly any implications for risk management.	Monitoring and reporting requirements	Evaluation and reporting responsibilities

## Appendix B Source Documents

Table Appendix B-1 The 24 source documents and their connection to the recommendations

Microsoft Excel Spreadsheet reference	File Name	Document Name	Author, year	Comments	Final recommendations extracted are from document	Recommendation extracted from the document, page number in brackets
*Background document, did not have recommendations evident	Final report and overview.pdf	Final Report and overview – North East Victoria: Adapting to a Low Water Future	North East Greenhouse Alliance. January 2012	Background document	No	
*Did not have recommendations evident	Context reports x5.pdf	Historical climate, climate change and water availability – North East Victoria Adapting to a Low Water Future: Project Context Setting – Deliverable 1	Dr Craig Beverly (DPI) Mr Mark Hocking (Hocking et al Pty Ltd)  The State of Victoria 2010	No formal recommendations	No	
North East Greenhouse Alliance - Water Demand, Drivers, Trends and Related Behaviour. North East Victoria Adapting to a Low Water Future: Project Context Setting - Deliverable 3	Context reports x5.pdf	Water Demand, Drivers, Trends and Related Behaviour – North East Victoria Adapting to a Low Water Future: Project Context Setting – Deliverable 3	Dr Alistair Watson  North East Greenhouse Alliance 2010	No formal recommendations, but identified text that looked like they may be recommendations	No	
North East Greenhouse Alliance - User Groups, Access to Water and Current Usage Statistics. North East Victoria Adapting to a Low Water Future: Project Context Setting - Deliverable 2	Context reports x5.pdf	User Groups, Access to Water and Current Usage Statistics – North East Victoria Adapting to a Low Water Future: Project Context Setting – Deliverable 2	Dr Jayanath Ananda (La Trobe University, Regional School of Business)  North East Greenhouse Alliance 2010	No formal recommendations, but identified text that looked like they may be recommendations	No	
North East Greenhouse Alliance - Preliminary Vulnerability Assessment. North East Victoria Adapting to a Low Water Future: Project Context Setting - Deliverable 4	Context reports x5.pdf	Preliminary Vulnerability Assessment – North East Victoria Adapting to a Low Water Future: Project Context Setting – Deliverable 4	Professor Lin Crase Professor Harry Clarke (La Trobe University)  North East Greenhouse Alliance 2010	No formal recommendations, but identified text that looked like they may be recommendations	No	
North East Greenhouse Alliance - Summary and Synthesis. North East Victoria Adapting to a Low Water Future: Project Context Setting - Deliverable 5	Context reports x5.pdf	Summary and Synthesis – North East Victoria Adapting to a Low Water Future: Project Context Setting – Deliverable 5	Professor Lin Crase (La Trobe University)  North East Greenhouse Alliance 2010	No formal recommendations, but identified text that looked like they may be recommendations	No	

## Appendix B - Source Documents

North East Victoria - Adapting to a Low Water Future: Review of Municipal Documents - Two Hemispheres Environmental Consulting Pty Ltd * is a summary of recommendations made in Section A, B of Review of Municipal Documents	Review of Municipal Documents.pdf	North East Victoria – Adapting to a low water future: Review of municipal documents	Two Hemispheres Environmental Consulting Pty Ltd  North East Greenhouse Alliance June 2011	Contains recommendations at start of document – also repeated in Section A and Section B (document below)	Yes	7 (7, 26, 27), 10 (10, 45), 13 (11, 52), 15 (7), 16 (7), 19 (9), 20 (10), 23 (8), 25 (8, 30), 27 (8), 28 (11), 29 (11, 54), 31 (11), 32 (11, 59), 35 (7, 10), 38 (11, 59), 40 (10), 41 (10), 44 (9), 55 (8, 11, 32-35, 59), 61 (9, 43), 62 (9, 10), 63 (10), 65 (9), 67 (9), 70 (8, 11)  <u>Non Council</u> 1 (9)
North East Victoria - Adapting to a Low Water Future: Review of Municipal Documents - Two Hemispheres Environmental Consulting Pty Ltd - Section A	Review of Municipal Documents.pdf	North East Victoria – Adapting to a low water future: Review of municipal documents – Section A: Overview	Two Hemispheres Environmental Consulting Pty Ltd  North East Greenhouse Alliance June 2011	Contains recommendations at start of document – also repeated in Section A and Section B (document below)	Yes	7 (26, 27), 16 (27, 28), 19 (9), 23 (29), 24 (30), 25 (30), 37 (20), 63 (24, 25)
Section B: An analysis of existing council plans and strategies based on priority risk groupings - Two Hemispheres Environmental Consulting Pty Ltd	Review of Municipal Documents.pdf	North East Victoria – Adapting to a low water future: Review of municipal documents – Section B: An analysis of existing council plans and strategies based on priority risk groupings	Two Hemispheres Environmental Consulting Pty Ltd  North East Greenhouse Alliance June 2011	Recommendations at start of document	Yes	65 (36)
North East Victoria - Adapting to a Low Water Future: Review of Municipal Documents - Two Hemispheres Environmental Consulting Pty Ltd - Section C NOTE: Reviews multiple documents	Review of Municipal documents.pdf	North East Victoria – Adapting to a low water future: Review of municipal documents – Section C: Document Review	Two Hemispheres Environmental Consulting Pty Ltd  North East Greenhouse Alliance June 2011	No formal recommendations listed (formal recommendations at beginning of document were for Section A and B only) – what appeared as recommendations were noted	Yes	30 (71), 33 (68), 42 (65)
Development of Practical Solutions for the North East of Victoria - adapting to a low water future - Bonacci Water	Watersecurity in NE.pdf	Development of Practical Solutions for the North East of Victoria – adapting to a low water future – Water Security	Bonacci Water  North East Greenhouse Alliance 15 February 2012	Did not have formal recommendations	Yes	47 (86), 77 (9, 10, 13-16, 14, 86)
*Attachments were incorporated into Adapting to a Low Water Future: Climate Change Risk Assessment and Adaptation Plan	NEGHA_Adaptation Plan_Attachments.pdf	Adapting to a Low Water Future: Climate Change Risk Assessment and Adaptation Plan - Attachments	Marsden Jacob Associates  North East Greenhouse Alliance October 2011	These attachments were incorporated into the final report document below	No	

## Appendix B - Source Documents

Adapting to a Low Water Future: Climate Change Risk Assessment and Adaptation Plan	NEGHA_Risk Adaptation Report.pdf	Adapting to a Low Water Future: Climate Change Risk Assessment and Adaptation Plan – Final Report	Marsden Jacob Associates Pty Ltd  North East Greenhouse Alliance October 2011	Only pages v to xvi of document had relevant recommendations pages 42-95 are how, why and who are to do recommendations	Yes	1 (xiv), 2 (xiv), 6 (x, xiii, xiv), 8 (xi), 9 (xiii), 10 (ix), 11 (xi), 17 (ix), 19 (ix, viii, xv), 20 (x, xi), 21 (ix), 22 (vii), 31 (xvi), 36 (v), 43 (vii), 46 (xii), 52 (xvi), 57 (ix), 58 (xiii), 59 (v), 62 (x), 64 (viii), 67 (vii), 68 (xi), 73 (vi), 74 (vi), 86 (xvi)  <u>Non Council</u> 2 (vi), 3 (xii), 4 (xiii), 5 (xiv), 6 (xv), 7 (xvi), 8 (xvii), 18 (xv), 20 (viii)
North East Victoria Adapting to a low water future phase 3: Social Response skills gaps and training needs analysis Final Report	Social Response skills gaps and training needs analysis.pdf	North East Victoria Adapting to a low water future phase 3: Social response skills gaps and training needs analysis – Final Report	Wodonga TAFE, Centre for Sustainable Skills Wodonga TAFEspace  North East Greenhouse Alliance, December 2011	Formal recommendations	Yes	7 (33), 54 (33), 84 (33, 34-35), 87 (33), 88 (33)
North East Victoria Adapting to a Low Water Future Phase 3: Stakeholder behavioural study and analysis FINAL REPORT - North East Greenhouse Alliance	Stakeholder Behaviour Analysis.pdf	North East Victoria Adapting to a Low Water Future – Phase 3 – Stakeholder Behavioural Study and Analysis	The Regional Development Company Pty Ltd  North East Greenhouse Alliance December 2011	Formal recommendations	Yes	85 (30), 87 (30)
*No recommendations identified	Developing a Climate Change Action Plan final.pdf	Developing a climate change action plan	Tribal Frog Pty Ltd  North East Greenhouse Alliance January 2012	No recommendations identified. Was a document describing how to successfully develop a climate change action plan	No	
*No recommendations apparent	Alternative Options for S&S.pdf	Development of Practical Solutions for the North East of Victoria – adapting to a low water future – Alternative options to manage sullage and sewage in small rural towns	Bonacci Water  North East Greenhouse Alliance 29 February 2012	No recommendations apparent	No	

## Appendix B - Source Documents

Alpine Shire Council Climate Change Draft Action Plan 2012-2016 January 2012 - Tribal Frog Pty Ltd	Alpine Shire Climate Change Action Plan.pdf	Alpine Shire Council – Climate Change Draft Action Plan 2012 - 2016	Tribal Frog Pty Ltd  North East Greenhouse Alliance January 2012	Contained Actions	Yes	3 (17), 4 (17), 6 (16), 8 (13), 9 (15), 12 (18, 14), 17 (22), 18 (19), 19 (18), 20 (11, 12, 22), 23 (14), 25 (14), 26 (14), 27 (15), 28 (14), 34 (14), 38 (19), 45 (15), 46 (13), 48 (21), 49 (10), 50 (10), 51 (20), 52 (10, 11, 12, 17, 18, 22), 56 (17), 58 (15), 60 (21), 61 (16), 63 (22), 66 (19), 71 (11, 15, 18), 72 (11, 12), 75 (13, 74), 76 (21)  <u>Non Council</u> 19 (13)
Report for Water Efficiency Site Assessments and Action Plans: Phase 3, Part 5 of North East Victoria Adapting to a Low Water Future - North East Greenhouse Alliance - WaterGroup Pty Ltd	Water Audit Consolidated report and outcomes.pdf	Report for Water Efficiency – Site Assessments & Action Plans – Phase 3, Part 5 of North East Victoria Adapting to a Low Water Future	WaterGroup Pty Ltd  North East Greenhouse Alliance, no date	Contained recommendation section	Yes	79 (33), 80 (33), 81 (33), 82 (33), 83 (33)  <u>Non Council</u> 9 (25)
*Incorporated in the Water Audit Consolidated Report and Outcome document	Example of Company audit Bright Chalet.pdf	Easy Blue – Water Savings Program - Water Audit and Water Savings Action Plan: Bright Chalet December 2011	Water Conservation Group Pty Ltd  North East Greenhouse Alliance December 2011	Incorporated in the Water Audit Consolidated Report and Outcome document	No	
*Incorporated in the Water Audit Consolidated Report and Outcome document	Example of Company audit Wangaratta Livestock Exchange.pdf	Easy Blue – Water Savings Program - Water Audit and Water Savings Action Plan: Wangaratta Livestock Exchange December 2011	WaterGroup Pty Ltd  North East Greenhouse Alliance, December 2011	Incorporated in the Water Audit Consolidated Report and Outcome document	No	
*Incorporated in the Water Audit Consolidated Report and Outcome document	Example of Company audit Wodonga Caravan and Cabin Park.pdf	Easy Blue – Water Savings Program - Water Audit and Water Savings Action Plan: Wodonga Caravan and Cabin Park December 2011	WaterGroup Pty Ltd  North East Greenhouse Alliance, December 2011	Incorporated in the Water Audit Consolidated Report and Outcome document	No	
*Incorporated in the Water Audit Consolidated Report and Outcome document	Free Water Audit Flyer.pdf	Easy blue water savings program	North East Greenhouse Alliance	Incorporated in the Water Audit Consolidated Report and Outcome document	No	
*Same as: Climate Change in NEVic Vulnerability Assessment and Resilience Plan.docx	1202-4 Add1 Report(draft).pdf	Climate Change in North East Victoria - Vulnerability Assessment and Resilience Plan January 2012	Marsden Jacob Associates Pty Ltd  North East Greenhouse Alliance 2011	Same as: Climate Change in NEVic Vulnerability Assessment and Resilience Plan.docx	No	



## Appendix B - Source Documents

Final Report Climate Change in North East Victoria: Socioeconomic Resilience Plan February 2012	Climate Change in NEVic Vulnerability Assessment and Resilience Plan.docx	Climate Change in North East Victoria: Socioeconomic Resilience Plan – Final Report	Marsden Jacob Associates Pty Ltd  North East Greenhouse Alliance February 2011	Contained Actions	Yes	5 (82), 10 (82, 74), 14 (82), 39 (83), 46 (82), 52 (70, 82), 53 (74, 82), 60 (71, 82), 69 (68, 71, 82)  <u>Non Council</u> 10 (82), 11 (82), 12 (82), 13 (82), 14 (82), 15 (82), 16 (82), 17 (82)
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\*This document did not contain any evident recommendations, or the recommendations were incorporated within another report.

Table Appendix B-2 Additional documents reviewed

Document	Author	Date	Location/web address
North East Regional Catchment Strategy	North East Regional Catchment Management Authority	2004	<a href="http://www.necma.vic.gov.au/ResourceLibrary/StrategiesPlans/">http://www.necma.vic.gov.au/ResourceLibrary/StrategiesPlans/</a>
Goulburn Broken Regional Catchment Strategy	Goulburn Broken Catchment Management Authority	November 2003	Shepparton
Northern Region Sustainable Water Strategy	Department of Sustainability and Environment	November 2009	Melbourne
Fact sheet: Planning and building for bushfire protection	Department of Planning and Community Development	November 2011	Melbourne



# C

## Appendix C Microsoft Excel spreadsheets containing recommendation details

Table Appendix C-3 The origin of Council recommendations

Report name and Author	Recommendations	Type	Page	Who is responsible	Paraphrasing	Recommendation number	Broad category
Adapting to a Low Water Future: Climate Change Risk Assessment and Adaptation Plan	DSE, working with NECMA and councils should establish a co-ordinated long term, region wide program aimed at monitoring changes over time to high value conservation assets and ecosystems in the region. K2	Formal	xiv	DSE - not directly Council	Develop a long-term monitoring program to detect changes to high value conservation assets and ecosystems in the region	1	BIODIVERSITY
Adapting to a Low Water Future: Climate Change Risk Assessment and Adaptation Plan	Councils, working collaboratively with relevant agencies, should ensure that planning and management actions in the Hume Strategy and Regional Catchment Strategy aimed at protection of biodiversity, land and water assets are implemented. K1	Formal	xiv	Councils, DSE, NECMA	Ensure planning and management actions in the Hume Strategy and Regional Catchment strategy aimed at the protection of biodiversity, land and water assets are implemented.	2	BIODIVERSITY
Alpine Shire Council Climate Change Draft Action Plan 2012-2016 January 2012 - Tribal Frog Pty Ltd	Be proactive and work in partnership with other land managers to reduce fuel loads prior to bushfire season or flooding on land under the management of Council and land close to townships. <b>HOW:</b> 4.1 Council to undertake fuel management in areas where it has direct responsibility e.g. Council nature reserves; 4.1 Council to work with DSE / Parks Vic to manage fuel loads in reserves close to settlements; 11.3 Review/improve vegetation management within council managed land. PRIORITY = high	Action	17	Councils	1. Ensure high priority is given to reduce bushfire and flooding impacts by reducing fuel loads; reviewing/improve vegetation management on land under the management of Council/close to townships (including reserves). 2. Ensure this is done working in partnership with other land managers (e.g. DSE/Parks Vic).	3	BUSHFIRE
Alpine Shire Council Climate Change Draft Action Plan 2012-2016 January 2012 - Tribal Frog Pty Ltd	4.3 Educate the community on how to reduce the risk of bushfires. Cleaning up fuel and litter.	Action	17	Councils	Educate the community on reducing the risk of bushfires (e.g. importance of cleaning up fuel and litter).	4	BUSHFIRE

## Appendix C - Microsoft Excel spreadsheets containing recommendation details

Report name and Author	Recommendations	Type	Page	Who is responsible	Paraphrasing	Recommendation number	Broad category
Final Report Climate Change in North East Victoria: Socioeconomic Resilience Plan February 2012	Reduce the impact of prescribed burns on the tourism sector. <b>HOW:</b> setting aside 'no burn' times in peak visitation times; communicate with the public about why, when and how burns carried out; support improved research and monitoring of prescribed burns by DSE. Implementable=in part; driven locally=no; effective LT contribution to resilience=moderate	Action	82	Councils	Reduce the impact of prescribed burns on the tourism sector by: setting aside 'no burn' times in peak visitation times; communicate with the public about why, when and how burns carried out; support improved research and monitoring of prescribed burns by DSE.	5	BUSHFIRE
Alpine Shire Council Climate Change Draft Action Plan 2012-2016 January 2012 - Tribal Frog Pty Ltd	Expand Council's Business Continuity Plan for Council's operations and services during times of extreme natural events and for the recovery phase of these events. 1.1 Development of Council's Business Interruption Plan is also to include a review of current council roles and resourcing for emergencies - e.g. % of roles allocated to bushfire prevention.	Action	16	Councils	<p>1. Expand Council's Business Continuity Plan for operations and services during times of extreme natural events and for the recovery phase of these events (including impacts of flooding/Code Red days on staff resources and service provision). This includes reviewing current council roles and resourcing for emergencies - e.g. % of roles allocated to bushfire prevention.</p> <p>2. Ensure that effective procedures (summarised in a Q&amp;A template for distribution to all human resources and OH&amp;S staff) are in place to deal with the consequences of Code Red days. Councils should extend their Business Continuity Plans to improve their ability to cope with the impacts of Code Red days on staff resources and service provision.</p>	6	
Alpine Shire Council Climate Change Draft Action Plan 2012-2016 January 2012 - Tribal Frog Pty Ltd	F5 Council is to extend their Business Continuity Plans to improve their ability to cope with the impacts of flooding on staff resources and service provision.	Action	16	Councils			
Alpine Shire Council Climate Change Draft Action Plan 2012-2016 January 2012 - Tribal Frog Pty Ltd	Expand Council's Business Continuity Plan for Council's operations and services during times of extreme natural events and for the recovery phase of these events. J1. Council is to extend their Business Continuity Plans to improve their ability to cope with the impacts of Code Red days on staff resources and service provision.	Action	16	Councils			

## Appendix C - Microsoft Excel spreadsheets containing recommendation details

Report name and Author	Recommendations	Type	Page	Who is responsible	Paraphrasing	Recommendation number	Broad category
Alpine Shire Council Climate Change Draft Action Plan 2012-2016 January 2012 - Tribal Frog Pty Ltd	Expand Council's Business Continuity Plan for Council's operations and services during times of extreme natural events and for the recovery phase of these events. J2. Council is to ensure that effective procedures for dealing with the consequences of Code Red days are in place. The procedures should be summarised in a question and answer (Q&A) template for distribution to all human resources and OH&S staff. PRIORITY = high	Action	16	Councils		6	CONTINUITY
Adapting to a Low Water Future: Climate Change Risk Assessment and Adaptation Plan	Councils should ensure that effective procedures for dealing with the consequences of Code Red days are in place. The procedures should be summarised in a question and answer (Q&A) template for distribution to all human resources and OH&S staff. J2	Formal	xiv	Councils, other members of MEMCs			
Adapting to a Low Water Future: Climate Change Risk Assessment and Adaptation Plan	Councils should extend their Business Continuity Plans to improve their ability to cope with the impacts of Code Red days on staff resources and service provision. J1	Formal	xiii	Councils			
Adapting to a Low Water Future: Climate Change Risk Assessment and Adaptation Plan	Councils should extend their Business Continuity Plans to improve their ability to cope with the impacts of flooding on staff resources and service provision. F5	Formal	x	Councils			CONTINUITY/ DOCUMENT

## Appendix C - Microsoft Excel spreadsheets containing recommendation details

Report name and Author	Recommendations	Type	Page	Who is responsible	Paraphrasing	Recommendation number	Broad category
North East Victoria - Adapting to a Low Water Future: Review of Municipal Documents - Two Hemispheres Environmental Consulting Pty Ltd * is a summary of recommendations made in Section A, B of Review of Municipal Documents	Constraints: Councils should identify opportunities to identify what skills and resources are needed within the organisations to increase the capacity and resilience of staff and councillors who are managing in periods of considerable stress and change.	Formal	7 and 26/27	Council	Councils should identify opportunities to identify what skills and resources are needed within the organisations to increase the capacity and resilience of staff and councillors who are managing in periods of considerable stress and change; and to ensure they are prepared for the future skills and knowledge requirements to address a changing water future.	7	
North East Victoria - Adapting to a Low Water Future: Review of Municipal Documents - Two Hemispheres Environmental Consulting Pty Ltd - Section A	In discussions with staff, it appears that there is a need to provide opportunities for both staff and elected councillors to take stock, and to identify what skills and resources are needed within the organisations to increase their capacity and resilience. While there can be well developed capacity and development programs in place for the community, there is also a need to provide support for staff and councillors who are managing in periods of considerable stress and change.	Additional recommendations found in documents WITH formal recommendations	26 - 27	Councils			

## Appendix C - Microsoft Excel spreadsheets containing recommendation details

Report name and Author	Recommendations	Type	Page	Who is responsible	Paraphrasing	Recommendation number	Broad category
North East Victoria Adapting to a low water future phase 3: Social Response skills gaps and training needs analysis Final Report	In general, the NEGHA partners are managing their current knowledge, skills and trainings needs adequately with respect to the impact of climate change on our water resources and their strategic planning and management. However, the findings of our research suggest that this could not only be improved in the short-term, but that organisations should consider building knowledge and skills in certain disciplines in order to ensure they are prepared for the future skills and knowledge requirements to address a changing water future. This recommendation may also overcome any potential problems that might occur if integrated/cross-departmental dialogue for water resource planning and management is lacking within the NEGHA partners.	Formal	33	Councils		7	CONTINUITY/ COUNCIL TRAINING
Adapting to a Low Water Future: Climate Change Risk Assessment and Adaptation Plan	To build the resilience of the local economy to climate change impacts and extreme events, Councils, working with local chambers of commerce, business associations and local educators, should facilitate and promote a training and capacity building program on business continuity planning for small and medium sized businesses in the region. G2	Formal	xi	Councils, local chambers of commerce, business associations, local educators	Facilitate and promote a training and capacity building program for small and medium sized businesses in continuity planning. This includes reviewing risk exposure of local industry to climate change, climate variability and water availability.	8	

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Report name and Author	Recommendations	Type	Page	Who is responsible	Paraphrasing	Recommendation number	Broad category
Alpine Shire Council Climate Change Draft Action Plan 2012-2016 January 2012 - Tribal Frog Pty Ltd	Work with local chambers of commerce, business associations and local educators, to facilitate and promote a training and capacity building program for small and medium sized business continuity planning. G1. To build the resilience of the local economy to climate change impacts and extreme events, Council to work with local chambers of commerce, business associations and local educators, should facilitate and promote a training and capacity building program on business continuity planning for small and medium sized businesses in the region. G2. Council to work with local chambers of commerce and industry associations should review the risk exposure of local industry to climate change, climate variability and water availability.	Action	13	Councils		8	CONTINUITY
Adapting to a Low Water Future: Climate Change Risk Assessment and Adaptation Plan	Councils should review their open space plans with a view to rationalising and prioritising parks, gardens and playing fields to manage in times of low water availability, and investigate medium to long term actions to ensure ongoing viability of priority parks, gardens and playing fields. I1	Formal	xiii	Councils, working with NEW			
Alpine Shire Council Climate Change Draft Action Plan 2012-2016 January 2012 - Tribal Frog Pty Ltd	I1. Council is to review their open space plans with a view to rationalising and prioritising parks, gardens and playing fields to manage in times of low water availability, and investigate medium to long term actions to ensure ongoing viability of priority parks, gardens and playing fields.	Action	15	Councils	Councils should review their open space plans with a view to rationalising and prioritising parks, gardens and playing fields to manage in times of low water availability and investigate medium to long term actions to ensure ongoing viability of priority parks, gardens and playing fields.	9	CONTINUITY



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Report name and Author	Recommendations	Type	Page	Who is responsible	Paraphrasing	Recommendation number	Broad category
North East Victoria - Adapting to a Low Water Future: Review of Municipal Documents - Two Hemispheres Environmental Consulting Pty Ltd * is a summary of recommendations made in Section A, B of Review of Municipal Documents	Flooding: Councils should work with insurers to identify benefits of alternative strategic approaches, including 'Betterment'	Formal	10	Councils	<ol style="list-style-type: none"> <li>1. Councils should work with insurers to identify benefits of alternative strategic approaches, including 'Betterment'.</li> <li>2. Acting as a group, councils should present a case to state and federal government outlining the need for 'Betterment' when replacing infrastructure affected by flooding.</li> <li>3. Councils in consultation with partners, should identify a hierarchy of risks to infrastructure for council, state and interstate assets to identify where Betterment would be best applied.</li> <li>4. Councils should develop regionally consistent criteria for quantitatively assessing the vulnerability of major levees, roads, bridges and other key community assets to flooding and other climate extremes.</li> <li>5. Councils should develop a priority risk and schedule (priority list) of public infrastructure that contributes to building the resilience of local communities to climate change and variability and provide a demonstration of good practice to the community.</li> <li>6. Councils and partners should undertake a review of all infrastructure costs and other costs to municipalities for the recent flooding events.</li> </ol>	10	
North East Victoria - Adapting to a Low Water Future: Review of Municipal Documents - Two Hemispheres Environmental Consulting Pty Ltd * is a summary of recommendations made in Section A, B of Review of Municipal Documents	Flooding: Acting as a group, councils should present a case to state and federal government outlining the need for 'Betterment' when replacing infrastructure affected by flooding.	Formal	10	Councils			

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Report name and Author	Recommendations	Type	Page	Who is responsible	Paraphrasing	Recommendation number	Broad category
North East Victoria - Adapting to a Low Water Future: Review of Municipal Documents - Two Hemispheres Environmental Consulting Pty Ltd * is a summary of recommendations made in Section A, B of Review of Municipal Documents	Flooding: Councils in consultation with partners, should identify a hierarchy of risks to infrastructure for council, state and interstate assets to identify where Betterment would be best applied.	Formal	10	Councils			
North East Victoria - Adapting to a Low Water Future: Review of Municipal Documents - Two Hemispheres Environmental Consulting Pty Ltd * is a summary of recommendations made in Section A, B of Review of Municipal Documents	Flooding: Councils and partners should undertake a review of all infrastructure costs and other costs to municipalities for the recent flooding events. To increase capacity in mitigation work that reduces impacts of flooding.	Formal	10 and 45	Councils		10	
Adapting to a Low Water Future: Climate Change Risk Assessment and Adaptation Plan	Councils should develop regionally consistent criteria for quantitatively assessing the vulnerability of major levees, roads, bridges and other key community assets to flooding and other climate extremes, drawing on outputs from Actions E6 and F3. F2	Formal	ix	Councils			

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Report name and Author	Recommendations	Type	Page	Who is responsible	Paraphrasing	Recommendation number	Broad category
Final Report Climate Change in North East Victoria: Socioeconomic Resilience Plan February 2012	Community infrastructure priorities. Councils should consider developing a priority risk and schedule of public infrastructure that will contribute to building resilience of local communities to climate change and variability and provide a demonstration of good practice to the community. The priority list would also aim to identify interdependencies between infrastructures, including assets that have the potential to be impacted by interconnected or auxiliary assets that are managed by other agencies. The priority list should include details on: the type of infrastructure and how it will build resilience; preliminary cost estimates; responsibility (council, agency, other) for initiating the infrastructure; interconnections/interdependencies with other infrastructure; and potential funding sources. Implementable=yes; driven locally=yes; effective LT contribution to resilience=major	Action	82 and 74	NEGHA member Councils		10	CONTINUITY/ BETTERMENT
Adapting to a Low Water Future: Climate Change Risk Assessment and Adaptation Plan	Councils, working with local chambers of commerce and industry associations, should review the risk exposure of local industry to climate change, climate variability and water availability. G3	Formal	xi	Councils, local chambers of commerce, industry associations	Councils, working with local chambers of commerce and industry associations, should review the risk exposure of local industry to climate change, climate variability and water availability.	11	CONTINUITY

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Report name and Author	Recommendations	Type	Page	Who is responsible	Paraphrasing	Recommendation number	Broad category
Alpine Shire Council Climate Change Draft Action Plan 2012-2016 January 2012 - Tribal Frog Pty Ltd	Update infrastructure planning and design procedures and maintenance schedules to include consideration for climate change, extreme weather events and environmental sustainability. 10.1 Planning & budgeting. Prioritise upgrades for existing council assets (e.g. consider public safety, cost, consequence of asset failure to service delivery). 10.1 Preventative maintenance systems (existing infrastructure). Review / focus on bushfire affected areas – more susceptible to erosion, silting etc. 12.1 Improved road and culvert design. Review of design standards (flood capacity). E3 Council is to working cooperatively to develop regional guides and standards for the design of new and upgraded drainage assets. PRIORITY= new procedures High/ Existing procedures Medium	Action	18	Councils	<ol style="list-style-type: none"> <li>1. Ensure to update infrastructure planning and design procedures and maintenance schedules to include consideration for climate change, extreme weather events and environmental sustainability.</li> <li>2. Prioritise upgrades for existing council assets (e.g. consider public safety, cost, consequence of asset failure to service delivery).</li> <li>3. Preventative maintenance systems (existing infrastructure). Review/focus on bushfire affected areas – more susceptible to erosion, silting etc.</li> <li>4. Improved road and culvert design. Review of design standards (flood capacity).</li> <li>5. Councils to work cooperatively to develop regional guides and standards for the design of new and upgraded drainage assets.</li> <li>6. Promote the establishment of new industries within the shire arising from a changing climate.</li> </ol>	12	CONTINUITY
Alpine Shire Council Climate Change Draft Action Plan 2012-2016 January 2012 - Tribal Frog Pty Ltd	Relevant Council documents, policies, plans and procedures are to be updated to include climate change adaptation, relevant emergency planning and environmental sustainability. 7. Promote the establishment of new industries within the Shire arising from a changing climate. PRIORITY = high	Action	14	Councils			

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Report name and Author	Recommendations	Type	Page	Who is responsible	Paraphrasing	Recommendation number	Broad category
North East Victoria - Adapting to a Low Water Future: Review of Municipal Documents - Two Hemispheres Environmental Consulting Pty Ltd * is a summary of recommendations made in Section A, B of Review of Municipal Documents	Economic Development: Councils' economic development units should increase the capacity of businesses by running workshops for dealing with business interruption (contingency planning). To address risks likely being amplified with climate change (e.g. droughts, floods).	Formal	11 and 52	Councils	The Council's economic development units should conduct workshops for dealing with business interruption (contingency planning) to increase the capacity of businesses and address risks likely being amplified by climate change.	13	CONTINUITY

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Report name and Author	Recommendations	Type	Page	Who is responsible	Paraphrasing	Recommendation number	Broad category
Final Report Climate Change in North East Victoria: Socioeconomic Resilience Plan February 2012	Coordinated approach to building community resilience. Councils have an important coordinating role to play in fostering wellbeing and building resilience within local communities. Through local Emergency Management Committees, they already play this role in the area of emergency response, coordinating the work of relevant agencies and volunteer organisations. This approach could be extended to resilience planning through the establishment of community resilience committees in each of the region's local government areas. The committees would have a particular focus on: coordinating programs and initiatives relevant to community preparedness for and recovery from natural disasters and other climate extremes, as well as long term structural pressures facing local communities and economies; network and partnership building between relevant agencies and community organisations on these issues; 'mapping' of community programs and initiatives that build local community and resilience and organisations responsible for their delivery; establishing and coordinating registers of vulnerable groups; coordinating local and regional information sharing; and identifying gaps in programs and program delivery. The Alpine Community Resilience Committee, which is already operating successfully, provides a possible model for these committees. Implementable=yes; driven locally=yes; effective LT contribution to resilience=moderate	Action	82	Councils, NEGHA member councils, working with local agencies and community organisations	Establish community resilience committees in each of the region's local government areas.	14	CONTINUITY

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Report name and Author	Recommendations	Type	Page	Who is responsible	Paraphrasing	Recommendation number	Broad category
North East Victoria - Adapting to a Low Water Future: Review of Municipal Documents - Two Hemispheres Environmental Consulting Pty Ltd * is a summary of recommendations made in Section A, B of Review of Municipal Documents	Constraints: Councils should, wherever possible, include an administrative loading in all external funding to assist with administrative requirements. This suggestion stems from the strains on existing resources and demands, which is worsened by climate change (e.g. flood).	Formal	7	Council	Council should include an administrative loading in all external funding to assist with administrative requirements.	15	FUNDING
North East Victoria - Adapting to a Low Water Future: Review of Municipal Documents - Two Hemispheres Environmental Consulting Pty Ltd * is a summary of recommendations made in Section A, B of Review of Municipal Documents	Constraints: Councils should consider jointly funding a fund raising position to expand the sources of funding of councils and municipalities. This suggestion stems from the strains on existing resources and demands, which is worsened by climate change (e.g. flood).	Formal	7	Council	Councils should jointly fund a fund raising position to expand the sources of funding to help adjust to climate change.	16	

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Report name and Author	Recommendations	Type	Page	Who is responsible	Paraphrasing	Recommendation number	Broad category
North East Victoria - Adapting to a Low Water Future: Review of Municipal Documents - Two Hemispheres Environmental Consulting Pty Ltd - Section A	While there may be other sources of funding available for municipalities, including federal and philanthropic funding, it is often difficult for staff within their existing workloads to both identify funding, and to develop successful applications. As such, it is recommended that Councils consider jointly funding a fund raising position, to seek to expand the sources of funding of municipalities and councils. If a dedicated position whose funding was shared across the municipalities was funded from internal sources, then the investment could be quickly recouped if one or two additional grants or sources of funds were achieved.	Additional recommendations found in text for documents WITH formal recommendations	27 - 28	Councils		16	FUNDING
Adapting to a Low Water Future: Climate Change Risk Assessment and Adaptation Plan	NECMA and councils should seek funding from the State Government to commission research into projected changes of rainfall intensities and duration under climate change scenarios with the objective of producing regional and local rainfall-intensity-duration data and other relevant hydrologic tools. E6	Formal	ix	State Government, with assistance from NECMA and councils	NECMA and councils should seek funding from the State Government to commission research into projected changes of rainfall intensities and duration under climate change scenarios with the objective of producing regional and local rainfall-intensity-duration data and other relevant hydrologic tools.	17	



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Report name and Author	Recommendations	Type	Page	Who is responsible	Paraphrasing	Recommendation number	Broad category
Alpine Shire Council Climate Change Draft Action Plan 2012-2016 January 2012 - Tribal Frog Pty Ltd	In partnership with NECMA and partner councils seek funding from the State Government to commission research into projected changes of rainfall intensities and duration under climate change scenarios with the objective of producing regional and local rainfall-intensity-duration data and other relevant hydrologic tools. E6 In partnership with NECMA and partner councils seek funding from the State Government to commission research into projected changes of rainfall intensities and duration under climate change scenarios with the objective of producing regional and local rainfall-intensity-duration data and other relevant hydrologic tools. Refer and link to Action 2.17. PRIORITY = low	Action	22	Councils		17	FUNDING
Alpine Shire Council Climate Change Draft Action Plan 2012-2016 January 2012 - Tribal Frog Pty Ltd	Review Council's Sustainable Water Use Plan and consider how well it managed in a period of continuing low water availability. 6.2 Identify and secure funding – use risk assessment and adaptation plans to secure State and Federal funding to implement projects. E.g. Water for Future. PRIORITY = medium	Action	19	Councils	Identify and secure funding – use risk assessment and adaptation plans to secure State and Federal funding to implement projects. E.g. Water for Future.	18	FUNDING
North East Victoria - Adapting to a Low Water Future: Review of Municipal Documents - Two Hemispheres Environmental Consulting Pty Ltd * is a summary of recommendations made in Section A, B	Stormwater Management: Councils may wish to workshop funding opportunities as a group and prioritise spending for storm water infrastructure.	Formal	9	Council	Review Stormwater Planning and include these actions: -Conduct a group workshop to determine funding opportunities and prioritise spending on stormwater infrastructure. -Councils should prioritise management and/or upgrade of vulnerable stormwater assets at an LGA scale, drawing on outputs of actions. - Councils should analyse existing urban stormwater catchments, identifying areas in need of stormwater redevelopment, so as to achieve flow reductions for the purposes of controlling erosion in receiving waterways and	19	

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Report name and Author	Recommendations	Type	Page	Who is responsible	Paraphrasing	Recommendation number	Broad category
of Review of Municipal Documents					reducing urban flood risks. - Review the Council's Urban Stormwater Plan to assess whether it is still relevant, and whether any of the remaining recommendations can be carried out, urban areas should be included. - No future planning on stormwater or flooding be undertaken without firstly assessing and considering existing plans and strategies. - Councils working cooperatively should develop regional guides and standards for the design of new and upgraded drainage assets.	19	
Adapting to a Low Water Future: Climate Change Risk Assessment and Adaptation Plan	Councils should prioritise management and/or upgrade of vulnerable stormwater assets at an LGA scale, drawing on outputs of actions E1. E2	Formal	viii	Councils			
Adapting to a Low Water Future: Climate Change Risk Assessment and Adaptation Plan	Councils should analyse existing urban stormwater catchments, identifying areas in need of stormwater redevelopment, so as to achieve flow reductions for the purposes of controlling erosion in receiving waterways and reducing urban flood risks. L1	Formal	xv	Councils			

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Report name and Author	Recommendations	Type	Page	Who is responsible	Paraphrasing	Recommendation number	Broad category
Alpine Shire Council Climate Change Draft Action Plan 2012-2016 January 2012 - Tribal Frog Pty Ltd	Analyse existing urban stormwater catchments to identify areas in need of stormwater redevelopment. 2. Council's Urban Stormwater Plan and is to be assessed whether it is still relevant, and whether any of the remaining recommendations can be carried out. L1. Council is to analyse existing urban stormwater catchments, identifying areas in need of stormwater redevelopment, so as to achieve flow reductions for the purposes of controlling erosion in receiving waterways and reducing urban flood risks. 12.3 Review and implement a Stormwater management plan which includes urban areas. PRIORITY = medium	Action	18	Councils		19	
North East Victoria - Adapting to a Low Water Future: Review of Municipal Documents - Two Hemispheres Environmental Consulting Pty Ltd * is a summary of recommendations made in Section A, B of Review of Municipal Documents	Stormwater Management: It is strongly recommended that no future planning on storm water or flooding be undertaken without firstly assessing and considering existing plans and strategies.	Formal	9	Council			

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Report name and Author	Recommendations	Type	Page	Who is responsible	Paraphrasing	Recommendation number	Broad category
North East Victoria - Adapting to a Low Water Future: Review of Municipal Documents - Two Hemispheres Environmental Consulting Pty Ltd * is a summary of recommendations made in Section A, B of Review of Municipal Documents	Stormwater Management: It is strongly recommended that no future planning on storm water or flooding be undertaken without firstly assessing and considering existing plans and strategies.	Formal	9	Council		19	STORMWATER
Adapting to a Low Water Future: Climate Change Risk Assessment and Adaptation Plan	Councils working cooperatively should develop regional guides and standards for the design of new and upgraded drainage assets. E3	Formal	ix	Councils			
North East Victoria - Adapting to a Low Water Future: Review of Municipal Documents - Two Hemispheres Environmental Consulting Pty Ltd * is a summary of recommendations made in Section A, B of Review of Municipal Documents	Flooding: Councils and partners should be more explicit in education programmes that flood plains are for flooding and reduce future (housing and building) development in these areas. To increase capacity in mitigation work that reduces impacts of flooding.	Formal	10	Councils	1. NECMA, working with councils and other agencies should develop and implement a region wide information and education campaign to advise the community on potential climate change impacts on floodplain use and management. 2. Councils and partners should be more explicit in education programmes that flood plains are for flooding and reduce future (housing and building) development in these areas. 3. Councils, through the RMF (Regional Management Forum), should develop and deliver a regional training and information sharing program for staff and councillors to increase their understanding on potential implications of climate change for future planning, economic development and other decision making.	20	

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Report name and Author	Recommendations	Type	Page	Who is responsible	Paraphrasing	Recommendation number	Broad category
Adapting to a Low Water Future: Climate Change Risk Assessment and Adaptation Plan	NECMA, working with councils and other agencies should consider developing and implementing a region wide information and education campaign to advise the community on potential climate change impacts on floodplain use and management. F6	Formal	x	NECMA, councils	4. Create climate change and environmental sustainability educational resources and programs specific to council services and operations.	20	
Adapting to a Low Water Future: Climate Change Risk Assessment and Adaptation Plan	Councils, through the RMF, should consider developing and delivering a regional training and information sharing program for staff and councillors to increase their understanding on potential implications of climate change for future planning, economic development and other decision making. G1	Formal	xi	Councils, MAV and regional TAFE Institutes and universities			
Alpine Shire Council Climate Change Draft Action Plan 2012-2016 January 2012 - Tribal Frog Pty Ltd	To organise, host and or support workshops and training opportunities for staff and community to learn about climate change adaptation and mitigation practices, emergency response and environmental sustainability actions that can be implemented within businesses and households. To deliver a minimum of 2 trainings, workshops a year for Council staff, local residents, businesses to learn about climate change adaptation and mitigation practices, emergency response/ post emergency and environmentally sustainable actions that can be implemented within businesses, council operations and households. PRIORITY = medium	Action	11	Councils			

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Alpine Shire Council Climate Change Draft Action Plan 2012-2016 January 2012 - Tribal Frog Pty Ltd	To create climate change and environmental sustainability educational resources and programs specific to council services and operations. Examples of educational resources mentioned in background documents include: promoting walking and cycling; updating welcome information kit for residents to include information on responding to extreme weather events, personal steps to adapt to climate change and environmental activities/ achievements occurring within Alpine Shire and how they can be involved; information on preparedness and response to extreme events. PRIORITY = medium	Action	12	Councils		20	EDUCATION
Alpine Shire Council Climate Change Draft Action Plan 2012-2016 January 2012 - Tribal Frog Pty Ltd	In partnership with the Regional Management Forum (RMF) develop and implement a regional training and information sharing program for staff and councillors to increase their understanding on potential implications of climate change for future planning, economic development and other decision making. G1 In partnership with the Regional Management Forum (RMF) develop and implement a regional training and information sharing program for staff and councillors to increase their understanding on potential implications of climate change for future planning, economic development and other decision making. PRIORITY = medium	Action	22	Councils			TRAINING
Adapting to a Low Water Future: Climate Change Risk Assessment and Adaptation Plan	Councils should undertake a regional information and education campaign targeting community expectations on levels of service and councils' ability to deliver with regards to stormwater and flood management. E4	Formal	ix	Councils	Councils should undertake a regional information and education campaign targeting community expectations on levels of service and councils' ability to deliver with regards to stormwater and flood management.	21	EDUCATION/ STORMWATER

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Report name and Author	Recommendations	Type	Page	Who is responsible	Paraphrasing	Recommendation number	Broad category
Adapting to a Low Water Future: Climate Change Risk Assessment and Adaptation Plan	A regional groundwater resource education program should be developed to increase community understanding of groundwater resource and quality issues and the interaction and interdependencies between ground and surface water supplies. The program could be developed and led by G-MW, potentially through the proposed North East Regional Groundwater Monitoring Partnership (see Action C2). C3	Formal	vii	G-MW, with assistance from councils, DSE, NEW, NECMA	A regional groundwater resource education program should be developed to increase community understanding of groundwater resource and quality issues and the interaction and interdependencies between ground and surface water supplies. The program could be developed and led by G-MW, potentially through the proposed North East Regional Groundwater Monitoring Partnership.	22	EDUCATION/ GROUNDWATER
North East Victoria - Adapting to a Low Water Future: Review of Municipal Documents - Two Hemispheres Environmental Consulting Pty Ltd * is a summary of recommendations made in Section A, B of Review of Municipal Documents	Opportunities for change: For every plan and strategy, councils should apply a template of questions that identify how the documents and its recommendations have considered, managed and reduced risks associated with climate change. Workshops revealed that some Council operations (e.g. emergency management) were peripheral to risks and opportunities to adapt to climate change. Having questions and answers will help specify targets for reducing risk and adapting to climate change.	Formal	8	Council	For every plan and strategy councils should apply a template of questions that identify how the documents and its recommendations have considered, managed and reduced risks associated with climate change.	23	
North East Victoria - Adapting to a Low Water Future: Review of Municipal Documents - Two Hemispheres Environmental Consulting Pty Ltd * is a summary of recommendations made in Section A, B	Opportunities for change: For every plan and strategy, councils should apply a template of questions that identify how the documents and its recommendations have considered, and identified, opportunities arising from adaptation and mitigation of climate change. Will help specify targets for reducing risk and adapting to climate change.	Formal	8	Council			

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Report name and Author	Recommendations	Type	Page	Who is responsible	Paraphrasing	Recommendation number	Broad category
of Review of Municipal Documents							
North East Victoria - Adapting to a Low Water Future: Review of Municipal Documents - Two Hemispheres Environmental Consulting Pty Ltd - Section A	For every report and strategy produced by Councils, there needs to be a template of questions applied. Examples include: Does this strategy consider risks that are highlighted by climate change? Have we considered in this strategy what would happen if there were consistent shortages of water? Have we considered in this economic development policy what will happen to businesses if there is another major bush fire? What happens in emergency management if there is a 50% reduction in water availability for three years? All of these reports need to be considered as they are due for renewal through the lens of managing and reducing risk due to climate change.	Additional recommendations found in text for documents WITH formal recommendations	29	Councils		23	
Alpine Shire Council Climate Change Draft Action Plan 2012-2016 January 2012 - Tribal Frog Pty Ltd	Relevant Council documents, policies, plans and procedures are to be updated to include climate change adaptation, relevant emergency planning and environmental sustainability. For every plan and strategy, council is to apply a template of questions that identify how the documents and its recommendations have considered, managed and reduced risks associated with climate change. PRIORITY = high	Action	14	Councils			DOCUMENT



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North East Victoria - Adapting to a Low Water Future: Review of Municipal Documents - Two Hemispheres Environmental Consulting Pty Ltd - Section A	As a key performance indicator have someone at a senior executive level within Councils ensure this ongoing, consistent approach to the review of strategies and plans. Workshops revealed that some Council operations (e.g. emergency management) were peripheral to risks and opportunities to adapt to climate change. Will help specify targets for reducing risk and adapting to climate change.	Additional recommendations found in text for documents WITH formal recommendations	30	Councils	A senior executive staff member within Councils should ensure there is an ongoing, consistent approach to the review of strategies and plans.	24	DOCUMENT
North East Victoria - Adapting to a Low Water Future: Review of Municipal Documents - Two Hemispheres Environmental Consulting Pty Ltd - Section A	On a regular basis whenever there is a report or strategy developed, as an item to Council, the staff report on how they have addressed the issues of climate change risk and opportunity within the report. Workshops revealed that some Council operations (e.g. emergency management) were peripheral to risks and opportunities to adapt to climate change. Will help specify targets for reducing risk and adapting to climate change.	Additional recommendations found in text for documents WITH formal recommendations	30	Councils	1. Council staff should report on how they have addressed the issues of climate change risk and adaptation opportunities within the reports/strategies developed. 2. A Councillor or Councillors should be given the responsibility to ensure that all reports and strategies address climate change, relevant emergency planning and environmental sustainability. 3. Councils should share, monitor and document progress in presenting their documents to address climate change adaptation.	25	
North East Victoria - Adapting to a Low Water Future: Review of Municipal Documents - Two Hemispheres Environmental Consulting Pty Ltd * is a summary of recommendations made in Section A, B of Review of Municipal Documents	Opportunities for change: Councils allocate to an individual Councillor or Councillors a responsibility to champion this activity and provide support to staff as one of their portfolios of responsibilities. Activity: staff report on how the addressed the issues of climate change risk and opportunity within the report/strategy developed.	Formal	8	Council			

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Report name and Author	Recommendations	Type	Page	Who is responsible	Paraphrasing	Recommendation number	Broad category
North East Victoria - Adapting to a Low Water Future: Review of Municipal Documents - Two Hemispheres Environmental Consulting Pty Ltd - Section A	3. It is also recommended that Councils identify an individual Councillor or Councillors who are allocated the responsibility to champion this activity and provide support to staff as one of their portfolios of responsibilities.	Additional recommendations found in text for documents WITH formal recommendations	30	Councils		25	
North East Victoria - Adapting to a Low Water Future: Review of Municipal Documents - Two Hemispheres Environmental Consulting Pty Ltd * is a summary of recommendations made in Section A, B of Review of Municipal Documents	Opportunities for change: All reports going to Council seeking endorsement or approval, should include a statement from officers how they and/or the consultants have addressed the issue of climate change risk and opportunity. Will help specify targets for reducing risk and adapting to climate change.	Formal	8	Council			
North East Victoria - Adapting to a Low Water Future: Review of Municipal Documents - Two Hemispheres Environmental Consulting Pty Ltd * is a summary of recommendations made in Section A, B of Review of Municipal	Opportunities for change: Councils should share, monitor and document progress in this cultural change as well as less successful approaches as part of the development of increased capacity within Councils and the community. Will help specify targets for reducing risk and adapting to climate change.	Formal	8 and 30	Council			

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Documents							
North East Victoria - Adapting to a Low Water Future: Review of Municipal Documents - Two Hemispheres Environmental Consulting Pty Ltd * is a summary of recommendations made in Section A, B of Review of Municipal Documents	Opportunities for change: Councils should identify a senior executive staff member who will be responsible to ensure this work occurs, and include this activity as part of their key performance indicator.	Formal	8	Council		25	
North East Victoria - Adapting to a Low Water Future: Review of Municipal Documents - Two Hemispheres Environmental Consulting Pty Ltd - Section A	It is also recommended that Councils share, monitor and document progress in this cultural change as well as less successful approaches as part of the development of increased capacity within Councils and the community.	Additional recommendations found in text for documents WITH formal recommendations	30	Councils			

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Report name and Author	Recommendations	Type	Page	Who is responsible	Paraphrasing	Recommendation number	Broad category
Alpine Shire Council Climate Change Draft Action Plan 2012-2016 January 2012 - Tribal Frog Pty Ltd	Relevant Council documents, policies, plans and procedures are to be updated to include climate change adaptation, relevant emergency planning and environmental sustainability. All reports going to Council seeking endorsement or approval, should include a statement from officers how they and/or the consultants have addressed the issue of climate change risk and opportunity. PRIORITY = high	Action	14	Councils		25	DOCUMENT
Alpine Shire Council Climate Change Draft Action Plan 2012-2016 January 2012 - Tribal Frog Pty Ltd	Relevant Council documents, policies, plans and procedures are to be updated to include climate change adaptation, relevant emergency planning and environmental sustainability. Internal Council processes and reporting templates are to be updated to include sections specific to climate change and environmental sustainability.	Action	14				
Alpine Shire Council Climate Change Draft Action Plan 2012-2016 January 2012 - Tribal Frog Pty Ltd	The following documents, processes and reporting templates are to be updated with specific reference to climate change and environmental sustainability: purchasing policy; tender documents; council reports; new project applications; vehicle purchasing policy. PRIORITY = high	Action	14	Councils	1. The documents, processes and reporting templates: purchasing policy; tender documents; council reports; new project applications; vehicle purchasing policy - should be updated with specific reference to climate change and environmental sustainability. 2. The updating of Council documents is to occur when these	26	

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Report name and Author	Recommendations	Type	Page	Who is responsible	Paraphrasing	Recommendation number	Broad category
Alpine Shire Council Climate Change Draft Action Plan 2012-2016 January 2012 - Tribal Frog Pty Ltd	The updating of Council documents is to occur when these documents are due for review (or when they are being developed). The following documents are listed in the background climate change reports but is not the limit of Council documents needing updating: Recreation Strategy; Transport Strategy; Walking and Cycling Strategy; Waste Management Plan; Council Plan, Council 2030 Plan, Liveability Plan, Economic Development Strategy and Tourism Strategy. PRIORITY = high	Action	14	Councils	documents are due for review (or when they are being developed).	26	DOCUMENT
Alpine Shire Council Climate Change Draft Action Plan 2012-2016 January 2012 - Tribal Frog Pty Ltd	Existing and future Recreation strategies, Park strategies and Facilities Management are to be proactive in addressing the risk of ongoing, severe water reductions, and to develop both contingency planning and alternative approaches to facility and asset management.	Action	15	Councils	Councils should ensure their recreation strategies, park strategies and facilities management are proactive in addressing the risk of ongoing, severe water reductions, and to develop both contingency planning and alternative approaches to facility and asset management	27	DOCUMENT
North East Victoria - Adapting to a Low Water Future: Review of Municipal Documents - Two Hemispheres Environmental Consulting Pty Ltd * is a summary of recommendations made in Section A, B of Review of Municipal Documents	Surface Water Supply and Quality: Councils should consider their recreation strategies, park strategies and facilities management in a proactive manner to address the risk of ongoing, severe water reductions, and to develop both contingency planning and alternative approaches to facility and asset management	Formal	8	Council			DOCUMENT

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North East Victoria - Adapting to a Low Water Future: Review of Municipal Documents - Two Hemispheres Environmental Consulting Pty Ltd * is a summary of recommendations made in Section A, B of Review of Municipal Documents	Economic Development: As economic development strategies are developed and renewed, specifically address managing risks associated with climate change for existing businesses.	Formal	11	Councils	As tourism and economic development strategies are developed, renewed and updated they are to specifically address managing risks and opportunities associated with climate change for existing and new businesses and the impacts of recent (drought, fire, flood) events need to be examined and used as a base case for extrapolating future risks, and reducing them.	28	
North East Victoria - Adapting to a Low Water Future: Review of Municipal Documents - Two Hemispheres Environmental Consulting Pty Ltd * is a summary of recommendations made in Section A, B of Review of Municipal Documents	Economic Development: As economic development strategies are developed and renewed, specifically address opportunities associated with climate change for existing and new businesses.	Formal	11	Councils			

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Report name and Author	Recommendations	Type	Page	Who is responsible	Paraphrasing	Recommendation number	Broad category
Alpine Shire Council Climate Change Draft Action Plan 2012-2016 January 2012 - Tribal Frog Pty Ltd	Relevant Council documents, policies, plans and procedures are to be updated to include climate change adaptation, relevant emergency planning and environmental sustainability. 3. When Tourism and economic development strategies are updated they are to specifically address managing risks associated with climate change for existing and new businesses and need to examine what the impacts of recent (drought, fire, flood) events and use these as a base case for extrapolating future risks, and reducing them. PRIORITY = high	Action	14	Councils		28	
North East Victoria - Adapting to a Low Water Future: Review of Municipal Documents - Two Hemispheres Environmental Consulting Pty Ltd * is a summary of recommendations made in Section A, B of Review of Municipal Documents	Tourism: As tourism strategies are prepared or renewed they should draw on a rigorous examination of what the impacts were of recent (drought, fire and flood) events, and use these as a base case for extrapolating future risks, and reducing them.	Formal	11	Councils			

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North East Victoria - Adapting to a Low Water Future: Review of Municipal Documents - Two Hemispheres Environmental Consulting Pty Ltd * is a summary of recommendations made in Section A, B of Review of Municipal Documents	Tourism: As tourism strategies are developed and renewed, councils should require the strategies to specifically address climate change risks and opportunities.	Formal	11	Councils		28	DOCUMENT
North East Victoria - Adapting to a Low Water Future: Review of Municipal Documents - Two Hemispheres Environmental Consulting Pty Ltd * is a summary of recommendations made in Section A, B of Review of Municipal Documents	Economic Development: If not already in place, councils should develop business interruption plans for municipal operations. Municipalities through their economic development strategies and tourism strategies can assist businesses to consider their business risk and identify other opportunities.	Formal	11 and 54	Councils	If not already in place, councils should develop business interruption plans for municipal operations. Municipalities through their economic development strategies and tourism strategies can assist businesses to consider their business risk and identify other opportunities.	29	DOCUMENT
North East Victoria - Adapting to a Low Water Future: Review of Municipal Documents - Two Hemispheres Environmental Consulting Pty Ltd -	Economic Development Action Plan - Not yet developed by Council. To be developed in next six months or so.	Recommendations found in text that did not have formal recommendations	71	Councils	Indigo Shire Council should develop an Economic Development Action Plan. (June 2011 report stated that one was to be developed in the next 6 months or so).	30	DOCUMENT



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Section C NOTE: Reviews multiple documents							
North East Victoria - Adapting to a Low Water Future: Review of Municipal Documents - Two Hemispheres Environmental Consulting Pty Ltd * is a summary of recommendations made in Section A, B of Review of Municipal Documents	Carbon Pricing: Councils should review the progress of the Greenhouse Action Plans against targets	Formal	11	Councils	Councils should review the progress of the Greenhouse Action Plans against targets and ensure that their greenhouse action plans are current and up to date, and should build on their established emission reduction programs.	31	DOCUMENT
Adapting to a Low Water Future: Climate Change Risk Assessment and Adaptation Plan	Councils should ensure that their greenhouse action plans are current and up to date, and should build on their established emission reduction programs. N1	Formal	xvi	Councils			

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North East Victoria - Adapting to a Low Water Future: Review of Municipal Documents - Two Hemispheres Environmental Consulting Pty Ltd * is a summary of recommendations made in Section A, B of Review of Municipal Documents	Recreation and Amenity: Councils should continue to reflect their more recent approaches on managing for heat and integrated community wellbeing when revising other strategies. The reality is that municipalities and communities have been dealing with drought and fire and reduced water availability for many years.	Formal	11 and 59	Councils	Councils should manage for heat extremes and integrated community wellbeing when revising other strategies.	32	DOCUMENT
North East Victoria - Adapting to a Low Water Future: Review of Municipal Documents - Two Hemispheres Environmental Consulting Pty Ltd - Section C NOTE: Reviews multiple documents	Alpine Shire does not currently have a tourist plan? IS ONE NEEDED??	Recommendations found in text that did not have formal recommendations	68	Councils	A tourism plan needs to be developed for the Alpine Shire.	33	DOCUMENT/ TOURISM PLAN
Alpine Shire Council Climate Change Draft Action Plan 2012-2016 January 2012 - Tribal Frog Pty Ltd	Relevant Council documents, policies, plans and procedures are to be updated to include climate change adaptation, relevant emergency planning and environmental sustainability. "Perception Marketing" Tourism Strategy is to be investigated to capitalise on forest re-growth and look at different markets. PRIORITY = high	Action	14	Councils	A "Perception Marketing" Tourism Strategy is to be investigated to capitalise on forest re-growth and look at different markets.	34	DOCUMENT/ TOURISM

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North East Victoria - Adapting to a Low Water Future: Review of Municipal Documents - Two Hemispheres Environmental Consulting Pty Ltd * is a summary of recommendations made in Section A, B of Review of Municipal Documents	Gaps identified: As Planning Schemes are reviewed councils should ensure that the most recent version of documents are included as referenced documents.	Formal	7	Council	<ol style="list-style-type: none"> <li>1. As Planning Schemes are reviewed councils should ensure that the most recent version of documents are included as referenced documents.</li> <li>2. Councils should revisit existing plans and strategies as the Planning Schemes and Council Plans are reviewed to consider the appropriateness of including additional documents as referred documents. For example, Heatwave Plans</li> <li>3. Referred documents and incorporated documents should be reviewed and amended to reflect the latest document produced. Drafts should not be included within the planning schemes.</li> </ol>	35	
North East Victoria - Adapting to a Low Water Future: Review of Municipal Documents - Two Hemispheres Environmental Consulting Pty Ltd * is a summary of recommendations made in Section A, B of Review of Municipal Documents	Climate Change Planning and Co-ordination: Councils should revisit existing plans and strategies as the Planning Schemes and Council Plans are reviewed to consider the appropriateness of including additional documents as referred documents. For example, Heatwave Plans	Formal	10	Councils			

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North East Victoria - Adapting to a Low Water Future: Review of Municipal Documents - Two Hemispheres Environmental Consulting Pty Ltd * is a summary of recommendations made in Section A, B of Review of Municipal Documents	Climate Change Planning and Co-ordination: Referred documents and incorporated documents should be reviewed and amended to reflect the latest document produced. Drafts should not be included within the planning schemes.	Formal	10	Councils		35	DOCUMENT
Adapting to a Low Water Future: Climate Change Risk Assessment and Adaptation Plan	Include the best available climate change projections (including changes to rainfall, runoff and drought frequency and severity) into the rules and streamflow plans associated with unregulated water resources (e.g. NEW's water plan 2013-18). A4	Formal	v	G-MW, NEW, NECMA	Include the best available climate change projections (including changes to rainfall, runoff and drought frequency and severity) into the rules and streamflow plans associated with unregulated water resources (e.g. NEW's water plan 2013-18).	36	DOCUMENT
North East Victoria - Adapting to a Low Water Future: Review of Municipal Documents - Two Hemispheres Environmental Consulting Pty Ltd - Section A	To minimise overlap between waterMAP and Sustainable Water Use Plans requirements, the council can work with their local water corporation to align the two plans.	Additional recommendations found in text for documents WITH formal recommendations	20	Councils	To minimise overlap between waterMAP and Sustainable Water Use Plans requirements, the council can work with their local water corporation to align the two plans.	37	DOCUMENT

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North East Victoria - Adapting to a Low Water Future: Review of Municipal Documents - Two Hemispheres Environmental Consulting Pty Ltd * is a summary of recommendations made in Section A, B of Review of Municipal Documents	Recreation and Amenity: Councils should revisit sustainable water use plans and consider how well they manage in a period of continuing low water availability.	Formal	11 and 59	Councils		38	
Alpine Shire Council Climate Change Draft Action Plan 2012-2016 January 2012 - Tribal Frog Pty Ltd	Review Council's Sustainable Water Use Plan and consider how well it managed in a period of continuing low water availability. 2. Review Council's Sustainable Water Use Plan and consider how well it managed in a period of continuing low water availability. 6.1 Plan – Council to revise and / or develop water use policy, strategy and sustainable water use plan. Strategy to consider & target reduction in water use, access to alternative water supplies for council assets, community and open spaces, e.g. Bores, different plants, artificial turf, rainwater tanks, recycled water. Use of 'fit for purpose' water. Set measureable targets. 'Lead by example' approach.	Action	19	Councils	1. Councils should revisit and review the Council's Sustainable Water Use Plans and consider how well they manage in a period of continuing low water availability. 2. Council to revise and/or develop water use policy, strategy and sustainable water use plan. 3. Ensure the strategy considers and targets reduction in water use, access to alternative water supplies for council assets, community and open spaces. Use of 'fit for purpose' water. Set measureable targets. 'Lead by example' approach.		DOCUMENT

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Report name and Author	Recommendations	Type	Page	Who is responsible	Paraphrasing	Recommendation number	Broad category
Final Report Climate Change in North East Victoria: Socioeconomic Resilience Plan February 2012	Review of emergency management plans. Municipal Emergency Management Committees should consider conducting a review of their Municipal Emergency Management Plan (MEMP) and sub-plans with the aim of identifying limitations with the MEMP and providing recommendations and tools to improve the capacity of councils and emergency service agencies to manage projected increases in extreme events from an emergency response perspective, particularly projected increases in the coincident occurrence of extreme events, such as floods and bushfires. The review should also: consider the ability of key service providers to continue to deliver key community services during and after extreme events; seek to integrate all hazard and risk planning not currently part of the MEMP (e.g. heatwave plans); and ensure that especially vulnerable groups are addressed in the plan, for example through the inclusion of 'vulnerable' or 'at risk' group registers. Implementable=?: driven locally=yes; effective LT contribution to resilience=moderate	Action	83	Councils, NEGHA member councils working with regional emergency service agencies	Municipal Emergency Management Committees should conduct a review of their Municipal Emergency Management Plan (MEMP) and sub-plans with the aim of identifying limitations with the MEMP and providing recommendations and tools to improve the capacity of councils and emergency service agencies to manage projected increases in extreme events from an emergency response perspective, particularly projected increases in the coincident occurrence of extreme events, such as floods and bushfires. The review should also: consider the ability of key service providers to continue to deliver key community services during and after extreme events; seek to integrate all hazard and risk planning not currently part of the MEMP (e.g. heatwave plans); and ensure that especially vulnerable groups are addressed in the plan, for example through the inclusion of 'vulnerable' or 'at risk' group registers.	39	DOCUMENT
North East Victoria - Adapting to a Low Water Future: Review of Municipal Documents - Two Hemispheres Environmental Consulting Pty Ltd * is a summary of recommendations made in Section A, B of Review of Municipal	Climate Change Planning and Co-ordination: Planning schemes should be reviewed to include more clearly the language of risk and management of risk, for example in relation to future flooding and development, and availability of water.	Formal	10	Councils	Planning schemes should be reviewed to include more clearly the language of risk and management of risk in relation to future flooding and development, and availability of water.	40	DOCUMENT/ PLANNING SCHEME

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Documents						40	
North East Victoria - Adapting to a Low Water Future: Review of Municipal Documents - Two Hemispheres Environmental Consulting Pty Ltd * is a summary of recommendations made in Section A, B of Review of Municipal Documents	Climate Change Planning and Co-ordination: Planning Schemes should include clearer monitoring standards that address climate change risks.	Formal	10	Councils	Planning Schemes should include clearer monitoring standards that address climate change risks.	41	DOCUMENT/ PLANNING SCHEME

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North East Victoria - Adapting to a Low Water Future: Review of Municipal Documents - Two Hemispheres Environmental Consulting Pty Ltd - Section C NOTE: Reviews multiple documents	A review of s21.03 of the MSS shows no reference to climate change. Water is raised in the latter part of the document: pages 40 on. Page 40 talks of need for the appropriate provision of water supply for fire hazard management for developments, while page 41 addresses special water supply catchment areas which have significant value for urban water supplies. Two items identified for further investigation include: work with the relevant Catchment Management Authorities to identify the appropriate planning tools to address catchment and water issues. Discuss with the Catchment Management Authorities the contents and extent of application of an Environmental Significance Overlay to be applied to all waterways.	Recommendations found in text that did not have formal recommendations	65	Councils	<ol style="list-style-type: none"> <li>1. Alpine Planning Scheme: Municipal strategic statement (MSS) should be amended (under Vic legislation every council should have one that should last for four years).</li> <li>2. Further investigation is required for the following items: work with the relevant Catchment Management Authorities to identify the appropriate planning tools to address catchment and water issues. Discuss with the Catchment Management Authorities the contents and extent of application of an Environmental Significance Overlay to be applied to all waterways.</li> </ol>	42	DOCUMENT/ PLANNING SCHEME
Adapting to a Low Water Future: Climate Change Risk Assessment and Adaptation Plan	Councils should be more effectively integrated into groundwater supply and demand planning processes by amending planning schemes to include provisions relating to groundwater management. Planning scheme provisions should be consistent between the region's councils. C1	Formal	vii	Councils	Councils should be more effectively integrated into groundwater supply and demand planning processes by amending planning schemes to include provisions relating to groundwater management. Planning scheme provisions should be consistent between the region's councils.	43	DOCUMENT/ GROUNDWATER
North East Victoria - Adapting to a Low Water Future: Review of Municipal Documents - Two Hemispheres Environmental Consulting Pty Ltd * is a summary of recommendations made in Section A, B	Stormwater Management: Councils should revisit in a consistent way the existing Stormwater Plans and assess whether they are still relevant, and whether any of the recommendations can be carried out.	Formal	9	Council	<ol style="list-style-type: none"> <li>1. Councils should revisit in a consistent way the existing Stormwater Plans and assess whether they are still relevant, and whether any of the recommendations can be carried out.</li> <li>2. As reviews of Planning Schemes are undertaken, councils should revisit the management options in the Stormwater Plans and include management recommendations where appropriate.</li> </ol>	44	



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of Review of Municipal Documents							
North East Victoria - Adapting to a Low Water Future: Review of Municipal Documents - Two Hemispheres Environmental Consulting Pty Ltd * is a summary of recommendations made in Section A, B of Review of Municipal Documents	Stormwater Management: As reviews of Planning Schemes are undertaken, councils should revisit the management options in the Stormwater Plans and include management recommendations where appropriate.	Formal	9	Council		44	DOCUMENT/ STORMWATER
Alpine Shire Council Climate Change Draft Action Plan 2012-2016 January 2012 - Tribal Frog Pty Ltd	Ensure Stormwater Best Management Practices are being implemented. Confirm the status of the CSIRO Urban Stormwater: Best Practice Environmental Management Guidelines and whether this has been upgraded or background documents and technical documents have superseded this work. PRIORITY = high	Action	15	Councils	1. Ensure Stormwater Best Management Practices are being implemented. 2. Confirm the status of the CSIRO Urban Stormwater: Best Practice Environmental Management Guidelines and whether this has been upgraded or background documents and technical documents have superseded this work.	45	DOCUMENT/ STORMWATER

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Report name and Author	Recommendations	Type	Page	Who is responsible	Paraphrasing	Recommendation number	Broad category
Adapting to a Low Water Future: Climate Change Risk Assessment and Adaptation Plan	Councils should develop a regional communications plan aimed at educating and providing timely information to visitors about the risks of extreme weather events and how to act should these events occur. H1	Formal	xii	Councils, working with local tourism associations, BoM, Parks Victoria, SES, CFA, police and broadcasters (local radio and TV)	<p>1. Councils should develop a regional communications plan aimed at educating and providing timely information to visitors about the risks of extreme weather events and how to act should these events occur and where they should/ should not travel.</p> <p>2. The communications plan should also provide information to tourists on what to do in the event of Code Red days.</p>	46	
Alpine Shire Council Climate Change Draft Action Plan 2012-2016 January 2012 - Tribal Frog Pty Ltd	Develop a regional communications plan aimed at educating and providing timely information to visitors about the risks of extreme weather events and how to act should these events occur. H1. Council to develop a regional communications plan aimed at educating and providing timely information to visitors about the risks of extreme weather events and how to act should these events occur. PRIORITY = medium	Action	13	Councils			
Alpine Shire Council Climate Change Draft Action Plan 2012-2016 January 2012 - Tribal Frog Pty Ltd	G3. Council to develop a regional communications plan aimed at educating and providing timely information to visitors about the risks of extreme weather events and how to act should these events occur. PRIORITY = medium	Action	13	Councils			

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Final Report Climate Change in North East Victoria: Socioeconomic Resilience Plan February 2012	Visitor extreme weather communications and travel plan. A communications and travel plan should be developed with the aim of educating and providing timely and accurate information to tourists and other visitors about the risks of extreme weather events, how to act should these events occur and where they should/ should not travel. The communications plan should also provide information to tourists on what to do in the event of Code Red days. Implementable=yes; driven locally=in part; effective LT contribution to resilience=minor	Action	82	Councils (through MEMCs), working with the emergency response group of NEVRTB, local tourism associations, BoM, Parks Victoria, emergency management organisations (SES, CFA, police) and broadcasters (e.g. local radio and TV stations)		46	DOCUMENT/ PLANNING/ TOURISM

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Development of Practical Solutions for the North East of Victoria - adapting to a low water future - Bonacci Water	Councils and all agencies can demonstrate community leadership by ensuring that all future projects include water security objectives in their decision making.	Recommendations found in text that did not have formal recommendations	86	Councils	Councils should include water security objectives in their decision making.	47	WATER SECURITY
Alpine Shire Council Climate Change Draft Action Plan 2012-2016 January 2012 - Tribal Frog Pty Ltd	Support and work towards a coordinated regional approach to climate change adaptation planning. M1. Council is to work towards a coordinated regional approach to climate change adaptation planning, by agreeing to priority actions for implementation from ALWF document and relevant actions in regional strategies such as the Hume Strategy. North East Greenhouse Alliance is a great example of a coordinated regional approach. PRIORITY = high	Action	21	Councils	Council should present a coordinated regional approach to climate change adaptation planning, by agreeing to priority actions for implementation from ALWF document (page 23 of Alpine Shire Council document - ALWF document is 'Adapting to a Low Water Future: Climate Change Risk Assessment and Adaptation Plan by Marsden Jacob Associates) and relevant actions in regional strategies such as the Hume Strategy and the North East Greenhouse Alliance.	48	COORDINATION

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Alpine Shire Council Climate Change Draft Action Plan 2012-2016 January 2012 - Tribal Frog Pty Ltd	To regularly share relevant environmental, sustainability and climate change educational information through local communication channels, Council's website, local and regional networks and local community groups. Educational information is to cover awareness of biodiversity, waste, water and energy; reduction in waste, water and energy consumption; increase in biodiversity awareness; climate change; community and council achievements, programs and opportunities; transport; Landcare programs, achievements and services; Stormwater; lighting; paper usage. 3.1 Collaborate with conservation, environmental groups, and schools to promote environmental responsibility. PRIORITY = High	Action	10	Councils	1. Councils should regularly share relevant environmental, sustainability and climate change educational information through local communication channels such as their websites, local and regional networks and local community groups. 2. Collaborate with conservation, environmental groups, and schools to promote environmental responsibility.	49	COORDINATION
Alpine Shire Council Climate Change Draft Action Plan 2012-2016 January 2012 - Tribal Frog Pty Ltd	To continue Council's internal Green Team to promote sustainability and climate change initiatives relating to Council business and operations. Representation of Green Team is from all directorates of Council and focuses on education, behaviour change and information programs, initiatives relating to sustainability and climate change adaptation and mitigation relating to Council services and operations. PRIORITY = high	Action	10	Councils	Continue or create a Council's internal Green Team to promote sustainability and climate change initiatives relating to Council business and operations.	50	GREEN TEAM

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Alpine Shire Council Climate Change Draft Action Plan 2012-2016 January 2012 - Tribal Frog Pty Ltd	Investigate the introduction of an environmental incentive in conjunction with the Rural Land Strategy and revised Rating Strategy. 11.1.1 Investigate the introduction of an environmental levy in conjunction with the Rural Land Strategy and revised Rating Strategy. 10. Investigate an environmental levy. Also referred to in the YCCF document as 10. Investigate an environmental levy. PRIORITY = low	Action	20	Councils	Investigate the introduction of an environmental levy - in conjunction with the Rural Land Strategy and revised Rating Strategy.	51	ENVIRONMENTAL LEVY
Adapting to a Low Water Future: Climate Change Risk Assessment and Adaptation Plan	Consider developing and implementing a coordinated regional community education program on climate change impacts and risks. M2	Formal	xvi	Councils, agencies	Build and improve support for groups throughout the Shire to: - enhance climate action. -support the School Environment Education Directory (SEED) and encourage local schools to participate in climate action. -Establish an annual Youth Climate Change Forum. -Support and promote whole of community sustainability projects. - Employ an officer within the environment section to facilitate community education programs around climate change and environmental issues.	52	
Alpine Shire Council Climate Change Draft Action Plan 2012-2016 January 2012 - Tribal Frog Pty Ltd	Build and improve support to enhance sustainability and environmental groups throughout the Shire. 1.2.1 Build and improve support to enhance sustainability and environmental groups throughout the Shire. 6.2.1 Support community groups to enhance climate action. 6.2.1 Continue to support the School Environment Education Directory (SEED) and encourage local schools to participate in climate action. PRIORITY = high	Action	10	Councils			
Alpine Shire Council Climate Change Draft Action Plan 2012-2016 January 2012 - Tribal Frog Pty Ltd	Implement a consultative program on climate change between youth and Council. 1.1 Establish an annual Youth Climate Change Forum. PRORITY = high	Action	11	Councils			
Alpine Shire Council Climate Change Draft Action Plan 2012-2016 January 2012 - Tribal Frog Pty Ltd	Support and promote whole of community sustainability projects. 32. Organise a Sustainable Street approach project; Harrieville's sustainability project is first example of this action being implemented. 6.1.1 Facilitate a pilot community garden in Harrieville and roll out to other communities in the Shire. PRIORITY = medium	Action	12	Councils			

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Alpine Shire Council Climate Change Draft Action Plan 2012-2016 January 2012 - Tribal Frog Pty Ltd	To provide support and mentorship to youth climate change and sustainability initiatives within Alpine Shire. 1.1. Collaborate with conservation, environmental groups, and schools to promote environmental responsibility. PRIORITY = high	Action	18	Councils		52	
Alpine Shire Council Climate Change Draft Action Plan 2012-2016 January 2012 - Tribal Frog Pty Ltd	Employ an officer to facilitate community education programs around climate change and environmental issues. 1.1.1 Employ an officer within the environment section to facilitate community education programs around climate change and environmental issues. PRIORITY = high	Action	17	Councils			
Alpine Shire Council Climate Change Draft Action Plan 2012-2016 January 2012 - Tribal Frog Pty Ltd	Investigate developing and implementing a coordinated regional community education program on climate change impacts and risks. M2 Consider developing and implementing a coordinated regional community education program on climate change impacts and risks. PRIORITY = medium	Action	22	Councils			
Final Report Climate Change in North East Victoria: Socioeconomic Resilience Plan February 2012	Industry sustainability network. A regional network of industries implementing or interested in implementing sustainability practices (e.g. water, waste and energy reduction initiatives) should be considered. The network would provide a point of connection between different businesses and industries in the region and conduit for the sharing of information on sustainability practices. Implementable=yes; driven locally=yes; effective LT contribution to resilience=minor	Action	82 and 70	Councils			

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Alpine Shire Council Climate Change Draft Action Plan 2012-2016 January 2012 - Tribal Frog Pty Ltd	2.1 Develop and implement an education program to provide sustainability information to the community. 3.1 Collaborate with conservation, environmental groups, and schools to promote environmental responsibility. PRIORITY = medium	Action	12	Councils		52	COMMUNITY SUPPORT
Final Report Climate Change in North East Victoria: Socioeconomic Resilience Plan February 2012	Community organisation support. Councils could recognise the value of established and emerging community organisations in building community resilience by providing those organisations with in-kind support. Support could be provided in the form of: assistance with grant writing; infrastructure provision (e.g. accommodation); and secretarial, accounting and legal support. Implementable=yes; driven locally=yes; effective LT contribution to resilience=minor	Action	82 and 74	Councils, NEGHA member councils (potentially through the proposed community resilience committees).	Provide support to community organisations and recognise the value of established and emerging community organisations in building community resilience. Support could be provided in the form of: assistance with grant writing; infrastructure provision (e.g. accommodation); and secretarial, accounting and legal support.	53	COMMUNITY SUPPORT
North East Victoria Adapting to a low water future phase 3: Social Response skills gaps and training needs analysis Final Report	This dialogue must address the integrated strategic planning and management of our water resources in the face of challenges presented by climate change.	Formal	33	Councils	Integrated strategic planning and management of water resources in the face of challenges presented by climate change should be addressed.	54	WATER MANAGEMENT



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Report name and Author	Recommendations	Type	Page	Who is responsible	Paraphrasing	Recommendation number	Broad category
North East Victoria - Adapting to a Low Water Future: Review of Municipal Documents - Two Hemispheres Environmental Consulting Pty Ltd * is a summary of recommendations made in Section A, B of Review of Municipal Documents	Surface Water Supply and Quality: Councils should review their current emergency management plans for drought and consider which of these activities should be transferred into standard operating procedures. This is to alleviate the risk of ongoing, severe water reductions.	Formal	8 and 32-35	Council	<ol style="list-style-type: none"> <li>1. Councils should review their current emergency management plans for drought and consider which of these activities should be transferred into standard operating procedures.</li> <li>2. Councils should shift from considering drought management as an emergency response to a risk management item.</li> <li>3. Working with the community, councils should consider in advance which facilities it shall not maintain in future reduced water periods.</li> </ol>	55	
North East Victoria - Adapting to a Low Water Future: Review of Municipal Documents - Two Hemispheres Environmental Consulting Pty Ltd * is a summary of recommendations made in Section A, B of Review of Municipal Documents	Recreation and Amenity: Councils should shift from considering drought management as an emergency response to a risk management item. Water availability is no longer an emergency but an identified, continuing and growing risk - shift from emergency response to risk allows for more proactive planning.	Formal	11 and 59	Councils			

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North East Victoria - Adapting to a Low Water Future: Review of Municipal Documents - Two Hemispheres Environmental Consulting Pty Ltd * is a summary of recommendations made in Section A, B of Review of Municipal Documents	Recreation and Amenity: Working with the community, councils should consider in advance which facilities it shall not maintain in future reduced water periods.	Formal	11 and 59	Councils		55	PLANNING
Alpine Shire Council Climate Change Draft Action Plan 2012-2016 January 2012 - Tribal Frog Pty Ltd	Provide and promote alternative (bus, train, walking, car pooling and cycling) transport infrastructure and services to better meet the needs of the community. GLAP (document: Greenhouse Local Action Plan by Alpine Shire Council): Includes TravelSmart planning; providing cycling and walking tracks; including walking/ cycling paths in new developments; promoting walking and cycling alternatives to car-based travelling. 9.1.2 Ensure all new road infrastructure and streetscapes are designed to accommodate bike and pedestrian traffic. PRIORITY = high	Action	17	Councils	<ol style="list-style-type: none"> <li>1. Provide and promote alternative (bus, train, walking, car pooling and cycling) transport infrastructure and services to better meet the needs of the community.</li> <li>2. Ensure all new road infrastructure and streetscapes are designed to accommodate bike and pedestrian traffic.</li> </ol>	56	PLANNING/ TRANSPORT
Adapting to a Low Water Future: Climate Change Risk Assessment and Adaptation Plan	Councils should develop and implement a regional stormwater professional training and professional capacity building program with a focus on managing and adapting to projected changes in runoff due to increased rainfall intensity and duration. E5	Formal	ix	Councils	Councils should develop and implement a regional stormwater professional training and professional capacity building program with a focus on managing and adapting to projected changes in runoff due to increased rainfall intensity and duration.	57	PLANNING/ STORMWATER

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Alpine Shire Council Climate Change Draft Action Plan 2012-2016 January 2012 - Tribal Frog Pty Ltd	I2. To increase water availability for watering of parks, gardens, sportsgrounds and other recreation facilities, council to consider mapping potential non potable water supplies and matching them to 'fit for purpose' uses. PRIORITY = high	Action	15	Councils	To increase water availability for watering of parks, gardens, sportsgrounds and other recreation facilities, councils could consider mapping potential non potable water supplies and matching them to 'fit for purpose' uses.	58	WATER SUPPLY
Adapting to a Low Water Future: Climate Change Risk Assessment and Adaptation Plan	To increase water availability for watering of parks, gardens, sportsgrounds and other recreation facilities, councils could consider mapping potential non potable water supplies and matching them to 'fit for purpose' uses. I2	Formal	xiii	Councils, proposed North East Regional Groundwater Monitoring Partnership			
Adapting to a Low Water Future: Climate Change Risk Assessment and Adaptation Plan	Councils should collaborate with each other and with NEW to strengthen and promote consistency in application of demand management and consideration of water service supply options across the region. A2	Formal	v	Councils, NEW	Councils should collaborate with each other and with NEW to strengthen and promote consistency in application of demand management and consideration of water service supply options across the region.	59	WATER SUPPLY
Alpine Shire Council Climate Change Draft Action Plan 2012-2016 January 2012 - Tribal Frog Pty Ltd	Continue to develop & expand promotion of year round tourism activities. 17.1 Strategy - Develop & expand promotion of year round activities (e.g. cycling), flexible response to snow available. Work with local businesses to cater for alternate tourism activities. Seek out incentive programs and Grants such as the Australian Tourism Development Program. PRIORITY = high	Action	21	Councils	<ol style="list-style-type: none"> <li>1. Continue to develop &amp; expand promotion of year round tourism activities (e.g. cycling), make a flexible response to snow available.</li> <li>2. Work with local businesses to cater for alternate tourism activities.</li> <li>3. Seek out incentive programs and Grants such as the Australian Tourism Development Program.</li> <li>4. A role should be established within the NERTB to provide ongoing mentoring and support to tourism businesses, to</li> </ol>	60	

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Report name and Author	Recommendations	Type	Page	Who is responsible	Paraphrasing	Recommendation number	Broad category
Final Report Climate Change in North East Victoria: Socioeconomic Resilience Plan February 2012	Tourism business forward planning and crisis preparation. To increase the resilience of the tourism sector to downturns and crises, many of which can be linked to climate extremes such as bushfires, droughts and floods. A role should be established within the NERTB to provide ongoing mentoring and support to tourism businesses. The focus of the role would be to: educate and mentor tourism businesses on forward planning and crisis preparation; provide leadership, be a point of contact and advocacy for tourism businesses in times of crisis; and seek funding to develop support programs. The role would be ongoing and build on the crisis preparation training program that is currently in place. Implementable=yes; driven locally=yes; effective LT contribution to resilience=major	Action	82 and 71	Councils	build on the crisis preparation training program that is currently in place. The focus of the role would be to: educate and mentor tourism businesses on forward planning and crisis preparation; provide leadership, be a point of contact and advocacy for tourism businesses in times of crisis; and seek funding to develop support programs.	60	PLANNING/ TOURISM
North East Victoria - Adapting to a Low Water Future: Review of Municipal Documents - Two Hemispheres Environmental Consulting Pty Ltd * is a summary of recommendations made in Section A, B of Review of Municipal Documents	Flooding: There should be a clear discussion about risks facing councils – legal, reputational and financial risks where flood studies have been undertaken and not incorporated into the Planning scheme. Councils may face an increased risk of legal challenge in the future if decisions are made that allow development in areas subject to flooding. Increased development in these areas could be an increased cost to municipalities, rather than a rate revenue stream (councils face increased insurance premiums with increased flooding and inundation).	Formal	9 and 43	Councils	There should be a clear discussion about risks facing councils – legal, reputational and financial risks where flood studies have been undertaken and not incorporated into the Planning scheme.	61	

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Report name and Author	Recommendations	Type	Page	Who is responsible	Paraphrasing	Recommendation number	Broad category
Alpine Shire Council Climate Change Draft Action Plan 2012-2016 January 2012 - Tribal Frog Pty Ltd	Incorporate and reference existing and future flood studies within Council's Planning Scheme. 1. Advocate for a clear discussion about risks facing council – legal, reputational and financial risks where flood studies have been undertaken and not incorporated into the Planning scheme. 9. There should be a clear discussion about risks facing council – legal, reputational and financial risks where flood studies have been undertaken and not incorporated into the Planning scheme. PRIORITY = high	Action	16	Councils		61	PLANNING/ FLOOD
North East Victoria - Adapting to a Low Water Future: Review of Municipal Documents - Two Hemispheres Environmental Consulting Pty Ltd * is a summary of recommendations made in Section A, B of Review of Municipal Documents	Flooding: Councils should as a priority incorporate existing flood studies as an overlay in Planning Schemes	Formal	9	Councils	1. Councils should incorporate existing flood studies as an overlay in Planning Schemes. 2. Councils as a group should select two or three existing flood models for an urban area where a Council is under development pressure and remodel taking into account latest information on rainfall and its changes under climate change to quantify the changes and risks. 3. Councils working with NECMA should undertake or commission site specific hydrologic / flood modelling of local priority areas where the perceived risk is high and current Floodplain Management Plans do not fully reflect regional rainfall intensity projections. 4. Council is to liaise with NECMA and other partners to	62	

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Report name and Author	Recommendations	Type	Page	Who is responsible	Paraphrasing	Recommendation number	Broad category
North East Victoria - Adapting to a Low Water Future: Review of Municipal Documents - Two Hemispheres Environmental Consulting Pty Ltd * is a summary of recommendations made in Section A, B of Review of Municipal Documents	Flooding: Councils as a group should select two or three existing flood models for an urban area where a Council is under development pressure and remodel taking into account latest information on rainfall and its changes under climate change to quantify the changes and risks.	Formal	9	Councils	improve flood prediction. 5. Councils should review and update Planning Scheme overlays relating to floodplains, incorporating outcomes of flood studies..... .. and ensure the public is aware of the most up to date flood data and extent of flooding. 6. Councils should, in consultation with NECMA, identify areas that could benefit from the improved accuracy of mapping of the land subject to inundation.	62	
Adapting to a Low Water Future: Climate Change Risk Assessment and Adaptation Plan	Drawing on outcomes of Action E6, Councils working with NECMA should undertake or commission site specific hydrologic / flood modelling of local priority areas where the perceived risk is high and current Floodplain Management Plans do not fully reflect regional rainfall intensity projections. F3	Formal	x	Councils, working with NECMA			
North East Victoria - Adapting to a Low Water Future: Review of Municipal Documents - Two Hemispheres Environmental Consulting Pty Ltd * is a summary of recommendations made in Section A, B of Review of Municipal Documents	Flooding: Councils to liaise with NECMA and other partners to improve flood prediction.	Formal	10	Councils			

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Adapting to a Low Water Future: Climate Change Risk Assessment and Adaptation Plan	Councils should review and update Planning Scheme overlays relating to floodplains, incorporating outcomes of flood studies (Action F3), and ensure the public is aware of the most up to date flood data and extent of flooding. F4	Formal	x	Councils		62	PLANNING/ FLOOD
North East Victoria - Adapting to a Low Water Future: Review of Municipal Documents - Two Hemispheres Environmental Consulting Pty Ltd * is a summary of recommendations made in Section A, B of Review of Municipal Documents	Climate Change Planning and Co-ordination: Planning Schemes should be amended to incorporate flood overlays to better protect against risks.	Formal	10	Councils			
North East Victoria - Adapting to a Low Water Future: Review of Municipal Documents - Two Hemispheres Environmental Consulting Pty Ltd * is a summary of recommendations made in Section A, B of Review of Municipal Documents	Flooding: Councils should, in consultation with NECMA, identify areas that could benefit from the improved accuracy of mapping of the land subject to inundation. To increase capacity in mitigation work that reduces impacts of flooding.	Formal	10	Councils			

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North East Victoria - Adapting to a Low Water Future: Review of Municipal Documents - Two Hemispheres Environmental Consulting Pty Ltd - Section A	Workshop outcome: Flooding needs clarification. There needs to be some thought about more accurately defining and describing a 100 year event. Planners and engineers may have a very precise understanding of the approach and the definition of a 1 in 100 year event. However this is less clear to staff not intimately involved in the design process, or the public.	Additional recommendations found in text for documents WITH formal recommendations	24	Councils	<ol style="list-style-type: none"> <li>1. Advocate for a 'flooding information' single point of contact to be made readily available to council and the public.</li> <li>2. Clearly define and advocate a 100 year event to staff and the public.</li> <li>3. Additional flood mapping should be checked. It is unlikely a property purchaser would know where to find this important information.</li> <li>4. Councils and partners should provide information as part of the 'welcome package' and resource guide for rural properties on flood risks and preparedness for emergencies.</li> </ol>	63	
Alpine Shire Council Climate Change Draft Action Plan 2012-2016 January 2012 - Tribal Frog Pty Ltd	Advocate for a 'flooding information' single point of contact to be made readily available to council and the public. 9. Advocate for a 'flooding information' single point of contact to be made readily available to council and the public. PRIORITY = medium	Action	22	Councils			
North East Victoria - Adapting to a Low Water Future: Review of Municipal Documents - Two Hemispheres Environmental Consulting Pty Ltd - Section A	It is recommended that this additional flood mapping should be checked. It is unlikely a property purchaser would know where to find this important information.	Additional recommendations found in text for documents WITH formal recommendations	25	Councils			



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North East Victoria - Adapting to a Low Water Future: Review of Municipal Documents - Two Hemispheres Environmental Consulting Pty Ltd * is a summary of recommendations made in Section A, B of Review of Municipal Documents	Flooding: Councils and partners should provide information as part of the 'welcome package' and resource guide for rural properties on flood risks and preparedness for emergencies. To increase capacity in mitigation work that reduces impacts of flooding.	Formal	10	Councils		63	PLANNING/ FLOOD
Adapting to a Low Water Future: Climate Change Risk Assessment and Adaptation Plan	Councils, with support from NECMA, should undertake or commission hydraulic modelling to assess local and regional impacts of climate change to stormwater and drainage systems and urban floodways, drawing on outputs of regional rainfall intensity modelling (see Action E6). E1	Formal	viii	Councils, NECMA	Councils, with support from NECMA, should undertake or commission hydraulic modelling to assess local and regional impacts of climate change to stormwater and drainage systems and urban floodways, drawing on outputs of regional rainfall intensity modelling.	64	RESEARCH
North East Victoria - Adapting to a Low Water Future: Review of Municipal Documents - Two Hemispheres Environmental Consulting Pty Ltd * is a summary of recommendations made in Section A, B of Review of Municipal Documents	Groundwater Supply and Quality: Councils in conjunction with agencies, including CFA, should map all bores for potential sources of water for fire fighting and water supplies.	Formal	9	Council	As part of a proactive risk management strategy Councils in conjunction with agencies, including CFA should map all bores for potential sources of water for fire fighting and water supplies. This involves gaining knowledge of groundwater resource size, quality, and accessibility.	65	

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Section B: An analysis of existing council plans and strategies based on priority risk groupings - Two Hemispheres Environmental Consulting Pty Ltd	There is an opportunity for Councils to consider in a more proactive manner the groundwater resource: its size, quality and accessibility in advance so that risks can be reduced. Likewise, if not already undertaken, mapping of all bores for their potential water sources for bush fire fighting and for water supply, could be part of a proactive risk management strategy.	Recommendations found in text WITH document that had set out recommendations	36	Councils		65	RESEARCH/ GROUNDWATER
Alpine Shire Council Climate Change Draft Action Plan 2012-2016 January 2012 - Tribal Frog Pty Ltd	Monitor the progress of the Engineers Australia 'Australian Rainfall and Runoff' (ARR) Revision Project. Council is to monitor the progress of the Engineers Australia ARR Revision Project. Council is to consider advocating for end user representation on the technical committee or other committees of this project, if not this has not already occurred. Councils with North East Water and the North East Catchment Management Authority should propose that the North East be a pilot project for aspects of the project. The region should invite representatives of the Engineers Australia Project Team to address municipalities on the project, benchmarks and outcomes. Council is to ensure that there is no duplication in research or modelling that has already been undertaken as part of the ARR Revision project. PRIORITY = medium	Action	19	Councils	1. Councils should monitor the progress of the Engineers Australia 'Australian Rainfall and Runoff' (ARR) Revision Project. 2. Council should advocate end-user representation on the technical committee or other committees of this project. 3. Councils in partnership with North East Water and the North East Catchment Management Authority should nominate the North East as a pilot project for aspects of the project. 4. The Councils should invite representatives of the Engineers Australia Project Team to address municipalities on the project, benchmarks and outcomes. 5. Councils should ensure that there is no duplication in research or modelling that has already been undertaken as part of the ARR Revision project.	66	ARR REVISION PROJECT

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North East Victoria - Adapting to a Low Water Future: Review of Municipal Documents - Two Hemispheres Environmental Consulting Pty Ltd * is a summary of recommendations made in Section A, B of Review of Municipal Documents	Groundwater Supply and Quality: Councils should act to obtain a better knowledge of groundwater resources in partnership with other agencies.	Formal	9	Council	<ol style="list-style-type: none"> <li>1. Councils should act to obtain a better knowledge of groundwater resources in partnership with other agencies.</li> <li>2. Council should collaborate with other agencies to encourage an improved groundwater monitoring network.</li> <li>3. Councils should consider establishing a monitoring program for high risk septic systems and areas identified through Action.</li> <li>4. Investigate the feasibility of establishing a 'North East Regional Groundwater Monitoring Partnership' to streamline and consolidate the collection of groundwater data in the region.</li> </ol>	67	
North East Victoria - Adapting to a Low Water Future: Review of Municipal Documents - Two Hemispheres Environmental Consulting Pty Ltd * is a summary of recommendations made in Section A, B of Review of Municipal Documents	Groundwater Supply and Quality: Council to collaborate with other agencies to encourage an improved groundwater monitoring network.	Formal	9	Council			
Adapting to a Low Water Future: Climate Change Risk Assessment and Adaptation Plan	Councils should consider establishing a monitoring program for high risk septic systems and areas identified through Action B2. D2	Formal	vii	councils			

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Adapting to a Low Water Future: Climate Change Risk Assessment and Adaptation Plan	Investigate the feasibility of establishing a 'North East Regional Groundwater Monitoring Partnership' to streamline and consolidate the collection of groundwater data in the region. C2	Formal	vii	DSE, G-MW, NEW, NECMA, DPI and councils		67	GROUNDWATER
Adapting to a Low Water Future: Climate Change Risk Assessment and Adaptation Plan	NEW and councils, working with local industry and business associations, should consider designing and implementing a regional energy and water efficiency program, similar to EREPs but targeting small and medium businesses across the region. G4	Formal	xi	NEW, councils, local industry and business associations	NEW and councils, working with local industry and business associations, should consider designing and implementing a regional energy and water efficiency program, similar to EREPs but targeting small and medium businesses across the region.	68	WATER AND ENERGY EFFICIENCY

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Final Report Climate Change in North East Victoria: Socioeconomic Resilience Plan February 2012	Business continuity training program and toolkit - manufacturing. Consider developing an information and support package on water, energy, waste, and cost savings. The package would target manufacturing firms in the region, providing firms with information and support on: available technologies, systems and processes for reducing water and energy consumption and waste, with case studies provided of industry leaders/ early adopters who have successfully and cost-effectively reduced water and energy consumption and waste; audits and other support that can be utilised to identify water, energy and waste reduction opportunities; sustainability training programs provided by government (e.g. 'Sustainability Skills' through Manufacturing Skills Australia); and available government assistance and grants programs that can be accessed to assist firms implement more sustainable practices and reduce their water and energy consumption and waste. The aims of the package would be to increase the awareness and ultimately take-up of sustainability programs and opportunities, as well as improving coordination between the different programs. The information component of the strategy would require a range of approaches including active marketing, case studies, fact sheets (e.g. return on investment calculators), forums, industry outreach and promotion through industry groups and chambers of commerce. Implementable=yes; driven locally=yes; effective LT contribution to resilience=moderate	Action	82 and 68 – proposed action 6.2.2	Councils NEGHA member councils, working with regional industry groups, North East Water (NEW) and the Victorian Environment Protection Authority (EPA)	Develop an information and support package on water, energy, waste, and cost savings to increase the awareness and ultimately take-up of sustainability programs and opportunities, as well as improving coordination between the different programs.	69	

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Report name and Author	Recommendations	Type	Page	Who is responsible	Paraphrasing	Recommendation number	Broad category
Final Report Climate Change in North East Victoria: Socioeconomic Resilience Plan February 2012	Business continuity training program and toolkit – tourism. Implementable=yes; driven locally=yes; effective LT contribution to resilience=moderate	Action	82 and 71 - page 68 – relates to proposed action 6.2.2	Councils		69	WATER AND ENERGY EFFICIENCY
North East Victoria - Adapting to a Low Water Future: Review of Municipal Documents - Two Hemispheres Environmental Consulting Pty Ltd * is a summary of recommendations made in Section A, B of Review of Municipal Documents	Opportunities for change: Where not already established, staff should develop measurement and reporting on water and energy consumption of council operations publicly and on a regular basis.	Formal	8	council			
North East Victoria - Adapting to a Low Water Future: Review of Municipal Documents - Two Hemispheres Environmental Consulting Pty Ltd * is a summary of recommendations	Carbon Pricing: Councils should actively monitor energy consumption and prices.	Formal	11	Councils	1. Where not already established, staff should develop measurement and reporting on water and energy consumption of council operations publicly and on a regular basis. 2. Councils should actively monitor energy consumption and prices. 3. Councils should include a standing item in reporting on a quarterly basis about energy consumption, comparing year to year progress.	70	

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made in Section A, B of Review of Municipal Documents						70	
North East Victoria - Adapting to a Low Water Future: Review of Municipal Documents - Two Hemispheres Environmental Consulting Pty Ltd * is a summary of recommendations made in Section A, B of Review of Municipal Documents	Carbon Pricing: Councils should include a standing item in reporting on a quarterly basis about energy consumption, comparing year to year progress	Formal	11	Councils			WATER AND ENERGY EFFICIENCY
Alpine Shire Council Climate Change Draft Action Plan 2012-2016 January 2012 - Tribal Frog Pty Ltd	Encourage and support community initiatives to reduce waste to landfill. Compost bins; worm farms for kitchen scraps, shredding garden waste for mulch, use a green bag instead of disposable plastic bags for shopping, choose products with less wrapping and packaging, buy in bulk - many items can be bought more cheaply in large amounts. Investigate the suitability of providing an incentive for residents to purchase compost bins. PRIORITY = high	Action	11	Councils	Encourage and support community initiatives to reduce waste to landfill: -Investigate the suitability of providing an incentive for residents to purchase compost bins. -Continue to reduce waste to landfill and improve opportunities to recycle within Alpine Shire. -Investigate the introduction of a regular kerb-side green waste collection bin. -Establish green waste sites.	71	

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Alpine Shire Council Climate Change Draft Action Plan 2012-2016 January 2012 - Tribal Frog Pty Ltd	Continue to reduce waste to landfill and improve opportunities to recycle within Alpine Shire. Continue to improve recycling within Alpine Shire. PRIORITY = High	Action	15	Councils		71	WASTE MANAGEMENT
Alpine Shire Council Climate Change Draft Action Plan 2012-2016 January 2012 - Tribal Frog Pty Ltd	Investigate the introduction of a regular kerb-side green waste collection bin. 12.1.1 Investigate the introduction of a regular kerb-side green waste collection bin. Also referred to in YCCF document as 11. Establish green waste sites. PRIORITY = high	Action	18	Councils			
Alpine Shire Council Climate Change Draft Action Plan 2012-2016 January 2012 - Tribal Frog Pty Ltd	Lead by example with drought tolerant and non weedy plant selection and community education. 6.3 Shift to more drought tolerant plant species. Establish specific action plan for which plants will be planted where and progressively replaced. PRIORITY = high	Action	11	Councils	1. Encourage the use of drought tolerant and non weedy plant selection and community education, one way to do this is by shifting to more drought tolerant plant species; establish specific action plan for which plants will be planted where and progressively replaced. 2. Develop a planting guide outlining the most suitable species to plant in the Shire.	72	WATER SUSTAINABILITY
Alpine Shire Council Climate Change Draft Action Plan 2012-2016 January 2012 - Tribal Frog Pty Ltd	Develop a planting guide outlining the most suitable species to plant in the Shire. 7.2.2 Develop a planting guide outlining the most suitable species to plant in the Shire. PRIORITY = medium	Action	12	Councils			



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Report name and Author	Recommendations	Type	Page	Who is responsible	Paraphrasing	Recommendation number	Broad category
Adapting to a Low Water Future: Climate Change Risk Assessment and Adaptation Plan	Councils should become actively involved in regional water quality management and monitoring processes through the North East Regional Water Monitoring Partnership (NERWMP). This can be facilitated by broadening the role of NERWMP to address issues relevant to council concerns (e.g. research and monitoring of sources of urban sediment and pollution in stormwater) and seeking assistance of councils in integrated catchment management. B1	Formal	vi	Councils and NERWMP	Councils should become actively involved in regional water quality management and monitoring processes through the North East Regional Water Monitoring Partnership (NERWMP). This can be facilitated by broadening the role of NERWMP to address issues relevant to council concerns (e.g. research and monitoring of sources of urban sediment and pollution in stormwater) and seeking assistance of councils in integrated catchment management.	73	WATER QUALITY MANAGEMENT
Adapting to a Low Water Future: Climate Change Risk Assessment and Adaptation Plan	Councils should adopt a risk-averse approach to water pollution generating activities that they have a role in managing, including by strengthening relevant strategies and plans for the management of wastewater systems and stormwater. B2	Formal	vi	Councils	Councils should adopt a risk-averse approach to water pollution generating activities that they have a role in managing, including by strengthening relevant strategies and plans for the management of wastewater systems and stormwater.	74	WATER QUALITY MANAGEMENT
Alpine Shire Council Climate Change Draft Action Plan 2012-2016 January 2012 - Tribal Frog Pty Ltd	Annually undertake audits of Council's waste, lighting, street lighting, energy and water consumption and green purchasing. Audits are to include all Council owned and managed buildings, fleet, reserves and assets including street lights. Continue to implement relevant audit programs like EcoBuy, Planet Footprint to measure Council's resource consumption and purchasing patterns. PRIORITY = high	Action	13	Councils	<ol style="list-style-type: none"> <li>1. Annually undertake audits of Council's waste, lighting, street lighting, energy and water consumption and green purchasing. Audits are to include all Council owned and managed buildings, fleet, reserves and assets including street lights.</li> <li>2. Continue to implement relevant audit programs like EcoBuy, Planet Footprint to measure Council's resource consumption and purchasing patterns.</li> <li>3. Monitor and annually report on Council's Audit (waste,</li> </ol>	75	

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Report name and Author	Recommendations	Type	Page	Who is responsible	Paraphrasing	Recommendation number	Broad category
Alpine Shire Council Climate Change Draft Action Plan 2012-2016 January 2012 - Tribal Frog Pty Ltd	Monitor and annually report on Council's Audit (waste, water, lighting, street lighting and energy consumption and green purchasing) results. To share results of Council's resource consumption and purchasing patterns internally and with community and relevant partner organisations. PRIORITY = high	Action	14	Councils	water, lighting, street lighting and energy consumption and green purchasing) results. 4. Share results of Council's resource consumption and purchasing patterns internally and with community and relevant partner organisations.	75	AUDIT
Alpine Shire Council Climate Change Draft Action Plan 2012-2016 January 2012 - Tribal Frog Pty Ltd	Develop a better understanding of the local environment. Facilitate the undertaking of energy audits for schools, businesses and private homes. PRIORITY = high	Action	21	Councils	Develop a better understanding of the local environment by facilitating the undertaking of energy audits for schools, businesses and private homes.	76	AUDIT
Development of Practical Solutions for the North East of Victoria - adapting to a low water future - Bonacci Water	Councils in particular should ensure that this document (as in the one this recommendation is from) does not become lost in the archives but continues to be a valuable source document in formulating policies for building and development.	Recommendations found in text that did not have formal recommendations	9,10, 86	Councils	Councils should reduce mains water demands, sewage discharges, and impacts on waterways from urban development through water efficient appliances, gardens, practices, rainwater harvesting, reuse of wastewater, and stormwater harvesting. This should include a community engagement strategy.	77	
Development of Practical Solutions for the North East of Victoria - adapting to a low water future - Bonacci Water	Councils should develop engagement strategies to ensure that the findings of this report are implemented at the Lot Scale and across the wider community.	Recommendations found in text that did not have formal recommendations	86	Councils			
Development of Practical Solutions for the North East of Victoria - adapting to a low water future - Bonacci Water	• Councils, DPCD and North East Water should work together to ensure that the water security measures detailed in this report are considered in all future planning scheme rezoning, and major developments.	Recommendations found in text that did not have formal recommend-	86	Councils			

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Report name and Author	Recommendations	Type	Page	Who is responsible	Paraphrasing	Recommendation number	Broad category
		ations					
Development of Practical Solutions for the North East of Victoria - adapting to a low water future - Bonacci Water	<ul style="list-style-type: none"> <li>North East Water should ensure that future Water Supply Demand Strategies are cognizant of the findings of this report and promote these water security measures.</li> </ul>	Recommendations found in text that did not have formal recommendations	86	Councils			
Development of Practical Solutions for the North East of Victoria - adapting to a low water future - Bonacci Water	Strategies to encourage community acceptance, implementation and adoption will be required. This will require good leadership and governance, good community engagement and respected local champions. Option 0: Business as usual - this option assumes that centralised management of reticulated mains water supply (towns without reticulated water supply involves the option of using water from rainwater tanks and management of wastewater from septic tanks and absorption trenches), sewage disposal and stormwater runoff will be the dominant source of water cycle services to North East Victoria. Also assumed is mains water will be supplied to most towns throughout the region from the existing headworks system that includes a network of rivers, dams and weirs within nine water supply districts. Not a viable option in the longer term.	Recommendations found in text that did not have formal recommendations	14 (incorporated pages 13-16)	Councils		77	WATER SAVINGS

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Report name and Author	Recommendations	Type	Page	Who is responsible	Paraphrasing	Recommendation number	Broad category
Report for Water Efficiency Site Assessments and Action Plans: Phase 3, Part 5 of North East Victoria Adapting to a Low Water Future - North East Greenhouse Alliance - WaterGroup Pty Ltd	Priority should be given to pursuing a water efficiency program for the Accommodation industry. A water savings program for the region's Wineries should also be considered, either at the completion of the program for the accommodation industry, or simultaneously if budget permits. The means which can be used to promote water savings in each of these industries are discussed in Section 7.4 of this report.	Formal	29	Councils	Priority should be given to pursuing a water efficiency program for the Accommodation industry. A water savings program for the region's Wineries should also be considered, either at the completion of the program for the accommodation industry, or simultaneously if budget permits.	78	WATER SAVINGS
Report for Water Efficiency Site Assessments and Action Plans: Phase 3, Part 5 of North East Victoria Adapting to a Low Water Future - North East Greenhouse Alliance - WaterGroup Pty Ltd	An Information Campaign should be launched on the basis of the results of this program, based on case studies summarising the outcomes of the site audits for each of the sites involved (with the exception of the Livestock Exchange, due to there being only two other such sites in the North East Water area).	Formal	33	Councils	An Information Campaign should be launched on the basis of the results of this water savings program, based on case studies summarising the outcomes of audits.	79	WATER SAVINGS
Report for Water Efficiency Site Assessments and Action Plans: Phase 3, Part 5 of North East Victoria Adapting to a Low Water Future - North East Greenhouse Alliance - WaterGroup Pty Ltd	A Rebate Program should be put in place focusing on providing low cost or free flow restriction devices for businesses to use in amenity taps should be launched.	Formal	33	Councils	A Rebate Program should be put in place focusing on providing low cost or free flow restriction devices for businesses to use in amenity taps.	80	WATER SAVINGS

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Report name and Author	Recommendations	Type	Page	Who is responsible	Paraphrasing	Recommendation number	Broad category
Report for Water Efficiency Site Assessments and Action Plans: Phase 3, Part 5 of North East Victoria Adapting to a Low Water Future - North East Greenhouse Alliance - WaterGroup Pty Ltd	Better water management should be encouraged by providing larger water users and those more interested in their consumption, with at least know how, and ideally also financial assistance to install smart meters. This will allow them to see their water consumption in near real time online. It is likely to lead to sustained and significant future water savings.	Formal	33	Councils	Better water management should be encouraged by providing larger water users with information on how to reduce use and ideally also financial assistance to install smart meters.	81	WATER SAVINGS
Report for Water Efficiency Site Assessments and Action Plans: Phase 3, Part 5 of North East Victoria Adapting to a Low Water Future - North East Greenhouse Alliance - WaterGroup Pty Ltd	In terms of focussing on a specific industry, water savings in the Accommodation industry should be pursued with priority. The most effective delivery model (in addition to the support from the Information Campaign and Rebate Program) to achieve savings in this industry is the Sector Engagement Model.	Formal	33	Councils	Water savings in the Accommodation industry should be pursued with priority. The most effective delivery model (in addition to the support from the Information Campaign and Rebate Program) to achieve savings in this industry is the Sector Engagement Model.	82	WATER SAVINGS
Report for Water Efficiency Site Assessments and Action Plans: Phase 3, Part 5 of North East Victoria Adapting to a Low Water Future - North East Greenhouse Alliance - WaterGroup Pty Ltd	Wineries should be considered as a second priority for an industry specific program, with an Upfront Commitment Model, a Sector Engagement Model or a Business Cluster Model used.	Formal	33	Councils	Wineries should be considered as a second priority for an industry specific program, with an Upfront Commitment Model, a Sector Engagement Model or a Business Cluster Model used.	83	WATER SAVINGS

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Report name and Author	Recommendations	Type	Page	Who is responsible	Paraphrasing	Recommendation number	Broad category
North East Victoria Adapting to a low water future phase 3: Social Response skills gaps and training needs analysis Final Report	Given the findings of the research referred to in this report that points to significant workforce and skills shortages in the Water Industry, our own findings and the available training in the education sector regionally there is strong merit in instigating a collaborative body that might be known as 'Water Skills Training Centre.' Such a centre could effectively coordinate and/or deliver training for skills in strategic planning, water resource management and even water operations. It is recognised that such a Water Skills Training Centre is a significant financial and logistical undertaking. Therefore, another recommendation is that an active mechanism should be enacted to allow effective and ongoing collaboration between the NEGHA partners to share training and resources. The mechanism to achieve this could be a skills and training website but a more engaging and active process such as regular meetings either face-to-face or via the internet is strongly encouraged.	Formal	33	NEGHA partners and Councils	<ol style="list-style-type: none"> <li>1. Instigate a collaborative body that might be known as 'Water Skills Training Centre.'</li> <li>2. An active mechanism should be enacted to allow effective and ongoing collaboration between the NEGHA partners to share training and resources.</li> <li>3. With respect to water planning for the NEGHA partners, and in lieu of a Water Skills Training Centre, we recommend the creation of a training co-ordinator role for water management in the North East.</li> </ol>	84	

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Report name and Author	Recommendations	Type	Page	Who is responsible	Paraphrasing	Recommendation number	Broad category
North East Victoria Adapting to a low water future phase 3: Social Response skills gaps and training needs analysis Final Report	<p>With respect to water planning for the NEGHA partners, and in lieu of a Water Skills Training Centre, we recommend the creation of a training co-ordinator role for water management in the North East. This role would be located centrally in the North East and perform the following functions: Collaborate with local government natural resource managers/strategic planners/human resource staff to identify training needs and opportunities; Work alongside NEGHA partners to address training gaps and barriers; Liaise with Registered Training Providers/Universities to deliver relevant and accessible training programs; Coordinate combined training/skills and knowledge sharing activities; Identify emerging technological trends in water management and plot strategies to assess relevance for the region; and Deliver water or sustainability training/workshops as deemed necessary. The existence of a Water Skills Training Centre and/or a coordinator may also enhance the capacity of the region to attract and retain staff. Funds to assist the NEGHA partners to establish either a Water Skills Training Centre or coordinator role may be available through Federal (e.g. Water for the Future) or State (e.g. Victorian Water Trust) programs. These funding opportunities may also be considered by the NEGHA partners as an opportunity to work more closely with the tertiary education sector by applying for funds in partnership.</p>	Formal	34-35	NEGHA partners and Councils		84	NEGHA

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Report name and Author	Recommendations	Type	Page	Who is responsible	Paraphrasing	Recommendation number	Broad category
North East Victoria Adapting to a Low Water Future Phase 3: Stakeholder behavioural study and analysis FINAL REPORT - North East Greenhouse Alliance	That NEGHA networks the five councils into other relevant projects that councils and other organisations outside of the region are doing to provide ideas and insights that may assist and guide them with their own projects.	Formal	30	NEGHA partners and Councils	Ensure the NEGHA networks the councils into other relevant projects that councils and other organisations outside of the region are doing to provide ideas and insights that may assist and guide them with their own projects.	85	NEGHA
Adapting to a Low Water Future: Climate Change Risk Assessment and Adaptation Plan	Once a detailed carbon price framework has been established by the Australian Government, NEGHA member and partner organisations should initiate a joint study into the impacts of carbon pricing on the north east region and develop region wide measures to reduce those impacts. N2	Formal	xvi	Councils and agencies	Once a detailed carbon price framework has been established by the Australian Government, NEGHA member and partner organisations should initiate a joint study into the impacts of carbon pricing on the north east region and develop region wide measures to reduce those impacts.	86	NEGHA
North East Victoria Adapting to a low water future phase 3: Social Response skills gaps and training needs analysis Final Report	Given the outcomes of the workshop discussions, we would also recommend regular interaction between the NEGHA partners to ensure additional continuity and resilience in the North East Victoria region.	Formal	33	Councils	1. Ensure that the NEGHA monitors the progress of each Council's progress and provides individual support where necessary to assist the councils with making sense of the issues. 2. Ensure that the NEGHA provides a forum (face to face or some other facilitated means) for the staff leading the projects identified in the case studies to meet and discuss their progress. 3. Interaction should be regular between the NEGHA partners to ensure additional continuity and resilience in the North East Victoria region.	87	
North East Victoria Adapting to a Low Water Future Phase 3: Stakeholder behavioural study and analysis FINAL REPORT - North East Greenhouse Alliance	That the NEGHA monitors the progress of each Council's progress and provides individual support where necessary to assist the councils with making sense of the issues. This may involve 3 to 6 monthly facilitated review sessions to monitor progress and discuss any barriers that have emerged in developing and implementing the plans and strategies so far identified in the case studies.	Formal	30	NEGHA partners and Councils			



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Report name and Author	Recommendations	Type	Page	Who is responsible	Paraphrasing	Recommendation number	Broad category
North East Victoria Adapting to a Low Water Future Phase 3: Stakeholder behavioural study and analysis FINAL REPORT - North East Greenhouse Alliance	That the NEGHA provides a forum (face to face or some other facilitated means) for the staff leading the projects identified in the case studies to meet and discuss their progress. This would enable them to continue to learn from what they are each doing and receive support and ideas from the group. A facilitator would ensure the group maintains momentum and the process does not stall for lack of a driver to keep it top of mind. (Learning circles focused on wicked problems)	Formal	30	NEGHA partners and Councils		87	NEGHA

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Report name and Author	Recommendations	Type	Page	Who is responsible	Paraphrasing	Recommendation number	Broad category
North East Victoria Adapting to a low water future phase 3: Social Response skills gaps and training needs analysis Final Report	Given the wider research on skills gaps and trainings needs in the water industry and the findings of this project, we recommend that the NEGHA partners consider adding broad skills in natural resource or environmental management and/or sustainability throughout their organisation i.e. within each department and level of the organisation relevant to strategic planning and management of our water resources. This will ensure that trained staff are capable of identifying the knowledge and skills needed within their organisation (either in-house or a consultant) and to keep abreast of new developments, knowledge and technology related to planning and management of our water resources in the face of relatively uncertain impacts of climate change. Furthermore, the knowledge and skills gained in these broader qualifications will enable staff to think critically with respect to natural resource planning and management as well as identify risks and plan for environmental, economic and social adaptation within the North East Victorian region. Given the emphasis on triple bottom line accounting and reporting and the environmental learning gained within education about and for sustainability, we strongly recommend training in sustainability as a first step in improving the knowledge and skills within the NEGHA partner organisations. This will provide a relevant and strong foundation to base ongoing assessments of needs and promote more effective future forecasting.	Formal	33	NEGHA partners and Councils	<ol style="list-style-type: none"> <li>1. NEGHA partners should consider adding broad skills in natural resource or environmental management and/or sustainability throughout their organisation i.e. within each department and level of the organisation relevant to strategic planning and management of our water resources.</li> <li>2. Training in sustainability should be the first step in improving the knowledge and skills within the NEGHA partner organisations.</li> </ol>	88	NEGHA

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Table Appendix C-4 The origin of non-Council recommendations

Report name and Author	Recommendations	Type	Page	Recommendation number	Who is responsible
North East Victoria - Adapting to a Low Water Future: Review of Municipal Documents - Two Hemispheres Environmental Consulting Pty Ltd * is a summary of recommendations made in Section A, B of Review of Municipal Documents	Stormwater Management: It is recommended that the state government review its storm water design standards and update them to reduce risks for future developments.	Formal	9	1	State government
Adapting to a Low Water Future: Climate Change Risk Assessment and Adaptation Plan	The State Government should initiate research through the NERWMP to improve understanding of the potential impacts of climate change (including increased rainfall variability) on the generation of water pollution, and the impact of this on receiving environments and uses. B3	Formal	vi	2	State government, NERWMP
Adapting to a Low Water Future: Climate Change Risk Assessment and Adaptation Plan	The North East Victoria Regional Tourism Board (NEVRTB) should seek funding to undertake tourism industry and climate change case studies, which identify potential impacts of climate change on key tourism industries, drawing on recent experience. H3	Formal	xii	3	NEVRTB in consultation with councils and local tourism organisations
Adapting to a Low Water Future: Climate Change Risk Assessment and Adaptation Plan	NEW could consider strengthening its water education and information initiatives by developing a program specifically focussed on understanding how the community values water and water-related services and educating the community on water use efficiency. I3	Formal	xiii	4	NEW
Adapting to a Low Water Future: Climate Change Risk Assessment and Adaptation Plan	Fire management plans and associated components of the Victorian Fire Risk Register should be reviewed to ensure availability of suitable water supplies for fire suppression, particularly in periods of low water availability. J3	Formal	xiv	5	Municipal Fire Management Planning Committees (MFMPCs)
Adapting to a Low Water Future: Climate Change Risk Assessment and Adaptation Plan	Education and conservation incentive programs targeting high conservation value vegetation communities and ecosystems threatened by climate change should be enhanced. K3	Formal	xv	6	DSE, NECMA and councils
Adapting to a Low Water Future: Climate Change Risk Assessment and Adaptation Plan	NEGHA partner organisations should seek to encourage a coordinated regional approach to climate change adaptation planning by working with the RMF to prioritise and implement actions from this plan and relevant actions in other strategies such as the Hume Strategy. M3	Formal	xvi	7	DSE, NEW, G-MW and NECMA
Adapting to a Low Water Future: Climate Change Risk Assessment and Adaptation Plan	Councils should work towards a coordinated regional approach to climate change adaptation planning, by agreeing to priority actions for implementation from this plan and relevant actions in regional strategies such as the Hume Strategy. M1	Formal	xvi	8	Regional Management Forum (RMF)

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Report name and Author	Recommendations	Type	Page	Recommendation number	Who is responsible
Report for Water Efficiency Site Assessments and Action Plans: Phase 3, Part 5 of North East Victoria Adapting to a Low Water Future - North East Greenhouse Alliance - WaterGroup Pty Ltd	<p>The most financially attractive measures should be implemented with priority at the seven sites assessed, since they will provide the highest level of total savings for a given implementation budget. As mentioned in the individual site audit reports (see Appendix) it is recommended that the „Tier 1“ measures are implemented as soon as possible:</p> <ul style="list-style-type: none"> <li>· Tier 1 measures were classified as those with a payback of 6 years or less. These should be seen as financially attractive, and thus widespread prompt implementation should be encouraged. These measures are mostly simple "water efficiency" style measures such as showerhead upgrades, laundry upgrades, urinal flush modification, and amenity and incidental hand washing tap flow restriction. These are particularly applicable across a wider range of industries. Also included (but not as widely applicable) are changes to water using processes (e.g. wine vat and line cleaning at the Vic Alps Winery), and the large scale use of an alternative water source (e.g. installation of a bore at the Vic Alps Winery).</li> <li>· Tier 2 measures can be split into 2 parts. Measures with a payback between 6 years and 12 years, while not as financially attractive, should still be encouraged for implementation. Such measures were limited to only a few of the sites included in the program, mostly at the Vic Alps Winery. They include "water management" style measures such as sub- and smart metering, and also leakage remediation.</li> <li>· Measures with a payback of greater than 12 years may be considered for longer term implementation or as part of a special initiative (e.g. outside funding, or as special showcase sustainability projects supporting a particular image and marketing aspect that the business is pursuing). These measures include kitchen, café, and cleaning equipment upgrades, rainwater harvesting and an upgrade of the irrigation system for the Vic Alps Winery.</li> <li>· A separate category is the installation of a roof over the Wangaratta Livestock Exchange. Given that this has significant benefits beyond water savings (such as in animal wellbeing), this is an option that should be pursued primarily for other reasons, with water savings seen as an additional benefit.</li> </ul>	Formal	25	9	
Final Report Climate Change in North East Victoria: Socioeconomic Resilience Plan February 2012	Promote and improve outreach of established farm management and planning services. Implementable=yes; driven locally=yes, effective LT contribution to resilience=moderate.	Action	82	10	
Final Report Climate Change in North East Victoria: Socioeconomic Resilience Plan February 2012	Training programs to encourage farm succession planning and good practice. Implementable=?; driven locally=in part; effective LT contribution to resilience=major	Action	82	11	
Final Report Climate Change in North East Victoria: Socioeconomic Resilience Plan February 2012	Research and trials into adaptive farm management practices. Implementable=no; driven locally=yes; effective LT contribution to resilience=major	Action	82	12	
Final Report Climate Change in North East Victoria: Socioeconomic Resilience Plan February 2012	Land bank. Implementable=?; driven locally=?; effective LT contribution to resilience=major	Action	82	13	
Final Report Climate Change in North East Victoria: Socioeconomic Resilience Plan February 2012	Sustainable land use strategy. Implementable=no; driven locally=yes; effective LT contribution to resilience=moderate	Action	82	14	
Final Report Climate Change in North East Victoria: Socioeconomic Resilience Plan February 2012	Long range regional weather forecast information. Implementable=yes; driven locally=no; effective LT contribution to resilience=minor	Action	82	15	
Final Report Climate Change in North East Victoria: Socioeconomic Resilience Plan February 2012	Sustainability opportunities information and support package. Implementable=yes; driven locally=yes; effective LT contribution to resilience=major	Action	82	16	

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Report name and Author	Recommendations	Type	Page	Recommendation number	Who is responsible
Final Report Climate Change in North East Victoria: Socioeconomic Resilience Plan February 2012	Region wide audit of industries exposed to climate change. Implementable=yes; driven locally=yes; effective LT contribution to resilience=minor	Action	82	17	
Adapting to a Low Water Future: Climate Change Risk Assessment and Adaptation Plan	Consider establishing an inter-agency working group to assess climate change risks on regionally important aquatic assets. The assessment could then be used to optimise environmental, economic and social outcomes from decisions on water allocations and management. An established regional group, such as North East Dry Inflow Contingency Planning Group, could be a suitable forum for the proposed working group. L2	Formal	xv	18	DSE, NECMA, G-MW, councils and Parks Victoria
Alpine Shire Council Climate Change Draft Action Plan 2012-2016 January 2012 - Tribal Frog Pty Ltd	Introduce an Environmental Award in the Australia Day presentations. An Environmental Category is to be created within the Australia Day Awards to recognise the environmental achievements of a local resident, community group, family, business. PRIORITY = low	Action	13	19	Councils
Adapting to a Low Water Future: Climate Change Risk Assessment and Adaptation Plan	Drawing on outcomes from Action D2, NEW, working in partnership with councils, DSE and the EPA, should explore techniques and funding sources for improving the treatment of household wastewater in high priority small townships (e.g. less than 100 houses) to an adequate standard. D3	Formal	viii	20	NEW working with DSE, EPA and councils



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## Appendix D Limitations

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